



							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	29	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	29	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	29	95.0%	100%	2	4.90	17
<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	4	95.0%	100%	6.25	1.89	11.93
Conductivity	(mS / m)	Aesthetic	≤ 170	29	95.0%	100%	20.69	1.11	24.01
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	4	95.0%	100%	141.25	4.79	155.61
Turbidity	(NTU)	Operational	≤ 1	29	95.0%	100%	0.27	0.05	0.41
Turbidity	(NTU)	Aesthetic	≤ 5	29	95.0%	100%	0.27	0.05	0.41
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	29	95.0%	100%	8.17	0.18	8.71
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	29	95.0%	100%	0.40	0.15	0.86
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	4	95.0%	100%	10.23	0.52	11.78
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	29	97.0%	100%	0.07	0.01	0.11
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	29	97.0%	100%	1.66	0.26	2.44
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	4	97.0%	100%	0.28	0.02	0.33
Nitrate	(mg / L as N)	Acute health	≤ 11	29	99.0%	100%	0.59	0.09	0.84
Nitrite	(mg / L as N)	Acute health	≤ 0.9	29	99.0%	100%	0.03	0.01	0.05
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	24	99.0%	100%	0.08	0.01	0.11
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	29	95.0%	100%	1.72	0.26	2.51
Sodium	(mg / L as Na)	Aesthetic	≤ 200	4	95.0%	100%	8.80	0.08	9.04
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	4	95.0%	100%	14.00	0.00	14.00
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	4	99.0%	100%	14.00	0.00	14.00
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	4	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	4	95.0%	100%	66.25	32.50	163.75
Antimony	(µg / L as Sb)	Chronic health	≤ 20	4	97.0%	100%	0.60	0.00	0.60
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	4	97.0%	100%	36.75	1.26	40.52
Boron	(µg / L as B)	Chronic health	≤ 2400	4	97.0%	100%	3.00	0.00	3.00
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	4	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	4	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	4	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	4	97.0%	100%	39.83	29.39	128.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	4	95.0%	100%	39.83	29.39	128.00
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	4	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	4	95.0%	100%	3.00	0.00	3.00
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	4	97.0%	100%	5.00	0.00	5.00
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%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	4	97.0%	100%	3.65	0.06	3.82
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%	30.50	2.89	39.16
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%	14.00	0.82	16.45
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.37	0.02	0.44
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	4	not applicable	100%	19.75	0.50	21.25
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	4	not applicable	100%	70.00	1.41	74.24
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	4	not applicable	100%	6.00	0.08	6.24
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	4	not applicable	100%	2.80	0.00	2.80
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	8	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	8	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%	100%

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****