DATA.
INSIGHT.
OUTCOMES.

Wednesday April 8, 2026

Permian Basin Water in Energy Conference

Injection, Pressure and Seismicity – From Data to Decision-making

Presenters: Patrick Patton - VP Product, B3 Insight

Collaboration Partners:

CISR

TORA
TIGHT OIL RESOURCE ASSESSMENT

Bureau of Economic Geology

satsense

nanometrics

ENVERUS

B3 Insight – Turning Data into Decisions

- Data + No Context = **Data**, *non-actionable*
- Data + Context = **Information**, *understandable*
- Information + Interpretation = **Insight**, actionable

Katie showed the scale of the challenge and the data ecosystem.

Now: how do we turn that data into operational decisions?

The Challenge Isn’t Data – It’s What You Do With It

DATA

Non-actionable

- Daily injection volumes
- Monthly reported rates
- Average surface pressure
- Pressure tests
- Seismicity events
- Seismic response areas (SRAs)

Raw inputs

→

INFORMATION

Understandable

- Data quality and validation
- Water transportation
- Receiving formation
- Depth classification
- Pressure test association
- De-duplicated seismic events
- SRA affected SWDs
- Operator & midstream market
- Disposal cost & infrastructure
- Surface landowners

In context

→

INSIGHT

Actionable

- BHP interpretations
- Shut-in-Fall-Off Test
- Modeled V&P
- Pressure estimations
- Capacity estimations
- Pressure predictions
- Injection capacity predictions

Interpreted

A decade ago we had data.
Today we have context, models, and the ability to turn it into decisions.

Daily Injection Data → Subsurface Intelligence

1 Daily data captured

Injection volume & surface pressure reported daily to TexNet

2 Shut-in periods detected

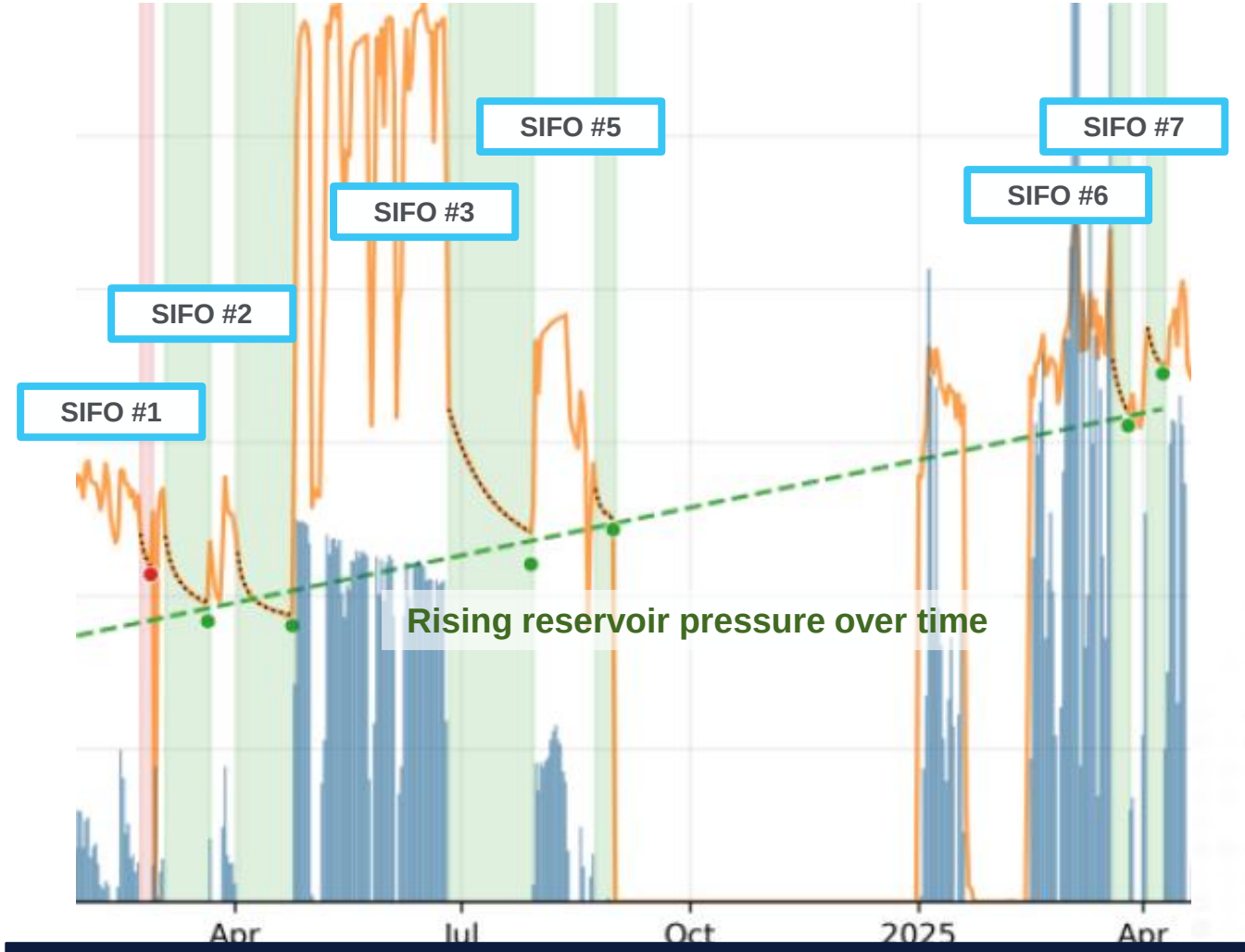
Algorithm identifies Shut-In-Fall-Off (SIFO) events when a well stops injection; natural pressure test

3 BHP estimated

Pressure decay during shut-in is fitted to a fall-off-curve – BHP derived

4 BHP tend inference

Trend identified and used to understand pressure through time – foundation for capacity forecasting



Shut-in periods → fitted fall-off curves → rising pressure trend

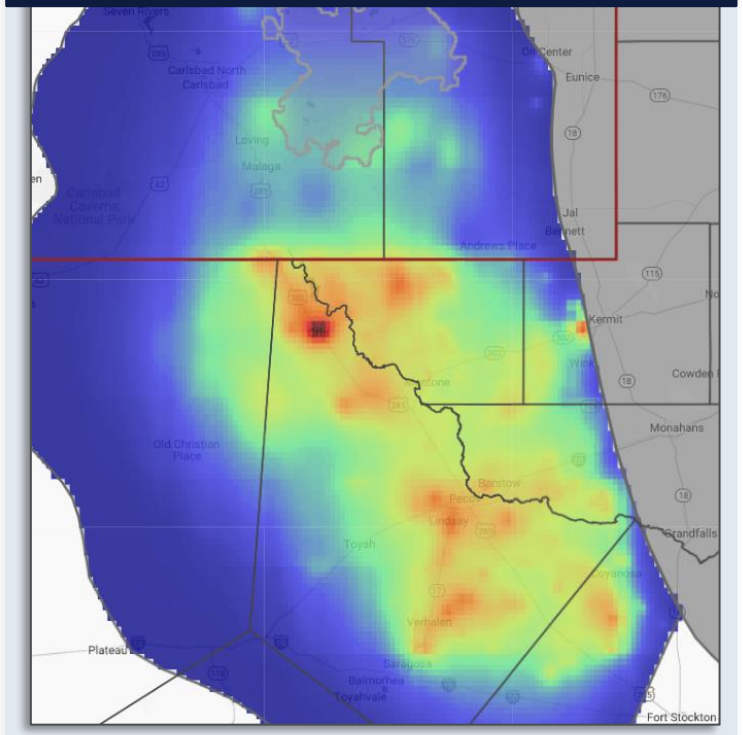
Insight: One Well to Entire Basin

20M+ barrels injected daily across the Permian

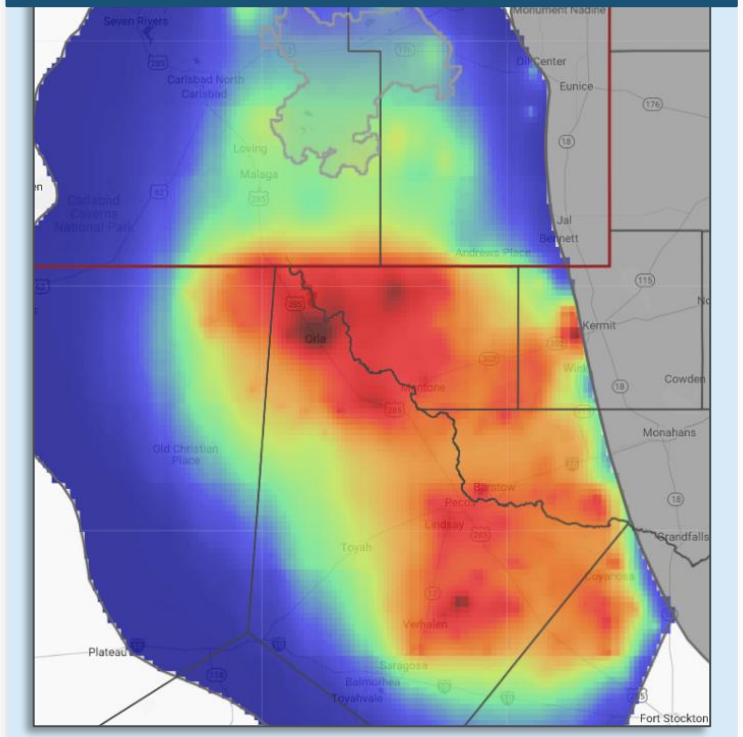
Increasing pressure across key disposal horizons

Capacity constraints visible and predictable

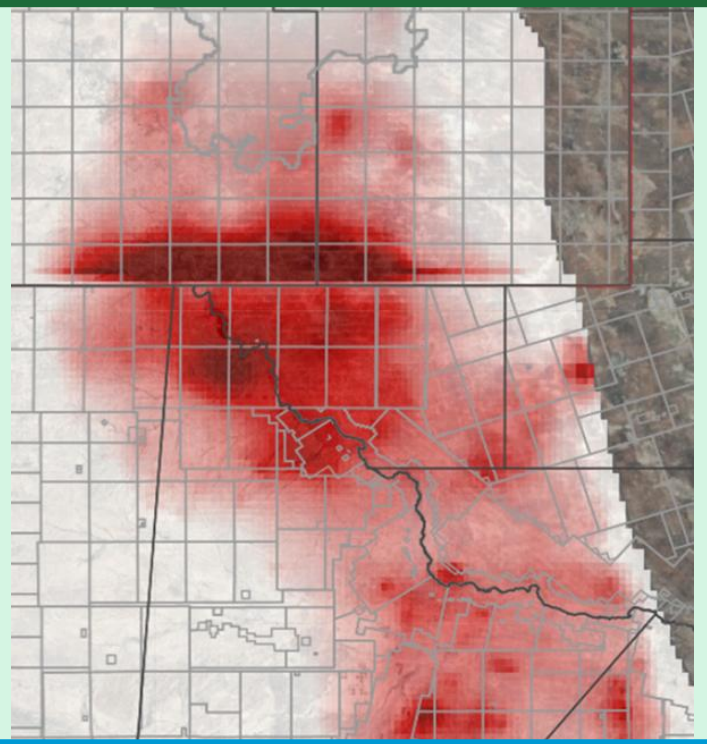
2025



2030



2035



Shallow Pressure Gradient → Available Capacity → Capacity Full | source: B3 Insight InjectIQ

We can now forecast WHERE capacity runs out — and WHEN. That changes how operators, regulators, and planners make decisions.

Closing the Loop – From Data to Decision-Making

- **Near-real-time data sharing** – Daily data is here; monthly is the floor
- **Evergreen models** – Pressure/capacity models update continuously
- **Collaboration across silos** – Industry, academia, regulators, and data providers working together
- **Capacity is finite** – Proactive management requires insight, not just information

The data exists.

The tools exist.

The question is: how fast can we close the loop?