

S1.2.4 Oil and Hydrocarbons Polishing Pretreatment for Membranes

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Increased water recycle and reuse practices worldwide leads to both Ultra Filtration and Reverse Osmosis membranes being utilized in commercial water filtration as well as industrial waste water filtration. Membranes are very efficient filtration means to achieve very high quality and low contaminant concentration which enables customers across wide range of industrial sectors to achieve recycle and reuse objectives. The downside of the membranes is that they could be fouled by lower concentrations of oil and hydrocarbons among other contaminants in water. Membranes need proper pre-treatment to effectively remove these fouling contaminants including oil in water to very low concentration for effective operation and practical regeneration on a continuous basis during the filtration operation. MYCELX presentation will discuss the requirement of oil in water removal prior to membrane treatment of the industrial waste water. The paper will also discuss the issues in quantifying the oil in water loading on a continuous basis and the need for the oil removal as a part of the membrane pretreatment. This presentation will also discuss the technology and protocols utilized in trace contamination of oil in water removal which serves as a pretreatment to both RO and UF membranes. This paper also focuses on the difficulties of continuous online monitoring of oil and hydrocarbons at very low concentrations and unique techniques that can be adapted to effectively monitor the inlet water to membrane systems. MYCELX presentation will also discuss couple of the case studies in detail and the data collected from the applications and the performance of the polishing pretreatment step in enabling the membranes to perform as per their specification.