RAND WATER

Customer Bulk Water Quality Report

23 March 2021 to 21 April 2021 — **1 Month** — **Date generated: 14 May 2021**

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(%)	Descriptive Statistics: Mean	Standard Deviation	Mean + 3 Std deviations
Microbiological determinands									
E. coli	(mpn per 100 mL)	Acute health	Non-detect	1,309	99.0%	99.85%	0	0.38	1
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	1,309	95.0%	99.16%	1	11.34	35
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	1,309	95.0%	98.85%	217	4,563.53	13908
Cryptosporidium spp (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
Giardia spp (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	.	no data	.
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	109	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	117	95.0%	99.15%	10.78	3.43	21.07
Conductivity	(mS / m)	Aesthetic	≤ 170	1,028	95.0%	100%	24.60	5.25	40.36
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	131	95.0%	100%	178.70	51.54	333.32
Turbidity	(NTU)	Operational	≤ 1	1,078	95.0%	99.44%	0.36	0.17	0.86
Turbidity	(NTU)	Aesthetic	≤ 5	1,078	95.0%	100%	0.36	0.17	0.86
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	1,028	95.0%	100%	7.86	0.17	8.38
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	1,027	95.0%	100%	0.20	0.16	0.67
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	99	95.0%	100%	21.35	18.50	76.85
Free chlorine	(mg / L as Cl_2)	Chronic health	≤ 5	1,309	97.0%	100%	0.28	0.47	1.70
Monochloramine	(mg / L as Cl_2)	Chronic health	≤ 4.1	942	97.0%	100%	1.05	0.69	3.13
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	99	97.0%	100%	0.38	0.11	0.72
Nitrate	(mg / L as N)	Acute health	≤ 11	1,018	99.0%	100%	0.80	0.19	1.38
Nitrite	(mg / L as N)	Acute health	≤ 0.9	1,008	99.0%	100%	0.09	0.10	0.38
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	979	99.0%	100%	0.18	0.13	0.56
Residual disinfectant (4)	(mg / L as Cl_2)	Operational	≥ (0.1 and 0.2)	1,309	95.0%	84.19%	1.03	0.71	3.17
Sodium	(mg / L as Na)	Aesthetic	≤ 200	118	95.0%	100%	7.58	3.94	19.40
Sulphate	(mg / L as SO_4)	Aesthetic	≤ 250	102	95.0%	100%	21.44	9.18	48.99
Sulphate	(mg / L as SO_4)	Acute health	≤ 500	102	99.0%	100%	21.44	9.18	48.99
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	84	95.0%	100%	0.08	0.04	0.19
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	118	95.0%	100%	11.63	8.31	36.55
Antimony	(µg / L as Sb)	Chronic health	≤ 20	112	97.0%	100%	0.37	0.14	0.79
Arsenic	(µg / L as As)	Chronic health	≤ 10	115	97.0%	100%	0.77	0.45	2.11
Barium	(µg / L as Ba)	Chronic health	≤ 700	119	97.0%	100%	41.24	5.68	58.28
Boron	(µg / L as B)	Chronic health	≤ 2400	119	97.0%	100%	3.68	2.01	9.72
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	116	97.0%	100%	0.95	0.20	1.55
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	118	97.0%	100%	0.30	0.45	1.66
Copper	(µg / L as Cu)	Chronic health	≤ 2000	119	97.0%	100%	3.88	3.44	14.20
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	115	99.0%	100%	5.01	0.06	5.17
Iron	(µg / L as Fe)	Chronic health	≤ 2000	118	97.0%	100%	31.94	35.29	137.81
Iron	(µg / L as Fe)	Aesthetic	≤ 300	118	95.0%	100%	31.94	35.29	137.81
Lead	(µg / L as Pb)	Chronic health	≤ 10	116	97.0%	100%	1.96	0.42	3.22
Manganese	(µg / L as Mn)	Chronic health	≤ 400	118	97.0%	100%	3.04	4.07	15.26
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	118	95.0%	100%	3.04	4.07	15.26
Mercury	(µg / L as Hg)	Chronic health	≤ 6	115	97.0%	100%	0.73	0.22	1.37
Nickel	(µg / L as Ni)	Chronic health	≤ 70	119	97.0%	100%	1.39	1.08	4.62
Selenium	(µg / L as Se)	Chronic health	≤ 40	116	97.0%	100%	3.91	0.53	5.51
Uranium	(µg / L as U)	Chronic health	≤ 30	112	97.0%	100%	0.20	0.19	0.77
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	106	97.0%	100%	5.10	0.72	7.26
Phenols as C_6H_5OH	(µg / L)	Aesthetic	≤ 10	100	95.0%	100%	2.57	0.17	3.09
Chloroform - $CHCl_3$	(µg / L)	Chronic health	≤ 300	123	97.0%	100%	80.78	19.89	140.45
Bromoform - $CHBr_3$	(µg / L)	Chronic health	≤ 100	123	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - $CHBr_2Cl$	(µg / L)	Chronic health	≤ 100	123	97.0%	100%	10.08	0.68	12.14
Bromodichloromethane - $CHBrCl_2$	(µg / L)	Chronic health	≤ 60	123	97.0%	100%	18.73	3.29	28.59
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	123	97.0%	100%	0.60	0.11	0.94
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	34	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	119	not applicable	100%	12.25	2.72	20.42
Hardness (7)	(mg / L as $CaCO_3$)	Operational	≥ 20 to ≤ 200	119	not applicable	100%	51.61	14.46	94.99
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	119	not applicable	100%	5.13	2.05	11.28
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	118	not applicable	100%	2.67	0.74	4.90
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	305	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	305	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%	99.85%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	99.98%
Operational	95.0%	96.18%

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****