Application Fact Sheet

Condensate Recovery and Polishing

Mobile Water Service

Ecolutia Services operates the world's newest and most efficient fleet of mobile water and wastewater treatment systems. Industrial and municipal customers trust our 24-hour, 365 days per year service for emergency, short-term or long-term use.

As your outsourced water treatment partner, we provide a rapid response service that ensures you benefit from the latest technologies and operating techniques. This critical service is available for worldwide deployment, incorporating customised solutions to match your requirements.

Typical On-site Challenges

- Failure of on-site condensate polishing plant
- New water extraction and discharge regulations
- Increased costs of water extraction and discharge
- Removal of additional contamination
- Desire to reduce costs and increase site efficiency
- Water recovery in drought conditions
- Recover residual heat energy for secondary use
- Use or sale of condensate for downstream process

Impact

Hot condensate is important for many manufacturing and production processes. Contamination or inefficient use can cause economic and physical difficulties at your facility.

Inadequately treated water used for steam generation increases the potential of damage to your boiler pipes, turbine blades and other components within the water loop. Careless maintenance can result in condensate loss and increase the need for make-up water. In many cases, condensate discharge is the only option as no alternative for recovery or polishing is in place.

Discharge of condensate can also cause ecological damage, such as raising the local fresh water temperature. This can lead to a shift in the natural balance and cause an enduring habitat change. Therefore, enforcement of new operating procedures and regulations require alternative solutions to simply discharging the condensate.

Service Solution

For closed looped systems, a temporary condensate polishing service is available to aid plant restarts after a maintenance shutdown.

In other cases, water reuse and utilisation of waste heat can help achieve increased efficiency of your facility. In many older facilities, condensate recovery was not a consideration

and retrofits can be costly to install. However, the availability of a temporary mobile water treatment service for condensate recovery offers benefits and a viable alternative.

The short-term solution available from Ecolutia Services is able to remove ionic and ferric contamination from the condensate. The Proteus Series condensate polisher systems are deployable globally at short-notice and the operating configuration is of separate cation and mixed-bed vessels. This configuration is highly efficient in removing any contamination and polishing the condensate to achieve the pure water quality you require.

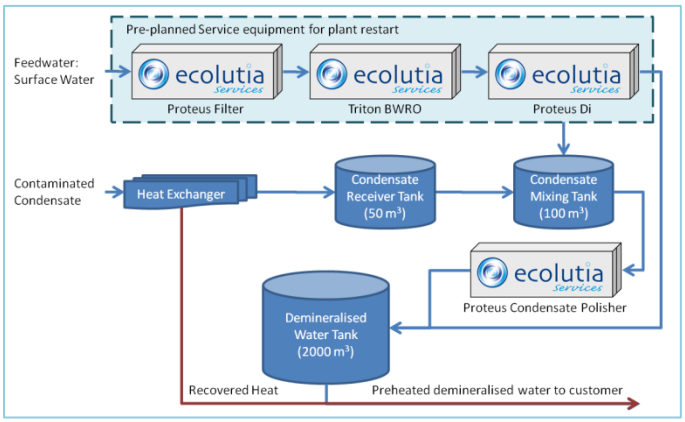
Example: Project A

Problem: A scheduled site outage at a power station results in contamination of the water loop during maintenance work. In order to prevent damage to the turbines and boilers, removal of the dissolved iron is imperative before the power station can restart.

Generation commitments mean the power station must restart on the scheduled date. However, the refurbishment to the on-site condensate polishing plant is a number of weeks behind schedule. A temporary solution is required to cover the period while the permanent condensate polishing remains unavailable.

Solution: A temporary service to provide supplemental water to help in the power station restart is already on site. The existing service is able to use the modular concept of the mobile fleet to allow swift installation of the Proteus Series condensate polisher into an overall solution. The condensate polisher is only used to treat the condensate and return into the water loop for reuse within the power station.

Benefit: The modular concept of the mobile water treatment fleet offers flexibility to integrate late changes to customer requirements. Integration is possible during the progression of the project and without disrupting the overall project objectives. Energy recovery devises and high recovery membranes significantly increase the energy and water efficiency of the project. The systems remain in place for a few weeks until the refurbishment is complete.



Typical Capacity of Systems*

Proteus Series Media Loadings:	
Softening	300 m^3/h (1320 GPM)
Filtration	150 m^3/h (660 GPM)
Demineralisation	300 m^3/h (1320 GPM)
Condensate Polishing	250 m^3/h (1100 GPM)
De-oxygenation	200 m^3/h (880 GPM)
Atlas Series Micro-filtration	150 m^3/h (660 GPM)
Triton Series Reverse Osmosis:	
Seawater RO	60 m^3/h (265 GPM)
Brackish Water RO	65 m^3/h (286 GPM)
Volturnus Series Electro-deionisation:	60 m^3/h (265 GPM)

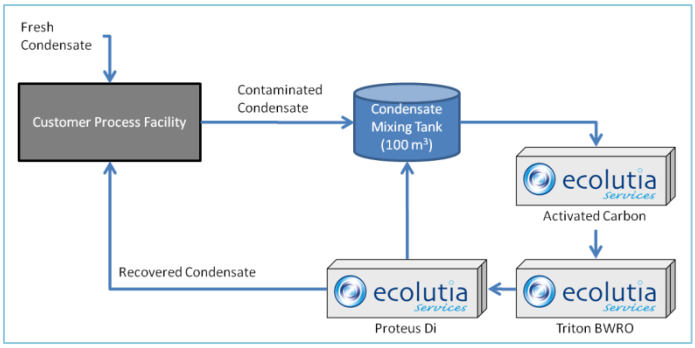
** Total product water flow is subject to feedwater quality*

Example: Project B

Problem: During an unusually dry season, a food processing plant faces restriction on fresh water access from its municipal source. A temporary solution is urgently required as a recently won international contract could lead to further business if the project delivery schedule is achieved.

Solution: Treatment and recovery of the currently discharged condensate is the most feasible solution. A temporary mobile water treatment service supplements the municipal supply, with recovered condensate, until the monsoon season arrives in a few months. High colloidal silica levels mean a Triton Series brackish water reverse osmosis system precedes the ion exchange loaded Proteus Series unit. This protects the ion exchange resin from damage and increases its treatment capacity. However to protect the reverse osmosis membranes a Proteus Series loaded with activated carbon pre-treats the Triton Series system.

Benefits: The production line operates unhindered during the high volume period. Less energy is required to heat the make-up water and discharge costs fall noticeably. With no civil works required, the equipment extracted from the site without delay or incident when the rainy season starts.



For a secure treated water supply contact Ecolutia Services