NEXED® ELECTRODIALYSIS REVERSAL (EDR) MODULES

APPLICATION BRIEF: OIL AND GAS FIELD PRODUCED WATER

NEXED® modules evaluated for large scale produced water desalination

Produced water treatment for surface discharge can create expensive concentrate management requirements. The process complexity and percentage of recovery achieved is critical to CAPEX and OPEX costs of operation.

Within desalination processes, a common cost associated with the treatment is disposal of the concentrated brine. Widely utilized solutions for concentrate discharge involve deep well injection or evaporation ponds.

A clear technology differentiator between brackish water reverse osmosis (BWRO) and electrodialysis reversal (EDR) comes with the influence on silica (SiO_2). EDR does not concentrate silica and can reduce wastewater by operating at higher recovery, while eliminating the need for complex silica removal. This reduces the costs of pretreatment and wastewater disposal.

Automatic controls are programmed using Evoqua's proprietary current algorithm for its NEXED modules. This continuously adjusts power applied to the modules to maintain product conductivity, without wasting additional power.

Site Location
North America

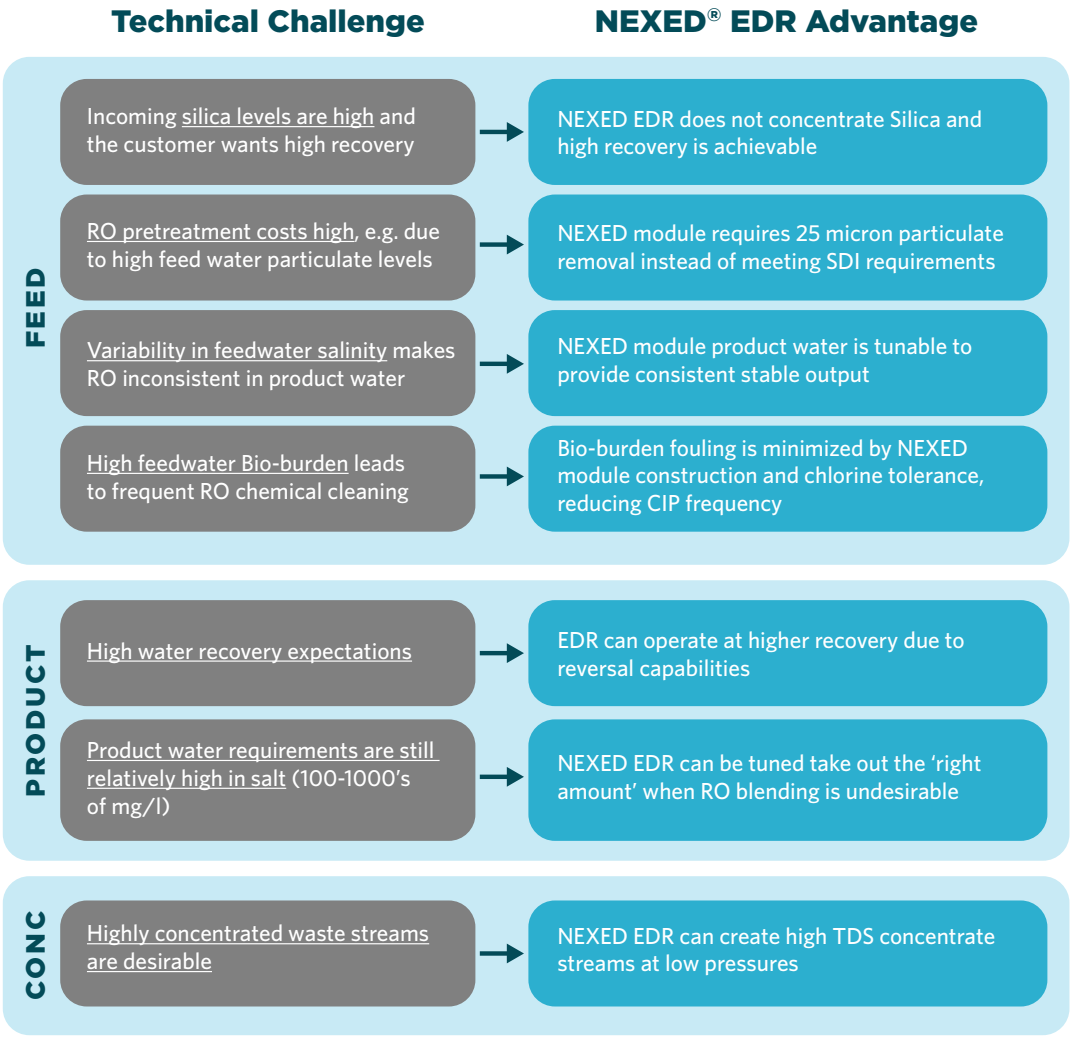
Full Treatment Requirement
100k BPD (4.2 MGD)

Business Challenge
Demonstrate increased water recovery to determine impacts on OPEX and equipment CAPEX.

Keys to Success
EDR operates with less complex pretreatment and at higher overall recovery.

Results
EDR met surface discharge requirements while reducing OPEX by 50% compared to the existing treatment operation.

Key Applications: RO reject recovery, brackish water and wastewater, cooling tower, and produced water



NEXED MODULES OPERATE WHERE RO SYSTEMS ARE CHALLENGED

Many applications favor the capabilities of NEXED modules such as applications with high silica, variable feeds, high bioburdens, and those that tend to foul reverse osmosis systems. More commonly treating these problematic water sources for water reuse or challenging brackish feeds are necessary to meet water-optimization goals.

EVOQUA WATER TECHNOLOGIES

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