

## **Innovative Method for Treating Oil-Produced Water with Low Operating Cost**

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**Abstract :** The high salinity of oil-produced water and its complicated chemical composition, makes designing a suitable treatment system for oil-produced water is extremely difficult and costly. On the current study, a new innovative method was proposed to treat the complicated oil-produced water through a simple mixing with brine stream produced from waste water treatment plant. The proposal will investigate the scaling potential of oil-produce water, seawater and the selected brine water (BW) produced from Sulaibiya waste water treatment and reclamation plant (SWWTRP) before and after the mixing with oil-produced water, and will calculate the scaling potential of all expected precipitated salts using different conversion and different % of mixing to optimize the % of mixing between the oil-produced water and the selected stream. The result shows a great, feasible and economic solution to treat oil produced with a very low capital cost.

**Keywords :** brine water, oil-produced water, scaling potential, Sulaibiyah waste water and reclamation plant

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