

Ngwathe Municipality Water Quality Report - 12 Month

23 October 2017 to 22 October 2018 Date generated: 05 November 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	153	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	153	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	153	100.0%	1	2.05	7
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	817	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	14	100.0%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	152	100.0%	20.51	1.74	25.72
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	14	100.0%	143.93	9.44	172.25
Turbidity	(NTU)	Operational	95.0%	≤1	151	100.0%	0.32	0.08	0.56
Turbidity	(NTU)	Aesthetic	95.0%	≤5	151	100.0%	0.32	0.08	0.56
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	151	100.0%	8.09	0.16	8.55
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	150	100.0%	0.05	0.03	0.13
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	14	100.0%	12.14	1.77	17.45
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	151	100.0%	0.96	0.55	2.62
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	13	100.0%	0.21	0.04	0.34
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	152	100.0%	0.45	0.04	0.55
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	152	100.0%	0.03	0.02	0.09
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	152	100.0%	0.07	0.02	0.14
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	151	98.0%	0.96	0.55	2.62
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	14	100.0%	10.78	1.68	15.82
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	13	100.0%	14.62	1.85	20.17
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	13	100.0%	14.62	1.85	20.17
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	14	100.0%	0.09	0.26	0.88
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	14	100.0%	27.64	6.97	48.55
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	13	100.0%	0.53	0.06	0.70
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	14	100.0%	2.15	2.67	10.14
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	14	100.0%	39.21	9.32	67.19
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	14	100.0%	21.36	7.37	43.45
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	14	100.0%	2.25	0.51	3.78
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	14	100.0%	12.86	4.26	25.63
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	14	100.0%	9.57	0.85	12.13
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	14	100.0%	10.36	7.46	32.73
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	14	100.0%	19.14	7.13	40.55
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	14	100.0%	19.14	7.13	40.55
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	14	100.0%	1.52	2.79	9.89
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	14	100.0%	8.50	2.98	17.44
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	14	100.0%	8.50	2.98	17.44
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	13	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	14	100.0%	8.93	2.13	15.32
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	14	100.0%	2.07	2.71	10.19
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	13	100.0%	0.29	0.13	0.68
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	14	100.0%	3.71	0.39	4.87
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	14	100.0%	4.57	0.85	7.13
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	14	100.0%	68.07	14.66	112.06
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	14	100.0%	2.54	4.05	14.67
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	14	100.0%	4.09	3.32	14.04
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	14	100.0%	18.43	2.44	25.75
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	14	100.0%	0.60	0.09	0.86
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	193	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	14	100.0%	17.79	2.78	26.12106203
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	14	100.0%	67.43	11.64	102.35
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	14	100.0%	6.65	1.47	11.06
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	14	100.0%	3.67	0.28	4.51
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	46	100.0%	1.01	0.06	1.19
Taste	FTN	RWRD	95.0%	≤2	46	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)