

# Puresep chosen by Herefordshire Cider Company to provide end-to-end plant solution.



Herefordshire Cider Company have chosen Puresep as their key partner in providing an end to end plant solution, from

water make up and process filtration technology, through to mixing and blending facilities and finally for effluent treatment, Puresep designed a turnkey solution to facilitate the plants complete requirements, giving Herefordshire Cider a single source of supply.

Puresep are well known in the food and beverage industry with expert knowledge of filtration and water treatment solutions having already partnered with Heineken, Diageo, Britvic and Marston's. Following close consultation and evaluation of available technologies, the agreed plant solutions included ultra-filtration technology, Reverse Osmosis Plant, Deaeration Plant, PureChlor Chlorine Dioxide Plant and an effluent neutralisation system.

The Ultra filtration plant is used as a pre-treatment technology to remove colloids and suspended solids to prevent clogging of the reverse osmosis membranes. The PureFlow Reverse Osmosis membrane separation plant utilises high rejection,



semi permeable polyamide membranes to reject dissolved ions from the feed water. The pressure of the feed water is boosted, to drive the separation process. Puresep's technical team recommended using a PureCare-100 anti-scalent dosing system to prevent membrane deposits ensuring the smooth running of the plant as well as assisting in the efficiency and cost effectiveness of the membranes.

A Deaeration plant was installed as an efficient and economical solution to removing oxygen from the water. Removing oxygen is necessary to prevent the loss of flavours and colours in product as well as extend shelf life. The hydrophobic membrane system enables process water to pass through the membranes while a vacuum pressure applied to the core of the membrane removes the dissolved gases. The



vacuum pressure is applied with a Carbon Dioxide sweep gas thus reducing the equilibrium concentration of the stripped gas resulting in a fast diffusive transfer of dissolved oxygen.

A multi-point of use PureChlor Chlorine Dioxide system was installed to ensure sterility to softened water for CIP applications and for treating the water for process applications. This is an effective, efficient and safe way of generating Chlorine Dioxide, and is a key way of keeping water costs to a minimum and productivity and efficiency at its optimum. The highly purified water was sent to storage vessels to feed the mixing and blending facility. As required, the water was pulled to the mixing and blending tanks for product makeup, and then onto the chiller plant and pinpoint carbonator.

A final part of the plant was an effluent neutralisation system. This system is in place to correct the pH of the effluent to within the required band so that it can be discharged off site more economically.

The entire plant is controlled and monitored by a central PLC system, with a fully automated central HMI screen allowing operators complete flexibility and control.

**“Puresep were able to design and install technology to meet Herefordshire ciders complete requirements, meaning we had one company to deal with, resulting in simple & efficient communications & cost-effective solutions. We also know that the systems in place are scalable to meet predicted increased production requirement in the future” Richard Leach, Site Director**



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