

Thembeles Municipality Water Quality Report - 12 Month

23 May 2017 to 22 May 2018 Date generated: 01 June 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	157	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	157	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	157	100.0%	0	1.38	7
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	913	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	12	100.0%	5.17	0.39	6.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	157	100.0%	19.65	2.43	23.88
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	12	100.0%	137.50	8.66	150.00
Turbidity	(NTU)	Operational	95.0%	≤1	157	100.0%	0.30	0.09	0.47
Turbidity	(NTU)	Aesthetic	95.0%	≤5	157	100.0%	0.30	0.09	0.47
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	157	100.0%	7.87	0.13	8.14
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	157	100.0%	0.23	0.10	0.40
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	12	100.0%	10.41	1.09	12.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	157	100.0%	0.08	0.12	0.63
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	157	100.0%	0.94	0.31	1.52
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	12	100.0%	0.19	0.01	0.19
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	157	100.0%	0.46	0.05	0.65
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	157	100.0%	0.12	0.11	0.54
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	157	100.0%	0.18	0.12	0.64
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	157	100.0%	1.02	0.30	1.56
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	19	100.0%	8.63	0.78	9.68
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	12	100.0%	13.58	1.08	15.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	12	100.0%	13.58	1.08	15.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	19	100.0%	0.02	0.00	0.02
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	19	100.0%	35.37	8.97	53.00
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	12	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	12	100.0%	0.99	0.71	2.30
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	18	100.0%	36.00	5.84	44.00
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	19	100.0%	30.53	24.09	111.10
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	12	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	19	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	19	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	12	100.0%	5.55	1.47	9.63
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	19	100.0%	11.33	7.63	30.92
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	19	100.0%	11.33	7.63	30.92
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	12	100.0%	0.21	0.03	0.30
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	19	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	19	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	12	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	19	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	12	100.0%	0.67	0.36	1.62
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	12	100.0%	0.26	0.19	0.79
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	12	100.0%	3.98	0.55	5.27
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	12	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	12	100.0%	43.58	9.06	54.78
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	12	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	12	100.0%	1.42	0.94	3.25
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	12	100.0%	13.83	1.64	16.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	12	100.0%	0.40	0.05	0.47
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	186	100.0%	0.32	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	19	100.0%	17.58	2.93	22.82
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	19	100.0%	65.47	8.64	77.64
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	19	100.0%	6.22	0.65	7.30
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	19	100.0%	3.82	0.35	4.38
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	49	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	49	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%	100.00%

- Notes:**
- Specification date of effect : 1 July 2016
 - Free chlorine : Results from chloraminated system
 - Monochloramine : Results are from the chloraminated systems
 - Residual disinfectant : Results from chloraminated system
 - Measured at water treatment works exit points
 - Customer request: Results not included in the risk indices compliance calculations
 - (NO₂/0.9 + NO₃/11)
 - (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)