

Victor Khanye Municipality (Delmas System) Water Quality Report - 12 Month

23 January 2017 to 22 January 2018

Date generated: 01 February 2018

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	252	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	252	100.0%	0	0.26	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	252	100.0%	3	22.14	65
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	179	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	179	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	775	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	28	100.0%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	252	100.0%	19.05	2.08	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	28	100.0%	139.64	25.49	233.95
Turbidity	(NTU)	Operational	95.0%	≤1	252	100.0%	0.29	0.10	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	252	100.0%	0.29	0.10	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	252	100.0%	7.88	0.15	8.21
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	252	100.0%	0.28	0.14	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	26	100.0%	10.21	0.92	11.75
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	252	100.0%	0.12	0.22	1.32
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	252	100.0%	1.13	0.48	1.85
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	26	100.0%	0.18	0.02	0.21
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	252	100.0%	0.53	0.12	0.84
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	252	100.0%	0.09	0.09	0.41
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	252	100.0%	0.14	0.10	0.50
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	252	100.0%	1.25	0.47	1.97
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	28	100.0%	8.09	0.85	10.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	26	100.0%	12.85	0.78	14.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	26	100.0%	12.85	0.78	14.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	28	100.0%	0.02	0.00	0.02
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	28	100.0%	41.25	11.61	65.38
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	25	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	28	100.0%	0.93	0.61	2.31
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	27	100.0%	33.96	7.48	57.02
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	28	100.0%	29.64	24.57	119.90
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	28	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	28	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	28	100.0%	10.04	0.19	10.73
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	25	100.0%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	28	100.0%	18.78	7.50	31.00
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	28	100.0%	18.78	7.50	31.00
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	28	100.0%	0.38	0.45	1.90
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	28	100.0%	10.75	3.97	25.33
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	28	100.0%	10.75	3.97	25.33
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	25	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	28	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	28	100.0%	0.83	1.20	5.40
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	25	100.0%	0.20	0.00	0.22
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	28	100.0%	3.75	0.57	5.25
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	35	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	28	100.0%	47.82	6.65	60.73
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	28	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	28	100.0%	1.21	0.78	2.90
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	28	100.0%	13.54	1.37	15.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	28	100.0%	0.40	0.04	0.47
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	179	100.0%	0.33	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	28	100.0%	17.89	3.86	28.57
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	28	100.0%	65.32	13.29	108.66
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	28	100.0%	5.98	1.30	10.60
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	28	100.0%	3.58	0.50	4.47
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	95	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	95	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	100.00%

Notes:

- Specification date of effect : 1 July 2016
- Free chlorine : Results from chloraminated system
- Monochloramine : Results are from the chloraminated systems
- Residual disinfectant : Results from chloraminated system
- Measured at water treatment works exit points
- Customer request: Results not included in the risk indices compliance calculations
- (NO₂/0.9 + NO₃/11)
- (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)