



RAND WATER
Ekurhuleni Water Quality Report
1 Month

21 November 2020 to 22 December 2020

Date generated: 08 January 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	228	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	228	95.0%	100%	0	0.21	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	320	95.0%	100%	4	19.51	63
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	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	18	95.0%	100%	7.28	2.14	13.69
Conductivity	(mS / m)	Aesthetic	≤ 170	197	95.0%	100%	21.72	2.75	29.97
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	27	95.0%	100%	145.93	17.49	198.39
Turbidity	(NTU)	Operational	≤ 1	215	95.0%	99.53%	0.28	0.11	0.61
Turbidity	(NTU)	Aesthetic	≤ 5	215	95.0%	100%	0.28	0.11	0.61
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	197	95.0%	100%	8.02	0.17	8.52
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	193	95.0%	100%	0.30	0.20	0.90
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	22	95.0%	100%	11.08	1.04	14.19
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	320	97.0%	100%	0.20	0.30	1.10
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	276	97.0%	100%	1.56	0.56	3.23
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	22	97.0%	100%	0.25	0.05	0.40
Nitrate	(mg / L as N)	Acute health	≤ 11	191	99.0%	100%	0.52	0.05	0.68
Nitrite	(mg / L as N)	Acute health	≤ 0.9	197	99.0%	100%	0.11	0.19	0.68
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	180	99.0%	100%	0.25	0.27	1.05
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ (0.1 and 0.2)	320	95.0%	93.75%	1.53	0.59	3.29
Sodium	(mg / L as Na)	Aesthetic	≤ 200	19	95.0%	100%	6.30	1.74	11.52
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	22	95.0%	100%	15.36	0.58	17.11
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	22	99.0%	100%	15.36	0.58	17.11
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	15	95.0%	100%	0.00	0.00	0.01
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	19	95.0%	100%	24.47	11.48	58.90
Antimony	(µg / L as Sb)	Chronic health	≤ 20	18	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	18	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	19	97.0%	100%	35.58	2.97	44.48
Boron	(µg / L as B)	Chronic health	≤ 2400	19	97.0%	100%	2.94	1.06	6.11
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	18	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	19	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	19	97.0%	100%	3.33	1.72	8.50
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	18	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	19	97.0%	100%	102.11	9.18	129.64
Iron	(µg / L as Fe)	Aesthetic	≤ 300	19	95.0%	100%	102.11	9.18	129.64
Lead	(µg / L as Pb)	Chronic health	≤ 10	18	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	19	97.0%	100%	3.21	2.93	12.01
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	19	95.0%	100%	3.21	2.93	12.01
Mercury	(µg / L as Hg)	Chronic health	≤ 6	18	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	19	97.0%	100%	3.07	0.32	4.04
Selenium	(µg / L as Se)	Chronic health	≤ 40	18	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	18	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	18	97.0%	100%	2.72	0.21	3.36
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	21	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	18	97.0%	100%	43.06	6.16	61.53
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	18	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	18	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	18	97.0%	100%	15.44	1.29	19.33
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	18	97.0%	100%	0.44	0.04	0.55
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	19	not applicable	100%	14.47	1.07	17.69
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	19	not applicable	100%	57.89	3.46	68.28
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	19	not applicable	100%	5.24	0.51	6.77
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	19	not applicable	100%	2.45	0.15	2.90
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	61	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	61	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%	98.48%

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****