



RAND WATER

Ngwathe 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
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	51	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	51	95.0%	100%	0	0.46	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	51	95.0%	100%	3	9.57	32
<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	84	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	3	95.0%	100%	7.67	3.06	16.83
Conductivity	(mS / m)	Aesthetic	≤ 170	24	95.0%	100%	24.25	1.65	29.20
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	3	95.0%	100%	163.33	2.89	171.99
Turbidity	(NTU)	Operational	≤ 1	24	95.0%	95.83%	0.41	0.49	1.89
Turbidity	(NTU)	Aesthetic	≤ 5	24	95.0%	100%	0.41	0.49	1.89
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	24	95.0%	100%	8.02	0.19	8.58
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	25	95.0%	100%	0.10	0.02	0.15
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	1	95.0%	100%	15.00	n/a	15.00
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	51	97.0%	100%	1.48	0.67	3.48
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	1	97.0%	100%	0.25	n/a	0.25
Nitrate	(mg / L as N)	Acute health	≤ 11	25	99.0%	100%	0.64	0.10	0.93
Nitrite	(mg / L as N)	Acute health	≤ 0.9	25	99.0%	100%	0.03	0.00	0.04
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	25	99.0%	100%	0.09	0.01	0.13
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	51	95.0%	92.16%	1.48	0.67	3.48
Sodium	(mg / L as Na)	Aesthetic	≤ 200	4	95.0%	100%	7.58	0.66	9.54
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	4	95.0%	100%	18.25	2.87	26.87
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	4	99.0%	100%	18.25	2.87	26.87
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	4	95.0%	100%	0.08	0.05	0.22
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	4	95.0%	100%	10.93	4.24	23.63
Antimony	(µg / L as Sb)	Chronic health	≤ 20	1	97.0%	100%	0.60	n/a	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	1	97.0%	100%	0.80	n/a	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	4	97.0%	100%	37.50	6.66	57.48
Boron	(µg / L as B)	Chronic health	≤ 2400	4	97.0%	100%	3.10	1.19	6.67
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	1	97.0%	100%	1.00	n/a	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	4	97.0%	100%	0.28	0.15	0.73
Copper	(µg / L as Cu)	Chronic health	≤ 2000	4	97.0%	100%	1.69	0.49	3.16
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	4	97.0%	100%	39.75	40.64	161.67
Iron	(µg / L as Fe)	Aesthetic	≤ 300	4	95.0%	100%	39.75	40.64	161.67
Lead	(µg / L as Pb)	Chronic health	≤ 10	1	97.0%	100%	2.00	n/a	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	4	97.0%	100%	1.25	0.53	2.83
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	4	95.0%	100%	1.25	0.53	2.83
Mercury	(µg / L as Hg)	Chronic health	≤ 6	1	97.0%	100%	0.10	n/a	0.10
Nickel	(µg / L as Ni)	Chronic health	≤ 70	4	97.0%	100%	3.03	2.46	10.40
Selenium	(µg / L as Se)	Chronic health	≤ 40	1	97.0%	100%	4.00	n/a	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	1	97.0%	100%	0.50	n/a	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	1	97.0%	100%	5.10	n/a	5.10
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	1	95.0%	100%	2.50	n/a	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	1	97.0%	100%	28.00	n/a	28.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	1	97.0%	100%	10.00	n/a	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	1	97.0%	100%	10.00	n/a	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	1	97.0%	100%	10.00	n/a	10.00
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	1	97.0%	100%	0.26	n/a	0.26
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	25	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	4	not applicable	100%	12.50	1.73	17.70
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	4	not applicable	100%	52.75	6.18	71.30
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	4	not applicable	100%	5.15	0.49	6.63
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	4	not applicable	100%	2.88	0.30	3.77
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	9	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	9	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%	98.27%

- 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****