



RAND WATER

Rustenburg Water Quality Report
1 Month

22 April 2021 to 21 May 2021

Date generated: 04 June 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	74	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	74	95.0%	97.30%	3	23.78	75
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	74	95.0%	94.59%	3090	19021.95	60156
<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	6	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	16	95.0%	100%	12.00	2.61	19.82
Conductivity	(mS / m)	Aesthetic	≤ 170	73	95.0%	100%	30.70	15.83	78.18
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	15	95.0%	100%	249.00	117.93	602.80
Turbidity	(NTU)	Operational	≤ 1	73	95.0%	100%	0.29	0.06	0.46
Turbidity	(NTU)	Aesthetic	≤ 5	73	95.0%	100%	0.29	0.06	0.46
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	73	95.0%	100%	7.83	0.16	8.33
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	74	95.0%	100%	0.14	0.10	0.45
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	17	95.0%	100%	50.29	40.75	172.56
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	74	97.0%	100%	0.21	0.42	1.49
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	74	97.0%	100%	0.21	0.20	0.82
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	17	97.0%	100%	0.50	0.15	0.94
Nitrate	(mg / L as N)	Acute health	≤ 11	75	99.0%	100%	0.69	0.14	1.11
Nitrite	(mg / L as N)	Acute health	≤ 0.9	74	99.0%	100%	0.19	0.12	0.55
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	63	99.0%	100%	0.28	0.13	0.68
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	74	95.0%	83.78%	0.39	0.46	1.76
Sodium	(mg / L as Na)	Aesthetic	≤ 200	16	95.0%	100%	23.39	19.86	82.96
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	17	95.0%	100%	34.94	19.76	94.21
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	17	99.0%	100%	34.94	19.76	94.21
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	16	95.0%	100%	0.04	0.04	0.16
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	16	95.0%	100%	61.70	61.57	246.41
Antimony	(µg / L as Sb)	Chronic health	≤ 20	14	97.0%	100%	0.33	0.07	0.52
Arsenic	(µg / L as As)	Chronic health	≤ 10	16	97.0%	100%	6.20	3.22	15.86
Barium	(µg / L as Ba)	Chronic health	≤ 700	16	97.0%	100%	46.06	13.04	85.18
Boron	(µg / L as B)	Chronic health	≤ 2400	16	97.0%	100%	18.28	18.81	74.69
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	16	97.0%	100%	1.38	0.22	2.05
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	16	97.0%	100%	3.80	2.15	10.24
Copper	(µg / L as Cu)	Chronic health	≤ 2000	16	97.0%	100%	10.78	4.30	23.68
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	16	99.0%	100%	5.03	0.13	5.41
Iron	(µg / L as Fe)	Chronic health	≤ 2000	16	97.0%	100%	23.56	23.00	92.56
Iron	(µg / L as Fe)	Aesthetic	≤ 300	16	95.0%	100%	23.56	23.00	92.56
Lead	(µg / L as Pb)	Chronic health	≤ 10	16	97.0%	100%	6.50	2.68	14.55
Manganese	(µg / L as Mn)	Chronic health	≤ 400	16	97.0%	100%	8.60	11.50	43.10
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	16	95.0%	100%	8.60	11.50	43.10
Mercury	(µg / L as Hg)	Chronic health	≤ 6	16	97.0%	100%	1.33	0.31	2.26
Nickel	(µg / L as Ni)	Chronic health	≤ 70	16	97.0%	100%	4.04	1.71	9.18
Selenium	(µg / L as Se)	Chronic health	≤ 40	16	97.0%	100%	7.00	1.79	12.37
Uranium	(µg / L as U)	Chronic health	≤ 30	14	97.0%	100%	0.13	0.05	0.27
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	13	97.0%	100%	4.82	0.41	6.06
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	14	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	14	97.0%	100%	61.86	17.16	113.34
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%	12.21	3.53	22.82
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	14	97.0%	100%	21.36	6.23	40.06
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	14	97.0%	100%	0.62	0.14	1.03
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	16	not applicable	100%	21.13	8.27	45.93
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	16	not applicable	100%	92.81	43.92	224.58
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	16	not applicable	100%	11.29	6.89	31.97
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	16	not applicable	100%	5.43	2.49	12.91
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	40	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	40	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%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	95.38%

- 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****