

RandWest Municipality Water Quality Report - 12 Month

October 2016 to September 2017 Date generated: 03 October 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
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	745	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	745	100.0%	0	0.17	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	742	100.0%	2	6.08	32
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	775	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	46	100.0%	5.09	0.28	6.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	745	100.0%	18.22	2.93	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	745	100.0%	129.85	17.07	157.70
Turbidity	(NTU)	Operational	95.0%	≤1	730	100.0%	0.27	0.11	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	730	100.0%	0.27	0.11	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	745	100.0%	7.96	0.16	8.30
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	737	100.0%	0.34	0.09	0.51
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	53	100.0%	9.80	1.41	13.48
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	745	100.0%	0.13	0.20	0.96
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	745	100.0%	1.50	0.35	2.00
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	53	100.0%	0.19	0.07	0.40
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	733	100.0%	0.49	0.14	0.82
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	737	100.0%	0.03	0.03	0.16
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	733	100.0%	0.08	0.04	0.23
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	745	99.6%	1.63	0.31	2.08
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	45	100.0%	8.79	8.77	41.14
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	53	100.0%	12.42	2.06	17.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	53	100.0%	12.42	2.06	17.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	45	100.0%	0.02	0.01	0.05
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	45	100.0%	30.87	13.26	82.12
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	46	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	46	100.0%	0.83	0.56	2.11
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	45	100.0%	32.02	7.76	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	46	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%	10.24	0.96	14.12
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	46	100.0%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	45	100.0%	22.09	22.40	107.28
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	45	100.0%	22.09	22.40	107.28
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	46	100.0%	0.31	0.20	0.99
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	46	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	46	100.0%	0.71	0.40	2.10
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	46	100.0%	0.22	0.11	0.66
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	46	100.0%	3.36	1.02	5.11
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	46	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	54	100.0%	41.87	12.41	64.47
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	54	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	54	100.0%	1.80	0.91	3.45
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	54	100.0%	12.97	2.22	16.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	54	100.0%	0.38	0.07	0.49
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	183	100.0%	0.35	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	45	100.0%	18.71	9.09	53.12
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	45	97.8%	66.53	30.66	182.44
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	45	100.0%	5.71	2.40	14.49
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	45	100.0%	3.04	1.49	7.88
Rand Water Risk Determinands (RWRD)									
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

Water quality risk indices		
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%	99.93%

- 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)