

**RandWest Municipality Water Quality Report - 12 Month**

21 July 2017 to 20 July 2018 Date generated: 03 August 2018

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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	777	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	777	100.0%	0	0.31	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	777	100.0%	2	12.90	22
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	800	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	47	100.0%	5.34	0.89	8.54
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	777	100.0%	19.55	2.28	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	47	100.0%	137.11	21.22	178.90
Turbidity	(NTU)	Operational	95.0%	≤1	770	100.0%	0.32	0.08	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	770	100.0%	0.32	0.08	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	777	100.0%	7.90	0.13	8.26
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	777	100.0%	0.37	0.09	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	53	100.0%	11.23	0.89	13.00
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	777	100.0%	0.13	0.23	1.59
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	776	100.0%	1.50	0.39	1.97
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	53	100.0%	0.19	0.00	0.19
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	775	100.0%	0.44	0.04	0.57
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	777	100.0%	0.03	0.03	0.19
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	774	100.0%	0.08	0.04	0.26
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	777	98.8%	1.62	0.34	2.12
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	52	100.0%	8.80	0.83	10.49
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	53	100.0%	14.09	1.11	16.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	53	100.0%	14.09	1.11	16.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	52	100.0%	0.02	0.00	0.04
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	52	100.0%	31.06	10.64	73.37
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	47	100.0%	0.50	0.02	0.57
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	47	100.0%	1.09	0.93	3.67
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	52	100.0%	35.38	6.63	48.45
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	52	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	47	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	52	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	52	100.0%	10.27	1.05	14.98
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	47	100.0%	8.02	5.91	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	52	100.0%	17.82	12.71	55.92
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	52	100.0%	17.82	12.71	55.92
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	47	100.0%	0.69	1.40	6.56
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	52	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	52	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	47	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	52	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	47	100.0%	1.09	1.38	6.20
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	47	100.0%	0.26	0.24	1.36
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	47	100.0%	3.83	0.54	5.02
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	47	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	55	100.0%	41.40	9.20	53.46
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	55	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	55	100.0%	1.53	0.99	3.19
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	55	100.0%	13.57	2.32	16.46
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	55	100.0%	0.38	0.06	0.48
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	189	100.0%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	52	100.0%	16.94	2.23	21.49
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	52	100.0%	63.90	7.23	78.37
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	52	100.0%	6.23	0.88	8.04
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	52	100.0%	3.76	0.38	5.00
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	334	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	334	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%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.81%

- 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) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)
  - (8) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)