

**ABROOK ARMS,
191 HAREFIELD ROAD,
UXBRIDGE,
UB9 1PW**

Validation and Completion Report

Client
Frendcastle Management

Report No. 5359

29th March 2021



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**ABROOK ARMS,
191 HAREFIELD ROAD,
UXBRIDGE,
UB9 1PW**

**Validation and Completion
Report**

Synopsis

A Sitecheck Desktop Environmental Report ^[1] and a Geoenvironmental Intrusive survey^[2] have been carried out at The former Abrook Arms Public House in Uxbridge on the instructions of Frendcastle Management.

The purpose of this validation and completion report is to provide the information to confirm works on site have been carried out in accordance with the above reports.

The results indicate that the site is suitable for use.

1

Previous investigations and strategy

The previous investigation at this site^[2] has generally found the site to be suitable for its proposed use. Some minor contamination was highlighted by the survey but this was removed as part of the general works where in proposed landscaped areas.

In the soft landscaped areas, clean certified soil was required for the imported soils and the certificate from the soil supplier confirming that it's suitable for use is at Appendix A. All the results are at concentrations appropriate to the proposed end use of the site.

A site plan showing the landscaped areas and the validation locations is at Figure 1 of Appendix C.

In respect clean imported material has been used. This has been tested, at the majority of locations, where it has been placed; apart from one stockpile to be used for landscaping at the front of the site. The results are at Appendix B and show that the results for all determinands are below appropriate trigger concentrations and are thus suitable for use.

2

Ground conditions

2.1

Stratigraphy

The stratigraphy of the site as revealed during the redevelopment is consistent with that found in the survey. No visual or olfactory evidence of contamination was observed.

3

Discussion validation

As is good practice, the site agent was required to inform us if any possible contamination was found. No such notification was received; as detailed in Appendix D

The site has been investigated to a suitable extent and appropriate risk assessments undertaken.

No additional contamination has been highlighted Imported topsoil has been used in landscaped areas and are formed from certified imported soils, validated on site and the development is considered suitable for its proposed use.

A M Smith
AP GEOTECHNICS LTD.
29th March 2021

This report has been prepared for the sole and specific use of Frenndcastle Management. for the purpose of the proposed development at Abrook Court and should not be relied upon by any third party. Any other persons who use any information contained herein without the written permission of AP GEOTECHNICS LTD. do so at their own risk. The copyright to this report remains the property of AP GEOTECHNICS LTD.

References

- [1] Report Reference: SAS_85987451_I_I,
Sitecheck Asses
191 Harefield Road, Uxbridge. Middlesex, UB8 1PW
Argyll Environmental, 5th May 2016
- [2] Report No. 4732
Geoenvironmental Investigation
Abrook Arms, 191 Harefield Road, Uxbridge UB9 1PW
AP Geotechnics Ltd., 16 November 2017

APPENDICES

A Topsoil Analysis Report

B Laboratory Test Results

Contaminants in Soil

Original Laboratory Test Certificates

C Figure

Figure I: Validation Sample Locations

D Client Declaration

APPENDIX A

TOPSOIL ANALYSIS REPORT



Final Report

Report No.:	20-34138-1		
Initial Date of Issue:	24-Dec-2020		
Client	Springbridge Direct Ltd		
Client Address:	Oxford Road Denham Middlesex UB9 4DF		
Contact(s):	Katie East Tom Hawkins		
Project	Springbridge Yard		
Quotation No.:	Q20-21261	Date Received:	11-Dec-2020
Order No.:	105715	Date Instructed:	11-Dec-2020
No. of Samples:	1		
Turnaround (Wkdays):	10	Results Due:	24-Dec-2020
Date Approved:	24-Dec-2020		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: Springbridge Yard

Client: Springbridge Direct Ltd	Chemtest Job No.:				20-34138
Quotation No.: Q20-21261	Chemtest Sample ID.:				1112427
	Client Sample ID.:				TOPSOIL
	Sample Type:				SOIL
	Date Sampled:				08-Dec-2020
	Asbestos Lab:				DURHAM
Determinand	Accred.	SOP	Units	LOD	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-
Moisture	N	2030	%	0.020	13
Soil Colour	N	2040		N/A	Brown
Other Material	N	2040		N/A	None
Soil Texture	N	2040		N/A	Sandy Loam
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	1.3
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50
Arsenic	M	2450	mg/kg	1.0	12
Cadmium	M	2450	mg/kg	0.10	0.20
Chromium	M	2450	mg/kg	1.0	12
Copper	M	2450	mg/kg	0.50	13
Mercury	M	2450	mg/kg	0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	11
Lead	M	2450	mg/kg	0.50	19
Selenium	M	2450	mg/kg	0.20	< 0.20
Zinc	M	2450	mg/kg	0.50	46
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Naphthalene	N	2700	mg/kg	0.010	< 0.010

Results - Soil

Project: Springbridge Yard

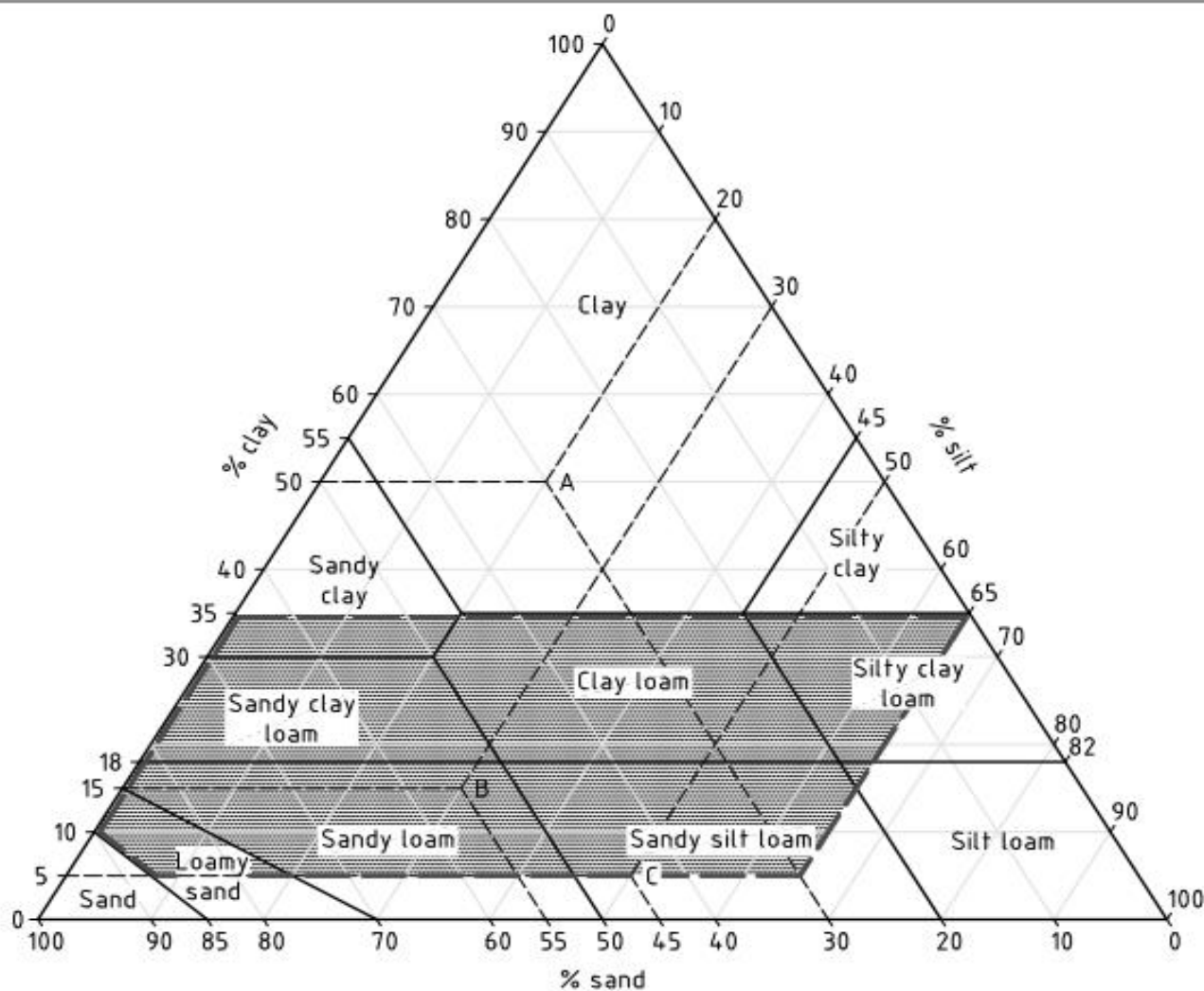
Client: Springbridge Direct Ltd		Chemtest Job No.:		20-34138	
Quotation No.: Q20-21261		Chemtest Sample ID.:		1112427	
		Client Sample ID.:		TOPSOIL	
		Sample Type:		SOIL	
		Date Sampled:		08-Dec-2020	
		Asbestos Lab:		DURHAM	
Determinand	Accred.	SOP	Units	LOD	
Acenaphthylene	N	2700	mg/kg	0.010	< 0.010
Acenaphthene	N	2700	mg/kg	0.010	< 0.010
Fluorene	N	2700	mg/kg	0.010	< 0.010
Phenanthrene	N	2700	mg/kg	0.010	1.0
Anthracene	N	2700	mg/kg	0.010	0.12
Fluoranthene	N	2700	mg/kg	0.010	0.26
Pyrene	N	2700	mg/kg	0.010	0.37
Benzo[a]anthracene	N	2700	mg/kg	0.010	0.89
Chrysene	N	2700	mg/kg	0.010	0.42
Benzo[b]fluoranthene	N	2700	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2700	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2700	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2700	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2700	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2700	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2700	mg/kg	0.20	3.1
Benzene	M	2760	µg/kg	1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0
Total Phenols	M	2920	mg/kg	0.30	< 0.30

Results - Topsoil Report

BS3882:2015

Chemtest Job No.: 20-34138
 Chemtest Sample ID.: 1112427
 Client Sample Ref.:
 Sample Location:
 Client Sample ID.: TOPSOIL
 Top Depth (m):
 Bottom Depth (m):
 Date Sampled: 08-Dec-2020
 Time Sampled:

Parameter	Units	Multipurpose Range	Result	Compliant with Multipurpose Range? (Y/N)	Compliant with Specific Purpose Range? (Y/N)		
Texture					Acid	Low F	Calc.
Clay content	%		5.0				
Silt content	%		10				
Sand content	%		85				
Soil texture class		See Attached Chart	Sandy Loam	YES			
Mass Loss on Ignition							
Clay 5-20%		3.0-20	5.8	YES	YES	YES	YES
Clay 20-35%		5.0-20					
Stone Content	% m/m						
>2mm		0-30	18	YES			
>20mm		0-10	< 0.020	YES			
>50mm		0	< 0.020	YES			
Soil pH value		5.5-8.5	8.4	YES	NO	YES	YES
Carbonate (Calcareous only)	%		1.0				YES
Electrical Conductivity	µS/cm	If >3300 do ESP	2900	YES			
Available Nutrient Content							
Nitrogen %		>0.15	0.16	YES	YES		YES
Extractable phosphorus	mg/l	16-140	57	YES	YES	NO	YES
Extractable potassium	mg/l	121-1500	1500	YES	YES		YES
Extractable magnesium	mg/l	51-600	310	YES	YES		YES
Carbon : Nitrogen Ratio		<20:1	18/1	YES	N/A	N/A	N/A
Exchangeable sodium	%	<15	7.4				
Available Calcium	mg/l		2700				
Available Sodium	mg/l		360				
Phytotoxic Contaminants (by soil pH)		< 6.0	6.0-7.0	> 7.0			
Zinc (Nitric Acid extract)	mg/kg	<200	<200	<300	34	YES	
Copper (Nitric Acid extract)	mg/kg	<100	<135	<200	12	YES	
Nickel (Nitric Acid extract)	mg/kg	<60	<75	<110	9.5	YES	
Visible Contaminants	% mm						
>2mm		<0.5	0.000	YES			
..... of which plastics		<0.25	0.000	YES			
..... man-made sharps		zero in 1kg	0.000	YES			

Texture Classification Chart**Key**

Area within which the texture of topsoil is required to fall

NOTE Examples of textural classification are as follows.

- Soil A with 30% sand, 20% silt and 50% clay is in the "clay" textural class.
- Soil B with 55% sand, 30% silt and 15% clay is in the "sandy loam" textural class.
- Soil C with 45% sand, 50% silt and 5% clay is in the "sandy silt loam" textural class.

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Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2115	Total Nitrogen in Soils	Nitrogen	Determination by elemental analyser
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2260	Carbonate	Carbonate	Titration
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2400	Cations	Cations	ICP-MS
2420	Phosphate	Phosphate	Spectrophotometry - Discrete analyser
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2620	LOI 440	LOI 440 Trommel Fines	Determination of the proportion by mass that is lost from a soil by ignition at 440°C.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

APPENDIX B

LABORATORY TEST RESULTS

CONTAMINANTS IN SOIL

Project: ABROOK ARMS, 191 HAREFIELD ROAD, UXBRIDGE, UB8 1PW
Client: Frendcastle Management

Project No: 5359
Sheet No: 1/1

Location	Sample	Depth m	Arsenic	Barium	Beryllium	Boron water sol.	Cadmium	Chromium trivalent	Copper	Lead	Mercury inorganic	Nickel	Selenium	Vanadium	Zinc	TPH4 by GCMS					pH
																C10 - C20	C20 - C30	C30 - C40	Total		
V1			9.6	68	0.42	4.4	<0.2	18	30	54	<0.3	13	<1.0	24	100						
V2			11	74	0.45	5.1	0.4	18	28	63	<0.3	14	<1.0	27	100						
V3			12	79	0.52	4.5	0.5	21	35	91	<0.3	17	<1.0	27	130						
V4			11	95	0.47	2.8	0.5	31	34	120	<0.3	20	<1.0	26	130						
Stockpile			11	73	0.48	3.1	0.5	19	36	66	<0.3	17	<1.0	26	110						
S4UL ¹	residential ³		37		1.7	290	11	910	2400		40	180	250	410	3700						
	residential ^{13a}		40		1.7	11000	85	910	7100		56	180	430	1200	40000						
	commercial		640		12	240000	190	8600	68000		110	980	12000	9000	730000						
	POS resi*		79		2.2	46000	120	1500	12000		120	230	1100	2000	81000						
CLEA ²	residential		32						130				350								
	commercial		640						1800				13000								

Notes

- S4UL given at 6% soil organic matter
 - CLEA SGVs given at 6% soil organic matter
 - Residential with plant uptake
 - 3a. Residential without plant uptake
- © AP GEOTECHNICS LTD.

All units are mg/kg dry weight of soil unless otherwise stated, except for pH which is dimensionless

Exceptions denoted thus: Residential **XX**
XX

CONTAMINANTS IN SOIL

Project: ABROOK ARMS, 191 HAREFIELD ROAD, UXBRIDGE, UB8 1PW
 Client: Frenndcastle Management

Project No: 5359
 Sheet No: 1/1

Speciated Total Petroleum Hydrocarbons (Aromatic / Aliphatic Split with BTEX)											
Location Sample Depth, m	V1	V2	V3	V4	Stockpile				LQM/CIEH S4UL		
									residential	allotments	commercial
Determinand	Concentration, mg/kg										
Aromatic Hydrocarbons											
C5 - C7	<0.001	<0.001	<0.001	<0.001	<0.001				300	57	86000
>C7 - C8	<0.001	<0.001	<0.001	<0.001	<0.001				660	120	180000
>C8 - C10	<0.001	<0.001	<0.001	<0.001	<0.001				190	51	17000
>C10 - C12	1.7	2.4	<1.0	<1.0	<1.0				380	74	34000
>C12 - C16	6.6	7.9	<2.0	9.1	7.1				660	130	38000
>C16 - C21	13	12	<10	16	10				930	260	28000
>C21 - C35	67	53	20	45	40				1700	1600	28000
Total Aromatic Hydrocarbons	88	75	27	70	58						
Aliphatic Hydrocarbons											
C5 - C6	<0.001	<0.001	<0.001	<0.001	<0.001				160	3900	12000
>C6 - C8	<0.001	<0.001	<0.001	<0.001	<0.001				530	13000	40000
>C8 - C10	<0.001	<0.001	<0.001	<0.001	<0.001				150	1700	11000
>C10 - C12	<1.0	<1.0	<1.0	<1.0	<1.0				760	7300	47000
>C12 - C16	<2.0	<2.0	<2.0	<2.0	<2.0				4300	13000	90000
>C16 - C21	<8.0	<8.0	<8.0	<8.0	<8.0						
>C21 - C35	<8.0	<8.0	<8.0	<8.0	<8.0						
Total Aliphatic Hydrocarbons	<10	<10	<10	<10	<10						
Total Petroleum Hydrocarbons	88	75	27	70	58						
BTEX	Concentration, µg/kg										
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0				370	75	90000
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0				660000	120000	180000000
Ethyl Benzene	<1.0	<1.0	<1.0	<1.0	<1.0				260000	91000	27000000
p & m-xylene	<1.0	<1.0	<1.0	<1.0	<1.0				310000	160000	30000000
o-xylene	<1.0	<1.0	<1.0	<1.0	<1.0						
MTBE	<1.0	<1.0	<1.0	<1.0	<1.0						

Notes

Total = Sum of compounds above detection limit.

S4UL given at 6% soil organic matter

*Results given as total of (ortho), (meta) and (para) xylene. SGV given is the lowest permissible value for any xylene compound

Exceptions denoted thus:

Residential

XX

Commercial

XX

CONTAMINANTS IN SOIL

Project: ABROOK ARMS, 191 HAREFIELD ROAD, UXBRIDGE, UB8 1PW
Client: Frendcastle Management

Project No: 5359
Sheet No: 1/1

Speciated Polyaromatic Hydrocarbons by GCMS																
Location Sample Depth, m	V1	V2	V3	V4	Stockpile								LQM/CIEH S4UL ³			
													residential ⁴	residential ⁵	allotments	commercial
Determinand	Concentration, mg/kg															
PAH																
Naphthalene	<0.05	<0.05	<0.05	<0.05	<0.05								13	13	24	1100
Acenaphthylene	<0.05	<0.05	<0.05	<0.05	<0.05								920	6000	160	100000
Acenaphthene	<0.05	<0.05	<0.05	<0.05	<0.05								1100	6000	200	100000
Fluorene	<0.05	<0.05	<0.05	0.13	<0.05								860	4500	160	71000
Phenanthrene	0.94	0.48	0.68	1.6	0.67								440	1500	90	23000
Anthracene	0.31	<0.05	0.29	0.57	0.18								11000	37000	2200	540000
Fluoranthene	3.2	1.7	2.4	3.0	2.3								890	1600	290	23000
Pyrene	2.7	1.5	2.2	2.9	2.1								2000	3800	620	54000
Benzo(a)anthracene	1.5	0.83	1.2	1.3	1.0								13	15	13	180
Chrysene	1.1	0.67	0.91	1.1	0.93								27	32	19	350
Benzo(b)fluoranthene	1.3	0.73	1.0	1.3	0.99								3.7	4.0	3.9	45
Benzo(k)fluoranthene	0.74	0.52	0.71	0.82	0.70								100	110	130	1200
Benzo(a)pyrene	1.0	0.71	0.97	1.2	0.95								3	3.2	3.5	36
Indeno(123-cd)pyrene	0.53	0.38	0.43	0.56	0.41								41	46	39	510
Dibenzo(ah)anthracene	<0.05	<0.05	<0.05	0.19	<0.05								0.3	0.32	0.43	3.6
Benzo(ghi)perylene	0.59	0.38	0.5	0.64	0.54								350	360	640	4000
Total PAH (16)	13.8	7.82	11.3	15.4	10.7											

Notes

1. Total PAH = Sum of EPA16 identified components
 2. The results are expressed as mg/kg dry weight soil after correction for moisture content
 3. S4UL given at 6% soil organic matter
 4. Residential with plant uptake
 5. Residential without plant uptake
- © AP GEOTECHNICS LTD.

Exceptions denoted thus: Residential **XX**
Commercial **XX**

CONTAMINANTS IN SOIL

Project: ABROOK ARMS, 191 HAREFIELD ROAD, UXBRIDGE, UB8 1PW
Client: Frendcastle Management

Project No: 5359
Sheet No: 1/1

Location	Sample	Depth m	Asbestos identification		
			Description of matrix	Overall percentage of asbestos identified (approx.)	Type of asbestos identified
V1			Brown loam and clay with gravel and vegetation		none detected
V2			Brown loam and clay with gravel and vegetation		none detected
V3			Brown loam and clay with gravel and vegetation		none detected
V4			Brown sandy loam with gravel and vegetation		none detected
Stockpile			Brown sandy loam with gravel and vegetation		none detected

Adrian Smith

AP Geotechnics Ltd
51-53 Guildford Street
Chertsey
KT16 9BA

t: 01932 848460

e: adrian.smith@apgeotechnics.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

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Analytical Report Number : 21-63781

Project / Site name:	Abrook Arms 191 Harefield Road, Uxbridge	Samples received on:	19/03/2021
Your job number:	5359	Samples instructed on/ Analysis started on:	19/03/2021
Your order number:		Analysis completed by:	26/03/2021
Report Issue Number:	1	Report issued on:	26/03/2021
Samples Analysed:	5 soil samples		



Signed:

Rachel Bradley
Deputy Quality Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-63781

Project / Site name: Abrook Arms 191 Harefield Road, Uxbridge

Lab Sample Number				1809667	1809668	1809669	1809670	1809671
Sample Reference				V1	V2	V3	V4	Stockpile
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				19/03/2021	19/03/2021	19/03/2021	19/03/2021	19/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	%	0.01	NONE	20	26	19	15	17
	kg	0.001	NONE	0.50	0.50	0.50	0.50	0.50

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.13	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.94	0.48	0.68	1.6	0.67
Anthracene	mg/kg	0.05	MCERTS	0.31	< 0.05	0.29	0.57	0.18
Fluoranthene	mg/kg	0.05	MCERTS	3.2	1.7	2.4	3.0	2.3
Pyrene	mg/kg	0.05	MCERTS	2.7	1.5	2.2	2.9	2.1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.5	0.83	1.2	1.3	1.0
Chrysene	mg/kg	0.05	MCERTS	1.1	0.67	0.91	1.1	0.93
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.3	0.73	1.0	1.3	0.99
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.74	0.52	0.71	0.82	0.70
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.0	0.71	0.97	1.2	0.95
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.53	0.38	0.43	0.56	0.41
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.19	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.59	0.38	0.50	0.64	0.54

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	13.8	7.82	11.3	15.4	10.7
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.6	11	12	11	11
Barium (aqua regia extractable)	mg/kg	1	MCERTS	68	74	79	95	73
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.42	0.45	0.52	0.47	0.48
Boron (water soluble)	mg/kg	0.2	MCERTS	4.4	5.1	4.5	2.8	3.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.4	0.5	0.5	0.5
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	18	21	31	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	30	28	35	34	36
Lead (aqua regia extractable)	mg/kg	1	MCERTS	54	63	91	120	66
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	14	17	20	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	24	27	27	26	26
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	100	100	130	130	110

Analytical Report Number: 21-63781
Project / Site name: Abrook Arms 191 Harefield Road, Uxbridge

Lab Sample Number	1809667	1809668	1809669	1809670	1809671
Sample Reference	V1	V2	V3	V4	Stockpile
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	19/03/2021	19/03/2021	19/03/2021	19/03/2021	19/03/2021
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	1.7	2.4	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	6.6	7.9	< 2.0	9.1	7.1
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	13	12	< 10	16	10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	67	53	20	45	40
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	88	75	27	70	58

U/S = Unsuitable Sample I/S = Insufficient Sample

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1809667	V1	None Supplied	None Supplied	Brown loam and clay with gravel and vegetation.
1809668	V2	None Supplied	None Supplied	Brown loam and clay with gravel and vegetation.
1809669	V3	None Supplied	None Supplied	Brown loam and clay with gravel and vegetation.
1809670	V4	None Supplied	None Supplied	Brown sandy loam with gravel and vegetation.
1809671	Stockpile	None Supplied	None Supplied	Brown sandy loam with gravel and vegetation.

Analytical Report Number : 21-63781

Project / Site name: Abrook Arms 191 Harefield Road, Uxbridge

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

APPENDIX C

FIGURE

Validation Sample Locations

Figure 1



APPENDIX D

CLIENT DECLARATION



29th March 2021

Mr Adrian Smith
AP Geotechnics limited
51-53 Guildford Street
Chertsey
Surrey
KT16 9BA

Dear Adrian,

Abrook Court, 191 Harefield Road, Uxbridge UB8 1PW

We employ a qualified and suitably experienced site agent with over 10 years of experience working on a wide variety of sites including contaminated ones.

Our site agent can confirm that no materials were encountered that showed significant variation from those detailed in the ground investigation that required a visit from our environmental specialist.

We can also confirm that all ground workers on the site were informed to report any material that would be cause for concern in relation to contamination, to be reported for further investigation.

Our site records indicate that no reports in this regard were recorded.

Yours sincerely,

M D Rockel
Contracts Manger

