**What is AWT?**
Advanced Wastewater Treatment (AWT) refers to **processes that go beyond conventional secondary treatment to further purify wastewater, typically removing pollutants like nutrients (nitrogen and phosphorus) and suspended solids to a higher degree than standard methods**. This leads to a higher quality effluent that can be safely discharged or even reused for various purposes. [[1](https://www.etch2o.com/what-does-advanced-wastewater-treatment-involve/#:~:text=Advanced%20wastewater%20treatment%20is%20a%20process%20used,standards%20for%20safe%20release%20into%20the%20environment.), [2](https://www.aiche.org/ifs/resources/glossary/isws-water-glossary/advanced-wastewater-treatment-awt), [3](https://fashion.sustainability-directory.com/term/advanced-wastewater-treatment/)]

**Here's a more detailed explanation:**

* **Purpose:** AWT aims to reduce the level of impurities in wastewater beyond what is achievable with basic biological or secondary treatment. This often involves removing nutrients (phosphorus and nitrogen) and a high percentage of suspended solids. [[1](https://www.etch2o.com/what-does-advanced-wastewater-treatment-involve/#:~:text=Advanced%20wastewater%20treatment%20is%20a%20process%20used,standards%20for%20safe%20release%20into%20the%20environment.), [2](https://www.aiche.org/ifs/resources/glossary/isws-water-glossary/advanced-wastewater-treatment-awt)]
* **Technologies:** AWT utilizes a range of technologies including:
	+ **Advanced biological treatment:** Enhanced versions of biological processes like membrane bioreactors (MBRs) and moving bed bioreactors (MBBRs). [[4](https://pollution.sustainability-directory.com/term/advanced-wastewater-treatment/)]
	+ **Physicochemical processes:** Processes like deep-bed filtration, floating media filtration, membrane filtration, ozone treatment, ultraviolet (UV) disinfection, and advanced oxidation processes (AOPs). [[5](https://www.wwdmag.com/what-is-articles/article/10939699/what-is-advanced-wastewater-treatment)]
* **Benefits:**
	+ **Improved water quality:** AWT results in cleaner, safer water for discharge or reuse. [[6](https://www.wwdmag.com/wastewater-treatment/article/55269144/a-closer-look-at-advanced-wastewater-filter-technologies)]
	+ **Nutrient removal:** AWT effectively removes nitrogen and phosphorus, which can cause pollution in receiving waters. [[5](https://www.wwdmag.com/what-is-articles/article/10939699/what-is-advanced-wastewater-treatment)]
	+ **Resource recovery:** AWT can enable the reuse of treated wastewater for irrigation, industrial cooling, and even potable water supplies. [[3](https://fashion.sustainability-directory.com/term/advanced-wastewater-treatment/)]
	+ **Environmental protection:** By reducing pollution and enabling water reuse, AWT helps protect the environment and conserve water resources. [[3](https://fashion.sustainability-directory.com/term/advanced-wastewater-treatment/), [6](https://www.wwdmag.com/wastewater-treatment/article/55269144/a-closer-look-at-advanced-wastewater-filter-technologies)]
* **Examples:**
	+ **Scottsdale Water Campus:** The City of Scottsdale's Advanced Water Treatment Facility (AWT) is an example of a sophisticated facility using AWT to produce high-quality recycled water. [[7](https://www.scottsdaleaz.gov/water/water-supply-recycling/advanced-water-purification#:~:text=The%20Scottsdale%20Water%20Campus%20is%20home%20to,standard%20that%20exceeds%20that%20of%20bottled%20water.)]
	+ **Tampa's AWT system:** The City of Tampa's AWT plant uses a multi-step process including dissolved air reactors, denitrification, and chlorine disinfection. [[8](https://blogs.ifas.ufl.edu/sarasotaco/2020/07/30/advanced-wastewater-treatment-awt/)]

[1] [https://www.etch2o.com/what-does-advanced-wastewater-treatment-involve/](https://www.etch2o.com/what-does-advanced-wastewater-treatment-involve/#:~:text=Advanced%20wastewater%20treatment%20is%20a%20process%20used,standards%20for%20safe%20release%20into%20the%20environment.)

[2] <https://www.aiche.org/ifs/resources/glossary/isws-water-glossary/advanced-wastewater-treatment-awt>

[3] <https://fashion.sustainability-directory.com/term/advanced-wastewater-treatment/>

[4] <https://pollution.sustainability-directory.com/term/advanced-wastewater-treatment/>

[5] <https://www.wwdmag.com/what-is-articles/article/10939699/what-is-advanced-wastewater-treatment>

[6] <https://www.wwdmag.com/wastewater-treatment/article/55269144/a-closer-look-at-advanced-wastewater-filter-technologies>

[7] [https://www.scottsdaleaz.gov/water/water-supply-recycling/advanced-water-purification](https://www.scottsdaleaz.gov/water/water-supply-recycling/advanced-water-purification#:~:text=The%20Scottsdale%20Water%20Campus%20is%20home%20to,standard%20that%20exceeds%20that%20of%20bottled%20water.)

[8] <https://blogs.ifas.ufl.edu/sarasotaco/2020/07/30/advanced-wastewater-treatment-awt/>