

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

24 October 2016 to 23 October 2017

Date generated: 02 November 2017

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	775	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	775	100.0%	0	0.17	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	717	100.0%	2	6.18	32
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	181	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	181	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	784	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%	5.09	0.28	6.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	775	100.0%	18.40	2.92	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	775	100.0%	130.91	17.02	157.70
Turbidity	(NTU)	Operational	95.0%	≤1	760	100.0%	0.28	0.11	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	760	100.0%	0.28	0.11	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	775	100.0%	7.94	0.16	8.29
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	768	100.0%	0.34	0.10	0.51
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	54	100.0%	10.07	1.32	13.47
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	775	100.0%	0.14	0.25	1.48
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	775	100.0%	1.48	0.40	2.00
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	54	100.0%	0.19	0.07	0.40
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	764	100.0%	0.50	0.12	0.82
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	768	100.0%	0.04	0.03	0.19
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	764	100.0%	0.09	0.04	0.26
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	775	98.8%	1.62	0.35	2.08
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	45	100.0%	8.93	8.74	41.14
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	54	100.0%	12.78	1.92	17.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	54	100.0%	12.78	1.92	17.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	45	100.0%	0.02	0.01	0.05
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	45	100.0%	31.82	13.30	82.12
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	47	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	47	100.0%	0.89	0.53	2.09
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	45	100.0%	31.82	7.94	55.80
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	45	100.0%	26.24	8.35	56.36
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	45	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	45	100.0%	10.18	0.86	14.12
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	47	100.0%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	45	100.0%	23.57	22.38	107.28
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	45	100.0%	23.57	22.38	107.28
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	47	100.0%	0.31	0.20	0.98
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	45	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	45	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	45	100.0%	10.02	0.15	10.56
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	47	100.0%	0.64	0.27	1.51
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	47	100.0%	0.22	0.11	0.63
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	47	100.0%	3.53	0.99	5.09
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%	44.55	10.03	64.46
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%	1.60	0.94	3.45
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	55	100.0%	13.33	1.98	16.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	55	100.0%	0.39	0.06	0.49
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	181	100.0%	0.35	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	45	100.0%	18.84	9.09	53.12
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	45	97.8%	66.76	30.66	182.44
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	45	100.0%	5.68	2.41	14.49
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	45	100.0%	3.26	1.43	7.88
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	343	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	343	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)