

# CASE STUDY

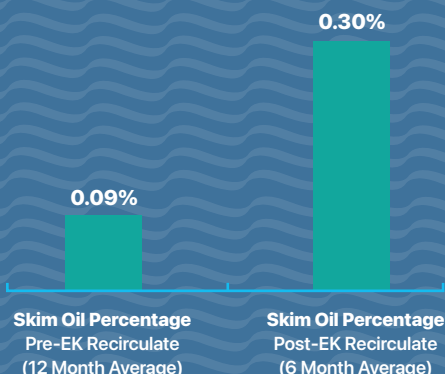
## CUSTOMER CHALLENGES

- Lost skim oil revenue due to “oil-locked” solids pads
- Expensive tank cleanouts
- Costly facility downtime

## CUSTOMER RESULTS

- Elimination of “solids pads”
- Enhanced oil-water separation
- Improved skim oil revenue

## EK RECIRCULATE™ BENEFITS



## CLIENT TESTIMONIAL

*“EnviroKlean ensures our operations remain efficient, scalable, and available for rapid growth. Their EK Recirculate system has dramatically increased our skim oil recovery while improving both system uptime and water quality in our tanks.”*

**VP of Operations,  
Midstream Water Company**



## Improving Oil Skim Revenue by Preventing Oil-Wet Solids

### The Challenge

For oil producers and water midstream operators, oil-wet solids represent a common and expensive operational challenge. Nearly impenetrable solids pads form between the oil and water layers in tank batteries, gun barrels and other separation and storage tanks, reducing separation efficiency and driving up operational expenses due to the need for ongoing cleanouts and solids removal. Even more challenging — and more expensive — is the negative financial impact of lost skim oil revenues. Solids pads commonly contain significant amounts of oil trapped within the “sludge”. As this layer of sludge continually grows, oil/water separation becomes increasingly difficult, ultimately reducing both the total volume of skim oil as well as the quality of the final marketable product.

### The Solution

EnviroKlean’s EK Recirculate™ system is a patent-pending solids prevention system that works together with EnviroKlean’s EK One™ carbon-based chemistry to prevent oil-wet solids pads from forming in gun barrels and other separation tanks. By eliminating the solids (or preventing them from forming), EK Recirculate™ (i) improves oil-water separation, (ii) increases skim oil, (iii) decreases facility downtime, (iv) reduces cleanout costs and (v) enhances overall operating and financial performance.

### The Outcome

Customers that deploy EK Recirculate™ systems experience dramatic reductions in the formation of solids pads and the related “rag layer” that forms in their facilities, particularly when an EK One™ treatment is deployed on the front end of their system. The improvement in system performance is visually demonstrated through the use of thermal imaging cameras (FLIR), which show clear comparative images of the solids elimination “before vs after” each EK Recirculate™ system is introduced. Although performance gains vary, the three-fold enhancement in skim oil recovery documented in this case study is not unusual and translates into additional monthly skim oil revenue of \$50,000 to \$100,000 per month for a typical SWD processing 20-25,000 barrels per day.

### Conclusion

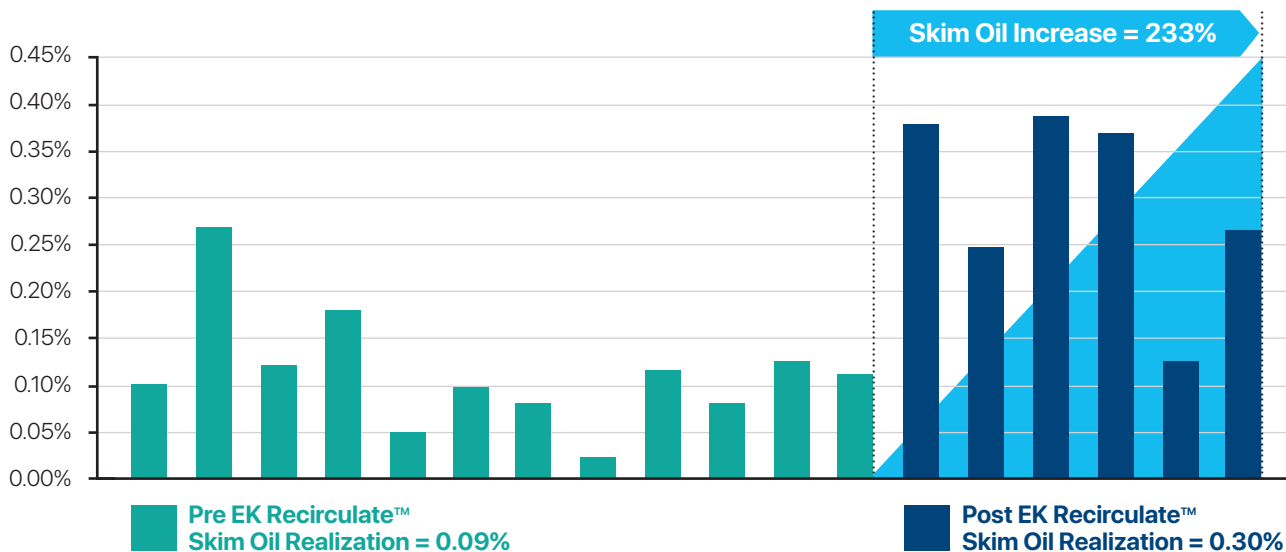
EK Recirculate™ is a proven system that prevents solids pads from forming in gun barrels and other separation tanks, resulting in improved operational efficiency, decreased workover and cleanout costs, and increased skim oil revenue.

**\*See reverse side for “Monthly Skim Oil Realization” chart**



## Monthly Skim Oil Realization\*

\*Actual 18-month performance for Midstream Water Operator processing ~25,000 BBL/day in this Delaware Basin Disposal Well



## EK Recirculate™ Results (Before/After)

