

Lesedi Municipality Water Quality Report - 12 Month

21 July 2017 to 20 July 2018 Date generated: 03 August 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	364	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	364	100.0%	0	0.09	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	364	100.0%	1	3.68	7
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	800	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	12	100.0%	5.25	0.62	6.89
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	364	100.0%	19.78	1.88	24.37
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	12	100.0%	142.08	10.33	163.35
Turbidity	(NTU)	Operational	95.0%	≤1	364	100.0%	0.32	0.08	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	364	100.0%	0.32	0.08	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	360	100.0%	7.83	0.18	8.33
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	358	100.0%	0.26	0.14	0.46
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	12	100.0%	10.73	1.14	12.89
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	364	100.0%	0.11	0.18	1.05
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	362	100.0%	1.13	0.42	1.85
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	12	100.0%	0.19	0.01	0.23
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	364	100.0%	0.44	0.02	0.54
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	364	99.7%	0.11	0.15	0.60
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	363	99.7%	0.16	0.17	0.71
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	364	100.0%	1.23	0.41	1.93
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	21	100.0%	9.16	1.58	12.80
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	12	100.0%	14.17	1.80	17.89
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	12	100.0%	14.17	1.80	17.89
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	21	100.0%	0.02	0.01	0.04
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	21	100.0%	40.71	11.90	61.00
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	12	100.0%	0.51	0.04	0.62
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	11	100.0%	0.99	1.06	3.23
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	21	100.0%	39.14	9.84	58.20
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	21	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	12	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	21	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	21	100.0%	10.52	2.18	18.20
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	12	100.0%	7.73	5.79	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	21	100.0%	11.33	7.84	31.60
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	21	100.0%	11.33	7.84	31.60
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	12	100.0%	0.31	0.27	1.04
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	21	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	21	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	12	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	21	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	11	100.0%	0.69	0.29	1.28
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	12	100.0%	0.24	0.10	0.51
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	12	100.0%	4.14	0.59	5.27
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	12	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	12	100.0%	45.33	8.69	61.12
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	12	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	12	100.0%	1.69	0.98	2.89
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	12	100.0%	15.07	2.35	18.78
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	12	100.0%	0.42	0.06	0.55
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	189	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	21	100.0%	17.62	3.23	24.6
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	21	100.0%	66.90	12.43	91.80
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	21	100.0%	6.61	1.31	9.02
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	21	100.0%	3.66	0.27	4.10
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	194	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	194	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%	99.82%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	100.00%

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