



RAND WATER

Ngwathe 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	54	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	54	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	54	95.0%	100%	2	3.03	11
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	26	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	26	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	68	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	7	95.0%	100%	7.29	0.49	8.75
Conductivity	(mS / m)	Aesthetic	≤ 170	26	95.0%	100%	23.12	2.20	29.71
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	152.86	15.51	199.38
Turbidity	(NTU)	Operational	≤ 1	26	95.0%	100%	0.28	0.08	0.51
Turbidity	(NTU)	Aesthetic	≤ 5	26	95.0%	100%	0.28	0.08	0.51
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	26	95.0%	100%	8.23	0.23	8.92
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	27	95.0%	100%	0.13	0.10	0.44
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	14.00	2.55	21.65
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	54	97.0%	100%	1.42	0.42	2.67
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	n/a	97.0%	n/a	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	5	97.0%	100%	0.32	0.04	0.43
Nitrate	(mg / L as N)	Acute health	≤ 11	27	99.0%	100%	0.51	0.07	0.72
Nitrite	(mg / L as N)	Acute health	≤ 0.9	27	99.0%	100%	0.03	0.01	0.05
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	27	99.0%	100%	0.08	0.01	0.11
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	54	95.0%	98.15%	1.42	0.42	2.67
Sodium	(mg / L as Na)	Aesthetic	≤ 200	8	95.0%	100%	9.71	0.86	12.31
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	8	95.0%	100%	15.63	0.52	17.18
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	8	99.0%	100%	15.63	0.52	17.18
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	8	95.0%	100%	0.01	0.02	0.06
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	7	95.0%	100%	25.71	6.80	46.11
Antimony	(µg / L as Sb)	Chronic health	≤ 20	6	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	6	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	8	97.0%	100%	37.25	2.31	44.19
Boron	(µg / L as B)	Chronic health	≤ 2400	8	97.0%	100%	4.86	1.98	10.80
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	6	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	8	97.0%	100%	0.79	0.56	2.48
Copper	(µg / L as Cu)	Chronic health	≤ 2000	8	97.0%	100%	2.44	1.16	5.91
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	3	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	8	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	8	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	6	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	8	97.0%	100%	2.84	2.37	9.94
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	8	95.0%	100%	2.84	2.37	9.94
Mercury	(µg / L as Hg)	Chronic health	≤ 6	6	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	8	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	6	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	6	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	5	97.0%	100%	3.24	0.11	3.58
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	5	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	5	97.0%	100%	54.60	29.16	142.08
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	5	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	5	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	5	97.0%	100%	15.40	4.16	27.88
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	5	97.0%	100%	0.44	0.23	1.13
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	no data	no data	no data
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	8	not applicable	100%	16.88	1.25	20.61
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	8	not applicable	100%	68.00	3.85	79.56
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	8	not applicable	100%	6.26	0.44	7.59
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	8	not applicable	100%	3.06	0.24	3.78
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	10	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	10	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%	99.65%

- 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 chlorinated system = Free available chlorine
 (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****