Mr Robert McLaughlin
Galliford Try
Crab Lane
Warrington
WA2 8XR

Date: 12/02/20

Dear Sir,

RE: Phase Q, Plots 234 - 236 & Phase V, Plots 276 - 277 & 279 - 281 Galliford Try, Brunswick

Summary

Description	NHBC CML	
	Pass	Fail
The cover system in the rear gardens of Phase Q, Plots 234 - 236 & Phase V, Plots 276 - 277 & 279 - 281 has achieved the required chemical quality and has been placed at the appropriate thickness.	✓	

A site inspection assessed the soils placed in the rear gardens of Phase Q, Plots 234 - 236 & Phase V, Plots 276 - 277 & 279 - 281. The material is known to be a second generation product with no evidence of any significant visual or olfactory contamination. A review of chemical test results indicated the tested soil meets with the quality requirements of the development. The Chemical Laboratory Results are found in Appendix A. In addition and in accordance with the remediation strategy inspection pits have been excavated in the rear gardens of each property. The inspection pits indicated the soil to have been placed at the appropriate thickness in accordance with the requirements of the URA, Brunswick PFI, Remediation Strategy, April 2015, Report No. 47069217 – Phases 1-3, prepared for: Galliford Try.

Introduction

A development of approximately 517 new houses is being constructed in phases by Galliford Try at Brunswick, Manchester. The redevelopment of the Brunswick Neighbourhood forms part of the Brunswick PFI regeneration project, and has been granted planning permission by Manchester City Council (Planning Application No. 101664/FO/2013/N2).

The site is currently occupied by residential housing with associated schools and public open spaces however most areas of the site were previously occupied by various types of historical industrial works. Prior to construction of the new properties land had been remediated in phases to remove buried obstructions, deal with contamination and re-profile site levels.

Remediation Works

Remediation works have been split into five scenarios. The proposed mitigation measures to reduce the risk to acceptable levels include the following:

Scenario 1: Site Wide Residential Gardens.

A minimum 600mm clean validated imported soil is recommended for gardens areas. This will consist of 150mm of topsoil underlain by 450mm of sub soil. Deeper clean 'soil bowls' of 1000mm are recommended for any proposed tree species to be planted.

Scenario 2: Statistical 'Hot Spots' Residential.
A minimum 600mm clean validated imported soil is recommended for gardens areas. This will consist of 150mm of topsoil underlain by 450mm of sub soil over a 100mm stone layer and geotextile. Deeper clean 'soil bowls' of 1000mm are recommended for any proposed tree species to be planted.

Scenario 3: Recreational space and landscaped areas.
A minimum of 300mm clean validated imported soil is recommended over these open spaces. This will consist of 150mm of topsoil underlain by 150mm of sub soil. Deeper clean 'soil bowls' of 1000mm are recommended for any proposed tree species.

Scenario 4: Play areas for children.
It is recommended that raised beds are considered for landscaped areas within the play areas. A minimum 450mm clean validated imported soil is recommended. This will consist of 150mm of topsoil underlain by 300mm of sub soil.

Scenario 5: Orchard and allotment areas.
A minimum of 600mm clean validated imported soil is recommended for the allotment areas. This will consist of 150mm of topsoil underlain by 450mm of sub soil. Deeper clean 'soil bowls' of 1000mm are required for any proposed tree species.

Engagement

Redstart was instructed by Chandos Civil Engineering (CCE) to take soil samples, submit them for chemical analysis and interpret the laboratory results of imported 'visually clean' soils. The interpretation includes assessing soils against quality criteria for reuse included within the remediation strategy. The instruction included attending site to visually assess soils following placement and completion of inspection pits to confirm the soil had been placed at the appropriate thickness.

Imported Soil

A visual inspection of the imported soil was undertaken. The soil appeared of good quality with no visual or olfactory evidence of significant contaminants and no oversized material (such as brick rubble / construction debris). There were however very minor fragments of possible concrete and brick within the soil indicating the soil was a second generation product.

Chemical Testing

8No. samples were taken from the imported soil stockpile in August 2019. The samples were submitted to the independent MCERTS accredited laboratory Chemtest for analysis including pH, Metals, PAHs and TPH and Asbestos Screen in general accordance with the requirements of the remediation strategy. The remediation criteria are included as Appendix B. The chemical laboratory results indicated that Chromium (III) was identified in excess of the URS criteria target levels, the below table summarises the results:

Contaminant	Chemical Analysis Result	URS Specification	LQM/CIEH S4UL (5% SOM)	DEFRA C4SL
	mg/kg			
Chromium (III)	23-34	4.3	910	-

Following discussions with the Manchester City Council, Environmental Health Department the Human Health Assessment Criteria for Residential with Plant Uptake end use scenario Soil Guideline Values (SGVs) can be taken from the DEFRA C4SL or LQM/CIEH S4ULs which were released after the URS remediation strategy was produced. When the soil chemical analysis is compared against the C4SL or S4ULs SGVs no exceedances were identified and the soil was therefore considered suitable for use. The results of the chemical analysis testing are included in Appendix A.

Laboratory Results

The chemical laboratory results indicated that all of the samples met the remediation criteria and are suitable for use. No visual or olfactory sign of contamination was noted.

Soil Thickness

Soil thickness was confirmed during a second visit when the soil had been placed. Phase Q, Plots 234 - 236 & Phase V, Plots 276 - 277 & 279 - 281 fall under Scenario 1: Site Wide Residential Gardens. The remediation strategy requires placement of 600mm clean validated imported soil cover within the rear gardens. This will consist of 150mm of topsoil underlain by 450mm of sub soil.

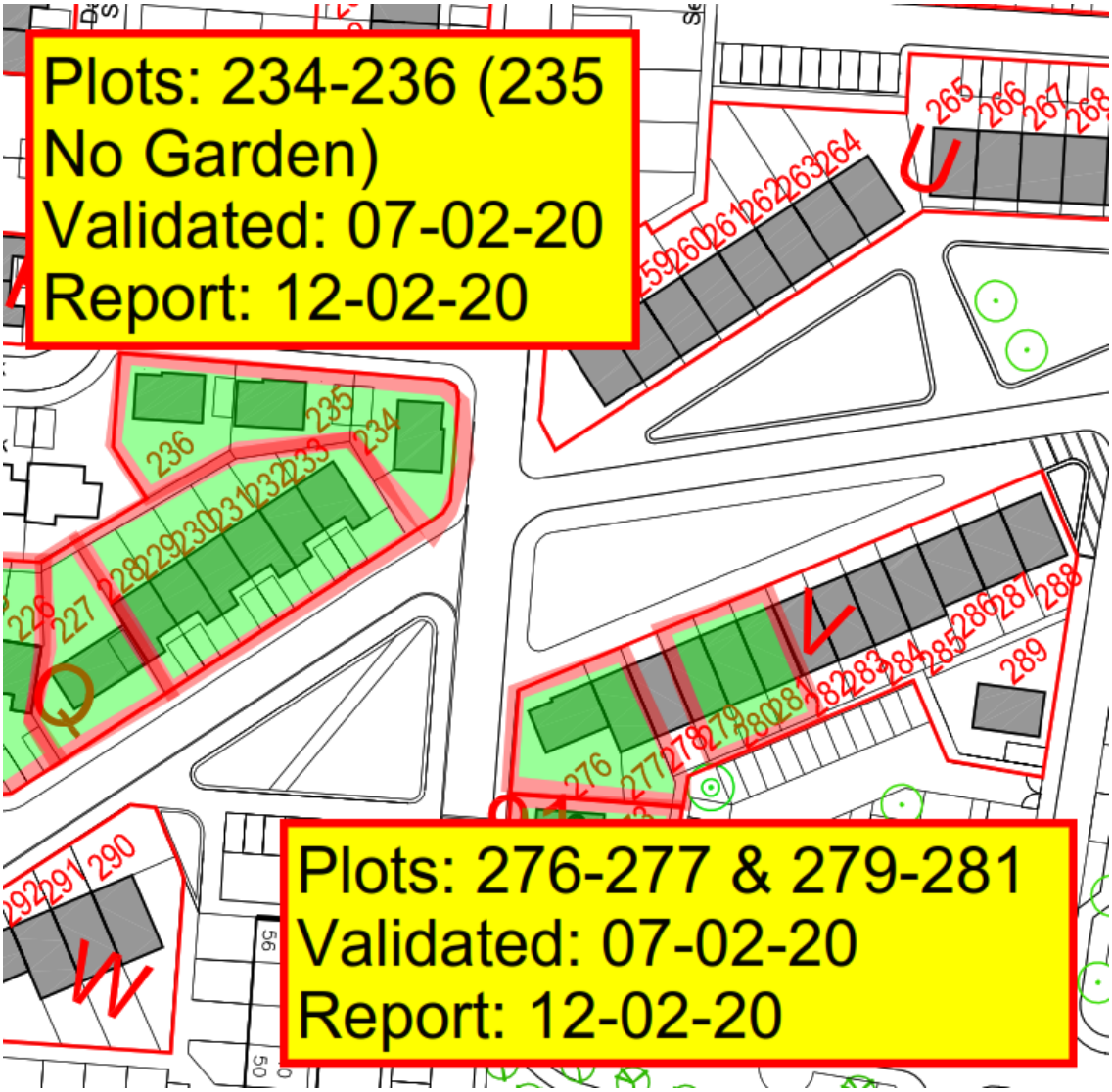
Hand excavated inspection pits were advanced in the rear garden of plots 228 - 233. The thickness of the soil was measured and photographed. The clean cover soil was measured at a minimum thickness of 600mm with a hard dig layer below. A location plan and photographs are included below.

Conclusions

Overall, the quality of the soil analysed meets with the requirements of the development. A visual inspection of the soil confirmed the soil to be second generation and of a reasonable quality. Inspection pits completed in the rear gardens indicates the soil has been placed in accordance with the recommendations for soil thickness in the specification.

Sampling Plot Location Plan

Phase Q, Plots 234 - 236 & Phase V, Plots 276 - 277 & 279 - 281



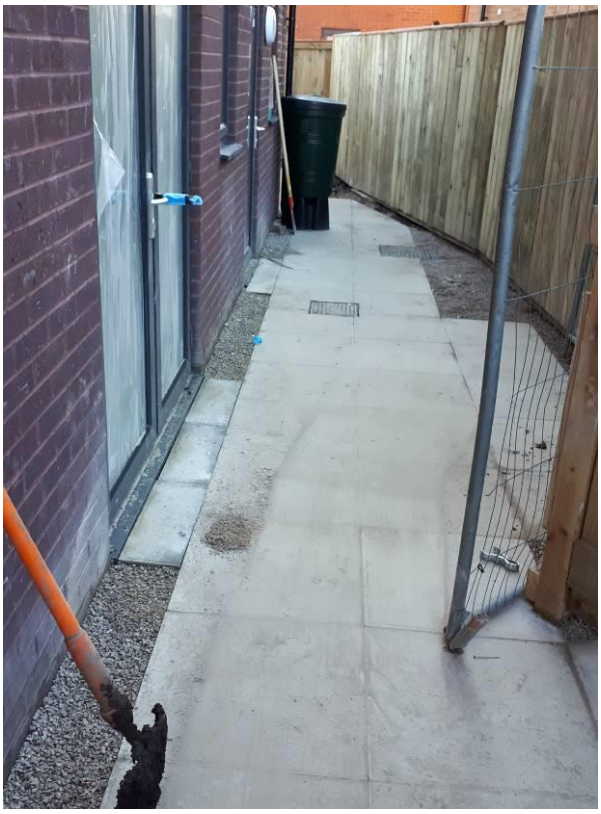
Depth Validation Location Photographs - Phases Q & V

Photograph 1: Plot 234 Validation Pit 1 Location

Photograph 2: Plot 234 Validation Pit 1 Depth

Photograph 3: Plot 234 Validation Pit 2 Location

Photograph 4: Plot 234 Validation Pit 2 Depth

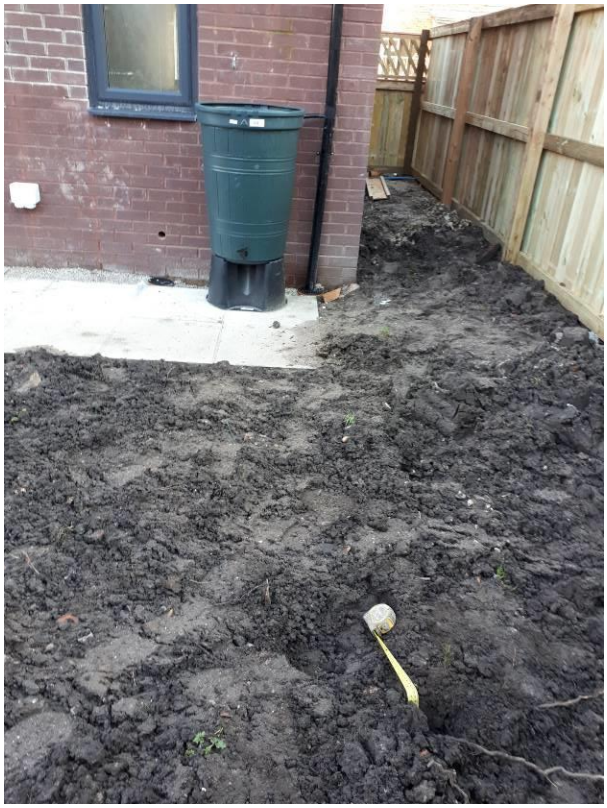


Photograph 5: Plot 235 Showing No Garden

Photograph 6: Plot 235 Showing No Garden

Photograph 7: Plot 236 Validation Pit 1 Location

Photograph 8: Plot 236 Validation Pit 1 Depth



Photograph 9: Plot 236 Validation Pit 2 Location

Photograph 10: Plot 236 Validation Pit 2 Depth

Photograph 11: Plot 276 Validation Pit 1 Location

Photograph 12: Plot 276 Validation Pit 1 Depth

Photograph 13: Plot 276 Validation Pit 2 Location

Photograph 14: Plot 276 Validation Pit 2 Depth

Photograph 15: Plot 277 Validation Pit 1 Location

Photograph 16: Plot 277 Validation Pit 1 Depth

Photograph 17: Plot 277 Validation Pit 2 Location

Photograph 18: Plot 277 Validation Pit 2 Depth

Photograph 19: Plot 279 Validation Pit 1 Location

Photograph 20: Plot 279 Validation Pit 1 Depth

Photograph 21: Plot 279 Validation Pit 2 Location

Photograph 22: Plot 279 Validation Pit 2 Depth

Photograph 23: Plot 280 Validation Pit 1 Location

Photograph 24: Plot 280 Validation Pit 1 Depth

Photograph 25: Plot 280 Validation Pit 2 Location

Photograph 26: Plot 280 Validation Pit 2 Depth

Photograph 27: Plot 281 Validation Pit 1 Location

Photograph 28: Plot 281 Validation Pit 1 Depth

Photograph 29: Plot 281 Validation Pit 2 Location

Photograph 30: Plot 281 Validation Pit 2 Depth

Final Remarks

We trust this meets with your requirements. Please do not hesitate to contact us if you require further information.

For and on behalf of Redstart

David Newton BSc FGS
Geo-Environmental Engineer
Enclosed:

Appendix A – Laboratory Testing Results
Appendix B – Clean Cover Requirements

Appendix A
Laboratory Results

Chemtest
The right chemistry to deliver results
Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING 2183

Final Report

Report No.:	19-27362-1		
Initial Date of Issue:	21-Aug-2019		
Client	Redstart Northwest Limited		
Client Address:	Unit 6 Oak Green Business Park Earl Road Cheadle Hulme Cheshire SK8 6QL		
Contact(s):	Phil Sales		
Project	314.23 Brunswick		
Quotation No.:	Q18-12443	**Date Received:**	15-Aug-2019
Order No.:		**Date Instructed:**	15-Aug-2019
No. of Samples:	8		
Turnaround (Wkdays):	5	**Results Due:**	21-Aug-2019
Date Approved:	21-Aug-2019		

Approved By:

Details: Robert Monk, Technical Manager

Chemtest
The right chemistry to deliver results

Results - Soil

Project: 314.23 Brunswick

Client: Redstart Northwest Limited				**Chemtest Job No.:**	19-27362	19-27362	19-27362	19-27362	19-27362	19-27362	19-27362	19-27362
Quotation No.: Q18-12443				**Chemtest Sample ID.:**	873465	873466	873467	873468	873469	873470	873471	873472
				Client Sample ID.:	P2501	P2502	P2503	P2504	P2505	P2506	P2507	P2508
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-	-	-	-	-	-	-	-
Total Asbestos	N	2192	%	0.001	-	-	-	-	-	-	-	-
Moisture	N	2030	%	0.020	26	26	28	27	28	25	28	28
pH	U	2010		N/A	8.1	8.0	7.9	7.6	7.8	7.8	7.8	7.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.55	0.52	0.50	0.59	0.44	0.43	0.42	0.63
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.028	0.023	0.019	0.018	0.028	0.019	0.023	0.020
Sulphur (Elemental)	U	2180	mg/kg	1.0	11	7.8	7.3	6.4	5.7	5.1	6.3	4.6
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphate (Acid Soluble)	U	2430	%	0.010	0.065	0.078	0.079	0.079	0.073	0.059	0.081	0.076
Arsenic	U	2450	mg/kg	1.0	13	13	11	14	13	14	13	14
Barium	U	2450	mg/kg	10	230	190	130	150	140	150	130	140
Beryllium	U	2450	mg/kg	1.0	1.4	1.1	< 1.0	< 1.0	1.1	1.1	< 1.0	1.2
Cadmium	U	2450	mg/kg	0.10	0.20	0.25	0.23	0.29	0.28	0.21	0.25	0.22
Chromium	U	2450	mg/kg	1.0	34	28	23	26	28	33	27	29
Molybdenum	U	2450	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Antimony	N	2450	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	U	2450	mg/kg	0.50	24	27	22	22	26	24	24	24
Mercury	U	2450	mg/kg	0.10	0.10	0.12	0.11	0.11	0.14	0.10	0.13	0.10
Nickel	U	2450	mg/kg	0.50	33	25	20	21	25	28	22	26
Lead	U	2450	mg/kg	0.50	41	49	44	44	51	45	51	46
Selenium	U	2450	mg/kg	0.20	< 0.20	0.34	0.30	0.28	0.30	0.29	0.34	0.34
Vanadium	U	2450	mg/kg	5.0	40	34	30	34	36	39	35	39
Zinc	U	2450	mg/kg	0.50	67	72	60	63	71	65	69	74
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	4.7	6.9	5.3	5.5	5.2	4.1	5.0	4.8
Aliphatic TPH >C5-C6	N	2680	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Aliphatic TPH >C6-C8	N	2680	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Aliphatic TPH >C8-C10	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C5-C7	N	2680	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Aromatic TPH >C7-C8	N	2680	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Chemtest
The right chemistry to deliver results

Results - Soil

Project: 314.23 Brunswick

Client: Redstart Northwest Limited				**Chemtest Job No.:**	19-27362	19-27362	19-27362	19-27362	19-27362	19-27362	19-27362	19-27362
Quotation No.: Q18-12443				**Chemtest Sample ID.:**	873465	873466	873467	873468	873469	873470	873471	873472
				Client Sample ID.:	P2501	P2502	P2503	P2504	P2505	P2506	P2507	P2508
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Date Sampled:	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019	14-Aug-2019
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aromatic TPH >C8-C10	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	2680	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Benzene	N	2760	µg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Toluene	N	2760	µg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Ethylbenzene	N	2760	µg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
m & p-Xylene	N	2760	µg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
o-Xylene	N	2760	µg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Methyl Tert-Butyl Ether	N	2760	µg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	0.52	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	0.10	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	0.73	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	0.78	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	2.1	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30

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.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
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
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.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	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-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

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
Clean Cover Protocol

APPENDIX A

Determinand	LOD	Units	Residential with plant uptake assessment criteria
Arsenic	1	mg/kg	32
Boron (water-soluble)	1	mg/kg	291
Cadmium	1	mg/kg	10
Chromium	1	mg/kg	4.3
Chromium VI	1	mg/kg	4.3
Copper	1	mg/kg	2330
Lead	1	mg/kg	354
Mercury	1	mg/kg	170
Nickel	1	mg/kg	130
Selenium	3	mg/kg	350
Zinc	1	mg/kg	3750
Cyanide(Complex)	1	mg/kg	400
Cyanide(free)	1	mg/kg	25
pH	0.1	Units	No criteria
Phenols	1	mg/kg	390
SO4(Total)	0.01	%	No criteria
Sulphide	10	mg/kg	No criteria
Sulphur(Free)	500	mg/kg	No criteria
Thiocyanate	10	mg/kg	No criteria
Naphthalene	0.01	mg/kg	3.7
Acenaphthylene	0.01	mg/kg	400
Acenaphthene	0.01	mg/kg	480
Fluorene	0.01	mg/kg	380
Phenanthrene	0.01	mg/kg	200
Anthracene	0.01	mg/kg	4900
Fluoranthene	0.01	mg/kg	460
Pyrene	0.01	mg/kg	1000
Benzo(a)Anthracene	0.01	mg/kg	4.7
Chrysene	0.01	mg/kg	8
Benzo(b)Fluoranthene	0.01	mg/kg	6.5
Benzo(k)Fluoranthene	0.01	mg/kg	9.6
Benzo(a)Pyrene	0.01	mg/kg	0.94
Indeno(123-cd)Pyrene	0.01	mg/kg	3.9
Dibenzo(ah)Anthracene	0.01	mg/kg	0.86
Benzo(ghi)Perylene	0.01	mg/kg	46
PAH(total)	0.01	mg/kg	No criteria

(c) URS April 2014

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