

**Ngwatho Municipality Water Quality Report - 12 Month**

23 March 2017 to 22 March 2018 Date generated: 03 April 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
<b>Microbiological determinands</b>									
<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	155	100.0%	0	1.00	5
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	786	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	16	100.0%	5.19	0.75	7.55
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	156	100.0%	19.62	1.68	24.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	16	100.0%	137.19	3.64	144.25
Turbidity	(NTU)	Operational	95.0%	≤1	154	100.0%	0.31	0.10	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	154	100.0%	0.31	0.10	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	155	100.0%	8.08	0.14	8.39
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	154	100.0%	0.06	0.06	0.40
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	17	100.0%	11.01	1.58	13.84
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	154	100.0%	0.77	0.46	2.20
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	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	0.06	0.38
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	156	100.0%	0.46	0.05	0.62
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	156	100.0%	0.03	0.01	0.09
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	156	100.0%	0.08	0.01	0.14
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	154	96.1%	0.77	0.46	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	16	100.0%	9.30	1.82	14.55
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	16	100.0%	13.44	0.89	15.70
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	16	100.0%	13.44	0.89	15.70
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	16	100.0%	0.02	0.01	0.04
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	16	100.0%	26.31	3.63	36.55
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	16	100.0%	0.60	0.33	1.64
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	16	100.0%	0.85	0.81	3.06
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	16	100.0%	28.06	8.81	51.70
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	16	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	16	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	16	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	16	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	16	100.0%	5.05	0.20	5.68
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	16	100.0%	23.21	18.86	67.95
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	16	100.0%	23.21	18.86	67.95
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	16	100.0%	0.21	0.05	0.37
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	16	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	16	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	16	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	16	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	16	100.0%	1.23	1.51	5.84
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	16	100.0%	0.20	0.00	0.20
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	16	100.0%	3.58	0.48	4.20
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	16	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	16	100.0%	75.63	11.09	99.10
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	14	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	14	100.0%	1.82	0.87	3.29
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	14	100.0%	17.43	3.06	21.74
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	14	100.0%	0.57	0.09	0.71
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	184	100.0%	0.32	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	16	100.0%	16.94	3.13	23.55
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	16	100.0%	60.88	10.72	88.15
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	16	100.0%	5.34	1.13	8.64
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	16	100.0%	3.53	0.37	4.19
<b>Rand Water Risk Determinands (RWRD)</b>									
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%	99.62%

- 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) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)
  - (8) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)