



RAND WATER
Barrage Water Quality Report
1 Month

23 October 2020 to 20 November 2020

Date generated: 04 December 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	33	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	33	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	33	95.0%	100%	1	2.55	9
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	2	99.0%	100%	0	0.00	0
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	9	95.0%	100%	7.00	1.50	11.50
Conductivity	(mS / m)	Aesthetic	≤ 170	33	95.0%	100%	22.45	2.96	31.33
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	22	95.0%	100%	156.59	19.54	215.22
Turbidity	(NTU)	Operational	≤ 1	33	95.0%	93.94%	0.55	0.35	1.59
Turbidity	(NTU)	Aesthetic	≤ 5	33	95.0%	100%	0.55	0.35	1.59
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	33	95.0%	100%	8.01	0.10	8.30
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	67	95.0%	100%	0.10	0.00	0.11
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	14.60	2.88	23.24
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	33	97.0%	100%	1.22	0.52	2.80
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	0.08	0.48
Nitrate	(mg / L as N)	Acute health	≤ 11	68	99.0%	100%	0.55	0.13	0.94
Nitrite	(mg / L as N)	Acute health	≤ 0.9	67	99.0%	100%	0.15	0.23	0.85
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	66	99.0%	100%	0.22	0.26	0.99
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	33	95.0%	100%	1.22	0.52	2.80
Sodium	(mg / L as Na)	Aesthetic	≤ 200	9	95.0%	100%	11.43	6.44	30.76
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	16.20	1.64	21.13
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	16.20	1.64	21.13
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	9	95.0%	100%	0.02	0.01	0.04
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	9	95.0%	100%	57.11	32.83	155.59
Antimony	(µg / L as Sb)	Chronic health	≤ 20	2	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	2	97.0%	100%	1.25	0.64	3.16
Barium	(µg / L as Ba)	Chronic health	≤ 700	9	97.0%	100%	33.89	3.26	43.66
Boron	(µg / L as B)	Chronic health	≤ 2400	9	97.0%	100%	6.82	7.44	29.13
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	9	97.0%	100%	3.00	2.37	10.12
Copper	(µg / L as Cu)	Chronic health	≤ 2000	9	97.0%	100%	6.27	3.17	15.77
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	8	97.0%	100%	86.75	28.70	172.86
Iron	(µg / L as Fe)	Aesthetic	≤ 300	8	95.0%	100%	86.75	28.70	172.86
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	9	97.0%	100%	9.77	13.15	49.21
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	9	95.0%	100%	9.77	13.15	49.21
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	9	97.0%	100%	4.89	2.15	11.33
Selenium	(µg / L as Se)	Chronic health	≤ 40	2	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	2	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	2	97.0%	100%	2.50	0.00	2.50
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	2	97.0%	100%	32.00	1.41	36.24
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%	14.00	0.00	14.00
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	2	97.0%	100%	0.38	0.01	0.40
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	no data	no data	no data
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	9	not applicable	100%	19.78	8.61	45.62
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	8	not applicable	100%	78.88	38.12	193.24
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	9	not applicable	100%	7.36	3.31	17.29
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	9	not applicable	100%	3.13	0.71	5.28
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	16	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	16	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%	98.88%

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****