



CASE STUDY



CLIENT PROFILE

Top 10 Permian Energy Producer

ENVIROKLEAN SOLUTION

EK Assure™ – Infrastructure Protection

INFRASTRUCTURE PROTECTED

15+ Disposal Wells
500+ Miles of Pipeline
100+ Batteries and Risers
5+ Integrated Water Systems

PERFORMANCE TRACK RECORD

5+ Years Continuous Operation
250MM+ Total Barrels Treated
1.0MM+ Daily Barrels Treated
ZERO Tubing Failures
ZERO Acid Jobs
ZERO Pipeline Cleanouts

12 MONTH CONFIRMATION TRIAL

Lower cost treatment program tested on a closed loop water system, resulting in:

- Tubing Failures
- Pipelines Clogged
- Injection Pressures Increased
- Solids Accumulation
- H₂S Escalated: >5,000 PPM
- H₂S Safety Event

EK ASSURE REINSTATED

Post-trial, EK Assure returned system to prior operating performance levels

- H₂S Eliminated
- Positive ORP Restored
- Injection Stabilized at Prior Levels
- System Returned to Reliable Status

The Hidden Costs of Low-Cost Treatment: Conventional Programs Require Ongoing Intervention

Proven Protection for Critical Infrastructure

In December 2020, a Top 10 Permian operator initiated a 90-day trial to evaluate EK One™ chemistry's ability to protect its wholly-owned produced water network. The trial was a success and quickly expanded into a long-term operating model.

Today, EK Assure™ provides sustainable, system-wide protection across this operator's critical infrastructure, including 100% of disposal wells and the majority of connected pipelines, batteries, and risers with more than 250 million barrels successfully treated.

After more than five years of sustained field performance, EnviroKlean has earned Tier 1 supplier status, reflecting its strategic role in protecting system integrity and preserving disposal capacity.

Conventional Treatment: Failure and Intervention Cycle

Produced water infrastructure is becoming increasingly constrained, driven by seismic pressures, rising injection thresholds, and tightening regulatory oversight. With disposal capacity growing increasingly valuable, long term costs of system instability and continual intervention are becoming financially unacceptable.

Conventional chemical treatment programs result in hidden failures because they are inherently reactive. Scale accumulates. Corrosion develops. Injection rates decline. Solids build. H₂S emerges.

A failure of conventional treatment is that it results in continuous intervention to maintain operability:

- Acid jobs to restore injection
- Workovers to address tubing failures
- Pipeline cleanouts to reestablish flow
- Operational disruptions tied to H₂S and system instability

These outcomes are not anomalies, they are the ongoing cost of business with conventional chemistry treatment.

The Confirmation Trial



This leading producer decided to test a lower-cost conventional chemical treatment program across one of its integrated water systems. Within the trial's first months, system performance began to degrade. Over the course of the 12-month trial, the operator was able to fully evaluate the hidden costs of unplanned failure and intervention and decided to reinstate EK Assure and continue to expand it across their entire produced water network, recognizing the long-term performance advantage of EnviroKlean.



EK Assure eliminates the need for intervention with customized, proactive treatment from the beginning.

EK Assure Is Designed to Prevent Failure

EK Assure prevents failure rather than responding to it.

The EK Assure solution integrates.

- **Carbon-based chemistry (EK One™)** tailored to the specific water conditions of each facility
- **Autonomous injection (EK FlowPro™)** that ensures consistent, accurate delivery
- **Active field management** through continuous monitoring and chemical adjustment

This approach shifts produced water management from reactive intervention to proactive protection.

“Lower Cost” per barrel results in higher cost across the system.

System performance is not a **chemical cost decision.**

It's an **operating model decision.**

Proven in the Field | Trial Confirms EK Assure's Value & Performance

EK Assure, a History of Sustained Performance

For more than five years, this producer's infrastructure managed by EK Assure has avoided the need for intervention, with stable injection performance, no acid jobs, no tubing failures, and no pipeline cleanouts. Critical disposal capacity and pipeline flow have been maintained without disruption.

Evaluation of a Perceived Lower Cost Solution

To test a reduction in chemical treatment spend, the operator initiated a trial using a conventional treatment approach across an active closed-loop water system, including batteries, pipelines with high H₂S and a disposal well. After 12 months, the results became clear.

Conventional Treatment Introduced Failure Conditions

During the trial, injection pressures became unstable, solids accumulated, pipeline flow deteriorated, ORP shifted negative, and H₂S escalated. Operational intervention became routine.

Unplanned Intervention Created a Safety Event

A necessary intervention mistakenly introduced conventional acid into an iron sulfide environment, resulting in an H₂S release event that triggered site-wide alarms and full personnel evacuation.

Conventional Chemistry Trial

Using EK Assure (before trial):

Clear water, positive ORP, no H₂S

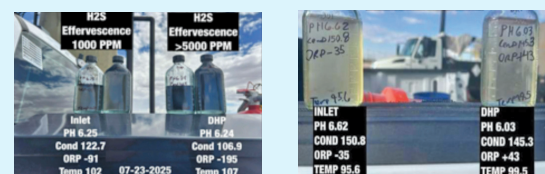
Conventional Treatment (during trial):

Dark, solids-laden water, negative ORP, H₂S present

Using EK Assure Reinstated (after trial):

Clarity restored, ORP returned positive, H₂S eliminated

Produced Water Condition Comparison



Conventional Treatment Trial
(July 2025)

After EK Assure Returned
(October 2025)



Reinstating EK Assure Eliminated Failures and Returned System Stability

The trial ended. EnviroKlean was reinstated across the trial water system. H₂S was eliminated, ORP returned positive, injection stabilized, and the system returned to a controlled, reliable operation.

EK Assure Eliminates the Need for Intervention

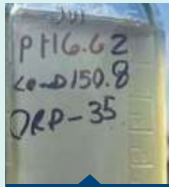
EK Assure is designed to prevent failure through unique carbon-based chemistry (EK One), precision injection automation (EK FlowPro), and continuous monitoring and chemical adjustment.

Performance Follows the Treatment Model

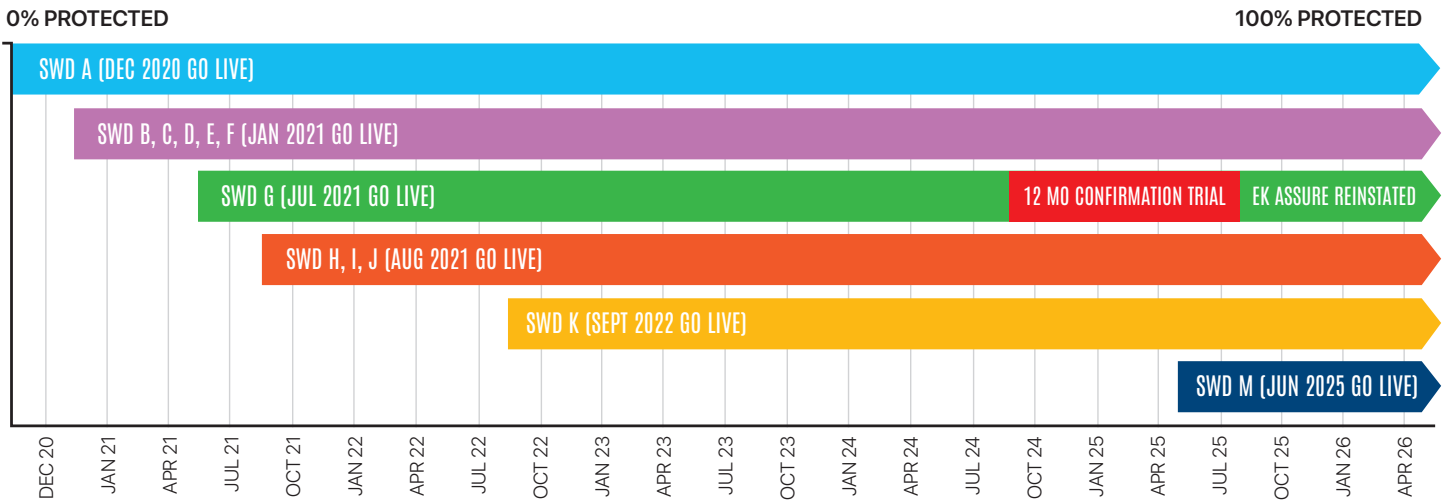
EK Assure:
Stable operation

Conventional Treatment:
Infrastructure and performance degradation

After Reinstatement:
Recovery to prior stabilization

EK Assure Treatment		Confirmation/Conventional Trial		30 Days-EK Assure Reinstatement	
					
SWD/INLET	SWD/INJECTION	SWD/INLET	SWD/INJECTION	SWD/INLET	SWD/INJECTION
pH..... 7.25	pH..... 6.58	pH..... 6.25	pH..... 6.24	pH..... 6.62	pH..... 6.03
ORP..... +134	ORP..... +342	ORP..... -91	ORP..... -195	ORP..... -35	ORP..... +43
Conductivity..... 117.0	Conductivity..... 116.0	Conductivity..... 122.7	Conductivity..... 106.9	Conductivity..... 150.8	Conductivity..... 145.3
H ₂ S..... 0 PPM	H ₂ S..... 0 PPM	H ₂ S..... 1000 PPM	H ₂ S..... >5000 PPM	H ₂ S..... 5 PPM	H ₂ S..... 0 PPM

EK Assure Protects 100% of this Top 10 Producer's Disposal Infrastructure (SWDs)



Flow Assurance and Injection Integrity

EK Assure keeps midstream infrastructure healthy by preventing corrosion and scale buildup in pipelines and batteries while lowering injection pressures at disposal wells. EnviroKlean's recurring chemical treatment programs ensure maximum long-term injection capacity and comprehensive asset protection for your water network.