





# **APPENDIX E**









# Final Report

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**Report No.:** 21-17697-1

**Initial Date of Issue:** 02-Jun-2021

**Client:** Applied Geology

**Client Address:** Unit 23, Abbey Park  
Stareton  
Kenilworth  
Warwickshire  
CV8 2LY

**Contact(s):** Andrew Smith  
Kayleigh Mcgeoch  
Lab Results

**Project:** AG3268-21 Land Adjacent to Junction  
10, M40, Ardley

**Quotation No.:** **Date Received:** 26-May-2021

**Order No.:** 16857 **Date Instructed:** 26-May-2021

**No. of Samples:** 17

**Turnaround (Wkdays):** 5 **Results Due:** 02-Jun-2021

**Date Approved:** 02-Jun-2021

**Approved By:**

**Details:** Glynn Harvey, Technical Manager

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## Results - Soil

Project: AG3268-21 L and Adjacent to Junction 10, M40, Ardley

Client: Applied Geology	Chemtest Job No.:	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:	Chemtest Sample ID.:	1208517	1208518	1208519	1208520	1208521	1208522	1208523	1208524	1208524
	Sample Location:	TP7	TP11	TP20	TP31	TP42	TP54	TP56	TP60	TP60
	Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):	0.2	0.15	0.1	0.2	0.2	0.1	0.4	0.3	0.3
	Bottom Depth (m):	0.3	0.25	0.2	0.3	0.3	0.2	0.45	0.4	0.4
	Date Sampled:	17-May-2021	18-May-2021	17-May-2021	18-May-2021	20-May-2021	18-May-2021	18-May-2021	21-May-2021	21-May-2021
	Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	LOD							
4,4-DDD	N	2840	mg/kg	0.20			< 0.20			
Endosulfan II	N	2840	mg/kg	0.20			< 0.20			
Endrin Aldehyde	N	2840	mg/kg	0.20			< 0.20			
4,4-DDT	N	2840	mg/kg	0.20			< 0.20			
Endosulfan Sulphate	N	2840	mg/kg	0.20			< 0.20			
Methoxychlor	N	2840	mg/kg	0.20			< 0.20			
Endrin Ketone	N	2840	mg/kg	0.20			< 0.20			



# Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology	Chemtest Job No.:		Sample Location:	Sample Type:	Top Depth (m):	Bottom Depth (m):	Date Sampled:	Asbestos Lab:	21-17697															
	Quotation No.:	Chemtest Sample ID.:							TP70	TP74	TP76	TP89	TP91	TP92	TP94	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	
Determinand	Accred.	SOP	Units	LOD																				
Organic Matter	M	2625	%	0.40	3.1	3.8	1.9	1.9	2.8	2.4	2.4	4.0	2.9	2.1	2.1	2.1	2.1	2.1						
Arsenic	M	2450	mg/kg	0.50	33	16	31	31	29	31	31	34	32	31	31	31	31	31						
Cadmium	M	2450	mg/kg	0.10	0.43	0.42	0.28	0.28	0.37	0.42	0.42	0.56	0.56	0.34	0.34	0.34	0.34	0.34						
Chromium	M	2450	mg/kg	1.0	27	29	34	34	35	31	31	37	41	23	23	23	23	23						
Chromium (Hexavalent)	N	2490	mg/kg	0.50								< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50						
Chromium (Trivalent)	N	2490	mg/kg	1.0								37	41	23	23	23	23	23						
Copper	M	2450	mg/kg	0.50	17	15	12	12	15	15	15	19	19	13	13	13	13	13						
Lead	M	2450	mg/kg	0.50	28	22	17	17	22	24	24	36	37	25	25	25	25	25						
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010						
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.12	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Nickel	M	2450	mg/kg	0.50	27	26	30	30	31	27	27	35	38	24	24	24	24	24						
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20						
Vanadium	U	2450	mg/kg	5.0	48	44	60	60	56	53	53	62	68	42	42	42	42	42						
Zinc	M	2450	mg/kg	0.50	76	61	50	50	59	56	56	82	82	49	49	49	49	49						
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0						
Phenol	M	2920	mg/kg	0.020								< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020						
Resorcinol	M	2920	mg/kg	0.020								< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020						
Cresols	M	2920	mg/kg	0.020								< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020						
1-Naphthol	N	2920	mg/kg	0.020								< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020						
Trimethylphenols	M	2920	mg/kg	0.020								< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020						
Total Phenols	M	2920	mg/kg	0.10								< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10						









## Results - Soil

Project: AG3268-21 L and Adjacent to Junction 10, M40, Ardley

Client: Applied Geology	Chemtest Job No.:	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697	21-17697
Quotation No.:	Chemtest Sample ID.:	1208525	1208526	1208527	1208528	1208529	1208530	1208531	1208532
	Sample Location:	TP61	TP70	TP74	TP76	TP89	TP91	TP92	TP94
	Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):	0.1	0.1	0.4	0.1	0.1	0.1	0.3	0.1
	Bottom Depth (m):	0.2	0.2	0.5	0.2	0.2	0.2	0.4	0.2
	Date Sampled:	20-May-2021	17-May-2021	21-May-2021	19-May-2021	21-May-2021	17-May-2021	20-May-2021	21-May-2021
	Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD					
4,4-DDD	N	2840	mg/kg	0.20	< 0.20			< 0.20	
Endosulfan II	N	2840	mg/kg	0.20	< 0.20			< 0.20	
Endrin Aldehyde	N	2840	mg/kg	0.20	< 0.20			< 0.20	
4,4-DDT	N	2840	mg/kg	0.20	< 0.20			< 0.20	
Endosulfan Sulphate	N	2840	mg/kg	0.20	< 0.20			< 0.20	
Methoxychlor	N	2840	mg/kg	0.20	< 0.20			< 0.20	
Endrin Ketone	N	2840	mg/kg	0.20	< 0.20			< 0.20	

# Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Deteriminand	Accred.	SOP	Units	LOD	Chemtest Job No.:	
					21-17697	1208533
Organic Matter	M	2625	%	0.40	2.4	
Arsenic	M	2450	mg/kg	1.0	30	
Cadmium	M	2450	mg/kg	0.10	0.40	
Chromium	M	2450	mg/kg	1.0	20	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	
Chromium (Trivalent)	N	2490	mg/kg	1.0	20	
Copper	M	2450	mg/kg	0.50	13	
Lead	M	2450	mg/kg	0.50	19	
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	
Mercury	M	2450	mg/kg	0.10	< 0.10	
Nickel	M	2450	mg/kg	0.50	20	
Selenium	M	2450	mg/kg	0.20	< 0.20	
Vanadium	U	2450	mg/kg	5.0	37	
Zinc	M	2450	mg/kg	0.50	55	
Naphthalene	M	2700	mg/kg	0.10	< 0.10	
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	
Fluorene	M	2700	mg/kg	0.10	< 0.10	
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	
Anthracene	M	2700	mg/kg	0.10	< 0.10	
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	
Pyrene	M	2700	mg/kg	0.10	< 0.10	
Benzoflanthracene	M	2700	mg/kg	0.10	< 0.10	
Chrysene	M	2700	mg/kg	0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	
Benzokfluoranthene	M	2700	mg/kg	0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	
Phenol	M	2920	mg/kg	0.020	< 0.020	
Resorcinol	M	2920	mg/kg	0.020	< 0.020	
Cresols	M	2920	mg/kg	0.020	< 0.020	
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	
Total Phenols	M	2920	mg/kg	0.10	< 0.10	



# Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology		Chemtest Job No.:	21-17697	
Quotation No.:		Chemtest Sample ID.:	1208533	
		Sample Location:	TP131	
		Sample Type:	SOIL	
		Top Depth (m):	0.2	
		Bottom Depth (m):	0.3	
		Date Sampled:	19-May-2021	
		Asbestos Lab:	DURHAM	
Determinand	Accred.	SOP	Units	LOD
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
Aliphatic TPH >C5-C8	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
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010 < 0.010
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
Stones and Removed Materials	N	2030	%	0.020
Soil Colour	N	2040		N/A Brown
Other Material	N	2040		N/A Stones and Roots
Soil Texture	N	2040		N/A Sand
pH	M	2010		4.0 9.0
Boron	N	2450	mg/kg	0.40 11



# Results - Soil

Project: AG3268-21 L and Adjacent to Junction 10, M40, Ardley

Determiand	Accred.	SOP	Units	LOD	Chemtest Job No.:
					21-17697
					Chemtest Sample ID.:
					1208533
					Sample Location:
					TP131
					Sample Type:
					SOIL
					Top Depth (m):
					0.2
					Bottom Depth (m):
					0.3
					Date Sampled:
					19-May-2021
					Asbestos Lab:
					DURHAM
Determiand	Accred.	SOP	Units	LOD	
Beryllium	U	2450	mg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0
Demeton-O	N	2820	mg/kg	0.20	< 0.20
Phorate	N	2820	mg/kg	0.20	< 0.20
Demeton-S	N	2820	mg/kg	0.20	< 0.20
Disulfoton	N	2820	mg/kg	0.20	< 0.20
Fenthion	N	2820	mg/kg	0.20	< 0.20
Trichloronate	N	2820	mg/kg	0.20	< 0.20
Prothiofos	N	2820	mg/kg	0.20	< 0.20
Fensulphothion	N	2820	mg/kg	0.20	< 0.20
Sulprofos	N	2820	mg/kg	0.20	< 0.20
Azinphos-Methyl	N	2820	mg/kg	0.20	< 0.20
Coumaphos	N	2820	mg/kg	0.20	< 0.20
Atraton	N	2830	mg/kg	0.20	< 0.20
Prometon	N	2830	mg/kg	0.20	< 0.20
Simazine	N	2830	mg/kg	0.20	< 0.20
Atrazine	N	2830	mg/kg	0.20	< 0.20
Propazine	N	2830	mg/kg	0.20	< 0.20
Terbutylazine	N	2830	mg/kg	0.20	< 0.20
Secbumeton	N	2830	mg/kg	0.20	< 0.20
Simetyn	N	2830	mg/kg	0.20	< 0.20
Ametryn	N	2830	mg/kg	0.20	< 0.20
Prometryn	N	2830	mg/kg	0.20	< 0.20
Terbutyn	N	2830	mg/kg	0.20	< 0.20
Alpha-HCH	N	2840	mg/kg	0.20	< 0.20
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20	< 0.20
Beta-HCH	N	2840	mg/kg	0.20	< 0.20
Delta-HCH	N	2840	mg/kg	0.20	< 0.20
Heptachlor	N	2840	mg/kg	0.20	< 0.20
Aldrin	N	2840	mg/kg	0.20	< 0.20
Heptachlor Epoxide	N	2840	mg/kg	0.20	< 0.20
Gamma-Chlordane	N	2840	mg/kg	0.20	< 0.20
Alpha-Chlordane	N	2840	mg/kg	0.20	< 0.20
Endosulfan I	N	2840	mg/kg	0.20	< 0.20
4,4-DDE	N	2840	mg/kg	0.20	< 0.20
Dieldrin	N	2840	mg/kg	0.20	< 0.20
Endrin	N	2840	mg/kg	0.20	< 0.20

## Results - Soil

**Project:** AG3268-21 L and Adjacent to Junction 10, M40, Ardley

<b>Client:</b> Applied Geology	<b>Chemtest Job No.:</b> 21-17697
<b>Quotation No.:</b>	<b>Chemtest Sample ID.:</b> 1208533
	<b>Sample Location:</b> TP131
	<b>Sample Type:</b> SOIL
	<b>Top Depth (m):</b> 0.2
	<b>Bottom Depth (m):</b> 0.3
	<b>Date Sampled:</b> 19-May-2021
	<b>Asbestos Lab:</b> DURHAM
<b>Determinand</b>	<b>Accred.</b> <b>SOP</b> <b>Units</b> <b>LOD</b>
4,4-DDD	N 2840 mg/kg 0.20 < 0.20
Endosulfan II	N 2840 mg/kg 0.20 < 0.20
Endrin Aldehyde	N 2840 mg/kg 0.20 < 0.20
4,4-DDT	N 2840 mg/kg 0.20 < 0.20
Endosulfan Sulphate	N 2840 mg/kg 0.20 < 0.20
Methoxychlor	N 2840 mg/kg 0.20 < 0.20
Endrin Ketone	N 2840 mg/kg 0.20 < 0.20

## Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
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
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
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.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
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; Dibenz[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.
2820	Organophosphorus (O-P) Pesticides in Soils by GC-MS	Organophosphorus pesticide representative suite including Parathion, Malathion etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2830	Organonitrogen (O-N) Pesticides in Soils by GC-MS	Organonitrogen pesticide representative suite including Triazines etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2840	Organochlorine (O-Cl) Pesticides in Soils by GC-MS	Organochlorine pesticide representative suite including DDT and its metabolites, 'drins' and HCH etc, plus client specific determinands	Dichloromethane extraction / GC-MS
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**

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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"
SOP	Standard operating procedure
LOD	Limit of detection

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**

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- 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**

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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](mailto:customerservices@chemtest.com)





# Final Report

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**Report No.:** 21-18908-1

**Initial Date of Issue:** 11-Jun-2021

**Client:** Applied Geology

**Client Address:** Unit 23, Abbey Park  
Stareton  
Kenilworth  
Warwickshire  
CV8 2LY

**Contact(s):** Andrew Smith  
Kayleigh Mcgeoch  
Lab Results

**Project:** AG3268-21 Land Adjacent to Junction  
10, M40, Ardley

**Quotation No.:** Q17-09497                      **Date Received:** 04-Jun-2021

**Order No.:** 16906                                      **Date Instructed:** 04-Jun-2021

**No. of Samples:** 9

**Turnaround (Wkdays):** 5                              **Results Due:** 10-Jun-2021

**Date Approved:** 11-Jun-2021

**Approved By:**

**Details:** Glynn Harvey, Technical Manager

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# Results - Leachate

Project: AG3268-21 L and Adjacent to Junction 10, M40, Ardley

Determinand	Accred.	SOP	Type	Units	LOD	21-18908		21-18908		21-18908		21-18908		21-18908	
						Chemtest Job No.:	Chemtest Sample ID.:	Chemtest Job No.:	Chemtest Sample ID.:	Chemtest Job No.:	Chemtest Sample ID.:	Chemtest Job No.:	Chemtest Sample ID.:		
pH	U	1010	10:1			8.5	8.2	8.2	8.2	8.5	8.5	8.5	8.5	8.5	8.5
Sulphate	U	1220	10:1	mg/l	N/A	2.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Magnesium	U	1455	10:1	mg/l	0.20	0.81	0.85	0.85	0.69	1.0	0.76	0.60	0.77	0.60	0.77
Arsenic (Dissolved)	U	1455	10:1	µg/l	0.20	0.66	0.77	0.77	1.2	0.91	0.54	0.57	0.66	0.57	0.66
Boron (Dissolved)	U	1455	10:1	µg/l	10.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Beryllium (Dissolved)	U	1455	10:1	µg/l	1.00	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cadmium (Dissolved)	U	1455	10:1	µg/l	0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Copper (Dissolved)	U	1455	10:1	µg/l	0.50	1.5	1.5	1.5	5.3	3.2	2.7	1.9	3.5	1.9	3.5
Mercury (Dissolved)	U	1455	10:1	µg/l	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	1.0	1.0	3.3	1.2	0.93	0.79	1.0	0.79	1.0
Lead (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	< 0.50	< 0.50	0.54	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Selenium (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	< 0.50	< 0.50	0.72	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Vanadium (Dissolved)	U	1455	10:1	µg/l	0.50	1.3	1.4	1.4	2.3	2.3	0.84	1.2	1.2	0.84	1.2
Zinc (Dissolved)	U	1455	10:1	µg/l	2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Chromium (Total)	N	1455	10:1	µg/l	0.50	< 0.50	0.50	0.50	0.65	0.57	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	N	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	1700	10:1	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0



# Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Determinand	Accred.	SOP	Units	LOD	21-18908		21-18908		21-18908		21-18908		21-18908		21-18908	
					Chemtest Job No.:	Chemtest Sample ID.:	Sample Location:	Sample Type:	Top Depth (m):	Bottom Depth (m):	Date Sampled:	Asbestos Lab:	TP5	TP25	TP79	TP58
Organic Matter	M	2625	%	0.40	2.9	2.9	4.1	4.1	3.1	3.1	3.5	3.5	3.5	1.6	1.2	2.6
Arsenic	M	2450	mg/kg	1.0	17	15	22	22	19	19	24	24	24	21	16	8.4
Cadmium	M	2450	mg/kg	0.10	0.37	0.37	0.53	0.53	0.34	0.34	0.49	0.49	0.27	0.26	0.33	
Chromium	M	2450	mg/kg	1.0	32	32	40	40	26	26	43	43	15	30	27	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50						< 0.50	< 0.50	
Chromium (Trivalent)	N	2490	mg/kg	1.0	32		40	40						30	30	
Copper	M	2450	mg/kg	0.50	15	14	21	21	13	13	21	21	7.8	12	12	
Lead	M	2450	mg/kg	0.50	19	22	33	33	17	17	28	28	12	14	20	
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10	0.12	0.12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Nickel	M	2450	mg/kg	0.50	29	31	36	36	25	25	38	38	13	29	26	
Selenium	M	2450	mg/kg	0.20	0.28	0.38	0.39	0.39	< 0.20	< 0.20	0.27	0.27	< 0.20	< 0.20	0.32	
Vanadium	U	2450	mg/kg	5.0	48	46	61	61	41	41	69	69	24	41	38	
Zinc	M	2450	mg/kg	0.50	56	62	76	76	42	42	77	77	28	45	54	
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Phenol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Resorcinol	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Cresols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
1-Naphthol	N	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Trimethylphenols	M	2920	mg/kg	0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	



# Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology Quotation No.: Q17-09497	Chemtest Job No.:		21-18908		21-18908		21-18908		21-18908		21-18908		21-18908	
	Chemtest Sample ID.:		1214823		1214824		1214825		1214826		1214827		1214828	
Sample Location:		TP5		TP25		TP79		TP58		TP48		TP110		
Sample Type:		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		
Top Depth (m):		0.2		0.2		0.1		0.2		0.1		0.1		
Bottom Depth (m):		03		0.3		0.2		0.3		0.2		0.2		
Date Sampled:		25-May-2021		26-May-2021		25-May-2021		24-May-2021		25-May-2021		28-May-2021		
Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM		DURHAM		DURHAM		
Determinand	Accred.	SOP	Units	LOD	21-18908		21-18908		21-18908		21-18908		21-18908	
					No Asbestos Detected	Asbestos Detected	No Asbestos Detected	Asbestos Detected	No Asbestos Detected	Asbestos Detected	No Asbestos Detected	Asbestos Detected		
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C5-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	66	< 1.0	4.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	66	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	35	< 1.0	19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	35	< 5.0	19	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	100	< 10	23	< 10	< 10	< 10	< 10	< 10	< 10	
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.051	0.048	0.042	0.044	0.044	0.038	0.041	0.041	0.038	
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-	
Asbestos Identification	U	2192		N/A	N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	
Moisture	N	2030	%	0.020	21	23	22	19	19	20	14	25	25	
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Stones and Roots	Brown	Brown	Brown	
Other Material	N	2040		N/A	Stones	Roots	Stones	None	Stones	Stones and Roots	Stones	Stones	Stones	
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Clay	
pH	M	2010		4.0	8.6	8.2	8.5	8.2	8.2	8.2	8.6	8.6	8.1	
Boron	N	2450	mg/kg	0.40	7.8	6.2	9.9	6.9	6.9	10	6.4	6.4	9.0	
Beryllium	U	2450	mg/kg	1.0	1.2	1.3	1.5	1.1	1.1	1.8	1.3	1.3	1.6	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	

## Results - Soil

Project: AG3268-21 L and Adjacent to Junction 10, M40, Ardley

Client: Applied Geology Quotation No.: Q17-09497	Chemtest Job No.:		21-18908		21-18908		21-18908		21-18908		21-18908		21-18908	
	Chemtest Sample ID.:		1214823		1214824		1214825		1214826		1214827		1214828	
Sample Location:		TP5		TP25		TP79		TP58		TP48		TP110		
Sample Type:		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		
Top Depth (m):		0.2		0.2		0.1		0.2		0.1		0.1		
Bottom Depth (m):		03		0.3		0.2		0.3		0.2		0.2		
Date Sampled:		25-May-2021		26-May-2021		25-May-2021		24-May-2021		25-May-2021		28-May-2021		
Asbestos Lab:		DURHAM		DURHAM		DURHAM		DURHAM		DURHAM		DURHAM		
Determinand	Accred.	SOP	Units	LOD										
Demeton-O	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Phorate	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Demeton-S	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Disulfoton	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fenthion	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichloronate	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Prothiofos	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fensulphothion	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Sulprofos	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Azinphos-Methyl	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Coumaphos	N	2820	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Atraton	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Prometon	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Simazine	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Atrazine	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Propazine	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Terbutylazine	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Secbumeton	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Simetryn	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Ametryn	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Prometryn	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Terbutryn	N	2830	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Alpha-HCH	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Beta-HCH	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Delta-HCH	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Heptachlor	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Aldrin	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Heptachlor Epoxide	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Gamma-Chlordane	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Alpha-Chlordane	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Endosulfan I	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
4,4-DDE	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dieldrin	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Endrin	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
4,4-DDD	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Endosulfan II	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20



## Results - Soil

**Project:** AG3268-21 Land Adjacent to Junction 10, M40, Ardley

<b>Client:</b> Applied Geology	<b>Chemtest Job No.:</b> 21-18908	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>	<b>21-18908</b>
<b>Quotation No.:</b> Q17-09497	<b>Chemtest Sample ID.:</b> 1214824	1214824	1214825	1214826	1214827	1214828	1214829	1214830	
	<b>Sample Location:</b>	TP5	TP79	TP58	TP48	TP110	TP97	TP112	
	<b>Sample Type:</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
	<b>Top Depth (m):</b>	0.2	0.1	0.2	0.1	0.1	0.3	0.2	
	<b>Bottom Depth (m):</b>	03	0.2	0.3	0.2	0.2	0.4	0.3	
	<b>Date Sampled:</b>	25-May-2021	25-May-2021	24-May-2021	25-May-2021	28-May-2021	28-May-2021	27-May-2021	
	<b>Asbestos Lab:</b>	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	
<b>Determinand</b>	<b>Accred.</b>	<b>SOP</b>	<b>Units</b>	<b>LOD</b>					
Endrin Aldehyde	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	
4,4-DDT	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	
Endosulfan Sulphate	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	
Methoxychlor	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	
Endrin Ketone	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	



# Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Deteriminand	Accred.	SOP	Units	LOD	Chemtest Job No.:	
					21-18908	1214831
Organic Matter	M	2625	%	0.40	2.6	
Arsenic	M	2450	mg/kg	1.0	17	
Cadmium	M	2450	mg/kg	0.10	0.32	
Chromium	M	2450	mg/kg	1.0	26	
Chromium (Hexavalent)	N	2490	mg/kg	0.50		
Chromium (Trivalent)	N	2490	mg/kg	1.0		
Copper	M	2450	mg/kg	0.50	12	
Lead	M	2450	mg/kg	0.50	23	
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	
Mercury	M	2450	mg/kg	0.10	< 0.10	
Nickel	M	2450	mg/kg	0.50	22	
Selenium	M	2450	mg/kg	0.20	< 0.20	
Vanadium	U	2450	mg/kg	5.0	39	
Zinc	M	2450	mg/kg	0.50	44	
Naphthalene	M	2700	mg/kg	0.10	< 0.10	
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	
Fluorene	M	2700	mg/kg	0.10	< 0.10	
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	
Anthracene	M	2700	mg/kg	0.10	< 0.10	
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	
Pyrene	M	2700	mg/kg	0.10	< 0.10	
Benzoflanthracene	M	2700	mg/kg	0.10	< 0.10	
Chrysene	M	2700	mg/kg	0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	
Benzokifluoranthene	M	2700	mg/kg	0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	
Benzofluoranthene	M	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	
Phenol	M	2920	mg/kg	0.020		
Resorcinol	M	2920	mg/kg	0.020		
Cresols	M	2920	mg/kg	0.020		
1-Naphthol	N	2920	mg/kg	0.020		
Trimethylphenols	M	2920	mg/kg	0.020		
Total Phenols	M	2920	mg/kg	0.10		

# Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology	Chemtest Job No.: 21-18908			
	Quotation No.: Q17-09497	Chemtest Sample ID.: 1214831		
	Sample Location:	TP124		
	Sample Type:	SOIL		
	Top Depth (m):	0.1		
	Bottom Depth (m):	0.2		
	Date Sampled:	28-May-2021		
	Asbestos Lab:	DURHAM		
Determinand	Accred.	SOP	Units	LOD
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
Aliphatic TPH >C5-C8	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
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010 0.041
ACM Type	U	2192		N/A -
Asbestos Identification	U	2192		N/A No Asbestos Detected
Moisture	N	2030	%	0.020 18
Soil Colour	N	2040		N/A Brown
Other Material	N	2040		N/A Stones and Roots
Soil Texture	N	2040		N/A Clay
pH	M	2010		4.0 8.3
Boron	N	2450	mg/kg	0.40 10
Beryllium	U	2450	mg/kg	1.0 1.3
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0 < 1.0

# Results - Soil

Project: AG3268-21 L and Adjacent to Junction 10, M40, Ardley

Determinand	Accred.	SOP	Units	LOD	Chemtest Job No.:	
					21-18908	
Demeton-O	N	2820	mg/kg	0.20	Chemtest Sample ID.:	1214831
Phorate	N	2820	mg/kg	0.20	Sample Location:	TP124
Demeton-S	N	2820	mg/kg	0.20	Sample Type:	SOIL
Disulfoton	N	2820	mg/kg	0.20	Top Depth (m):	0.1
Fenthion	N	2820	mg/kg	0.20	Bottom Depth (m):	0.2
Trichloronate	N	2820	mg/kg	0.20	Date Sampled:	28-May-2021
Prothiofos	N	2820	mg/kg	0.20	Asbestos Lab:	DURHAM
Fensulphothion	N	2820	mg/kg	0.20		
Sulprofos	N	2820	mg/kg	0.20		
Azinphos-Methyl	N	2820	mg/kg	0.20		
Coumaphos	N	2820	mg/kg	0.20		
Atraton	N	2830	mg/kg	0.20		
Prometon	N	2830	mg/kg	0.20		
Simazine	N	2830	mg/kg	0.20		
Atrazine	N	2830	mg/kg	0.20		
Propazine	N	2830	mg/kg	0.20		
Terbutylazine	N	2830	mg/kg	0.20		
Secbumeton	N	2830	mg/kg	0.20		
Simetryn	N	2830	mg/kg	0.20		
Ametryn	N	2830	mg/kg	0.20		
Prometryn	N	2830	mg/kg	0.20		
Terbutryn	N	2830	mg/kg	0.20		
Alpha-HCH	N	2840	mg/kg	0.20		
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20		
Beta-HCH	N	2840	mg/kg	0.20		
Delta-HCH	N	2840	mg/kg	0.20		
Heptachlor	N	2840	mg/kg	0.20		
Aldrin	N	2840	mg/kg	0.20		
Heptachlor Epoxide	N	2840	mg/kg	0.20		
Gamma-Chlordane	N	2840	mg/kg	0.20		
Alpha-Chlordane	N	2840	mg/kg	0.20		
Endosulfan I	N	2840	mg/kg	0.20		
4,4-DDE	N	2840	mg/kg	0.20		
Dieldrin	N	2840	mg/kg	0.20		
Endrin	N	2840	mg/kg	0.20		
4,4-DDD	N	2840	mg/kg	0.20		
Endosulfan II	N	2840	mg/kg	0.20		





## Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[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)
2010	pH Value of Soils	pH	pH Meter
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
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
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.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
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; Dibenz[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.
2820	Organophosphorus (O-P) Pesticides in Soils by GC-MS	Organophosphorus pesticide representative suite including Parathion, Malathion etc, plus client specific determinands	Dichloromethane extraction / GC-MS

## Test Methods

SOP	Title	Parameters included	Method summary
2830	Organonitrogen (O-N) Pesticides in Soils by GC-MS	Organonitrogen pesticide representative suite including Triazines etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2840	Organochlorine (O-Cl) Pesticides in Soils by GC-MS	Organochlorine pesticide representative suite including DDT and its metabolites, 'drins' and HCH etc, plus client specific determinands	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and Trimethylphenols Note: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	Compliance Test for Leaching of Granular Waste Material and Sludge



## **Report Information**

### **Key**

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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"
SOP	Standard operating procedure
LOD	Limit of detection

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**

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- 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**

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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](mailto:customerservices@chemtest.com)



# Final Report

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**Report No.:** 21-19774-1

**Initial Date of Issue:** 21-Jun-2021

**Client:** Applied Geology

**Client Address:** Unit 23, Abbey Park  
Stareton  
Kenilworth  
Warwickshire  
CV8 2LY

**Contact(s):** Andrew Smith  
Kayleigh Mcgeoch  
Lab Results

**Project:** AG3268-21 Land Adjacent to Junction  
10, M40, Ardley

**Quotation No.:** Q17-09497                      **Date Received:** 11-Jun-2021

**Order No.:** 16944                                **Date Instructed:** 11-Jun-2021

**No. of Samples:** 6

**Turnaround (Wkdays):** 7                      **Results Due:** 21-Jun-2021

**Date Approved:** 21-Jun-2021

**Approved By:**

**Details:** Glynn Harvey, Technical Manager

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## Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Chemtest Job No: 21-19774

Chemtest Sample ID: 1218792

Sample Ref:

Sample ID: TP17

Sample Location: 0.70

Top Depth(m): 0.80

Bottom Depth(m): 26-May-2021

Sampling Date: 26-May-2021

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria Limits		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	M	%	0.31	5	6
Loss On Ignition	2610	M	%	3.4	--	10
Total BTEX	2760	M	mg/kg	[B] < 0.010	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	--	--
TPH Total WAC	2670	M	mg/kg	[B] < 10	--	--
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	--	--
pH	2010	M		8.7	--	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0020	To evaluate	To evaluate
Eluate Analysis			2:1 mg/l	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455	U	< 0.0002	8:1 mg/l	2:1 mg/kg	
Barium	1455	U	0.007	< 0.0002	< 0.0002	0.5
Cadmium	1455	U	< 0.00011	< 0.005	0.014	20
Chromium	1455	U	< 0.0005	< 0.00011	< 0.00011	0.04
Copper	1455	U	0.0018	< 0.0005	< 0.0005	0.5
Mercury	1455	U	< 0.00005	< 0.0005	0.0036	2
Molybdenum	1455	U	< 0.00005	< 0.0002	< 0.00005	0.01
Nickel	1455	U	< 0.0005	< 0.0002	< 0.0002	0.5
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	0.4
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	0.5
Selenium	1455	U	0.0007	< 0.0005	0.0014	0.06
Zinc	1455	U	< 0.003	< 0.003	< 0.003	0.1
Chloride	1220	U	1.4	< 1.0	< 10	4
Fluoride	1220	U	0.23	0.16	< 1.0	800
Sulphate	1220	U	9.4	2.6	19	10
Total Dissolved Solids	1020	N	110	78	220	1000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	4000
Dissolved Organic Carbon	1610	U	8.1	3.5	< 50	1

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	15

Leachate Test Information	
Leachant volume 1st extract/l	0.320
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.085

### Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



## Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Chemtest Job No: 21-19774

Chemtest Sample ID: 1218793

Sample Ref:

TP58

Sample Location:

1.90

Top Depth(m):

2.00

Bottom Depth(m):

24-May-2021

Sampling Date:

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria Limits		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	M	%	1.9	5	6
Loss On Ignition	2610	M	%	1.5	--	10
Total BTEX	2760	M	mg/kg	[B] < 0.010	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	--	--
TPH Total WAC	2670	M	mg/kg	[B] < 10	--	--
Total (Of 17) PAH's	2700	N	mg/kg	< 2.0	--	--
pH	2010	M		8.9	--	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.032	To evaluate	To evaluate
Eluate Analysis			2:1 mg/l	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455	U	< 0.0002	0.0036	0.5	25
Barium	1455	U	0.006	0.0054	20	100
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	70
Copper	1455	U	0.0010	0.0008	2	50
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2
Molybdenum	1455	U	0.0006	0.0005	0.5	10
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10
Lead	1455	U	< 0.0005	< 0.0005	0.5	10
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5
Zinc	1455	U	< 0.003	< 0.003	4	50
Chloride	1220	U	2.1	40	800	15000
Fluoride	1220	U	0.19	1.6	10	150
Sulphate	1220	U	9.5	58	1000	20000
Total Dissolved Solids	1020	N	98	740	4000	60000
Phenol Index	1920	U	< 0.030	< 0.50	1	--
Dissolved Organic Carbon	1610	U	5.5	< 50	500	800

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	13

Leachate Test Information	
Leachant volume 1st extract/l	0.325
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.154

### Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

## Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Chemtest Job No: 21-19774

Chemtest Sample ID: 1218794

Sample Ref:

Sample ID: TP43

Sample Location: 1.50

Top Depth(m): 1.60

Bottom Depth(m):

Sampling Date: 02-Jun-2021

Determinand	SOP	Accred.	Units
Total Organic Carbon	2625	M	%
Loss On Ignition	2610	M	%
Total BTEX	2760	M	mg/kg
Total PCBs (7 Congeners)	2815	M	mg/kg
TPH Total WAC	2670	M	mg/kg
Total (Of 17) PAH's	2700	N	mg/kg
pH	2010	M	
Acid Neutralisation Capacity	2015	N	mol/kg
Eluate Analysis			2:1 mg/l
Arsenic	1455	U	<0.0002
Barium	1455	U	0.009
Cadmium	1455	U	<0.00011
Chromium	1455	U	<0.0005
Copper	1455	U	0.0010
Mercury	1455	U	<0.00005
Molybdenum	1455	U	0.0004
Nickel	1455	U	<0.0005
Lead	1455	U	<0.0005
Antimony	1455	U	<0.0005
Selenium	1455	U	<0.0005
Zinc	1455	U	<0.003
Chloride	1220	U	2.4
Fluoride	1220	U	0.27
Sulphate	1220	U	11
Total Dissolved Solids	1020	N	100
Phenol Index	1920	U	<0.030
Dissolved Organic Carbon	1610	U	4.7

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	10

Leachate Test Information	
Leachant volume 1st extract/l	0.330
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.169

Determinand	Landfill Waste Acceptance Criteria Limits		
	Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
	2.0	5	6
	1.3	--	10
	<0.010	--	--
	<0.10	--	--
	<10	--	--
	<2.0	--	--
	8.8	>6	--
	0.14	To evaluate	To evaluate
	Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
		0.5	2
		20	100
		0.04	1
		0.5	10
		2	50
		0.01	0.2
		0.5	10
		0.4	10
		0.5	10
		0.06	0.7
		0.1	0.5
		4	50
		800	15000
		<10	150
		2.3	500
		39	20000
		690	60000
		<0.50	100000
		<50	800
		<50	1000

### Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



## Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Chemtest Job No: 21-19774

Chemtest Sample ID: 1218795

Sample Ref:

Sample ID: TP90

Sample Location: 0.90

Top Depth(m): 1.00

Bottom Depth(m): 04-Jun-2021

Sampling Date:

Determinand	SOP	Accred.	Units
Total Organic Carbon	2625	M	%
Loss On Ignition	2610	M	%
Total BTEX	2760	M	mg/kg
Total PCBs (7 Congeners)	2815	M	mg/kg
TPH Total WAC	2670	M	mg/kg
Total (Of 17) PAH's	2700	N	mg/kg
pH	2010	M	
Acid Neutralisation Capacity	2015	N	mol/kg
Eluate Analysis			2:1 mg/l
Arsenic	1455	U	<0.0002
Barium	1455	U	0.007
Cadmium	1455	U	<0.00011
Chromium	1455	U	<0.0005
Copper	1455	U	0.0016
Mercury	1455	U	<0.00005
Molybdenum	1455	U	0.0007
Nickel	1455	U	<0.0005
Lead	1455	U	<0.0005
Antimony	1455	U	<0.0005
Selenium	1455	U	<0.0005
Zinc	1455	U	0.009
Chloride	1220	U	5.1
Fluoride	1220	U	0.45
Sulphate	1220	U	13
Total Dissolved Solids	1020	N	120
Phenol Index	1920	U	<0.030
Dissolved Organic Carbon	1610	U	6.7

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	6.9

Landfill Waste Acceptance Criteria Limits	Landfill Waste Acceptance Criteria Limits		Cumulative mg/kg 10:1	8:1 mg/l	2:1 mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	To evaluate
	Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill					
	3	5	2.6			0.5	To evaluate
	--	--	1.1			20	2
	6	--	<0.010			0.04	1
	1	--	<0.10			0.5	10
	500	--	<10			2	50
	100	--	<2.0			0.01	0.2
	--	>6	8.8			0.5	10
	--	--	0.21			0.4	10
						0.06	0.7
						0.1	0.5
						4	50
						800	15000
						10	150
						1000	20000
						4000	60000
						1	100000
						<0.50	--
						<50	800
						<0.0002	25
						0.0043	300
						<0.00011	5
						<0.0005	70
						0.0010	100
						<0.00005	2
						0.0005	30
						<0.0005	40
						<0.0005	50
						0.06	5
						0.1	7
						0.006	200
						<10	25000
						3.7	500
						27	50000
						870	100000
						<0.50	--
						<50	1000

Leachate Test Information	
Leachant volume 1st extract/l	0.337
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.114

### Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



## Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Chemtest Job No: 21-19774

Chemtest Sample ID: 1218796

Sample Ref:

Sample ID: TP134

Sample Location:

Top Depth(m): 0.90

Bottom Depth(m): 1.00

Sampling Date: 03-Jun-2021

Determinand	SOP	Accred.	Units		Landfill Waste Acceptance Criteria Limits			
			M	%	Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill	
Total Organic Carbon	2625	M		%	0.66	3	5	6
Loss On Ignition	2610	M		%	6.1	--	--	10
Total BTEX	2760	M		mg/kg	<0.010	6	--	--
Total PCBs (7 Congeners)	2815	M		mg/kg	<0.10	1	--	--
TPH Total WAC	2670	M		mg/kg	<10	500	--	--
Total (Of 17) PAH's	2700	N		mg/kg	<2.0	100	--	--
pH	2010	M			8.6	--	>6	--
Acid Neutralisation Capacity	2015	N		mol/kg	0.080	--	To evaluate	To evaluate
Eluate Analysis				2:1 mg/l	Cumulative mg/kg 10:1	Limit values for compliance using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U		<0.0002	<0.0002	0.5	2	25
Barium	1455	U		0.006	0.012	20	100	300
Cadmium	1455	U		<0.00011	<0.00011	0.04	1	5
Chromium	1455	U		<0.0005	<0.0005	0.5	10	70
Copper	1455	U		0.0012	0.0023	2	50	100
Mercury	1455	U		<0.00005	<0.00005	0.01	0.2	2
Molybdenum	1455	U		<0.0002	<0.0002	0.5	10	30
Nickel	1455	U		<0.0005	<0.0005	0.4	10	40
Lead	1455	U		<0.0005	<0.0005	0.5	10	50
Antimony	1455	U		<0.0005	<0.0005	0.06	0.7	5
Selenium	1455	U		<0.0005	<0.0005	0.1	0.5	7
Zinc	1455	U		<0.003	<0.003	4	50	200
Chloride	1220	U		1.3	<10	800	15000	25000
Fluoride	1220	U		0.39	<1.0	10	150	500
Sulphate	1220	U		11	21	1000	20000	50000
Total Dissolved Solids	1020	N		140	270	4000	60000	100000
Phenol Index	1920	U		<0.030	<0.30	1	--	--
Dissolved Organic Carbon	1610	U		6.5	<50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	29

Leachate Test Information	
Leachant volume 1st extract/l	0.279
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.085

### Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

## Results - 2 Stage WAC

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Chemtest Job No: 21-19774

Chemtest Sample ID: 1218797

Sample Ref:

Sample ID: TP119

Sample Location:

Top Depth(m): 1.70

Bottom Depth(m): 1.80

Sampling Date: 01-Jun-2021

Determinand	SOP	Accred.	Units	Landfill Waste Acceptance Criteria Limits		
				Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon	2625	M	%	1.2	5	6
Loss On Ignition	2610	M	%	1.4	--	10
Total BTEX	2760	M	mg/kg	<0.10	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	<0.10	--	--
TPH Total WAC	2670	M	mg/kg	<10	--	--
Total (Of 17) PAH's	2700	N	mg/kg	<2.0	--	--
pH	2010	M		8.9	--	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.022	To evaluate	To evaluate
Eluate Analysis				Cumulative mg/kg 10:1	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455	U	mg/l	8:1	2:1	
Barium	1455	U	0.0002	0.0028	0.0005	0.5
Cadmium	1455	U	<0.0005	0.013	<0.0005	20
Chromium	1455	U	<0.00011	<0.00011	<0.00011	0.04
Copper	1455	U	<0.0005	0.0034	0.031	0.5
Mercury	1455	U	0.0010	0.0059	0.0021	2
Molybdenum	1455	U	<0.00005	<0.00005	<0.00005	0.01
Nickel	1455	U	<0.0005	0.0051	0.0027	0.5
Lead	1455	U	<0.0005	0.0017	<0.0005	0.4
Antimony	1455	U	<0.0005	0.0007	<0.0005	0.5
Selenium	1455	U	<0.0005	0.0015	<0.0005	0.06
Zinc	1455	U	<0.0003	<0.003	<0.0005	0.1
Chloride	1220	U	1.8	8.2	<10	4
Fluoride	1220	U	0.16	0.57	<1.0	800
Sulphate	1220	U	5.7	38	11	10
Total Dissolved Solids	1020	N	98	78	190	1000
Phenol Index	1920	U	<0.030	<0.030	<0.30	4000
Dissolved Organic Carbon	1610	U	5.4	3.8	<50	1

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	8.1

Leachate Test Information	
Leachant volume 1st extract/l	0.335
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.131

### Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

## Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

<b>Sample:</b>	<b>Sample Ref:</b>	<b>Sample ID:</b>	<b>Sample Location:</b>	<b>Sampled Date:</b>	<b>Deviation Code(s):</b>	<b>Containers Received:</b>
1218792			TP17	26-May-2021	B	Amber Glass 250ml
1218792			TP17	26-May-2021	B	Amber Glass 60ml
1218792			TP17	26-May-2021	B	Plastic Tub 500g
1218793			TP58	24-May-2021	B	Amber Glass 250ml
1218793			TP58	24-May-2021	B	Amber Glass 60ml
1218793			TP58	24-May-2021	B	Plastic Tub 500g



## Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
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
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
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; Dibenz[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.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

## **Report Information**

### **Key**

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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"
SOP	Standard operating procedure
LOD	Limit of detection

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**

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- 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**

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All soil samples will be retained for a period of 30 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](mailto:customerservices@chemtest.com)



# Final Report

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**Report No.:** 21-19819-1

**Initial Date of Issue:** 18-Jun-2021

**Client:** Applied Geology

**Client Address:** Unit 23, Abbey Park  
Stareton  
Kenilworth  
Warwickshire  
CV8 2LY

**Contact(s):** Andrew Smith  
Kayleigh Mcgeoch  
Lab Results

**Project:** AG3268-21 Land Adjacent to Junction  
10, M40, Ardley

**Quotation No.:** Q17-09497      **Date Received:** 11-Jun-2021

**Order No.:** 16944      **Date Instructed:** 11-Jun-2021

**No. of Samples:** 10

**Turnaround (Wkdays):** 5      **Results Due:** 17-Jun-2021

**Date Approved:** 18-Jun-2021

**Approved By:**

**Details:** Glynn Harvey, Technical Manager

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# Results - Leachate

Project: AG3268-21 L and Adjacent to Junction 10, M40, Ardley

Determinand	Accred.	SOP	Type	Units	LOD	Chemtest Job No.:	
						21-19819	21-19819
pH	U	1010	10:1		N/A	8.4	21-19819
Sulphate	U	1220	10:1	mg/l	1.0	< 1.0	1218949
Magnesium	U	1455	10:1	mg/l	0.20	0.75	1218954
Arsenic (Dissolved)	U	1455	10:1	µg/l	0.20	0.66	TP128
Boron (Dissolved)	U	1455	10:1	µg/l	10.0	< 10	TP150
Beryllium (Dissolved)	U	1455	10:1	µg/l	1.00	< 1.0	SOIL
Cadmium (Dissolved)	U	1455	10:1	µg/l	0.11	< 0.11	SOIL
Copper (Dissolved)	U	1455	10:1	µg/l	0.50	3.4	0.10
Mercury (Dissolved)	U	1455	10:1	µg/l	0.05	< 0.05	0.20
Nickel (Dissolved)	U	1455	10:1	µg/l	0.50	1.2	0.30
Lead (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	0.30
Selenium (Dissolved)	U	1455	10:1	µg/l	0.50	< 0.50	0.30
Vanadium (Dissolved)	U	1455	10:1	µg/l	0.50	1.2	0.30
Zinc (Dissolved)	U	1455	10:1	µg/l	2.5	< 2.5	0.30
Chromium (Total)	N	1455	10:1	µg/l	0.50	< 0.50	0.30
Naphthalene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Acenaphthylene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Acenaphthene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Fluorene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Phenanthrene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Anthracene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Fluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Pyrene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Chrysene	N	1700	10:1	µg/l	0.10	< 0.10	0.30
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Indeno(1,2,3-c,d)Pyrene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Dibenz(a,h)Anthracene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Benzofluoranthene	U	1700	10:1	µg/l	0.10	< 0.10	0.30
Total Of 16 PAH's	N	1700	10:1	µg/l	2.0	< 2.0	0.30





# Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Client: Applied Geology Quotation No.: Q17-09497	Chemtest Job No.:		21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819	21-19819
	Chemtest Sample ID.:	Sample Location:	TP1	TP105	TP108	TP126	TP128	TP136	TP138	TP141	
Sample Type:	SOIL										
Top Depth (m):	0.10										
Bottom Depth (m):	0.20										
Date Sampled:	04-Jun-2021										
Asbestos Lab:	DURHAM										
Determinand	Accred.	SOP	Units	LOD	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C5-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
ACM Type	U	2192		N/A	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	20	12	14	18	10	16	18
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones, Roots and Wood	Stones and Roots
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	8.2	8.4	8.4	8.0	8.4	8.3	8.3
Boron	N	2450	mg/kg	0.40	6.9	5.9	8.7	11	15	20	19
Beryllium	U	2450	mg/kg	1.0	1.3	< 1.0	1.4	1.0	1.2	1.6	1.6
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



# Results - Soil

Project: AG3268-21 L and Adjacent to Junction 10, M40, Ardley

Client: Applied Geology Quotation No.: Q17-09497	Chemtest Job No.:		Chemtest Sample ID.:		Sample Location:		Sample Type:		Top Depth (m):		Bottom Depth (m):		Date Sampled:		Asbestos Lab:	
	21-19819	1218945	21-19819	1218946	21-19819	1218947	21-19819	1218948	21-19819	1218949	21-19819	1218950	21-19819	1218951	21-19819	1218952
Determinand	Accred.	SOP	Units	LOD	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Demeton-O	N	2820	mg/kg	0.20												
Phorate	N	2820	mg/kg	0.20												
Demeton-S	N	2820	mg/kg	0.20												
Disulfoton	N	2820	mg/kg	0.20												
Fenthion	N	2820	mg/kg	0.20												
Trichloronate	N	2820	mg/kg	0.20												
Prothiofos	N	2820	mg/kg	0.20												
Fensulphothion	N	2820	mg/kg	0.20												
Sulprofos	N	2820	mg/kg	0.20												
Azinphos-Methyl	N	2820	mg/kg	0.20												
Coumaphos	N	2820	mg/kg	0.20												
Atraton	N	2830	mg/kg	0.20												
Prometon	N	2830	mg/kg	0.20												
Simazine	N	2830	mg/kg	0.20												
Atrazine	N	2830	mg/kg	0.20												
Propazine	N	2830	mg/kg	0.20												
Terbutylazine	N	2830	mg/kg	0.20												
Secbumeton	N	2830	mg/kg	0.20												
Simetryn	N	2830	mg/kg	0.20												
Ametryn	N	2830	mg/kg	0.20												
Prometryn	N	2830	mg/kg	0.20												
Terbutryn	N	2830	mg/kg	0.20												
Alpha-HCH	N	2840	mg/kg	0.20												
Gamma-HCH (Lindane)	N	2840	mg/kg	0.20												
Beta-HCH	N	2840	mg/kg	0.20												
Delta-HCH	N	2840	mg/kg	0.20												
Heptachlor	N	2840	mg/kg	0.20												
Aldrin	N	2840	mg/kg	0.20												
Heptachlor Epoxide	N	2840	mg/kg	0.20												
Gamma-Chlordane	N	2840	mg/kg	0.20												
Alpha-Chlordane	N	2840	mg/kg	0.20												
Endosulfan I	N	2840	mg/kg	0.20												
4,4-DDE	N	2840	mg/kg	0.20												
Dieldrin	N	2840	mg/kg	0.20												
Endrin	N	2840	mg/kg	0.20												
4,4-DDD	N	2840	mg/kg	0.20												
Endosulfan II	N	2840	mg/kg	0.20												

## Results - Soil

**Project:** AG3268-21 L and Adjacent to Junction 10, M40, Ardley

Client: Applied Geology Quotation No.: Q17-09497	Chemtest Job No.:		21-19819		21-19819		21-19819		21-19819		21-19819		21-19819		21-19819	
	Chemtest Sample ID.:		1218945		1218946		1218947		1218948		1218949		1218950		1218951	
Sample Location:			TP1		TP105		TP108		TP126		TP128		TP136		TP138	
Sample Type:			SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
Top Depth (m):			0.10		0.10		0.10		0.10		0.10		0.10		0.10	
Bottom Depth (m):			0.20		0.20		0.20		0.20		0.20		0.20		0.20	
Date Sampled:			04-Jun-2021		02-Jun-2021		03-Jun-2021		03-Jun-2021		03-Jun-2021		02-Jun-2021		04-Jun-2021	
Asbestos Lab:			DURHAM		DURHAM		DURHAM		DURHAM		DURHAM		DURHAM		DURHAM	
Determinand	Accred.	SOP	Units	LOD												
Endrin Aldehyde	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
4,4-DDT	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Endosulfan Sulphate	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Methoxychlor	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Endrin Ketone	N	2840	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20

# Results - Soil

Project: AG3268-21 Land Adjacent to Junction 10, M40, Ardley

Determind	Accred.	SOP	Units	LOD	Chemtest Job No.:		21-19819	21-19819
					Chemtest Sample ID.:	1218953		
					Sample Location:		TP149	TP150
					Sample Type:		SOIL	SOIL
					Top Depth (m):		0.30	0.20
					Bottom Depth (m):		0.40	0.30
					Date Sampled:		03-Jun-2021	03-Jun-2021
					Asbestos Lab:		DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD				
Organic Matter	M	2625	%	0.40	1.0	1.0	1.4	1.4
Arsenic	M	2450	mg/kg	1.0	21	21	12	12
Cadmium	M	2450	mg/kg	0.10	0.30	0.30	0.30	0.30
Chromium	M	2450	mg/kg	1.0	33	33	27	27
Chromium (Hexavalent)	N	2490	mg/kg	0.50				
Chromium (Trivalent)	N	2490	mg/kg	1.0				
Copper	M	2450	mg/kg	0.50	27	27	15	15
Lead	M	2450	mg/kg	0.50	19	19	15	15
Magnesium (Water Soluble)	N	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Mercury	M	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	27	27	23	23
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	45	45	34	34
Zinc	M	2450	mg/kg	0.50	61	61	60	60
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz[a,h]Anthracene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Phenol	M	2920	mg/kg	0.020				
Resorcinol	M	2920	mg/kg	0.020				
Cresols	M	2920	mg/kg	0.020				
1-Naphthol	N	2920	mg/kg	0.020				
Trimethylphenols	M	2920	mg/kg	0.020				
Total Phenols	M	2920	mg/kg	0.10				