

**Water Authority of Jordan  
Laboratories & Quality Affairs**



Quality Assurance List

For

**بديل خدمات التحاليل والخدمات المخبرية**

**Water Analysis, Sampling and Historical Data Prices**

<b>Reviewed by</b>	
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Changes since last revision

A marginal line indicates changes from previous revision

***Authorized for release and use by:***

Approved by: \_\_\_\_\_  
Eng. Rateb Al-Adwan Date: 1 June 2017

ASG/ Laboratories and Quality Affairs  
Water Authority of Jordan

**Water Authority of Jordan**  
**Laboratories and Quality Affairs**

**Water Analysis, Sampling and Historical**  
**Water Quality Data Price Lists**

*"Continued growth is surely expected with our exceptional facility  
and dedicated and professional staff, building on our solid  
history of accurate testing with trusted results."*

**Submitting Samples:**

Samples should be submitted directly through Sample Reception Area at the Lab facility. We provide empty sampling containers, tools and technical assistance for collecting and preserving samples according to the requirements of the World Health Organization (Guidelines for Drinking Water Quality, Surveillance and Control of Community Supplies) and the Standard Methods for the Examination of Water and Wastewater 22<sup>nd</sup> edition.

**Confidentiality:**

Results of all tests are available only to the client, unless released by client's written notification.

**Analytical Capabilities:**

Laboratories and Quality Affairs employ state-of-the-art equipment capable of handling a wide range of analytical tasks; we have got accreditation from United Kingdom Accreditation System (UKAS) according to the International Standard IEC/ISO 17025.



**2715**

**Drinking Water Chemistry**

Analysis	Method Used	<sup>sm</sup> Method Number	Result Release (day)	Unit Price (JD/Sample)
*pH	Electrometric	4500 HB	3	2
Total Dissolved Solids	Calculation by Factor to EC Ratio	1030 E	3	2.5
Total Dissolved Solids (Ca,Mg,Na,K,NO3,Cl,SO4,SIO2,HCO3,CO3,F)	Calculation by Analysis and Summation	1030 E	3	80
*Calcium, *Magnesium, *Potassium, *Sodium, Hardness as CaCO <sub>3</sub>	Ion Chromatography	In-house Method	6	11 each
Bromide, *Chloride, Nitrite, *Nitrate, * Sulfate,	Ion Chromatography	In-house Method	6	11 each
*Nitrate	Ion Chromatography	4110 B	6	11 each
*Iron, *Manganese, Nickel, Lead, Cadmium, Cobalt, Chromium, *Copper, Silver, Lithium, Aluminum, Beryllium, *Zinc, Molybdenum, Antimony, Strontium, Barium, Vanadium, Tin	Inductively Coupled Plasma/Atomic Emission Spectroscopy.	3120 B	10	25 each, 250 for the whole group
Sulfur	Iodomertic	4500 F	4	9
*Electrical Conductivity	Laboratory Method	2510 B	3	2.5
Electrical Resistivity	Calculation from EC	2510 B	3	2.5
Silica	Molybdosilicate	4500 C	4	15
*Turbidity	Nephelometric Method	2130 B	3	4
*Total Organic Carbon (TOC)	Persulfate-Ultraviolet Oxidation	5310 C	4	25
Ammonium	Colorimetric Method	In- house Method	4	15
Boron	Spectrophotometer Azomethine-H	Method Of Soil analysis Part 2 /Second Edition 25-S	4	15
*Ortho Phosphorus	Stannous Chloride	4500-P D	4	10
Carbonate, Bicarbonate, Hydroxide	Titrimetric	2320 B	4	10 each
Alkalinity	Titrimetric	2320 B	4	10
*Hardness as CaCO <sub>3</sub>	EDTA Titrimetric	2340 C	4	10
Color	Visual Comparison Color	2120 B	4	8
Odor	Threshold Odor Test	2150 B	4	7
Copper, Iron, Manganese, Zinc	Atomic Absorption Spectrometric	3111 B	10	20 each
Arsenic, Selenium	Atomic Absorption Spectrometric/Hydride Generation	3114 C	10	20 each
Mercury	Atomic Absorption Spectrometric/Hydride Generation-Cold Vapor	3112 B	10	20
Anionic Surfactants (ABS)	Colorimetric	Operating Manual	4	20
Cyanide	Colorimetric	Operation Manual Hach/Dr 2800	4	30
*Fluoride	Colorimetric SPADNS Method	4500 F D	4	10
<b>Organo Chlorinated Pesticides</b> A-BHC, *Linden, B-BHC, *Heptachlor, D-BHC, *Aldrin, *Heptachlor epoxide, Endosulfane 1, P,P-DDE, *Dieldrin, *Endrin, P,P-DDD, Endosulfane 2, *P,P-DDT, Endrinaldehide, Endosulfanesulfate, Methoxychlore,	Solid Phase Extraction/Gas Chromatographic/Electron Capture Detector	6630 B	14	200

Analysis	Method Used	<sup>SM</sup> Method Number	Result Release (day)	Unit Price (JD/Sample)
Endrin ketone.				
Aldrin, Lindane, Heptachlore, Dieldrin, Heptachlorepoxyde, Endrin, P,P-DDT	Solid Phase Extraction/Gas Chromatographic/Mass Spectrometry	6410 B	14	170
<b>Volatile Organic Compounds</b> Benzene, Ethyl benzene, O-Xylene, P&M-Xylene, Tetrachloroethylene, Toluene, Trichloroethylene	Head Space with Chromatographic Flame Ionization Detector	In-house method	10	75
<b>Chlorophenoxy Herbicides</b> 2,4,5-T (Herbicides) 2,4-D (Herbicides)	Solid Phase Extraction-HPLC Performance	LC Work Station class Vp Instruction Manual	14	100
<b>Phenols &amp; its derivatives</b> 2-Chlorophenol 2-Methylphenol 4-Chloro-3 Methylphenol 4-Methylphenol Phenol	Gas Chromatographic/Solid Phase Extraction/Flame Ionization Detector	6420	14	95
Trihalomethanes (T.THM)	Head Space Trap Analyzer/Gas Chromatography/ECD	In-House Method	4	75

**\*For the samples with EC $\geq$ 30000  $\mu$ S/cm 5% of drinking water tests prices added.**

#### Environmental Isotope Analysis

Analysis	Method Used	<sup>SM</sup> Method Number	Result Release	Unit Price (JD/Sample)
*Oxygen 18	CO2 Equilibrium/Delta Plus XP/IRMS HDO	Modified from (IAEA) NAAL HYI02.02.001	10	20
Oxygen 18	LWIA EP- 45	LGR	10	20
*Deuterium	Delta PlusXP/IRMS HDO/Mass Spectrometry using Platinum Catalyst	Modified from (IAEA) RIALHYPO2.01001	10	30
Deuterium	LWIA EP- 45	LGR	10	30
Rn 222	Degassing Unit, EDA	EDA MANUAL	5	40
	Liquid Scintillation Spectrometry	Modified from SM (7500-Rn B)	5	40
	RAD 7	Modified from SM (7500-RN)	5	40
*Ra 228 in Water samples	Evaporative Enrichment and Gamma Spectroscopy	Modified from SM (7120)	10	100
*Ra 226 in Water samples	Emanation Method (Evaporation Enrichment & Radon Degassing Unit)	Modified from SM (7500-Ra A and C) Emanation	30	70
Ra 226 in Water samples	Liquid Scintillation Spectrometry	Modified From SM (7500-Ra D) Sequential Precipitation & 7500-Rn B Liquid Scintillation	30	70
Ra 226 in Water samples	Evaporation Enrichment & Counting by Gamma Spectrometer	Evaporative Enrichment and Gamma Spectroscopy	40	100
*Tritium	Electrolytic Tritium Enrichment	Modified from (IAEA), Technical Report Note No. 19	30	70
Gross Alpha, Gross Beta	Evaporation and Gas Proportional Counting	Modified From SM (7110 B)	10	50

Analysis	Method Used	<sup>s</sup> Method Number	Result Release	Unit Price (JD/Sample)
*Gross Alpha,*Gross Beta	Evaporation and Liquid Scintillation Counting		10	50
Lead 210 in Water Samples	Determination of Pb 210 by Resin Extraction and Liquid Scintillation Counter	Modified from Eichrom Analytical Procedure OTOW1 rev 2	20	120
Thorium in water sample	Determination by Inductively Coupled Plazma/Mass Spectrometry	Modified from Environmental Protection Agency (EPA) Method 200.8	10	35
Uranium in Water samples			10	35
Carbon 14	Measurement of C-14 by Benzene Synthesis Line and Liquid Scintillation Counter	Modified from (IAEA) Technical Procedure #25 (1980)	30	200
Carbon 13	Measurement of C-13 by Picarro Isotopic CO2 Analyzer	In-house method derived from Picarro Catalogue	10	50
Potassium40 in Soil samples	Gama Spectrometer	Modified from SM (7120)	10	35 each
Uranium 238 in soil sample as Radium 226			30	
Thorium 232 in Soil samples as Radium 228			10	

#### Microbiological Analysis for Drinking and Waste Water

Analysis	Method Used	<sup>s</sup> Method Number	Result Release	Unit Price (JD/Sample)
*Total Coliforms	Multiple Tube Fermentation	9221 A, B	4	20
* <i>Escherichia coli</i>		9221 F(1)	4	17
*Fecal Coliforms (Total Thermotolerant Coliforms)		9221 E (1)	4	18
*Total Coliforms and <i>Escherichia coli</i> (Presence/Absence)	Enzyme Substrate Test Colilert From IDEXX	9223 B	4	28
*Total Coliforms and <i>Escherichia coli</i> (Quantitative)			4	35
Total Coliforms and <i>Escherichia coli</i> (Presence/Absence)	Colitag Test / ATP D05-0035	User Manual	4	22
* <i>Pseudomonas aeruginosa</i>	Multiple Tube Technique	9213 F	5	20
* <i>Pseudomonas aeruginosa</i> (Presence/Absence)	Bacterial Enzyme Detection Technology "Pseudolert" From IDEXX	User Manual	4	45
* <i>Pseudomonas aeruginosa</i> (Quantitative)			4	50
Bacterial Identification to species/Aerobic Bacteria	Vitek 2 Compact 15 by Biomerieux System	User Manual	5	50
Bacterial Identification to species/Anaerobic Bacteria			5	55
Bacterial Identification to species/Fungi			5	60
<i>Vibrio Cholerae</i>	Membrane Filtration	9260 H	7	40
<i>Cryptosporidium</i> and <i>Giardia</i>	Method 1623/ <i>Cryptosporidium</i> & <i>Giardia</i> in Water by Filtration/IMS/FA	EPA 1623	10	400

Analysis	Method Used	<sup>s</sup> Method Number	Result Release	Unit Price (JD/Sample)
Chlorophyll-a	Fluorometric Determination	10200 H 1, 3	6	25
Fungi	Membrane Filtration	9610 A, D	9	25
Heterotrophic Plate Count	Membrane Filtration/Spread Plate/Pour Plate	9215 A,B,C,D	4	20
Free Living Nematodes	Membrane Filtration	(AWWA) Manual Ch5 & 10200C2	4	20
Amoebae	Membrane Filtration	User Manual	4	20
<i>Sulfate-Reducing Bacteria</i>	Membrane Filtration	9240 D4	23	35
<i>Clostridium perfringens</i>	Membrane Filtration	The Microbiology of Drinking Water 2010part 6	4	32
Iron Bacteria	Membrane Filtration	9240 B	4	25
Fecal Streptococcus&Enterococcus	Multiple Tube Fermentation	9230 A,B	6	30
<i>Enterococcus</i>	Presence/Absence Fluorogenic Test by Enterolert by IDEXX	9230 D	4	45
	Quantitative Fluorogenic Test by Enterolert by IDEXX	9230 D	4	50
<i>Salmonella</i>	General Qualitative Isolation & Identification	9260 B	10	40
Helminth Eggs Count and Identification	Sedimentation- Floation/Schwartzbroad	WHO 1989	5	45
<i>Shigella</i>	Membrane filtration	9260 E	10	40
<i>Algae</i>	Sedimentation Technique	10200 F	5	20
<i>Campylobacter jejuni</i>	Membrane filtration Technique	9260G	7	50
<i>Legionella spp.</i>	Membrane filtration Technique	9260J	12	110
Diarrheagenic <i>Escherichia coli O157:H7</i>	Fermentation Technique	9260F	5	40
<i>Sulfur Oxidizing Bacteria</i>	Multiple Tube Fermentation	9240 D/59, 9240 D/5C	10	40
Seven Hours Fecal coliform test	Membrane filtration Technique	9211B	2	30

### Wastewater Chemistry

Analysis	Method Used	<sup>s</sup> Method Number	Result Release	Unit Price (JD/Sample)
*pH	Electrometric	4500 H	3	2
*Turbidity	Nephelometric	2130 B	3	4
*Biological Oxygen Demand (BOD)	5 day BOD Test	5210 B	7	28
Biochemical Oxygen	5 day BOD Test	5210 B	7	30
*Biological Oxygen Demand (BOD7)	7 day BOD Test		9	30
*Chemical Oxygen Demand (COD)	Closed Reflux/Potentiometric Titration	5220 C	5	25
	Closed Reflux/Manual Titration	5220 C	5	25
Total Solids/TS	Drying at 103 - 105 °C	2540 B	5	12
*Total Suspended Solids/TSS	Drying at 103 - 105 °C	2540 D	5	12
*Total Dissolved Solids/TDS	Drying at 180 °C	2540 C	5	12

Analysis	Method Used	<sup>SM</sup> Method Number	Result Release	Unit Price (JD/Sample)
Total Fixed Solids/TFS	Ignition at 550 °C	2540 E	5	16
Total Volatile Solids/TVS			5	16
*Nitrate	Ion Chromatography(LRV 0.25 mg/l)	4110 B	6	11
* Nitrite	Ion Chromatography	4110 B	6	11
Kjeldahl Nitrogen	Calculation	User Manual		30
*Fluoride	Ion Chromatography(LRV 0.1 mg/l)	4110 B	5	11
Fluoride	Colorimetric Method(LRV 0.4 mg/l)	User Manual	5	10
Sulfide	Iodometric	4500 F	5	10
Calcium, Potassium, Magnesium, Sodium	Ion Chromatography	In-house Method	6	11 each
Iron, Manganese, Nickel, Zinc, Cadmium, Cobalt, Lead, Chromium, Copper, Silver, Aluminium, Barium, Beryllium, Lithium, Molybdenum, Stannous, Vanadium, Boron,arsenic,Selenium	Inductively coupled Plasma/Atomic Emission Spectroscopy	3120 B	10	30 each, 300 for the whole group
*Oil and Grease	Total by Gravimetric method	5520 B	6	25
	Indicative by Gravimetric method	5520 B	6	25
*Mercury	O2 Combustion Gold Amalgamation with Atomic Absorption	User Manual	6	20
Anionic Surfactants (ABS)	Surfactants MBAS Kit	User Manual	5	15
Total Alkalinity: Carbonate, Bicarbonate, Hydroxide	Potentiometric Titration	2320 & User Manual	6	10 each
Total Nitrogen	Catalytic Combustion	User Manual	10	20
Total Nitrogen/Filtered	Catalytic Combustion	User Manual	10	22
*Chloride	Ion Chromatography(LRV 0.25 mg/l)	4110 B	5	11
Chloride	Potentiometric Argentometric(LRV 4 mg/l)	4500 B	5	10
*Phosphate	Ion Chromatography(LRV 0.3 mg/l)	4110 B	5	11
Phosphate	Stannous Chloride (LRV 0.2 mg/l)	4500 P D	5	10
*Sulfate	Ion Chromatography(LRV 0.25 mg/l)	4110 B	5	11
SAR# (Na,Ca,Mg)	Ion Chromatography/by calculation	In-house Method	5	33
*Ammonium	Ion Chromatography(LRV 0.2mg/l)	In-house Method	5	11
Ammonium	Flow Injection (LRV 0.5 mg/l)	4500 H	5	11

# The listed price if the customer requested the SAR only and not its constituents, i.e. the Na,Ca& Mg

**Mobile Laboratory / Drinking Water**

Analysis	Method Used	<sup>SM</sup> Method Number	Unit Price (JD/Sample)
Ammonia	Colorimetric	User Manual	7
Dissolved Oxygen	Membrane Electrode	4500-O G	10
Odor	Threshold Odor Test	2150 B	5
*Residual Chlorine	DPD Colorimetric	4500-Cl G	2
Hardness	EDTA Titration	2340 C	10
Oxidation Reduction Potential (Eh)	Electrometric	2580 A	10
*PH	Electrometric	4500 H B	3
Iron	Spectrophotometer	User Manual	15
Alkalinity	H <sub>2</sub> SO <sub>4</sub> Titration	2320 B	10
Sulfur	Iodometric	4500 F	10
*Fluoride	SPANDS Colorimetric	4500 F D	15
*Electrical Conductivity	Laboratory Method	2510 B	3
*Total Coliforms and <i>Escherichia coli</i> (Presence/Absence)	Enzyme Substrate Test Colilert From IDEXX	9223 B	40
*Turbidity	Nephelometric	2130 B	3
Nitrate	Powder Pillows or AccuVacAmpouls	4500 C	15
Temperature	Laboratory Method	2550 B	2
Carbonate, Bicarbonate,	Titration	2320	10 each
Langelier Saturated Index (LSI) (pH, Temperature, TDS, HCO <sub>3</sub> , Total Hardness )	Calculation by Analysis and Summation	1030 E	30

**Field Analysis / Drinking Water**

Analysis	Method Used	<sup>SM</sup> Method Number	Unit Price (JD/Sample)
Ammonia	Colorimetric	User Manual	7
*Residual Chlorine	DPD Colorimetric	4500-Cl G	2
*PH	Electrometric	4500 H B	3
Electrical Conductivity	Laboratory Method	2510 B	3
*Turbidity	Nephelometric	2130 B	3
Oxidation Reduction Potential (Eh)	Electrometric	2580 A	10
Temperature	Laboratory Method	2550 B	2
Dissolved Oxygen	Membrane Electrode	4500-O G	10

**Field Analysis / Waste Water**

Analysis	Method Used	<sup>SM</sup> Method Number	Unit Price (JD/Sample)
*PH	Electrometric	4500 H B	3



**Field Trips & Sampling Services Price List\***

Description (Water)	No of samples collected	Destination	Price (JD/Trip/day) vehicle	Price (JD/Trip/day) personnel
*Sampling Water by lab personnel & vehicles	≤ 3	Within Greater Amman Directorate	30	15
	>3		30	25
	≤ 3	Outside Greater Amman Directorate	50	30
	>3		50	50

**Grab Samples**

Description (Wastewater)	No of samples collected	Destination	Price (JD/Trip/day) vehicle	Price (JD/Trip/day) personnel
Sampling Wastewater by lab personnel & vehicles (Grab Samples)	≤ 3	Within Greater Amman Directorate	30	15
	>3		30	25
	≤ 3	Outside Greater Amman Directorate	50	30
	>3		50	50

**Composite samples**

Description (Wastewater)	No of samples collected	Destination	Price (JD/Trip/day) vehicle	Price (JD/Trip/day) personnel
Sampling Wastewater by lab personnel & vehicles (Composite Samples)	≤ 3	Within Greater Amman Directorate	60	30
	>3		60	50
	≤ 3	Outside Greater Amman Directorate	100	60
	>3		100	100

Description	Destination	Price (JD/Trip/day) vehicle	Price (JD/Trip/day) personnel
Mobile Unit Accompanied by Lab personnel	Within Greater Amman Directorate	200 <sup>1</sup>	50 <sup>1</sup>
	Outside Greater Amman Directorate	300 <sup>1</sup>	100 <sup>1</sup>

<sup>1</sup> The prices of analysis conducted by the mobile unit are added to the listed price and according to the main laboratory price list.

\* Test is accredited by the United Kingdom accreditation service (UKAS) against ISO /IEC 17025 Lab No.2715, Refer to Schedule of Accreditation for water matrix details for each testing method (attached). Sampling is accredited for natural and potable water for Customer taps, ground water wells, desalination stations, pumping stations, reservoirs (raw and final) and wastewater (sewage effluents treated and untreated) based on Standard Methods 22nd edition 1060 A copy of our current scope of accreditation is available on our website [www.waj.gov.jo](http://www.waj.gov.jo)

## اجور خدمات مديرية التخطيط

الرقم	الخدمة	التسعيرة
1	اعداد خريطة من معلومات مملوكة لسلطة المياه	30 د
2	اعداد خريطة من معلومات خاصة بالزبون	20 د
3	استخدام احداثيات من GPS مملوك لسلطة المياه و اعداد الخريطة	40 د
4	استخدام احداثيات من GPS مملوك لسلطة المياه	20 د
5	اعداد وصف هيدروجيولوجي لمنطقة الدراسة من لوحة خريطة جيولوجية واحده	100 د
6	المشاركة في جمع العينات والجولات الميدانية	حسب التسعيرة المعتمدة لاجور السيارة والفني
7	كشوفات اعادة الترخيص للشركات والمقالع والتعدين واي منشآت لها آثار بيئية على مصادر المياه	200 د

## استثناءات

- 1- يستثنى من بدل خدمات التحاليل والخدمات المخبرية القوات المسلحة والأجهزة الأمنية والديوان الملكي على ان لا يتجاوز عشرة عينات شهريا
- 2- يستثنى من بدل خدمات التحاليل والخدمات المخبرية المشاريع التي تكون تحت ادارة وزارة المياه والري.
- 3- هناك استثناءات فيما يخص الحالات الدراسية ضمن مذكرات تفاهم مع الجامعات الأردنية ومختصين في سلطة المياه والتي تعود نتائجها بالمنفعة على سلطة المياه، ويتم اشراك المختصين من سلطة المياه وتزويدنا بنتائج البحث والتقارير النهائي للدراسات للإستفادة منها وعكسها على تحسين عمليات سلطة المياه.

## سياسة تحديد اسعار البيانات التراكمية لنوعية المياه

يتوفر لدى شؤون المختبرات والنوعية النتائج الخاصة بالمياه والمياه العادمة منذ عام 1995 ولغاية تاريخه وتتضمن النتائج؛ نتائج العينات التي تم جمعها من قبل الأقسام الرقابية في مديرية النوعية وكذلك النتائج للعينات التي تم جمعها من قبل الجهات المختلفة في وزارة المياه والري.

تتوفر المعلومات في ثلاث قواعد للبيانات تتوزع حسب الفترات الزمنية التالية:

أ. FoxPro: من عام 2002-1995

ويوجد صعوبة في استخراج البيانات من القواعد المذكورة في أ حيث لم ترد العينات في ذلك الوقت بأرقام ورموز تشير الى المصدر بالتحديد وهذا يستوجب دراسة البيانات وتبويبها قبل اصدار نتائجها الأمر الذي يحتاج لوقت وجهد كبيرين.

ب. Oracle: من عام 2002 ولغاية تاريخه هي سهلة الإستخراج.

آلية إحتساب الأجر للخدمات الفنية المتعلقة بالبيانات التراكمية لنوعية المياه:

1- يتم احتساب التكلفة الإجماليه الحقيقيه للبيانات التراكمية وفقاً لما هو وارد في قائمة أسعار التحاليل المعتمدة من سلطة المياه.

2- النسبة المئوية المطلوبة من التكلفة الإجمالية الحقيقية هي 20%.

3- التكلفة الإجماليه للبيانات التراكميه المطلوبه = التكلفة الإجماليه الحقيقيه للبيانات التراكمية X 20%.

\*تقديم خصم 50% إضافي على التكاليف الموضحة اعلاه لطلاب الجامعات والدراسات العليا والجهات البحثية.

\*هناك استثناءات فيما يخص :-

1- الحالات الدراسية ضمن مذكرات تفاهم مع الجامعات الأردنية ومختصين في سلطة المياه والتي تعود نتائجها بالمنفعة على سلطة المياه، ويتم اشراك المختصين من سلطة المياه وتزويدنا بنتائج البحث والتقارير النهائي للدراسات للإستفادة منها وعكسها على تحسين عمليات سلطة المياه.

2-القوات المسلحة والاجهزة الامنية.

3-المشاريع التي تكون تحت ادارة وزارة المياه والري.