

**Lesedi Municipality Water Quality Report - 12 Month**

23 March 2017 to 22 March 2018 Date generated: 03 April 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	453	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	453	100.0%	0	0.08	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	451	100.0%	4	38.76	71
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	786	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	52	100.0%	5.15	0.61	7.47
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	451	100.0%	18.99	1.67	22.50
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	56	100.0%	135.45	7.15	150.00
Turbidity	(NTU)	Operational	95.0%	≤1	449	100.0%	0.30	0.09	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	449	100.0%	0.30	0.09	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	447	100.0%	7.78	0.16	8.40
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	445	100.0%	0.22	0.14	0.46
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	52	100.0%	10.48	0.96	13.00
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	453	100.0%	0.10	0.18	1.01
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	453	100.0%	0.94	0.51	1.76
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	52	100.0%	0.18	0.02	0.24
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	451	100.0%	0.50	0.09	0.78
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	451	99.6%	0.13	0.16	0.61
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	450	99.6%	0.19	0.18	0.71
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	453	96.2%	1.05	0.51	1.86
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	57	100.0%	8.45	1.12	12.44
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	52	100.0%	13.29	0.87	15.49
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	52	100.0%	13.29	0.87	15.49
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	57	100.0%	0.02	0.01	0.04
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	57	100.0%	40.49	11.00	61.00
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	52	100.0%	0.55	0.33	1.72
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	52	100.0%	0.98	0.76	2.89
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	57	100.0%	35.39	7.91	58.44
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	57	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	52	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	57	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	57	100.0%	10.72	3.55	26.60
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	52	100.0%	5.03	0.25	5.88
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	57	100.0%	19.68	11.44	48.64
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	57	100.0%	19.68	11.44	48.64
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	52	100.0%	0.33	0.52	2.43
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	57	100.0%	10.12	0.54	12.44
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	57	100.0%	10.12	0.54	12.44
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	52	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	57	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	52	100.0%	0.97	1.01	5.23
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	52	100.0%	0.26	0.27	1.46
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	52	100.0%	3.94	0.84	6.30
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	31	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	52	100.0%	48.48	6.21	61.92
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	52	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	52	100.0%	1.28	0.60	2.60
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	52	100.0%	14.50	2.09	18.49
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	52	100.0%	0.42	0.05	0.53
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	184	100.0%	0.32	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	57	100.0%	17.30	2.75	23.44
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	57	100.0%	63.60	9.27	87.44
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	57	100.0%	5.88	0.93	8.88
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	57	100.0%	3.69	0.33	4.44
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	234	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	235	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%	99.73%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.45%

- 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) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)
  - (8) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)