



RAND WATER

Ngwathe Water Quality Report
1 Month

22 May 2021 to 21 June 2021

Date generated: 13 July 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	50	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	50	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	50	95.0%	100%	2	8.96	29
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
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	23	95.0%	100%	7.43	1.70	12.54
Conductivity	(mS / m)	Aesthetic	≤ 170	25	95.0%	100%	23.04	4.90	37.75
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	159.29	8.86	185.88
Turbidity	(NTU)	Operational	≤ 1	25	95.0%	100%	0.40	0.13	0.80
Turbidity	(NTU)	Aesthetic	≤ 5	25	95.0%	100%	0.40	0.13	0.80
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	25	95.0%	100%	8.00	0.18	8.54
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	25	95.0%	100%	0.13	0.09	0.40
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	4	95.0%	100%	17.50	1.73	22.70
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	51	97.0%	100%	1.31	0.78	3.64
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	3	97.0%	100%	0.40	0.02	0.45
Nitrate	(mg / L as N)	Acute health	≤ 11	25	99.0%	100%	0.55	0.05	0.71
Nitrite	(mg / L as N)	Acute health	≤ 0.9	25	99.0%	100%	0.03	0.00	0.03
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	25	99.0%	100%	0.08	0.01	0.10
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	51	95.0%	78.43%	1.31	0.78	3.64
Sodium	(mg / L as Na)	Aesthetic	≤ 200	7	95.0%	100%	12.57	1.13	15.97
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	7	95.0%	100%	20.71	1.98	26.64
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	7	99.0%	100%	20.71	1.98	26.64
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	7	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	7	95.0%	100%	50.00	0.00	50.00
Antimony	(µg / L as Sb)	Chronic health	≤ 20	3	97.0%	100%	0.30	0.00	0.30
Arsenic	(µg / L as As)	Chronic health	≤ 10	3	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	7	97.0%	100%	39.29	4.03	51.37
Boron	(µg / L as B)	Chronic health	≤ 2400	7	97.0%	100%	11.76	2.03	17.84
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	3	97.0%	100%	1.80	0.26	2.59
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	7	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	7	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	7	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	7	97.0%	100%	63.86	23.71	134.99
Iron	(µg / L as Fe)	Aesthetic	≤ 300	7	95.0%	100%	63.86	23.71	134.99
Lead	(µg / L as Pb)	Chronic health	≤ 10	3	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	7	97.0%	100%	3.64	1.09	6.91
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	7	95.0%	100%	3.64	1.09	6.91
Mercury	(µg / L as Hg)	Chronic health	≤ 6	3	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	7	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	3	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	3	97.0%	100%	0.11	0.01	0.14
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	3	97.0%	100%	5.03	0.06	5.21
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	3	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	3	97.0%	100%	100.00	75.66	326.99
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	3	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	3	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	3	97.0%	100%	21.67	10.21	52.31
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	3	97.0%	100%	0.65	0.50	2.13
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	18	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	7	not applicable	100%	17.86	1.35	21.89
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	7	not applicable	100%	70.43	3.87	82.03
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	7	not applicable	100%	7.49	0.23	8.19
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	7	not applicable	100%	4.53	0.25	5.28
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	12	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	12	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%	96.01%

- 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****