



Water Reuse Case Study

Background

A corporate initiative was introduced to reduce water consumption by 10% within the company nationally. This was to help meet the long-term goal of 25% reduction in process & wastewater consumption. The local facility met with Environmental Water, Ltd. to brainstorm cost effective methods to reduce water.

Water is a natural resource, which in areas of the country have become more scarce, often driving up higher prices to meet infrastructure needs. Many facilities are looking into more advanced ways of reduction of water, carbon emissions and electricity to meet the needs of the future.

Approach

Environmental Water first mapped the water supply to understand where and why the water was used. Supply of water was consumed in multiple processes such as steam boilers, softeners, reverse osmosis, cooling systems, and multiple production lines. Furthermore, the installation of new water meters were used to determine the actual water usage to complete the mapping process.

Water samples were collected and lab analysis was conducted on each to detail the parameters of each system to meet their specified quality.

Based on all our information, it was found that reusing the waste discharge from a reverse osmosis system which fed the boilers. The discharge would be processed through another reverse osmosis system. The permeate or product water would be used for additional cooling tower make-up.



Benefits

The final outcome of this approach was on target and met & exceeded the minimal need of the facility. The water reuse directly saved the 10% of water by not discharging the waste down the drain and reusing it as make-up to the cooling tower. The other advantages are below:

- Reduced blowdown of cooling tower, which resulted in further water savings
- Reduced chemical treatment of cooling tower. The cooling tower could operate at higher cycles of concentration and the new make-up water required less treatment due to its high purity
- Allowed for a back-up water reverse osmosis system for production needs if 1st RO was not operational
- Reduced chemical discharge to storm system, allowing easier compliance for permitting
- Installation of system did not require shutdown of production to complete
- Reduced potential for scaling and corrosion, which will extend equipment life



Assistance

For assistance with your water treatment program, contact us and we will develop a treatment program that is right for your facility.