



RAND WATER
Customer Bulk Water Quality Report
1 Month

22 August 2020 to 21 September 2020

Date generated: 09 October 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
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	1,218	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,218	95.0%	99.92%	0	0.62	2
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,218	95.0%	99.92%	4	52.28	161
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	20	99.0%	95.00%	0	0.45	1
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	20	99.0%	95.00%	0	0.22	1
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	92	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	108	95.0%	100%	6.96	1.75	12.20
Conductivity	(mS / m)	Aesthetic	≤ 170	950	95.0%	100%	21.67	7.25	43.43
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	116	95.0%	100%	157.97	67.88	361.63
Turbidity	(NTU)	Operational	≤ 1	1,001	95.0%	99.80%	0.29	0.14	0.70
Turbidity	(NTU)	Aesthetic	≤ 5	1,001	95.0%	100%	0.29	0.14	0.70
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	947	95.0%	100%	8.05	0.13	8.43
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	938	95.0%	100%	0.25	0.16	0.73
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	105	95.0%	100%	18.08	25.07	93.28
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	1,218	97.0%	100%	0.43	0.55	2.08
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	847	97.0%	100%	1.61	0.45	2.95
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	108	97.0%	100%	0.21	0.02	0.28
Nitrate	(mg / L as N)	Acute health	≤ 11	935	99.0%	100%	0.60	0.11	0.92
Nitrite	(mg / L as N)	Acute health	≤ 0.9	957	99.0%	100%	0.03	0.07	0.24
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	925	99.0%	100%	0.15	0.20	0.75
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	1,218	95.0%	99.18%	1.54	0.46	2.92
Sodium	(mg / L as Na)	Aesthetic	≤ 200	114	95.0%	100%	14.09	14.92	58.83
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	111	95.0%	100%	22.60	17.54	75.23
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	111	99.0%	100%	22.60	17.54	75.23
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	114	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	114	95.0%	100%	30.59	11.13	63.97
Antimony	(µg / L as Sb)	Chronic health	≤ 20	101	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	104	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	114	97.0%	100%	39.99	9.01	67.01
Boron	(µg / L as B)	Chronic health	≤ 2400	114	97.0%	100%	11.22	21.95	77.07
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	104	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	114	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	114	97.0%	100%	8.44	1.45	12.77
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	108	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	114	97.0%	100%	22.00	29.25	109.76
Iron	(µg / L as Fe)	Aesthetic	≤ 300	114	95.0%	100%	22.00	29.25	109.76
Lead	(µg / L as Pb)	Chronic health	≤ 10	104	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	114	97.0%	100%	4.18	3.80	15.58
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	114	95.0%	100%	4.18	3.80	15.58
Mercury	(µg / L as Hg)	Chronic health	≤ 6	104	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	114	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	104	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	101	97.0%	100%	0.57	0.34	1.57
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	101	97.0%	100%	4.46	0.45	5.82
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	96	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	116	97.0%	100%	30.33	9.57	59.04
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	116	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	116	97.0%	100%	10.39	1.89	16.05
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	116	97.0%	100%	14.52	2.28	21.35
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	116	97.0%	100%	0.37	0.09	0.64
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	23	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	114	not applicable	100%	19.88	6.18	38.43
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	114	not applicable	98.25%	76.71	31.77	172.02
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	114	not applicable	100%	7.81	4.82	22.27
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	114	not applicable	100%	3.53	1.67	8.56
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	353	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	353	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%	99.84%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.76%

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****