



RAND WATER
Ekurhuleni Water Quality Report
1 Month

22 September 2020 to 22 October 2020

Date generated: 06 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	346	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	346	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	346	95.0%	100%	3	16.66	53
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	80	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	28	95.0%	100%	6.89	1.59	11.68
Conductivity	(mS / m)	Aesthetic	≤ 170	220	95.0%	100%	20.94	2.50	28.44
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	37	95.0%	100%	148.38	16.54	198.01
Turbidity	(NTU)	Operational	≤ 1	238	95.0%	99.16%	0.27	0.11	0.59
Turbidity	(NTU)	Aesthetic	≤ 5	238	95.0%	100%	0.27	0.11	0.59
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	220	95.0%	100%	8.05	0.19	8.62
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	215	95.0%	100%	0.34	0.18	0.88
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	28	95.0%	100%	10.69	1.28	14.53
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	346	97.0%	100%	0.20	0.32	1.15
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	300	97.0%	100%	1.66	0.50	3.15
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	28	97.0%	100%	0.28	0.03	0.37
Nitrate	(mg / L as N)	Acute health	≤ 11	215	99.0%	100%	0.64	0.14	1.05
Nitrite	(mg / L as N)	Acute health	≤ 0.9	215	99.0%	100%	0.03	0.01	0.07
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	201	99.0%	100%	0.09	0.02	0.16
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	346	95.0%	96.24%	1.61	0.54	3.22
Sodium	(mg / L as Na)	Aesthetic	≤ 200	28	95.0%	100%	9.24	0.31	10.16
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	28	95.0%	100%	14.43	0.88	17.07
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	28	99.0%	100%	14.43	0.88	17.07
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	28	95.0%	100%	0.23	0.41	1.46
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	28	95.0%	100%	56.82	19.81	116.26
Antimony	(µg / L as Sb)	Chronic health	≤ 20	28	97.0%	100%	0.61	0.05	0.75
Arsenic	(µg / L as As)	Chronic health	≤ 10	28	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	28	97.0%	100%	37.32	2.14	43.75
Boron	(µg / L as B)	Chronic health	≤ 2400	28	97.0%	100%	3.84	2.19	10.41
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	28	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	28	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	28	97.0%	100%	8.69	2.50	16.19
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	28	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	28	97.0%	100%	30.03	34.57	133.73
Iron	(µg / L as Fe)	Aesthetic	≤ 300	28	95.0%	100%	30.03	34.57	133.73
Lead	(µg / L as Pb)	Chronic health	≤ 10	28	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	28	97.0%	100%	3.26	0.95	6.10
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	28	95.0%	100%	3.26	0.95	6.10
Mercury	(µg / L as Hg)	Chronic health	≤ 6	28	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	28	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	28	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	28	97.0%	100%	1.03	1.94	6.84
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	28	97.0%	100%	3.81	0.63	5.71
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	27	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	28	97.0%	100%	30.79	5.16	46.26
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	28	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	28	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	28	97.0%	100%	14.21	1.73	19.40
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	28	97.0%	100%	0.36	0.05	0.51
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	16	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	28	not applicable	100%	19.36	1.06	22.54
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	28	not applicable	100%	70.07	3.76	81.35
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	28	not applicable	100%	6.26	0.32	7.22
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	28	not applicable	100%	2.93	0.11	3.25
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	55	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	55	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%	99.06%

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 chloraminated system = Sum of Free and Monochloramine
(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****