



# QUARTERLY REPORT BOTTLED WATER QUALITY

(July-September, 2014)



**PAKISTAN COUNCIL OF RESEARCH IN WATER RESOURCES**

**Ministry of Science & Technology**

**Khyban-e-johar, H-8/1, Islamabad.**

[www.pcrwr.gov.pk](http://www.pcrwr.gov.pk)

July-September, 2014



**SUMMARY**

The poor quality of drinking water has forced a large section of citizens to buy bottled water. However, many of the mineral water companies were found selling contaminated water. To monitor and improve the quality of bottled water, the government of Pakistan through Ministry of Science and Technology has designated the task for quarterly monitoring of bottled/mineral water brands to PCRWR. According to the monitoring report for the quarter July-September, 2014 following is the brief overview of the findings.

**Quarterly Monitoring of Bottled/Mineral Water (July-September, 2014)**

<b>No. of Brands Collected</b>	<b>65</b>	
<b>No. of Cities Targeted</b>	<b>06</b> (Islamabad, Lahore, Bahawalpur, Karachi, Quetta, and Peshawar).	
<b>No. of Overall Safe Brands</b>	<b>57</b>	
<b>Overall Unsafe Brands (08)</b>	<b>Brand Name</b>	<b>Manufacturer(s)</b>
	<b>Active</b>	Ali Enterprises :90-E Sabzazar ,Lahore, Pakistan
	<b>Aqua National</b>	Milli Brother :8-km,G.T Road Shahdara ,Lahore
	<b>Aqua Q</b>	Maaza Pakistan(Pvt)Ltd,Plot# 701,702.703 Shah Murad Road Thatta Pakistan
	<b>Aab-E-Kousar</b>	Reg.#155-SIU-GIQ Quetta.
	<b>Sparkle pure Water</b>	Pro Health Beverages (Pvt)Ltd.11-km Multan road, Lahore
	<b>Elight Water</b>	Hassnain Products Kahna Noh Lahore E-mail:elightwater633@gmail.com 0331-4418456
	<b>Al-Sana</b>	mzh Foods & Beverages 2 Shamas Block Rizwan Garden Jalo Park Road Lahore <a href="mailto:Mzhfoods@gmail.com">Mzhfoods@gmail.com</a>
<b>Alpine Hydr8</b>	Alpine Pakistan Ltd.Bedian Road Lahore 042-35021176	
<b>Chemically Safe Brands</b>	<b>57</b>	
<b>Chemically Unsafe Brands</b>	<b>08</b>	
	<b><u>Excessive Arsenic (03)</u></b> (Aqua National, Sparkle pure Water, Active)	
	<b><u>Excessive Sodium (6)</u></b> (Aqua Q, Aab-E-Kousar, Al-Sana, Elight Water, Sparkle Pure Water, Alpine Hydr8)	
	<b><u>pH (1)</u></b> Aqua Q	
<b>No. of Microbiologically Safe Brands</b>	<b>64</b>	
<b>Microbiologically Unsafe Brands</b>	<b>01</b> (Elight Water)	



## INTRODUCTION

Drinking water quality is deteriorating continually due to biological contamination from human waste, chemical pollutants from industries and agricultural inputs. Piped water also gets contaminated because pipes are laid very close to sewerage lines or open drains and cause many serious water borne diseases. It was found that 45% of infant deaths have been attributed to diarrhea and about 60% to overall infectious waterborne diseases in Pakistan. According to the World Health Organization (WHO) 25-30% of the diseases are gastro-intestinal in nature. The poor quality of drinking water has forced a large cross-section of citizens to buy bottled water. As a consequence of this expanding market a mushroom growth of bottled water industry in the country is witnessed during the last few years. However, many of the mineral water companies were found selling contaminated water. To monitor and improve the quality of bottled water, the government of Pakistan has designated the PCRWR as focal point agency.

1. Ministry of Science & Technology informed PCRWR Vide U.O. No. 5(21)/2004-ATA-II dated 17.10.2005 that the Cabinet in its meeting under the chairmanship of Prime Minister directed Ministry of Science & Technology to undertake regular survey/samples of bottled/mineral water at source of production publicize the results on a quarterly basis and follow up with punitive/legal action.
2. Ministry of Science & Technology has assigned the task of quality monitoring of bottled water and publicize the results to PCRWR Vide U.O. No.1(1)/2005-Secy (MoST) dated 8.12.2005.

## PCRWR SAMPLING METHODOLOGY

No. of Brands Collected	65	
No. of Cities Targeted	06 (Islamabad, Lahore, Bahawalpur, Karachi, Quetta, and Peshawar).	
Composition of Sampling Team	One Research Officer and Two Laboratory Assistants	
Sampling Procedure	Samples of <b>Sixty-five</b> commercially available brands of mineral/bottled water were collected from local market of six cities of Pakistan. These samples were collected by the senior staff members of National Water Quality Laboratory (NWQL) of PCRWR Head Office and Regional/district Water Quality Laboratories of PCRWR during July-September, 2014. A set of four bottles of each brand was collected and sealed on site. Identification codes were allotted to all the brands according to PCRWR Bottled Water Classification System.	
Transparency	Sample No. 1	Handed over to shopkeeper at the time of sample collection;
	Sample No. 2	Preserved in the National Water Quality Laboratory of PCRWR, Islamabad for future record.
	Sample No. 3	Used for Microbiological Analysis
	Sample No. 4	Used for Physico-chemical Analysis

PCRWR QUARTERLY REPORT-BOTTLED WATER QUALITY



PCRWR BOTTLED WATER CLASSIFICATION SYSTEM

Brand Name	PCRWR Code	City	Date of Collection	Date of Expiry	Size	Name & Address of Seller/Shop Keeper	Manufacturer's Address
NEBRASKA	BWC-01	Peshawar	21/08/2014	08/2015	0.6 Liter	12-C Industrial Estate Hayatabad, Peshawar	12-C Industrial Estate Hayatabad, Peshawar
Aqua splash	BWC-02	Peshawar	21/08/2014	07/2015	0.6 Liter	(Euro International) 192-A, Industrial Estate Hayatabad, Peshawar	(Euro International) 192-A, Industrial Estate Hayatabad, Peshawar
Aquatic fresh	BWC-03	Peshawar	21/08/2014	07/2015	0.6 Liter	Royal Food Industries Plot-1/C Industrial Estate Jamrud Road Peshawar	Royal Food Industries Plot-1/C Industrial Estate Jamrud Road Peshawar
Natural Aqwah	BWC-04	Peshawar	21/08/2014	06/2015	1.5 Liter	RG enterprises Plot#1 41-A Industrial Estate Hayatabad, Peshawar	RG enterprises Plot#1 41-A Industrial Estate Hayatabad, Peshawar
Moya Mineral	BWC-05	Peshawar	21/08/2014	06/2015	1.5 Liter	Al-Saudia Enterprises 580/B Main Gulberg Peshawar Cantt	Al-Saudia Enterprises 580/B Main Gulberg Peshawar Cantt
Sunlay	BWC-06	Quetta	18/08/2014	12/2015	1.5 Liter	Nazar Medical Store Jinnah Road Opp.Civil Hospital Quetta	27/1,Nazimabad no.1 Karachi www.iqra finu.com
Aqua Hygienic	BWC-07	Quetta	18/08/2014	07/2015	1.5 Liter	Nazar Medical Store Jinnah Road Opp.Civil Hospital Quetta	Zauhras: Plot# 2, St#12 Faisal Town Brewery Road, Quetta
Aqua Q	BWC-08	Quetta	18/08/2014	03/2015	1.5 Liter	Nazar Medical Store Jinnah Road Opp.Civil Hospital Quetta	Maaza Pakistan(Pvt)Ltd,Plot# 701,702.703 Shah Murad Road Thatta Pakistan
Aab-E-Kousar	BWC-09	Quetta	18/08/2014	-	1.5 Liter	Shahid General Store Sooraj Ganj Bazaar Quetta	Reg. #155-SIU-GIQ Quetta.
yes	BWC-10	Quetta	18/08/2014	12/2016	1.5 Liter	Nazar Medical Store Jinnah Road Opp.Civil Hospital Quetta	Mega Fina Industries:Plot#A-62,Malir Industrial Area Malir Karachi
Vaskaro	BWC-11	Quetta	18/08/2014	05/2015	0.6 Liter	Shahid General Store Sooraj Ganj Bazaar Quetta	Mashk Enterprises:B-17,Industrial Area Shikarpur Road Sukkar
Nestle	BWC-12	Quetta	18/08/2014	07/2015	1.5 Liter	Nazar Medical Store Jinnah Road Opp.Civil Hospital Quetta	308-Upper Mall Road Lahore
Aqua Spring	BWC-13	Quetta	18/08/2014	12/2015	1.5 Liter	Hafsa Foods Industries main kirani Road ,Quetta	Hafsa Foods Industries main kirani Road ,Quetta
Springley	BWC-14	Quetta	18/08/2014	11/2015	1.5 Liter	Utility Store Corporation GPO Branch Quetta	Jam-e-Shirin Boulevard 14-G,Gulberg 111,Lahore
AquaFina	BWC-15	Lahore	21/08/2014	04/2015	1.5 Liter	Salamat Pan Shop Band Road Lahore	32-N,Gulberg -II,Lahore

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Brand Name	PCRWR Code	City	Date of Collection	Date of Expiry	Size	Name & Address of Seller/Shop Keeper	Manufacturer's Address
Gourmet	BWC-16	Lahore	20/08/2014	05/2015	1.5 Liter	Gourmet Bakers Lahore	Gourmet Foods Gate # 1 Plot 1-5 Sunder Industrial Estate Raiwind Sunder Road Lahore
Aftab Qarshi	BWC-17	Lahore	21/08/2014	04/2015	1.5 Liter	Hamza Pan Shop Lahore	Aftab Qarshi Herbal Laboratories Water Division Muzamil Town 20-km Multan Road, Lahore
Kinley	BWC-18	Lahore	20/08/2014	04/2015	1.5 Liter	Quality Medical Store Jail Road Lahore	Coca cola Beverages Pakistan Ltd.(CCBPL)5-E,11 Gulberg 111,Lahore
Aqua RO7	BWC-19	Lahore	20/08/2014	12/2015	1.5 Liter	Orange Plus Bakery Sher Shah Colony Lahore	Waqar Haider Brothers: Factory Hassan Kot, 7.5 Raiwand Road, Lahore
Mashmoom Aqua	BWC-20	Lahore	20/08/2014	03/2015	1.5 Liter	Orange Plus Bakery Sher Shah Colony Lahore	Mashmoom (Pvt) Ltd Plot # 154/3 154/4 Phase V Industrial Estate Hattar
Kisan Batter Life	BWC-21	Lahore	20/08/2014	04/2015	0.6 Liter	Nawab Pan Shop Bastani Stop Road Lahore	Faisalabad Oil Refinery (Pvt)Ltd <a href="http://www.kisan.com.pk">www.kisan.com.pk</a>
Natural Dew	BWC-22	Lahore	20/08/2014	10/2014	1.5 Liter	Quality Medical Store Jail Road Lahore	Rana Industries:1067-A,Block Sabzazar Scheme Near Bijli Ghar Stop Multan Road, Lahore
Active	BWC-23	Lahore	20/08/2014	02/2015	1.5 Liter	Mashallah pan Shop niazi Adda Yateem Khana Lahore	Ali Enterprises :90-E Sabzazar, Lahore Pakistan
Doce	BWC-24	Lahore	20/08/2014	08/2015	1.5 Liter	Doce Bakery Lahore	48-M Quaid-e-Azam Industries Estate Kot Lakhpat Lahore
Aqua National	BWC-25	Lahore	20/08/2014	12/2015	1.5 Liter	Rizwan Pan Shop Chowk Samnabad Lahore	Milli Brother :8-km,G.T Road Shahdara, Lahore
Alpine Hydr8	BWC-26	Lahore	21/08/2014	07/2015	1.5 Liter	Hamza Pan Shop Lahore	Alpine Pakistan Ltd.Bedian Road Lahore 042-35021176
Dewan Water Express	BWC-27	Lahore	21/08/2014	08/2015	1.5 Liter	Shayan General Store Lahore	Dewan Foods:168,Shah Jamal Lahore E-mail; accounts @dewanfoods.com
Sparkle pure Water	BWC-28	Lahore	20/08/2014	05/2015	1.5 Liter	Orange Plus Bakery Sher Shah Colony Lahore	Pro Health Beverages (Pvt)Ltd.11-km Multan road, Lahore
Qaswa	BWC-29	Lahore	21/08/2014	07/2015	1.5 Liter	Hamza Pan Shop Lahore	Y.B Foods(Pvt)Ltd 320-A Huma Block main Boulevard Allama Iqbal Town, Lahore
Sufi	BWC-30	Lahore	20/08/2014	07/2016	1.5 Liter	Quality Medical Store Jail Road Lahore	Hadayat food Stuffs Industries(Pvt)Ltd 1-B,Garden Block Garden town, Lahore Pakistan
Elight Water	BWC-31	Lahore	21/08/2014	-	1.5 Liter	Zain Ali Pan Shop Lahore	Hassnain Products Kahna Noh Lahore E-mail:elightwater633@gmail.com 0331-4418456
Aqua Dew	BWC-32	Lahore	20/08/2014	07/2015	1.5 Liter	Imran Pan Shop Near Grand Battery Multan Road Lahore	Mustafa & Hamza Foods:N-Block Sabzazar, Lahore Cell#03214443731

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Brand Name	PCRWR Code	City	Date of Collection	Date of Expiry	Size	Name & Address of Seller/Shop Keeper	Manufacturer's Address
Al-Sana	BWC-33	Lahore	21/08/2014	07/2014	1.5 Liter	Ilyas Pan Shop Rawind Road Lahore	mzh Foods & Beverages 2 Shamas Block Rizwan Garden Jalo Park Road Lahore <a href="mailto:mzhfoods@gmail.com">mzhfoods@gmail.com</a>
Butt	BWC-34	Lahore	20/08/2014	05/2015	1.5 Liter	Butt Sweets & Bakers Chowk Chuburgi Lahore	A product of Azhar & Co. Gulberg -111 Lahore
Effort	BWC-35	Lahore	2008/2014	08/2014	1.5 Liter	Quality Medical Store Jail Road Lahore	Effort Corporation 83-A, Shadman 11, Lahore Pakistan <a href="mailto:effort_corp@gmail.com">effort_corp@gmail.com</a>
Best Water	BWC-36	Karachi	29/08/2014	06/2015	0.6 Liter	Sector S/1 Near Pila School north Karachi	4/33 Sector 21 Korangi Industrial Area Karachi <a href="http://www.bestwater.com">www.bestwater.com</a>
Aqua Vida	BWC-37	Karachi	29/08/2014	-	0.6 Liter	Sector S/1 Near Pila School north Karachi	Habib Consumer Products(Pvt)Ltd Plot#80-A,B,C Sector 27, Korangi Industrial Area Karachi
Orion	BWC-38	Karachi	29/08/2014	12/2016	0.6 Liter	Akhtar Super General Store Karachi	Orion Foods Site E-1, Suite #2, Defance View Phase-II, Karachi
First Water	BWC-39	Karachi	29/08/2014	-	0.6 Liter	Sector S/1 Near Pila School north Karachi	First Water Company (Pvt) Ltd. D-38 S.I.T.E Karachi-75000
JEL	BWC-40	Karachi	29/08/2014	12/2015	0.6 Liter	New Hospital Karachi	Mega Fine Industries Plot#A-92 Malir Industrial Area Malir Karachi
Ideal Life	BWC-41	Karachi	28/08/2014	-	0.6 Liter	New Medical General Store Karachi	Plot#B-9/B-1 Office# 37.5 p Chamber Site Karachi
Al-Massafi	BWC-42	Karachi	28/08/2014	12/2014	0.6 Liter	Waqar Shareen Shop 36,37 Plot#17 main Road Landhi Karachi	Al-Massafi Foods Plot# S-3, S-4, Malir City Karachi
Aqua Pure	BWC-43	Karachi	28/08/2014	-	1.5 Liter	Sector S/1 Near Pila School north Karachi	Plot#B-80 Block 13-D D/2 Gulshan Iqbal Karachi
Miracle	BWC-44	Karachi	28/08/2014	-	1.5 Liter	Sweets & Nimko Shop 23,24 Chorangi Karachi	The Miracle Product(Pvt)Ltd Plot#WSA-23, Block-14, F.B Area Karachi
Marbella	BWC-45	Karachi	28/08/2014	12/2016	1.5 Liter	Sector S/1 Near Pila School north Karachi	Marbella Enterprises 021-32016136
Al-Habib	BWC-46	Karachi	28/08/2014	12/2016	1.5 Liter	Ibrahim General Store Landhi Hospital Karachi	E-10 Al-Azam Square F.B Block-1 Karachi
Paradise	BWC-47	Karachi	28/08/2014	03/2016	1.5 Liter	Bismillah Bakery RCD, Ground Sandab Malir Karachi	Paradise Foods Groups(UK)Ltd Manchester England 0321-2036202
Vey	BWC-48	Karachi	28/08/2014	08/2016	1.5 Liter	Ibrahim General Store Landhi Hospital Karachi	Fluid Technology Int'l(Pvt)Ltd 424, Bhayani Center Block, M, North Nazimabad, Karachi
Spring Fresh	BWC-49	Karachi	28/08/2014	12/2015	1.5 Liter	Super General Store Goth Karachi	A-71/1, Shaniabad F.B Area Karachi
Al-Sahar	BWC-50	Karachi	28/08/2014	-	1.5 Liter	Danish Bakery & General Store Indus Mehran	Al-Saffrat International Plot#C-68 Site Super Highway Industrial Area



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Brand Name	PCRWR Code	City	Date of Collection	Date of Expiry	Size	Name & Address of Seller/Shop Keeper	Manufacturer's Address
						Malir Karachi	Karachi
<b>Glaxo</b>	BWC-51	Karachi	28/08/2014	-	1.5 Liter	Sector S/1 Near Pila School north Karachi	Amjad Associates Office#G-5 Commercial Area Block 4 Shah faisal Town Karachi
<b>Pure 99</b>	BWC-52	Karachi	28/08/2014	-	1.5 Liter	Sweets & Nimko Shop 23,24 Chorangi Karachi	Yasir Enterprises Salman Tower A-15,Mazzanine Floor Opp.Nadra Office Main National Highway Malir city Karachi
<b>Blu</b>	BWC-53	Bahawalpur	15/09/2014	06/2015	0.6 Liter	Time Pharmacy Bahawalpur	Al-Hilal Industries(Pvt)Ltd Sultan Nagar Vehari Road Multan
<b>ARWA Water</b>	BWC-54	Bahawalpur	15/09/2014	07/2015	0.5 Liter	Time Pharmacy Bahawalpur	Aslam Group of Industries:16 km Hasilpur Road Dera Bakha Bahawalpur
<b>Pine'o</b>	BWC-55	Bahawalpur	15/09/2014	08/2015	0.6 Liter	Life Medicose Opp.BVH Bahawalpur	Gysing Pak PSIE,Bahawalpur Gysing@live.com
<b>Fresco Healthy Water</b>	BWC-56	Bahawalpur	15/09/2014	12/2015	0.5 Liter	Al-Rehman Medicose Opp.BVH Bahawalpur	Fresco foods jhang Road kabir wala
<b>Necter</b>	BWC-57	Islamabad	11/09/2014	-	1.5 Liter	Plot # 14/10, Mark Plot # 14/10, Markaz G-7 Islamabad.	Plot # 14/10, Mark Plot # 14/10, Markaz G-7 Islamabad.
<b>Deep Spring</b>	BWC-58	Islamabad	11/09/2014	-	1.5 Liter	Plot # 226, St # 7,I-9/2, Industrial Area ,Islamabad	Plot # 226, St # 7,I-9/2, Industrial Area ,Islamabad
<b>Deosai</b>	BWC-59	Islamabad	11/09/2014	02/2015	1.5 Liter	Margalla foods & Beverages, plot # 32,Khayaban-e-johar Industrial Area I-9/2,Islamabad	Margalla foods & Beverages, plot # 32,Khayaban-e-johar Industrial Area I-9/2,Islamabad
<b>A.R Water</b>	BWC-60	Islamabad	11/09/2014	-	0.5 Liter	Plot # 18, Mian Road RCCI Industrial Estate Rawat, Islamabad	Plot # 18, Mian Road RCCI Industrial Estate Rawat, Islamabad
<b>Maple Dew</b>	BWC-61	Islamabad	11/09/2014	08/2015	0.5 Liter	Maple Associates, Park Road, Islamabad Ph 051-2552424	Maple Associates, Park Road, Islamabad Ph 051-2552424
<b>Water Plus</b>	BWC-62	Islamabad	11/09/2014	09/2015	0.5 Liter	Plot # 235,St # 6,I-9/2, Industrial Area Islamabad	Plot # 235,St # 6,I-9/2, Industrial Area Islamabad
<b>Hydra</b>	BWC-63	Islamabad	11/09/2014	-	1.5 Liter	Plot # 31-A, I-9 Industrial Area Islamabad	Plot # 31-A, I-9 Industrial Area Islamabad
<b>Refresh Water</b>	BWC-64	Islamabad	11/09/2014	07/2015	1.5 Liter	T& S Islamabad Office # 01, main Hall Pindori Road Main Khanna Dak Islamabad	T& S Islamabad Office # 01, main Hall Pindori Road Main Khanna Dak Islamabad
<b>Fresh Life</b>	BWC-65	Islamabad	11/09/2014	09/2015	1.5 Liter	T& S Islamabad Office # 01, main Hall Pindori Road Main Khanna Dak Islamabad	T& S Islamabad Office # 01, main Hall Pindori Road Main Khanna Dak Islamabad



**WATER QUALITY PARAMETERS AND METHODS USED FOR ANALYSIS**

Sr. #	PARAMETERS	ANALYTICAL METHOD
1.	Alkalinity (mg/l as CaCO <sub>3</sub> )	2320, Standard method (2005) APHA
2.	Arsenic (ppb)	AAS Vario 6, Analytik Jena AG
3.	Bicarbonate	2320, Standard method (2005) APHA
4.	Calcium (mg/l)	3500-Ca-D, Standard Method (2005) APHA
5.	Carbonate (mg/l)	2320, Standard method (2005)
6.	Chloride (mg/l)	Titration (Silver Nitrate), Standard Method (2005) APHA
7.	Color (TCU)	Sensory Test
8.	Conductivity (μS/cm)	E.C meter, Hach-44600-00, USA
9.	Hardness (mg/l)	EDTA Titration, Standard Method (2005) APHA
10.	Magnesium (mg/l)	2340-C, Standard Method (2005) APHA
11.	Nitrate Nitrogen (mg/l)	Cd. Reduction (Hach-8171) by Spectrophotometer
12.	Odor	Sensory Test
13.	pH	pH Meter, Hanna Instrument, Model 8519, Italy
14.	Potassium (mg/l)	Flame photometer PFP7, UK
15.	Sodium (mg/l)	Flame photometer PFP7, UK
16.	Sulfate (mg/l)	SulfaVer4 (Hach-8051) by Spectrophotometer
17.	Phosphate (mg/l)	8190 and 8048 (Hach)
18.	Taste	Sensory Test
19.	TDS (mg/l)	2540C, Standard method (2005) APHA
20.	Turbidity (NTU)	Turbidity Meter, Lamotte, Model 2008, USA
21.	Fluoride (mg/l)	4500-F C. ion-Selective Electrode Method Standard method (2005) APHA
22.	Iron (mg/l)	FerroVer method (HACH Cat. 21057-69)
23.	Total Coliforms (MPN/100ml)	9221-B,C&D, Standard Methods (2005) APHA
24.	E. Coli (MPN/100ml)	9221-B,C&D, Standard Methods (2005) APHA

**WATER QUALITY PERMISSIBLE LIMITS FOR BOTTLED WATER**

Sr. #	Parameter	Units	Permissible Limits		
			WHO	IBWA	PSQCA
1.	Alkalinity	(mg/l)	NGVS	NGVS	NGVS
2.	Bicarbonate	(mg/l)	NGVS	NGVS	NGVS
3.	Calcium	(mg/l)	NGVS	NGVS	100
4.	Carbonate	(mg/l)	NGVS	NGVS	NGVS
5.	Chloride	(mg/l)	250	250	250
6.	Co lour	(TCU)	15	NGVS	5
7.	Conductivity	(μS/cm)	NGVS	NGVS	NGVS
8.	Fluoride	(mg/l)	1.5	3	0.7
9.	Hardness	(mg/l)	NGVS	NGVS	NGVS
10	Iron	(mg/l)	0.3	0.3	0.3
11.	Magnesium	(mg/l)	NGVS	NGVS	50
12.	Odor	-	Odorless	NGVS	Unobjectionable
13.	Nitrate-N	(mg/l)	10	10	10
14.	pH	-	6.5-8.5	NGVS	6.5-8.5
15.	Potassium	(mg/l)	NGVS	NGVS	10
16.	Sodium	(mg/l)	200	NGVS	50
17.	Sulfate	(mg/l)	250	250	250
18.	Taste	-	Unobject.	NGVS	Unobjectionable



## PCRWR QUARTERLY REPORT-BOTTLED WATER QUALITY



Sr. #	Parameter	Units	Permissible Limits		
			WHO	IBWA	PSQCA
19.	TDS	(mg/l)	1000	500	500
20.	Turbidity	(NTU)	5	NGVS	0.5
21.	Phosphate	(mg/l)	NGVS	NGVS	NGVS
22.	Arsenic	ppb	10	10	10
23.	Total Coliforms	MPN/100ml	0	0	0
24.	E-Coli	MPN/100ml	0	0	0

**WHO** World Health Organization  
**IBWA** International Bottled Water Association  
**PSQCA** Pakistan Standards and Quality Control Authority

### SUMMARY OF RESULTS OF PCRWR MONITORING

#### CONTAMINANTS OF POTENTIAL CONCERNS FOUND IN BOTTLED WATER BRANDS

##### Arsenic: Safe Limit : 10 parts per billion (ppb)

Sr. No	Brand Name	Code	City of Manufacturing	Unit	Results
1.	Active	BWC-23	Lahore	ppb	23
2.	Aqua National	BWC-25	Lahore	ppb	27
3.	Sparkle pure Water	BWC-28	Lahore	ppb	19

##### Sodium ( Safe Limit : 50 parts per million (ppm)

Sr. No	Brand Name	Code	City of Manufacturing	Unit	Results
1.	Aqua Q	BWC-08	Quetta	ppm	53
2.	Aab-E-Kousar	BWC-09	Quetta	ppm	78
3.	Alpine Hydr8	BWC-26	Lahore	ppm	60
4.	Sparkle pure Water	BWC-28	Lahore	ppm	61
5.	Elight Water	BWC-31	Lahore	ppm	60
6.	Al-Sana	BWC-33	Lahore	ppm	61

##### pH: ( Safe Limit : 6.5 - 8.5 )

Sr. No	Brand Name	Code	City of Manufacturing	Unit	Results
1.	Aqua Q	BWC-08	Quetta	-	9.80

##### BACTERIOLOGICAL: (Total Coliforms , Fecal Coliforms & E Coli) (Safe Limit: 0/100ml)

Sr. No	Brand Name	Code	Results	
			Total Coliforms (MPN/100ml)	E. Coli (MPN/100ml)
1.	Elight Water	BWC-31	04	Nil

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PCRWR TESTING: SAFE BRANDS

Sr. No	Brand Name	Code	Quality (Safe/Unsafe)	
			Chemical	Microbiological
1.	NEBRASKA	BWC-01	Safe	Safe
2.	Aqua splash	BWC-02	Safe	Safe
3.	Aquatic fresh	BWC-03	Safe	Safe
4.	Natural Aqwah	BWC-04	Safe	Safe
5.	Moya Mineral	BWC-05	Safe	Safe
6.	Sunlay	BWC-06	Safe	Safe
7.	Aqua Hygienic	BWC-07	Safe	Safe
8.	Yes	BWC-10	Safe	Safe
9.	Vaskaro	BWC-11	Safe	Safe
10.	Nestle	BWC-12	Safe	Safe
11.	Aqua Spring	BWC-13	Safe	Safe
12.	Springley	BWC-14	Safe	Safe
13.	AquaFina	BWC-15	Safe	Safe
14.	Gourmet	BWC-16	Safe	Safe
15.	Aftab Qarshi	BWC-17	Safe	Safe
16.	Kinley	BWC-18	Safe	Safe
17.	Aqua RO7	BWC-19	Safe	Safe
18.	Mashmoom Aqua	BWC-20	Safe	Safe
19.	Kisan Batter Life	BWC-21	Safe	Safe
20.	Natural Dew	BWC-22	Safe	Safe
21.	Doce	BWC-24	Safe	Safe
22.	Dewan Water Express	BWC-27	Safe	Safe
23.	Qaswa	BWC-29	Safe	Safe
24.	Sufi	BWC-30	Safe	Safe
25.	Aqua Dew	BWC-32	Safe	Safe
26.	Butt	BWC-34	Safe	Safe
27.	Effort	BWC-35	Safe	Safe
28.	Best Water	BWC-36	Safe	Safe
29.	Aqua Vida	BWC-37	Safe	Safe
30.	Orion	BWC-38	Safe	Safe
31.	First Water	BWC-39	Safe	Safe
32.	Jel	BWC-40	Safe	Safe
33.	Ideal Life	BWC-41	Safe	Safe
34.	Al-Massafi	BWC-42	Safe	Safe
35.	Aqua Pure	BWC-43	Safe	Safe
36.	Miracle	BWC-44	Safe	Safe
37.	Marbehha	BWC-45	Safe	Safe
38.	Al-Habib	BWC-46	Safe	Safe
39.	Paradise	BWC-47	Safe	Safe
40.	Vey	BWC-48	Safe	Safe
41.	Spring Fresh	BWC-49	Safe	Safe
42.	Al-Sahar	BWC-50	Safe	Safe
43.	Glaxo	BWC-51	Safe	Safe
44.	Pure 99	BWC-52	Safe	Safe
45.	Blu	BWC-53	Safe	Safe

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Sr. No	Brand Name	Code	Quality (Safe/Unsafe)	
			Chemical	Microbiological
46.	ARWA Water	BWC-54	Safe	Safe
47.	Pine'o	BWC-55	Safe	Safe
48.	Fresco Healthy Water	BWC-56	Safe	Safe
49.	Necter	BWC-57	Safe	Safe
50.	Deep Spring	BWC-58	Safe	Safe
51.	Deosai	BWC-59	Safe	Safe
52.	A.R Water	BWC-60	Safe	Safe
53.	Maple Dew	BWC-61	Safe	Safe
54.	Water Plus	BWC-62	Safe	Safe
55.	Hydra	BWC-63	Safe	Safe
56.	Refresh Water	BWC-64	Safe	Safe
57.	Fresh Life	BWC-65	Safe	Safe

PCRWR TESTING: UNSAFE BRANDS

Sr. No	Brand Name	Code	Address/ Manufacturer	Quality (Safe/Unsafe)	
				Chemical	Microbiological
1.	Aqua Q	BWC-08	Maaza Pakistan(Pvt)Ltd,Plot# 701,702.703 Shah Murad Road Thatta Pakistan	Unsafe	Safe
2.	Aab-E-Kousar	BWC-09	Reg.#155-SIU-GIQ Quetta.	Unsafe	Safe
3.	Active	BWC-23	Ali Enterprises :90-E Sabzazar, Lahore Pakistan	Unsafe	Safe
4.	Aqua National	BWC-25	Milli Brother :8-km,G.T Road Shahdara, Lahore	Unsafe	Safe
5.	Alpine Hydr8	BWC-26	Alpine Pakistan Ltd.Bedian Road Lahore 042-35021176	Unsafe	Safe
6.	Sparkle pure Water	BWC-28	Pro Health Beverages (Pvt)Ltd.11-km Multan road, Lahore	Unsafe	Safe
7.	Elight Water	BWC-31	Hassnain Products Kahna Noh Lahore E-mail:elightwater633@gmail.com 0331-4418456	Safe	Unsafe
8.	Al-Sana	BWC-33	mzh Foods & Beverages 2 Shamas Block Rizwan Garden Jalo Park Road Lahore <a href="mailto:Mzhfoods@gmail.com">Mzhfoods@gmail.com</a>	Unsafe	Safe



**MARKET CONSISTENCY IN TWO NEIGHBORING QUARTERS**

Sr. No	Consistent Brands	New Brands	Unavailable Brands
1.	Nebraska	Sunlay	Al-Saudia
2.	Splash Aqua	Aqua Q	Nation
3.	Aquatic Fresh	Aab-e Kousar	Nectar
4.	Natural Aqwah	Yes	Super Natural
5.	Moya Mineral	Vaskaro	River
6.	Aqua Hygienic	Doce	Indus Water
7.	Nestle	Alpine Hydr8	Himalaya Cool
8.	Aqua Spring	Elight Water	Ultra Pak
9.	Springley	Al-Sana	Khush Aab
10.	AquaFina	Best Water	Foss
11.	Gourmet	First Water	Crystal
12.	Aftab Qarshi	Aqua Pure	Hydro Life
13.	Kinley	Marbehha	Clear
14.	Aqua RO7	Paradise	Aqua Smart
15.	Mashmoom Aqua	Al-Sahar	Minter
16.	Kisan Batter Life	Glaxo	Vital Happy life
17.	Natural Dew	Fresco Healthy Water	Pearl
18.	Active	Fresh Life	Oslo
19.	Aqua National		Nice
20.	Dewan Water Express		Naseeb
21.	Sparkle Pure Water		Aqua Blue Drops
22.	Qaswa		Isberg
23.	Sufi		ECO
24.	Aqua Dew		Rise Water
25.	Butt		Al-Shalal
26.	Effort		Vina
27.	Aqua Vida		Aqua Save
28.	Orion		Aspen Aqua
29.	Jel		Waseb
30.	Ideal Life		Crystal Lite
31.	Al-Massafi		Matrah
32.	Miracle		Nain
33.	Al-Habib		Sea Breeze
34.	Vey		Friends Life
35.	Spring Fresh		Verbena
36.	Pure 99		Life
37.	Blu		Venora
38.	ARWA Water		Water Pack
39.	Pine'o		Ultra Blue
40.	Nectar		Valley
41.	Deep Spring		Ice Berg
42.	Deosai		Water Empire
43.	A.R Water		Mount
44.	Maple Dew		Berg
45.	Water Plus		Lite Wave
46.	Hydra		Nectar (Multan)
47.	Refresh Water		Splish Aryana
48.			Pure Fresh Water
49.			New Everest

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50.			New Deep
51.			Fit
52.			Aqua 7
53.			Alfa blue
54.			Sehat
55.			Nice Pure
56.			Unique Water
57.			Lite Aqua
58.			Oasis
59.			AFRA
60.			Murree Sparkletts
61.			Aqua Safe
62.			Life
63.			Natural Drops
64.			Natur Aqua
65.			Cool

**DISEASE POTENTIAL FROM CONTAMINATED BOTTLED WATER**

Sr. No	Contaminant	Diseases Impacts
1.	Bacteriological Contamination	Cholera, Diarrhea, Dysentery, Hepatitis, Typhoid
2.	Arsenic	Cancer (lungs, bladder, skin, prostate, kidney, nose and liver), diabetes kidney diseases, hypertension, heart diseases, birth defects, black foot diseases.
3.	Sodium	Hypertension

**CONCLUSIONS**

Sr. No	Item	Conclusion	
		No.	% age
1.	Total No. of Brands Collected	65	-
2.	Overall safe brands	57	88
3.	No. of overall unsafe brands	08	12
4.	No. of Chemically safe brands	57	88
5.	No. of Chemically unsafe brands	08	12
6.	No. of Microbiologically safe brands	64	98
7.	No. of Microbiologically unsafe brands	01	02
8.	No. of Consistent brands in Market	47	72
9.	No. of brands disappeared from market	65	-
10.	No. of new brands	18	28

Detailed water quality status of each bottled water brand is available at **Annexure-1**



Annexure-1

Chemical and Microbiological Quality of Bottled/Mineral Water Brands

Brand Name	Brand Code	Turbidity	pH	EC	TDS	Ca	Mg	Hard	HCO <sub>3</sub>	CO <sub>3</sub>	Cl	Na	F	PO <sub>4</sub>	Fe	K	NO <sub>3</sub>	SO <sub>4</sub>	As	* Microbiological Contaminants	
																				Total Coli forms 0/100 ml	E-Coli 0/100 ml
PSQCA Bottled Water Standards	-	0.5	6.5 - 8.5	NGVS	500	100	50	NGVS	NGVS	NGVS	250	50	0.7	NGVS	0.3	10	10	250	10	-	-
Detection Limits	-	0.2	0.02	0.287	-	2	1	5	5	5	2	1	0.03	0.03	0.03	0.2	0.06	0.4	0.1	-	-
Units	-	NTU		µS/cm	Ppm	ppm	ppm	ppm	ppm	Ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	MPN /100ml	MPN /100ml
NEBRASKA	BWC-01	BDL	7.64	430	237	34	19	165	65	Nil	72	18	BDL	BDL	BDL	0.12	BDL	49	0.2	Nil	Nil
Aqua splash	BWC-02	BDL	7.01	362	199	30	18	150	50	Nil	76	6	BDL	0.03	BDL	0.2	2	11	BDL	Nil	Nil
Aquatic fresh	BWC-03	BDL	7.72	533	293	40	29	220	140	Nil	40	17	0.24	BDL	BDL	0.18	7	34	0.7	Nil	Nil
Natural Aqwah	BWC-04	BDL	7.61	392	216	30	28	190	105	Nil	54	14	0.24	BDL	BDL	1	4	30	0.2	Nil	Nil
Moya Mineral	BWC-05	BDL	6.80	254	140	28	10	110	80	Nil	32	12	BDL	BDL	BDL	0.5	2	14	BDL	Nil	Nil
Sunlay	BWC-06	BDL	6.25	75	41	8	4	30	25	Nil	08	4	BDL	BDL	BDL	0.5	1	2	BDL	Nil	Nil
Aqua Hygienic	BWC-07	BDL	7.20	334	184	40	12	150	50	Nil	60	8	0.04	0.04	BDL	BDL	BDL	47	BDL	Nil	Nil
Aqua Q	BWC-08	BDL	9.80	370	204	8	12	70	50	30	62	53	0.04	0.05	BDL	2.4	BDL	30	BDL	Nil	Nil
Aab-E-Kousar	BWC-09	BDL	7.84	729	401	36	36	240	200	Nil	58	78	0.55	BDL	BDL	1.8	3	121	0.7	Nil	Nil
yes	BWC-10	BDL	7.10	312	172	12	12	80	40	Nil	50	40	0.10	BDL	BDL	1.2	2	141	BDL	Nil	Nil
Vaskaro	BWC-11	BDL	7.02	356	196	24	17	130	85	Nil	48	23	0.11	BDL	BDL	2.4	1	37	BDL	Nil	Nil
Nestle	BWC-12	BDL	7.42	328	180	24	12	110	60	Nil	48	22	BDL	BDL	BDL	0.2	BDL	43	4	Nil	Nil
Aqua Spring	BWC-13	BDL	7.57	450	248	32	15	140	70	Nil	48	27	0.53	BDL	BDL	0.8	6	25	0.5	Nil	Nil
Springley	BWC-14	BDL	7.63	515	283	56	24	240	200	Nil	24	20	0.23	BDL	BDL	1	3	52	0.6	Nil	Nil
Aqua Fina	BWC-15	BDL	6.90	217	119	26	6	90	40	Nil	26	10	0.04	BDL	BDL	1	BDL	31	BDL	Nil	Nil
Gourmet	BWC-16	BDL	6.65	381	210	40	11	150	50	Nil	96	20	BDL	BDL	BDL	0.2	BDL	17	BDL	Nil	Nil
Aftab Qarshi	BWC-17	BDL	7.84	364	200	48	11	165	45	Nil	78	5	BDL	BDL	BDL	0.2	BDL	29	5	Nil	Nil

The highlighted results indicate the concentration level beyond the PSQCA Bottled Water Standards.

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Kinley	BWC-18	BDL	6.09	542	298	40	15	160	45	Nil	132	41	BDL	BDL	BDL	1.8	BDL	27	BDL	Nil	Nil
Aqua RO7	BWC-19	BDL	7.22	456	251	40	7	130	75	Nil	84	44	0.14	BDL	BDL	0.1	BDL	32	0.8	Nil	Nil
Mashmoom Aqua	BWC-20	BDL	7.88	437	240	28	27	180	200	Nil	12	16	0.13	BDL	BDL	1.1	2	7	BDL	Nil	Nil
Kisan Batter Life	BWC-21	BDL	7.68	418	230	40	12	150	60	Nil	82	22	BDL	BDL	BDL	1	BDL	22	BDL	Nil	Nil
Natural Dew	BWC-22	BDL	7.60	347	191	40	7	130	90	Nil	60	23	BDL	BDL	BDL	0.5	BDL	16	3	Nil	Nil
Active	BWC-23	BDL	7.68	459	252	40	11	145	160	Nil	36	27	0.25	BDL	BDL	3.2	BDL	14	23	Nil	Nil
Doce	BWC-24	BDL	6.82	335	184	40	7	130	80	Nil	62	19	0.05	BDL	BDL	0.4	BDL	14	0.6	Nil	Nil
Aqua National	BWC-25	BDL	7.51	275	151	40	7	130	120	Nil	12	8	0.20	BDL	BDL	1.5	BDL	9	27	Nil	Nil
Alpine Hydr8	BWC-26	BDL	7.09	408	224	20	12	100	150	Nil	36	60	0.15	BDL	BDL	1.6	BDL	26	2	Nil	Nil
Dewan Water Express	BWC-27	BDL	7.05	284	156	40	7	130	45	Nil	60	7	BDL	BDL	BDL	0.1	BDL	14	BDL	Nil	Nil
Sparkle pure Water	BWC-28	BDL	7.43	440	242	20	12	100	150	Nil	48	61	0.30	BDL	BDL	1.2	BDL	32	19	Nil	Nil
Qaswa	BWC-29	BDL	8.30	129	78	18	4	60	60	Nil	10	10	BDL	BDL	BDL	0.1	BDL	10	2	Nil	Nil
Sufi	BWC-30	BDL	7.62	354	195	40	15	160	50	Nil	84	7	BDL	BDL	BDL	0.1	BDL	23	BDL	Nil	Nil
Elight Water	BWC-31	BDL	7.24	440	242	32	5	100	140	Nil	20	60	0.16	BDL	BDL	0.6	BDL	50	0.5	04	Nil
Aqua Dew	BWC-32	BDL	6.80	513	282	48	10	160	60	Nil	118	27	BDL	BDL	BDL	0.5	BDL	15	0.6	Nil	Nil
Al-Sana	BWC-33	BDL	7.85	594	327	60	24	250	270	Nil	12	61	0.16	BDL	BDL	10	2	37	4	Nil	Nil
Butt	BWC-34	BDL	6.55	439	241	44	10	150	40	Nil	108	20	BDL	BDL	BDL	0.3	BDL	14	8	Nil	Nil
Effort	BWC-35	BDL	7.68	294	162	40	5	120	50	Nil	60	11	BDL	BDL	BDL	0.2	BDL	16	0.2	Nil	Nil
Best Water	BWC-36	BDL	6.72	432	238	40	5	120	100	Nil	60	47	0.14	BDL	BDL	3.5	5	28	BDL	Nil	Nil
Aqua Vida	BWC-37	BDL	7.17	374	206	32	24	180	40	Nil	84	12	0.41	BDL	BDL	0.2	BDL	43	BDL	Nil	Nil
Orion	BWC-38	BDL	7.00	237	130	24	7	90	25	Nil	60	19	BDL	BDL	BDL	0.6	1	9	BDL	Nil	Nil
First Water	BWC-39	BDL	7.35	359	192	40	7	130	55	Nil	72	20	BDL	BDL	BDL	6	0.5	16	BDL	Nil	Nil
JEL	BWC-40	BDL	7.28	416	229	36	5	110	60	Nil	96	44	BDL	BDL	BDL	2	3	16	BDL	Nil	Nil
Ideal Life	BWC-41	BDL	7.30	341	188	4	15	70	50	Nil	60	46	BDL	BDL	BDL	0.4	4	21	BDL	Nil	Nil
Al-Massafi	BWC-42	BDL	7.38	333	183	16	22	130	45	Nil	82	18	BDL	BDL	BDL	3	1	14	BDL	Nil	Nil
Aqua Pure	BWC-43	BDL	6.87	285	157	32	7	110	35	Nil	72	20	BDL	BDL	BDL	0.2	BDL	10	BDL	Nil	Nil

The highlighted results indicate the concentration level beyond the PSQCA Bottled Water Standards.

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Miracle	BWC-44	BDL	7.20	319	175	20	10	90	70	Nil	48	30	0.19	BDL	BDL	4.5	1	17	BDL	Nil	Nil
Marbella	BWC-45	BDL	7.30	265	146	44	2	120	25	Nil	72	4	BDL	BDL	BDL	1	BDL	13	BDL	Nil	Nil
Al-Habib	BWC-46	BDL	7.36	459	252	16	19	120	90	Nil	72	50	0.36	BDL	BDL	2	2	31	BDL	Nil	Nil
Paradise	BWC-47	BDL	7.04	360	198	12	10	70	35	Nil	60	38	0.11	BDL	BDL	0.4	3	23	BDL	Nil	Nil
Vey	BWC-48	BDL	6.71	284	156	24	12	110	25	Nil	72	16	0.42	BDL	BDL	7	BDL	15	BDL	Nil	Nil
Spring Fresh	BWC-49	BDL	6.80	312	177	16	19	120	75	Nil	72	30	BDL	BDL	BDL	0.6	0.4	9	BDL	Nil	Nil
Al-Sahar	BWC-50	BDL	6.91	293	161	28	12	120	40	Nil	76	12	0.06	BDL	BDL	5.5	BDL	7	BDL	Nil	Nil
Glax	BWC-51	BDL	6.57	415	228	24	10	100	35	Nil	96	44	0.13	BDL	BDL	0.3	4	27	BDL	Nil	Nil
Pure 99	BWC-52	BDL	6.90	520	285	80	2	210	70	Nil	120	20	BDL	BDL	BDL	5.6	3	24	BDL	Nil	Nil
Blu	BWC-53	BDL	7.47	283	156	40	5	120	50	Nil	60	13	BDL	BDL	BDL	0.6	BDL	11	1	Nil	Nil
ARWA Water	BWC-54	BDL	7.28	402	221	40	12	150	60	Nil	70	8	BDL	BDL	BDL	0.9	BDL	25	1	Nil	Nil
Pine'o	BWC-55	BDL	7.61	425	234	40	12	150	60	Nil	86	33	0.20	BDL	BDL	2.6	BDL	27	9	Nil	Nil
Fresco Healthy Water	BWC-56	BDL	7.86	183	101	16	2	50	60	Nil	20	21	0.09	BDL	BDL	1.4	1	7	2	Nil	Nil
Necter	BWC-57	BDL	7.22	398	219	44	15	170	115	Nil	24	15	0.39	BDL	BDL	1	5	24	BDL	Nil	Nil
Deep Spring	BWC-58	BDL	7.10	375	203	48	5	140	130	Nil	24	19	0.33	BDL	BDL	0.7	1.2	19	BDL	Nil	Nil
Deosai	BWC-59	BDL	7.30	347	191	40	7	130	150	Nil	12	18	0.43	BDL	BDL	0.3	0.7	15	BDL	Nil	Nil
A.R Water	BWC-60	BDL	6.59	342	188	40	12	150	35	Nil	96	18	BDL	BDL	BDL	0.2	BDL	14	BDL	Nil	Nil
Maple Dew	BWC-61	BDL	6.76	377	207	48	2	130	35	Nil	96	29	0.09	BDL	BDL	0.2	3	19	BDL	Nil	Nil
Water Plus	BWC-62	BDL	7.54	602	331	58	26	250	200	Nil	50	21	0.19	BDL	BDL	1.2	4	31	BDL	Nil	Nil
Hydra	BWC-63	BDL	7.45	531	292	44	22	200	200	Nil	40	28	0.20	BDL	BDL	1	1	27	BDL	Nil	Nil
Refresh Water	BWC-64	BDL	7.55	421	232	68	5	190	170	Nil	20	19	0.09	BDL	BDL	1.3	2	21	BDL	Nil	Nil
Fresh Life	BWC-65	BDL	7.57	420	231	48	11	165	160	Nil	24	9	0.07	BDL	BDL	1.3	2	19	BDL	Nil	Nil

NGVS =No Guideline Value Set

BDL = Below Detection Limits

\* Microbiological results have also been verified by IDEXX (Quanti-Tray/2000 USA) and Membrane Filtration (CFU/100ml, 9222-B&D APHA) Methods.

The highlighted results indicate the concentration level beyond the PSQCA Bottled Water Standards.

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