


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>UKAS TESTING 4208</p> <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Kharafi National Sulaibiya Testing Laboratory</h3>	
	<p>Issue No: 004 Issue date: 22 September 2009</p>	<p>PO Box 24081 Safat 13101 Kuwait</p>
<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>WATERS Raw Sewage, Clean Water, Brine</p>	<p><u>Chemical and Physical Tests</u></p>	<p>Documented In-House Methods based on "Standard Methods for the Analysis of Water and Wastewater" 21st Edition (APHA) unless stated otherwise</p>
	pH	LTM 101 (APHA-4500H B) using pH Meter
	Conductivity	LTM 102 (APHA-2510B) using conductivity meter
	Total Suspended Solids	LTM 103 (APHA-2540D) using gravimetry
	Total Dissolved Solids	LTM 105 (APHA-2540C) using gravimetry (180°C)
	Total Dissolved Solids	LTM 146 (APHA-2510A&B) using conductivity
	Chemical Oxygen Demand	LTM 107 (APHA-5220B) using open reflux
	Biochemical Oxygen Demand	LTM 127 (APHA- 5210B) 5 day test
	Ammonia Nitrogen	LTM 109 (APHA-4500 NH3 B&C) using automated steam distillation and Titrimetry apparatus
Total Phosphate/Phosphorous	LTM 116 (APHA-4500 P C) using Colourimetry	



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WATERS Raw Sewage, Clean Water, Brine (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	
	Total Kjeldahl Nitrogen	LTM 149 (APHA-4500C) using automated instrumentation LTM 115 (APHA-4500N) by calculation
	Organic Nitrogen	LTM 111 (APHA-4500N) using automated instrumentation LTM 150 (APHA 4500A) by calculation
	<u>Metals</u> Aluminium Barium Calcium Iron Magnesium Manganese Potassium Sodium Strontium Phosphorous (total P)	LTM 205 (APHA 3120B) using ICP-OES
	Alkalinity	LTM 119 (APHA-2320 B) using Titrimetry
	Chloride	LTM 120 (APHA-4500CI B) using Titrimetry
	Sulphate	LTM 121 (APHA-4500 SO4 E) using Colourimetry
WATERS Raw Sewage & Clean Water	<u>Chemical and Physical Tests</u>	Documented In-House Methods based on "Standard Methods for the Analysis of Water and Wastewater" 21st Edition (APHA) unless stated otherwise
	Nitrite Nitrogen	LTM 114 (APHA-4500 NO2 B) using Colourimetry
	Sulphide	LTM 122 (APHA 4500S D) using Colourimetry



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WATERS Raw Sewage & Clean Water (cont'd)	<u>Chemical and Physical Tests</u> (cont'd) <u>Metals</u> Arsenic Beryllium Cadmium Chromium Cobalt Copper Lead Lithium Molybdenum Nickel Zinc Volatile Suspended Solids	Documented In-House Methods based on "Standard Methods for the Analysis of Water and Wastewater" 21st Edition (APHA) unless stated otherwise LTM 205 (APHA 3120B) using ICP-OES LTM 104 (APHA-2540E) using gravimetry
WATERS Clean Water & Brine	<u>Chemical and Physical Tests</u> Free Chlorine Colour (ADMI) Total Hardness <u>Metals</u> Calcium Iron Potassium Magnesium Manganese Copper Strontium Sodium	Documented In-House Methods based on "Standard Methods for the Analysis of Water and Wastewater" 21st Edition (APHA) unless stated otherwise LTM 123 (APHA-4500 Cl G) using Colourimetry LTM 125 (APHA-2120 F) using Colourimetry LTM 130 (APHA-2340 B) by Calculation LTM 201 (APHA-3111 B+D) using Flame Atomic Absorption Spectrometry



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WATERS Clean Waters only	<u>Chemical and Physical Tests</u>	Documented In-House Methods based on "Standard Methods for the Analysis of Water and Wastewater" 21st Edition (APHA) unless stated otherwise
	Turbidity	LTM 128 (APHA-2130 B) using Nephelometry
	Total Organic Carbon	LTM 137 (APHA-5310 B) using TOC analyser
	Nitrate Nitrogen	LTM 113 (APHA-4500 NO3 E) using Colourimetry
	Total Hardness	LTM 129 (EPA-130.1) using Colourimetry
	Selenium	LTM 205 (APHA 3120B) using ICP-OES
WATERS Brine only	<u>Chemical and Physical Tests</u>	Documented In-House Methods based on "Standard Methods for the Analysis of Water and Wastewater" 21st Edition (APHA) unless stated otherwise
	Chromium	LTM 202 (APHA-3113 B) using Electrothermal Atomic Absorption Spectrometry
	Mercury	LTM 203 (APHA-3112 B) using Cold Vapour Atomic Absorption Spectrometry
SEWAGE Raw Sewage	<u>Chemical and Physical Tests</u>	Documented In-House Methods based on "Standard Methods for the Analysis of Water and Wastewater" 21st Edition (APHA) unless stated otherwise
	Oil and Grease	LTM 108 (APHA 5520C) using Partition Infra Red
	<u>Metals</u> Mercury Silver Vanadium	LTM 205 (APHA 3120B) using ICP-OES



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SEWAGE Raw Sewage (cont'd)	<u>Chemical and Physical Tests</u> (cont'd)	Documented In-House Methods based on "Standard Methods for the Analysis of Water and Wastewater" 21st Edition (APHA) unless stated otherwise (cont'd)
	Settleable Solids	LTM 138 (APHA-2540 F) using Volume Measurement
SEWAGE SLUDGE	<u>Chemical and Physical Tests</u>	Documented In-House Methods based on "Standard Methods for the Analysis of Water and Wastewater" 21st Edition (APHA) unless stated otherwise
	Sludge Volume	LTM 131 (APHA-2710 C) using Volume Measurement
	Sludge Volume Index	LTM 133 (APHA-2710 D) by calculation
	Capillary Suction Time	LTM 132 (APHA-2710 G) using Time measurement
	Volatile Suspended Solids	LTM 104 (APHA-2540E) using gravimetry
	Total Solids	LTM 106 (APHA-2540 B&G) using Gravimetry
	Total Solids	LTM 139 (APHA-2540 B&G) using Moisture Analyser
	Total Volatile Solids	LTM 140 (APHA-2540 G) using Gravimetry
	Total Suspended Solids	LTM 103 (APHA-2540D) using gravimetry
	<u>Biological Tests</u>	Documented In-House Methods
Microscopic Examination	LTM 254 (based on Process Control of Activated Sludge Plants by Microscopic Examination) by D H Eikelboom	



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SEWAGE SLUDGE (cont'd) Dried Sewage Sludge	<u>Microbiological Tests</u> Faecal Coliforms (Presumptive and Total)	LTM 257 (APHA-9222D and EPA 16820) using Membrane Filtration
WATERS Raw Sewage, Clean Water, Brine	<u>Microbiological Tests</u> Total Coliforms (Presumptive and Total) Faecal Coliforms (Presumptive and Total) Salmonella (Presence and Absence) Total Bacterial Count	LTM 251 (APHA- 9222 B) using Membrane Filtration LTM 252 (APHA-9222D) using Membrane Filtration LTM 253 (based on Campden Microbiological Methods Manual) using Membrane Filtration LTM 256 (APHA-9000, 9215D) using Membrane Filtration
	END	