Rainwater Ontology

This ontology aims to standardize water quality parameters, treatment processes, and the interactions between different water system components. It is often used to model and monitor water quality and treatment processes in environmental studies.

# Storage

## Storage tank: Containers where collected rainwater is stored.

### Overflow mechanism: Systems to handle excess water when storage tanks are full.

# Reuse

## Non-Potable

## irrigation

# Collection: Precipitation that falls from the atmosphere in the form of rain.

## Catchment Area: Surface area where rainwater is collected (e.g., rooftops, paved surfaces).

* 1. Collection: Structures to collect rain

## Rain Barrel

## Gutter

## Downspout

# Treatment

## Sedimentation: A process where larger particles settle at the bottom of a tank.

### Sedimentation tank

## Disinfection System: Methods like UV light or chlorination used to treat rainwater for potable uses.

## Filtration System: Devices or processes used to remove particulates from collected rainwater.

# Monitoring

## Water Quality Sensor: Devices used to measure pH, turbidity, contaminants, etc.

|  |  |
| --- | --- |
| **Measurement** | **Method** |
| Salinity | Conductivity |
| Temperature | Thermometer (electronic) |
| Transparency | Secchi depth, PAR sensor |
| Dissolved oxygen | Winkler titration, electrochemical and optical sensors |
| Ammonium | Photometric or ion-selective electrodes |
| Nitrate and nitrite | Photometrically (ion-selective electrode or ion chromatography) |
| Total nitrogen | Peroxidsulfate digestion or Kjeldahl method |
| Phosphate | Photometrically |
| Total phosphorus | Boiling with potassium peroxidsulphate at low pH |
| Dissolved silica | Photometrically |
| Total organic carbon | TOC analyzer |
| Particulate organic carbon | TOC analyzer on a filtered sample |

## Sampling: Collecting water samples to assess quality

# Distribution

## Distribution Pipe: Networks that transport treated or untreated rainwater to various points of use.

## Pump System: Devices that facilitate the movement of rainwater from storage tanks to where it’s needed.

## Control Valve: Devices that regulate flow in the distribution network.