



**RAND WATER**  
Customer Bulk Water Quality Report  
1 Month

20 June 2020 to 22 July 2020

Date generated: 06 August 2020

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	1,390	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,390	95.0%	100%	0	0.22	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,390	95.0%	99.78%	7	121.52	372
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	19	99.0%	94.74%	0	0.23	1
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	19	99.0%	84.21%	0	0.37	1
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	110	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	116	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	1,091	95.0%	100%	23.61	7.09	44.88
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	127	95.0%	100%	164.65	56.29	333.52
Turbidity	(NTU)	Operational	≤ 1	1,149	95.0%	99.83%	0.32	0.29	1.20
Turbidity	(NTU)	Aesthetic	≤ 5	1,149	95.0%	99.83%	0.32	0.29	1.20
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	1,091	95.0%	100%	7.92	0.15	8.38
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	1,091	95.0%	100%	0.27	0.19	0.83
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	109	95.0%	100%	16.93	19.53	75.52
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	1,402	97.0%	100%	0.44	0.57	2.15
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	995	97.0%	100%	1.45	0.55	3.08
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	109	97.0%	100%	0.23	0.08	0.48
Nitrate	(mg / L as N)	Acute health	≤ 11	1,085	99.0%	100%	0.58	0.08	0.83
Nitrite	(mg / L as N)	Acute health	≤ 0.9	1,086	99.0%	100%	0.02	0.04	0.13
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	1,067	99.0%	100%	0.28	0.29	1.15
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ (0.1 and 0.2)	1,402	95.0%	99.50%	1.46	0.49	2.94
Sodium	(mg / L as Na)	Aesthetic	≤ 200	113	95.0%	100%	12.71	10.23	43.38
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	113	95.0%	100%	23.55	13.10	62.84
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	113	99.0%	100%	23.55	13.10	62.84
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	112	95.0%	100%	0.02	0.02	0.07
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	110	95.0%	100%	31.76	22.48	99.21
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	.	no data	.
Arsenic	(µg / L as As)	Chronic health	≤ 10	106	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	113	97.0%	100%	43.76	5.46	60.13
Boron	(µg / L as B)	Chronic health	≤ 2400	113	97.0%	100%	13.75	27.55	96.41
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	105	97.0%	100%	1.51	0.07	1.71
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	112	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	113	97.0%	100%	9.21	3.34	19.22
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	114	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	108	97.0%	100%	24.80	21.05	87.95
Iron	(µg / L as Fe)	Aesthetic	≤ 300	108	95.0%	100%	24.80	21.05	87.95
Lead	(µg / L as Pb)	Chronic health	≤ 10	105	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	112	97.0%	100%	3.90	3.05	13.04
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	112	95.0%	100%	3.90	3.05	13.04
Mercury	(µg / L as Hg)	Chronic health	≤ 6	105	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	112	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	106	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	no data	97.0%	no data	.	no data	.
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	102	97.0%	100%	4.52	0.58	6.26
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	97	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	121	97.0%	100%	25.01	8.13	49.41
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	121	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	121	97.0%	100%	10.12	0.98	13.06
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	121	97.0%	100%	14.30	2.61	22.14
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	119	97.0%	100%	0.34	0.09	0.61
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	21	97.0%	100%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	113	not applicable	100%	18.58	4.60	32.39
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	113	not applicable	100%	74.16	22.44	141.48
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	113	not applicable	100%	7.98	3.27	17.80
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	113	not applicable	100%	3.56	1.11	6.89
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	332	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	332	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	99.72%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	99.95%
Operational	95.0%	99.82%

Notes  
 (1) Specification\_SANS 241 date of effect : 1 July 2016  
 (2) Measured at water treatment works exit points  
 (3) (NO2/0.9 + NO3/11)  
 (4) Residual disinfectant : Results from both the chlorinated and chloraminated systems  
 (5) (CHCl3/300 + CHBr3/100 + CHBr2Cl/100 + CHBrCl2/60)  
 (6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006  
 (7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec  
 \*\*\*\* Determinands with no data are due to instrument breakdown\*\*\*\*