



Annex (1)

Updated on: 08-01-2023

To The Accreditation Certificate No. **JAS Test – 031-a** Dated **13-07-2021**

For Water Quality Directorate / Drinking Water Laboratories
at Jordan Water Company (Miyahuna)/ Zai

Scope of Accreditation

Chemical and Microbiological Testing and Sampling of Water

Tested Parameter/ Type of Test/ Measured Quantity	Measurement Range	Test Methods/ Standards
Water (Surface, Ground, Treated and In Distribution Net)		
Turbidity	0.15 – 4000 NTU	<ul style="list-style-type: none"> SM 2130 B - Nephelometric Method - Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Total Alkalinity	> 4.0 ppm as CaCO ₃	<ul style="list-style-type: none"> SM 2320 B - Titration Method - Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Total Hardness	> 10.0 ppm as CaCO ₃	<ul style="list-style-type: none"> SM 2340 C - EDTA Titrimetric Method - Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Electrical Conductivity	> 2.0 μS/cm	<ul style="list-style-type: none"> SM 2510 B – Laboratory Method – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Total Dissolved Solids	> 10 ppm	<ul style="list-style-type: none"> SM 2540 C – Total Dissolved Solids Dried at 180°C – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Dissolved Metals (Iron)	0.15 – 1.5 ppm	<ul style="list-style-type: none"> SM 3111 B – Direct Air-Acetylene Flame Method – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Dissolved Metals (Sodium)	3.0 – 100 ppm	<ul style="list-style-type: none"> SM 3111 B – Direct Air-Acetylene Flame Method – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Dissolved Metals (Zinc)	0.06 – 0.5 ppm	<ul style="list-style-type: none"> SM 3111 B – Direct Air-Acetylene Flame Method – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Dissolved Metals (Chromium)	2.0 – 10 ppb	<ul style="list-style-type: none"> SM 3113 B – Electrothermal Atomic Absorption Spectrometric Method – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Dissolved Metals (Cadmium)	0.25 – 1.0 ppb	<ul style="list-style-type: none"> SM 3113 B – Electrothermal Atomic Absorption Spectrometric Method – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Dissolved Metals (Lead)	2.0 – 20 ppb	<ul style="list-style-type: none"> SM 3113 B – Electrothermal Atomic Absorption Spectrometric Method – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017



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Dissolved Metals (Copper)	0.15 – 0.6 ppm	▪ SM 3111 B – Direct Air – Acetylene Flame Method – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017
Dissolved Metals (Manganese)	0.05 – 0.5 ppm	▪ SM 3111 B – Direct Air – Acetylene Flame Method – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017
Dissolved Metals (Nickel)	2.0 – 20 ppb	▪ SM 3113 B – Electrothermal Atomic Absorption Spectrometric Method – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017
Calcium Hardness	> 10 ppm as CaCO ₃	▪ SM 3500-Ca B – EDTA Titrimetric Method – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017
Chloride	2.0 – 400 ppm	▪ SM 4110 B - Ion Chromatography with Chemical Suppression of Eluent Conductivity - Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017
pH	0 – 14 Unit	▪ SM 4500-H+ B – Electrometric Method – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017
Phosphate- as PO ₄	0.1 - 2.0 ppm	▪ SM 4500-P D - Stannous Chloride Method – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017
Sulfate- as SO ₄	1.0- 200 ppm	▪ SM 4110 B - Ion Chromatography with Chemical Suppression of Eluent Conductivity - Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017
Trihalomethanes	8 - 120 ppb	▪ In-house Method No.: CS 002 [Issue No. (7); Issue Date: 08/07/2021, Revision No. (2); Revision Date: 20/02/2022] – Determination of THMs
Ammonium- as NH ₄	0.1 - 3.22 ppm	▪ In-house Method No.: CS 031 [Issue No. (5); Issue Date: 31/10/2019, Revision No. (3); Revision Date: 20/02/2022] - Determination of NH ₄



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Fluoride	0.2 – 3.0 ppm	<ul style="list-style-type: none"> SM 4110 B - Ion Chromatography with Chemical Suppression of Eluent Conductivity-Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Turbidity (Field Test)	0.15 – 800 NTU	<ul style="list-style-type: none"> SM 2130 B – Nephelometric Method - Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Electrical Conductivity (Field Test)	> 2.0 μ S/cm	<ul style="list-style-type: none"> SM 2510 B – Laboratory Method for Field Tests - Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
pH (Field Test)	0 – 14 Unit	<ul style="list-style-type: none"> SM 4500- H + B – Electrometric Method for Field Tests - Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Total Organic Carbon- as NPOC	0.2 – 10 ppm	<ul style="list-style-type: none"> SM 5310 B - High Temperature Combustion Method – Standards Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Nitrate- as NO ₃	1.0 – 20 ppm	<ul style="list-style-type: none"> SM 4110 B - Ion Chromatography with Chemical Suppression of Eluent Conductivity – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017
Residual Free Chlorine	0.15 – 5 ppm	<ul style="list-style-type: none"> In-house Method No.: CS 033 [Issue No. (2); Issue Date:08/07/2021, Revision No. (2); Revision Date: 20/02/2022] - Determination of Free Residual Chlorine by DPD Colorimetric Method.
Total Coliform	<ul style="list-style-type: none"> Potable Water (1.1 – 23) MPN/100 ml Non-Potable Water (1.8 – 1600) MPN/100 ml Potable Water (1 – 200.5) MPN/100 ml Non-Potable Water (1 – 2419.6) MPN/100 ml 	<ul style="list-style-type: none"> SM 9221 B – Standard Total Coliform Fermentation Technique – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017 SM 9223 B – Enzyme Substrate Test, c. Multi-Well Procedure – Standard Methods for Examination of Water and Wastewater, 23rd Edition, 2017 and Manufacturer Manual



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Total Coliform	> 1 CFU/100 mL	▪ In-house Method No.: MS 001 [Issue No. (5); Issue Date: 16/09/2018, Revision No. (4); Revision Date: 06/01/2022], Total Coliform by membrane filtration procedure (MF)
Fecal Coliform	• Non-Potable Water (1.8 –1600) MPN/100 mL	▪ SM 9221 E – Thermotolerant (Fecal) Coliform, Procedure, (2), Thermotolerant (Fecal) Coliform Direct Test (A-1 Medium) – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017
Escherichia Coli	• Potable Water (1.1 – 23) MPN/100 mL • Non-Potable Water (1.8 – 1600) MPN/10 mL • Potable Water (1 – 200.5) MPN/100 mL • Non-Potable Water (1 – 2419.6) MPN/100 mL	▪ SM 9221 F –Escherichia Coli Procedure Using Fluorogenic Substrate, 1. Escherichia coli Test (EC-MUG Medium) – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017 ▪ SM 9223 B – Enzyme Substrate, c. Multi-Well Procedure – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017and Manufacturer Manual
Sampling / Chemical	-----	▪ SM 1060 B - Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017 ▪ Jordanian Standard JS 287:1998
Sampling / Bacteriology and Microbiology	-----	▪ SM 9060 A – Sample Collection and SM 10200 B – Sample Collection – Standard Methods for Examination of Water and Wastewater, 23 rd Edition, 2017 ▪ Jordanian Standard JS 287:1998

List of employees in the laboratory who are technically responsible for issuing the test reports in the scope of accreditation:

- 1- Water Quality Director/ Eng. Majeda Al-Zoubi
- 2- Laboratories Department Manager / Eng. Amer Haroun
- 3- Head of Chemical Drinking Water Laboratories Subsection/ Mr. Ghassan Al-Weheid
- 4- Head of Microbiological Laboratories Subsection / Mr. Nasser Khraisat