

Customer Bulk 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	15 137	99.9%	0	2.32	7
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	15 137	99.8%	0	6.00	18
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	15 137	99.5%	20	390.49	1192
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	213	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	213	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	1 015	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	1 313	99.8%	5.41	1.32	9.38
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	12 216	100.0%	21.24	7.56	43.91
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	1 467	100.0%	158.03	70.06	368.20
Turbidity	(NTU)	Operational	95.0%	≤1	12 733	99.7%	0.32	0.24	1.04
Turbidity	(NTU)	Aesthetic	95.0%	≤5	12 733	99.9%	0.32	0.24	1.04
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	12 207	100.0%	7.93	0.16	8.42
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	11 937	100.0%	0.23	0.17	0.74
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	1 332	100.0%	18.16	24.58	91.89
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	15 127	100.0%	0.37	0.51	1.90
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	10 897	100.0%	1.32	0.58	3.07
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	1 329	100.0%	0.20	0.02	0.27
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	12 056	100.0%	0.45	0.05	0.59
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	12 164	100.0%	0.05	0.08	0.29
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	11 878	100.0%	0.10	0.09	0.36
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine; ≥0.1 Sum of Free and Monochloramine	15 127	97.2%	1.32	0.57	3.02
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	1 387	100.0%	13.21	14.03	55.30
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	1 283	100.0%	21.50	23.63	92.40
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	1 283	100.0%	21.50	23.63	92.40
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	1 387	100.0%	0.08	0.23	0.77
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	1 387	100.0%	33.36	14.83	77.86
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	1 189	100.0%	0.51	0.20	1.12
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	1 255	100.0%	1.73	2.25	8.49
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	1 387	100.0%	43.03	13.29	82.91
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	1 387	100.0%	24.90	17.62	77.77
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	1 258	100.0%	2.31	0.45	3.66
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	1 386	100.0%	13.45	3.62	24.31
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	1 387	100.0%	11.02	4.93	25.81
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	1 302	100.0%	11.41	7.37	33.51
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	1 386	100.0%	17.55	20.48	78.99
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	1 386	100.0%	17.55	20.48	78.99
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	1 269	100.0%	1.21	2.25	7.97
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	1 386	100.0%	10.62	9.68	39.64
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	1 386	99.9%	10.62	9.68	39.64
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	1 189	100.0%	0.77	0.15	1.23
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	1 387	100.0%	9.22	1.81	14.66
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	1 255	100.0%	1.92	2.33	8.90
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	1 190	100.0%	0.30	0.34	1.31
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	1 260	100.0%	3.79	0.61	5.62
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	1 221	100.0%	4.69	0.73	6.87
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	1 440	100.0%	36.27	13.11	75.59
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	1 440	100.0%	2.08	3.46	12.46
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	1 440	100.0%	3.49	3.77	14.80
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	1 440	100.0%	13.54	3.07	22.75
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	1 440	100.0%	0.40	0.11	0.72
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	261	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	1387	100.0%	19.10	5.79	36.47007278
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	1 387	99.1%	75.13	30.11	165.47
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	1 385	100.0%	7.91	4.71	22.05
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	1 387	100.0%	4.01	1.41	8.24
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	4 027	100.0%	1.00	0.02	1.05
Taste	FTN	RWRD	95.0%	≤2	4 027	100.0%	1.00	0.01	1.04

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	99.93%
Acute health chemical	99.00%	99.97%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	99.97%
Operational	95.00%	99.23%

- Notes:**
- (1) Specification date of effect : 1 July 2016
 - (2) Free chlorine : Results from both the chlorinated and chloraminated systems
 - (3) Monochloramine : Results are from the chloraminated systems
 - (4) Residual disinfectant : Results from both the chlorinated and chloraminated systems
 - (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)