

Ngwathe Municipality Water Quality Report - 12 Month

21 July 2017 to 20 July 2018 Date generated: 14 August 2018

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	156	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	156	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	156	100.0%	1	2.03	6
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	800	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	17	100.0%	5.18	0.73	7.52
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	156	100.0%	20.10	1.65	23.45
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	17	100.0%	140.88	8.70	162.60
Turbidity	(NTU)	Operational	95.0%	≤1	154	100.0%	0.32	0.09	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	154	100.0%	0.32	0.09	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	155	100.0%	8.06	0.15	8.39
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	154	100.0%	0.05	0.02	0.08
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	17	100.0%	11.36	1.76	14.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	154	100.0%	0.77	0.40	2.20
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	not applicable	not applicable	not applicable	not applicable	not applicable
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	16	100.0%	0.19	0.01	0.22
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	156	100.0%	0.44	0.03	0.47
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	156	100.0%	0.03	0.02	0.10
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	156	100.0%	0.08	0.02	0.15
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	154	98.1%	0.77	0.40	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	17	100.0%	10.07	1.85	14.52
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	16	100.0%	14.13	1.75	18.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	16	100.0%	14.13	1.75	18.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	17	100.0%	0.02	0.01	0.04
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	17	100.0%	26.24	3.15	34.84
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	17	100.0%	0.60	0.32	1.63
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	17	100.0%	0.99	0.94	3.28
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	17	100.0%	33.18	10.71	54.36
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	17	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	17	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	17	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	17	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	17	100.0%	6.81	4.97	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	17	100.0%	19.59	9.61	38.52
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	17	100.0%	19.59	9.61	38.52
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	17	100.0%	0.26	0.18	0.83
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	17	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	17	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	17	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	17	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	17	100.0%	0.73	0.51	2.08
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	17	100.0%	0.23	0.08	0.49
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	17	100.0%	3.71	0.38	4.20
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	17	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	17	100.0%	72.35	13.68	99.04
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	17	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	17	100.0%	1.96	1.11	3.72
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	17	100.0%	18.82	2.35	22.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	17	100.0%	0.58	0.07	0.71
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	189	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	17	100.0%	17.41	3.26	23.84
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	17	100.0%	64.71	12.54	90.68
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	17	100.0%	6.12	1.50	9.08
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	17	100.0%	3.66	0.33	4.18
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	48	100.0%	1.01	0.06	1.21
Taste	FTN	RWRD	95.0%	≤2	48	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.81%

- Notes:**
- (1) Specification date of effect : 1 July 2016
 - (2) Free chlorine : Results from chlorinated system
 - (3) Monochloramine : Chlorinated system has no monochloramine
 - (4) Residual disinfectant : Results from chlorinated system
 - (5) Measured at water treatment works exit points
 - (6) Customer request: Results not included in the risk indices compliance calculations
 - (7) (NO₂/0.9 + NO₃/11)
 - (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)