

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

23 March 2017 to 22 March 2018 Date generated: 03 April 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	782	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	782	100.0%	0	0.17	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	779	100.0%	2	13.08	32
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	786	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	48	100.0%	5.17	0.63	7.59
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	782	100.0%	18.96	2.97	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	48	100.0%	132.79	20.45	178.55
Turbidity	(NTU)	Operational	95.0%	≤1	776	100.0%	0.30	0.10	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	776	100.0%	0.30	0.10	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	782	100.0%	7.88	0.13	8.15
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	782	100.0%	0.37	0.09	0.52
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	59	100.0%	10.79	0.94	13.42
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	782	100.0%	0.14	0.27	1.67
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	782	100.0%	1.50	0.41	1.99
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	59	100.0%	0.20	0.06	0.40
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	778	100.0%	0.47	0.07	0.71
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	782	100.0%	0.04	0.03	0.20
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	777	100.0%	0.08	0.04	0.27
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	782	98.8%	1.65	0.34	2.07
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	50	100.0%	9.50	8.18	38.36
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	59	100.0%	13.53	1.28	17.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	59	100.0%	13.53	1.28	17.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	50	100.0%	0.02	0.01	0.05
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	50	100.0%	31.52	10.34	66.77
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	48	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	48	100.0%	1.03	0.73	2.81
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	50	100.0%	33.32	7.45	55.55
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	50	100.0%	26.12	7.92	53.56
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	48	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	50	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	50	100.0%	10.40	1.29	15.51
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	48	100.0%	5.14	0.49	6.91
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	50	100.0%	24.47	22.14	104.13
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	50	100.0%	24.47	22.14	104.13
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	48	100.0%	0.60	1.32	6.54
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	50	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	50	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	48	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	50	100.0%	10.02	0.14	10.51
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	48	100.0%	1.07	1.37	6.20
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	48	100.0%	0.22	0.11	0.62
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	48	100.0%	3.78	0.51	4.55
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	48	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	56	100.0%	48.07	7.06	64.45
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	56	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	56	100.0%	1.21	0.69	3.14
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	56	100.0%	14.10	1.45	16.45
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	56	100.0%	0.41	0.05	0.50
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	184	100.0%	0.32	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	50	100.0%	18.40	8.65	49.05
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	50	98.0%	66.72	29.38	170.43
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	50	100.0%	5.98	2.23	14.14
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	50	100.0%	3.95	1.08	8.06
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	336	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	336	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)