



RAND WATER
Barrage Water Quality Report
1 Month

22 April 2021 to 21 May 2021

Date generated: 11 June 2021

							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	34	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	34	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	34	95.0%	100%	26	64.96	221
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	4	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	10	95.0%	100%	12.50	2.76	20.78
Conductivity	(mS / m)	Aesthetic	≤ 170	34	95.0%	100%	24.00	1.65	28.95
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	23	95.0%	100%	165.22	12.29	202.09
Turbidity	(NTU)	Operational	≤ 1	34	95.0%	91.18%	0.72	0.37	1.82
Turbidity	(NTU)	Aesthetic	≤ 5	34	95.0%	100%	0.72	0.37	1.82
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	34	95.0%	100%	8.00	0.10	8.30
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	70	95.0%	100%	0.10	0.01	0.13
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	16.80	2.28	23.64
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	34	97.0%	100%	1.06	0.65	3.02
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	n/a	97.0%	no data	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	5	97.0%	100%	0.25	0.06	0.44
Nitrate	(mg / L as N)	Acute health	≤ 11	71	99.0%	100%	0.58	0.06	0.75
Nitrite	(mg / L as N)	Acute health	≤ 0.9	70	99.0%	100%	0.03	0.01	0.08
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	64	99.0%	100%	0.11	0.07	0.33
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	34	95.0%	94.12%	1.06	0.65	3.02
Sodium	(mg / L as Na)	Aesthetic	≤ 200	10	95.0%	100%	13.09	2.05	19.25
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	17.00	2.35	24.04
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	17.00	2.35	24.04
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	10	95.0%	100%	0.05	0.04	0.18
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	10	95.0%	100%	38.96	21.96	104.83
Antimony	(µg / L as Sb)	Chronic health	≤ 20	2	97.0%	100%	0.30	0.00	0.30
Arsenic	(µg / L as As)	Chronic health	≤ 10	2	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	10	97.0%	100%	47.20	6.65	67.14
Boron	(µg / L as B)	Chronic health	≤ 2400	10	97.0%	100%	8.78	3.55	19.43
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	10	97.0%	100%	3.08	2.48	10.52
Copper	(µg / L as Cu)	Chronic health	≤ 2000	10	97.0%	100%	7.41	2.68	15.46
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	5	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	10	97.0%	100%	74.93	43.15	204.37
Iron	(µg / L as Fe)	Aesthetic	≤ 300	10	95.0%	100%	74.93	43.15	204.37
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	10	97.0%	100%	4.43	2.04	10.55
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	10	95.0%	100%	4.43	2.04	10.55
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	10	97.0%	100%	3.59	1.86	9.17
Selenium	(µg / L as Se)	Chronic health	≤ 40	2	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	2	97.0%	100%	0.10	0.00	0.10
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	2	97.0%	100%	5.00	0.00	5.00
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	2	97.0%	100%	88.50	6.36	107.59
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	2	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	2	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	2	97.0%	100%	18.50	0.71	20.62
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	2	97.0%	100%	0.62	0.04	0.72
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	2	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	10	not applicable	100%	17.70	2.36	24.78
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	9	not applicable	100%	70.44	10.25	101.19
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	10	not applicable	100%	7.41	1.02	10.47
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	10	not applicable	100%	4.82	1.29	8.70
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	17	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	17	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%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	97.28%

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 the chlorinated system = Free available chlorine
 (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****