

Customer Bulk Water Quality Report - 12 Month

24 October 2016 to 23 October 2017 Date generated: 02 November 2017

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	15 377	100.0%	0	0.12	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	15 377	99.8%	0	6.02	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	14 362	99.9%	13	847.20	79
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	204	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	204	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	985	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	1 337	99.9%	5.10	1.38	6.64
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	12 230	100.0%	18.98	5.14	49.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	12 230	100.0%	134.27	29.98	309.26
Turbidity	(NTU)	Operational	95.0%	≤1	12 645	99.6%	0.30	0.34	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	12 645	99.9%	0.30	0.34	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	12 231	100.0%	7.94	0.18	8.43
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	12 112	100.0%	0.22	0.15	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	1 341	100.0%	12.45	10.54	59.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	15 390	100.0%	0.41	0.53	2.00
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	11 665	100.0%	1.23	0.63	2.15
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	1 341	100.0%	0.19	0.06	0.40
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	12 031	100.0%	0.52	0.15	0.95
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	12 109	100.0%	0.05	0.06	0.36
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	12 030	100.0%	0.10	0.08	0.47
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine; ≥0.1 Sum of Free and Monochloramine	15 390	97.9%	1.34	0.53	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	1 342	100.0%	10.02	9.37	60.59
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	1 368	100.0%	15.61	12.75	74.33
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	1 368	100.0%	15.61	12.75	74.33
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	1 342	100.0%	0.02	0.01	0.08
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	1 342	99.9%	30.99	16.82	80.00
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	1 258	100.0%	0.51	0.17	0.83
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	1 256	100.0%	0.87	0.65	3.40
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	1 335	100.0%	33.02	10.17	73.32
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	1 342	100.0%	26.92	11.52	53.59
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	1 256	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	1 342	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	1 342	100.0%	11.24	8.52	27.59
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	1 328	100.0%	5.18	1.82	9.16
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	1 342	100.0%	21.59	23.35	120.00
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	1 342	99.9%	21.59	23.35	120.00
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	1 255	100.0%	0.28	0.31	1.65
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	1 342	100.0%	11.49	12.73	46.36
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	1 342	99.6%	11.49	12.73	46.36
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	1 258	100.0%	0.80	0.01	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	1 342	100.0%	10.01	0.12	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	1 256	100.0%	0.88	0.89	5.53
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	1 257	100.0%	0.24	0.30	0.92
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	1 252	100.0%	3.58	0.97	6.65
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	1 198	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	1 432	100.0%	39.19	14.29	72.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	1 428	100.0%	0.53	0.26	2.07
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	1 428	100.0%	1.88	1.90	11.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	1 428	100.0%	12.19	2.93	19.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	1 428	100.0%	0.36	0.09	0.56
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	252	100.0%	0.35	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	1342	100.0%	18.27	4.80	37
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	1 342	99.9%	67.22	21.90	161.24
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	1 342	100.0%	6.23	3.32	23.00
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	1 340	100.0%	3.28	1.28	8.96
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	4 135	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	4 136	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%	99.99%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	99.97%
Operational	95.00%	99.43%

- 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)