

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK



1650

Accredited to
ISO/IEC 17025:2005

Scientific Analysis Laboratories Ltd

Issue No: 032 Issue date: 13 April 2012

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Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
SOILS SEDIMENTS EFFLUENT SAMPLING MEDIA FOODSTUFF SURFACE, GROUND and POTABLE WATER (non regulatory)	<u>Chemical Tests and Physical Tests</u> Semi-Volatile Organic Compounds (SVOC) with boiling points between 180 - 550 °C <i>The organisation holds a flexible scope of accreditation for these tests. Please contact the organisation for details of the individual gaseous compounds they can analyse using this method.</i>	Methods developed and validated under a flexible scope according to In-House Method SOP 12 Using GC-MS
	Volatile Organic Compounds (VOC) with boiling points between -50 to 220 °C <i>The organisation holds a flexible scope of accreditation for these tests. Please contact the organisation for details of the individual gaseous compounds they can analyse using this method.</i>	Methods developed and validated under a flexible scope according to In-House Method SOP 12 Using GC-MS
	<u>Chemical Tests and Physical Tests</u> Semi-Volatile Organic Compounds (SVOC): 2,4-dinitrotoluene 2-methyl phenol 3-nitroaniline 4-chloroaniline 4-nitroaniline acenaphthylene carbazole dibutyl phthalate	Documented In-House Procedures In-House Method SOP 12E using GC-MS
SOIL		



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SOIL (cont'd)	<u>Chemical Tests and Physical Tests</u> (cont'd) Semi-Volatile Organic Compounds (SVOC): (cont'd) naphthalene phenanthrene 1,2,4-trichlorobenzene 1,2-dichlorobenzene 1,3-dichlorobenzene 1,4-dichlorobenzene 2,4-dichlorophenol 2,6-dinitrotoluene 2-chlorophenol 2-chloronaphthalene 2-methyl naphthalene 2-nitroaniline 3/4 methyl phenol 4-bromophenyl phenyl ether 4-chloro, 3-methyl phenol 4-chlorophenylphenyl ether acenaphthene anthracene azobenzene benzo (a) anthracene benzo(a) pyrene benzo(b) fluoranthene benzo(ghi) perylene (total benzo(b)fluoranthene and benzo(k) fluoranthene) bis (2-chloroisopropyl) ether bis (2-chloroethoxy) methane bis (2-chloroethyl) ether chrysene di-octyl phthalate dibenz(ah) anthracene dibenzofuran diethyl phthalate dimethyl phthalate fluorene hexachlorobenzene hexachlorobutadiene hexachloroethane indeno(123cd)pyrene isophorone nitrobenzene phenol	Documented In-House Procedures In-House Method SOP 12E using GC-MS



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SOIL (cont'd)	<p><u>Chemical Tests and Physical Tests</u> (cont'd)</p> <p>Polynuclear Aromatic Hydrocarbons (Total sum of EPA 16)</p> <p>Metals, acid extractable: Aluminium Barium Beryllium Magnesium Manganese Molybdenum Mercury Selenium Sodium Strontium Thallium Tin Titanium Vanadium</p> <p>pH</p> <p>Extractable Petroleum Hydrocarbons (EPH) C₁₀-C₄₀ Also banding, including: C10-C12, >C12-C16, >C16-C21, >C21-C35 And C10-C20, >C20-C30, >C30-C40</p> <p>Volatile Organic Compounds (VOC's): Vinyl Chloride Bromomethane Chloroethane Trichlorofluoromethane 1,1-Dichloroethene Dichloromethane MTBE (methyl-tert, butyl Ether) Trans-1,2-Dichloroethene 1,1-Dichloroethane Cis-1,2-Dichloroethene 2,2-Dichloropropane Chloroform Bromochloromethane</p>	<p>Documented In-House Procedures</p> <p>Documented In-House Method SOP 12E using GC-MS</p> <p>SOP 259 Hotblock digestion followed by ICP-OES</p> <p>SOP 254 by pH Meter</p> <p>SOP 6 Microwave Solvent Extraction followed by GC-FID</p> <p>SOP 12I using Headspace GC-MS</p>



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SOIL (cont'd)	<u>Chemical Tests and Physical Tests</u> (cont'd) Volatile Organic Compounds (VOC's): (cont'd) 1,1,1-Trichloroethane 1,2,3-Trimethylbenzene 1,1-Dichloropropene Carbon Tetrachloride 1,2-Dichloroethane Benzene 1,2-Dichloropropane Trichloroethene Bromodichloromethane Dibromomethane Cis-1,3-dichloropropene Toluene Trans-1,3-Dichloropropene 1,1,2-Trichloroethane 1,3-Dichloropropane Tetrachloroethene Dibromochloromethane 1,2-Dibromoethane Chlorobenzene 1,1,1,2-Tetrachloroethane Ethyl Benzene m,p-Xylene o-Xylene Styrene Bromoform Isopropylbenzene 1,1,2,2-Tetrachloroethane 1,2,3-Trichloropropane n-Propylbenzene Bromobenzene 1,3,5-Trimethylbenzene Tert-Butylbenzene 1,2,4-Trimethylbenzene Sec-Butylbenzene p-Isopropyltoluene 2-Chlorotoluene 4-Chlorotoluene 1,3-Dichlorobenzene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2-Dibromo-3-chloropropane	Documented In-House Procedures SOP 12I using Headspace GC-MS



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SOIL (cont'd)	<u>Chemical Tests and Physical Tests</u> (cont'd) Volatile Organic Compounds (VOC's): (cont'd) 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene TAME (tert-amyl methyl ether) m/p-ethyl Toluene 2-ethyl Toluene Oxidisable Sulphate	Documented In-House Procedures SOP 12I using Headspace GC-MS SOP 259 Calculation based on total sulphur and total sulphate
SOIL	<u>Chemical Tests and Physical Tests</u> Cyanide (total/free/complex) Loss on Ignition pH Metals: Arsenic Cadmium Chromium Cobalt Copper Lead Nickel Zinc Monohydric phenols Sulphate, water soluble (2:1) Total Sulphate	Documented In-House Methods to meet the requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of Soil SOP 256 Distillation followed by Colorimetry SOP 263 by Gravimetry SOP 254 by pH Meter SOP 259 Hotblock digestion followed by ICP-OES SOP 257 Distillation followed by Colorimetry SOP 260 by ICP-OES SOP 259 by hotblock digestion and ICP-OES



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SOIL (cont'd)	<u>Chemical Tests and Physical Tests</u> (cont'd) Total Sulphur Thiocyanate Extractable Petroleum Hydrocarbons (EPH) C ₁₀ -C ₄₀ Semi-Volatile Organic Compounds (SVOC): 1,2,4-trichlorobenzene 1,2-dichlorobenzene 1,3-dichlorobenzene 1,4-dichlorobenzene 2,4-dichlorophenol 2,6-dinitrotoluene 2-chlorophenol 2-chloronaphthalene 2-methyl naphthalene 2-nitroaniline 3/4 methyl phenol 4-bromophenyl phenyl ether 4-chloro, 3-methyl phenol 4-chlorophenylphenyl ether acenaphthene anthracene azobenzene benzo (a) anthracene benzo(a) pyrene benzo(b) fluoranthene benzo(ghi) perylene (total benzo(b)fluoranthene and benzo(k) fluoranthene) bis (2-chloroisopropyl) ether bis (2-chloroethoxy) methane bis (2-chloroethyl) ether chrysene di-octyl phthalate dibenz(ah) anthracene dibenzofuran	Documented In-House Methods to meet the requirements of the Environment Agency MCERTS Performance Standard - Chemical Testing of Soil (cont'd) SOP 259 by hotblock digestion and ICP-OES SOP 251 by Colorimetry SOP 6 Microwave Solvent Extraction followed by GC-FID In-House Method SOP 12E using GC-MS



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WATERS	<u>Chemical Tests</u>	Documented In-House Procedures based on/incorporating published procedures in the HMSO series 'Methods for the Examination of Waters and Associated Materials', (MEWAM), referenced by the ISBN number and year. Any additional or alternative reference is identified.
Landfill leachates, ground water and potable water (non regulatory)	Anions: Bromide Chloride Fluoride Nitrate Nitrite Sulphate	SOP 262 by Ion Chromatography
Landfill leachates, WATERS, ground water and potable water (non regulatory)	Monohydric phenols	SOP 257 Distillation followed by Colorimetry
WATERS, ground water and potable water (non regulatory)	Thiocyanate	SOP 251 by Colorimetry
	Alkalinity	SOP 253 by Titrimetry
	Ammonia	SOP 250 by Ion Selective Electrode
	Conductivity	SOP 252 by Conductivity Meter
	Phosphate	SOP 262 by Ion Chromatography
Landfill leachates, WATERS, ground water and potable water (non regulatory)	Cyanide (total)	SOP 256 Distillation followed by Colorimetry
Prepared soil leachates, WATERS, ground water and potable water (non regulatory)	Mercury	SOP 258 by CV-AAS
WATERS ground water, pure water, potable water (non regulatory) and prepared soil leachate	Metals: Aluminium Antimony Arsenic Barium Beryllium Bismuth Cadmium Cobalt	SOP 259 by ICP-OES



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WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)	Documented In-House Procedures based on/incorporating published procedures in the HMSO series 'Methods for the Examination of Waters and Associated Materials', (MEWAM), referenced by the ISBN number and year. Any additional or alternative reference is identified. (cont'd)
WATERS ground water, pure water, potable water (non regulatory) and prepared soil leachate (cont'd)	Metals: (cont'd) Chromium Copper Iron Lead Manganese Molybdenum Nickel Phosphorus Selenium Tin Thallium Titanium Vanadium Zinc	SOP 259 by ICP-OES
Landfill leachates, WATERS, ground water and potable water (non regulatory)	Calcium Magnesium Potassium Sodium	SOP 261 by ICP-OES
	Total Hardness by calculation	SOP 261 by calculation
Groundwater and potable water (non regulatory)	pH	SOP 254 by pH Meter
Landfill leachates	pH	SOP 254 by pH Meter
	Alkalinity	SOP 253 by Titrimetry
	Ammonia	SOP 250 by Ion Selective Electrode
	Conductivity	SOP 252 by Conductivity Meter



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WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)	Documented In-House Procedures based on/incorporating published procedures in the HMSO series 'Methods for the Examination of Waters and Associated Materials', (MEWAM), referenced by the ISBN number and year. Any additional or alternative reference is identified. (cont'd)
Groundwater	Extractable Petroleum Hydrocarbons (EPH) C ₁₀ -C ₄₀ Also banding, including: C10-C12, >C12-C16, >C16-C21, >C21-C35 And C10-C20, >C20-C30, >C30-C40	SOP 6 Liquid to Liquid Extraction using Dichloromethane followed by GC-FID
Pure water, potable water (non regulatory), ground water, landfill leachate and prepared leachate	Total Organic Carbon (TOC) Dissolved Organic Carbon (DOC)	SOP 13 by TOC analyser
Groundwater	Polyaromatic hydrocarbons (PAHs): Acenaphthylene Acenaphthene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(ghi)perylene Benzo(k)fluoranthene Chrysene Dibenz(ah)anthracene Fluoranthrene Fluorene Indeno(123cd)pyrene Naphthalene Phenanthrene Pyrene	SOP 12A by GC-MS
	Semi-Volatile Organic Compounds (SVOC's): Bis(2-chloroethyl)ether 2-Chlorophenol 1,3-Dichlorobenzene Nitrobenzene 1,4-Dichlorobenzene	SOP 12E by GC-MS



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WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)	Documented In-House Procedures based on/incorporating published procedures in the HMSO series 'Methods for the Examination of Waters and Associated Materials', (MEWAM), referenced by the ISBN number and year. Any additional or alternative reference is identified. (cont'd)
Groundwater (cont'd)	Semi-Volatile Organic Compounds (SVOC's): (cont'd) Fluoranthrene Pyrene Butylbenzylphthalate Benzo(a)anthracene Chrysene Dioctylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(123cd)pyrene Dibenz(ah)anthracene Benzo(ghi)perylene	SOP 12E by GC-MS
Potable water (non regulatory), Ground Water and prepared leachate	Volatile Organic Compounds (VOC's): Chloromethane Vinyl Chloride Bromomethane Chloroethane Trichlorofluoromethane 1,1-Dichloroethene Dichloromethane MTBE (methyl-tert, butyl Ether) Trans-1,2-Dichloroethene 1,1-Dichloroethane Cis-1,2-Dichloroethene 2,2-Dichloropropane Chloroform Bromochloromethane 1,1,1-Trichloroethane Bromochloromethane 1,1,1-Trichloroethane 1,1-Dichloropropene Carbon Tetrachloride	SOP 12I by Headspace GC-MS

