Schedule of Accreditation

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United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

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Accredited to ISO/IEC 17025:2017

Environmental Chemistry Testing Limited

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Testing performed by the Organisation at the locations specified

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address Unit 14B Blackhill Road West Holton Heath Trading Park Poole Dorset BH16 6LE **Local contact** Mrs Emilia Hevelke Tel: +44(0)116 2536333 Email: Emilia.hevelke@ectlabs.co.uk	**Testing:** Inorganic Chemistry Organic Chemistry Microbiology Sample Preparation	A
Address Unit D11 Admiralty Park Station Road Holton Heath Poole Dorset BH16 6HX **Local contact** Mrs Emilia Hevelke Tel: +44(0)116 2536333 Email: Emilia.hevelke@ectlabs.co.uk	**Testing:** Sample Preparation Inorganic Chemistry	B
Address Leicester Old Mill Lane An Annex of 7-11 Harding Street Leicester LE1 4DH **Local contact** Mrs Emilia Hevelke Tel: +44(0)116 2536333 Email: Emilia.hevelke@ectlabs.co.uk	**Testing:** Aggregates, concrete and mortar and soils for civil engineering purposes. Environmental analysis and chemical testing for soils. Waters Microbiology testing of waters Identification of asbestos in bulk materials and soils Health and Hygiene Asbestos – All Support Functions	C

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOIL and GRANULAR WASTE	Preparation for subsequent analysis by an ISO/IEC 17025 accredited laboratory	Documented In-House Methods	
	WAC Leachate Preparation (2:1, 8:1 and 10:1)	In-house procedures PLP0101 and PLP0102 based on BS EN 12457-3:2002	B
	Chemical Tests		
	pH value	In-house method PMT0301 based on BS 1377:3:1990 by pH meter	A
	BTEX: Benzene Ethylbenzene Toluene m/p-Xylene o-Xylene Total BTEX (sum of the 6 above)	In-house method PMT0101 by Headspace GC-FID using Ultrasonic Bath Extraction	A
	Loss on Ignition	In-house method PMT0302 based on BS 1377:3:1990 by Gravimetry	B
	Total Organic Carbon (TOC)	In-house method PMT0102 by NDIR carbon analyser	A
SOIL	Phenol Index	In-house method PMT0109 by Continuous Flow Analyser	A
SOIL	Total Cyanide Free Cyanide Complex Cyanide (by Calculation)	In-house method PMT0206 by Continuous Flow Analyser	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOIL and GRANULAR WASTE (cont'd)	Chemical Tests (cont'd)	Documented In-House Methods	
	Total Extractable Metals: Arsenic Cadmium Chromium Copper Lead Nickel Selenium Zinc	In-house method PMT0201 by ICP-OES	A
SOIL	pH	In-house method PMT0308 by pH Robot	A
	Total Petroleum Hydrocarbons C_{10}-C_{40}	In-house method PMT0105 by GC-FID	A
	Mercury	In-house method PMT0202 by cold vapour AAS	A
	Polynuclear Aromatic Hydrocarbons (PAH's): - Naphthalene - Acenaphthylene - Acenaphthene - Fluorene - Phenanthrene - Anthracene - Fluoranthene - Pyrene - Benzo(a)anthracene - Chrysene - Benzo(b)fluoranthene - Benzo(k)fluoranthene - Benzo(a)pyrene - Indeno(1,2,3-c,d)pyrene - Dibenz(a,h)anthracene - Benzo(g,h,i)perylene Total PAH's (SUM of 16 Above)	In-house method PMT0108 by GC-MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOIL and GRANULAR WASTE (cont'd)	Chemical Tests (cont'd)	Documented In-House Methods	
	PCB Congeners: PCB 28 PCB 52 PCB 101 PCB 118 PCB 138 PCB 153 PCB 180 Total PCBs (sum of the above)	In-house method PMT0110 by GC-MS	A
SOIL	Metals: Arsenic Barium Beryllium Cadmium Cobalt Chromium Copper Iron Mercury Molybdenum Nickel Lead Selenium Tin Thallium Vanadium Zinc	In-house method PMT0210 ICPMS	A
SOIL	Water Soluble Sulphates	In-house method PMT0207 by Discrete flow analyser	A
SOIL	Total Sulphur	In-house method PMT0209 by ICP-OES	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
AGGREGATES	Chemical Tests (cont'd)	Documented In-House Methods	
	Water-Soluble Sulphates	BS EN 1744-1:2009 + A1:2012 Tests for the Chemical Properties of Aggregates Clause 10.1	A
	Total Sulphur	BS EN 1744-1:2009 + A1:2012 Tests for the Chemical Properties of Aggregates Clause 11.1	A
	Acid Soluble Sulphates	BS EN 1744-1:2009 + A1:2012 Tests for Chemical Properties of Aggregates Clause 12	A
	Acid Soluble Sulphides	BS EN 1744-1:2009 + A1 2012 Tests for Chemical Properties of Aggregates Clause 13	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOIL	<u>Chemical Tests</u>	Documented In-House Methods to Meet the Requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of soil	
	Polynuclear Aromatic Hydrocarbons (PAH's): Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-c,d)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene Total PAH's (Sum of 16 above)	In-house method PMT0108 by GC-MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SURFACE AND GROUND WATERS and LEACHATES	Chemical Tests	Documented In-House Methods	
Ground Waters, Surface Waters and Laboratory Prepared Leachates	Ammonium Nitrogen	In-house method PMT0203 by spectrophotometry	A
Ground Waters, Drinking Water (non-regulatory), Process Waters, Surface Waters and Laboratory Prepared Leachates	Anions: chloride fluoride nitrate phosphate sulphate nitrite	In-house method PMT0204 by Ion Chromatography using Dionex and Metrohm IC Systems Including PLP0101 & PLP0102 2:1, 8:1, WAC Leachate Preparation based on BS EN 12457	A
Drinking Water (non-regulatory), Process Waters and Laboratory Prepared Leachates	Anions: bromide	In-house method PMT0204 by Ion Chromatography using Dionex and Metrohm IC Systems Including PLP0101 & PLP0102 2:1, 8:1, WAC Leachate Preparation based on BS EN 12457	A
Ground Waters, Drinking Waters (non-regulatory), Process Waters Surface Waters and Laboratory Prepared Leachates	Electrical conductivity	In-house method PMT0303 by Conductivity Meter Including PLP0101 & PLP0102 2:1, 8:1, WAC Leachate Preparation based on BS EN 12457	A
Ground Waters, Drinking Waters (non-regulatory), Process Waters Surface Waters and Laboratory Prepared Leachates	pH value	In-house method PMT0301 by pH meter PMT0308 by pH Robot Including PLP0101 & PLP0102 2:1, 8:1, WAC Leachate Preparation based on BS EN 12457	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SURFACE AND GROUND WATERS and LEACHATES (cont'd)	Chemical Tests (cont'd)	Documented In-House Methods	
Ground Waters, Surface Waters and Laboratory Prepared Leachates	Metals: Antimony Arsenic Barium Cadmium Chromium Copper Lead Molybdenum Nickel Selenium Zinc	In-house method PMT0205 by ICP-OES Including PLP0101 & PLP0102 2:1, 8:1, WAC Leachate Preparation based on BS EN 12457	A
Ground Waters, Surface Waters and Laboratory Prepared Leachates	Total Dissolved Solids	Test Procedure PMT0304 Including PLP0101 & PLP0102 2:1, 8:1, WAC Leachate Preparation based on BS EN 12457	A
Laboratory Prepared Leachates, Ground Waters, Borehole Waters	Mercury	In-house method PMT0202 by cold vapour AAS Including PLP0101 & PLP0102 2:1, 8:1, WAC Leachate Preparation based on BS EN 12457	A
Ground Waters, Surface Waters and Laboratory Prepared Leachates	Chemical Oxygen Demand	In-house method PMT0307 by spectrophotometry	A
Ground Waters, Surface Waters and Laboratory Prepared Leachates	Total organic carbon (TOC) and Dissolved Organic Carbon (DOC)	In-house method PMT0103 by NDIR carbon analyser Including PLP0101 & PLP0102 2:1, 8:1, WAC Leachate Preparation based on BS EN 12457	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SURFACE AND GROUND WATERS and LEACHATES (cont'd)	Chemical Tests (cont'd)	Documented In-House Methods	
Ground Waters, Surface Waters, Drinking Water (non-regulatory), Process Waters and Laboratory Prepared Leachates	Total Suspended Solids	In-house method PMT0305 by gravimetry	A
Ground Waters, Surface Waters, Drinking Water (non-regulatory) and Process Waters	Total Suspended Solids	In-house method PMT0305 by gravimetry	B
Ground Waters, Surface Waters, and Laboratory Prepared Leachates	Phenol Index	In-house method PMT0109 by Continuous Flow Analyser Including PLP0101 & PLP0102 2:1, 8:1, WAC Leachate Preparation based on BS EN 12457	A
Ground Waters, Surface Waters, and Laboratory Prepared Leachates	Total Cyanide Free Cyanide Complex Cyanide (by Calculation	In-house method PMT0206 by Continuous Flow Analyser	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SURFACE AND GROUND WATERS and LEACHATES (cont'd)	Chemical Tests (cont'd)	Documented In-House Methods	
Surface Water	Metals: Aluminium Arsenic Barium Cadmium Cobalt Chromium Copper Iron Mercury Molybdenum Nickel Lead Antimony Selenium Tellurium Titanium Thallium Uranium Vanadium Zinc	In-house method PMT0208 ICPMS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SURFACE AND GROUND WATERS and LEACHATES (cont'd)	Chemical Tests (cont'd)	Documented In-house Methods	
Ground Water	Metals: Aluminium Arsenic Barium Beryllium Cadmium Cobalt Chromium Copper Iron Mercury Lithium Magnesium Molybdenum Nickel Lead Sulphur Antimony Selenium Tellurium Titanium Thallium Uranium Vanadium Zinc	In-house method PMT0208 ICPMS	A
Ground Water, Drinking Water (non-regulatory), Process Waters and Surface Water	Ammoniacal Nitrogen	In-house method PMT0211 by Discrete analyser	A
Ground Water, Surface Waters and Laboratory Prepared Leachates	Water Soluble Sulphates	In-house method PMT0207 by Discrete flow analyser	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SURFACE AND GROUND WATERS and LEACHATES (cont'd)	Chemical Tests (cont'd)	Documented In-house Methods	
Laboratory Prepared Leachates	Metals: Arsenic Barium Beryllium Cadmium Cobalt Chromium Copper Iron Mercury Lithium Magnesium Manganese Molybdenum Nickel Lead Sulphur Antimony Selenium Tellurium Titanium Thallium Uranium Vanadium Zinc	Including PLP0101 & PLP0102 2:1, 8:1, 10:1 WAC Leachate Preparation based on BS EN 12457 In-house Method PMT0208 by ICP-MS	A

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	<u>Health and Hygiene</u>	Health and Safety Executive – Asbestos: The Analysts' Guide (HSG 248) – 2021	
ASBESTOS in BULK MATERIALS including materials and products suspected of containing asbestos	Identification of: Amosite Chrysotile Crocidolite Fibrous actinolite Fibrous anthophyllite Fibrous tremolite	Documented In-House Method MS-AS-Asbestos using stereo-microscopy, polarised light optical microscopy and dispersion staining based on HSG 248	C
ASBESTOS IN SOILS – The Identification of asbestos fibres in bulk samples of soil, specifically: *Soil* *Sediment* *Slurry* *Ballast* *Aggregates*	Identification of: Amosite Chrysotile Crocidolite Fibrous actinolite Fibrous anthophyllite Fibrous tremolite	Documented In-House Method MS-AS-Asbestos using stereo-microscopy, polarised light optical microscopy and dispersion staining based on HSG 248	C
ASBESTOS IN SOILS – The Identification and quantification of asbestos fibres in bulk samples of soil, specifically: *Soil* *Ballast* *Aggregates*	Identification and Quantification of Asbestos content of: Amosite Chrysotile Crocidolite Fibrous actinolite Fibrous anthophyllite Fibrous tremolite	Documented In-House Method MS-AS-Asbestos for identification using stereo-microscopy, polarised light optical microscopy and dispersion staining based on HSG 248. Documented In-House Method MS-AS-Asbestos for quantification of asbestos.	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS	<u>Chemical Tests</u>		
	Total Petroleum Hydrocarbons (TPH) >C8-C40 Hydrocarbon banding including: GRO >C8 – C10 DRO >C10 – C12 DRO >C12 – C16 DRO >C16 – C21 MRO >C21 – C35 MRO >C35 – C40 Total DRO >C10 – C21 Total MRO >C21 – C40 Total TPH >C8 – C40 Total WAC TPH >C10 – C40	Documented In-House Method MS-CL-TPH (GC-FID) using GC-FID	C
	Polynuclear Aromatic Hydrocarbons (PAH) Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene Benzo(ghi)perylene Total PAHs (summation of above 16 compounds)	Documented In-House Method MS-CL-PAH (As Received) using GC-MS	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	Chemical Tests (cont'd) Volatile Organic Compounds (VOC) Benzene Toluene Ethyl benzene o-xylene m-xylene p-xylene MTBE Total m/p-xylene Total xylenes (total m, p & o) Total BTEX compounds (summation of Benzene, Toluene, Ethylbenzene, m, p & o-xylene) Vinyl Chloride Chloroethane Trichlorofluoromethane 1,1-Dichloroethylene trans-1,2, -dichloroethylene 1,1-Dichloroethane 2,2-Dichloropropane cis–1,2, -dichloroethylene Bromochloromethane Chloroform 1,1,1-Trichloroethane 1,1-Dichloropropene Carbon Tetrachloride 1,2-dichloroethane Trichloroethylene 1,2-Dichloropropane Dibromomethane Bromodichloromethane cis-1,2-dichloropropylene trans-1,3-dichloropropylene 1,1,2-Trichloroethane 1,3-Dichloropropane Tetrachloroethylene Chlorodibromomethane 1,2-Dibromoethane Chlorobenzene 1,1,1,2-tetrachloroethane	Documented In-House Method MS-CL-VOC & MBTEX using headspace GC-MS	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	Chemical Tests (cont'd)		
	Volatile Organic Compounds (VOC) (cont'd) Isopropylbenzene Bromoform 1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane n-Propylbenzene Bromobenzene 2-chlorotoluene 4-chlorotoluene 1,2-Dichlorobenzene Dichlorodifluoromethane Chloromethane Styrene 1,3,5-Trimethylbenzene tert-butylbenzene 1,2,4-trimethylbenzene sec-Butylbenzene 4-Isopropyltoluene(P-Cymene) n-Butylbenzene	Documented In-House Method MS-CL-VOC & MBTEX using headspace GC-MS	C
	Total cyanide	Documented In-House Method MS-CL-Cyanide by Skalar	C
	Volatile Organic Compounds (VOC) >C5-C10 Benzene Toluene Ethyl Benzene o-Xylene m&p-Xylene Total BTEX and MTBE Hydrocarbon banding including: ALI >C5-C6 ALI >C6-C8 ALI >C8-C10 ARO >C5-C7 ARO >C7-C8 ARO >C8-C10	Documented In-House Method MS-CL-VPH using headspace GC-MS	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	Chemical Tests (cont'd)		
	Metals *(for sand, loam and clay types)* Arsenic Barium Beryllium Cadmium Chromium Copper Lead Manganese Mercury Nickel Vanadium Zinc	Documented In-House Method MS-CL-ICP-Metals via aqua regia extraction and ICP-OES determination	C
	Total Monohydric Phenols	Documented In-House Method MS-CL-Phenols by Skalar	C
	pH	Documented In-House Method MS-CL-pH in Soils using the Jenway 3300 and Fisher Accumet pH instrumentation systems Documented In-House Method MS-CL-pH in Soils using the method MS-CL-pH to include the automated SEAL Analytical pH soil minilab instrument	C
	Speciated Phenols - Phenol - Cresols - Xylenol - Trimethyl phenol - Total phenols (sum of individual groups)	Documented In-House Method MS-CL-Phenols by HPLC	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	Chemical Tests (cont'd)		
	Polychlorinated biphenyls (PCB) PCB 28 PCB 52 PCB 101 PCB 118 PCB 138 PCB 153 PCB 180 PCB 81 PCB 77 PCB 123 PCB 114 PCB 105 PCB 126 PCB 167 PCB 156 PCB 157 Total 7's (summation of: PCB 28, PCB 52, PCB 101, PCB 118, PCB 138, PCB 153, PCB 180)	Documented In-House Method MS-CL-PCB 18 using GC-MS	C
	Total Organic Carbon	Documented In-House Method MS-CL-TOC Eltra using a TOC analyser	C
	Soil Organic Matter	By calculation from Total Organic Carbon using a factor of 0.58	C
	Fraction Organic Carbon	By calculation from Total Organic Carbon	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	Chemical Tests (cont'd)		
	Extractable Petroleum Hydrocarbons (EPH) GRO - Gasoline Range Organics >C8 – C10, DRO - Diesel Range Organics >C10 – C12, DRO - Diesel Range Organics >C12 – C16, DRO - Diesel Range Organics >C16 – C21, MRO - Mineral Range Organics >C21 – C35 MRO - Mineral Range Organics >C35 – C40. Total DRO for the ranges >C10 – C21, Total MRO for the ranges >C21 – C40 Total TPH is the summation of the range >C8 – C40 Total WAC TPH is the summation of the range >C10 – C40 Aliphatic >EC10-EC12 Aliphatic >EC12-EC16 Aliphatic >EC16-EC21 Aliphatic >EC21-EC35 Aliphatic >EC35-EC40 Aliphatic >EC10-EC35 Aliphatic >EC10-EC40 Aromatic >EC10-EC12 Aromatic >EC12-EC16 Aromatic >EC16-EC21 Aromatic >EC21-EC35 Aromatic >EC35-EC40 Aromatic >EC10-EC35 Aromatic >EC10-EC40	Documented In-House Method ENV0648 MS-CL–TPH and EPH using GCXGC-FID MS	C
	Total CWG C5 - C35 Total CWG C5 - C40	Summation from MS-CL-VPH & MS-CL–TPH	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	Chemical Tests (cont'd)	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard – Chemical Testing of Soil	
	Total Monohydric Phenols	Documented In-House Method MS-CL-Phenols by Skalar	C
	Speciated Phenols - Phenol - Cresols - Xylenols	Documented In-House Method MS-CL-Phenols by HPLC	C
	Total Petroleum Hydrocarbons (TPH) >C8-C40 Hydrocarbon banding including: GRO >C8 – C10 DRO >C10 – C12 DRO >C12 – C16 DRO >C16 – C21 MRO >C21 – C35 MRO >C35 – C40 Total DRO >C10 – C21 Total MRO >C21 – C40 Total TPH >C8 – C40 Total WAC TPH >C10 – C40	Documented In-House Method MS-CL-TPH (GC-FID) using GC-FID	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	Chemical Tests (cont'd)	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard – Chemical Testing of Soil	
	Polynuclear Aromatic Hydrocarbons (PAH) Naphthalene Acenaphthene Fluorene Phenanthrene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene Benzo(ghi)perylene	Documented In-House Method MS-CL-PAH (As Received) using GC-MS	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	Chemical Tests (cont'd)	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard – Chemical Testing of Soil	
	Volatile Organic Compounds (VOC) Benzene Toluene Ethyl benzene o-xylene m-xylene p-xylene MTBE Total m/p-xylene Total xylenes (total m, p & o) Total BTEX compounds (summation of Benzene, Toluene, Ethylbenzene, m, p & o-xylene) Vinyl Chloride Chloroethane Trichlorofluoromethane 1,1-Dichloroethylene trans-1,2, -dichloroethylene 1,1-Dichloroethane 2,2-Dichloropropane cis-1,2, -dichloroethylene Bromochloromethane Chloroform 1,1,1-Trichloroethane 1,1-Dichloropropene Carbon Tetrachloride 1,2-dichloroethane Trichloroethylene 1,2-Dichloropropane Dibromomethane Bromodichloromethane cis-1,2-dichloropropylene trans-1,3-dichloropropylene 1,1,2-Trichloroethane 1,3-Dichloropropane Tetrachloroethylene	Documented In-House Method MS-CL-VOC & MBTEX using headspace GC-MS	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (cont'd)	<u>Chemical Tests</u> (cont'd)	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard – Chemical Testing of Soil	
	Volatile Organic Compounds (VOC) (cont'd) Chlorodibromomethane 1,2-Dibromoethane Chlorobenzene 1,1,1,2-tetrachloroethane Isopropylbenzene Bromoform 1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane	Documented In-House Method MS-CL-VOC & MBTEX using headspace GC-MS	C
SOILS (sand, loam & clay types)	Metals *(for sand, loam and clay types)* Arsenic Barium Beryllium Cadmium Copper Lead Manganese Nickel Zinc	Documented In-House Method MS-CL-ICP Metals via aqua regia extraction and ICP-OES determination	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (sand, loam & clay types) (cont'd)	Chemical Tests (cont'd)	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard – Chemical Testing of Soil	
	pH	Documented In-House Method MS-CL-pH in Soils using the Jenway 3300 and Fisher Accumet pH instrumentation systems Documented In-House Method MS-CL-pH in Soils using the method MS-CL-pH to include the automated SEAL Analytical pH soil minilab instrument	C
	Total Organic Carbon (TOC)	Documented In-House Method MS-CL-TOC Eltra in soil using a TOC analyser	C
	Total cyanide	Documented In-House Method MS-CL-Cyanide by Skalar	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (sand, loam & clay types) (cont'd)	Chemical Tests (cont'd)	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard – Chemical Testing of Soil	
	Volatile Organic Compounds (VOC) >C5-C10 Benzene Toluene Ethyl Benzene o-Xylene m&p-Xylene Total BTEX and MTBE Hydrocarbon banding including: ALI >C5-C6 ALI >C6-C8 ALI >C8-C10 ARO >C5-C7 ARO >C7-C8 ARO >C8-C10	Documented In-House Method MS-CL-VPH using headspace GC-MS	C
	Total Petroleum Hydrocarbons (TPH) >C8-C40 Hydrocarbon banding including: GRO >C8 – C10 DRO >C10 – C12 DRO >C12 – C16 DRO >C16 – C21 MRO >C21 – C35 MRO >C35 – C40 Total DRO >C10 – C21 Total MRO >C21 – C40 Total TPH >C8 – C40 Total WAC TPH >C10 – C40	Documented In-House Method MS-CL-Scrubbed TPH (GC-FID) using GC-FID	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (sand, loam & clay types) (cont'd)	Chemical Tests (cont'd)	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard – Chemical Testing of Soil	
	Polychlorinated biphenyls (PCB) PCB 28 PCB 52 PCB 101 PCB 118 PCB 138 PCB 153 PCB 180 PCB 81 PCB 77 PCB 123 PCB 114 PCB 105 PCB 126 PCB 167 PCB 156 PCB 157 Total 7's (summation of: PCB 28, PCB 52, PCB 101, PCB 118, PCB 138, PCB 153, PCB 180)	Documented In-House Method MS-CL-PCB 18 using GC-MS	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (sand, loam & clay types) (cont'd)	Chemical Tests (cont'd)	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard – Chemical Testing of Soil	
	Extractable Petroleum Hydrocarbons (EPH) GRO - Gasoline Range Organics >C8 – C10, DRO - Diesel Range Organics >C10 – C12, DRO - Diesel Range Organics >C12 – C16, DRO - Diesel Range Organics >C16 – C21, MRO - Mineral Range Organics >C21 – C35 MRO - Mineral Range Organics >C35 – C40. Total DRO for the ranges >C10 – C21, Total MRO for the ranges >C21 – C40 Total TPH is the summation of the range >C8 – C40 Total WAC TPH is the summation of the range >C10 – C40 Aliphatic >EC10-EC12 Aliphatic >EC12-EC16 Aliphatic >EC16-EC21 Aliphatic >EC21-EC35 Aliphatic >EC35-EC40 Aliphatic >EC10-EC35 Aliphatic >EC10-EC40 Aromatic >EC10-EC12 Aromatic >EC12-EC16 Aromatic >EC16-EC21 Aromatic >EC21-EC35 Aromatic >EC35-EC40 Aromatic >EC10-EC35 Aromatic >EC10-EC40	Documented In-House Method ENV0648 MS-CL–TPH and EPH using GCXGC-FID MS	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS (sand, loam & clay types) (cont'd)	Chemical Tests (cont'd)	Documented In-House Method to meet the requirements of the Environment Agency MCERTS Performance Standard – Chemical Testing of Soil	
	Total CWG C5 - C35 Total CWG C5 - C40	Summation from MS-CL-VPH & MS-CL–TPH	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Chemical Tests (cont'd)		
SOILS	Leachate Preparation 10:1 single stage 2:1 single stage 2:1 and 8:1 two stage	In-house procedure MS-CL-Soil Leachate Preparation based on BS EN 12457	C
SOIL and GENERAL WASTE	Preparation for subsequent analysis by an ISO/IEC 17025 accredited laboratory	Documented In-House Methods	C
	WAC Leachate Preparation (10:1, 2:1 single stage 2:1 and 8:1 two stage)	In-house procedure ENV 0727 & 0414 – MS-CL based on BS EN 12457	C
WATERS Surface and groundwater Prepared soil leachates	pH	Documented In-House Method MS-CL-pH and MS-CL-Soil Leachate Preparation (for prepared soil leachates) including (10:1, 2:1 single stage 2:1 and 8:1 two stage) WAC Leachate Preparation ENV 0727 & 0414 – MS-CL based on BS EN 12457	C
	Electrical Conductivity (EC)	Documented In-House Method MS-CL-Conductivity and MS-CL-Soil Leachate Preparation (for prepared soil leachates) including (10:1, 2:1 single stage 2:1 and 8:1 two stage) WAC Leachate Preparation ENV 0727 & 0414 – MS-CL based on BS EN 12457	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Chemical Tests (cont'd)		
WATERS Surface and groundwater Prepared soil leachates (cont'd)	Dissolved Organic Carbon (DOC)	Documented In-House Method MS-CL-DOC and MS-CL-Soil Leachate Preparation (for prepared soil leachates)) including (10:1, 2:1 single stage 2:1 and 8:1 two stage) WAC Leachate Preparation ENV 0727 & 0414 – MS-CL based on BS EN 12457	C
	Chloride	Documented In-House Method MS-CL-Anions by Aquakem Leachate Preparation (for prepared soil leachates) including (10:1, 2:1 single stage 2:1 and 8:1 two stage) WAC Leachate Preparation ENV 0727 & 0414 – MS-CL based on BS EN 12457	C
	Sulphate	Documented In-House Method MS-CL-Anions by Aquakem Leachate Preparation (for prepared soil leachates) including (10:1, 2:1 single stage 2:1 and 8:1 two stage) WAC Leachate Preparation ENV 0727 & 0414 – MS-CL based on BS EN 12457	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS	Chemical Tests (cont'd)		
Ground Water, Surface Water	Total and Dissolved Metals Aluminium (Al) Antimony (Sb) Arsenic (As) Barium (Ba) Beryllium (Be) Boron (B) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Lithium (Li) Magnesium (Mg) Manganese (Mn) Mercury (Hg) Molybdenum (Mo) Nickel (Ni) Potassium (K) Selenium (Se) Sodium (Na) Tin (Sn) Vanadium (V) and Tungsten (W) Sulphur (S) Strontium (Sr) Tellurium (Te) Uranium (U)	Documented In-House Method MS-CL-Metals in Waters by ICP-MS using ICP-MS	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS (cont'd)	Chemical Tests (cont'd)		
Prepared Leachates (from soils)	Dissolved Metals Aluminium (Al) Antimony (Sb) Arsenic (As) Barium (Ba) Beryllium (Be) Boron (B) Cadmium (Cd) Calcium (Ca) Chromium (Cr) Cobalt (Co) Copper (Cu) Iron (Fe) Lead (Pb) Lithium (Li) Magnesium (Mg) Manganese (Mn) Mercury (Hg) Molybdenum (Mo) Nickel (Ni) Potassium (K) Selenium (Se) Sodium (Na) Tin (Sn) Vanadium (V) and Tungsten (W) Sulphur (S) Strontium (Sr) Tellurium (Te) Titanium (Ti) Uranium (U)	Documented In-House Method MS-CL-Soil Leachate Preparation and documented In-House method MS-CL-Metals in Waters by ICP-MS using ICP-MS) including (10:1, 2:1 single stage 2:1 and 8:1 two stage) WAC Leachate Preparation ENV 0727 & 0414 – MS-CL based on BS EN 12457	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS (cont'd) Drinking water (non-regulatory), process water, Recreational (swimming pool / spa water)	<u>Chemical Tests</u> (cont'd) Total Metals: Aluminium Antimony Arsenic Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper – except in Drinking water Iron Lead Lithium Magnesium Manganese Mercury Molybdenum Nickel Phosphorus Potassium Selenium Sodium Strontium Sulphur Tellurium Thallium Tin Titanium Tungsten Uranium Vanadium	In house Method - ICP MS	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS (cont'd) Drinking water,(non-regulatory), process water, Recreational (swimming pool / spa water)	<u>Chemical Tests</u> (cont'd) Dissolved Metals: Aluminium Antimony Arsenic Barium Beryllium Boron Cadmium Calcium Chromium Cobalt Copper – except in Drinking water Iron Lead Lithium Magnesium Manganese Mercury Molybdenum Nickel Phosphorus Potassium Selenium Sodium Strontium Sulphur Tellurium Thallium Tin Titanium Tungsten Uranium Vanadium	In house Method - ICP	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS (cont'd)	Chemical Tests (cont'd)		
Drinking water (non-regulatory), surface water ground water, process water, recreational, (swimming pool / spa water	Anions: Bromide Chloride Fluoride Nitrate Nitrite Sulphate Molybdate	In house Method - Ion Chromatography	C
	Ammonia	In house Method - Colorimetric	C
	pH & Conductivity	In house Method Probe	C
Surface water, ground water, process water, recreational, (swimming pool / spa water)	Total Suspended Solids	In-House Method Gravimetric	C
AGGREGATES	Water-soluble chloride salts (reference method)	EN 1744-1:2009 + A1: 2012	C
	Water-soluble sulphates	EN 1744-1:2009 + A1: 2012	C
	Total sulphur content	EN 1744-1:2009 + A1: 2012	C
	Total Sulphur Content	EN BS 1744-1:2009 +A1: 2012 Clause 11.2; TS EN 1744 and Eltra CS-800 Carbon/Sulphur Analyser and LECO CS744 Carbon/Sulphur analyser	C
	Acid Soluble Sulphate	EN 1744-1:2009 + A1: 2012	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Chemical Tests (cont'd)		
CONCRETE – hardened	Cement content - insoluble residue; - soluble silica (ICP-OES); - calcium oxide (ICP-OES); - sodium and potassium oxide (alkalis)	BS 1881:Part 124: 2015	C
	Chloride content by Aquakem discrete selective photometric analyser	Documented In-House Method ENV0901 MS-Chloride in Hardened Concrete by Aquakem Discrete Analyser with extraction to BS 1881:Part 124: 2015	C
	Sulphate content	Documented In-House Method MS-Sulphate in hardened concrete by ICP	C
	Carbonation	BS EN 14630: 2006	C
	Presence of High Alumina Cement by rapid chemical method	BRE Information Sheet IS 15/74	C
	Capillary porosity	BS 1881:Part 124: 2015	C
	heat Original water/cement ratio	BS 1881:Part 124: 2015	C
MORTARS, RENDERS, SCREEDS and PLASTERS	Chemical analysis and aggregate grading – freshly mixed and hardened mortars, screeds and plasters - insoluble residue; - soluble silica (Gravimetric); - calcium oxide (Gravimetric);	BS 4551: 2005 + A2: 2013	C
GROUT, MORTAR and CONCRETE	Moisture content	Documented In-House Method MS – Moisture content of grout, mortar and concrete	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
	Chemical Tests (cont'd)		
SOILS and AGGREGATES for civil engineering purposes	Water soluble sulphur	TRL 447: 2005: Test 1	C
	Acid soluble sulphur	TRL 447: 2005: Test 2	
	Total Sulphur Content	TRL447:2005 Test 4; TS TRL447 and Eltra CS-800 Carbon/Sulphur Analyser and LECO CS744 Carbon/Sulphur Analyser	C
	Oxidisable Sulphate by calculation	TRL 447: 2005: Test 2 & 4	C
	Total potential sulphate	TRL 447: 2005: Test 4 calculation	C
SOILS for civil engineering purposes	Water-soluble sulfur (sulfate calculated) (ICPOES)	BS 1377-3: 2018 + A1:2021 Clause 7.5	C
	Acid-soluble sulfur (sulfate calculated) (ICPOES)	BS 1377-3: 2018 + A1:2021 Clause 7.9	C
	Organic matter content	BS 1377-3: 2018 + A1:2021 Clause 14	C
	Loss on Ignition	BS 1377-3: 2018 + A1:2021 Clause 6	C
	Sulphate content of soil and ground water – gravimetric method	BS 1377-3: 2018 + A1:2021 Clause 7.6	C
	pH value	BS 1377-3: 2018 + A1:2021 Clause 12	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
SOILS for civil engineering purposes (cont'd)	Chemical Tests (cont'd)		
	Total Sulphur Content	BS1377-3: 2018 + A1:2021 Clause 7.10 and TS BS 1377 and Eltra CS-800 Carbon/Sulphur Analyser LECO CS744 Carbon/ Sulphur Analyser	C
WATERS Potable, Ground, Process (Closed Hot and Cold Water Systems), Grey Water, Cooling Towers, Recreational Waters (Swimming Pool and Spas) Surface Water, (Rivers, Lakes , Open Reservoirs), Fountains and Spring Water	Microbiological Testing	In-House Documented Methods based on BS EN ISO and the Microbiology of Drinking Water Standards (MDW)	
	Enumeration of Total Aerobic Count at 22°C,,30°C and 37°C	Method MIC 006 based on the Microbiology of Drinking Water - part 7 (2020)	C
	Enumeration of *Escherichia coli* and Coliform bacteria	Method MIC 008 based on the Microbiology of Drinking Water – Part 4b (2016).	C
	Enumeration of *Pseudomonas aeruginosa*	Method MIC 009 based on the Microbiology of Drinking Water – Part 8 (2015).	C
	Enumeration of Pseudomonas species	Method MIC 010 based on the Microbiology of Drinking Water – Part 8 (2015).	C
	Enumeration of Enterococci	Method LM05 based on the Microbiology of Drinking Water – Part 5 (2012).	C

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS Potable, Ground, Process (Closed Hot and Cold Water Systems), Grey Water, Cooling Towers, Recreational Waters (Swimming Pool and Spas) Surface Water, (Rivers, Lakes , Open Reservoirs), Fountains and Spring Water	<u>Microbiological Testing</u> (cont'd)	In-House Documented Methods based on BS EN ISO and the Microbiology of Drinking Water Standards (MDW)	
	Enumeration of *Legionella pneumophila* serogroups 1, 2-14 and *Legionella* species	Method MIC 007 (full method) based on ISO 11731:2017 according to procedures 8, 9 and 10 covering Matrix A and B using Media A and C. Sero grouping SG1, SG 2-14 and species using Latex agglutination	C
		Method MIC 007 based on ISO 11731:2017 according to procedures 8, 9 and 10 covering Matrix A and B using Media C (GVPC only). Sero grouping SG1, SG 2-14 and species using Latex agglutination	C
	Identification of *Legionella pneumophila* and species isolated from methods MIC007	Method MIC040 using MALDI-ToF	C
END			