



التحاليل في مركز المياه و الطاقة و البيئة ٢٠٢٣
Chemical Analysis for Water and Wastewater

Analysis	Method Used *	Lab.	Container	Minimum Sample Size (ml)	Preservation	Result Release (day)
Electrical Conductivity (EC)	2510 B Laboratory method	Wastewater lab.	P, G, FP	500	Cool, $\leq 6^{\circ}\text{C}$	2 days
pH**	4500-H+ B Electrometric method	Wastewater lab.	P, G	50	Analyze immediately	2 days
Color	2120 C Spectrophotometric Method	Wastewater lab.	P, G, FP	500	Cool, $\leq 6^{\circ}\text{C}$	2 days
Turbidity	2130 B Nephelometric Method	Wastewater lab.	P, G, FP	100	Analyze same day; store in dark up to 24h, Cool, $\leq 6^{\circ}\text{C}$	2 days
Calcium Ca, Sodium Na, Magnesium Mg, Potassium K, Ammonium NH ₄	4110 C Single Column Ion Chromatography	Wet chemistry Lab.+ waste water lab.	P, G, FP	100	Cool, $\leq 6^{\circ}\text{C}$	7 days
Fluoride F, Chloride Cl, Bromide Br, Nitrate NO ₃ , Sulfate SO ₄ , Phosphate PO ₄	4110 C Single Column Ion Chromatography	Wet chemistry Lab.+ waste water lab.	P, G, FP	100	Cool, $\leq 6^{\circ}\text{C}$	7 days
Carbonate CO ₃ , Bicarbonate, HCO ₃	2320 B Titration Method	Wet chemistry Lab.	P, G, FP	200	Cool, $\leq 6^{\circ}\text{C}$	2 days
Total Hardness, mg eq. CaCO ₃ /L	2340 C EDTA-Titrimetric Method	Wet chemistry Lab.	P, G, FP	100	add HNO ₃ or H ₂ SO ₄ to pH < 2	2 days
Total Solids (TS)	2540 B Total Solids Dried at 103 – 105 C°	Wastewater lab.	P, G	200	or Cool, $\leq 6^{\circ}\text{C}$	2 days
Total Dissolved Solids (TDS)**	2540 C Total Dissolved Solids Dried at 180 C°	Wastewater lab.	P, G	200	Cool, $\leq 6^{\circ}\text{C}$	2 days
Total Suspended Solids (TSS)**	2540 D Total Suspended Solids Dried at 103 – 105 C°	Wastewater lab.	P, G	500	Cool, $\leq 6^{\circ}\text{C}$	2 days
Fixed and volatile Solids (VS & VSS)	2540 E Fixed and Volatile solids Ignited at 550 C°	Wastewater lab.	P,G	500	Cool, $\leq 6^{\circ}\text{C}$	2 days
Biological Oxygen Demand (BOD)	5210 D Respirometric Method	Wastewater lab.	G	1000	Analyze immediately	6 days



The University of Jordan
Water, Energy and Environment Center



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Chemical Oxygen Demand (COD)**	5220 D Closed Reflux, Colorimetric Method	Wastewater lab.	P, G, FP	100	add H ₂ SO ₄ to pH < 2; Cool, ≤ 6 °C	2 days
Organo – Chlorinated Pesticides	Gas Chromatographic	Instrumental Lab.	G(S), PTFE-lined cap	1000	Cool, ≤ 6 °C, add Ascorbic acid 1000 mg/l if residual chlorine present	3 days
Ammonium-NH ₄	4500 NH ₃ F Phenate Method	Wastewater lab.	P, G, FP	500	Analyze as soon as possible, or add H ₂ SO ₄ to pH < 2; Cool ≤ 6 oC	3 days
Ammonium-NH ₄	4500 NH ₃ C Titrimetric Method	Wastewater lab.	P, G, FP	500	Analyze as soon as possible, or add H ₂ SO ₄ to pH < 2; Cool ≤ 6 oC	3 days
Oil and Grease	5520 B Liq.-Liq. Partition-Gravimetric Method	Wastewater lab.	G, wide mouth	1000	add HCl or H ₂ SO ₄ to pH < 2; Cool ≤ 6 oC	2 Days
Total Kjeldahl Nitrogen(TKN)	4500 N _{org} . B Macro-Kjeldahl Method	Wastewater lab.	P, G, FP	500	Cool ≤ 6 oC, add H ₂ SO ₄ to pH < 2	3 days
Sludge Volume Index(SVI)	2540 F Settleable Solids	Wastewater lab.	P,G	1000	Cool ≤ 6 oC	2 days

P= Plastic(Polyethylene or equivalent), FP=fluoropolymer(PTFE, Teflon)or other fluoropolymer, G(Glass);
G(S)=glass rinsed with organic solvents or baked.
Cool=storage at > 0 C, ≤ 6 C°, in the dark.

* Analysis according to Standard Methods for Examination Water & Wastewater, 24th Edition, 2022
** Accredited analysis according to ISO/IEC 17025:2017.



Microbiological Analysis for Water and Wastewater

Analysis	Method Used *	Lab.	Container	Minimum Sample Size (ml)	Preservation	Result Release (day)
Total Coliforms & Escherichia Coli**	9223 B Enzyme Substrate Test	Microbiological Lab.	Autocleavable Glass sterilized at 121 C° for 15 minutes	500	Add sodium thiosulfate, Cool, ≤ 6 °C and analyzed immediately	2 days
Total Count	9215 D Membrane Filter Method	Microbiological Lab.	Autoclavable Glass sterilized at 121 C° for 15 minutes	500	Add sodium thiosulfate, Cool, ≤ 6 °C and analyzed immediately	3 days
Nematode eggs**	Sedimentation – Flootation Procedure (WHO 1996)	Microbiological Lab.	P, G	2000	1ml formalin	2 days
Chlorophyll a	Fluorometric	Microbiological Lab.	P,G	500	Immediately	2 days
Fungi	9610 D Membrane Filter Technique	Microbiological Lab.	Autoclavable Glass sterilized at 121 C° for 15 minutes	500	Add sodium thiosulfate, Cool, ≤ 6 °C and analyzed immediately	6 days
Algae Identification	8110 Algae Identification	Microbiological Lab.	P,G	500	Immediately	2 days
Pseudomonas Aeruginosa**	9213 E Membrane Filter Technique for pseudomonas Aeruginosa	Microbiological Lab.	Autoclavable Glass sterilized at 121 C° for 15 minutes	500	Add sodium thiosulfate, Cool, ≤ 6 °C and analyzed immediately	4 days
Legionella**	ISO 11731:2017 Legionella	Microbiological Lab.	Autoclavable Glass sterilized at 121 C° for 15 minutes	1000	Add sodium thiosulfate, Cool, ≤ 6 °C and analyzed immediately	11 days
Endotoxin	LAL-test	Microbiological Lab.	Non pyrogenic test tube	25	Immediately	2 days

P= Plastic (Polyethylene or equivalent), G(Glass), Cool=storage at > 0 C, ≤ 6 C°, in the dark.

* Analysis according to Standard Methods for Examination Water & Wastewater, 24th Edition, 2022. (otherwise, the method is mentioned).

** Accredited analysis according to ISO/IEC 17025:2017.