

Customer Bulk Water Quality Report - 12 Month							Date generated: 03 August 2018		
21 July 2017 to 20 July 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									
E. coli	(mpn per 100 mL)	Acute health	99.0%	0	15 478	99.9%	0	2.29	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	15 478	99.8%	0	6.15	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	15 478	99.7%	14	223.69	127
Cryptosporidium spp (5)	(org / 10 Litre)	Acute health	99.0%	0	209	100.0%	0	0.00	0
Giardia spp (5)	(org / 10 Litre)	Acute health	99.0%	0	209	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	1 001	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	1 371	99.9%	5.32	1.25	8.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	12 249	100.0%	20.64	6.81	65.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	1 531	100.0%	153.37	62.31	450.00
Turbidity	(NTU)	Operational	95.0%	≤1	12 749	99.6%	0.33	0.31	0.49
Turbidity	(NTU)	Aesthetic	95.0%	≤5	12 749	99.9%	0.33	0.31	0.49
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	12 242	100.0%	7.90	0.15	8.30
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	11 975	100.0%	0.23	0.16	0.53
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	1 370	100.0%	16.79	21.55	115.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	15 469	100.0%	0.40	0.54	1.97
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	10 863	100.0%	1.30	0.59	2.13
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	1 366	100.0%	0.20	0.03	0.31
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	12 169	100.0%	0.45	0.05	0.69
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	12 202	100.0%	0.05	0.08	0.37
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	12 168	100.0%	0.10	0.09	0.46
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine; ≥0.1 Sum of Free and Monochloramine	15 469	97.1%	1.31	0.57	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	1 430	100.0%	12.46	12.79	68.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	1 402	100.0%	19.79	20.29	100.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	1 402	100.0%	19.79	20.29	100.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	1 430	100.0%	0.02	0.02	0.11
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	1 430	100.0%	32.21	14.45	95.13
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	1 295	100.0%	0.53	0.21	1.11
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	1 269	100.0%	1.11	1.13	5.63
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	1 430	100.0%	39.90	14.23	94.00
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	1 430	100.0%	27.36	15.72	60.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	1 293	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	1 429	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	1 430	100.0%	11.48	8.67	35.71
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	1 362	100.0%	7.69	5.69	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	1 429	100.0%	18.17	21.00	103.60
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	1 429	100.0%	18.17	21.00	103.60
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	1 293	100.0%	0.39	0.65	3.31
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	1 429	100.0%	11.31	8.11	45.16
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	1 429	99.9%	11.31	8.11	45.16
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	1 294	100.0%	0.80	0.02	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	1 430	100.0%	10.00	0.11	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	1 269	100.0%	1.00	1.07	5.93
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	1 295	100.0%	0.29	0.33	1.81
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	1 287	100.0%	3.82	0.57	5.51
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	1 242	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	1 462	100.0%	38.37	13.64	71.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	1 462	100.0%	0.58	0.42	3.10
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	1 462	100.0%	1.99	2.43	14.39
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	1 462	100.0%	13.24	3.20	22.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	1 462	100.0%	0.37	0.09	0.63
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	258	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	1430	100.0%	18.99	5.97	42
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	1 430	99.2%	73.64	29.55	190.00
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	1 428	100.0%	7.56	4.49	26.00
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	1 430	100.0%	4.06	1.23	9.57
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	4 046	100.0%	1.00	0.02	1.00
Taste	FTN	RWRD	95.0%	≤2	4 047	100.0%	1.00	0.01	1.00
Water quality risk indices									
Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241							
Acute health microbiological	99.00%	99.94%							
Acute health chemical	99.00%	99.97%							
Chronic health	97.00%	100.00%							
Aesthetic	95.00%	99.97%							
Operational	95.00%	99.20%							
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) (NO ₂ /0.9 + NO ₃ /11)									
(8) (CHCl ₃ /300 + CHBr ₃ /100 + CHBr ₂ Cl/100 + CHBrCl ₂ /60)									