



SONECO® TRIAL **SCOTTISH WATER** **HORIZONS, BO'NESS**

Power & Water exhibited the effectiveness of our patented Soneco® system treating various water feeds at Bo'ness Wastewater Treatment works. Locating the Soneco® system at the Scottish Water Horizons Innovation Centre allowed us to demonstrate the process on a range of influents and optimise elements of our process.

WHAT IS SONECO?

Soneco® is an alternative to liquid chemicals, by electro-generating metal ions from sacrificial anodes. These metal ions join with hydroxide ions produced at the cathode to provide a metal hydroxide coagulant. In turn, precipitating soluble phosphorus to a solid that can be removed from the treatment stream. The Soneco® system includes ultrasound, which acts as a cleaning in place mechanism to prevent passivation which is usually an inherent obstacle with electrocoagulation.

BENEFITS OF SONECO

- Simple and easy transport of our sacrificial anodes to site reducing cost and carbon footprint.
- Generally less infrastructure changes required than for liquid chemical delivery.
- Fewer Health and safety issues such as those associated with transport, handling, storage, shower facilities.
- No pH reduction of treatment stream.
- Soneco® processes immediately once it is powered.
- The passive nature of anodes in Soneco® means there is no risk of deterioration if they're not used.

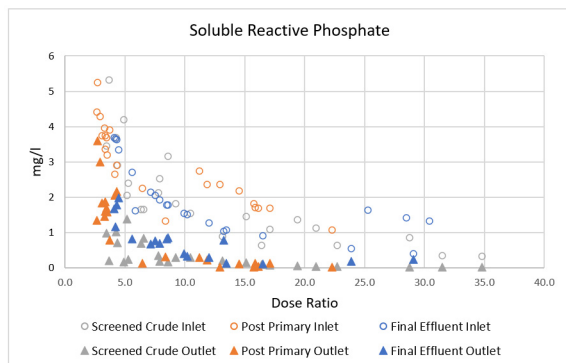


We were delighted to welcome Power & Water to our Bo'ness Development Centre, which hosted a trial of their Sono- Electrocoagulation system. It was great to see the innovation involved in this sustainable alternative to liquid chemical dosing to remove Phosphorus from wastewater. The team were a pleasure to work with and I look forward to seeing how things progress!

Scottish Water Horizons



OUR RESULTS

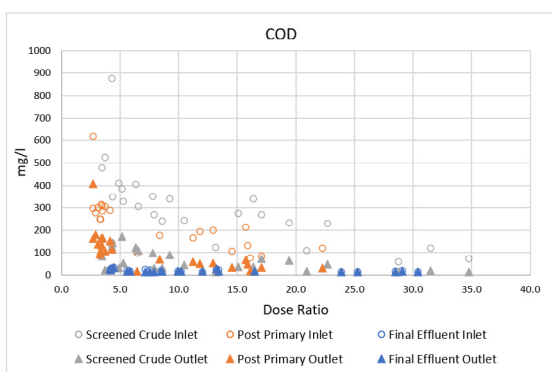
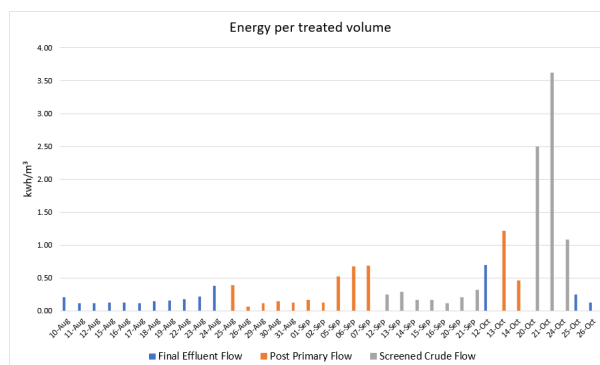


SRP

Controlling the dose ratio facilitates increase in the removal of both SRP and total phosphorus. The final effluent typically needed a slightly higher dose than the crude or primary settled streams. A dose ratio of between 6 and 8 resulted in all flows achieving an SRP below 1 mg/L. With only lamella settlement, achieving a total phosphorus below 1mg/L, with a dose of approximately 10 delivering target removal for all streams.

POWER

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COD

The results show that in addition to the phosphorus removal the process demonstrates good COD reduction. For crude sewage this is greater than would be anticipated by settlement alone.

pH

Soneco® has little or no affect on pH, whereas liquid chemicals would usually require a pH adjustment stage.

0.05 mg/l Achievement

Soneco was able to reach soluble reactive phosphate levels of 0.05 mg/L.

£65 Total Cost

12 weeks of operation cost £65 which was more positive than anticipated.

Phosphorous Removed to 0.2 mg/l

The effluent target of less than 2mg/L total phosphorus was readily achieved, and a much lower effluent concentration of 0.2mg/L total phosphorus was achieved.



**Visit our website
to find out more:**
powerandwater.com

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