

Concentration Limit Table

Penrith Wastewater Treatment Plant

EPL 1409

Updated 10-08-2023

Sydney Water's treatment plants operate under environmental protection licences issued by the NSW Environmental Protection Authority (EPA). For each monitoring/discharge point the concentration of a pollutant must not exceed the concentration limits specified for that pollutant in the table.

| pollutant | unit of measure | 3DGM limit | 50 percentile limit | 80 percentile limit | 90 percentile limit | average limit |
|---|----------------------|------------|---------------------|---------------------|---------------------|---------------|
| aluminium | µg/L | - | - | - | 270 | 200 |
| arsenic | µg/L | - | - | - | - | - |
| cadmium | µg/L | - | - | - | 0.2 | 0.2 |
| biochemical oxygen demand | mg/L | 30 | 10 | - | 15 | - |
| <i>Ceriodaphnia dubia</i> immobilisation (EC50) | % effluent by volume | - | 50 | - | - | - |
| chlorine (total residual) | mg/L | - | - | - | 0.1 | - |
| cobalt | µg/L | - | - | - | - | - |
| copper | µg/L | - | - | - | 9 | 8 |
| faecal coliforms | cfu/100ml | - | - | 200 | - | - |
| hydrogen sulphide (un-ionised) | µg/L | - | - | - | 60 | 30 |
| iron | µg/L | - | - | - | 350 | 330 |
| nickel | µg/L | - | - | - | - | - |
| nitrogen (ammonia) ¹ | mg/L | - | 1 | - | 5 | - |
| nitrogen (total) | mg/L | - | 10 | - | 15 | - |
| phosphorus (total) | mg/L | - | 0.2 | - | 0.4 | - |
| total suspended solids | mg/L | 10 | 5 | - | 10 | - |
| zinc | µg/L | - | - | - | 180 | 60 |

Licence limits for *Ceriodaphnia dubia* immobilisation (EC50) and sea urchin sperm fertilisation (EC50) are breached if the result is below the EPA specified limit value.

3 Day Geometric Mean (3DGM) is a way to average a set of values and is commonly used with water quality assessments which show a great deal of variability. 3DGM is calculated by multiplying the results of the analysis of three samples collected on three consecutive days and then taking the cubed root of that amount.

A licence condition with a 100 Percentile Limit means that 100% of samples (or all samples) taken must not exceed the limit for that pollutant. This can be extrapolated for other percentiles, for example an 80 Percentile Limit means that 80% of samples taken must not exceed the limit for that pollutant within the annual licence period.

¹As per Condition L3.9 of EPL 1409, revised concentration limits for Nitrogen (ammonia) are applicable from 10 May 2023 until 30 December 2024 whilst refurbishment works of the stage 7 Biological Nutrient Reactor at Penrith WRRF is undertaken.