

## FINAL ANALYTICAL TEST REPORT

**Envirolab Job Number:** 24/02940  
**Issue Number:** 1  
**Date:** 05 April, 2024

**Client:** RB Geotechnical  
7 Carr Manor View  
Leeds  
UK  
LS17 5AG

**Project Manager:** Ross Blake  
**Project Name:** Colne Vale (Huddersfield)  
**Project Ref:** Not specified  
**Order No:** N/A  
**Date Samples Received:** 21/03/24  
**Date Instructions Received:** 21/03/24  
**Date Analysis Completed:** 05/04/24

**Approved by:**

Richard Wong  
Client Manager

Envirolab Job Number: 24/02940

Client Project Name: Colne Vale (Huddersfield)

Client Project Ref: Not specified

Lab Sample ID	24/02940/1	24/02940/2	24/02940/3					Units	Limit of Detection	Method ref
Client Sample No	1	2	3							
Client Sample ID	WS01	WS02	WS03							
Depth to Top	0.30	0.30	0.30							
Depth To Bottom										
Date Sampled	12-Mar-24	12-Mar-24	12-Mar-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6AB	4A	4AB							
% Stones >10mm <sub>A</sub>	<0.1	<0.1	<0.1							
Cyanide (free) <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-042sFCN
Cyanide (total) <sub>A</sub> <sup>M#</sup>	<1	<1	<1					mg/kg	1	A-T-042sTCN
Arsenic <sub>D</sub> <sup>M#</sup>	5	8	30					mg/kg	1	A-T-024s
Cadmium <sub>D</sub> <sup>M#</sup>	0.7	0.7	1.0					mg/kg	0.5	A-T-024s
Copper <sub>D</sub> <sup>M#</sup>	34	32	134					mg/kg	1	A-T-024s
Chromium <sub>D</sub> <sup>M#</sup>	26	21	87					mg/kg	1	A-T-024s
Lead <sub>D</sub> <sup>M#</sup>	41	41	135					mg/kg	1	A-T-024s
Mercury <sub>D</sub>	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel <sub>D</sub> <sup>M#</sup>	30	21	52					mg/kg	1	A-T-024s
Selenium <sub>D</sub> <sup>M#</sup>	1	<1	<1					mg/kg	1	A-T-024s
Zinc <sub>D</sub> <sup>M#</sup>	80	61	133					mg/kg	5	A-T-024s

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Depth to Top	0.30	0.30	0.30							
Depth To Bottom										
Date Sampled	12-Mar-24	12-Mar-24	12-Mar-24							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6AB	4A	4AB							
Asbestos in Soil (inc. matrix)										
Asbestos in soil <sup>#</sup>	Chrysotile	Chrysotile	Chrysotile					A-T-045		
Asbestos Matrix (visual) <sub>D</sub>	-	-	-					A-T-045		
Asbestos Matrix (microscope) <sub>D</sub>	Loose Fibres	Loose Fibres	Loose Fibres					A-T-045		
Asbestos ACM - Suitable for Water Absorption Test? <sub>D</sub>	N/A	N/A	N/A					A-T-045		
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) <sub>D</sub>	<0.001	0.002	0.009					% w/w	0.001	A-T-054

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Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6AB	4A	4AB							
PAH-16MS										
Acenaphthene <sub>A</sub> <sup>M#</sup>	0.06	0.03	1.06					mg/kg	0.01	A-T-019s
Acenaphthylene <sub>A</sub> <sup>M#</sup>	0.01	0.07	0.17					mg/kg	0.01	A-T-019s
Anthracene <sub>A</sub> <sup>M#</sup>	0.10	0.17	1.93					mg/kg	0.02	A-T-019s
Benzo(a)anthracene <sub>A</sub> <sup>M#</sup>	0.50	1.54	6.09					mg/kg	0.04	A-T-019s
Benzo(a)pyrene <sub>A</sub> <sup>M#</sup>	0.55	1.91	6.23					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene <sub>A</sub> <sup>M#</sup>	0.63	2.20	6.70					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene <sub>A</sub> <sup>M#</sup>	0.40	1.34	3.91					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene <sub>A</sub> <sup>M#</sup>	0.25	0.82	2.30					mg/kg	0.07	A-T-019s
Chrysene <sub>A</sub> <sup>M#</sup>	0.50	1.54	5.49					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene <sub>A</sub>	0.08	0.27	0.85					mg/kg	0.04	A-T-019s
Fluoranthene <sub>A</sub> <sup>M#</sup>	0.88	2.33	11.7					mg/kg	0.08	A-T-019s
Fluorene <sub>A</sub> <sup>M#</sup>	0.03	0.02	0.96					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene <sub>A</sub> <sup>M#</sup>	0.41	1.44	4.27					mg/kg	0.03	A-T-019s
Naphthalene <sub>A</sub> <sup>M#</sup>	<0.03	<0.03	0.34					mg/kg	0.03	A-T-019s
Phenanthrene <sub>A</sub> <sup>M#</sup>	0.44	0.51	6.26					mg/kg	0.03	A-T-019s
Pyrene <sub>A</sub> <sup>M#</sup>	0.81	2.24	10.6					mg/kg	0.07	A-T-019s
Total PAH-16MS <sub>A</sub>	5.65	16.4	68.9					mg/kg	0.01	A-T-019s

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Client Sample ID	WS01	WS02	WS03										
Depth to Top	0.30	0.30	0.30										
Depth To Bottom													
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Sample Type	SOIL - ES	SOIL - ES	SOIL - ES										
Sample Matrix Code	6AB	4A	4AB										
TPH CWG with Clean Up													
Ali >C5-C6 <sub>A</sub>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s			
Ali >C6-C8 <sub>A</sub>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s			
Ali >C8-C10 <sub>A</sub>	1	<1	<10					mg/kg	1	A-T-055s			
Ali >C10-C12 <sub>A</sub> <sup>M#</sup>	1	<1	<10					mg/kg	1	A-T-055s			
Ali >C12-C16 <sub>A</sub> <sup>M#</sup>	<1	<1	<10					mg/kg	1	A-T-055s			
Ali >C16-C21 <sub>A</sub> <sup>M#</sup>	<1	1	18					mg/kg	1	A-T-055s			
Ali >C21-C35 <sub>A</sub> <sup>M#</sup>	9	7	541					mg/kg	1	A-T-055s			
Total Aliphatics <sub>A</sub>	11	8	559					mg/kg	1	Calc-As Recd			
Aro >C5-C7 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s			
Aro >C7-C8 <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s			
Aro >C8-C10 <sub>A</sub>	2	2	<10					mg/kg	1	A-T-055s			
Aro >C10-C12 <sub>A</sub>	1	<1	<10					mg/kg	1	A-T-055s			
Aro >C12-C16 <sub>A</sub>	2	2	52					mg/kg	1	A-T-055s			
Aro >C16-C21 <sub>A</sub> <sup>M#</sup>	10	8	156					mg/kg	1	A-T-055s			
Aro >C21-C35 <sub>A</sub> <sup>M#</sup>	40	50	467					mg/kg	1	A-T-055s			
Total Aromatics <sub>A</sub>	56	62	674					mg/kg	1	Calc-As Recd			
TPH (Ali & Aro >C5-C35) <sub>A</sub>	67	70	1230					mg/kg	1	Calc-As Recd			
BTEX - Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s			
BTEX - Toluene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s			
BTEX - Ethyl Benzene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s			
BTEX - m & p Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s			
BTEX - o Xylene <sub>A</sub> <sup>#</sup>	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s			
MTBE <sub>A</sub> <sup>#</sup>	<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 **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.  
 Analytical results reflect the quality of the sample at the time of analysis only.  
 Opinions and Interpretations expressed are outside our scope of accreditation.  
 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 Analysis Dates

Lab Sample ID	24/02940/1	24/02940/2	24/02940/3
Client Sample No	1	2	3
Client Sample ID/Depth	WS01 0.30m	WS02 0.30m	WS03 0.30m
Date Sampled	12/03/24	12/03/24	12/03/24
A-T-019s	04/04/2024	04/04/2024	04/04/2024
A-T-022s	27/03/2024	27/03/2024	27/03/2024
A-T-024s	03/04/2024	03/04/2024	03/04/2024
A-T-042sFCN	26/03/2024	26/03/2024	26/03/2024
A-T-042sTCN	26/03/2024	26/03/2024	26/03/2024
A-T-044	05/04/2024	05/04/2024	05/04/2024
A-T-045	22/03/2024	22/03/2024	22/03/2024
A-T-054	03/04/2024	03/04/2024	03/04/2024
A-T-055s	27/03/2024	27/03/2024	27/03/2024
Calc-As Recd	27/03/2024	27/03/2024	27/03/2024

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**