

Barrage Consumer Supply Water Quality Report (SANS 241) - 12 Month

23 May 2017 to 22 May 2018

Date generated: 01 June 2018

| Determinand | Measurement units | Risk | Required compliance to SANS 0241 2015 standard (%) | SANS 0241:2015 standard limits (1) | No of results | Achieved Compliance to SANS0241: 2015 Spec(%) | Descriptive statistics | | |
|---|------------------------------|----------------|--|------------------------------------|----------------|---|------------------------|----------------|------------------------------|
| | | | | | | | Mean | Std Deviation | Mean + 3 standard deviations |
| Microbiological determinands | | | | | | | | | |
| <i>E. coli</i> | (mpn per 100 mL) | Acute health | 99.0% | 0 | 155 | 100.0% | 0 | 0.00 | 0 |
| Total Coliforms | (mpn per 100 mL) | Operational | 95.0% | 10 | 155 | 100.0% | 0 | 0.00 | 0 |
| Heterotrophic Plate Count | (cfu per 1 mL) | Operational | 95.0% | ≤1000 | 155 | 100.0% | 4 | 8.90 | 50 |
| <i>Cryptosporidium spp</i> | (org / 10 Litre) | Acute health | 99.0% | 0 | 24 | 100.0% | 0 | 0.00 | 0 |
| <i>Giardia spp</i> | (org / 10 Litre) | Acute health | 99.0% | 0 | 24 | 100.0% | 0 | 0.00 | 0 |
| Somatic Coliphages | (count per 10 mL) | Operational | 95.0% | 0 | 52 | 100.0% | 0 | 0.00 | 0 |
| Physical and Aesthetic determinands | | | | | | | | | |
| Colour | (mg / L as Pt-Co) | Aesthetic | 95.0% | ≤15 | 20 | 100.0% | 5.15 | 0.37 | 6.00 |
| Conductivity | (mS / m) | Aesthetic | 95.0% | ≤170 | 155 | 100.0% | 73.19 | 13.28 | 93.46 |
| Total Dissolved Solids | (mg / L) | Aesthetic | 95.0% | ≤1200 | 20 | 100.0% | 444.25 | 94.13 | 568.10 |
| Turbidity | (NTU) | Operational | 95.0% | ≤1 | 155 | 98.7% | 0.33 | 0.21 | 1.06 |
| Turbidity | (NTU) | Aesthetic | 95.0% | ≤5 | 155 | 100.0% | 0.33 | 0.21 | 1.06 |
| pH | (pH units) | Operational | 95.0% | ≥ 5 to ≤ 9.7 | 155 | 100.0% | 8.06 | 0.11 | 8.30 |
| Chemical Properties | | | | | | | | | |
| Macro determinands | | | | | | | | | |
| Ammonia | (mg / L as N) | Aesthetic | 95.0% | ≤1.5 | 155 | 100.0% | 0.05 | 0.00 | 0.05 |
| Chloride | (mg / L as Cl) | Aesthetic | 95.0% | ≤300 | 23 | 100.0% | 56.78 | 14.23 | 80.78 |
| Free chlorine | (mg / L as Cl ₂) | Chronic health | 97.0% | ≤5 | 155 | 100.0% | 1.70 | 0.39 | 2.20 |
| Monochloramine | (mg / L as Cl ₂) | Chronic health | 97.0% | ≤4.1 | not applicable | not applicable | not applicable | not applicable | not applicable |
| Fluoride | (mg / L as F) | Chronic health | 97.0% | ≤1.5 | 23 | 100.0% | 0.22 | 0.07 | 0.42 |
| Nitrate | (mg / L as N) | Acute health | 99.0% | ≤11 | 155 | 100.0% | 3.35 | 1.15 | 5.20 |
| Nitrite | (mg / L as N) | Acute health | 99.0% | ≤0.9 | 155 | 100.0% | 0.03 | 0.00 | 0.03 |
| Combined nitrate plus nitrite (2) | (mg / L as N) | Acute health | 99.0% | ≤1 | 155 | 100.0% | 0.34 | 0.10 | 0.51 |
| Residual disinfectant | (mg / L) | Operational | 95.0% | ≥0.2 Chlorinated system | 155 | 100.0% | 1.70 | 0.39 | 2.20 |
| Sodium | (mg / L as Na) | Aesthetic | 95.0% | ≤200 | 20 | 100.0% | 56.30 | 14.72 | 73.00 |
| Sulphate | (mg / L as SO ₄) | Aesthetic | 95.0% | ≤250 | 23 | 100.0% | 158.00 | 47.98 | 212.80 |
| Sulphate | (mg / L as SO ₄) | Acute health | 99.0% | ≤500 | 23 | 100.0% | 158.00 | 47.98 | 212.80 |
| Zinc | (mg / L as Zn) | Aesthetic | 95.0% | ≤5 | 20 | 100.0% | 0.04 | 0.02 | 0.07 |
| Micro determinands | | | | | | | | | |
| Aluminium | (µg / L as Al) | Operational | 95.0% | ≤300 | 20 | 100.0% | 31.95 | 8.79 | 48.81 |
| Antimony | (µg / L as Sb) | Chronic health | 97.0% | ≤20 | 20 | 100.0% | 0.86 | 1.40 | 5.67 |
| Arsenic | (µg / L as As) | Chronic health | 97.0% | ≤10 | 20 | 100.0% | 2.19 | 2.25 | 6.36 |
| Barium | (µg / L as Ba) | Chronic health | 97.0% | ≤700 | 20 | 100.0% | 36.25 | 11.34 | 58.62 |
| Boron | (µg / L as B) | Chronic health | 97.0% | ≤2400 | 20 | 100.0% | 74.90 | 24.00 | 109.05 |
| Cadmium | (µg / L as Cd) | Chronic health | 97.0% | ≤3 | 20 | 100.0% | 2.50 | 0.00 | 2.50 |
| Chromium (Total) | (µg / L as Cr) | Chronic health | 97.0% | ≤50 | 20 | 100.0% | 15.00 | 0.00 | 15.00 |
| Copper | (µg / L as Cu) | Chronic health | 97.0% | ≤2000 | 20 | 100.0% | 10.00 | 0.00 | 10.00 |
| Cyanide (Recoverable) | (µg / L as CN) | Acute health | 99.0% | ≤200 | 20 | 100.0% | 5.00 | 0.00 | 5.00 |
| Iron | (µg / L as Fe) | Chronic health | 97.0% | ≤2000 | 20 | 100.0% | 24.84 | 19.95 | 81.34 |
| Iron | (µg / L as Fe) | Aesthetic | 95.0% | ≤300 | 20 | 100.0% | 24.84 | 19.95 | 81.34 |
| Lead | (µg / L as Pb) | Chronic health | 97.0% | ≤10 | 20 | 100.0% | 0.69 | 1.46 | 5.59 |
| Manganese | (µg / L as Mn) | Chronic health | 97.0% | ≤400 | 20 | 100.0% | 10.70 | 2.27 | 18.48 |
| Manganese | (µg / L as Mn) | Aesthetic | 95.0% | ≤100 | 20 | 100.0% | 10.70 | 2.27 | 18.48 |
| Mercury | (µg / L as Hg) | Chronic health | 97.0% | ≤6 | 20 | 100.0% | 0.80 | 0.00 | 0.80 |
| Nickel | (µg / L as Ni) | Chronic health | 97.0% | ≤70 | 20 | 100.0% | 10.25 | 0.55 | 11.81 |
| Selenium | (µg / L as Se) | Chronic health | 97.0% | ≤40 | 20 | 100.0% | 1.73 | 1.46 | 4.92 |
| Uranium | (µg / L as U) | Chronic health | 97.0% | ≤30 | 20 | 100.0% | 1.77 | 1.15 | 3.48 |
| Organic determinands | | | | | | | | | |
| Total Organic Carbon | (mg / L) | Chronic health | 97.0% | ≤10 | 20 | 100.0% | 3.81 | 0.60 | 4.68 |
| Phenols as C ₆ H ₅ OH | (µg / L) | Aesthetic | 95.0% | ≤10 | 20 | 100.0% | 5.00 | 0.00 | 5.00 |
| Chloroform - CHCl ₃ | (µg / L) | Chronic health | 97.0% | ≤300 | 20 | 100.0% | 33.40 | 10.79 | 53.05 |
| Bromoform - CHBr ₃ | (µg / L) | Chronic health | 97.0% | ≤100 | 20 | 100.0% | 0.56 | 0.17 | 1.08 |
| Dibromochloromethane - CHBr ₂ Cl | (µg / L) | Chronic health | 97.0% | ≤100 | 20 | 100.0% | 9.92 | 1.25 | 12.00 |
| Bromodichloromethane - CHBrCl ₂ | (µg / L) | Chronic health | 97.0% | ≤60 | 20 | 100.0% | 19.75 | 3.42 | 26.43 |
| Combined trihalomethanes (3) | (µg / L) | Chronic health | 97.0% | ≤1 | 20 | 100.0% | 0.55 | 0.10 | 0.74 |
| Total Mycrocystin | (µg / L) | Chronic health | 97.0% | ≤0.7 | 12 | 100.0% | 0.31 | 0.01 | 0.35 |

| Water quality risk indices | | |
|------------------------------|--|-----------------------------|
| 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% | 99.76% |

Notes:
(1) Specification date of effect : 1 July 2016
(2) (NO₂/0.9 + NO₃/11)
(3) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)