

Switchable Polarity Solvent Forward Osmosis (SPS FO): Technology Development Status and Economic Potential for Produced Water Treatment

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Significant quantities of produced water are brought to the surface during oil and gas production operations. In 2007 approximately 21 billion barrels of water were produced from oil & gas operations. Produced water can contain a wide range of constituents including dissolved salt, petroleum and other organic compounds, suspended solids, trace elements, bacteria, naturally occurring radioactive materials, and anything injected into the well (Clark and Veil, 2009).

The majority of produced water from hydrocarbon resource development is reinjected into the subsurface. Approximately 45% of produced water is reinjected for enhanced oil recovery (to maintain reservoir pressure) and ~40% is disposed of in deep injection wells that are commonly located offsite at commercial

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