



ENHANCING OPERATIONAL EFFICIENCY: ARAMCO PILOT CASE STUDY OVERVIEW

WOG Technologies is executing a Ceramic Membrane Pilot Plant at Saudi Aramco's facility to address the critical challenge of reducing Total Suspended Solids (TSS) and oil content in high-temperature wastewater.

With a capacity of 40–80 m³/hr, the plant is designed to evaluate the performance of advanced ceramic membranes under real operating conditions, aiming to deliver reliable, efficient removal of oil and solids without extensive pre-treatment.

Target Outlet Parameters

- Oil Products: < 10 mg/L
- TSS: < 3 mg/L

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Project Objective

- Evaluate ceramic membrane performance for oil & TSS removal with/without pretreatment.
- Optimize operational parameters: flow scheme, mode (dead-end/crossflow) and cleaning protocols.
- Establish design basis and recovery rates for full-scale implementation.
- Assess sludge and oil generation from the process.

Technical Highlights

- **Membrane Type:** Ceramic membranes
- **Operation Modes:** Dead-end & Crossflow
- **Flow Rates Tested:** 40-80 m³/hr
- **Cleaning Features:** Backwash, CEB, CIP, Flushing
- **Sludge Dewatering:** Integrated to assess waste stream quality

Flow Rate 40-80
m³/day m³/hr

PARAMETER	INLET	OUTLET
TSS	2000 mg/l	<3 mg/l
Oil Content	1000 mg/l	10 mg/l
TDS	200000 mg/l	200000 mg/l
Chloride	164205 mg/l	164205 mg/l

For detailed techno-commercial proposal or site visit coordination,

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Impact

This pilot plant demonstrates WOG Technologies' capability to deliver high-performance membrane systems for complex, high-temperature oily wastewater with proven ceramic technology and modular design ready for full-scale scale-up.