



Phase IV Validation Completion Report

At

Prospect House School
Blackley

Client: Tilbury Douglas

Reference: 30186-SUT-ZZ-00-RP-G-704-0001

Date: November 2021

Liverpool Head Office
18-20 Harrington Street
Liverpool
L2 9QA

T: 0151 227 3155
E: enquiries@sutcliffe.co.uk
www.sutcliffe.co.uk

Manchester Office
T: 0161 817 5180

North Wales Office
T: 01978 664 071

London Office
T: 020 8016 4320

 @Sutcliffe_1985

 Sutcliffe1985

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SUTCLIFFE INVESTIGATIONS

Phase III Remediation & Validation Strategy Proposals

Document Control Sheet

Report Reference: 30186-SUT-ZZ-00-RP-G-704-0001

Issue: P01 Date: November 2021

Prepared by:

Checked/Approved by:

Name:	D Bowen	Name:	W G Baldwin	
Title:	Senior Environmental Scientist	Title:	Director	
Qualifications:	BSc (Hons) FGS	Qualifications:	BEng (Hons) CEng MStructE AIEMA	

Revision History:

Rev.	Date	Description	Prepared	Checked	Approved
P01	November 2021	Final Report	DB	WGB	WGB
Signatures:					

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1 Introduction

1.1 Terms of Reference

Sutcliffe Investigations have carried out remediation validation works on behalf of Tilbury Douglas in order to enable contaminated land conditions to be removed at land at the Prospect House, Bank House Road, Blackley, Manchester M9 8LT.

The present document outlines Sutcliffe Investigations validation works including:

-  Gas Membrane Validation
-  Topsoil Sampling
-  Depth Validation

Additionally, it also includes the third-party validation works undertaken on the gas membrane installation by MEC Environmental Ltd.

1.2 Previous Works

This report should be read in conjunction with:

-  Phase 1 Geo-Environmental Desk Study Report produced by HSP Consulting (Report Reference C2729 / PI-Hillside Centre) – February 2018.
-  Phase II Geo-Environmental Assessment Report produced by HSP Consulting (Report Reference C2729 / PII-Hillside Centre) – April 2018 HSP Consulting.
-  Geo-Environmental Investigation produced by Sinclair Knight Merz (SKM) for the adjacent Co-Operative Academy – November 2008 – Reviewed for the purpose of ground gas risk assessment.
-  Phase II Interpretive Ground Assessment (Report Reference 30186LG – R02 REV B) reported April 2020.
-  Phase III Remediation & Validation Proposals at Prospect House School (Report Reference 30186LG-R03 Rev A) reported April 2020

Based on the findings of the ground assessment, the chemical testing indicated elevated levels of Arsenic, Lead, Cyanide, C21 to C35 Aromatic, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenzo(ah)anthracene. Asbestos was also identified within 4No. sampling locations.

Statistical analysis carried out indicated site wide contamination and therefore the need for site wide remediation. This will comprise a 450mm clean capping system to be emplaced in all soft landscaping areas as part of the development works, which is to be underlain by a geo-grid membrane. This will break any remaining potential contaminant linkages.

Levels beneath proposed areas of hardstanding will be as dictated by the adopted foundation solution.

Based on the quantitative and qualitative assessment of the risk associated with ground gas the site should be classified as Characteristic Situation 4, indicating that special protective measures are required.

1.3 Objectives

Therefore, the aim of this document is to provide evidence that methodologies and protocols have been adhered to as detailed within the Phase III Remediation and Validation Proposals, dated April 2020, thus ensuring risks to identified receptors have been mitigated. This principally relates to the imported topsoil material for landscaped areas and the gas membrane installation in the new buildings.

1.4 Development Proposal

The proposal layout is for the construction of a new SEN teaching facility is proposed which is to include an indoor swimming pool. Externally, soft and hardstanding areas, external individual play areas with artificial grass and a Multi-Use Games Area (MUGA) are proposed on the site. Based on discussions with the client, soft landscaping is proposed, with artificial surfacing proposed immediately adjacent to the classrooms, with soft landscaping proposed elsewhere. The proposed plan is shown on Drawing Number FS0831-JMA-01-00-DR-A-00-0002 produced by jm architects.

2 Risk Assessment (Pre-Remedial Works)

2.1 Long Term Human Health

Following intrusive site investigation works completed by Sutcliffe Investigations (*reported in April 2020*) analytical results indicated that there were site wide elevated concentrations of contamination on site that would represent a risk to identified receptors (site end & adjacent users, construction workers & controlled waters).

A full assessment of risks to long term human health is presented in Sutcliffe's "*Phase II Interpretive Ground Assessment – April 2020*".

2.2 Ground Gas Risk Assessment

Elevated levels of carbon dioxide (up to 11.6%) and methane (up to 0.2%) concentrations were recorded before the fire. In accordance with CIRIA C665 the ground gas monitoring results indicate that the site has a Gas Screening Value (GSV) of 0.0812 l/hr for carbon dioxide and 0.0014 l/hr for methane. This results in the site being classified as Characterisation Situation 2 for Carbon Dioxide and a Characterisation Situation 1 for Methane.

Additionally, samples were also collected from site for the purpose of forensic testing. Samples retrieved from site revealed an average TOC value of 3.78%. Using the Pragmatic Approach to Ground Gas Risk Assessment (RB17) the TOC and forensic testing has given a site wide average TOC value of 3.78% with the levels of TOC ranging from 0.88% to 7.43%. This classifies the site as a Characteristic Situation 3.

A review of HSPs Consulting classification revealed a Characteristic Situation 4, based on the GSV calculation. In light of this classification further investigation was undertaken to determine the ground gas classification of the adjacent school. Sinclair Knight Merz (SKM) carried out a PHII Geo-Environmental Investigation on the Co-Operative Academy adjacent to the site in November 2008, based on this report the adjacent site was also classified as a Characterisation Situation 4.

A full assessment of risks associated with ground gas is presented in Sutcliffe's "*Phase II Interpretive Ground Assessment – April 2020*".

2.3 Controlled Waters

Exceedances of DWS and EQS screening criteria are not considered significant given the likely depth to groundwater, effects of natural attenuation, lack of nearby groundwater abstractions and the absence of any surface water courses that could be in continuity with ground water beneath the site.

A full assessment of risks to controlled waters is presented in Sutcliffe's "*Phase II Interpretive Ground Assessment – April 2020*".

3 Remediation Works

3.1 Introduction

Based on the findings of the ground assessment, completed for the site (reported in April 2020), and with the exception of risks to receptors (construction workers & adjacent site users) associated with the site wide contamination, in addition to risks associated with ground gas, no other source-pathway-receptor linkages have been identified.

The site wide contamination was removed to achieve formation levels and a clean 450m capping system, underlain by a geotextile membrane was installed in all soft landscaping areas. In regard to ground gas risks, validated protection measures have been installed.

3.2 Remedial Works

Imported Material

Approximately 300m³ of clean topsoil was imported onto site for the landscaped areas. A recommended depth of 450mm was emplaced in all landscaped areas to create a suitable growth medium underlain by a geotextile membrane forming a barrier to the underlying contamination.

Depth validation was carried out and it was noted that a minimum depth of 450mm was emplaced on site.

A photographic log for the installation of the geotextile membrane and depth validation is presented as *Appendix A*.

Sampling was undertaken to ensure the material was suitable and “fit for purpose” at a sampling rate of 1 sample per 50m³ of material. Therefore 6 samples were recovered from the material on site, as a minimum requirement, and sampled against the following guidance values:

-  LQM Suitable 4 Use Levels (S4ULs).
-  ATRISK Soil Screening Values (SSVs) and CL:AIRE Generic Assessment Criteria (GACs) - Cyanide
-  Category 4 Screening Values – Lead

The chemical results for the topsoil were compared against the relevant GACs for residential (with plant uptake) at 2.5% soil organic matter (SOM). No elevated levels of contamination or Asbestos have been identified.

The analytical results certificates and screening spreadsheet are presented in *Appendix B*.

Gas Protection Measures

A gas membrane was required for the new development and required to meet a Characteristic Situation 4 classification. This required high-level gas protection measures, comprising a membrane and ventilated sub-floor void to create a permeability contrast to limit the ingress of gas into buildings.

Foundation design drawings are presented in *Appendix C*.

Validation of the membrane installation was carried out for all areas of the building by MEC Environmental Ltd on to ensure the installation was carried out to the correct standard.

A copy of the MEC Environmental Ltd Gas Membrane Installation Validation Report is presented as *Appendix D*.

3.3 Site Variations

No variations have been noted on site during the course of the remediation works.

4 Conclusions

Sutcliffe Investigations can confirm site works have been carried out on site as detailed in this report. A suitable gas membrane has been installed in all buildings and imported topsoil and subsoil for use in landscaped areas has been sampled and validated and Sutcliffe can confirm that the material is suitable for its proposed use on site.

Sutcliffe can confirm that the site does not pose a significant risk to identified receptors (site users, construction works, adjacent site users & controlled waters).

Appendix A – Depth Validation Photographic Log



Plate 1: View showing the installation of the geotextile membrane beneath the landscaped areas.



Plate 2: View showing the installation of the geotextile membrane beneath the landscaped areas.



Plate 3: View showing the installation of the geotextile membrane beneath the landscaped areas.



Plate 4: View showing location of depth validation pit for TS1/SS1.



Plate 5: View showing depth of imported material at TS1/SS1.



Plate 6: View down hole at TS1/SS1.



Plate 7: View showing location of depth validation pit for TS2/SS2.



Plate 8: View showing depth of imported material at TS2/SS2.



Plate 9: View down hole at TS2/SS2.



Plate 10: View showing location of depth validation pit for TS4/SS4.



Plate 11: View showing depth of imported material at TS4/SS4.



Plate 12: View down hole at TS4/SS4.



Plate 13: View showing location of depth validation pit for TS3/SS3.



Plate 14: View showing depth of imported material at TS3/SS3.



Plate 15: View down hole at TS3/SS3.

Appendix B – Analytical Certificates & Screening Tables (Imported)

Job Number:	30186
Job Name:	Prospect House, Manchester
Proposed Land Use:	Residential With Plant Uptake
S.O.M.	2,5

	Below Limit of Detection
	Above Threshold
n/t	Not Tested
NAD	No Asbestos Detected

Sample ID	TS1	TS2	TS3	SS5	SS2	SS3
Depth Top	0.1	0.1	0.1	0.3	0.3	0.3
Depth Bottom	0.3	0.2	0.2	0.4	0.5	0.5
Date Sampled	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21
Threshold						

Contaminant	Units	Source	Value						
Arsenic (Total)	mg/kg	LQM S4UL	37	2	2	2	2	<1	<1
Boron (Soluble)	mg/kg	LQM S4UL	290	1.1	<1.0	<1.0	1.2	<1.0	<1.0
Cadmium (Total)	mg/kg	LQM S4UL	11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium III	mg/kg	LQM S4UL	910	6	6	6	7	12	8
Chromium VI	mg/kg	LQM S4UL	6	<1	<1	<1	<1	<1	<1
Copper (Total)	mg/kg	LQM S4UL	2400	10	8	8	7	6	5
Lead (Total)	mg/kg	C4SL	200	15	15	15	10	4	6
Mercury (Total)	mg/kg	LQM S4UL	40	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Nickel (Total)	mg/kg	LQM S4UL	180	5	6	5	7	9	7
Selenium (Total)	mg/kg	LQM S4UL	250	<1	<1	1	<1	<1	<1
Zinc (Total)	mg/kg	LQM S4UL	3700	32	28	30	24	15	16
Cyanide (Total)	mg/kg	ATKINS	34	<1	<1	<1	<1	<1	<1
Phenols (Total)	mg/kg	LQM S4UL	550	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Organic matter	%	LQM S4UL	N/a	4.1	4.9	3.9	1.8	0.3	0.5
Sulphate (Acid Soluble)	mg/kg	LQM S4UL	N/a	<200	<200	<200	<200	<200	<200
Sulphate as Water Soluble	g/l	LQM S4UL	N/a	<0.01	<0.01	0.04	<0.01	<0.01	<0.01
Sulphide	mg/kg	LQM S4UL	N/a	9	7	<5	<5	<5	<5
pH	pH units	LQM S4UL	N/a	8.49	8.52	8.09	8.27	8.07	8.01
Sulphur (Elemental)	mg/kg	LQM S4UL	N/a	5	<5	7	7	<5	<5
Asbestos									
Asbestos in soil	N/a		N/a	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Matrix (microscope)	N/a		N/a	-	-	-	-	-	-
ACM - Suitable for Water Absorption Test?	N/a		N/a	N/A	N/A	N/A	N/A	N/A	N/A
Asbestos in soil % composition	% w/w		0.001	n/t	n/t	n/t	n/t	n/t	n/t
TPH Suite									
TPH (Total)	mg/kg		N/a	139	169	123	2	11	15
Total Aliphatic	mg/kg		N/a	21	27	21	<1	2	2
>C5 to C6 aliphatic	mg/kg	LQM S4UL	78	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C6 to C8 aliphatic	mg/kg	LQM S4UL	230	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C8 to C10 aliphatic	mg/kg	LQM S4UL	65	<1	<1	<1	<1	<1	<1
>C10 to C12 aliphatic	mg/kg	LQM S4UL	330	<1	<1	<1	<1	<1	<1
>C12 to C16 aliphatic	mg/kg	LQM S4UL	2400	<1	<1	<1	<1	<1	<1
>C16 to C35 aliphatic	mg/kg	LQM S4UL	92000	19	25	19	<1	2	2
>C35 to C44 aliphatic	mg/kg	LQM S4UL	92000	2	2	2	<1	<1	<1
Total Aromatic	mg/kg		N/a	117	141	102	2	9	12
>C5 to C7 aromatic (Benzene)	mg/kg	LQM S4UL	140	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C7 to C8 aromatic (Toluene)	mg/kg	LQM S4UL	290	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C8 to C10 aromatic	mg/kg	LQM S4UL	83	<1	<1	<1	<1	<1	<1
>C10 to C12 aromatic	mg/kg	LQM S4UL	180	<1	3	5	<1	<1	1
>C12 to C16 aromatic	mg/kg	LQM S4UL	330	3	8	8	<1	<1	1
>C16 to C21 aromatic	mg/kg	LQM S4UL	540	7	97	68	2	7	8
>C21 to C35 aromatic	mg/kg	LQM S4UL	1500	83	33	21	<1	2	2
>C35 to C44 aromatic	mg/kg	LQM S4UL	1500	25	n/t	n/t	n/t	n/t	n/t
Aliphatic + Aromatic EC >44-70	mg/kg	LQM S4UL	N/a	n/t	n/t	n/t	n/t	n/t	n/t
BTEX Suite									
benzene	mg/kg	LQM S4UL	0.17	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
toluene	mg/kg	LQM S4UL	290	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
ethylbenzene	mg/kg	LQM S4UL	110	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
m&p Xylene	mg/kg	LQM S4UL	130	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o-Xylene	mg/kg	LQM S4UL	140	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH Suite									
naphthalene	mg/kg	LQM S4UL	5.6	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
acenaphthylene	mg/kg	LQM S4UL	420	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
acenaphthene	mg/kg	LQM S4UL	510	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
fluorene	mg/kg	LQM S4UL	400	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
phenanthrene	mg/kg	LQM S4UL	220	<0.03	0.05	0.05	<0.03	0.03	<0.03
anthracene	mg/kg	LQM S4UL	5400	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
fluoranthene	mg/kg	LQM S4UL	560	0.11	0.22	0.15	<0.08	<0.08	<0.08
pyrene	mg/kg	LQM S4UL	1200	0.09	0.18	0.16	<0.07	<0.07	<0.07
benzo(a)anthracene	mg/kg	LQM S4UL	11	0.07	0.08	0.08	<0.04	<0.04	<0.04
chrysene	mg/kg	LQM S4UL	22	0.09	0.1	0.1	<0.06	<0.06	<0.06
benzo(b)fluoranthene	mg/kg	LQM S4UL	3.3	0.08	0.09	0.09	<0.05	<0.05	<0.05
benzo(k)fluoranthene	mg/kg	LQM S4UL	93	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
benzo(a)pyrene	mg/kg	LQM S4UL	2.7	0.04	0.07	0.08	<0.04	<0.04	<0.04
dibenzo(ah)anthracene	mg/kg	LQM S4UL	0.28	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
benzo(ghi)perylene	mg/kg	LQM S4UL	340	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
indeno(123cd)pyrene	mg/kg	LQM S4UL	36	0.03	0.06	0.06	<0.03	<0.03	<0.03

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/08459
Issue Number: 1 **Date:** 13 August, 2021

Client: Sutcliffe
18-20 Harrington Street
Liverpool
L2 9QA

Project Manager: (Use) D Evans; D Bowen; A Tosh; W Baldwin/(Use) Jo
Project Name: Prospect House, Manchester
Project Ref: 30186LG
Order No: 8704
Date Samples Received: 04/08/21
Date Instructions Received: 05/08/21
Date Analysis Completed: 12/08/21

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Richard Wong
Client Manager

Envirolab Job Number: 21/08459

Client Project Name: Prospect House, Manchester

Client Project Ref: 30186LG

Lab Sample ID	21/08459/1	21/08459/2	21/08459/3	21/08459/4	21/08459/5	21/08459/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS1	TS2	TS3	SS5	SS2	SS3				
Depth to Top	0.1	0.1	0.1	0.3	0.3	0.3				
Depth To Bottom	0.3	0.2	0.2	0.4	0.5	0.5				
Date Sampled	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4AE	4AE	4AE	4A	4A	4A				
% Moisture at <40C _A	10.5	14.8	11.6	11.2	9.1	11.4		% w/w	0.1	A-7-044
% Stones >10mm _A	<0.1	2.8	<0.1	1.6	0.8	<0.1		% w/w	0.1	A-7-044
pH _D ^{MS}	8.49	8.52	8.09	8.27	8.07	8.01		pH	0.01	A-7-031s
Sulphate (water sol 2:1) _D ^{MS}	<0.01	<0.01	0.04	<0.01	<0.01	<0.01		g/l	0.01	A-7-026s
Sulphate (acid soluble) _D ^{MS}	<200	<200	<200	<200	<200	<200		mg/kg	200	A-7-028s
Cyanide (total) _A ^{MS}	<1	<1	<1	<1	<1	<1		mg/kg	1	A-7-042aTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		mg/kg	0.2	A-7-050s
Sulphide _A	9	7	<5	<5	<5	<5		mg/kg	5	A-7-033s
Sulphur (elemental) _D ^{MS}	5	<5	7	7	<5	<5		mg/kg	5	A-7-029s
Organic matter _D ^{MS}	4.1	4.9	3.9	1.8	0.3	0.5		% w/w	0.1	A-7-032 OM
Arsenic _D ^{MS}	2	2	2	2	<1	<1		mg/kg	1	A-7-024s
Boron (water soluble) _D	1.1	<1.0	<1.0	1.2	<1.0	<1.0		mg/kg	1	A-7-027s
Cadmium _D ^{MS}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		mg/kg	0.5	A-7-024s
Copper _D ^{MS}	10	8	8	7	6	5		mg/kg	1	A-7-024s
Chromium _D ^{MS}	6	6	6	7	12	8		mg/kg	1	A-7-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1		mg/kg	1	A-7-040s
Chromium (trivalent)	6	6	6	7	12	8		mg/kg	1	C-18:
Lead _D ^{MS}	15	15	15	10	4	6		mg/kg	1	A-7-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17		mg/kg	0.17	A-7-024s
Nickel _D ^{MS}	5	6	5	7	9	7		mg/kg	1	A-7-024s
Selenium _D ^{MS}	<1	<1	1	<1	<1	<1		mg/kg	1	A-7-024s
Zinc _D ^{MS}	32	28	30	24	15	16		mg/kg	5	A-7-024s

Envirolab Job Number: 21/08459

Client Project Name: Prospect House, Manchester

Client Project Ref: 30186LG

Lab Sample ID	21/08459/1	21/08459/2	21/08459/3	21/08459/4	21/08459/5	21/08459/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS1	TS2	TS3	SS5	SS2	SS3				
Depth to Top	0.1	0.1	0.1	0.3	0.3	0.3				
Depth To Bottom	0.3	0.2	0.2	0.4	0.5	0.5				
Date Sampled	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4AE	4AE	4AE	4A	4A	4A				
Asbestos in Soil (inc. matrix)										
Asbestos in soil ⁰	NAD	NAD	NAD	NAD	NAD	NAD				A=T-045
Asbestos Matrix (microscope) ₀	-	-	-	-	-	-				A=T-045
Asbestos ACM - Suitable for Water Absorption Test? ₀	N/A	N/A	N/A	N/A	N/A	N/A				A=T-045

Envirolab Job Number: 21/08459

Client Project Name: Prospect House, Manchester

Client Project Ref: 30186LG

Lab Sample ID	21/08459/1	21/08459/2	21/08459/3	21/08459/4	21/08459/5	21/08459/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS1	TS2	TS3	SS5	SS2	SS3				
Depth to Top	0.1	0.1	0.1	0.3	0.3	0.3				
Depth To Bottom	0.3	0.2	0.2	0.4	0.5	0.5				
Date Sampled	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4AE	4AE	4AE	4A	4A	4A				
PAH-16MS										
Acenaphthene _A ^{MS}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-74019a
Acenaphthylene _A ^{MS}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-74019a
Anthracene _A ^{MS}	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		mg/kg	0.02	A-74019a
Benzo(a)anthracene _A ^{MS}	0.07	0.08	0.08	<0.04	<0.04	<0.04		mg/kg	0.04	A-74019a
Benzo(a)pyrene _A ^{MS}	0.04	0.07	0.08	<0.04	<0.04	<0.04		mg/kg	0.04	A-74019a
Benzo(b)fluoranthene _A ^{MS}	0.08	0.09	0.09	<0.05	<0.05	<0.05		mg/kg	0.05	A-74019a
Benzo(ghi)perylene _A ^{MS}	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		mg/kg	0.05	A-74019a
Benzo(k)fluoranthene _A ^{MS}	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		mg/kg	0.07	A-74019a
Chrysene _A ^{MS}	0.09	0.10	0.10	<0.06	<0.06	<0.06		mg/kg	0.06	A-74019a
Dibenzo(ah)anthracene _A ^{MS}	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		mg/kg	0.04	A-74019a
Fluoranthene _A ^{MS}	0.11	0.22	0.15	<0.08	<0.08	<0.08		mg/kg	0.08	A-74019a
Fluorene _A ^{MS}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A-74019a
Indeno(123-cd)pyrene _A ^{MS}	0.03	0.06	0.06	<0.03	<0.03	<0.03		mg/kg	0.03	A-74019a
Naphthalene _A ^{MS}	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		mg/kg	0.03	A-74019a
Phenanthrene _A ^{MS}	<0.03	0.05	0.05	<0.03	0.03	<0.03		mg/kg	0.03	A-74019a
Pyrene _A ^{MS}	0.09	0.18	0.16	<0.07	<0.07	<0.07		mg/kg	0.07	A-74019a
Total PAH-16MS _A ^{MS}	0.51	0.85	0.77	<0.08	<0.08	<0.08		mg/kg	0.01	A-74019a

Envirolab Job Number: 21/08459

Client Project Name: Prospect House, Manchester

Client Project Ref: 30186LG

Lab Sample ID	21/08459/1	21/08459/2	21/08459/3	21/08459/4	21/08459/5	21/08459/6		Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TS1	TS2	TS3	SS5	SS2	SS3				
Depth to Top	0.1	0.1	0.1	0.3	0.3	0.3				
Depth To Bottom	0.3	0.2	0.2	0.4	0.5	0.5				
Date Sampled	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21	04-Aug-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	4AE	4AE	4AE	4A	4A	4A				
TPH UKCWG										
Ali >C5-C6 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a
Ali >C6-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a
Ali >C8-C10 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A/T4055a
Ali >C10-C12 _A ^{MM}	<1	<1	<1	<1	<1	<1		mg/kg	1	A/T4055a
Ali >C12-C16 _A ^{MM}	<1	<1	<1	<1	<1	<1		mg/kg	1	A/T4055a
Ali >C16-C21 _A ^{MM}	2	3	2	<1	<1	<1		mg/kg	1	A/T4055a
Ali >C21-C35 _A ^{MM}	17	22	17	<1	2	2		mg/kg	1	A/T4055a
Ali >C35-C44 _A	2	2	2	<1	<1	<1		mg/kg	1	A/T4055a
Total Aliphatics _A	21	27	21	<1	2	2		mg/kg	1	A/T4055a
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a
Aro >C8-C10 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A/T4055a
Aro >C10-C12 _A	<1	<1	<1	<1	<1	<1		mg/kg	1	A/T4055a
Aro >C12-C16 _A	3	3	5	<1	<1	1		mg/kg	1	A/T4055a
Aro >C16-C21 _A ^{MM}	7	8	8	<1	<1	1		mg/kg	1	A/T4055a
Aro >C21-C35 _A ^{MM}	83	97	68	2	7	8		mg/kg	1	A/T4055a
Aro >C35-C44 _A	25	33	21	<1	2	2		mg/kg	1	A/T4055a
Total Aromatics _A	117	141	102	2	9	12		mg/kg	1	A/T4055a
TPH (Ali & Aro >C5-C44) _A	139	169	123	2	11	15		mg/kg	1	A/T4055a
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		mg/kg	0.01	A/T4022a