

SOP no	Title	Parameters included	Method summary
1010	pH Value of Waters UKAS accredited; MCERTS for effluents	pH	Measurement of the electrochemical potential of a cell responsive to the hydrogen ion activity in the sample.
1020	Electrical Conductivity of Waters UKAS accredited	electrical conductivity (EC)	Measurement of the electrical resistance of the sample in a cell of known dimensions.
1030	Total Suspended Solids	total suspended solids	Filtration of a mixed sample through a standard glass fibre filter and determination of the mass of residue retained dried at 105°C.
1040	Total Dissolved Solids	total dissolved solids	From conductivity measurement utilising an EC meter reading directly in mgTDS/L.
1090	Biochemical Oxygen Demand	biochemical oxygen demand (BOD ₅)	Electrometric determination of dissolved oxygen in seeded sample initially and after 5 days incubation at 20°C.
1100	Chemical Oxygen Demand UKAS accredited; MCERTS for effluents	chemical oxygen demand (COD)	Dichromate oxidation of organic matter in sample followed by colorimetric determination of residual Cr[VI].
1150	Dissolved Oxygen	dissolved oxygen (DO)	Electrometric determination (on site preferred), using oxygen sensitive membrane electrode.
1220	Anions, Alkalinity & Ammonium in Waters UKAS accredited; MCERTS - Ammonium in effluents	fluoride; chloride; nitrite; nitrate; total oxidisable nitrogen (TON); sulfate; phosphate; alkalinity; ammonium;	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1260	Alkalinity of Waters UKAS accredited	alkalinity	Titration of the sample with a standard solution of acid using instrumental detection to end points at pH 8.3 and pH 4.5.
1270	Total Hardness of Waters UKAS accredited	total hardness	Mathematical algorithm applied to selected cation results obtained by ICP-MS in accordance with SOP 1415 and expressed as mg l ⁻¹ CaCO ₃ equivalent.
1300	Cyanides in Waters UKAS accredited	total, free & complex cyanides	<ol style="list-style-type: none"> 1. Automated acid distillation of free cyanide under controlled conditions. Colorimetric development using buffered reaction with chloramine-T and pyridine/barbituric acid reagent. Measurement of intensity of colour produced at 610nm. 2. Total cyanide by UV decomposition of complex bound cyanides with measurement of resulting free cyanide as above. 3. Complex cyanide determined by difference.
1325	Sulphide in Waters UKAS accredited	sulphides	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using N,N-dimethyl-p-phenylenediamine.
1330	Thiocyanate in Waters UKAS accredited	thiocyanate	Automated analysis of water sample. Thiocyanate is converted to cyanogen chloride which reacts with chloramine-T and 1.3-dimethylbarbituric acid/isonicotinic acid. Measurement of intensity of colour at 600nm.
1340	Total Nitrogen in Waters	total nitrogen and organic nitrogen	An alkaline persulphate digestion converts all forms of nitrogen to nitrate. The nitrate then reacts with chromotropic acid under strongly acidic conditions to form a yellow complex. Its absorbance is measured at 420nm.

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1415	Cations in Waters by ICP-MS UKAS accredited	sodium; potassium; calcium; magnesium	Direct determination by inductively coupled plasma – mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS UKAS accredited	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.
1470	Iron in Waters by Colorimetry	iron	Iron in water by reaction with TPTZ colour reagent. Colour measurement at 595 nm.
1490	Hexavalent Chromium in Waters	chromium [VI]	Automated colorimetric analysis by 'Aquagem 600' Discrete Analyser using 1,5-diphenylcarbazine.
1610	Total Organic Carbon in Waters	total organic carbon (TOC)	Instrumental catalytic oxidation of organic (and inorganic) carbon and subsequent measurement of the CO ₂ liberated by infra-red spectroscopy. Inorganic carbon is also determined separately and the total organic carbon derived by difference.
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID UKAS accredited	TPH (C ₆ –C ₄₀); optional carbon banding, e.g. 3-band – GRO, DRO & LRO (SOP 1673).	Liquid/liquid solvent extraction of a water sample into pentane followed by determination of TPH by gas chromatography (GC) using flame ionisation detection (FID).
1675	Aliphatic/Aromatic split in Waters by GC-FID (cf. Texas Method 1006 / TPH CWG)	aliphatics: >C ₅ –C ₆ , >C ₆ –C ₈ , >C ₈ –C ₁₀ , >C ₁₀ –C ₁₂ , >C ₁₂ –C ₁₆ , >C ₁₆ –C ₂₁ , >C ₂₁ –C ₃₅ aromatics: >C ₅ –C ₇ , >C ₇ –C ₈ , >C ₈ –C ₁₀ , >C ₁₀ –C ₁₂ , >C ₁₂ –C ₁₆ , >C ₁₆ –C ₂₁ , >C ₂₁ –C ₃₅	Liquid/liquid solvent extraction of a water sample into pentane. Separation into aliphatic/aromatic fractions by column chromatography followed by determination of TPH in each fraction by gas chromatography (GC) using flame ionisation detection (FID).
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID UKAS accredited	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	Liquid/liquid solvent extraction of a water sample into pentane followed by determination of PAH by Gas Chromatography using Flame Ionisation Detection (FID).
1760	VOCs in Waters by Headspace GC-MS UKAS accredited	volatile organic compounds, including BTEX and halogenated aliphatic/aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.

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1790	SVOCs in Waters by GC-MS	semi-volatile organic compounds (cf. USEPA Method 8270)	Liquid/liquid solvent extraction of a water sample into dichloromethane followed by determination of Semi-Volatile Organic Compounds by Gas Chromatography (GC) using Mass Spectrometric detection (MS).
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters 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	Liquid/liquid solvent extraction of a water sample into pentane followed by determination of PAH by gas chromatography (GC) with mass spectrometric detection (MS).
1810	Polychlorinated Biphenyls in Waters by GC-MS	polychlorinated biphenyls expressed either as Aroclors or congeners	Liquid/liquid solvent extraction of a water sample into hexane, followed by determination of PCBs by gas chromatography (GC) using mass spectrometric (MS) detection for identification and electron capture detection (ECD) for quantitation if present.
1820	Organophosphorus (O-P) Pesticides in Waters by GC-MS	organophosphorus pesticide representative suite including parathion, malathion etc, plus client specific determinands	Liquid/liquid solvent extraction of a water sample into dichloromethane followed by determination of organophosphorus pesticides by gas chromatography (GC) using mass spectrometric detection (MS).
1830	Organonitrogen (O-N) Pesticides in Waters by GC-MS	organonitrogen pesticide representative suite including triazines etc, plus client specific determinands	Liquid/liquid solvent extraction of a water sample into dichloromethane followed by determination of organonitrogen pesticides by gas chromatography (GC) using mass spectrometric detection (MS).
1840	Organochlorine (O-Cl) Pesticides in Waters by GC-MS	organochlorine pesticide representative suite including DDT and its metabolites, 'drins' and HCH etc, plus client specific determinands	Liquid/liquid solvent extraction of a water sample into dichloromethane followed by determination of organochlorine pesticides by gas chromatography (GC) using mass spectrometric detection (MS).
1900	Phenols in Waters by GC-MS	approximately 24 substituted phenols, including chlorophenols	Liquid/liquid solvent extraction of a water sample into dichloromethane followed by determination of phenols by gas chromatography (GC) using mass spectrometric detection (MS).
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.