



RAND WATER

Rustenburg Water Quality Report  
1 Month

23 March 2021 to 21 April 2021

Date generated: 14 May 2021

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	77	99.0%	97.40%	0	1.54	5
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	77	95.0%	94.81%	8	35.65	115
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	77	95.0%	84.42%	3422	18628.38	59307
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	7	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	11	95.0%	100%	9.91	2.81	18.34
Conductivity	(mS / m)	Aesthetic	≤ 170	77	95.0%	100%	32.58	15.68	79.64
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	11	95.0%	100%	306.82	103.21	616.44
Turbidity	(NTU)	Operational	≤ 1	77	95.0%	100%	0.31	0.09	0.57
Turbidity	(NTU)	Aesthetic	≤ 5	77	95.0%	100%	0.31	0.09	0.57
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	77	95.0%	100%	7.81	0.17	8.33
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	77	95.0%	100%	0.11	0.07	0.31
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	11	95.0%	100%	59.45	39.04	176.59
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	77	97.0%	100%	0.34	0.63	2.23
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	77	97.0%	100%	0.18	0.16	0.66
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	11	97.0%	100%	0.53	0.18	1.06
Nitrate	(mg / L as N)	Acute health	≤ 11	79	99.0%	100%	0.79	0.20	1.40
Nitrite	(mg / L as N)	Acute health	≤ 0.9	77	99.0%	100%	0.17	0.12	0.52
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	74	99.0%	100%	0.27	0.14	0.69
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.1	77	95.0%	77.92%	0.49	0.62	2.34
Sodium	(mg / L as Na)	Aesthetic	≤ 200	10	95.0%	100%	14.17	11.96	50.06
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	11	95.0%	100%	40.45	19.39	98.62
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	11	99.0%	100%	40.45	19.39	98.62
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	9	95.0%	100%	0.08	0.04	0.21
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	10	95.0%	100%	8.06	7.15	29.52
Antimony	(µg / L as Sb)	Chronic health	≤ 20	8	97.0%	100%	0.38	0.14	0.79
Arsenic	(µg / L as As)	Chronic health	≤ 10	10	97.0%	100%	0.62	0.29	1.49
Barium	(µg / L as Ba)	Chronic health	≤ 700	11	97.0%	100%	44.64	5.55	61.30
Boron	(µg / L as B)	Chronic health	≤ 2400	11	97.0%	100%	5.87	3.60	16.68
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	11	97.0%	100%	0.75	0.42	2.02
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	10	97.0%	100%	0.26	0.13	0.64
Copper	(µg / L as Cu)	Chronic health	≤ 2000	11	97.0%	100%	5.71	5.80	23.12
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	11	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	10	97.0%	100%	31.37	36.96	142.24
Iron	(µg / L as Fe)	Aesthetic	≤ 300	10	95.0%	100%	31.37	36.96	142.24
Lead	(µg / L as Pb)	Chronic health	≤ 10	11	97.0%	100%	1.65	0.77	3.96
Manganese	(µg / L as Mn)	Chronic health	≤ 400	10	97.0%	100%	7.59	8.38	32.73
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	10	95.0%	100%	7.59	8.38	32.73
Mercury	(µg / L as Hg)	Chronic health	≤ 6	11	97.0%	100%	0.55	0.35	1.60
Nickel	(µg / L as Ni)	Chronic health	≤ 70	11	97.0%	100%	1.40	1.03	4.49
Selenium	(µg / L as Se)	Chronic health	≤ 40	11	97.0%	100%	3.32	1.17	6.82
Uranium	(µg / L as U)	Chronic health	≤ 30	8	97.0%	100%	0.21	0.18	0.75
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	9	97.0%	100%	4.61	0.42	5.88
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	8	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	9	97.0%	100%	56.22	29.82	145.68
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	9	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	9	97.0%	100%	11.11	2.42	18.37
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	9	97.0%	100%	18.67	6.86	39.23
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	9	97.0%	100%	0.54	0.20	1.14
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	9	97.0%	100%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	11	not applicable	100%	15.26	4.81	29.69
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	11	not applicable	100%	72.45	29.22	160.13
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	11	not applicable	100%	8.47	4.36	21.55
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	10	not applicable	100%	3.79	1.52	8.36
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	36	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	36	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	97.40%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	91.79%

Notes  
 (1) Specification SANS 241 date of effect : 1 July 2016  
 (2) Measured at water treatment works exit points  
 (3) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)  
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine  
 (5) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)  
 (6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006  
 (7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec  
 \*\*\*\* Determinands with no data are due to instrument breakdown\*\*\*\*