MARTIN
ENVIRONMENTAL
SOLUTIONS

Contaminated Land Verification Report for a residential development on land at 7-9 Chapel Street, Manchester, M19 3QB.

Prepared for

Burke Developments Ltd,
Norwood,
Greenacres,
Oldham,
OL4 3EX.

October 2025

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1. Introduction

1.1. This report confirms the measures undertaken to remediate the development site as detailed in the provided Premeditation & Verification Plan dated November 2024, ref 2843-3 to ensure it is safe and suitable for use and does not present any significant risk of significant harm to identified receptors.

The Site:

Site Address*:* 7-9 Chapel Street, Manchester, M19 3QB,

Grid reference: 387486; 394216

An aerial photograph of the site is included in Figure 1.

Site use:

1.2. The site was previously and industrial site consisting of a number of buildings and used as a metal engineering works. The Proposed development consists of the erection of eight two storey dwellings with gardens.

1.3. This report covers the works undertaken to remediate the site.

2. Previous Investigations

Phase I and Initial Phase II findings

2.1. The site was first developed between 1849-1892 with a Mission Room in the centre of the site. By 1905-11 the site had been redeveloped with a smithy to the western section. By 1956 the site is an engineering works, later redeveloped between 1968-1981. Off-site a reservoir was identified ~100m to the south of the site from 1893 until 1956 when the carpet mill was redeveloped into a saw mill and later a church. A house estate was erected on the northern section opposite the site in 2018. A large electricity sub-station was located to the south 40m away on Elbow Street from 1907.

2.2. The initial phase II investigation consisted of a series of trail holes across the site. These identified elevated levels of contaminations in five areas as indicated in the report.

The Phase II additional Intrusive Investigation

2.3. A site visit was conducted on the 8th June 2024 to undertake an intrusive investigation. The site had been cleared at the time of the visit with previous buildings demolished. A sampling program of 18 sample locations, spread across the site at approximately 10m centres were undertaken. Some of these were located adjacent to the previously sampled locations.

2.4. The samples were sent to Chemtech environmental a UKAS and MCERTs laboratory and each analysed for heavy metals, Total Petroleum Hydrocarbons (TPH) and Polyaromatic Hydrocarbons (PAH), and Asbestos.

2.5. The demolition of the buildings on site had also seen the removal of the concrete hardstanding across the site.

2.6. Elevated levels of Arsenic were identified from the second round of monitoring in TP4a and TP11a, and in the first round at TP5a and 8a. TP4 & 5 were in similar locations to the southeast of the site.

2.7. In addition, elevated lead levels were encountered across the centre of the site (front to back) In TP5, 7-12 15 & 16 during the second investigation which mirrored the first round

with the exception of the northwest corner where elevated lead was found in the first round.

2.8. Elevated Total Petroleum Hydrocarbons (TPH) were identified in TP6 during the first round and TP11, 13 & 15 in the second.

2.9. Elevated Polyaromatic Hydrocarbons levels were identified in TP1B, 3A, 5A and 6A (i.e. surface levels) during the first phase of investigation. During the second-round elevated levels were encountered in TP 4, 8-13, 16 & 18. These correspond to the first round plus some additional areas. Predominantly the central strip of the site to dorm the roadway and the western corners.

Further Investigations

2.10. Since the above results were obtained further made ground has been removed from site, particularly across the centre of the site covering the above TP 5, 7-12, 15-16 locations. Confirmation of site levels and foundation designs have been made.

2.11. On the 2nd September 2024 a further site visit was made, the aim to verify removal of additional contaminated material in the centre of the site. A total of eight samples were taken from across the side walls and base of the excavation. These were sent to Chemtech Environmental Limited laboratories for analysis. The samples were tested for the heavy metals, Polyaromatic hydrocarbons, total petroleum hydrocarbons and asbestos.

2.12. Anecdotally the made ground had been removed down to clean clay.

2.13. The full sampling results and sampling locations are presented in the report, which has been submitted to the Council. The results again compared against the LQM/CIEH S4UL's for a residential without homegrown produce scenario & the C4SL value for Lead. Soil organic matter varied across the site from 2.4-5.5%.

2.14. The results of the samples identified no asbestos fibres, no elevated levels of heavy metals, no elevated levels of total Petroleum Hydrocarbons.

2.15. No elevated levels of Polyaromatic hydrocarbons were identified with the exception of the very front entrance to the site (300mm from the boundary) under the proposed

entrance road. when compared against the residential with home grown produce criterion.

2.16. No odour was identified at the time of the visit. (previously a hydrocarbon odour had been identified in this central area together with an amount of tar impregnated wooden timbers, these having been removed as part of the excavation of the area).

Ground gas

2.17. The preliminary desk study report identified infilled ground in the vicinity of the site from historically filled reservoirs, the last infilled in the 1950's, 70yrs previously. The report concluded that it was unlikely ground gas would still be produced after such an elapse of time and the risk from ground gas affecting the site was low.

2.18. Additional research identified a recent planning application for a mill/engineering site to the south and on/adjacent to the former reservoir, redeveloped in the early 1950's. (Planning application 113618/FO/2016 & CDN/17/0092). Gas monitoring undertaken at this site identified no ground gas, no elevated levels of methane or carbon dioxide and a site characteristic gas situation of CS1 / Green was determined.

3. Proposed Remediation

3.1. A proposed remediation plan was formulated following the above works in accordance with the Councils technical guidance note.

Ground Gas

3.2. Research into nearby development sites has identified no ground gas emissions, however the original phase I report did recommend precautionary ground gas protection measures.

3.3. In addition, the further work undertaken in September resulted in the removal of the hydrocarbon contamination identified on site. Excavations to remove contaminated soil from below the building footprints was undertaken in September and clean clay was identified below the made ground across the site. The excavated areas were backfilled with clean imported hardcore.

3.4. However, the remediation plan proposed a precautionary inclusion of gas protection measures to a site characteristic situation CS2. The membrane installed to include protection against the ingress of VOC vapours as well as Methane and Carbon Dioxide.

3.5. The membrane was installed by a specialist independent company, who will install the membrane to the manufacturer's specifications. The membrane will be installed by suitably qualified and experienced operatives and independently verified by Geoshield.

On-site contamination

3.6. The previous investigation identified slightly elevated levels of contamination within the ground around the proposed garden areas. As detailed within the reports.

3.7. It was proposed that a clean cover system be installed within the garden amenity areas of the site to break any pathway between residual contamination and human receptors. This was to provide a minimum of 600mm of clean imported material into the rear garden amenity areas for each property.

3.8. The clean material to be placed over a geotextile “no dig barrier” to prevent movement of particles and to warn of potential contamination below.

3.9. Sampling of imported material was to be undertaken prior to being placed within the gardens.

3.10. This sampling will be undertaken prior to the material being laid within garden areas, enabling the material to be confirmed as clean before being installed.

3.11. In addition, mains water pipework will be installed using a MDPE barrier pipe to prevent any potential ingress of any contamination into the water supply.

4. Verification of Measures Undertaken

4.1. The following verification actions will be undertaken as part of the development.

Gas Membrane:

4.2. The gas membranes have been installed by and verified by Geoshield. The Geoshield verification report is attached in Appendix A which confirmed the correct installation of the gas membranes within each plot.

Installation of Services:

4.3. Services were laid in new trenches with clean imported aggregate used to bed the services and backfill the trenches. MDPE barrier pipe work has been used for the mains water supply. Photographic evidence of MDPE barrier pipework installation is provided, Appendix B.

Clean Cover System:

4.4. The clean cover system will be verified in two ways.

- Firstly, material will be tested to ensure the material is free from contamination.
- Secondly, once placed on site confirmed of the presence of the geotextile no dig layer and a 600mm cover of the imported material will be confirmed in each garden.

5. Verification Report

5.1. Following the removal of potentially contaminated material and further vertifiaction sampling checks, report ref: 2843-3, which confirmed no elevated contamination levels, clean hardcore was imported and foundations were laid, services installed and the properties constructed. No unforeseen contamination has been encountered.

5.2. Appendix A provides the installation and verification report for the gas membrane installation, confirming that it has been installed correctly.

5.3. Appendix B, shows photographs of the MDPE barrier pipe work used across the site for mains water connections.

5.4. Appendix C includes photographs to confirm the presence of a no dig layer and 600mm of clean material. Appendix D containing an e-mail and test certification for the imported material.

5.5. Further on-site testing of the imported soil has also been undertaken with the results, contained within Appendix E. Samples were taken from plots 2, 3 & 4 and analysed for heavy metals, PAHs, TPHs, and asbestos.

5.6. No elevated levels of any contaminants were identified within the samples.

5.7. The report confirms that the remediation identified for the development site has been undertaken and as a result any source-pathway-receptor pollutant linkage has been broken. The site **does not** pose a significant possibility of Significand harm to the identified receptors and the site is considered safe and suitable for its intended use as a residential development with garden amenity areas.

Figure 1 – Aerial Photograph



Figure 2 – Layout Plan

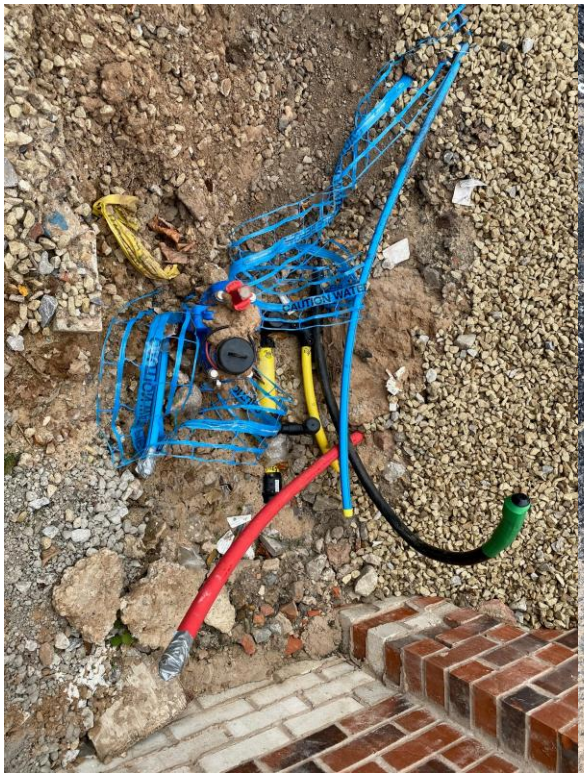


Plots 1-4

Appendix A – Gas Protection Measures Installation Report

(Separate Attachment)

Appendix B – Photographs of Installed barrier pipework.





Appendix C – Photographs of no dig layer and confirmed of 600mm clean cover material.

No Dig Barrier





Plot 1





Plot 2





Plot 3





Plot 4



Plot 5



Plot 6









Plot 7



Plot 8



Appendix D – E-mail and confirmation test certificate for imported soil.

Plots 5-8

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number:	25/04052
Issue Number:	1 **Date:** 25 April, 2025
Client:	Murray Rix (Northern) Ltd Andrew House Hadfield Street Dukinfield SK16 4QX
Project Manager:	Enquires/Owain Davies
Project Name:	Chapel Street, Levemshulme
Project Ref:	N/A
Order No:	25/158
Date Samples Received:	17/04/25
Date Instructions Received:	17/04/25
Date Analysis Completed:	25/04/25

Approved by:

Richard Wong
Client Manager

mCERTS UKAS TESTING 1247

Page 1 of 8

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Envirolab Job Number: 25/04052

Client Project Name: Chapel Street, Levenshulme

Client Project Ref: N/A

Lab Sample ID	25/04052/1							Units	Limit of Detection	Method ref
Client Sample No	5062401									
Client Sample ID	Sample 1									
Depth to Top										
Depth To Bottom										
Date Sampled	14-Apr-25									
Sample Type	SOIL - B									
Sample Matrix Code	6AE									
% Stones >10mm$_A$	<0.1							% w/w	0.1	A-T-004
pH$_D^{MC}$	6.98							pH	0.01	A-T-023a
Organic Matter$_D^{MC}$	5.99							% w/w	0.14	A-T-022a
Arsenic$_D^{MC}$	7							mg/kg	1	A-T-023a
Barium$_D^{M}$	71							mg/kg	3	A-T-023a
Beryllium$_D$	<0.5							mg/kg	0.5	A-T-023a
Boron (water soluble)$_D^{MC}$	<1.0							mg/kg	1	A-T-027a
Cadmium$_D^{MC}$	0.5							mg/kg	0.5	A-T-023a
Copper$_D^{MC}$	28							mg/kg	1	A-T-023a
Chromium$_D^{MC}$	14							mg/kg	1	A-T-023a
Chromium (hexavalent)$_D$	<1							mg/kg	1	A-T-040a
Chromium (trivalent)	14							mg/kg	1	Calc
Lead$_D^{MC}$	98							mg/kg	1	A-T-023a
Mercury$_D$	<0.17							mg/kg	0.17	A-T-023a
Nickel$_D^{MC}$	11							mg/kg	1	A-T-023a
Selenium$_D^{MC}$	<1							mg/kg	1	A-T-023a
Vanadium$_D^{MC}$	18							mg/kg	1	A-T-023a
Zinc$_D^{MC}$	49							mg/kg	1	A-T-023a

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Envirolab Job Number: 25/04052

Client Project Name: Chapel Street, Levemshulme

Client Project Ref: N/A

Lab Sample ID	25/04052/1							Units	Limit of Detection	Method ref
Client Sample No	5062401									
Client Sample ID	Sample 1									
Depth to Top										
Depth To Bottom										
Date Sampled	14-Apr-25									
Sample Type	SOIL - B									
Sample Matrix Code	6AE									
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	NAD									A-T-045
Asbestos Matrix (visual)$_D$	-									A-T-045
Asbestos Matrix (microscope)$_D$	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A									A-T-045

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Envirolab Job Number: 25/04052

Client Project Name: Chapel Street, Levenshulme

Client Project Ref: N/A

Lab Sample ID	25/04052/1							Units	Limit of Detection	Method ref
Client Sample No	5062401									
Client Sample ID	Sample 1									
Depth to Top										
Depth To Bottom										
Date Sampled	14-Apr-25									
Sample Type	SOIL - B									
Sample Matrix Code	6AE									
TPH CWG with Clean Up										
Ali >C5-C6$_A$	<0.01							mg/kg	0.01	
Ali >C6-C8$_A$	<0.01							mg/kg	0.01	
Ali >C8-C10$_A$	<1							mg/kg	1	
Ali >C10-C12$_A^{MS}$	<1							mg/kg	1	
Ali >C12-C16$_A^{MS}$	<1							mg/kg	1	
Ali >C16-C21$_A^{MS}$	1							mg/kg	1	
Ali >C21-C35$_A^{MS}$	13							mg/kg	1	
Total Aliphatics$_A$	14							mg/kg	1	
Aro >C5-C7$_A^{\#}$	<0.01							mg/kg	0.01	
Aro >C7-C8$_A^{\#}$	<0.01							mg/kg	0.01	
Aro >C8-C10$_A$	<1							mg/kg	1	
Aro >C10-C12$_A$	<1							mg/kg	1	
Aro >C12-C16$_A$	1							mg/kg	1	
Aro >C16-C21$_A^{MS}$	5							mg/kg	1	
Aro >C21-C35$_A^{MS}$	17							mg/kg	1	
Total Aromatics$_A$	24							mg/kg	1	
TPH (Ali & Aro >C5-C35)$_A$	38							mg/kg	1	
BTEX - Benzene$_A^{\#}$	<0.01							mg/kg	0.01	
BTEX - Toluene$_A^{\#}$	<0.01							mg/kg	0.01	
BTEX - Ethyl Benzene$_A^{\#}$	<0.01							mg/kg	0.01	
BTEX - m & p Xylene$_A^{\#}$	<0.01							mg/kg	0.01	
BTEX - o Xylene$_A^{\#}$	<0.01							mg/kg	0.01	
MTBE$_A^{\#}$	<0.01							mg/kg	0.01	

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Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of four weeks after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.
Quantification: Generally a 2 stage process including visual identification, hand picking and weighing, and fibre counting. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres). "TRACE" will be reported as a quantification result.
PLEASE INFORM THE LABORATORY IF YOU WOULD LIKE THE STAGE 3 SEDIMENTATION PROCESS CARRIED OUT. Note this will be subcontracted.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is NOT included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^{0}C / 11550µS/cm @ 20^{0}C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

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Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Murray Rix (Northern) Ltd, Andrew House , Hadfield Street, Dukinfield, SK16 4QX	**Project No:**	25/04052
		Date Received:	17/04/2025 (am)
Project:	Chapel Street, Levemshulme	**Cool Box Temperatures (°C):**	13.9
Clients Project No:	N/A		

NO DEVIATIONS IDENTIFIED
If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Plots 1-4

Martin Environmental Solutions

From: Jason JDaggregates <jason@jdaggregates.co.uk>
Sent: 18 August 2025 14:40
To: info@m-e-solutions.co.uk
Subject: TOPSOIL TESTING Ref CHAPEL ST
Attachments: Bellway Winwick TOPSOIL Ref MB.pdf

Afternoon Neil

As requested please find testing attached for topsoil supplied and delivered to Chapel St , Levenshulme , Manchester .

The material we supplied to Chapel St complies with BS3882 as per testing attached , we supply all major house builders i.e. Barratts , Taylor Wimpey, and Persimmon Homes
topsoil we delivered was from a Bellway site in Winwick and did pass all testing our clients requested .

if you need any further information do not hesitate to contact me .

Regards

Jason Grant

DIRECTOR

JD HAULAGE & AGGREGATES LTD
18 JOWETT ST , STOCKPORT
CHESHIRE
SK5-7QY

Mobile - 07521-491-529
Office - 0161-312-6477

TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

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

7th February 2025
Our Ref: TOHA/25/1702/SS
Your Ref: see below

MB Soils & Groundworks Limited

Dear Sirs

Topsoil Analysis Report: Bellway Homes, Golborne Road, Winwick

We have completed the analysis of the soil sample recently submitted, referenced *Bellway Homes Winwick Topsoil,* and have pleasure reporting our findings.

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

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

SAMPLE EXAMINATION

The sample was described as a dark reddish brown (Munsell Colour 5YR 2.5/2), slightly moist, friable, non-calcareous CLAY LOAM with a moderately developed, medium to very coarse, granular structure*. The sample was virtually stone-free and no unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

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

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

Registered in England No. OC324049 Registered Office: The Innovation Centre, Howbery Park, Wallingford, Oxfordshire OX10 8BA

ANALYTICAL SCHEDULE

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

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

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

RESULTS OF ANALYSIS

Particle Size Analysis and Stone Content

The sample fell into the *clay loam* texture class, which is usually considered suitable for general landscape applications provided the soil's physical condition is satisfactory.

Such soils usually have good water and nutrient retention capacities, but they are also prone to structural degradation and compaction during handling, and especially when plastic in consistency. Any damage to the structural condition of this soil is likely to reduce its drainage and aeration properties.

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

pH and Electrical Conductivity Values

The sample was acid in reaction (pH 5.8), with a pH value that would be suitable for general landscape purposes and in particular acid-loving species (calcifuges). This pH value is unlikely to be suitable for species known to specifically require or prefer alkaline soil, and in this instance the soil would benefit from further amelioration to raise its pH (e.g. lime application).

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

The electrical conductivity value by $CaSO_4$ extract (*BS3882* requirement) fell below the maximum specified value (3300 µS/cm) given in *BS3882:2015 – Table 1*.

Organic Matter and Fertility Status

The sample was adequately supplied with organic matter, total nitrogen and extractable magnesium but was deficient in extractable phosphorus and extractable potassium These deficiencies can be remedied by a suitable compost application.

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

Phytotoxic Contaminants

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

MB Soils & Groundworks Limited

Potential Contaminants

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

Of the potential contaminants determined (including asbestos), none was found at levels that exceeded their guideline values.

CONCLUSION

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

From the soil examination and subsequent laboratory analysis, the sample was described as an acid, non-saline, non-calcareous, virtually stone-free clay loam with a moderately developed structure. The sample was adequately supplied with organic matter, total nitrogen and extractable magnesium, but was deficient in all other major plant nutrients. Of the potential contaminants determined, none exceeded their respective guideline values.

To conclude, based on our findings, the topsoil represented by this sample would be considered suitable for general landscape purposes, provided the soil's physical condition is satisfactory. Species with a wide pH tolerance, or preference for acid soils, should be selected and the nutrient deficiencies remedied by a suitable compost application. If required for species with a preference for alkaline soils, consideration could be given to an application of lime to raise the pH level.

The sample was largely compliant with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil),* with the exception of the nutrient deficiencies. On this occasion, the non-compliances are considered minor when reviewed in the context of all the other results and provided the deficiencies remedied by a suitable compost application.

RECOMMENDATIONS

Compost Application

To address the nutrient deficiencies, we recommend applying and incorporating suitable compost (e.g. PAS100:2018 /Landscape Institute/WRAP grade (10mm screened) green compost) at a rate of **15%** by volume, ensuring the soil is dry and friable.

For planting purposes, the compost should be incorporated to a depth of 200mm and for grass areas the compost should be worked into the upper 100mm.

Lime Application (if needed)

Liming is routinely used to raise the pH of inherently acid soil. If required for species with a preference for alkaline soils, we recommend incorporating agricultural grade crushed limestone or chalk at the rate of **700 g/m²**, and incorporating evenly to a depth of 200mm.

Soil Handling Recommendations

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

It is important to ensure that the soil is not unnecessarily compacted by trampling or trafficking by site machinery, and soil handling should be stopped during and after heavy rainfall and not continued until the soil is friable in consistency.

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If the soil is structurally damaged and compacted at any stage during the course of soiling or landscaping works, it should be cultivated appropriately to relieve the compaction and to restore the soil's structure prior to any planting, turfing or seeding.

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

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

Yours faithfully

Ebony Gheorghe
BSc MSc
Soil Scientist

Helen Stanley
BSc MSc MISoilSci CSci
Senior Associate

For & on behalf of Tim O'Hare Associates LLP

MB Soils & Groundworks Limited

TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Client:	MB Soils & Groundworks Ltd
Project:	Bellway Homes, Golborne Road, Winwick
Job:	Topsoil Analysis - BS3882:2015
Date:	07/02/2025
Job Ref No:	TOHA/25/1702/SS

Sample Reference			Bellway Homes Winwick Topsoil
		Accreditation	
Clay (<0.002mm)	%	UKAS	24
Silt (0.002-0.063mm)	%	UKAS	27
Sand (0.063-2.0mm)	%	UKAS	49
Texture Class (UK Classification)	–	UKAS	CL
Stones (2-20mm)	% DW	GLP	1
Stones (20-50mm)	% DW	GLP	0
Stones (>50mm)	% DW	GLP	0
pH Value (1:2.5 water extract)	units	UKAS	5.8
Electrical Conductivity (1:2.5 water extract)	uS/cm	UKAS	423
Electrical Conductivity (1:2 $CaSO_4$ extract)	uS/cm	UKAS	2264
Exchangeable Sodium Percentage	%	UKAS	0.7
Organic Matter (LOI)	%	UKAS	4.5
Total Nitrogen (Dumas)	%	UKAS	0.22
C : N Ratio	ratio	UKAS	12
Extractable Phosphorus	mg/l	UKAS	15
Extractable Potassium	mg/l	UKAS	41
Extractable Magnesium	mg/l	UKAS	51
Total Arsenic (As)	mg/kg	MCERTS	12
Total Cadmium (Cd)	mg/kg	MCERTS	0.4
Total Chromium (Cr)	mg/kg	MCERTS	22
Hexavalent Chromium (Cr VI)	mg/kg	MCERTS	< 1.8
Total Copper (Cu)	mg/kg	MCERTS	44
Total Lead (Pb)	mg/kg	MCERTS	60
Total Mercury (Hg)	mg/kg	MCERTS	< 0.3
Total Nickel (Ni)	mg/kg	MCERTS	16
Total Selenium (Se)	mg/kg	MCERTS	< 1.0
Total Zinc (Zn)	mg/kg	MCERTS	100
Water Soluble Boron (B)	mg/kg	MCERTS	1.2
Total Cyanide (CN)	mg/kg	MCERTS	< 1.0
Total (mono) Phenols	mg/kg	MCERTS	< 1.0
Naphthalene	mg/kg	MCERTS	< 0.05
Acenaphthylene	mg/kg	MCERTS	< 0.05
Acenaphthene	mg/kg	MCERTS	< 0.05
Fluorene	mg/kg	MCERTS	< 0.05
Phenanthrene	mg/kg	MCERTS	0.26
Anthracene	mg/kg	MCERTS	< 0.05
Fluoranthene	mg/kg	MCERTS	0.55
Pyrene	mg/kg	MCERTS	0.49
Benz(a)anthracene	mg/kg	MCERTS	0.28
Chrysene	mg/kg	MCERTS	0.32
Benzo(b)fluoranthene	mg/kg	MCERTS	0.34
Benzo(k)fluoranthene	mg/kg	MCERTS	0.14
Benzo(a)pyrene	mg/kg	MCERTS	0.35
Indeno(1,2,3-cd)pyrene	mg/kg	MCERTS	0.19
Dibenzo(a,h)anthracene	mg/kg	MCERTS	< 0.05
Benzo(g,h,i)perylene	mg/kg	MCERTS	0.24
Total PAHs (sum USEPA16)	mg/kg	MCERTS	3.13
Aliphatic TPH >C5 - C6	mg/kg	MCERTS	< 0.010
Aliphatic TPH >C6 - C8	mg/kg	MCERTS	< 0.010
Aliphatic TPH >C8 - C10	mg/kg	MCERTS	< 0.010
Aliphatic TPH >C10 - C12	mg/kg	MCERTS	< 1.0
Aliphatic TPH >C12 - C16	mg/kg	MCERTS	< 2.0
Aliphatic TPH >C16 - C21	mg/kg	MCERTS	< 8.0
Aliphatic TPH >C21 - C35	mg/kg	MCERTS	< 8.0
Aliphatic TPH (C5 - C35)	mg/kg	MCERTS	< 10
Aromatic TPH >C5 - C7	mg/kg	MCERTS	< 0.010
Aromatic TPH >C7 - C8	mg/kg	MCERTS	< 0.010
Aromatic TPH >C8 - C10	mg/kg	MCERTS	< 0.020
Aromatic TPH >C10 - C12	mg/kg	MCERTS	< 1.0
Aromatic TPH >C12 - C16	mg/kg	MCERTS	< 2.0
Aromatic TPH >C16 - C21	mg/kg	MCERTS	< 10
Aromatic TPH >C21 - C35	mg/kg	MCERTS	< 10
Aromatic TPH (C5 - C35)	mg/kg	MCERTS	< 10
Benzene	mg/kg	MCERTS	< 0.005
Toluene	mg/kg	MCERTS	< 0.005
Ethylbenzene	mg/kg	MCERTS	< 0.005
p & m-xylene	mg/kg	MCERTS	< 0.008
o-xylene	mg/kg	MCERTS	< 0.005
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	MCERTS	< 0.005
Asbestos Screen	ND/D	ISO 17025	Not detected

CL= CLAY LOAM

Visual Examination

The sample was described as a dark reddish brown (Munsell Colour 5YR 2.5/2), slightly moist, friable, non- calcareous CLAY LOAM with a well developed, medium to very coarse, granular structure. The sample was virtually stone-free and no unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

Ebony Gheorghe
BSc MSc
Soil Scientist

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

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MB Soils & Groundworks Limited

Tim O'Hare Associates LLP Howbery Park Wallingford Oxfordshire OX10 8BA www.toha.co.uk

Appendix E – Additional On-site testing of Imported Soil

CHEMTECH environmental part of Cawood

ANALYTICAL TEST REPORT

Report Number	25-08829, issue number 1
Contract name:	Chapel St
Client reference:	Not Supplied
Clients name:	Martin Environmental Solutions Ltd
Clients address:	Martin Environmental Solutions Ltd 14 Hermitage Way Lytham St Annes Lancashire FY8 4FX
Samples received:	10/09/2025
Analysis started:	10/09/2025
Analysis completed:	17/09/2025
Report issued:	18/09/2025

Key	
U	UKAS accredited test
M	MCERTS & UKAS accredited test
(B)	Analysis performed at Southampton Site
I/S	Insufficient sample to carry out test
U/S	Sample not suitable for testing
NAD	No Asbestos Detected

Approved by: Abbie Neasham-Bourn
Senior Reporting Administrator

Unit 6 Parkhead, Greencroft Industrial Park, Stanley, County Durham, DH9 7YB

Telephone: (01207) 528578, Email supportsquad@chemtech-env.co.uk

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SAMPLE INFORMATION

MCERTS (Soils):
Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
% Moisture reported as MCERTS drying at 30°C

Lab ref	Sample ID	Depth (m)	Sample description	Material removed	% Removed	% Moisture
66785	S1	-	Brown Loamy Sand with Gravel and Vegetation.	-	-	23.6
66786	S2	-	Brown Loamy Sand with Gravel and Vegetation.	-	-	22.5
66787	S3	-	Brown Loamy Sand with Gravel and Vegetation.	-	-	18.8

CHEMTECH environmental part of Cawood

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

a	Sampling date not provided
b	Sampling time not provided (waters only)
c	Sample not received in appropriate containers
d	Storage Temperature
e	Headspace present in sample container
f	Sample exceeded sampling to receipt
g	Sample exceeded holding time(s)

Lab ref	Sample ID	Depth (m)	Deviating	Tests (Reason for deviation)
66785	S1	-	N	
66786	S2	-	N	
66787	S3	-	N	

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SOILS

Lab Number					66785	66786	66787
Sample ID					S1	S2	S3
Sampling Date					08/09/2025	08/09/2025	08/09/2025
Test	Method	Accred	LoD	Units			
Asbestos							
Asbestos Identification	SUBCON	SU	0	-	NAD	NAD	NAD
Metals							
Arsenic	CE264	U	1.8	mg/kg	< 1.8	9.2	9.4
Cadmium	CE264	M	1.6	mg/kg	< 1.6	< 1.6	< 1.6
Chromium	CE264	U	2	mg/kg	6.9	20.5	29.0
Copper	CE264	M	1.6	mg/kg	17.1	36.5	45.0
Lead	CE264	U	2.3	mg/kg	49.6	78.4	105
Mercury	CE264	U	0.7	mg/kg	1.0	< 0.7	< 0.7
Nickel	CE264	M	2.1	mg/kg	7.3	15.5	20.8
Selenium	CE264	U	3	mg/kg	< 3.0	< 3.0	< 3.0
Zinc	CE264	M	4	mg/kg	40.7	65.4	80.9
Combustion							
Moisture Content	CE001	N	0.1	%	23.6	22.5	18.8
Soil Organic Matter	CE192	N	0.1	%	8.79	6.38	6.62
Polyaromatic hydrocarbons							
Naphthalene	CE087	M	0.016	mg/kg	< 0.016	< 0.016	< 0.016
Acenaphthylene	CE087	M	0.015	mg/kg	< 0.015	< 0.015	< 0.015
Acenaphthene	CE087	M	0.013	mg/kg	0.040	0.039	0.023
Fluorene	CE087	U	0.013	mg/kg	0.017	0.019	< 0.013
Phenanthrene	CE087	M	0.014	mg/kg	0.311	0.273	0.163
Anthracene	CE087	U	0.017	mg/kg	0.045	0.054	0.022
Fluoranthene	CE087	M	0.017	mg/kg	0.596	0.454	0.428
Pyrene	CE087	M	0.016	mg/kg	0.495	0.361	0.352
Benzo(a)anthracene	CE087	U	0.012	mg/kg	0.220	0.176	0.193
Chrysene	CE087	M	0.028	mg/kg	0.250	0.157	0.204
Benzo(b)fluoranthene	CE087	M	0.02	mg/kg	0.317	0.214	0.296
Benzo(k)fluoranthene	CE087	M	0.025	mg/kg	0.110	0.092	0.106
Benzo(a)pyrene	CE087	U	0.019	mg/kg	0.248	0.180	0.240
Indeno(1,2,3-cd)pyrene	CE087	M	0.019	mg/kg	0.217	0.147	0.248
Dibenzo(a,h)anthracene	CE087	M	0.017	mg/kg	0.031	0.018	0.035
Benzo(g,h,i)perylene	CE087	M	0.019	mg/kg	0.144	0.099	0.165

SOILS

Lab Number					66785	66786	66787
Sample ID					S1	S2	S3
Sampling Date					08/09/2025	08/09/2025	08/09/2025
Test	Method	Accred	LoD	Units			
Total PAH(16)	CE087	N	0.28	mg/kg	3.04	2.28	2.48
Total Petroleum Hydrocarbons							
>C5-C6 Aliphatic (HS_1D_AL)	CE267	N	0.1	mg/kg	< 0.10	< 0.10	< 0.10
>C6-C8 Aliphatic (HS_1D_AL)	CE267	N	0.1	mg/kg	< 0.10	< 0.10	< 0.10
>C8-C10 Aliphatic (HS_1D_AL)	CE267	N	0.1	mg/kg	< 0.10	< 0.10	< 0.10
>C10-C12 Aliphatic (EH_2D_AL)	CE250	N	1	mg/kg	< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	CE250	N	0.5	mg/kg	< 0.5	< 0.5	< 0.5
>C16-C21 Aliphatic (EH_2D_AL)	CE250	N	0.7	mg/kg	< 0.7	< 0.7	< 0.7
>C21-C35 Aliphatic (EH_2D_AL)	CE250	N	4	mg/kg	< 4.0	< 4.0	< 4.0
>C35-C44 Aliphatic (EH_2D_AL)	CE250	N	0.5	mg/kg	< 0.5	< 0.5	< 0.5
>C5-C7 Aromatic (HS_1D_AR)	CE267	N	0.01	mg/kg	< 0.010	< 0.010	< 0.010
>C7-C8 Aromatic (HS_1D_AR)	CE267	N	0.01	mg/kg	< 0.010	< 0.010	< 0.010
>C8-C10 Aromatic (HS_1D_AR)	CE267	N	0.01	mg/kg	< 0.010	< 0.010	< 0.010
>C10-C12 Aromatic (EH_2D_AR)	CE250	N	0.6	mg/kg	< 0.6	< 0.6	< 0.6
>C12-C16 Aromatic (EH_2D_AR)	CE250	N	1	mg/kg	1.4	1.2	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	CE250	N	2	mg/kg	< 2.0	< 2.0	< 2.0
>C21-C35 Aromatic (EH_2D_AR)	CE250	N	4.5	mg/kg	6.2	6.9	< 4.5
>C35-C44 Aromatic (EH_2D_AR)	CE250	N	2	mg/kg	4.8	3.5	< 2.0

METHOD DETAILS

METHOD	TESTNAME	METHOD SUMMARY	ANALYSIS BASIS
CE267	VPH in Soil	HS-GCFID	As submitted sample
CE250	GCXGC in Soil	DCM Extraction and GCxGC-FID	As submitted sample
SUBCON	Asbestos Soil	HSG248	Air Dried Sample
CE264	Metals by ICP in Soil	ICPOES	Air dried sample
CE067	PAH in Soil	DCM Extraction and GCMS	As submitted sample

REPORT INFORMATION

Report No.:25-08829, issue number 1

Key	
U	ISO17025 Accredited Result
M	ISO17025 and MCERTS Accredited Result
N	Do not currently hold accreditation
^	MCERTS accreditation not applicable for sample matrix
*	ISO17025 accreditation not applicable for sample matrix
S	Subcontracted
I/S	Insufficient Sample
U/S	Unsuitable sample
N/T	Not tested
<	Means "less than"
>	Means "greater than"

LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

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Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

The results relate only to the sample received.

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Moisture Content Calculated on a Wet Weight basis (at 30°C)

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

Sampling was undertaken by Chemtech Environmental Limited and is outside the UKAS accreditation scope.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.

For soils and solids, all results are reported on a dry basis (30°C). Samples dried at no more than 30°C in a drying cabinet.

For soils and solids, analytical results are inclusive of stones, where applicable.

'Client Reference', 'Sample ID', 'Sample Location', 'Sample Type', 'Depth', 'Sample Date' and 'Sample Time' information is provided by the customer

Sample Retention and Disposal

All soil samples will be retained for a period of 4 weeks from the point of receipt
All water samples will be retained for a period of 2 weeks from the point of Reporting
Charges may apply to extended sample storage

TPH Classification - 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	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

Unless specifically identified (noted as "(B)" in analyte name) all internal analysis performed at Durham site

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