



Barrage Consumer Supply Water Quality Report (SANS 241) - 12 Month

23 January 2017 to 22 January 2018

Date generated: 01 February 2018

Determinand	Measurement units	Risk	Required compliance to SANS 0241:2015 standard (%)	SANS 0241:2015 standard limits (1)	No of results	Achieved Compliance to SANS0241: 2015 Spec(%)	Descriptive statistics		
							Mean	Std Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	418	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	418	100.0%	0	0.23	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	417	99.8%	10	148.23	68
<i>Cryptosporidium spp</i>	(org / 10 Litre)	Acute health	99.0%	0	24	100.0%	0	0.00	0
<i>Giardia spp</i>	(org / 10 Litre)	Acute health	99.0%	0	24	100.0%	0	0.00	0
Somatic Coliphages	(count per 10 mL)	Operational	95.0%	0	53	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	73	100.0%	5.15	0.59	7.56
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	417	100.0%	73.95	15.01	95.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	254	100.0%	462.66	87.07	580.00
Turbidity	(NTU)	Operational	95.0%	≤1	415	99.5%	0.30	0.17	0.74
Turbidity	(NTU)	Aesthetic	95.0%	≤5	415	100.0%	0.30	0.17	0.74
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	417	100.0%	8.03	0.12	8.32
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	211	100.0%	0.05	0.00	0.05
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	75	100.0%	57.63	12.41	82.30
Free chlorine	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	418	100.0%	1.77	0.40	2.20
Monochloramine	(mg / L as Cl ₂)	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	76	100.0%	0.21	0.05	0.39
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	211	100.0%	3.47	1.19	5.20
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	211	100.0%	0.03	0.03	0.10
Combined nitrate plus nitrite (2)	(mg / L as N)	Acute health	99.0%	≤1	211	100.0%	0.35	0.11	0.52
Residual disinfectant	(mg / L)	Operational	95.0%	≥0.2 Chlorinated system	418	100.0%	1.77	0.40	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	73	100.0%	57.05	13.07	73.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	76	98.7%	158.49	45.20	251.25
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	76	100.0%	158.49	45.20	251.25
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	73	100.0%	0.05	0.03	0.14
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	73	100.0%	28.59	16.80	77.16
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	28	100.0%	0.57	0.10	0.82
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	32	100.0%	2.37	1.85	6.31
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	73	100.0%	35.64	10.25	60.12
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	73	100.0%	77.08	17.67	111.40
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	32	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	73	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	73	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	65	100.0%	5.68	3.97	25.32
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	73	100.0%	25.78	22.18	111.88
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	73	100.0%	25.78	22.18	111.88
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	32	100.0%	0.87	1.53	5.88
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	73	100.0%	12.04	6.66	38.56
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	73	100.0%	12.04	6.66	38.56
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	32	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	73	100.0%	10.16	0.60	12.56
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	30	100.0%	1.98	1.39	5.03
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	28	100.0%	2.01	1.15	3.47
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	32	100.0%	4.07	0.52	5.38
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	32	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	32	100.0%	32.53	17.29	76.83
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	32	100.0%	0.67	0.28	1.20
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	32	100.0%	10.02	1.82	14.76
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	32	100.0%	19.28	5.03	32.07
Combined trihalomethanes (3)	(µg / L)	Chronic health	97.0%	≤1	32	100.0%	0.54	0.15	0.95
Total Mycrocystin	(µg / L)	Chronic health	97.0%	≤0.7	12	100.0%	0.33	0.03	0.36

Water quality risk indices		
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%	99.95%
Operational	95.00%	99.86%
Indicator	Target	Actual Performance
Composite Performance Index	99%	99.94%

Notes:
 (1) Specification date of effect : 1 July 2016
 (2) (NO₂/0.9 + NO₃/11)
 (3) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)