



RAND WATER
RandWest Water Quality Report
12 Month

22 August 2019 to 21 August 2020

Date generated: 28 August 2020

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	721	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	721	95.0%	100%	0	0.09	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	721	95.0%	99.86%	6	75.17	232
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	196	99.0%	98.98%	0	0.10	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	196	99.0%	98.47%	0	0.12	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	846	95.0%	99.88%	0	0.03	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	48	95.0%	100%	5.10	0.37	6.22
Conductivity	(mS / m)	Aesthetic	≤ 170	716	95.0%	100%	21.58	2.74	29.79
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	48	95.0%	100%	149.69	12.73	187.89
Turbidity	(NTU)	Operational	≤ 1	719	95.0%	100%	0.28	0.05	0.44
Turbidity	(NTU)	Aesthetic	≤ 5	719	95.0%	100%	0.28	0.05	0.44
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	716	95.0%	100%	7.96	0.14	8.37
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	716	95.0%	100%	0.34	0.16	0.83
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	61	95.0%	100%	12.33	1.72	17.51
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	714	97.0%	100%	0.09	0.05	0.25
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	714	97.0%	100%	1.48	0.39	2.64
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	59	97.0%	100%	0.30	0.11	0.62
Nitrate	(mg / L as N)	Acute health	≤ 11	718	99.0%	100%	0.56	0.09	0.84
Nitrite	(mg / L as N)	Acute health	≤ 0.9	713	99.0%	100%	0.03	0.06	0.21
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	708	99.0%	100%	0.14	0.20	0.74
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	714	95.0%	99.58%	1.57	0.40	2.75
Sodium	(mg / L as Na)	Aesthetic	≤ 200	56	95.0%	100%	11.06	7.09	32.32
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	63	95.0%	100%	18.49	4.46	31.87
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	63	99.0%	100%	18.49	4.46	31.87
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	56	95.0%	100%	0.02	0.01	0.03
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	56	95.0%	100%	31.11	13.66	72.10
Antimony	(µg / L as Sb)	Chronic health	≤ 20	42	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	51	97.0%	100%	3.36	3.47	13.75
Barium	(µg / L as Ba)	Chronic health	≤ 700	56	97.0%	100%	41.54	8.38	66.69
Boron	(µg / L as B)	Chronic health	≤ 2400	56	97.0%	100%	9.57	9.98	39.52
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	51	97.0%	100%	1.18	0.24	1.90
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	56	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	56	97.0%	100%	8.83	1.99	14.78
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	48	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	56	97.0%	100%	20.12	12.64	58.03
Iron	(µg / L as Fe)	Aesthetic	≤ 300	56	95.0%	100%	20.12	12.64	58.03
Lead	(µg / L as Pb)	Chronic health	≤ 10	51	97.0%	100%	4.14	2.88	12.79
Manganese	(µg / L as Mn)	Chronic health	≤ 400	56	97.0%	100%	3.07	0.41	4.30
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	56	95.0%	100%	3.07	0.41	4.30
Mercury	(µg / L as Hg)	Chronic health	≤ 6	45	97.0%	100%	1.08	0.35	2.12
Nickel	(µg / L as Ni)	Chronic health	≤ 70	56	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	51	97.0%	100%	5.41	1.93	11.20
Uranium	(µg / L as U)	Chronic health	≤ 30	42	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	48	97.0%	100%	3.79	0.70	5.89
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	48	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	56	97.0%	100%	36.70	9.14	64.12
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	56	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	56	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	56	97.0%	100%	15.30	2.29	22.17
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	56	97.0%	100%	0.40	0.07	0.60
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	195	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	56	not applicable	100%	18.11	6.19	36.68
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	56	not applicable	98.21%	70.91	20.83	133.41
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	56	not applicable	100%	7.40	1.61	12.23
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	56	not applicable	100%	3.39	0.96	6.26
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	303	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	303	not applicable	100%	1.00	0.00	1.00

Water quality risk indices

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	99.55%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.89%

- Notes
(1) Specification_SANS 241 date of effect : 1 July 2016
(2) Measured at water treatment works exit points
(3) (NO₂/0.9 + NO₃/11)
(4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine
(5) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)
(6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006
(7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec