

Llano Vista Midstream — Pecos East Station

Reeves County, Texas (Delaware Basin, Permian) · 2025-07-14 · **Field Brief** · Internal handover

● What this is

Three events in nine days look like separate incidents. DS-01 says they are one interconnected produced-water management system failure — with off-site impact already documented and a live reuse revenue loss accumulating daily.

Llano Vista's Pecos East Station experienced three events over nine days: a transfer line pressure loss (April 7), a stormwater pond overtop to off-site drainage (April 9), and a frac operator rejection of treated reuse water (April 12). Sample DS-01 from the ephemeral drainage 300 feet downstream shows chloride at 12,600 mg/L, benzene 4.1 µg/L, toluene 18 µg/L, and oilfield chemical markers — none of which belong in stormwater. The stormwater pond at SW-01 showed chloride at 18,900 mg/L, approximately 190 times a typical stormwater reading. NORM-bearing soil is confirmed in the release corridor at Ra-226 18.4 pCi/g. The 'three events' framing the facility is using is untenable once this sampling record is in a regulatory file. The reuse rejection is the economic trigger that forced this review — and the entry point for a strategic conversation before the regulatory clock forces a narrow corrective action. At Delaware Basin reuse economics, every day of rejected throughput is a quantifiable revenue loss; restoring the treatment train is not just a compliance obligation, it is a recoverable business decision.

NORM soil at 18.4 pCi/g Ra-226 in the transfer line release corridor is the dominant ROI variable — if the footprint exceeds the visible 120-ft corridor, remediation capex rises and the savings gap narrows. The NORM survey is the single highest-leverage data point for tightening the ROI estimate.

Incomplete truck manifests for two operators create a chain-of-custody gap that complicates source attribution and regulatory defense — closing this before formal regulatory engagement protects the enforcement-avoidance row of the ROI case.

● What we'd propose

Base-case ROI on the integrated response is 1.2–2x at 5 years. Adverse-scenario ROI — one enforcement action, one H2S incident, emergency NORM mobilisation — reaches 2.5–4x. Their sequential patch is cheaper on day one and materially more expensive in expectation.

Recommended approach: Phase 1 (0–6 months): Fixed H2S monitoring and automated scavenger injection at offload bay and EQ tanks; NORM radiological survey of release corridor, tank sludge/scale, and filter media before any excavation; transfer line isolation and soil stabilisation; physical process-water intercept upstream of stormwater pond emergency spillway; SWPPP/SPCC update. Phase 2 (6–18 months): Treatment train redesign — walnut shell filter rehabilitation, EQ tank skim-off protocol, automated chemical dosing (biocide, demulsifier, H2S scavenger with real-time feedback), reuse spec compliance testing protocol with frac contractor. NORM-aware soil and waste remediation to RRC closure. SWD wellbore integrity assessment and scale inhibitor program review. Phase-2 prize: once treatment performance and reuse throughput are restored, a produced-water management optimisation program (automated chemistry, multi-well reuse scheduling, SWD capacity management) becomes the strategic follow-on and the path to the upper end of the ROI range.

Why the customer should want this — the win-win argument:

Reuse revenue restored — \$500K–1.5M recovered over 5 years.: The frac contractor rejection is cutting reuse throughput today. At Delaware Basin reuse economics (\$0.10–0.25/bbl recovery fee), even a moderate daily rejection volume accumulates \$150–400K/yr in lost revenue. Over five years under the cheap-patch path, that compounds to \$750K–2M in foregone revenue. Restoring treatment performance to spec in Phase 1 recovers that stream — turning a sunk cost into a recoverable asset and contributing directly to the ROI case.

Enforcement exposure avoided — \$1.5–5M risk-adjusted saving.: DS-01 off-site detections are a documented regulatory record. Under Texas RRC and TCEQ jurisdiction, an unauthorized brine and hydrocarbon discharge of this character carries enforcement exposure of \$10–50K/day per parameter. With BTEX and chloride both confirmed off-site, the risk-adjusted 5-year enforcement exposure under a slow-patch path is \$2–7M. Executing a credible, documented corrective response before a formal NOV converts that probabilistic exposure to a substantially mitigated one — the enforcement-avoidance row alone justifies the integrated response in the base scenario.

H2S and NORM tail risk removed — uncapped exposure closed in Phase 1.: Intermittent H2S at the offload bay and EQ tanks is an active OSHA exposure today. NORM soil at 18.4 pCi/g Ra-226 in the release corridor requires specialist handling before any excavation mobilises site crews. An H2S worker incident or an uncontrolled NORM soil disturbance each trigger independent enforcement tracks with their own timeline and penalty structure — and both are currently unmanaged. Engineering controls in Phase 1 close both pathways at a fraction of the incident cost, removing an unbounded tail risk from the ROI denominator.

Cost of the alternative — fully priced over 5 years:

Cost component	Their path	Our proposal
Capex year 0 — upfront investment	Sequential patch: pipeline ~\$150K + pond ~\$100K + filter service ~\$75K H \$325K	Integrated response: \$3–12M over 18–24 months (NORM scope drives range)
Reuse revenue loss, 5yr cumulative	Frac contractor relationship degraded; ~\$750K–2M cumulative loss at observed rejection rate	Revenue restored ~yr 1; estimated \$500K–1.5M recovered vs their path

Cost component	Their path	Our proposal
NORM remediation — planned vs emergency	Uncontrolled soil disturbance triggers RRC enforcement + emergency remediation: \$1–3M unplanned	Included in planned scope at tendered rates; \$500K–2M saved vs emergency mobilisation
Risk-adjusted enforcement (brine + BTEX off-site)	\$10–50K/day × 2 parameters × enforcement duration; 5yr credible exposure: \$2–7M	Documented corrective action substantially mitigates exposure; ~\$1.5–5M avoided
H2S safety incident exposure	Active pathway uncontrolled; worker incident + OSHA citation: \$250K–1M+ per incident, uncapped	Engineered H2S controls installed Phase 1; uncapped tail removed
SWD downtime risk	Scaling + pressure unaddressed ' well failure ' emergency disposal workaround: \$500K–2M	Wellbore assessment + scale program included; ~\$300K–1.5M avoided
5-year total (mid-range)	~\$5–15M + uncapped NORM and H2S tail - net saving from integrated path: \$2–3M base case, up to \$10M+ adverse scenario	~\$3–12M · all four risk vectors closed · ROI: 1.2–4x depending on enforcement scenario

Sensitivity: NORM remediation scope is the dominant variable — stained soil corridor excavation vs surface stabilisation moves the deal by \$1–4M and is the primary ROI swing factor. Treatment train redesign depth (targeted repair vs full automation) adds up to \$1.5M. Phase-2 produced-water management program (reuse optimisation, SWD scheduling, chemistry automation) adds \$2–5M if Phase 1 restores frac contractor throughput — and is the path to a 2–4x ROI at the program level.

● What could kill it

The window between internal review triggered and formal corrective action order received is typically 30–90 days under Texas oilfield enforcement. That is the strategic conversation window — and a competing environmental consultant is likely already in it.

1 Regulatory posture forces narrow corrective action

If RRC or TCEQ issues a formal Corrective Action Order before the customer engages strategically, the response scope is dictated by the Order — narrow, fast, cheapest-compliant. The integrated ROI argument never gets made; vendors are selected by the Order's line items and the enforcement-avoidance savings row disappears because enforcement has already begun. *Mitigation: Move immediately. The DS-01 sampling record has already started the regulatory clock. Frame the first conversation around the ROI of proactive response versus reactive enforcement — the enforcement-avoidance row alone is worth \$1.5–5M over 5 years.*

2 Third-party environmental consultant pre-empts

A generalist environmental consulting firm, already engaged or soon to be, scopes the remediation under a T&M retainer and drives procurement. We become a subcontractor or are excluded from the treatment train scope, losing the revenue-recovery and operational savings rows of the ROI case. *Mitigation: Ask directly in the first call whether an environmental consultant has been engaged. Position as the produced-water treatment and water management specialist — the role that closes the reuse revenue loss row, which a generalist remediation firm cannot.*

3 NORM scope unknown collapses the economic argument

If the NORM survey reveals a substantially larger soil footprint than the visible 120-ft corridor, Phase 2 capex rises materially, narrowing or eliminating the net saving versus the cheap-patch path in the base scenario. The ROI case weakens at the exact moment the customer is evaluating scope. *Mitigation: Own the NORM survey recommendation. Frame it as the scoping step that makes the ROI case defensible — not the scary number. A contained NORM footprint strengthens the case; a larger footprint resets the Phase 2 estimate before the customer has anchored on a number.*

● Do this next

Two numbers from the next call — daily reuse rejection volume and regulatory notification status — move the ROI estimate from LOW to MEDIUM confidence. Until then, the enforcement-avoidance and revenue-recovery rows remain the widest variables in the 5-year comparison.

1 Surface regulatory posture and quantify reuse revenue loss · *This week (7 days)*

Ask directly: has RRC or TCEQ been formally notified, and has any corrective action timeframe been communicated? Also ask for daily reuse rejection volume in bbl/day and the frac contractor's acceptance criteria spec. These two numbers convert the ROI case from directional to calculated — revenue loss and enforcement probability are the two rows that most affect the 5-year total.

2 Identify the corporate decision-maker · *7–14 days*

The corporate approver for a \$3–12M capital response has not yet been identified. Without that role in the room, the ROI conversation never reaches the decision-maker. Request an introductory call that includes the corporate EHS or operations VP.

3**Propose the NORM survey as the ROI-bounding step** · *14–21 days*

Recommend the NORM radiological survey as the prerequisite scoping step. Frame it explicitly: until the survey is complete, every Phase 2 cost estimate carries a \$1–4M range on the NORM row alone. The survey — estimated \$75K–200K — is the cheapest way to bound the ROI range and make the capital case defensible.