



RAND WATER

Rustenburg Water Quality Report
1 Month

23 December 2020 to 22 January 2021

Date generated: 08 February 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
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	81	99.0%	98.77%	0	2.11	7
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	81	95.0%	87.65%	21	60.25	201
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	81	95.0%	88.89%	324	911.92	3060
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	9	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	17	95.0%	88.24%	11.06	4.29	23.94
Conductivity	(mS / m)	Aesthetic	≤ 170	79	95.0%	100%	36.76	23.81	108.20
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	14	95.0%	100%	314.29	172.67	832.30
Turbidity	(NTU)	Operational	≤ 1	80	95.0%	92.50%	0.47	0.29	1.34
Turbidity	(NTU)	Aesthetic	≤ 5	80	95.0%	100%	0.47	0.29	1.34
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	79	95.0%	100%	7.87	0.21	8.49
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	80	95.0%	100%	0.13	0.06	0.31
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	17	95.0%	100%	68.82	54.93	233.62
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	81	97.0%	100%	0.28	0.51	1.80
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	81	97.0%	100%	0.31	0.23	0.99
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	17	97.0%	100%	0.40	0.17	0.90
Nitrate	(mg / L as N)	Acute health	≤ 11	80	99.0%	100%	0.52	0.05	0.67
Nitrite	(mg / L as N)	Acute health	≤ 0.9	80	99.0%	100%	0.15	0.10	0.45
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	76	99.0%	100%	0.23	0.11	0.57
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	81	95.0%	92.59%	0.56	0.49	2.02
Sodium	(mg / L as Na)	Aesthetic	≤ 200	12	95.0%	100%	24.01	27.22	105.68
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	17	95.0%	100%	50.65	34.06	152.82
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	17	99.0%	100%	50.65	34.06	152.82
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	13	95.0%	100%	0.01	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	13	95.0%	100%	25.85	12.55	63.51
Antimony	(µg / L as Sb)	Chronic health	≤ 20	12	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	12	97.0%	100%	0.88	0.13	1.26
Barium	(µg / L as Ba)	Chronic health	≤ 700	13	97.0%	100%	46.38	8.21	71.02
Boron	(µg / L as B)	Chronic health	≤ 2400	13	97.0%	100%	12.62	9.42	40.88
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	12	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	13	97.0%	100%	0.59	0.23	1.27
Copper	(µg / L as Cu)	Chronic health	≤ 2000	13	97.0%	100%	9.17	5.72	26.34
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	12	99.0%	100%	7.08	5.09	22.35
Iron	(µg / L as Fe)	Chronic health	≤ 2000	13	97.0%	100%	102.31	8.32	127.27
Iron	(µg / L as Fe)	Aesthetic	≤ 300	13	95.0%	100%	102.31	8.32	127.27
Lead	(µg / L as Pb)	Chronic health	≤ 10	12	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	12	97.0%	100%	10.79	16.91	61.53
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	12	95.0%	100%	10.79	16.91	61.53
Mercury	(µg / L as Hg)	Chronic health	≤ 6	11	97.0%	100%	0.80	0.00	0.81
Nickel	(µg / L as Ni)	Chronic health	≤ 70	13	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	12	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	12	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	13	97.0%	100%	4.17	0.82	6.64
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	13	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	14	97.0%	100%	33.57	11.41	67.81
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	14	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	14	97.0%	100%	15.86	8.49	41.34
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	14	97.0%	100%	18.29	9.15	45.74
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	14	97.0%	92.86%	0.55	0.28	1.40
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	13	not applicable	100%	24.15	8.06	48.34
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	13	not applicable	92.31%	124.69	58.34	299.73
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	13	not applicable	100%	15.70	9.48	44.13
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	13	not applicable	100%	6.47	3.49	16.93
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	36	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	36	not applicable	97.22%	1.22	1.33	5.22

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	98.82%
Acute health chemical	99.0%	100%
Chronic health	97.0%	99.77%
Aesthetic	95.0%	99.46%
Operational	95.0%	92.69%

- Notes
- (1) Specification SANS 241 date of effect : 1 July 2016
 - (2) Measured at water treatment works exit points
 - (3) (NO₂/0.9 + NO₃/11)
 - (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine
 - (5) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)
 - (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****