

RandWest Municipality Water Quality Report - 12 Month

23 January 2018 to 22 January 2019

Date generated: 11 February 2019

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	758	99.9%	0	0.04	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	758	100.0%	0	0.34	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	758	100.0%	5	16.29	54
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	841	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	47	100.0%	5.38	0.90	8.08
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	758	100.0%	20.52	1.25	24.27
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	47	100.0%	143.83	6.19	162.39
Turbidity	(NTU)	Operational	95.0%	≤1	753	100.0%	0.32	0.08	0.55
Turbidity	(NTU)	Aesthetic	95.0%	≤5	753	100.0%	0.32	0.08	0.55
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	757	100.0%	7.99	0.12	8.34
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	758	100.0%	0.36	0.10	0.65
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	53	100.0%	11.51	0.67	13.52
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	758	100.0%	0.11	0.16	0.58
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	758	100.0%	1.52	0.35	2.55
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	53	100.0%	0.19	0.00	0.21
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	758	100.0%	0.46	0.05	0.61
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	758	100.0%	0.03	0.02	0.11
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	731	100.0%	0.08	0.02	0.15
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	758	99.6%	1.63	0.32	2.59
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	54	100.0%	9.17	0.63	11.07
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	53	100.0%	14.91	0.74	17.13
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	53	100.0%	14.91	0.74	17.13
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	54	100.0%	0.09	0.26	0.87
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	54	100.0%	30.33	9.35	58.38
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	231	100.0%	0.58	0.38	1.72
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	47	100.0%	2.22	2.46	9.61
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	54	100.0%	41.57	4.17	54.09
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	54	100.0%	18.06	8.04	42.17
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	47	100.0%	1.89	0.70	3.99
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	54	100.0%	10.56	5.02	25.60
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	54	100.0%	9.60	1.69	14.67
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	47	100.0%	15.53	6.93	36.33
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	54	100.0%	19.79	14.17	62.31
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	54	100.0%	19.79	14.17	62.31
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	47	100.0%	1.97	2.49	9.42
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	54	100.0%	7.06	3.54	17.66
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	54	100.0%	7.06	3.54	17.66
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	231	100.0%	0.79	0.09	1.06
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	54	100.0%	7.78	2.51	15.30
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	47	100.0%	2.73	2.62	10.58
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	231	100.0%	0.38	0.28	1.20
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	47	100.0%	3.99	0.54	5.62
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	47	100.0%	4.11	1.01	7.12
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	54	100.0%	39.48	13.52	80.04
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	54	100.0%	4.55	4.74	18.77
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	54	100.0%	5.50	3.98	17.45
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	54	100.0%	14.14	2.35	21.21
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	54	100.0%	0.47	0.13	0.85
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	195	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	54	100.0%	16.94	1.84	22.45515443
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	54	100.0%	65.35	6.52	84.90
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	54	100.0%	6.66	0.67	8.67
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	54	100.0%	3.43	0.52	4.98
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	331	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	331	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	99.91%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.94%

Notes:

- (1) Specification date of effect : 1 July 2016
- (2) Free chlorine : Results from chloraminated system
- (3) Monochloramine : Results are from the chloraminated systems
- (4) Residual disinfectant : Results from chloraminated system
- (5) Measured at water treatment works exit points
- (6) Customer request: Results not included in the risk indices compliance calculations
- (7) (NO₂/0.9 + NO₃/11)
- (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)