# Air quality management

## ATTRIBUTES FOR AIR QUALITY MANAGEMENT

## PARAMETER

A parameter is contextually declared with the parameter attribute by its specification in a PROCEDURE or ENTRY statement. The parameter should be explicitly declared with appropriate attributes. The PARAMETER attribute can also be specified in the declaration

## UNITS

- Not vary with respect to place.
- Not vary with respect to time.
- Be of Convenient size.
- Easy to make a copy.
- Be properly defined.
- Reproduce easily.
- Be easy to measure things. etc.

## CATIONS

Characteristics of cations : (i) Cations are positively charged. (ii) Cations are formed when an atom loses electrons from its valence shell to attain octet. (iii) Cations are smaller in size than parent atom. (iv) The charge acquired by a cation is equal to the number of electrons lost by the valence shell

## SYMBOLS

A chemical symbol is a one- or two-letter designation of an element. Some examples of chemical symbols are O for oxygen, Zn for zinc, and Fe for iron. The first letter of a symbol is always capitalized. If the symbol contains two letters, the second letter is lower case.

| Parameter | Unit | N01 | N02 | N04 |
|---|---|---|---|---|
| COD | ppm | 18 | 21 | |
| hardness CaC03 | ppm | 397.5 | 353.5 | 3 |
| Si02 | ppm | 2.88 | 3.84 | 4 |
| Organic nitrogen | ppm | 3.27 | 0.54 | 1 |
| Total nitrogen | ppm | 4.96 | 1.17 | 1 |
| Fe | ppm | 0.062 | 0.017 | 0 |
| 804 | ppm | 248.2 | 176.2 | 1 |
| NH3 | ppm | 0.4 | 2.01 | 0 |
| Cl | ppm | 251 | 340.8 | 37 |
| Nitrate | ppm | 6 | 2.98 | 3 |
| Organic Phosphate | ppm | 0.031 | 0.021 | 0 |
| Total Phosphorus | ppm | 0.058 | 0.025 | 1 |
| TSS | ppm | 1426 | 88 | 2 |
| Turbidity | NTU | 18.52 | 43 | 45 |
| pH | ppm | 8.5 | 8.2 | 26 |
| EC | µS em | 1426 | 1620 | 1 |
| Temperature | OC | 14 | 13 | 11 |
| BOD5 | ppm | 3.2 | 3.5 | 08 |
| DO | ppm | 8 | 9.8 | 34 |
| Springs name | 7.3 | 1182 | 3200 | 3117 84 2.14 |
| tfaatook -2 | 7.4 | 1064 | 2900 | 2790 74 1.9 |
| laan-3 | 7.2 | 944 | 2561 | 2390 72 1.9 |
| Al- rohbaan -4 | 7.2 | 986 | 2390 | 2203 73 1.9 |
| Al-hiaiatheea -5 | 7.8 | 1001 | 2320 | 2237 54 1.4 |
| M-rehameah -6 | 7.6 | 1276 | 2690 | 2412 41 1.03 |
| Al-iseaah-7 | 7.6 | 1245 | 2864 | 2710 48 1.2 |
| Al-assaweed -8 | 7.4 | 1387 | 2813 | 2931 56 1.4 |
| Al-ruhhba -9 | 7.3 | 1681 | 2890 | 2701 44 1.1 |
| Rweez -10 | 7.4 | 1512 | 2864 | 2682 46 1.2 |
| Average | 7.4 | 1228 | 2759 | 2597 59 |

| | To convert ppm ‘as the ion’ to ppm ‘as CaC03’ mulit | | | |
|---|---|---|---|---|
| 0 | **Cations** | symbol | values | T |
| 16.5 | Aluminum | Al3* | 5.55 | pH |
| .13 | Ammonium | NH4* | 2.78 | EC |
| 1.26 | Barium | Ba2* | 0.73 | SS |
| .12 | Cadmium | Cd2* | 1.78 | MA l |
| .03 | Calcium | Ca2* | 2.5 | Cl |
| 12.8 | Chromium | Cr3* | 2.89 | NH3-N |
| .34 | Copper | Cu2* | 1.57 | N03-N |
| 7.01 | Ferric (Iron) | Fe3* | 2.69 | DO |
| .14 | Ferrous (Iron) | Fe2* | 1.79 | Pv |
| .14 | Hydrogen | H* | 50 | B0Ds |
| .67 | Lead | Pb2* | 0.48 | T |
| 66 | Magnesium | Mg2* | 4.1 | pH |
| 6 | Nickel | Ni2* | 3.16 | EC |
| 8.1 | Potassium | K* | 1.28 | SS |
| 730 | Silver | Ag* | 0.93 | MA l |
| 10 | Sodium | Na* | 2.18 | Cl |
| 4.4 | Zinc | Zn2* | 1.53 | NH3-N |
| 8.6 | Copper | Cu2* | 11.26 | N03-N |
| 457 19.8 | 173 14.2 | 188 9.4 | 952 26. | 660 13.7 |
| 348 15.1 | 91 7.4 | 276 13.8 | 868 24. | 548 11.4 |
| 382 16.6 | 76 6.3 | 252 12.6 | 588 16. | 560 11.7 |
| 203 8.8 | 57 4.7 | 301 15 | 462 13 | 785 16.3 |
| 278 12.1 | 46 3.8 | 326 16.3 | 462 13 | 830 17.3 |
| 263 11.4 | 196 16.2 | 188 9.4 | 380 10. | 1188 24.7 |
| 335 14.6 | 213 17.5 | 152 7.4 | 546 15. | 1226 25.5 |
| 266 | 251 20.6 | 143 7.1 | 714 20. | 970 20.2 |
| 271 11.9 | 342 28.2 | 112 5.6 | 350 | 1765 36.8 |
| 266 | 319 26.2 | 131 6.6 | 392 | 1539 32.1 |
| 307 | 176 | 207 | 571 | 1007 |

| | | | | | |
|---|---|---|---|---|---|
| -0.734 | 0.539 | -0.238 | 0.075 | 0.018 | 0.0 |
| -0.088 | 0.061 | -0.246 | 0.472 | 0.032 | -0. |
| -0.821 | 0.312 | -0.067 | 0.079 | -0.203 | -0. |
| 0.644 | 0.575 | -0.264 | -0.003 | 0.149 | 0.2 |
| -0.463 | -0.380 | 0.357 | 0.083 | 0.682 | 0.0 |
| -0.183 | 0.372 | 0.646 | -0.349 | -0.028 | 0.3 |
| 0.097 | 0.565 | 0.641 | -0.037 | 0.007 | -0. |
| 0.029 | -0.378 | -0.163 | -0.775 | -0.096 | 0.0 |
| 0.659 | -0.623 | 0.113 | 0.067 | -0.017 | -0. |
| 0.524 | 0.675 | 0.061 | -0.120 | 0.096 | -0. |
| 0.467 | -0.176 | 0.539 | 0.421 | -0.295 | 0.2 |
| -0.734 | 0.539 | -0.238 | 0.075 | 0.018 | 0.0 |
| -0.088 | 0.061 | -0.246 | 0.472 | 0.032 | -0. |
| -0.821 | 0.312 | -0.067 | 0.079 | -0.203 | -0. |
| 0.644 | 0.575 | -0.264 | -0.003 | 0.149 | 0.2 |
| -0.463 | -0.380 | 0.357 | 0.083 | 0.682 | 0.0 |
| -0.183 | 0.372 | 0.646 | -0.349 | -0.028 | 0.3 |
| 0.097 | 0.565 | 0.641 | -0.037 | 0.007 | -0. |
| 0.029 | -0.378 | -0.163 | -0.775 | -0.096 | 0.0 |
| 116 1.9 | 25 | 0.641 | -0.037 | 0.007 | -0. |
| 45 1.5 | 26 | -0.163 | -0.775 | -0.096 | 0.0 |
| 116 1.9 | 26 | 0.113 | 0.067 | -0.017 | -0. |
| 116 1.9 | 25.5 | 0.061 | -0.120 | 0.096 | -0. |
| 140 2.3 | 26 | 0.539 | 0.421 | -0.295 | 0.2 |
| 110 1.8 | 26.5 | -0.238 | 0.075 | 0.018 | 0.0 |
| 122 1.99 | 27 | -0.246 | 0.472 | 0.032 | -0. |
| 116 1.9 | 26 | -0.067 | 0.079 | -0.203 | -0. |
| 109 1.8 | 26 | -0.264 | -0.003 | 0.149 | 0.2 |
| 116 | 25.6 | 0.357 | 0.083 | 0.682 | 0.0 |
| 109 | 25 | 0.646 | -0.349 | -0.028 | 0.3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 84 | 0.182 | 0.023 | -0.037 | 0.170 | -0.191 | -0.238 | 0.075 | 0.018 |
| 041 | -0.035 | 0.113 | 0.006 | 0.013 | 0.038 | -0.246 | 0.472 | 0.032 |
| 028 | 0.206 | -0.160 | 0.304 | -0.065 | 0.103 | -0.067 | 0.079 | -0.203 |
| 51 | 0.066 | 0.110 | 0.052 | 0.158 | 0.162 | -0.264 | -0.003 | 0.149 |
| 85 | 0.179 | -0.025 | 0.016 | -0.015 | 0.026 | 0.357 | 0.083 | 0.682 |
| 23 | -0.274 | -0.029 | 0.124 | 0.032 | -0.032 | 0.646 | -0.349 | -0.028 |
| 450 | 0.095 | 0.213 | 0.032 | 0.035 | 0.015 | 0.641 | -0.037 | 0.007 |
| 26 | 0.307 | 0.114 | -0.015 | 0.003 | 0.014 | -0.163 | -0.775 | -0.096 |
| 161 | 0.023 | -0.174 | 0.220 | 0.208 | -0.048 | 0.113 | 0.067 | -0.017 |
| 091 | 0.131 | -0.349 | -0.184 | -0.030 | 0.009 | 0.061 | -0.120 | 0.096 |
| 98 | 0.316 | 0.041 | -0.060 | -0.041 | -0.026 | 0.539 | 0.421 | -0.295 |
| 84 | 0.182 | 0.023 | -0.037 | 0.170 | -0.191 | -0.238 | 0.075 | 0.018 |
| 041 | -0.035 | 0.113 | 0.006 | 0.013 | 0.038 | -0.246 | 0.472 | 0.032 |
| 028 | 0.206 | -0.160 | 0.304 | -0.065 | 0.103 | -0.067 | 0.079 | -0.203 |
| 51 | 0.066 | 0.110 | 0.052 | 0.158 | 0.162 | -0.264 | -0.003 | 0.149 |
| 85 | 0.179 | -0.025 | 0.016 | -0.015 | 0.026 | 0.357 | 0.083 | 0.682 |
| 23 | -0.274 | -0.029 | 0.124 | 0.032 | -0.032 | 0.646 | -0.349 | -0.028 |
| 450 | 0.095 | 0.213 | 0.032 | 0.035 | 0.015 | 0.641 | -0.037 | 0.007 |
| 26 | 0.307 | 0.114 | -0.015 | 0.003 | 0.014 | -0.163 | -0.775 | -0.096 |
| 450 | 0.095 | 0.213 | 0.032 | 0.035 | 0.015 | 0.641 | -0.037 | 0.007 |
| 26 | 0.307 | 0.114 | -0.015 | 0.003 | 0.014 | -0.163 | -0.775 | -0.096 |
| 161 | 0.023 | -0.174 | 0.220 | 0.208 | -0.048 | 0.113 | 0.067 | -0.017 |
| 091 | 0.131 | -0.349 | -0.184 | -0.030 | 0.009 | 0.061 | -0.120 | 0.096 |
| 98 | 0.316 | 0.041 | -0.060 | -0.041 | -0.026 | 0.539 | 0.421 | -0.295 |
| 84 | 0.182 | 0.023 | -0.037 | 0.170 | -0.191 | -0.238 | 0.075 | 0.018 |
| 041 | -0.035 | 0.113 | 0.006 | 0.013 | 0.038 | -0.246 | 0.472 | 0.032 |
| 028 | 0.206 | -0.160 | 0.304 | -0.065 | 0.103 | -0.067 | 0.079 | -0.203 |
| 51 | 0.066 | 0.110 | 0.052 | 0.158 | 0.162 | -0.264 | -0.003 | 0.149 |
| 85 | 0.179 | -0.025 | 0.016 | -0.015 | 0.026 | 0.357 | 0.083 | 0.682 |
| 23 | -0.274 | -0.029 | 0.124 | 0.032 | -0.032 | 0.646 | -0.349 | -0.028 |

| | |
|---|---|
| 0.084 | 7.28 |
| -0.041 | 5.55 |
| -0.028 | 2.78 |
| 0.251 | 0.73 |
| 0.085 | 1.78 |
| 0.323 | 2.5 |
| -0.450 | 2.89 |
| 0.026 | 1.57 |
| -0.161 | 2.69 |
| -0.091 | 1.79 |
| 0.298 | 50 |
| 0.084 | 0.48 |
| -0.041 | 4.1 |
| -0.028 | 3.16 |
| 0.251 | 1.28 |
| 0.085 | 0.93 |
| 0.323 | 2.18 |
| -0.450 | 1.53 |
| 0.026 | 11.26 |
| -0.450 | 952 26.9 |
| 0.026 | 868 24.5 |
| -0.161 | 588 16.5 |
| -0.091 | 462 13 |
| 0.298 | 462 13 |
| 0.084 | 380 10.7 |
| -0.041 | 546 15.4 |
| -0.028 | 714 20.1 |
| 0.251 | 350 |
| 0.085 | 392 |
| 0.323 | 571 |