

Lesedi Municipality Water Quality Report - 12 Month

23 October 2017 to 22 October 2018

Date generated: 05 November 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	357	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	357	100.0%	0	0.07	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	357	100.0%	1	1.71	6
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	817	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	10	100.0%	5.30	0.67	7.32
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	357	100.0%	20.21	1.52	24.79
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	10	100.0%	144.50	10.12	174.87
Turbidity	(NTU)	Operational	95.0%	≤1	357	100.0%	0.30	0.08	0.55
Turbidity	(NTU)	Aesthetic	95.0%	≤5	357	100.0%	0.30	0.08	0.55
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	353	100.0%	7.88	0.19	8.45
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	351	100.0%	0.26	0.14	0.70
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	9	100.0%	11.22	0.97	14.14
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	357	100.0%	0.09	0.08	0.34
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	357	100.0%	1.14	0.42	2.41
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	9	100.0%	0.20	0.01	0.24
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	351	100.0%	0.45	0.03	0.53
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	357	99.7%	0.11	0.15	0.57
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	350	99.7%	0.16	0.17	0.68
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	357	100.0%	1.23	0.42	2.50
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	22	100.0%	9.59	1.37	13.69
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	9	100.0%	14.67	1.94	20.48
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	9	100.0%	14.67	1.94	20.48
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	22	100.0%	0.11	0.29	0.97
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	22	100.0%	41.05	11.20	74.65
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	9	100.0%	0.53	0.05	0.69
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	10	100.0%	1.86	2.39	9.03
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	22	100.0%	42.36	7.89	66.03
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	22	100.0%	22.12	6.38	41.26
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	10	100.0%	2.25	0.54	3.87
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	22	100.0%	13.18	3.95	25.02
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	22	100.0%	10.14	2.36	17.21
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	10	100.0%	11.28	7.55	33.94
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	22	100.0%	9.70	4.82	24.15
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	22	100.0%	9.70	4.82	24.15
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	10	100.0%	1.28	2.43	8.58
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	22	100.0%	8.73	2.76	17.02
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	22	100.0%	8.73	2.76	17.02
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	9	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	22	100.0%	9.09	1.97	15.01
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	10	100.0%	1.75	2.44	9.08
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	9	100.0%	0.29	0.13	0.69
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	10	100.0%	4.09	0.60	5.90
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	10	100.0%	4.60	0.84	7.13
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	10	100.0%	42.10	10.24	72.81
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	10	100.0%	2.40	4.01	14.42
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	10	100.0%	3.75	3.37	13.85
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	10	100.0%	14.98	2.54	22.60
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	10	100.0%	0.45	0.08	0.69
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	193	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	22	100.0%	18.18	2.97	27.09263169
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	22	100.0%	69.32	11.16	102.79
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	22	100.0%	6.90	1.10	10.20
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	22	100.0%	3.61	0.26	4.38
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	189	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	189	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%	99.81%
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)