



RAND WATER
Barrage Water Quality Report
1 Month

22 September 2020 to 22 October 2020

Date generated: 11 November 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	35	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	35	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	35	95.0%	100%	19	81.47	264
<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	12	95.0%	100%	6.33	1.30	10.24
Conductivity	(mS / m)	Aesthetic	≤ 170	35	95.0%	100%	40.57	25.20	116.18
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	26	95.0%	100%	297.12	153.29	756.99
Turbidity	(NTU)	Operational	≤ 1	35	95.0%	100%	0.42	0.13	0.81
Turbidity	(NTU)	Aesthetic	≤ 5	35	95.0%	100%	0.42	0.13	0.81
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	35	95.0%	100%	7.99	0.21	8.61
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	70	95.0%	70.00%	0.97	1.22	4.63
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	43.30	20.36	104.37
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	35	97.0%	100%	0.89	0.46	2.26
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%	0.65	0.22	1.32
Nitrate	(mg / L as N)	Acute health	≤ 11	71	99.0%	100%	1.54	1.20	5.15
Nitrite	(mg / L as N)	Acute health	≤ 0.9	72	99.0%	100%	0.06	0.09	0.34
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	72	99.0%	100%	0.21	0.18	0.74
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	35	95.0%	94.29%	0.89	0.46	2.26
Sodium	(mg / L as Na)	Aesthetic	≤ 200	12	95.0%	100%	39.08	26.27	117.90
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	95.60	46.25	234.36
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	95.60	46.25	234.36
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	12	95.0%	100%	0.51	0.51	2.04
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	12	95.0%	100%	50.00	0.00	50.00
Antimony	(µg / L as Sb)	Chronic health	≤ 20	4	97.0%	100%	0.80	0.02	0.85
Arsenic	(µg / L as As)	Chronic health	≤ 10	4	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	12	97.0%	100%	38.67	5.91	56.41
Boron	(µg / L as B)	Chronic health	≤ 2400	12	97.0%	100%	31.23	27.54	113.84
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	4	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	12	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	12	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	6	99.0%	100%	6.48	1.16	9.97
Iron	(µg / L as Fe)	Chronic health	≤ 2000	12	97.0%	100%	47.92	24.92	122.67
Iron	(µg / L as Fe)	Aesthetic	≤ 300	12	95.0%	100%	47.92	24.92	122.67
Lead	(µg / L as Pb)	Chronic health	≤ 10	4	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	12	97.0%	100%	42.02	43.35	172.08
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	12	95.0%	91.67%	42.02	43.35	172.08
Mercury	(µg / L as Hg)	Chronic health	≤ 6	4	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	12	97.0%	100%	5.93	0.98	8.88
Selenium	(µg / L as Se)	Chronic health	≤ 40	4	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	4	97.0%	100%	3.30	0.08	3.54
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	4	97.0%	100%	5.48	0.10	5.76
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	4	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	4	97.0%	100%	10.00	0.00	10.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	4	97.0%	100%	10.00	0.00	10.00
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.04	0.00	0.04
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	1	97.0%	100%	0.31	n/a	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	12	not applicable	100%	36.25	18.50	91.76
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	12	not applicable	66.67%	138.00	71.15	351.45
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	12	not applicable	100%	13.65	7.21	35.27
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	12	not applicable	100%	6.68	3.58	17.44
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	14	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	14	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%	90.83%
Operational	95.0%	98.95%

- 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****