

Envirolab Job Number: 23/08926

Client Project Name: Glendene, Wythenshaw

Client Project Ref: N/A

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
PAH-16MS										
Acenaphthene _A ^{M#}	0.02	0.01	<0.01	0.02	0.03	<0.01		mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.02	<0.02	<0.02	0.02	0.03	<0.02		mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.12	0.11	0.06	0.13	0.13	0.07		mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.13	0.09	0.07	0.14	0.13	0.08		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.17	0.13	0.09	0.19	0.15	0.09		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.09	0.06	<0.05	0.09	0.08	<0.05		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.18	0.16	0.11	0.20	0.21	0.12		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.25	0.20	0.14	0.29	0.29	0.15		mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.01	<0.01	<0.01	<0.01	0.01	<0.01		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.11	0.07	0.06	0.11	0.09	0.06		mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.14	0.11	0.07	0.13	0.18	0.08		mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.26	0.19	0.13	0.28	0.28	0.14		mg/kg	0.07	A-T-019s
Total PAH-16MS _A	1.50	1.13	0.73	1.60	1.61	0.79		mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/08926

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Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	<1	<1	<1	1	<1		mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	9	6	8	9	13	11		mg/kg	1	A-T-055s
Total Aliphatics _A	9	6	8	9	14	11		mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<3	<3	<3	<3	<3	<3		mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Aro >C12-C16 _A ^{M#}	1	<1	1	1	2	1		mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	4	2	2	2	3	4		mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	7	6	7	7	10	12		mg/kg	1	A-T-055s
Total Aromatics _A	12	8	11	10	16	16		mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	21	14	19	19	30	27		mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshaw

Clients Project No: N/A

Project No: 23/08926

Date Received: 07/09/2023 (am)

Cool Box Temperatures (°C): 21.8

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.

Envirolab Analysis Dates

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6
Client Sample No						
Client Sample ID/Depth	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F
Date Sampled	05/09/23	05/09/23	05/09/23	05/09/23	05/09/23	05/09/23
A-T-019s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-022s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-024s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-026s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-027s	14/09/2023	14/09/2023	14/09/2023	14/09/2023	14/09/2023	14/09/2023
A-T-028s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-031s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-032s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-040s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-042sTCN	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-044	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-045	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-050s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-055s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
Calc-As Recd	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

bEk Enviro Ltd

Suite One | No 3 Mitton Road Business Park
Mitton Road | Whalley | Lancashire | BB7 9YE

01254 377622

mbuckley@bekenviro.co.uk | bekenviro.co.uk

ANNEX C

Photographs



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

bEk Enviro Ltd

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Mitton Road | Whalley | Lancashire | BB7 9YE

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Photograph 1: Validation of Garden Capping



Photograph 2: Validation of Garden Capping

Our Ref: BEK/22114/230915/CG/40

15th September 2023

FAO Jon Sharp
The Casey Group
Rydings Road
Rochdale
OL12 9PS

Dear Jon,

Garden Capping Validation Letter for Residential Development at Glendene, Wythenshawe - PLOT 40

BEK Enviro (BEK) has been commissioned by The Casey Group (CG) to supervise and validate the post construction remediation works required at the above site.

The approved remediation works are detailed in the BEK Remediation Method Statement, Report Ref: BEK-22097-1 Rev A, dated November 2022.

The approved remediation requirements comprise the installation of a clean cover system in private gardens and soft landscaped areas as follows:

'All soft landscaped/garden areas will be capped with a minimum of 600 mm of clean suitable soil (450 mm subsoil and 150 mm topsoil). The capping soils should be underlain by a 100 mm granular no-dig layer or a geotextile marker membrane to prevent mixing.'

Following a review of the information it was determined that a capping system comprising entirely of 600 mm topsoil with a high visibility geotextile at the base could be utilised within private gardens at the site.

Remediation activities have been supervised by both BEK and CG. BEK has confirmed that the soils are suitable for use (prior to placement) and carried out checks to confirm that the correct capping thickness has been achieved. BEK has relied on CG and their appointed contractors to cap the gardens with the validated capping soils.

Topsoil used within the gardens comprises 'As dug topsoil' which has been sourced as product from O'Garas from a greenfield source. Source test data has been made available to BEK confirms that the O'Gara is suitable for use in a residential garden. A copy of the source test data is provided within Annex A.

To ensure suitability (and to comply with testing frequency requirements), BEK inspected the O'Gara soils placed in each of the plots and recovered representative samples for chemical testing. The soils are described as 'dark brown silty sand with occasional fine to coarse angular to rounded gravel' and are visually suitable for use. BEK has recovered a number of samples from the placed soil and copies of the chemical test results for the most recent samples tested (TS-A to TS-F) are presented in Annex B.



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Additional samples will be recovered progressively as the remediation works continue. Regular liaison with site managers will be maintained to ensure sample frequencies are maintained progressively throughout the works. Final volumes will be provided for imported topsoil at the end of the project.

In addition to confirming suitability of the soils used in the garden capping system at the site, BEK also confirms that that capping thickness is a minimum of 600 mm thick. CG confirm that a geotextile membrane has been placed at the base of the capping layer. Spot checks carried out by BEK on selected plots prove the presence of the geotextile membrane. Photographs showing capping thickness are provided within Annex C.

Based on the information provided by CG and the validation works carried out by BEK, we can confirm that the remediation works required for Plot 40 at the residential development at Glendene, Wythenshawe has been completed in accordance with the approved methodology. This Certificate should be read in conjunction with the final Validation Report that will be prepared on completion of all remediation works at the site.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely

MICHAEL BUCKLEY

BSc (Hons) MSc MEnvSci CEnv



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

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ANNEX A

Source Test Data

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S2

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
% Stones >10mm _A	3.7							% w/w	0.1	A-T-044
pH _D ^{M#}	7.83							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.11							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	40							mg/kg	1	A-T-024s
Chromium _D ^{M#}	26							mg/kg	1	A-T-024s
Lead _D ^{M#}	46							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	75							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	203							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
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

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.32							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.43							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.87							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.32							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.91							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.23							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.24							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.17							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.80							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.00							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	11.3							mg/kg	0.01	A-T-019s

REPORT NOTES

General

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 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

bEk Enviro Ltd

Suite One | No 3 Mitton Road Business Park
Mitton Road | Whalley | Lancashire | BB7 9YE

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ANNEX B

Chemical Test Results - Imported Topsoil Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/08926
Issue Number: 1

Date: 14 September, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter/Mitchell
Project Name: Glendene, Wythenshaw
Project Ref: N/A
Order No: 7922-22114-AH
Date Samples Received: 07/09/23
Date Instructions Received: 07/09/23
Date Analysis Completed: 14/09/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/08926

Client Project Name: Glendene, Wythenshaw

Client Project Ref: N/A

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
% Stones >10mm _A	<0.1	1.6	<0.1	7.1	<0.1	<0.1		% w/w	0.1	A-T-044
pH ₀ ^{M#}	7.14	6.90	6.97	6.84	7.07	6.89		pH	0.01	A-T-031s
Sulphate (water sol 2:1) ₀ ^{M#}	0.04	0.05	0.03	0.04	0.05	0.04		g/l	0.01	A-T-026s
Sulphate (acid soluble) ₀ ^{M#}	460	460	450	430	480	490		mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		mg/kg	0.2	A-T-050s
Organic Matter ₀ ^{M#}	3.6	3.1	3.4	3.5	3.8	3.8		% w/w	0.1	A-T-032s
Arsenic ₀ ^{M#}	8	7	7	7	7	6		mg/kg	1	A-T-024s
Boron (water soluble) ₀ ^{M#}	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		mg/kg	1	A-T-027s
Cadmium ₀ ^{M#}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		mg/kg	0.5	A-T-024s
Copper ₀ ^{M#}	34	31	31	28	31	31		mg/kg	1	A-T-024s
Chromium ₀ [#]	25	26	22	23	25	-		mg/kg	1	A-T-024s
Chromium ₀ ^{M#}	-	-	-	-	-	27		mg/kg	1	A-T-024s
Chromium (hexavalent) ₀	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-040s
Lead ₀ ^{M#}	49	48	45	42	43	42		mg/kg	1	A-T-024s
Mercury ₀	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17		mg/kg	0.17	A-T-024s
Nickel ₀ ^{M#}	20	18	18	18	19	19		mg/kg	1	A-T-024s
Selenium ₀ ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-024s
Zinc ₀ ^{M#}	74	69	64	63	68	62		mg/kg	5	A-T-024s

Envirolab Job Number: 23/08926

Client Project Name: Glendene, Wythenshaw

Client Project Ref: N/A

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	NAD	NAD	NAD	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	N/A	N/A	N/A	N/A	N/A				A-T-045

Envirolab Job Number: 23/08926

Client Project Name: Glendene, Wythenshaw

Client Project Ref: N/A

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
PAH-16MS										
Acenaphthene _A ^{M#}	0.02	0.01	<0.01	0.02	0.03	<0.01		mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.02	<0.02	<0.02	0.02	0.03	<0.02		mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.12	0.11	0.06	0.13	0.13	0.07		mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.13	0.09	0.07	0.14	0.13	0.08		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.17	0.13	0.09	0.19	0.15	0.09		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.09	0.06	<0.05	0.09	0.08	<0.05		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.18	0.16	0.11	0.20	0.21	0.12		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.25	0.20	0.14	0.29	0.29	0.15		mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.01	<0.01	<0.01	<0.01	0.01	<0.01		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.11	0.07	0.06	0.11	0.09	0.06		mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.14	0.11	0.07	0.13	0.18	0.08		mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.26	0.19	0.13	0.28	0.28	0.14		mg/kg	0.07	A-T-019s
Total PAH-16MS _A	1.50	1.13	0.73	1.60	1.61	0.79		mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/08926

Client Project Name: Glendene, Wythenshaw

Client Project Ref: N/A

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	<1	<1	<1	1	<1		mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	9	6	8	9	13	11		mg/kg	1	A-T-055s
Total Aliphatics _A	9	6	8	9	14	11		mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<3	<3	<3	<3	<3	<3		mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Aro >C12-C16 _A ^{M#}	1	<1	1	1	2	1		mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	4	2	2	2	3	4		mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	7	6	7	7	10	12		mg/kg	1	A-T-055s
Total Aromatics _A	12	8	11	10	16	16		mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	21	14	19	19	30	27		mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshaw

Clients Project No: N/A

Project No: 23/08926

Date Received: 07/09/2023 (am)

Cool Box Temperatures (°C): 21.8

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.

Envirolab Analysis Dates

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6
Client Sample No						
Client Sample ID/Depth	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F
Date Sampled	05/09/23	05/09/23	05/09/23	05/09/23	05/09/23	05/09/23
A-T-019s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-022s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-024s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-026s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-027s	14/09/2023	14/09/2023	14/09/2023	14/09/2023	14/09/2023	14/09/2023
A-T-028s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-031s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-032s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-040s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-042sTCN	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-044	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-045	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-050s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-055s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
Calc-As Recd	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

bEk Enviro Ltd

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ANNEX C

Photographs



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

bEk Enviro Ltd

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Mitton Road | Whalley | Lancashire | BB7 9YE

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Photograph 1: Validation of Garden Capping



Photograph 2: Validation of Garden Capping



BEK Geo-Environmental Consulting

No.2 Landwick Court, Metcalf Drive, Altham Business Park,
Lancashire BB5 5TU

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01254 377622

Our Ref: BEK/22114/231113/CG/45

13th November 2023

FAO Jon Sharp
The Casey Group
Rydings Road
Rochdale
OL12 9PS

Dear Jon,

Garden Capping Validation Letter for Residential Development at Glendene, Wythenshawe - PLOT 45

BEK Enviro (BEK) has been commissioned by The Casey Group (CG) to supervise and validate the post construction remediation works required at the above site.

The approved remediation works are detailed in the BEK Remediation Method Statement, Report Ref: BEK-22097-1 Rev A, dated November 2022.

The approved remediation requirements comprise the installation of a clean cover system in private gardens and soft landscaped areas as follows:

'All soft landscaped/garden areas will be capped with a minimum of 600 mm of clean suitable soil (450 mm subsoil and 150 mm topsoil). The capping soils should be underlain by a 100 mm granular no-dig layer or a geotextile marker membrane to prevent mixing.'

Following a review of the information it was determined that a capping system comprising entirely of 600 mm topsoil with a high visibility geotextile at the base could be utilised within private gardens at the site.

Remediation activities have been supervised by both BEK and CG. BEK has confirmed that the soils are suitable for use (prior to placement) and carried out checks to confirm that the correct capping thickness has been achieved. BEK has relied on CG and their appointed contractors to cap the gardens with the validated capping soils.

Topsoil used within the gardens comprises 'As dug topsoil' which has been sourced as product from O'Garas from a greenfield source. Source test data has been made available to BEK confirms that the O'Gara is suitable for use in a residential garden. A copy of the source test data is provided within Annex A.

To ensure suitability (and to comply with testing frequency requirements), BEK inspected the O'Gara soils placed in each of the plots and recovered representative samples for chemical testing. The soils are described as 'dark brown silty sand with occasional fine to coarse angular to rounded gravel' and are visually suitable for use. BEK has recovered a number of samples from the placed soil and copies of the chemical test results for the most recent samples tested (TS-K to TS-N) are presented in Annex B.

**BEK Geo-Environmental Consulting**

No.2 Landwick Court, Metcalf Drive, Altham Business Park,
Lancashire BB5 5TU

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01254 377622

Additional samples will be recovered progressively as the remediation works continue. Regular liaison with site managers will be maintained to ensure sample frequencies are maintained progressively throughout the works. Final volumes will be provided for imported topsoil at the end of the project.

In addition to confirming suitability of the soils used in the garden capping system at the site, BEK also confirms that that capping thickness is a minimum of 600 mm thick. CG confirm that a geotextile membrane has been placed at the base of the capping layer. Spot checks carried out by BEK on selected plots prove the presence of the geotextile membrane. Photographs showing capping thickness are provided within Annex C.

Based on the information provided by CG and the validation works carried out by BEK, we can confirm that the remediation works required for Plot 45 at the residential development at Glendene, Wythenshawe has been completed in accordance with the approved methodology. This Certificate should be read in conjunction with the final Validation Report that will be prepared on completion of all remediation works at the site.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'MBuckley', with a long horizontal flourish extending to the right.

MICHAEL BUCKLEY

BSc (Hons) MSc MEnvSci CEnv



BEK Geo-Environmental Consulting

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ANNEX A

Source Test Data

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S2

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
% Stones >10mm _A	3.7							% w/w	0.1	A-T-044
pH _D ^{M#}	7.83							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.11							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	40							mg/kg	1	A-T-024s
Chromium _D ^{M#}	26							mg/kg	1	A-T-024s
Lead _D ^{M#}	46							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	75							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	203							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
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

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.32							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.43							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.87							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.32							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.91							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.23							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.24							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.17							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.80							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.00							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	11.3							mg/kg	0.01	A-T-019s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 with the same delivery, will be disposed of six weeks after 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 the scope of our accreditation.
 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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ANNEX B

Chemical Test Results - Imported Topsoil Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/10635
Issue Number: 1

Date: 08 November, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter/Mitchell
Project Name: Glendene, Wythenshawe
Project Ref: N/A
Order No: 7974-22114-AH
Date Samples Received: 27/10/23
Date Instructions Received: 27/10/23
Date Analysis Completed: 08/11/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
% Stones >10mm _A	9.6	13.6	14.1	10.8				% w/w	0.1	A-T-044
pH _D ^{M#}	7.38	6.83	6.96	6.90				pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.03	0.03	0.08	0.05				g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	450	480	570	560				mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.5	3.4	3.9	3.6				% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	4	5	4	4				mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5	<0.5				mg/kg	0.5	A-T-024s
Copper _D ^{M#}	16	23	22	21				mg/kg	1	A-T-024s
Chromium _D ^{M#}	16	15	19	15				mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1				mg/kg	1	A-T-040s
Lead _D ^{M#}	29	44	38	37				mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	10	13	11				mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-024s
Zinc _D ^{M#}	38	47	48	45				mg/kg	5	A-T-024s

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	NAD	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	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
PAH-16MS										
Acenaphthene _A ^{M#}	0.02	<0.01	0.06	0.01				mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.03	<0.02	0.05	<0.02				mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.09	<0.04	0.09	0.06				mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.08	<0.04	0.09	0.06				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.11	0.05	0.12	0.08				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.06	<0.05	0.06	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.13	<0.06	0.14	0.09				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.23	<0.08	0.24	0.14				mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.02	<0.01	0.04	<0.01				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.07	0.03	0.07	0.06				mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	0.09	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.17	0.04	0.24	0.09				mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.21	<0.07	0.21	0.12				mg/kg	0.07	A-T-019s
Total PAH-16MS _A	1.22	0.12	1.50	0.71				mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	17	10	10	10				mg/kg	1	A-T-055s
Total Aliphatics _A	17	10	10	10				mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<2	<2	<2	<2				mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C12-C16 _A	2	2	2	2				mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	3	2	3	2				mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	10	6	6	7				mg/kg	1	A-T-055s
Total Aromatics _A	16	11	12	11				mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	33	21	21	21				mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

Report Notes

General

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 The results reported herein relate only to the material supplied to the laboratory.
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 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshawe

Clients Project No: N/A

Project No: 23/10635

Date Received: 27/10/2023 (am)

Cool Box Temperatures (°C): 10.0

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.

Envirolab Analysis Dates

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4
Client Sample No				
Client Sample ID/Depth	TS-K	TS-L	TS-M	TS-N
Date Sampled	25/10/23	25/10/23	25/10/23	25/10/23
A-T-019s	07/11/2023	07/11/2023	07/11/2023	07/11/2023
A-T-022s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-024s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-026s	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-027s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-028s	06/11/2023	06/11/2023	06/11/2023	06/11/2023
A-T-031s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-032s	07/11/2023	07/11/2023	07/11/2023	07/11/2023
A-T-040s	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-042sTCN	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-044	06/11/2023	06/11/2023	06/11/2023	06/11/2023
A-T-045	31/10/2023	31/10/2023	31/10/2023	31/10/2023
A-T-050s	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-055s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
Calc-As Recd	03/11/2023	03/11/2023	03/11/2023	03/11/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



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ANNEX C

Photographs



Photograph 1: Validation of Garden Capping



Photograph 2: Validation of Garden Capping



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Our Ref: BEK/22114/231206/CG/47

6th December 2023

FAO Jon Sharp
The Casey Group
Rydings Road
Rochdale
OL12 9PS

Dear Jon,

Garden Capping Validation Letter for Residential Development at Glendene, Wythenshawe - PLOT 47

BEK Enviro (BEK) has been commissioned by The Casey Group (CG) to supervise and validate the post construction remediation works required at the above site.

The approved remediation works are detailed in the BEK Remediation Method Statement, Report Ref: BEK-22097-1 Rev A, dated November 2022.

The approved remediation requirements comprise the installation of a clean cover system in private gardens and soft landscaped areas as follows:

'All soft landscaped/garden areas will be capped with a minimum of 600 mm of clean suitable soil (450 mm subsoil and 150 mm topsoil). The capping soils should be underlain by a 100 mm granular no-dig layer or a geotextile marker membrane to prevent mixing.'

Following a review of the information it was determined that a capping system comprising entirely of 600 mm topsoil with a high visibility geotextile at the base could be utilised within private gardens at the site.

Remediation activities have been supervised by both BEK and CG. BEK has confirmed that the soils are suitable for use (prior to placement) and carried out checks to confirm that the correct capping thickness has been achieved. BEK has relied on CG and their appointed contractors to cap the gardens with the validated capping soils.

Topsoil used within the gardens comprises 'As dug topsoil' which has been sourced as product from O'Garas from a greenfield source. Source test data has been made available to BEK confirms that the O'Gara is suitable for use in a residential garden. A copy of the source test data is provided within Annex A.

To ensure suitability (and to comply with testing frequency requirements), BEK inspected the O'Gara soils placed in each of the plots and recovered representative samples for chemical testing. The soils are described as 'dark brown silty sand with occasional fine to coarse angular to rounded gravel' and are visually suitable for use. BEK has recovered a number of samples from the placed soil and copies of the chemical test results for the most recent samples tested (TS-K to TS-N) are presented in Annex B.

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Additional samples will be recovered progressively as the remediation works continue. Regular liaison with site managers will be maintained to ensure sample frequencies are maintained progressively throughout the works. Final volumes will be provided for imported topsoil at the end of the project.

In addition to confirming suitability of the soils used in the garden capping system at the site, BEK also confirms that that capping thickness is a minimum of 600 mm thick. CG confirm that a geotextile membrane has been placed at the base of the capping layer. Spot checks carried out by BEK on selected plots prove the presence of the geotextile membrane. Photographs showing capping thickness are provided within Annex C.

Based on the information provided by CG and the validation works carried out by BEK, we can confirm that the remediation works required for Plot 47 at the residential development at Glendene, Wythenshawe has been completed in accordance with the approved methodology. This Certificate should be read in conjunction with the final Validation Report that will be prepared on completion of all remediation works at the site.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'MBuckley', is written over a horizontal line.

MICHAEL BUCKLEY

BSc (Hons) MSc MEnvSci CEnv



BEK Geo-Environmental Consulting

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ANNEX A

Source Test Data

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S2

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
% Stones >10mm _A	3.7							% w/w	0.1	A-T-044
pH _D ^{M#}	7.83							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.11							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	40							mg/kg	1	A-T-024s
Chromium _D ^{M#}	26							mg/kg	1	A-T-024s
Lead _D ^{M#}	46							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	75							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	203							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
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

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.32							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.43							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.87							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.32							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.91							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.23							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.24							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.17							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.80							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.00							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	11.3							mg/kg	0.01	A-T-019s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 with the same delivery, will be disposed of six weeks after 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 the scope of our accreditation.
 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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ANNEX B

Chemical Test Results - Imported Topsoil Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/10635
Issue Number: 1

Date: 08 November, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter/Mitchell
Project Name: Glendene, Wythenshawe
Project Ref: N/A
Order No: 7974-22114-AH
Date Samples Received: 27/10/23
Date Instructions Received: 27/10/23
Date Analysis Completed: 08/11/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
% Stones >10mm _A	9.6	13.6	14.1	10.8				% w/w	0.1	A-T-044
pH _D ^{M#}	7.38	6.83	6.96	6.90				pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.03	0.03	0.08	0.05				g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	450	480	570	560				mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.5	3.4	3.9	3.6				% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	4	5	4	4				mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5	<0.5				mg/kg	0.5	A-T-024s
Copper _D ^{M#}	16	23	22	21				mg/kg	1	A-T-024s
Chromium _D ^{M#}	16	15	19	15				mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1				mg/kg	1	A-T-040s
Lead _D ^{M#}	29	44	38	37				mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	10	13	11				mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-024s
Zinc _D ^{M#}	38	47	48	45				mg/kg	5	A-T-024s

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	NAD	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	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
PAH-16MS										
Acenaphthene _A ^{M#}	0.02	<0.01	0.06	0.01				mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.03	<0.02	0.05	<0.02				mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.09	<0.04	0.09	0.06				mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.08	<0.04	0.09	0.06				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.11	0.05	0.12	0.08				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.06	<0.05	0.06	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.13	<0.06	0.14	0.09				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.23	<0.08	0.24	0.14				mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.02	<0.01	0.04	<0.01				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.07	0.03	0.07	0.06				mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	0.09	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.17	0.04	0.24	0.09				mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.21	<0.07	0.21	0.12				mg/kg	0.07	A-T-019s
Total PAH-16MS _A	1.22	0.12	1.50	0.71				mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	17	10	10	10				mg/kg	1	A-T-055s
Total Aliphatics _A	17	10	10	10				mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<2	<2	<2	<2				mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C12-C16 _A	2	2	2	2				mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	3	2	3	2				mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	10	6	6	7				mg/kg	1	A-T-055s
Total Aromatics _A	16	11	12	11				mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	33	21	21	21				mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshawe

Clients Project No: N/A

Project No: 23/10635

Date Received: 27/10/2023 (am)

Cool Box Temperatures (°C): 10.0

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.

Envirolab Analysis Dates

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4
Client Sample No				
Client Sample ID/Depth	TS-K	TS-L	TS-M	TS-N
Date Sampled	25/10/23	25/10/23	25/10/23	25/10/23
A-T-019s	07/11/2023	07/11/2023	07/11/2023	07/11/2023
A-T-022s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-024s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-026s	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-027s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-028s	06/11/2023	06/11/2023	06/11/2023	06/11/2023
A-T-031s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-032s	07/11/2023	07/11/2023	07/11/2023	07/11/2023
A-T-040s	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-042sTCN	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-044	06/11/2023	06/11/2023	06/11/2023	06/11/2023
A-T-045	31/10/2023	31/10/2023	31/10/2023	31/10/2023
A-T-050s	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-055s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
Calc-As Recd	03/11/2023	03/11/2023	03/11/2023	03/11/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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ANNEX C

Photographs



Photograph 1: Validation of Garden Capping



Photograph 2: Validation of Garden Capping

**BEK Geo-Environmental Consulting**

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Our Ref: BEK/22114/231221/CG/50

21st December 2023

FAO Jon Sharp
The Casey Group
Rydings Road
Rochdale
OL12 9PS

Dear Jon,

Garden Capping Validation Letter for Residential Development at Glendene, Wythenshawe - PLOT 50

BEK Enviro (BEK) has been commissioned by The Casey Group (CG) to supervise and validate the post construction remediation works required at the above site.

The approved remediation works are detailed in the BEK Remediation Method Statement, Report Ref: BEK-22097-1 Rev A, dated November 2022.

The approved remediation requirements comprise the installation of a clean cover system in private gardens and soft landscaped areas as follows:

'All soft landscaped/garden areas will be capped with a minimum of 600 mm of clean suitable soil (450 mm subsoil and 150 mm topsoil). The capping soils should be underlain by a 100 mm granular no-dig layer or a geotextile marker membrane to prevent mixing.'

Following a review of the information it was determined that a capping system comprising entirely of 600 mm topsoil with a high visibility geotextile at the base could be utilised within private gardens at the site.

Remediation activities have been supervised by both BEK and CG. BEK has confirmed that the soils are suitable for use (prior to placement) and carried out checks to confirm that the correct capping thickness has been achieved. BEK has relied on CG and their appointed contractors to cap the gardens with the validated capping soils.

Topsoil used within the gardens comprises 'As dug topsoil' which has been sourced as product from O'Garas from a greenfield source. Source test data has been made available to BEK confirms that the O'Gara is suitable for use in a residential garden. A copy of the source test data is provided within Annex A.

To ensure suitability (and to comply with testing frequency requirements), BEK inspected the O'Gara soils placed in each of the plots and recovered representative samples for chemical testing. The soils are described as 'dark brown silty sand with occasional fine to coarse angular to rounded gravel' and are visually suitable for use. BEK has recovered a number of samples from the placed soil and copies of the chemical test results for the most recent samples tested (TS-O to TS-Q) are presented in Annex B.

**BEK Geo-Environmental Consulting**

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Additional samples will be recovered progressively as the remediation works continue. Regular liaison with site managers will be maintained to ensure sample frequencies are maintained progressively throughout the works. Final volumes will be provided for imported topsoil at the end of the project.

In addition to confirming suitability of the soils used in the garden capping system at the site, BEK also confirms that that capping thickness is a minimum of 600 mm thick. CG confirm that a geotextile membrane has been placed at the base of the capping layer. Spot checks carried out by BEK on selected plots prove the presence of the geotextile membrane. Photographs showing capping thickness are provided within Annex C.

Based on the information provided by CG and the validation works carried out by BEK, we can confirm that the remediation works required for Plot 50 at the residential development at Glendene, Wythenshawe has been completed in accordance with the approved methodology. This Certificate should be read in conjunction with the final Validation Report that will be prepared on completion of all remediation works at the site.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'MBuckley', is written over a light blue horizontal line.

MICHAEL BUCKLEY

BSc (Hons) MSc MEnvSci CEnv



BEK Geo-Environmental Consulting

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ANNEX A

Source Test Data

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S2

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
% Stones >10mm _A	3.7							% w/w	0.1	A-T-044
pH _D ^{M#}	7.83							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.11							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	40							mg/kg	1	A-T-024s
Chromium _D ^{M#}	26							mg/kg	1	A-T-024s
Lead _D ^{M#}	46							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	75							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	203							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
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

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.32							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.43							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.87							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.32							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.91							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.23							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.24							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.17							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.80							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.00							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	11.3							mg/kg	0.01	A-T-019s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 with the same delivery, will be disposed of six weeks after 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 the scope of our accreditation.
 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve.
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation.
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction.

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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ANNEX B

Chemical Test Results - Imported Topsoil Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/12199
Issue Number: 1

Date: 20 December, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter
Project Name: Glendene, Wythenshawe
Project Ref: Not specified
Order No: 8023-22114-MLM
Date Samples Received: 07/12/23
Date Instructions Received: 08/12/23
Date Analysis Completed: 20/12/23

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
% Stones >10mm _A	1.7	7.2	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	7.31	7.29	6.96					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.04	0.02					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	520	490	440					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.9	3.2	3.7					% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	4	3	3					mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.6	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	19	13	13					mg/kg	1	A-T-024s
Chromium _D ^{M#}	14	12	12					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	35	26	25					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	8	9					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	48	34	36					mg/kg	5	A-T-024s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	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	N/A	N/A							A-T-045

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
PAH-16MS										
Acenaphthene _A ^{M#}	0.08	0.07	0.12					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.11	0.08	0.27					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.29	0.12	0.42					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.23	0.07	0.24					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.33	0.12	0.40					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.16	<0.05	0.18					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.16	<0.07	0.17					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.34	0.12	0.39					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.75	0.34	1.13					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.04	0.03	0.08					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.18	0.06	0.21					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.47	0.25	0.87					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.68	0.29	0.96					mg/kg	0.07	A-T-019s
Total PAH-16MS _A	3.82	1.55	5.44					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	3	1	3					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	34	34	35					mg/kg	1	A-T-055s
Total Aliphatics _A	37	35	37					mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	5	3	4					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	29	11	12					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	90	31	28					mg/kg	1	A-T-055s
Total Aromatics _A	124	45	44					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	161	80	81					mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshawe

Clients Project No:

Project No: 23/12199

Date Received: 08/12/2023 (am)

Cool Box Temperatures (°C): 8.6

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.

Envirolab Analysis Dates

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3
Client Sample No			
Client Sample ID/Depth	TS-O	TS-P	TS-Q
Date Sampled	06/12/23	06/12/23	06/12/23
A-T-019s	15/12/2023	15/12/2023	15/12/2023
A-T-022s	13/12/2023	13/12/2023	13/12/2023
A-T-024s	14/12/2023	14/12/2023	14/12/2023
A-T-026s	13/12/2023	13/12/2023	13/12/2023
A-T-027s	13/12/2023	13/12/2023	13/12/2023
A-T-028s	13/12/2023	13/12/2023	13/12/2023
A-T-031s	13/12/2023	13/12/2023	13/12/2023
A-T-032s	14/12/2023	14/12/2023	14/12/2023
A-T-040s	13/12/2023	13/12/2023	13/12/2023
A-T-042sTCN	14/12/2023	14/12/2023	14/12/2023
A-T-044	12/12/2023	12/12/2023	12/12/2023
A-T-045	11/12/2023	11/12/2023	11/12/2023
A-T-050s	20/12/2023	20/12/2023	20/12/2023
A-T-055s	14/12/2023	14/12/2023	14/12/2023
Calc-As Recd	14/12/2023	14/12/2023	14/12/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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ANNEX C

Photographs



Photograph 1: Validation of Garden Capping



Photograph 2: Validation of Garden Capping

**BEK Geo-Environmental Consulting**

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Our Ref: BEK/22114/231221/CG/52

21st December 2023

FAO Jon Sharp
The Casey Group
Rydings Road
Rochdale
OL12 9PS

Dear Jon,

Garden Capping Validation Letter for Residential Development at Glendene, Wythenshawe - PLOT 52

BEK Enviro (BEK) has been commissioned by The Casey Group (CG) to supervise and validate the post construction remediation works required at the above site.

The approved remediation works are detailed in the BEK Remediation Method Statement, Report Ref: BEK-22097-1 Rev A, dated November 2022.

The approved remediation requirements comprise the installation of a clean cover system in private gardens and soft landscaped areas as follows:

'All soft landscaped/garden areas will be capped with a minimum of 600 mm of clean suitable soil (450 mm subsoil and 150 mm topsoil). The capping soils should be underlain by a 100 mm granular no-dig layer or a geotextile marker membrane to prevent mixing.'

Following a review of the information it was determined that a capping system comprising entirely of 600 mm topsoil with a high visibility geotextile at the base could be utilised within private gardens at the site.

Remediation activities have been supervised by both BEK and CG. BEK has confirmed that the soils are suitable for use (prior to placement) and carried out checks to confirm that the correct capping thickness has been achieved. BEK has relied on CG and their appointed contractors to cap the gardens with the validated capping soils.

Topsoil used within the gardens comprises 'As dug topsoil' which has been sourced as product from O'Garas from a greenfield source. Source test data has been made available to BEK confirms that the O'Gara is suitable for use in a residential garden. A copy of the source test data is provided within Annex A.

To ensure suitability (and to comply with testing frequency requirements), BEK inspected the O'Gara soils placed in each of the plots and recovered representative samples for chemical testing. The soils are described as 'dark brown silty sand with occasional fine to coarse angular to rounded gravel' and are visually suitable for use. BEK has recovered a number of samples from the placed soil and copies of the chemical test results for the most recent samples tested (TS-O to TS-Q) are presented in Annex B.

**BEK Geo-Environmental Consulting**

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Additional samples will be recovered progressively as the remediation works continue. Regular liaison with site managers will be maintained to ensure sample frequencies are maintained progressively throughout the works. Final volumes will be provided for imported topsoil at the end of the project.

In addition to confirming suitability of the soils used in the garden capping system at the site, BEK also confirms that that capping thickness is a minimum of 600 mm thick. CG confirm that a geotextile membrane has been placed at the base of the capping layer. Spot checks carried out by BEK on selected plots prove the presence of the geotextile membrane. Photographs showing capping thickness are provided within Annex C.

Based on the information provided by CG and the validation works carried out by BEK, we can confirm that the remediation works required for Plot 52 at the residential development at Glendene, Wythenshawe has been completed in accordance with the approved methodology. This Certificate should be read in conjunction with the final Validation Report that will be prepared on completion of all remediation works at the site.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'MBuckley', is written over a light blue horizontal line.

MICHAEL BUCKLEY

BSc (Hons) MSc MEnvSci CEnv



BEK Geo-Environmental Consulting

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ANNEX A

Source Test Data

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S2

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
% Stones >10mm _A	3.7							% w/w	0.1	A-T-044
pH _D ^{M#}	7.83							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.11							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	40							mg/kg	1	A-T-024s
Chromium _D ^{M#}	26							mg/kg	1	A-T-024s
Lead _D ^{M#}	46							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	75							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	203							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
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

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.32							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.43							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.87							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.32							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.91							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.23							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.24							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.17							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.80							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.00							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	11.3							mg/kg	0.01	A-T-019s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 with the same delivery, will be disposed of six weeks after 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 the scope of our accreditation.
 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve.
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation.
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction.

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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Lancashire BB5 5TU

mbuckley@bekenviro.co.uk

bekenviro.co.uk

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ANNEX B

Chemical Test Results - Imported Topsoil Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/12199
Issue Number: 1

Date: 20 December, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter
Project Name: Glendene, Wythenshawe
Project Ref: Not specified
Order No: 8023-22114-MLM
Date Samples Received: 07/12/23
Date Instructions Received: 08/12/23
Date Analysis Completed: 20/12/23

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
% Stones >10mm _A	1.7	7.2	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	7.31	7.29	6.96					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.04	0.02					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	520	490	440					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.9	3.2	3.7					% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	4	3	3					mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.6	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	19	13	13					mg/kg	1	A-T-024s
Chromium _D ^{M#}	14	12	12					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	35	26	25					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	8	9					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	48	34	36					mg/kg	5	A-T-024s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	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	N/A	N/A							A-T-045

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
PAH-16MS										
Acenaphthene _A ^{M#}	0.08	0.07	0.12					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.11	0.08	0.27					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.29	0.12	0.42					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.23	0.07	0.24					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.33	0.12	0.40					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.16	<0.05	0.18					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.16	<0.07	0.17					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.34	0.12	0.39					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.75	0.34	1.13					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.04	0.03	0.08					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.18	0.06	0.21					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.47	0.25	0.87					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.68	0.29	0.96					mg/kg	0.07	A-T-019s
Total PAH-16MS _A	3.82	1.55	5.44					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	3	1	3					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	34	34	35					mg/kg	1	A-T-055s
Total Aliphatics _A	37	35	37					mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	5	3	4					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	29	11	12					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	90	31	28					mg/kg	1	A-T-055s
Total Aromatics _A	124	45	44					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	161	80	81					mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General

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 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshawe

Clients Project No:

Project No: 23/12199

Date Received: 08/12/2023 (am)

Cool Box Temperatures (°C): 8.6

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.

Envirolab Analysis Dates

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3
Client Sample No			
Client Sample ID/Depth	TS-O	TS-P	TS-Q
Date Sampled	06/12/23	06/12/23	06/12/23
A-T-019s	15/12/2023	15/12/2023	15/12/2023
A-T-022s	13/12/2023	13/12/2023	13/12/2023
A-T-024s	14/12/2023	14/12/2023	14/12/2023
A-T-026s	13/12/2023	13/12/2023	13/12/2023
A-T-027s	13/12/2023	13/12/2023	13/12/2023
A-T-028s	13/12/2023	13/12/2023	13/12/2023
A-T-031s	13/12/2023	13/12/2023	13/12/2023
A-T-032s	14/12/2023	14/12/2023	14/12/2023
A-T-040s	13/12/2023	13/12/2023	13/12/2023
A-T-042sTCN	14/12/2023	14/12/2023	14/12/2023
A-T-044	12/12/2023	12/12/2023	12/12/2023
A-T-045	11/12/2023	11/12/2023	11/12/2023
A-T-050s	20/12/2023	20/12/2023	20/12/2023
A-T-055s	14/12/2023	14/12/2023	14/12/2023
Calc-As Recd	14/12/2023	14/12/2023	14/12/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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ANNEX C

Photographs



Photograph 1: Validation of Garden Capping



Photograph 2: Validation of Garden Capping



BEK Geo-Environmental Consulting

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Our Ref: BEK/22114/231221/CG/55

21st December 2023

FAO Jon Sharp
The Casey Group
Rydings Road
Rochdale
OL12 9PS

Dear Jon,

Garden Capping Validation Letter for Residential Development at Glendene, Wythenshawe - PLOT 55

BEK Enviro (BEK) has been commissioned by The Casey Group (CG) to supervise and validate the post construction remediation works required at the above site.

The approved remediation works are detailed in the BEK Remediation Method Statement, Report Ref: BEK-22097-1 Rev A, dated November 2022.

The approved remediation requirements comprise the installation of a clean cover system in private gardens and soft landscaped areas as follows:

'All soft landscaped/garden areas will be capped with a minimum of 600 mm of clean suitable soil (450 mm subsoil and 150 mm topsoil). The capping soils should be underlain by a 100 mm granular no-dig layer or a geotextile marker membrane to prevent mixing.'

Following a review of the information it was determined that a capping system comprising entirely of 600 mm topsoil with a high visibility geotextile at the base could be utilised within private gardens at the site.

Remediation activities have been supervised by both BEK and CG. BEK has confirmed that the soils are suitable for use (prior to placement) and carried out checks to confirm that the correct capping thickness has been achieved. BEK has relied on CG and their appointed contractors to cap the gardens with the validated capping soils.

Topsoil used within the gardens comprises 'As dug topsoil' which has been sourced as product from O'Garas from a greenfield source. Source test data has been made available to BEK confirms that the O'Gara is suitable for use in a residential garden. A copy of the source test data is provided within Annex A.

To ensure suitability (and to comply with testing frequency requirements), BEK inspected the O'Gara soils placed in each of the plots and recovered representative samples for chemical testing. The soils are described as 'dark brown silty sand with occasional fine to coarse angular to rounded gravel' and are visually suitable for use. BEK has recovered a number of samples from the placed soil and copies of the chemical test results for the most recent samples tested (TS-O to TS-Q) are presented in Annex B.

**BEK Geo-Environmental Consulting**

No.2 Landwick Court, Metcalf Drive, Altham Business Park,
Lancashire BB5 5TU

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Additional samples will be recovered progressively as the remediation works continue. Regular liaison with site managers will be maintained to ensure sample frequencies are maintained progressively throughout the works. Final volumes will be provided for imported topsoil at the end of the project.

In addition to confirming suitability of the soils used in the garden capping system at the site, BEK also confirms that that capping thickness is a minimum of 600 mm thick. CG confirm that a geotextile membrane has been placed at the base of the capping layer. Spot checks carried out by BEK on selected plots prove the presence of the geotextile membrane. Photographs showing capping thickness are provided within Annex C.

Based on the information provided by CG and the validation works carried out by BEK, we can confirm that the remediation works required for Plot 55 at the residential development at Glendene, Wythenshawe has been completed in accordance with the approved methodology. This Certificate should be read in conjunction with the final Validation Report that will be prepared on completion of all remediation works at the site.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'MBuckley', is written over a horizontal line.

MICHAEL BUCKLEY

BSc (Hons) MSc MEnvSci CEnv



BEK Geo-Environmental Consulting

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ANNEX A

Source Test Data

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S2

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
% Stones >10mm _A	3.7							% w/w	0.1	A-T-044
pH _D ^{M#}	7.83							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.11							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	40							mg/kg	1	A-T-024s
Chromium _D ^{M#}	26							mg/kg	1	A-T-024s
Lead _D ^{M#}	46							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	75							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	203							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
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

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.32							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.43							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.87							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.32							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.91							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.23							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.24							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.17							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.80							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.00							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	11.3							mg/kg	0.01	A-T-019s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 with the same delivery, will be disposed of six weeks after 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 the scope of our accreditation.
 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

No.2 Landwick Court, Metcalf Drive, Altham Business Park,
Lancashire BB5 5TU

mbuckley@bekenviro.co.uk

bekenviro.co.uk

01254 377622

ANNEX B

Chemical Test Results - Imported Topsoil Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/12199
Issue Number: 1

Date: 20 December, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter
Project Name: Glendene, Wythenshawe
Project Ref: Not specified
Order No: 8023-22114-MLM
Date Samples Received: 07/12/23
Date Instructions Received: 08/12/23
Date Analysis Completed: 20/12/23

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
% Stones >10mm _A	1.7	7.2	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	7.31	7.29	6.96					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.04	0.02					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	520	490	440					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.9	3.2	3.7					% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	4	3	3					mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.6	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	19	13	13					mg/kg	1	A-T-024s
Chromium _D ^{M#}	14	12	12					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	35	26	25					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	8	9					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	48	34	36					mg/kg	5	A-T-024s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	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	N/A	N/A							A-T-045

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
PAH-16MS										
Acenaphthene _A ^{M#}	0.08	0.07	0.12					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.11	0.08	0.27					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.29	0.12	0.42					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.23	0.07	0.24					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.33	0.12	0.40					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.16	<0.05	0.18					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.16	<0.07	0.17					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.34	0.12	0.39					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.75	0.34	1.13					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.04	0.03	0.08					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.18	0.06	0.21					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.47	0.25	0.87					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.68	0.29	0.96					mg/kg	0.07	A-T-019s
Total PAH-16MS _A	3.82	1.55	5.44					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	3	1	3					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	34	34	35					mg/kg	1	A-T-055s
Total Aliphatics _A	37	35	37					mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	5	3	4					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	29	11	12					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	90	31	28					mg/kg	1	A-T-055s
Total Aromatics _A	124	45	44					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	161	80	81					mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General

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 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshawe

Clients Project No:

Project No: 23/12199

Date Received: 08/12/2023 (am)

Cool Box Temperatures (°C): 8.6

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.

Envirolab Analysis Dates

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3
Client Sample No			
Client Sample ID/Depth	TS-O	TS-P	TS-Q
Date Sampled	06/12/23	06/12/23	06/12/23
A-T-019s	15/12/2023	15/12/2023	15/12/2023
A-T-022s	13/12/2023	13/12/2023	13/12/2023
A-T-024s	14/12/2023	14/12/2023	14/12/2023
A-T-026s	13/12/2023	13/12/2023	13/12/2023
A-T-027s	13/12/2023	13/12/2023	13/12/2023
A-T-028s	13/12/2023	13/12/2023	13/12/2023
A-T-031s	13/12/2023	13/12/2023	13/12/2023
A-T-032s	14/12/2023	14/12/2023	14/12/2023
A-T-040s	13/12/2023	13/12/2023	13/12/2023
A-T-042sTCN	14/12/2023	14/12/2023	14/12/2023
A-T-044	12/12/2023	12/12/2023	12/12/2023
A-T-045	11/12/2023	11/12/2023	11/12/2023
A-T-050s	20/12/2023	20/12/2023	20/12/2023
A-T-055s	14/12/2023	14/12/2023	14/12/2023
Calc-As Recd	14/12/2023	14/12/2023	14/12/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



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ANNEX C

Photographs



Photograph 1: Validation of Garden Capping



Photograph 2: Validation of Garden Capping



Photograph 3: Validation of Garden Capping

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Our Ref: BEK/22114/231221/CG/56

21st December 2023

FAO Jon Sharp
The Casey Group
Rydings Road
Rochdale
OL12 9PS

Dear Jon,

Garden Capping Validation Letter for Residential Development at Glendene, Wythenshawe - PLOT 56

BEK Enviro (BEK) has been commissioned by The Casey Group (CG) to supervise and validate the post construction remediation works required at the above site.

The approved remediation works are detailed in the BEK Remediation Method Statement, Report Ref: BEK-22097-1 Rev A, dated November 2022.

The approved remediation requirements comprise the installation of a clean cover system in private gardens and soft landscaped areas as follows:

'All soft landscaped/garden areas will be capped with a minimum of 600 mm of clean suitable soil (450 mm subsoil and 150 mm topsoil). The capping soils should be underlain by a 100 mm granular no-dig layer or a geotextile marker membrane to prevent mixing.'

Following a review of the information it was determined that a capping system comprising entirely of 600 mm topsoil with a high visibility geotextile at the base could be utilised within private gardens at the site.

Remediation activities have been supervised by both BEK and CG. BEK has confirmed that the soils are suitable for use (prior to placement) and carried out checks to confirm that the correct capping thickness has been achieved. BEK has relied on CG and their appointed contractors to cap the gardens with the validated capping soils.

Topsoil used within the gardens comprises 'As dug topsoil' which has been sourced as product from O'Garas from a greenfield source. Source test data has been made available to BEK confirms that the O'Gara is suitable for use in a residential garden. A copy of the source test data is provided within Annex A.

To ensure suitability (and to comply with testing frequency requirements), BEK inspected the O'Gara soils placed in each of the plots and recovered representative samples for chemical testing. The soils are described as 'dark brown silty sand with occasional fine to coarse angular to rounded gravel' and are visually suitable for use. BEK has recovered a number of samples from the placed soil and copies of the chemical test results for the most recent samples tested (TS-O to TS-Q) are presented in Annex B.



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Additional samples will be recovered progressively as the remediation works continue. Regular liaison with site managers will be maintained to ensure sample frequencies are maintained progressively throughout the works. Final volumes will be provided for imported topsoil at the end of the project.

In addition to confirming suitability of the soils used in the garden capping system at the site, BEK also confirms that that capping thickness is a minimum of 600 mm thick. CG confirm that a geotextile membrane has been placed at the base of the capping layer. Spot checks carried out by BEK on selected plots prove the presence of the geotextile membrane. Photographs showing capping thickness are provided within Annex C.

Based on the information provided by CG and the validation works carried out by BEK, we can confirm that the remediation works required for Plot 56 at the residential development at Glendene, Wythenshawe has been completed in accordance with the approved methodology. This Certificate should be read in conjunction with the final Validation Report that will be prepared on completion of all remediation works at the site.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'MBuckley', is written over a horizontal line.

MICHAEL BUCKLEY

BSc (Hons) MSc MEnvSci CEnv



BEK Geo-Environmental Consulting

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ANNEX A

Source Test Data

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S2

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
% Stones >10mm _A	3.7							% w/w	0.1	A-T-044
pH _D ^{M#}	7.83							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.11							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	40							mg/kg	1	A-T-024s
Chromium _D ^{M#}	26							mg/kg	1	A-T-024s
Lead _D ^{M#}	46							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	75							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	203							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
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

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.32							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.43							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.87							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.32							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.91							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.23							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.24							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.17							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.80							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.00							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	11.3							mg/kg	0.01	A-T-019s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 with the same delivery, will be disposed of six weeks after 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 the scope of our accreditation.
 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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ANNEX B

Chemical Test Results - Imported Topsoil Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/12199
Issue Number: 1

Date: 20 December, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter
Project Name: Glendene, Wythenshawe
Project Ref: Not specified
Order No: 8023-22114-MLM
Date Samples Received: 07/12/23
Date Instructions Received: 08/12/23
Date Analysis Completed: 20/12/23

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
% Stones >10mm _A	1.7	7.2	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	7.31	7.29	6.96					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.04	0.02					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	520	490	440					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.9	3.2	3.7					% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	4	3	3					mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.6	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	19	13	13					mg/kg	1	A-T-024s
Chromium _D ^{M#}	14	12	12					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	35	26	25					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	8	9					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	48	34	36					mg/kg	5	A-T-024s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	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	N/A	N/A							A-T-045

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
PAH-16MS										
Acenaphthene _A ^{M#}	0.08	0.07	0.12					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.11	0.08	0.27					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.29	0.12	0.42					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.23	0.07	0.24					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.33	0.12	0.40					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.16	<0.05	0.18					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.16	<0.07	0.17					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.34	0.12	0.39					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.75	0.34	1.13					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.04	0.03	0.08					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.18	0.06	0.21					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.47	0.25	0.87					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.68	0.29	0.96					mg/kg	0.07	A-T-019s
Total PAH-16MS _A	3.82	1.55	5.44					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	3	1	3					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	34	34	35					mg/kg	1	A-T-055s
Total Aliphatics _A	37	35	37					mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	5	3	4					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	29	11	12					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	90	31	28					mg/kg	1	A-T-055s
Total Aromatics _A	124	45	44					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	161	80	81					mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshawe

Clients Project No:

Project No: 23/12199

Date Received: 08/12/2023 (am)

Cool Box Temperatures (°C): 8.6

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.

Envirolab Analysis Dates

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3
Client Sample No			
Client Sample ID/Depth	TS-O	TS-P	TS-Q
Date Sampled	06/12/23	06/12/23	06/12/23
A-T-019s	15/12/2023	15/12/2023	15/12/2023
A-T-022s	13/12/2023	13/12/2023	13/12/2023
A-T-024s	14/12/2023	14/12/2023	14/12/2023
A-T-026s	13/12/2023	13/12/2023	13/12/2023
A-T-027s	13/12/2023	13/12/2023	13/12/2023
A-T-028s	13/12/2023	13/12/2023	13/12/2023
A-T-031s	13/12/2023	13/12/2023	13/12/2023
A-T-032s	14/12/2023	14/12/2023	14/12/2023
A-T-040s	13/12/2023	13/12/2023	13/12/2023
A-T-042sTCN	14/12/2023	14/12/2023	14/12/2023
A-T-044	12/12/2023	12/12/2023	12/12/2023
A-T-045	11/12/2023	11/12/2023	11/12/2023
A-T-050s	20/12/2023	20/12/2023	20/12/2023
A-T-055s	14/12/2023	14/12/2023	14/12/2023
Calc-As Recd	14/12/2023	14/12/2023	14/12/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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ANNEX C

Photographs



Photograph 1: Validation of Garden Capping



Photograph 2: Validation of Garden Capping

APPENDIX B

Public Open Space Validation Letter



BEK Geo-Environmental Consulting

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Our Ref: BEK/22114/2401/18/CG/POS

18th January 2024

FAO Jon Sharp
The Casey Group
Rydings Road
Rochdale
OL12 9PS

Dear Jon,

Soft Landscaping Capping Validation Letter for Residential Development at Glendene, Wythenshawe - POS

BEK Enviro (BEK) has been commissioned by The Casey Group (CG) to supervise and validate the post construction remediation works required at the above site.

The approved remediation works are detailed in the BEK Remediation Method Statement, Report Ref: BEK-22097-1 Rev A, dated November 2022.

The approved remediation requirements comprise the installation of a clean cover system in private gardens and soft landscaped areas as follows:

'All soft landscaped/garden areas will be capped with a minimum of 600 mm of clean suitable soil (450 mm subsoil and 150 mm topsoil). The capping soils should be underlain by a 100 mm granular no-dig layer or a geotextile marker membrane to prevent mixing.'

Following a review of the information it was determined that a capping system comprising entirely of 600 mm topsoil with a high visibility geotextile at the base could be utilised within private gardens and soft landscaping areas at the site.

Remediation activities have been supervised by both BEK and CG. BEK has confirmed that the soils are suitable for use (prior to placement) and carried out checks to confirm that the correct capping thickness has been achieved. BEK has relied on CG and their appointed contractors to cap the soft landscaping areas with the validated capping soils.

Topsoil used within the gardens comprises 'As dug topsoil' which has been sourced as product from O'Garas from a greenfield source. Source test data has been made available to BEK confirms that the O'Gara is suitable for use in a residential gardens and soft landscaping areas. A copy of the source test data is provided within Annex A.

To ensure suitability (and to comply with testing frequency requirements), BEK inspected the O'Gara soils placed in each of the plots and recovered representative samples for chemical testing. The soils are described as 'dark brown silty sand with occasional fine to coarse angular to rounded gravel' and

are visually suitable for use. BEK has recovered a number of samples from the placed soil and copies of the chemical test results for the most recent samples tested (TS-O to TS-Q) are presented in Annex B.

Additional samples will be recovered progressively as the remediation works continue. Regular liaison with site managers will be maintained to ensure sample frequencies are maintained progressively throughout the works. Final volumes will be provided for imported topsoil at the end of the project.

In addition to confirming suitability of the soils used in the public open space (POS) capping system at the site, BEK also confirms that that capping thickness is a minimum of 600 mm thick. CG confirm that a geotextile membrane has been placed at the base of the capping layer. Spot checks carried out by BEK on selected plots prove the presence of the geotextile membrane. Photographs showing capping thickness are provided within Annex C. The Location of the POS area is shown below in Figure 1.



Based on the information provided by CG and the validation works carried out by BEK, we can confirm that the remediation works required for POS at the residential development at Glendene, Wythenshawe has been completed in accordance with the approved methodology. This Certificate should be read in conjunction with the final Validation Report that will be prepared on completion of all remediation works at the site.

I trust the above is satisfactory. Should you require anything further please do not hesitate to contact the undersigned.

Yours sincerely



MICHAEL BUCKLEY

BSc (Hons) MSc MEnvSci CEnv



BEK Geo-Environmental Consulting

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ANNEX A

Source Test Data

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S2

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
% Stones >10mm _A	3.7							% w/w	0.1	A-T-044
pH _D ^{M#}	7.83							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.11							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	40							mg/kg	1	A-T-024s
Chromium _D ^{M#}	26							mg/kg	1	A-T-024s
Lead _D ^{M#}	46							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	75							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	203							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
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

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.32							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.43							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.87							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.32							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.91							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.23							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.24							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.17							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.80							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.00							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	11.3							mg/kg	0.01	A-T-019s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 with the same delivery, will be disposed of six weeks after 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 the scope of our accreditation.
 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

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ANNEX B

Chemical Test Results - Imported Topsoil Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/12199
Issue Number: 1

Date: 20 December, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter
Project Name: Glendene, Wythenshawe
Project Ref: Not specified
Order No: 8023-22114-MLM
Date Samples Received: 07/12/23
Date Instructions Received: 08/12/23
Date Analysis Completed: 20/12/23

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
% Stones >10mm _A	1.7	7.2	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	7.31	7.29	6.96					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.04	0.02					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	520	490	440					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.9	3.2	3.7					% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	4	3	3					mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.6	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	19	13	13					mg/kg	1	A-T-024s
Chromium _D ^{M#}	14	12	12					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	35	26	25					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	8	9					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	48	34	36					mg/kg	5	A-T-024s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	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	N/A	N/A							A-T-045

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
PAH-16MS										
Acenaphthene _A ^{M#}	0.08	0.07	0.12					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.11	0.08	0.27					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.29	0.12	0.42					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.23	0.07	0.24					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.33	0.12	0.40					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.16	<0.05	0.18					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.16	<0.07	0.17					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.34	0.12	0.39					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.75	0.34	1.13					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.04	0.03	0.08					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.18	0.06	0.21					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.47	0.25	0.87					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.68	0.29	0.96					mg/kg	0.07	A-T-019s
Total PAH-16MS _A	3.82	1.55	5.44					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	3	1	3					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	34	34	35					mg/kg	1	A-T-055s
Total Aliphatics _A	37	35	37					mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	5	3	4					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	29	11	12					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	90	31	28					mg/kg	1	A-T-055s
Total Aromatics _A	124	45	44					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	161	80	81					mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshawe

Clients Project No:

Project No: 23/12199

Date Received: 08/12/2023 (am)

Cool Box Temperatures (°C): 8.6

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.

Envirolab Analysis Dates

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3
Client Sample No			
Client Sample ID/Depth	TS-O	TS-P	TS-Q
Date Sampled	06/12/23	06/12/23	06/12/23
A-T-019s	15/12/2023	15/12/2023	15/12/2023
A-T-022s	13/12/2023	13/12/2023	13/12/2023
A-T-024s	14/12/2023	14/12/2023	14/12/2023
A-T-026s	13/12/2023	13/12/2023	13/12/2023
A-T-027s	13/12/2023	13/12/2023	13/12/2023
A-T-028s	13/12/2023	13/12/2023	13/12/2023
A-T-031s	13/12/2023	13/12/2023	13/12/2023
A-T-032s	14/12/2023	14/12/2023	14/12/2023
A-T-040s	13/12/2023	13/12/2023	13/12/2023
A-T-042sTCN	14/12/2023	14/12/2023	14/12/2023
A-T-044	12/12/2023	12/12/2023	12/12/2023
A-T-045	11/12/2023	11/12/2023	11/12/2023
A-T-050s	20/12/2023	20/12/2023	20/12/2023
A-T-055s	14/12/2023	14/12/2023	14/12/2023
Calc-As Recd	14/12/2023	14/12/2023	14/12/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report



BEK Geo-Environmental Consulting

No.2 Landwick Court, Metcalf Drive, Altham Business Park,
Lancashire BB5 5TU

mbuckley@bekenviro.co.uk

bekenviro.co.uk

01254 377622

ANNEX C

Photographs



Photograph 1: Validation of Public Open Space Capping



Photograph 2: Validation of Public Open Space Capping



Photograph 3: Validation of Public Open Space Capping



Photograph 4: Validation of Public Open Space Capping

APPENDIX C

Source Test Results - Topsoil

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S3

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/3							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Subsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	4A									
% Stones >10mm _A	3.5							% w/w	0.1	A-T-044
pH _D ^{M#}	8.15							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.15							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.6							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	43							mg/kg	1	A-T-024s
Chromium _D ^{M#}	21							mg/kg	1	A-T-024s
Lead _D ^{M#}	60							mg/kg	1	A-T-024s
Mercury _D	0.19							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	119							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	210							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/3							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Subsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	4A									
Asbestos in Soil (inc. matrix)										
Asbestos in soil ^o	NAD									A-T-045
Asbestos Matrix (visual) ^o	-									A-T-045
Asbestos Matrix (microscope) ^o	-									A-T-045
Asbestos ACM - Suitable for Water Absorption Test? ^o	N/A									A-T-045

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/3							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	Subsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	4A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.05							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.03							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.18							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.82							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.63							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.30							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.86							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.06							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.16							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.05							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.32							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.71							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.34							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	9.48							mg/kg	0.01	A-T-019s

REPORT NOTES

General

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 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 with the same delivery, will be disposed of six weeks after 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 the scope of our accreditation.
 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/02744/1

Amendments: Request for split report

Envirolab Job Number: 23/02744
Issue Number: 2-S2

Date: 30 March, 2023

Client: Pearl Environmental (UK) Ltd
58 Marford Crescent
Sale
Cheshire
UK
M33 4DH

Project Manager: Keith Lewis
Project Name: F' O'Gara Sorby Rd
Project Ref: Not specified
Order No: KL2203
Date Samples Received: 22/03/23
Date Instructions Received: 23/03/23
Date Analysis Completed: 29/03/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
% Stones >10mm _A	3.7							% w/w	0.1	A-T-044
pH _D ^{M#}	7.83							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.11							g/l	0.01	A-T-026s
Arsenic _D ^{M#}	7							mg/kg	1	A-T-024s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	40							mg/kg	1	A-T-024s
Chromium _D ^{M#}	26							mg/kg	1	A-T-024s
Lead _D ^{M#}	46							mg/kg	1	A-T-024s
Mercury _D	<0.17							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Zinc _D ^{M#}	75							mg/kg	5	A-T-024s
TPH total (>C6-C40) _A ^{M#}	203							mg/kg	10	A-T-007s

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
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

Envirolab Job Number: 23/02744

Client Project Name: F' O'Gara Sorby Rd

Client Project Ref: Not specified

Lab Sample ID	23/02744/2							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	As dug topsoil									
Depth to Top										
Depth To Bottom										
Date Sampled	22-Mar-23									
Sample Type	Soil									
Sample Matrix Code	5A									
PAH-16MS										
Acenaphthene _A ^{M#}	0.32							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.02							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.43							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.87							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.61							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.73							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.32							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.24							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.91							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.23							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.24							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.17							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.80							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.00							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	11.3							mg/kg	0.01	A-T-019s

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 with the same delivery, will be disposed of six weeks after 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 the scope of our accreditation.
 If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.
 A deviating samples 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.
 The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

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 analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

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.
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample, 9 = INCINERATOR ASH.
 Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,
 E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.
 US indicates Unsuitable Sample for analysis.
 NDP indicates No Determination Possible.
 NAD indicates No Asbestos Detected.
 N/A indicates Not Applicable.
 Superscript # indicates method accredited to ISO 17025.
 Superscript "M" indicates method accredited to MCERTS.
 Subscript "A" indicates analysis performed on the sample as received.
 Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve
 Subscript "A" indicates analysis has dependant options against results. Testing dependant on results appear in the comments area of your sample receipt.
 EPH CWG results have humics mathematically subtracted through instrument calculation
 TPH results "with Cleanup" indicates results cleaned up with Silica during extraction

EPH CWG GCxGC ID from TPH CWG

Where we have identified humic substances in any ID's from TPH CWG with Clean Up please note that the concentration of these humic substances is not included in the quantified results and are included in the ID for information.

Please contact us if you need any further information.

v2

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Pearl Environmental (UK) Ltd, 58 Marford Crescent , Sale, Cheshire, UK, M33 4DH	Project No:	23/02744
Project:	F' O'Gara Sorby Rd	Date Received:	23/03/2023 (am)
Clients Project No:		Cool Box Temperatures (°C):	13.6

NO DEVIATIONS IDENTIFIED with respect to sampling dates or containers received.

Note: 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 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/02744/1	23/02744/2	23/02744/3
Client Sample No			
Client Sample ID/Depth	Screened Soil	As dug topsoil	Subsoil
Date Sampled	22/03/23	22/03/23	22/03/23
A-T-007s		29/03/2023	29/03/2023
A-T-019s	29/03/2023	29/03/2023	29/03/2023
A-T-024s	28/03/2023	28/03/2023	28/03/2023
A-T-026s	28/03/2023	28/03/2023	28/03/2023
A-T-031s	28/03/2023	28/03/2023	28/03/2023
A-T-044	28/03/2023	28/03/2023	28/03/2023
A-T-045	24/03/2023	24/03/2023	24/03/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

APPENDIX D

BEK Validation Samples Test Results – Topsoil

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/06876
Issue Number: 1

Date: 19 July, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley
Project Name: Gledene, Wythenshaw
Project Ref: Not specified
Order No: 7856-22114-J
Date Samples Received: 10/07/23
Date Instructions Received: 11/07/23
Date Analysis Completed: 19/07/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/06876

Client Project Name: Gledene, Wythenshaw

Client Project Ref: Not specified

Lab Sample ID	23/06876/1	23/06876/2	23/06876/3	23/06876/4	23/06876/5	23/06876/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-1	TS-2	TS-3	TS-4	TS-5	TS-6				
Depth to Top										
Depth To Bottom										
Date Sampled	07-Jul-23	07-Jul-23	07-Jul-23	07-Jul-23	07-Jul-23	07-Jul-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	4AE	4AE	4A	4AE	4AE	4AE				
% Stones >10mm _A	8.2	6.8	8.6	9.3	10.6	9.4		% w/w	0.1	A-T-044
Asbestos in soil _D [#]	NAD	NAD	NAD	NAD	NAD	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	N/A	N/A	N/A	N/A	N/A				A-T-045
pH _D ^{M#}	8.02	8.04	8.40	8.17	8.15	8.15		pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.28	0.24	0.21	0.15	0.21	0.21		g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	1100	990	960	790	920	890		mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	4.5	4.6	3.4	5.0	3.8	4.5		% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	8	9	7	8	8	8		mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	1.0	<1.0	<1.0	<1.0	<1.0		mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.6	0.6	0.5	0.5	0.6	0.7		mg/kg	0.5	A-T-024s
Copper _D ^{M#}	49	45	41	52	36	39		mg/kg	1	A-T-024s
Chromium _D ^{M#}	14 ^U	16 ^U	11 ^U	13 ^U	13 ^U	17 ^U		mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-040s
Lead _D ^{M#}	98	104	87	99	95	91		mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17		mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	13	14	12	15	13	17		mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-024s
Zinc _D ^{M#}	161	144	130	137	131	137		mg/kg	5	A-T-024s

Envirolab Job Number: 23/06876

Client Project Name: Gledene, Wythenshaw

Client Project Ref: Not specified

Lab Sample ID	23/06876/1	23/06876/2	23/06876/3	23/06876/4	23/06876/5	23/06876/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-1	TS-2	TS-3	TS-4	TS-5	TS-6				
Depth to Top										
Depth To Bottom										
Date Sampled	07-Jul-23	07-Jul-23	07-Jul-23	07-Jul-23	07-Jul-23	07-Jul-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	4AE	4AE	4A	4AE	4AE	4AE				
PAH-16MS										
Acenaphthene _A ^{M#}	0.17	0.12	0.06	0.41	0.08	0.29		mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.03	0.02	0.03	0.03	0.03	0.04		mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.31	0.23	0.16	0.75	0.17	0.55		mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	1.10	0.96	0.68	1.97	0.88	1.34		mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	1.20	1.03	0.77	2.05	0.90	1.28		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	1.29	1.05	0.85	2.10	0.96	1.30		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.61	0.55	0.41	1.04	0.51	0.65		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.47	0.40	0.33	0.76	0.35	0.53		mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	1.34	1.12	0.84	2.17	1.02	1.50		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	0.12	0.12	0.10	0.22	0.11	0.13		mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.27	2.02	1.29	4.58	1.88	2.89		mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.11	0.07	0.05	0.27	0.06	0.23		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.67	0.59	0.46	1.18	0.57	0.75		mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.05	0.05	<0.03	0.09	0.04	0.07		mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.19	0.92	0.59	2.94	0.61	2.09		mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.10	1.83	1.18	4.00	1.76	2.54		mg/kg	0.07	A-T-019s
Total PAH-16MS _A	13	11.1	7.80	24.6	9.93	16.2		mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/06876

Client Project Name: Gledene, Wythenshaw

Client Project Ref: Not specified

Lab Sample ID	23/06876/1	23/06876/2	23/06876/3	23/06876/4	23/06876/5	23/06876/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-1	TS-2	TS-3	TS-4	TS-5	TS-6				
Depth to Top										
Depth To Bottom										
Date Sampled	07-Jul-23	07-Jul-23	07-Jul-23	07-Jul-23	07-Jul-23	07-Jul-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	4AE	4AE	4A	4AE	4AE	4AE				
TPH CWG with Clean Up										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	2	4	<1	1	2		mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	2	5	7	3	3	4		mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	20	83	34	31	25	48		mg/kg	1	A-T-055s
Total Aliphatics _A	22	91	45	35	29	54		mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<4	<4	<4	<4	<4	<4		mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	1	1	<1	<1	1		mg/kg	1	A-T-055s
Aro >C12-C16 _A	2	6	4	6	3	4		mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	6	19	11	25	9	16		mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	19	60	32	77	27	44		mg/kg	1	A-T-055s
Total Aromatics _A	27	86	48	109	39	65		mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	49	177	93	144	69	120		mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s

Report Notes

General

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 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Gledene, Wythenshaw

Clients Project No:

Project No: 23/06876

Date Received: 11/07/2023 (am)

Cool Box Temperatures (°C): 15.8

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.

Envirolab Analysis Dates

Lab Sample ID	23/06876/1	23/06876/2	23/06876/3	23/06876/4	23/06876/5	23/06876/6
Client Sample No						
Client Sample ID/Depth	TS-1	TS-2	TS-3	TS-4	TS-5	TS-6
Date Sampled	07/07/23	07/07/23	07/07/23	07/07/23	07/07/23	07/07/23
A-T-019s	19/07/2023	19/07/2023	19/07/2023	19/07/2023	19/07/2023	19/07/2023
A-T-022s	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023
A-T-024s	18/07/2023	18/07/2023	18/07/2023	18/07/2023	18/07/2023	18/07/2023
A-T-026s	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023
A-T-027s	14/07/2023	14/07/2023	14/07/2023	14/07/2023	14/07/2023	14/07/2023
A-T-028s	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023
A-T-031s	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023
A-T-032s	14/07/2023	14/07/2023	14/07/2023	14/07/2023	14/07/2023	14/07/2023
A-T-040s	18/07/2023	18/07/2023	18/07/2023	18/07/2023	17/07/2023	18/07/2023
A-T-042sTCN	14/07/2023	14/07/2023	14/07/2023	14/07/2023	14/07/2023	14/07/2023
A-T-044	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023
A-T-045	12/07/2023	12/07/2023	12/07/2023	12/07/2023	12/07/2023	12/07/2023
A-T-050s	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023
A-T-055s	14/07/2023	14/07/2023	14/07/2023	14/07/2023	14/07/2023	14/07/2023
Calc-As Recd	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023	17/07/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/08926
Issue Number: 1

Date: 14 September, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter/Mitchell
Project Name: Glendene, Wythenshaw
Project Ref: N/A
Order No: 7922-22114-AH
Date Samples Received: 07/09/23
Date Instructions Received: 07/09/23
Date Analysis Completed: 14/09/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/08926

Client Project Name: Glendene, Wythenshaw

Client Project Ref: N/A

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
% Stones >10mm _A	<0.1	1.6	<0.1	7.1	<0.1	<0.1		% w/w	0.1	A-T-044
pH ₀ ^{M#}	7.14	6.90	6.97	6.84	7.07	6.89		pH	0.01	A-T-031s
Sulphate (water sol 2:1) ₀ ^{M#}	0.04	0.05	0.03	0.04	0.05	0.04		g/l	0.01	A-T-026s
Sulphate (acid soluble) ₀ ^{M#}	460	460	450	430	480	490		mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		mg/kg	0.2	A-T-050s
Organic Matter ₀ ^{M#}	3.6	3.1	3.4	3.5	3.8	3.8		% w/w	0.1	A-T-032s
Arsenic ₀ ^{M#}	8	7	7	7	7	6		mg/kg	1	A-T-024s
Boron (water soluble) ₀ ^{M#}	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		mg/kg	1	A-T-027s
Cadmium ₀ ^{M#}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		mg/kg	0.5	A-T-024s
Copper ₀ ^{M#}	34	31	31	28	31	31		mg/kg	1	A-T-024s
Chromium ₀ [#]	25	26	22	23	25	-		mg/kg	1	A-T-024s
Chromium ₀ ^{M#}	-	-	-	-	-	27		mg/kg	1	A-T-024s
Chromium (hexavalent) ₀	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-040s
Lead ₀ ^{M#}	49	48	45	42	43	42		mg/kg	1	A-T-024s
Mercury ₀	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17		mg/kg	0.17	A-T-024s
Nickel ₀ ^{M#}	20	18	18	18	19	19		mg/kg	1	A-T-024s
Selenium ₀ ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-024s
Zinc ₀ ^{M#}	74	69	64	63	68	62		mg/kg	5	A-T-024s

Envirolab Job Number: 23/08926

Client Project Name: Glendene, Wythenshaw

Client Project Ref: N/A

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	NAD	NAD	NAD	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	N/A	N/A	N/A	N/A	N/A				A-T-045

Envirolab Job Number: 23/08926

Client Project Name: Glendene, Wythenshaw

Client Project Ref: N/A

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
PAH-16MS										
Acenaphthene _A ^{M#}	0.02	0.01	<0.01	0.02	0.03	<0.01		mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.02	<0.02	<0.02	0.02	0.03	<0.02		mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.12	0.11	0.06	0.13	0.13	0.07		mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.13	0.09	0.07	0.14	0.13	0.08		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.17	0.13	0.09	0.19	0.15	0.09		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.09	0.06	<0.05	0.09	0.08	<0.05		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.18	0.16	0.11	0.20	0.21	0.12		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.25	0.20	0.14	0.29	0.29	0.15		mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.01	<0.01	<0.01	<0.01	0.01	<0.01		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.11	0.07	0.06	0.11	0.09	0.06		mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.14	0.11	0.07	0.13	0.18	0.08		mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.26	0.19	0.13	0.28	0.28	0.14		mg/kg	0.07	A-T-019s
Total PAH-16MS _A	1.50	1.13	0.73	1.60	1.61	0.79		mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/08926

Client Project Name: Glendene, Wythenshaw

Client Project Ref: N/A

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F				
Depth to Top										
Depth To Bottom										
Date Sampled	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23	05-Sep-23				
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL				
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	6A				
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	<1	<1	<1	1	<1		mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	9	6	8	9	13	11		mg/kg	1	A-T-055s
Total Aliphatics _A	9	6	8	9	14	11		mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<3	<3	<3	<3	<3	<3		mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A-T-055s
Aro >C12-C16 _A ^{M#}	1	<1	1	1	2	1		mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	4	2	2	2	3	4		mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	7	6	7	7	10	12		mg/kg	1	A-T-055s
Total Aromatics _A	12	8	11	10	16	16		mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	21	14	19	19	30	27		mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-T-022s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshaw

Clients Project No: N/A

Project No: 23/08926

Date Received: 07/09/2023 (am)

Cool Box Temperatures (°C): 21.8

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.

Envirolab Analysis Dates

Lab Sample ID	23/08926/1	23/08926/2	23/08926/3	23/08926/4	23/08926/5	23/08926/6
Client Sample No						
Client Sample ID/Depth	TS-A	TS-B	TS-C	TS-D	TS-E	TS-F
Date Sampled	05/09/23	05/09/23	05/09/23	05/09/23	05/09/23	05/09/23
A-T-019s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-022s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-024s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-026s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-027s	14/09/2023	14/09/2023	14/09/2023	14/09/2023	14/09/2023	14/09/2023
A-T-028s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-031s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-032s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-040s	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-042sTCN	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-044	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023	13/09/2023
A-T-045	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-050s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
A-T-055s	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023
Calc-As Recd	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023	11/09/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/09650
Issue Number: 1

Date: 06 October, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter
Project Name: Glendene, Wythenshaw
Project Ref: Not specified
Order No: 7945-22114-MLM
Date Samples Received: 28/09/23
Date Instructions Received: 29/09/23
Date Analysis Completed: 06/10/23

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 23/09650

Client Project Name: Glendene, Wythenshaw

Client Project Ref: Not specified

Lab Sample ID	23/09650/1	23/09650/2	23/09650/3	23/09650/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-G	TS-H	TS-I	TS-J						
Depth to Top										
Depth To Bottom										
Date Sampled	27-Sep-23	27-Sep-23	27-Sep-23	27-Sep-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6A	4AE	4A	4A						
% Stones >10mm _A	<0.1	3.7	5.1	4.3				% w/w	0.1	A-T-044
pH _D ^{M#}	7.48	7.11	7.15	7.03				pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.02	0.03	0.03	0.03				g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	480	490	480	490				mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.1	3.8	5.5	4.7				% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	8	6	4	4				mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.8	0.6	<0.5	<0.5				mg/kg	0.5	A-T-024s
Copper _D ^{M#}	39	24	14	14				mg/kg	1	A-T-024s
Chromium _D ^{M#}	31	17	13	12				mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1				mg/kg	1	A-T-040s
Lead _D ^{M#}	47	37	27	29				mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	22	13	9	9				mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-024s
Zinc _D ^{M#}	80	51	35	34				mg/kg	5	A-T-024s

Envirolab Job Number: 23/09650

Client Project Name: Glendene, Wythenshaw

Client Project Ref: Not specified

Lab Sample ID	23/09650/1	23/09650/2	23/09650/3	23/09650/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-G	TS-H	TS-I	TS-J						
Depth to Top										
Depth To Bottom										
Date Sampled	27-Sep-23	27-Sep-23	27-Sep-23	27-Sep-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6A	4AE	4A	4A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	NAD	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	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 23/09650

Client Project Name: Glendene, Wythenshaw

Client Project Ref: Not specified

Lab Sample ID	23/09650/1	23/09650/2	23/09650/3	23/09650/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-G	TS-H	TS-I	TS-J						
Depth to Top										
Depth To Bottom										
Date Sampled	27-Sep-23	27-Sep-23	27-Sep-23	27-Sep-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6A	4AE	4A	4A						
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02	<0.02				mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.09	<0.04	0.05	<0.04				mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.09	<0.04	0.05	<0.04				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.13	0.07	0.07	0.07				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.06	<0.05	<0.05	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.12	<0.06	<0.06	<0.06				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.19	<0.08	<0.08	0.10				mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.07	0.03	0.05	0.05				mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.09	<0.03	0.05	0.05				mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.17	<0.07	0.08	0.09				mg/kg	0.07	A-T-019s
Total PAH-16MS _A	1.01	0.10	0.35	0.36				mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/09650

Client Project Name: Glendene, Wythenshaw

Client Project Ref: Not specified

Lab Sample ID	23/09650/1	23/09650/2	23/09650/3	23/09650/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-G	TS-H	TS-I	TS-J						
Depth to Top										
Depth To Bottom										
Date Sampled	27-Sep-23	27-Sep-23	27-Sep-23	27-Sep-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6A	4AE	4A	4A						
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	13	20	18	15				mg/kg	1	A-T-055s
Total Aliphatics _A	13	20	18	15				mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C12-C16 _A ^{M#}	1	1	1	1				mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	2	2	2	2				mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	7	10	9	7				mg/kg	1	A-T-055s
Total Aromatics _A	11	13	13	10				mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	24	34	31	26				mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

Report Notes

General

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 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshaw

Clients Project No:

Project No: 23/09650

Date Received: 29/09/2023 (am)

Cool Box Temperatures (°C): 17.7

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.

Envirolab Analysis Dates

Lab Sample ID	23/09650/1	23/09650/2	23/09650/3	23/09650/4
Client Sample No				
Client Sample ID/Depth	TS-G	TS-H	TS-I	TS-J
Date Sampled	27/09/23	27/09/23	27/09/23	27/09/23
A-T-019s	06/10/2023	06/10/2023	06/10/2023	06/10/2023
A-T-022s	06/10/2023	06/10/2023	06/10/2023	06/10/2023
A-T-024s	05/10/2023	05/10/2023	05/10/2023	05/10/2023
A-T-026s	05/10/2023	05/10/2023	05/10/2023	05/10/2023
A-T-027s	05/10/2023	05/10/2023	05/10/2023	05/10/2023
A-T-028s	06/10/2023	06/10/2023	06/10/2023	06/10/2023
A-T-031s	05/10/2023	05/10/2023	05/10/2023	05/10/2023
A-T-032s	05/10/2023	05/10/2023	05/10/2023	05/10/2023
A-T-040s	05/10/2023	05/10/2023	05/10/2023	05/10/2023
A-T-042sTCN	04/10/2023	04/10/2023	04/10/2023	04/10/2023
A-T-044	05/10/2023	05/10/2023	05/10/2023	05/10/2023
A-T-045	02/10/2023	02/10/2023	02/10/2023	02/10/2023
A-T-050s	04/10/2023	04/10/2023	04/10/2023	04/10/2023
A-T-055s	04/10/2023	04/10/2023	04/10/2023	04/10/2023
Calc-As Recd	06/10/2023	06/10/2023	06/10/2023	06/10/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/10635
Issue Number: 1

Date: 08 November, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter/Mitchell
Project Name: Glendene, Wythenshawe
Project Ref: N/A
Order No: 7974-22114-AH
Date Samples Received: 27/10/23
Date Instructions Received: 27/10/23
Date Analysis Completed: 08/11/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
% Stones >10mm _A	9.6	13.6	14.1	10.8				% w/w	0.1	A-T-044
pH _D ^{M#}	7.38	6.83	6.96	6.90				pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.03	0.03	0.08	0.05				g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	450	480	570	560				mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2				mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.5	3.4	3.9	3.6				% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	4	5	4	4				mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0	<1.0				mg/kg	1	A-T-027s
Cadmium _D ^{M#}	<0.5	<0.5	<0.5	<0.5				mg/kg	0.5	A-T-024s
Copper _D ^{M#}	16	23	22	21				mg/kg	1	A-T-024s
Chromium _D ^{M#}	16	15	19	15				mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1				mg/kg	1	A-T-040s
Lead _D ^{M#}	29	44	38	37				mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17				mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	10	13	11				mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-024s
Zinc _D ^{M#}	38	47	48	45				mg/kg	5	A-T-024s

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	NAD	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	N/A	N/A	N/A						A-T-045

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
PAH-16MS										
Acenaphthene _A ^{M#}	0.02	<0.01	0.06	0.01				mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.03	<0.02	0.05	<0.02				mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.09	<0.04	0.09	0.06				mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.08	<0.04	0.09	0.06				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.11	0.05	0.12	0.08				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.06	<0.05	0.06	<0.05				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07	<0.07				mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.13	<0.06	0.14	0.09				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04	<0.04				mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.23	<0.08	0.24	0.14				mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.02	<0.01	0.04	<0.01				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.07	0.03	0.07	0.06				mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	0.09	<0.03				mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.17	0.04	0.24	0.09				mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.21	<0.07	0.21	0.12				mg/kg	0.07	A-T-019s
Total PAH-16MS _A	1.22	0.12	1.50	0.71				mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/10635

Client Project Name: Glendene, Wythenshawe

Client Project Ref: N/A

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-K	TS-L	TS-M	TS-N						
Depth to Top										
Depth To Bottom										
Date Sampled	25-Oct-23	25-Oct-23	25-Oct-23	25-Oct-23						
Sample Type	SOIL	SOIL	SOIL	SOIL						
Sample Matrix Code	6AE	6A	6A	6A						
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	<1	<1	<1				mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	17	10	10	10				mg/kg	1	A-T-055s
Total Aliphatics _A	17	10	10	10				mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<2	<2	<2	<2				mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1				mg/kg	1	A-T-055s
Aro >C12-C16 _A	2	2	2	2				mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	3	2	3	2				mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	10	6	6	7				mg/kg	1	A-T-055s
Total Aromatics _A	16	11	12	11				mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	33	21	21	21				mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01				mg/kg	0.01	A-T-022s

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US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

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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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshawe

Clients Project No: N/A

Project No: 23/10635

Date Received: 27/10/2023 (am)

Cool Box Temperatures (°C): 10.0

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.

Envirolab Analysis Dates

Lab Sample ID	23/10635/1	23/10635/2	23/10635/3	23/10635/4
Client Sample No				
Client Sample ID/Depth	TS-K	TS-L	TS-M	TS-N
Date Sampled	25/10/23	25/10/23	25/10/23	25/10/23
A-T-019s	07/11/2023	07/11/2023	07/11/2023	07/11/2023
A-T-022s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-024s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-026s	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-027s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-028s	06/11/2023	06/11/2023	06/11/2023	06/11/2023
A-T-031s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
A-T-032s	07/11/2023	07/11/2023	07/11/2023	07/11/2023
A-T-040s	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-042sTCN	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-044	06/11/2023	06/11/2023	06/11/2023	06/11/2023
A-T-045	31/10/2023	31/10/2023	31/10/2023	31/10/2023
A-T-050s	08/11/2023	08/11/2023	08/11/2023	08/11/2023
A-T-055s	03/11/2023	03/11/2023	03/11/2023	03/11/2023
Calc-As Recd	03/11/2023	03/11/2023	03/11/2023	03/11/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/12199
Issue Number: 1

Date: 20 December, 2023

Client: BEK Enviro Ltd
2 Landwick Court
Metcalf Drive
Altham Business Park
Altham
Lancashire
BB5 5GY

Project Manager: Mick Buckley/James Mashiter
Project Name: Glendene, Wythenshawe
Project Ref: Not specified
Order No: 8023-22114-MLM
Date Samples Received: 07/12/23
Date Instructions Received: 08/12/23
Date Analysis Completed: 20/12/23

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
% Stones >10mm _A	1.7	7.2	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	7.31	7.29	6.96					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.04	0.02					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	520	490	440					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.9	3.2	3.7					% w/w	0.1	A-T-032s
Arsenic _D ^{M#}	4	3	3					mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.6	<0.5	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	19	13	13					mg/kg	1	A-T-024s
Chromium _D ^{M#}	14	12	12					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	35	26	25					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	11	8	9					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	48	34	36					mg/kg	5	A-T-024s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	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	N/A	N/A							A-T-045

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
PAH-16MS										
Acenaphthene _A ^{M#}	0.08	0.07	0.12					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.11	0.08	0.27					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.29	0.12	0.42					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.23	0.07	0.24					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.33	0.12	0.40					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.16	<0.05	0.18					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.16	<0.07	0.17					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.34	0.12	0.39					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.75	0.34	1.13					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.04	0.03	0.08					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.18	0.06	0.21					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.47	0.25	0.87					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.68	0.29	0.96					mg/kg	0.07	A-T-019s
Total PAH-16MS _A	3.82	1.55	5.44					mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/12199

Client Project Name: Glendene, Wythenshawe

Client Project Ref: Not specified

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS-O	TS-P	TS-Q							
Depth to Top										
Depth To Bottom										
Date Sampled	06-Dec-23	06-Dec-23	06-Dec-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	5	3	4							
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	3	1	3					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	34	34	35					mg/kg	1	A-T-055s
Total Aliphatics _A	37	35	37					mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	5	3	4					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	29	11	12					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	90	31	28					mg/kg	1	A-T-055s
Total Aromatics _A	124	45	44					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	161	80	81					mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 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 **six 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.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 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.

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 "A"	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
N/A	Not applicable

Asbestos

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
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. 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) quantification by sedimentation is performed. 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.

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°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

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

Envirolab Deviating Samples Report

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

Client: BEK Enviro Ltd, 2 Landwick Court, Metcalfe Drive, Altham Business Park,
Altham, Lancashire , BB5 5GY

Project: Glendene, Wythenshawe

Clients Project No:

Project No: 23/12199

Date Received: 08/12/2023 (am)

Cool Box Temperatures (°C): 8.6

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.

Envirolab Analysis Dates

Lab Sample ID	23/12199/1	23/12199/2	23/12199/3
Client Sample No			
Client Sample ID/Depth	TS-O	TS-P	TS-Q
Date Sampled	06/12/23	06/12/23	06/12/23
A-T-019s	15/12/2023	15/12/2023	15/12/2023
A-T-022s	13/12/2023	13/12/2023	13/12/2023
A-T-024s	14/12/2023	14/12/2023	14/12/2023
A-T-026s	13/12/2023	13/12/2023	13/12/2023
A-T-027s	13/12/2023	13/12/2023	13/12/2023
A-T-028s	13/12/2023	13/12/2023	13/12/2023
A-T-031s	13/12/2023	13/12/2023	13/12/2023
A-T-032s	14/12/2023	14/12/2023	14/12/2023
A-T-040s	13/12/2023	13/12/2023	13/12/2023
A-T-042sTCN	14/12/2023	14/12/2023	14/12/2023
A-T-044	12/12/2023	12/12/2023	12/12/2023
A-T-045	11/12/2023	11/12/2023	11/12/2023
A-T-050s	20/12/2023	20/12/2023	20/12/2023
A-T-055s	14/12/2023	14/12/2023	14/12/2023
Calc-As Recd	14/12/2023	14/12/2023	14/12/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

APPENDIX E

Validation Photographs



Photograph 1: Validation of membrane placement



Photograph 2: Validation of membrane placement



Photograph 3: Validation of membrane placement in Plot 16



Photograph 4: Validation of membrane placement in Plot 20



Photograph 5: Validation of membrane placement in Plot 21



Photograph 6: Validation of membrane placement in Plot 20