



**COMMISSION SHIFT**

**CLEAN WATER ACTION**  
PEOPLE • ACTION • JUSTICE

# Learn at the Lege: Grounds for Concern

*Mixing old unplugged oil wells with  
subsurface injection makes  
Texas-sized messes*

- |                       |   |
|-----------------------|---|
| <b>Schuyler Wight</b> | Rancher, YT Ranch                                   |
| <b>Becky Smith</b>    | Texas Director, Clean Water<br>Action               |
| <b>Julie Range</b>    | Orphaned Well Policy<br>Manager<br>Commission Shift |

**May 1, 2026**

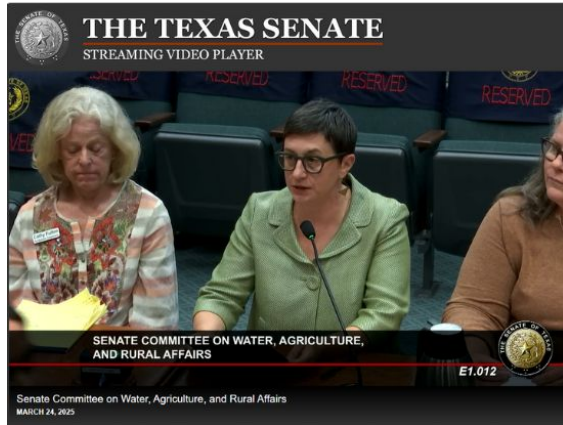
# Clean Water Action

## Mission



To protect our environment, health, economic well-being and community quality of life.

Clean Water Action organizes strong grassroots groups and coalitions and delivers on campaigns to solve environmental and community health problems and get pro-environment candidates elected at all levels of government.



# Commission Shift Mission



Commission Shift is transforming the state oil and gas agency by working with and for the people of Texas to create pathways for shared governance.

# Areas of Work



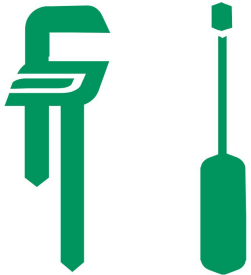
## What is the RRC?

- Voter Awareness



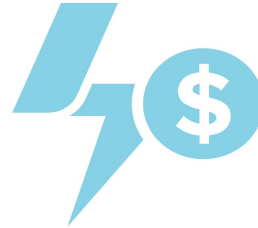
## Cleaning Up Oil and Gas

- Orphaned Wells and Sites
- CO<sub>2</sub> Injection
- Waste Pits
- Venting & Flaring



## Fixing the Commission

- Ethics
- Public Engagement
- Language Access
- Name Change



## Your Energy Costs

- Securitization
- Weatherization

# Poorly regulated subsurface injection

Plus

# Unplugged or poorly plugged wells

Creates

# Zombie wells and big expensive messes

## Reeves County, TX

Justin Hammel, DeSmog October 4, 2024



**Plugged** well blow out

# Agenda

- Orphaned & inactive wells
- Oil & gas activity induced catastrophes
- Produced water problem
  - Shallow Injection
  - Deep Injection
- Laws are creating this mess
- Carbon capture and storage
- Solutions
- Q&A



# Orphaned and Inactive Well Problem Overview



# What's the problem?

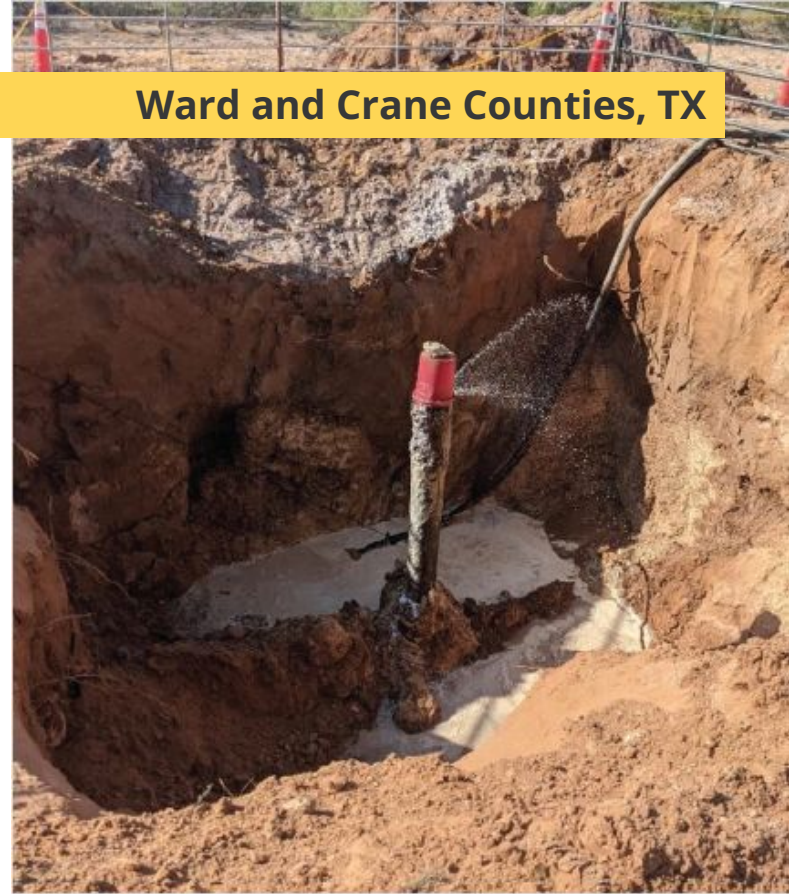
## Inactive wells

- Have an active operator; not “orphaned.”
- No production or permitted activity for greater than 12 months

## Orphaned wells

- Inactive greater than 12 months
- Operator permit to operate (P-5) delinquent greater than 12 months

Ward and Crane Counties, TX



*The Estes 24 well, with a red bucket and rock placed atop the well to control the spraying fluids. Photo: Watt, Ashley. @sand\_frac. [Twitter](#). June 13, 2021. Accessed on Dec. 7, 2021.*

# How bad is it?

## Inactive wells

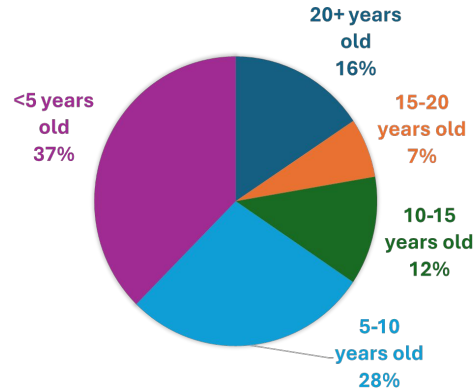
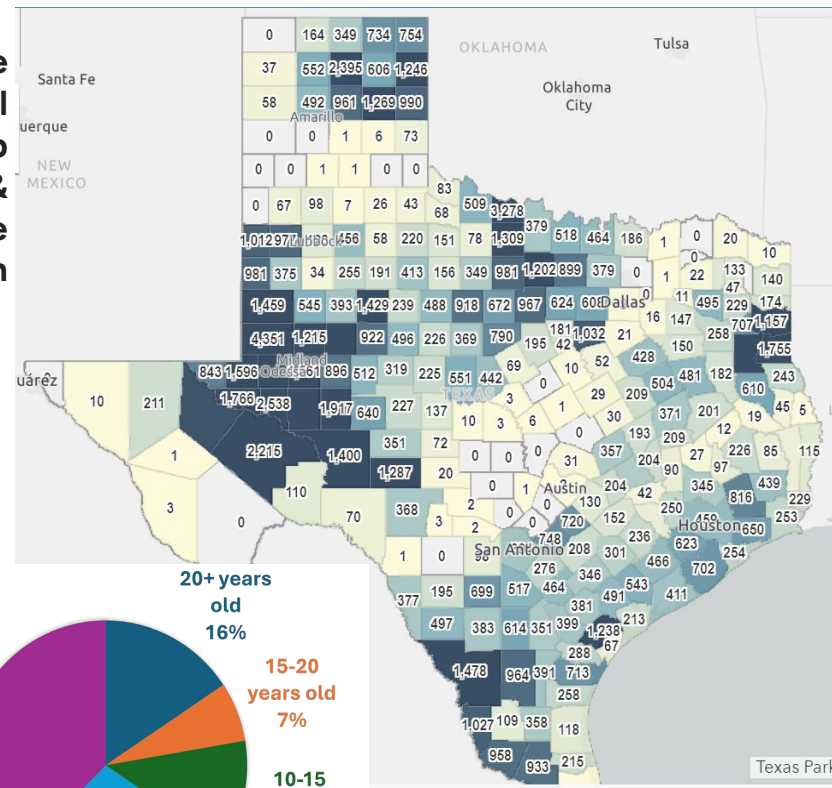
- 120,600 inactive as of February 2026
- 115,900 as of Feb 2025 => **4% increase**
- Operators plug 7,700/yr

## Orphaned wells

- 12,250 as of April 2026
- 8,960 as of April 2025 => **37% increase**
- RRC plug 1,300 wells/yr using state & federal funds

Once wells are idle for > 5 years, only 15% return to service

Inactive well map & age breakdown



Data: HB 1 Enrolled (88R), and Railroad Commission of Texas.  
 - Orphan Wells with Delinquent P-5 Greater Than 12 Months, March 2025.  
 - Oilfield Cleanup Program Annual Reports 2018 - 2022.

Data: Railroad Commission of Texas.  
 - Inactive Well Aging Report, March 2025.  
 - Well Distribution Tables, Aug 2024.  
 - Annual Drilling, Completion and Plugging Summaries, 2018 - 2022.

# What's the cost?

Estimated costs based on Railroad Commission information:

**\$456 Million** to plug  
~11,400 **orphaned** wells

**\$16.4 Billion** to plug  
120,000 **inactive** wells

Data: Railroad Commission of Texas.

- Oilfield Cleanup Program Annual Reports.
- Annual Drilling, Completion and Plugging Summaries. 2014 - 2023.
- Railroad Commission of Texas Legislative Appropriations Request 2026 - 2027. Avg. \$40,000 per well
- Railroad Commission of Texas. January 10, 2025. Inactive Well Aging Report.

Source:  
Railroad Commission of Texas Legislative Appropriations Request 2026 - 2027. Avg. \$40,000 per well  
Railroad Commission of Texas. January 10, 2025. Inactive Well Aging Report.





# Risks to Health

- Pollutants to air, groundwater, bays & estuaries
  - Chlorides, petroleum products, benzene, arsenic, Hydrogen sulfide, volatile organic compounds
- Health risks
  - Asthma, respiratory irritation, headaches, heart issues, cancer, reproductive harms



<https://e360.yale.edu/features/the-oil-well-next-door-californias-silent-health-hazard>

<https://insideclimatenews.org/news/29082022/oil-well-health-california/>

<https://abcnews.go.com/US/abandoned-oil-gas-wells-us-bring-fears-leak/story?id=116764814>

# O&G Activity Induced Catastrophes



**GO TO SCHUYLER'S SLIDES HERE**



# Produced Water Problem Overview



# What to do with all the produced water?

*On average 3-5 barrels produced water per barrel oil*

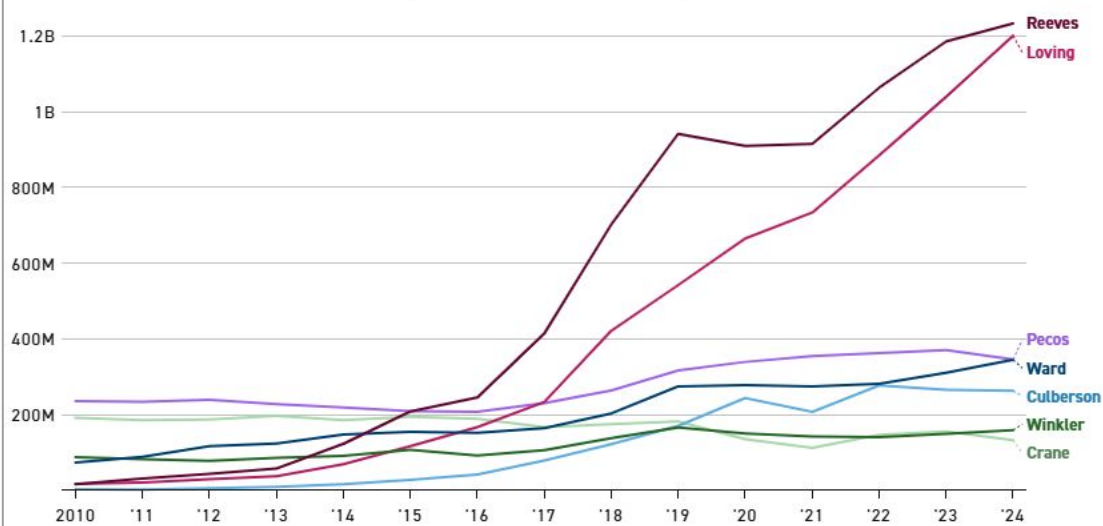
- Class II wells
- Recycle in O&G operations
- Treatment and discharge into surface water (TCEQ)
- Land application (going to TCEQ)
- Beneficial reuse



# Water, water everywhere and not a drop to drink

## Produced water injected in 7 Delaware Basin counties increased by nearly 500 percent from 2010 to 2024

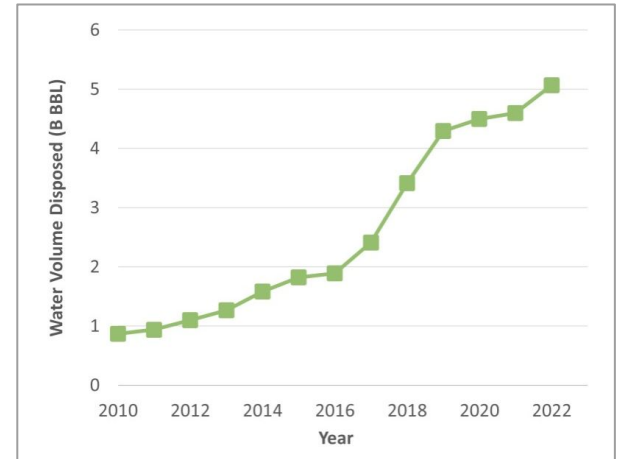
Annual barrels of produced water injected beneath part of the Permian Basin, by county



Source: The Texas Railroad Commission  
Shelby Webb/POLITICO

<https://www.eenews.net/articles/fracking-waste-threatens-permian-basin-water-supplies-imperils-oil-industry-plans/>

Total 135 Billion barrels injected statewide in salt water disposal wells (1945-2021)\*

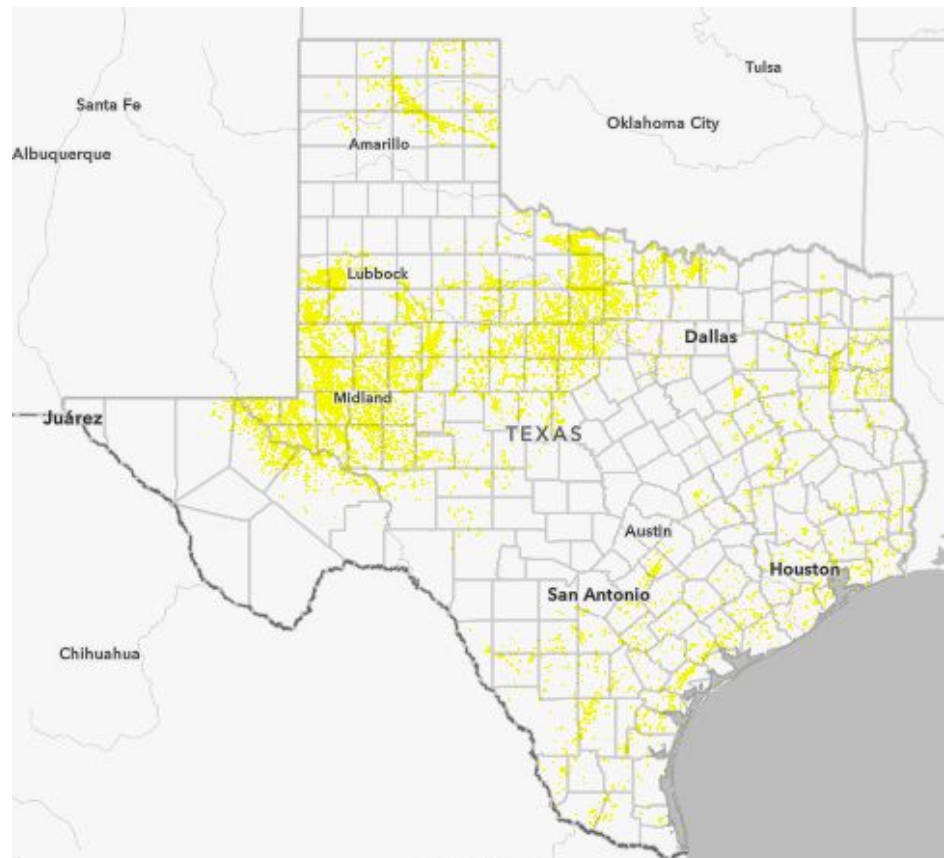


Permian Basin oilfield produced water disposal volume by year.

Source: B3 Insight

# Class II Service, Storage, and Injection Wells in Texas

Approx. 30,000  
(as of January 2026)

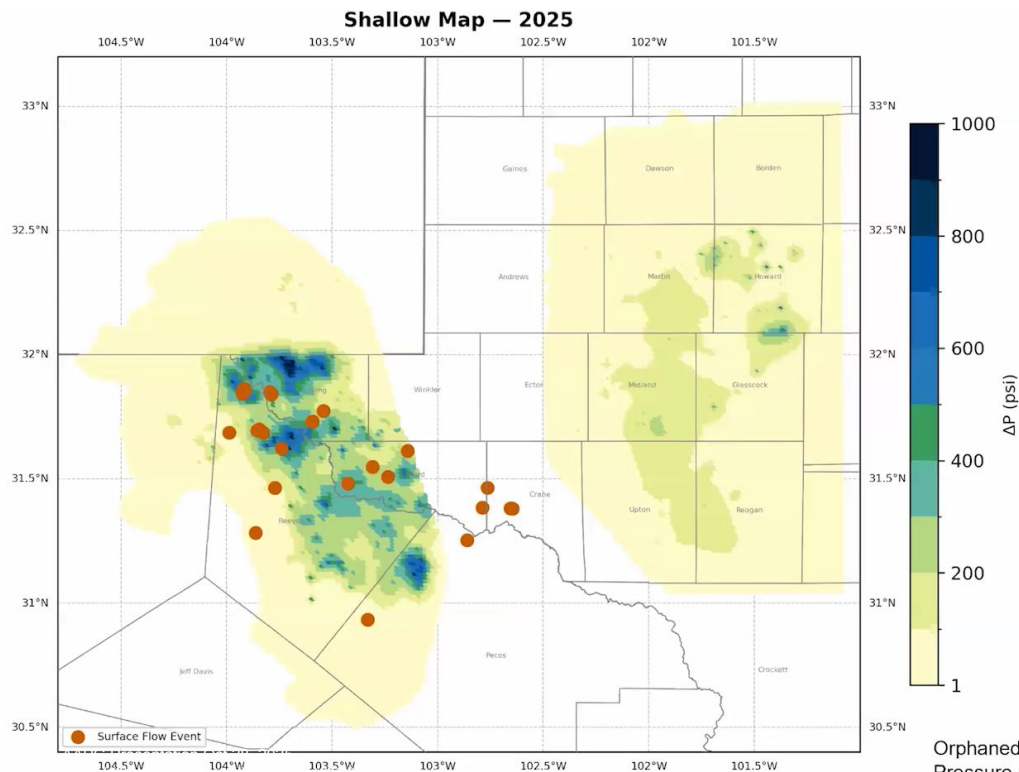


**Location of injection/disposal/service wells  
(as of Feb 2026)**

# Shallow Injection



# Fluid fills pore space and pressurizes the subsurface ...



Orphaned well data: TX RRC  
Pressure models: Ge, Nicot, Leng  
Animation: Darvari

INVESTIGATIONS

## Hundreds of 'zombie' wells likely plague a single Texas county, University of Houston study finds

By **Amanda Drane**, Staff Writer  
Updated Oct 29, 2025 11:11 a.m.

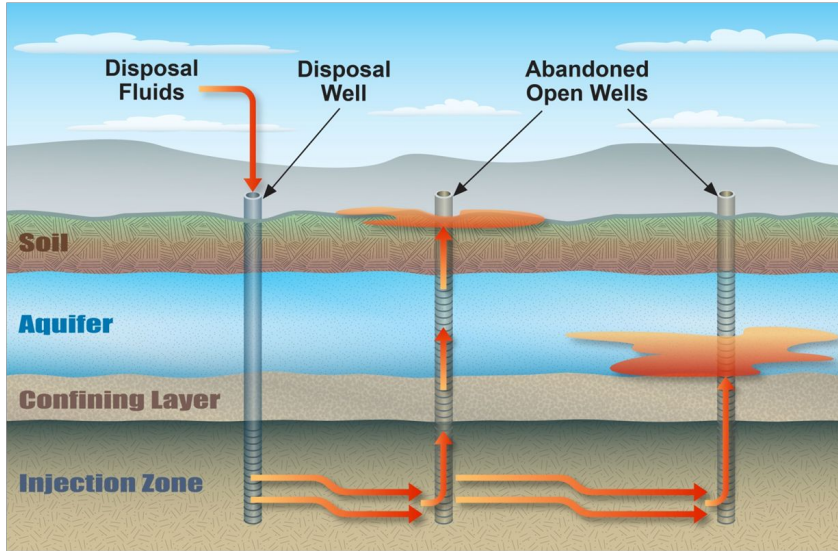


...which looks for the path of least resistance.

Study indicates roughly 20% of wells in Reeves County at high risk of leaking

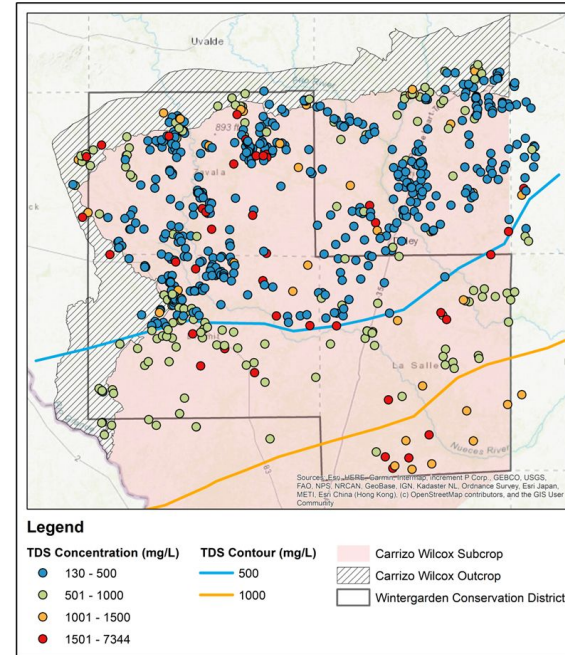
# Risks to Water Quality

## Threats from Orphan and Degraded Wells



Risk is imposed by pressurized injection by a SWD Well

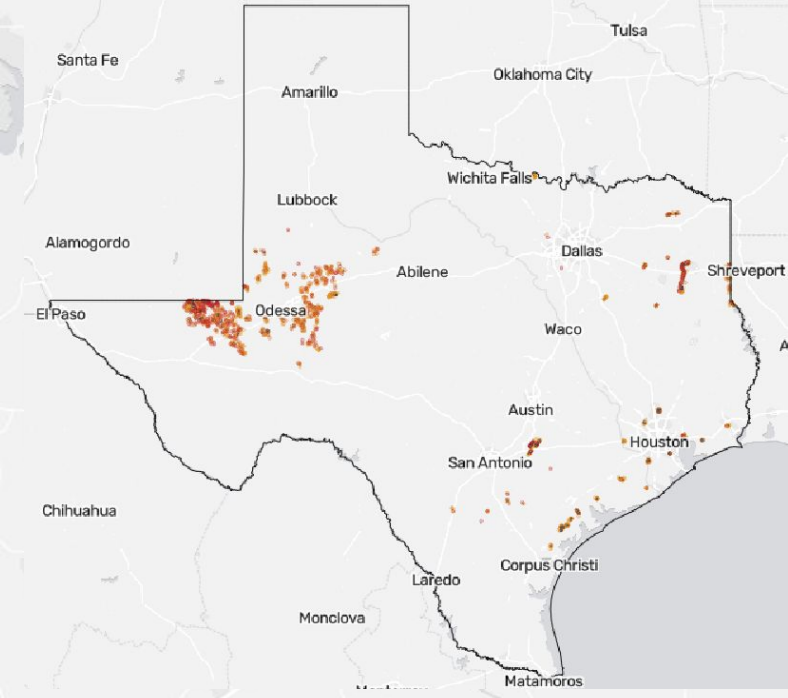
## Example: Eagleford Play Impact on Water Quality



This groundwater should be fresh

O/G activities are the only feasible source for the "hotspots"

# Houston Chronicle Map shows where wells are most likely to pollute



The more injection occurring at disposal wells near at-risk wells, the higher the risk.

Disposal Well Injection Amount:

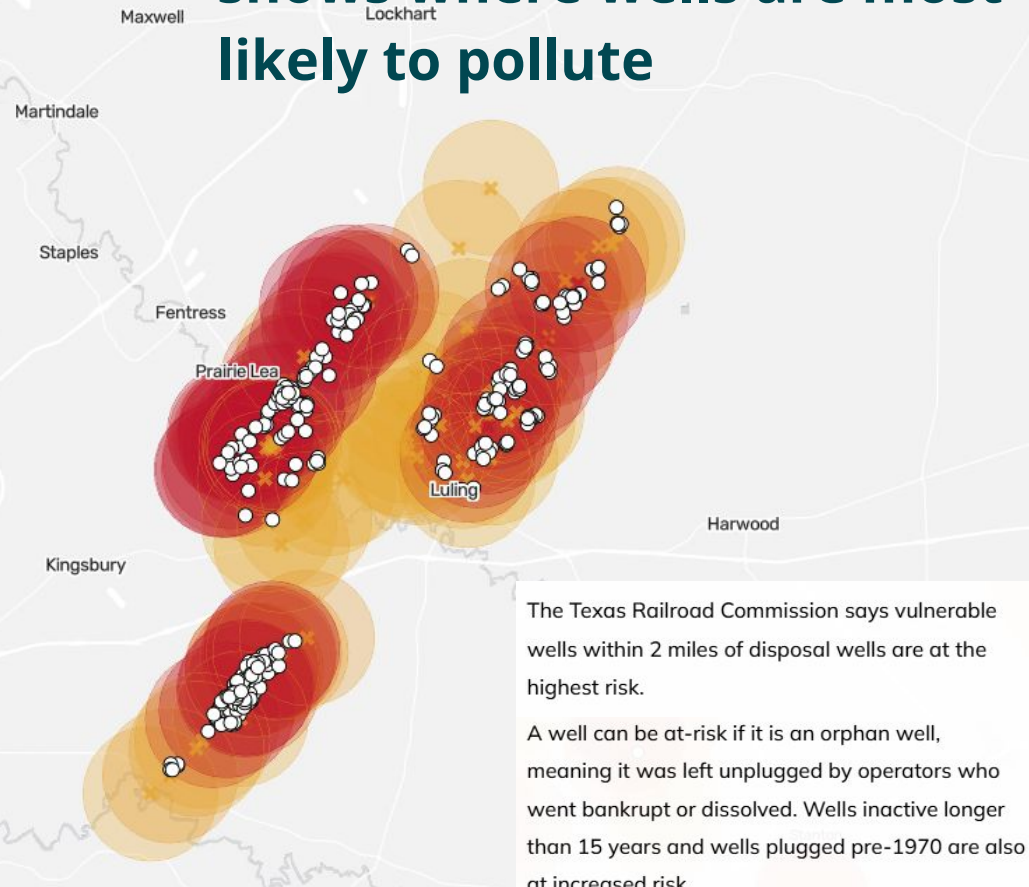
0.5 MMbbl 5 15

Filter At-Risk Wells:

- Inactive 15+ years
- Orphan
- Plugged pre-1970
- Multiple risks

Enter an address

Spindletop



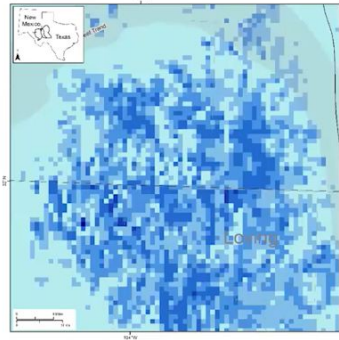
The Texas Railroad Commission says vulnerable wells within 2 miles of disposal wells are at the highest risk.

A well can be at-risk if it is an orphan well, meaning it was left unplugged by operators who went bankrupt or dissolved. Wells inactive longer than 15 years and wells plugged pre-1970 are also at increased risk.

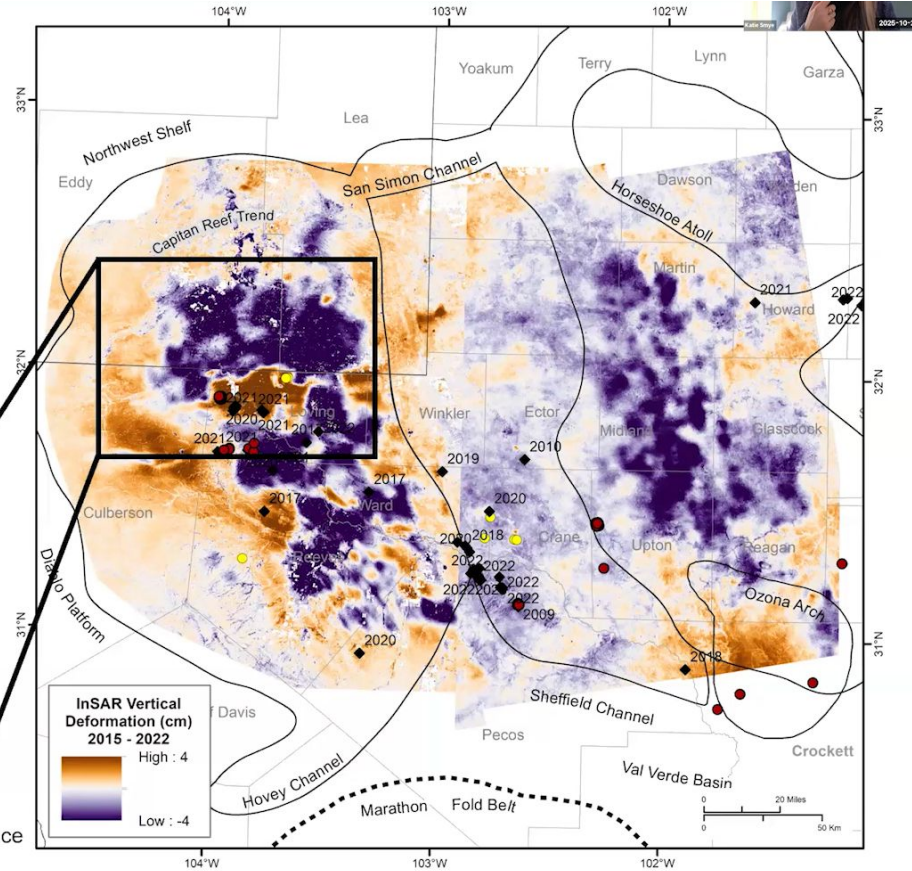
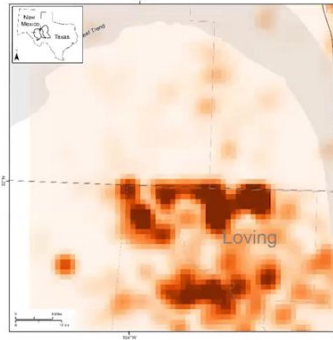
# Subsidence and Uplift

- ❖ Subsidence reflecting production of fluids from shales
- ❖ Uplift reflecting inflation of shallow injection reservoirs overcoming subsidence signal
- ❖ Uplift serves as an early warning of potential injection reservoir capacity challenges

water production



shallow injection



InSAR data: Chen et al. UT Aerospace





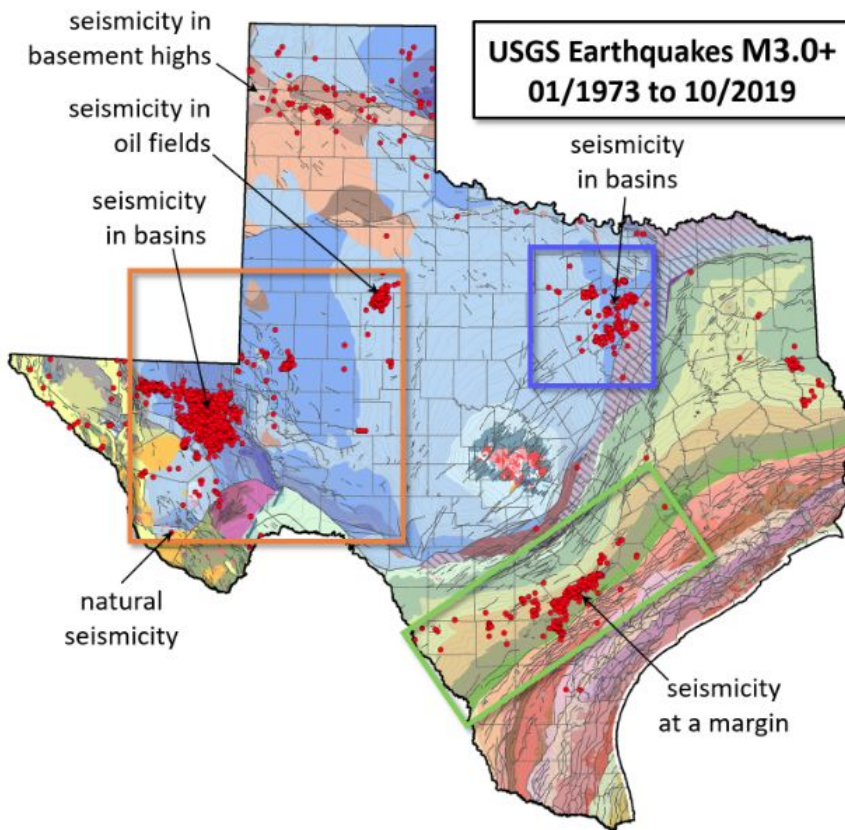
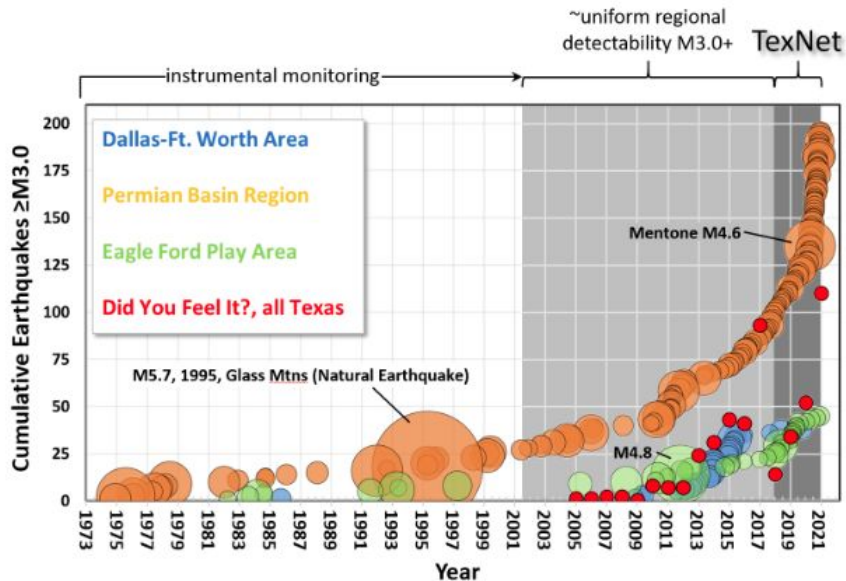
Crane County Dec 2023  
\$2.5 million

<https://www.houstonchronicle.com/business/energy/article/no-fly-zone-crane-county-wel-l-plug-18637528.php>

# Deep injection



# Earthquake Trends in Key Texas Areas



# Changes to pore pressure correlate with deep injection and earthquakes

- UT BEG modeled pore pressure change in deep strata relative to earthquakes in the Delaware and Midland basin
- Correlation between deep injection and earthquakes

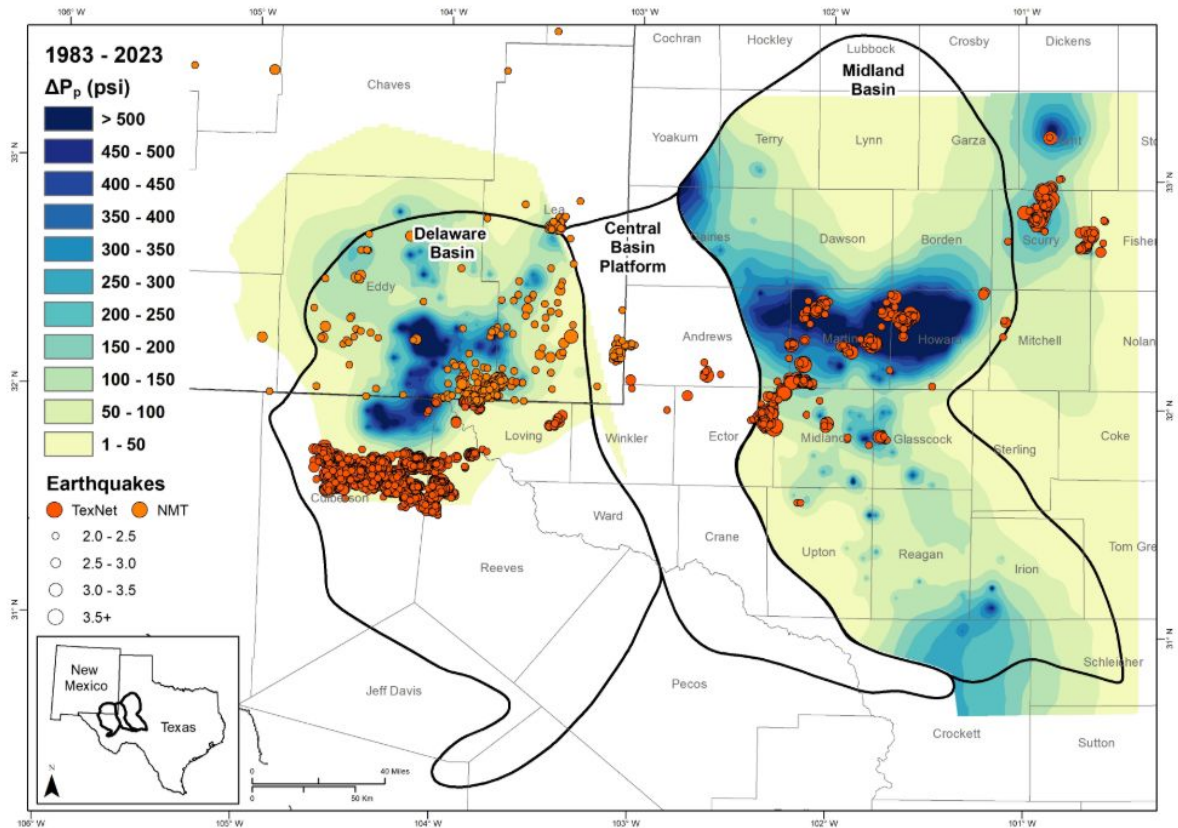


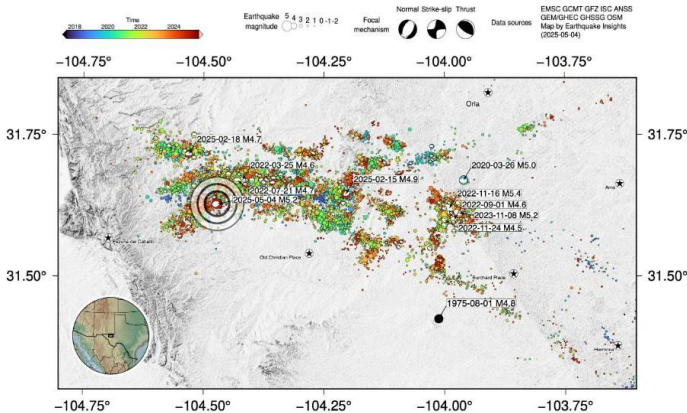
Figure: Pore pressure change in deep injection strata (Smye et al. 2024 for the Delaware Basin, Ge et al. 2024 for the Midland Basin) shown with deep earthquakes of M 2.0+ sized by magnitude. Shallow earthquakes in the sedimentary section of the southern Delaware Basin are associated with shallow disposal and hydraulic fracturing, and are not included.

# HART ENERGY

## RRC Orders Blackbuck's Disposal Well to Close Over Earthquake Fears

The Texas Railroad Commission had called for an emergency suspension of Blackbuck Resources' water disposal well operations on May 13, after an earthquake with a record 5.4 magnitude struck West Texas 10 days earlier.

Hart Energy Staff Thu, 06/19/2025 - 05:09 PM Comments



## RRC Issues Enhanced Guidelines for Permian Basin Disposal Wells

May 16, 2025



AUSTIN – Utilizing scientific and engineering analysis, the Railroad Commission of Texas has issued new guidelines that further strengthen permitting of disposal wells in the Permian Basin.

# RRC Summary of enhanced guidelines for Permian Basin disposal wells

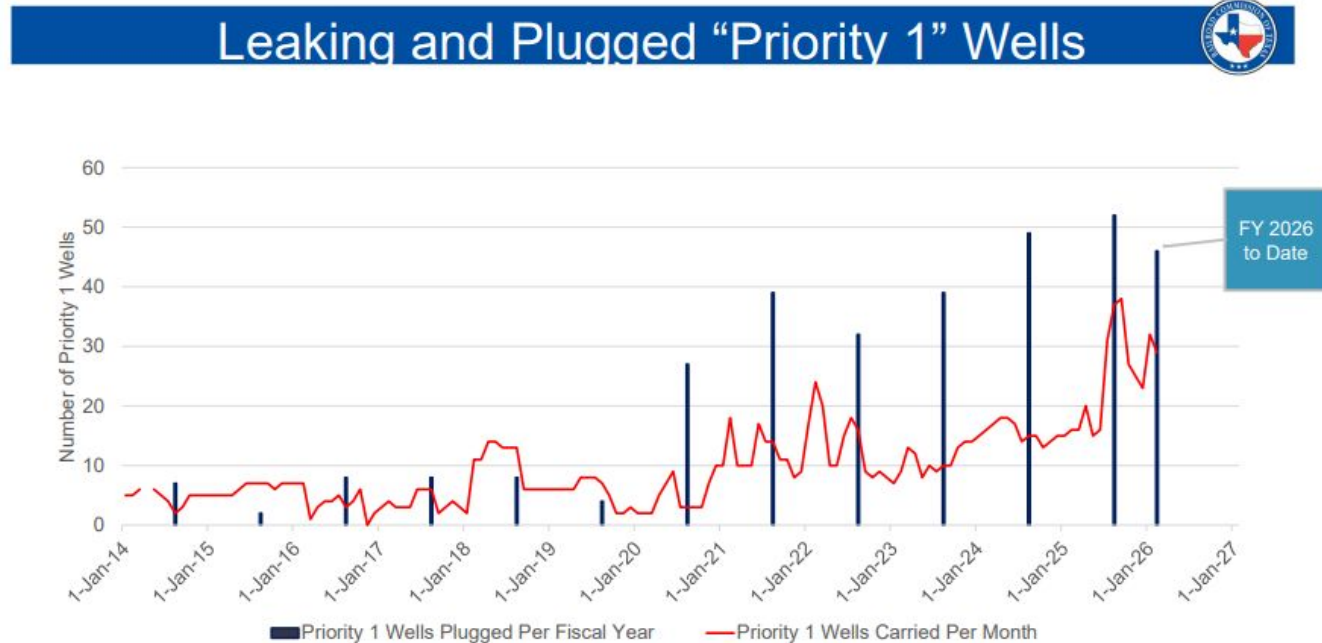
- Limit maximum surface injection pressure (MSIR) by confinement zone
- Limit maximum daily injection volume by average reservoir pressure
- Maximum Injection Rate limits
- 2-mile radial Area of Review:
  - Strict requirements within ½ mile for well conditions
  - Reduce MSIR within 2-mile if questionable well conditions within radius

# State Managed Priority 1 Wells

Fiscal Year	Total Annual Plugged Priority 1 Wells
2025	46
2026	52*

Fiscal Year	Average Annual Priority 1 Wells
2025	19
2026	29*


\* first half of fiscal year



Railroad Commission presentation, "Response to Oil and Gas Emergencies" March 24, 2026

# RRC emergency response updates

- RRC proposes changing emergency response when reservoir fluid confinement fails.
- Due to challenges managing produced water:
  - Unconventional produced water can't go back into fracked formations
  - High injection rates into shallow disposal wells
  - Old wellboards and “confinement” layers not confining

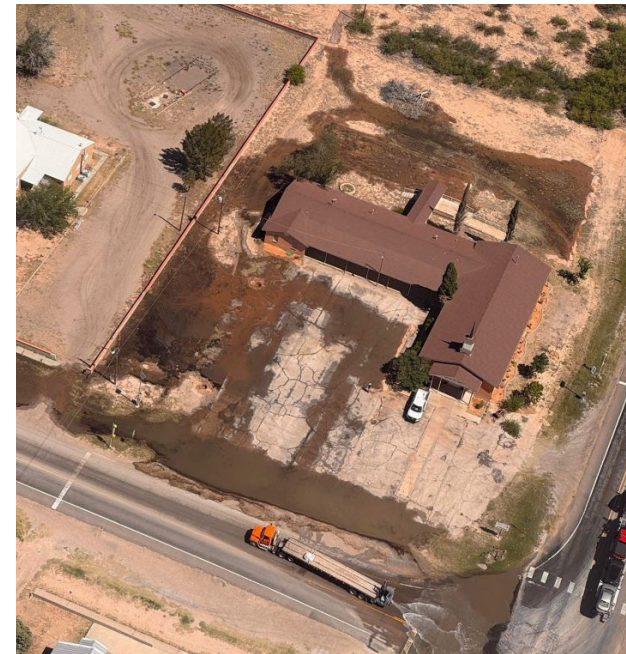


First Baptist Church  
Grandfalls, Ward County, TX  
April 21, 2026

***RRC: “We can no longer simply solve the surface flow and ignore the subsurface situation”***

# Proposed RRC emergency response

- Proposed Response (RRC led):
  - Secure & assess site
  - Compel contributing operators to control the flow
  - Declare “Oil or gas emergency”
  - Shut in injection wells in minimum 2 mile radius
  - Stop the leak
  - Look for cause
  - Require injection operators to demonstrate confinement before injection resumes
- Alternative Response (Operator-Led Emergency Response Action (OLERA))
  - Designate up to three member lead operators
  - Maximizes operator control over response
  - More flexible response terms



First Baptist Church  
Grandfalls, Ward County, Texas  
April 21, 2026

*No public input but industry input requested to the proposed response plan.*

**Laws are creating this mess**



# Why so many unplugged wells?

## Asset retirement obligations insufficient

- Operators can delay well plugging pretty much indefinitely\*.
  - Must plug within one year after drilling or operations cease ([SWR 14](#))  
OR
  - Get a plugging extension ([Form W-3X](#))
- Bonds are supposed to help the RRC pay for cleanup - but they haven't been updated since 1991.

Caldwell & Guadalupe  
Counties, TX

*\* SB 1150 limits extensions to 15 years, unless you request and qualify for new exceptions.*



Photo: Texas Tribune  
<https://www.texastribune.org/2024/06/04/texas-orphan-well--plugging-oil-and-gas/>

# Financial assurance requirements

## Individual wells:

- Bond, letter of credit, or cash deposit = **\$2/foot**
  - 10,000 foot well = \$20,000 financial security required
    - Operator pays bond @ 3% premium = \$600
- RRC average cost to plug = **\$15/foot** (2024 average)
  - 10,000 foot well = \$150,000

**For a 10,000 foot well, this equates to**

**\$150,000 - \$20,000 =**

**\$130,000 in unfunded financial risk to Texas**

Tex. Nat. Res. Code Sec. [91.1041](#).



<https://info.keystoneenergytools.com/blog/classification-and-types-of-drilling-pipe>

# Blanket bonds don't come close to covering the actual costs of plugging and cleanup:

<b>Number of wells</b>	<b>Blanket Bond Amount</b> (rate set in 1991)	<b>Per-well range of bonding</b> (RRC ave 2025 plugging cost per well \$57,000)
10 or fewer	\$25,000	\$2,500 to \$25,000
11 to 99	\$50,000	\$505 to \$4,545
100 or more	\$250,000	\$2,500 or less

<https://skytruth.org/2014/05/timelapse-west-texas-oil-boom/>

# Challenges in Class II injection oversight

- New permitting injection guidelines are not based on science
  - Area of review should be model-based
- Insufficient limits and reporting requirements for injection volumes and pressures
- Injection into overpressurized zones should stop
- Insufficient assessment or monitoring the condition of old abandoned wells in impacted area of review



# Carbon Capture & Storage



# **Carbon Capture & Storage: *You Want to Put That Where?!***

## **Putting Our Water First**

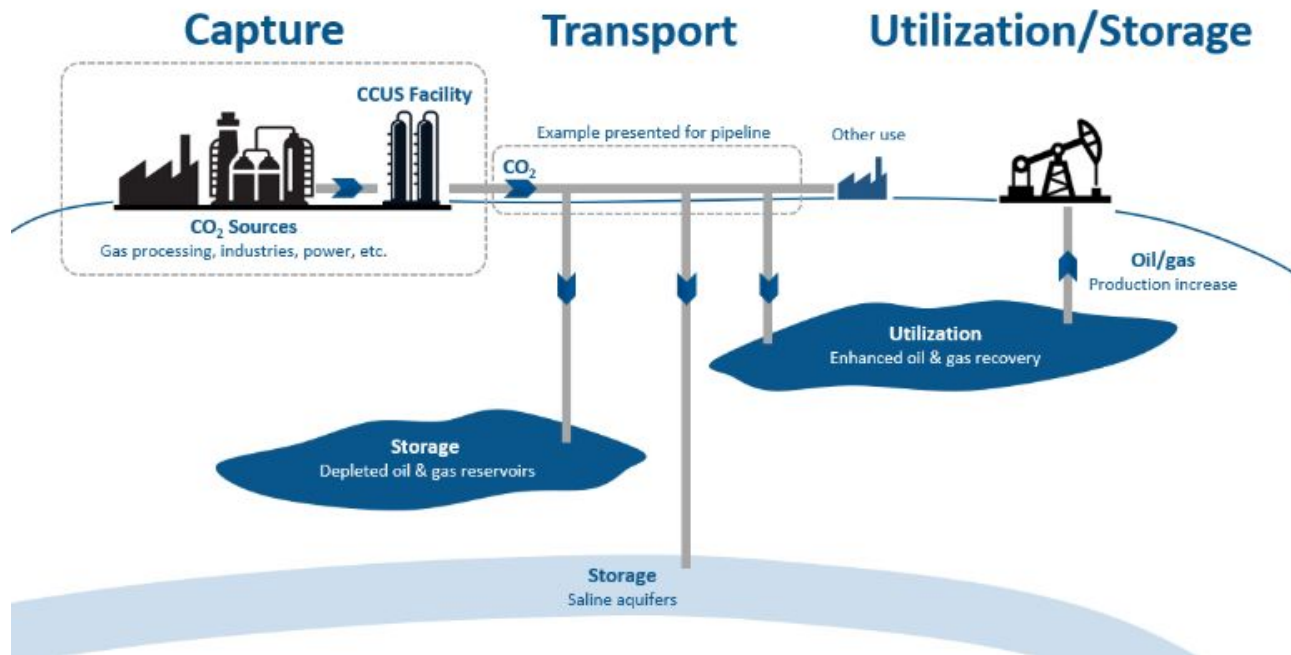
Potential Drinking Water Impacts of Oil & Gas Injection  
and Underground Carbon Storage



CLEAN WATER **ACTION**

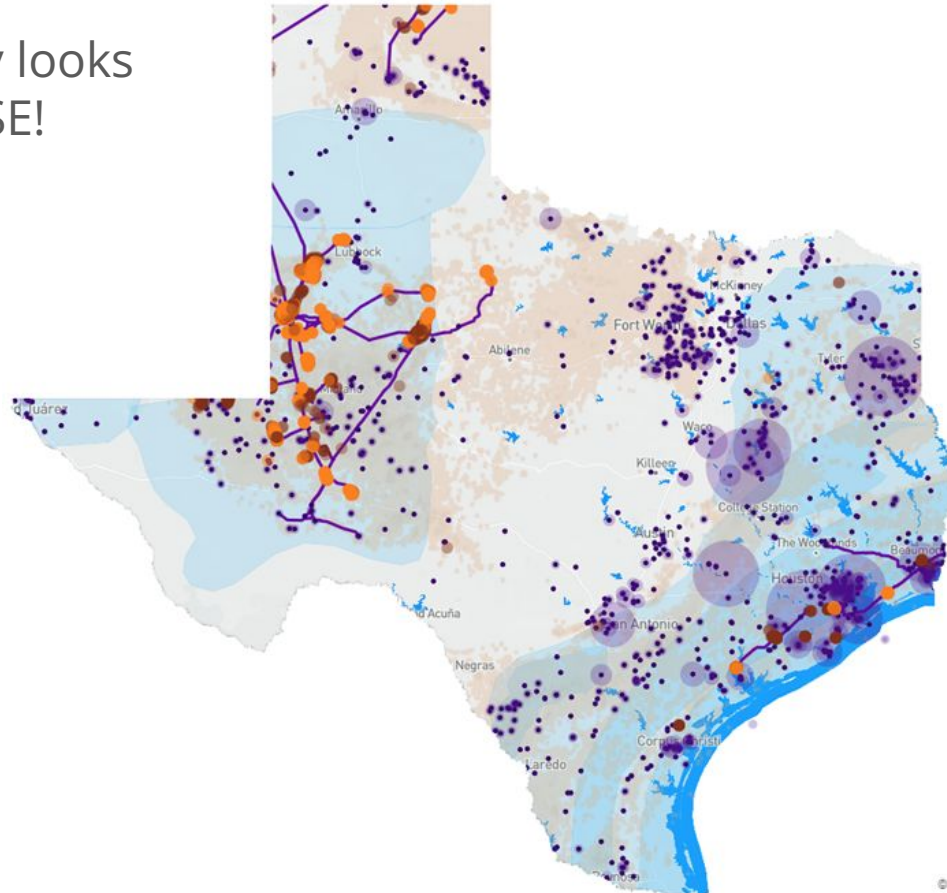
CLEAN WATER **FUND**

# Carbon Capture and Storage



Source: IEEFA, Carbon Capture in the Southeast Asian Market Context, 2022.

This joint already looks like SWISS CHEESE!



Elsie Hung, Center for Energy Studies, Baker Institute  
[Data and Methodology](#)

**Legend**

- CO<sub>2</sub> pipelines
- Active CO<sub>2</sub> injected wells
- Inactive CO<sub>2</sub> injected wells
- Direct emitters
- Saline formations

**Opacity:**

- CO<sub>2</sub> injection wells: 100%
- Active oil & gas wells: 30%
- Saline formations: 59%

Direct emitters

Direct emitters by 2019 emissions

CO<sub>2</sub> pipelines

CO<sub>2</sub> injection wells

Active oil and gas wells

Texas state land inventory

Saline formation

# What's the Problem?



**CO<sub>2</sub> is an asphyxiant and is heavier than air. Exposure can cause long-term neurological damage or death.**

The 2020 gassing of Satartia, MS sent more than 50 people to the hospital and caused evacuation of over 300.

# Texas Aquifer Exemptions: Ignoring Federal Law to Fast-Track Oil & Gas Drilling

- What are aquifer exemptions?
- Railroad Commission does not have a complete idea of which aquifers are exempt
- Railroad Commissions UIC Oversight Responsibilities
- Railroad Commission confirms lapses in oversight that puts drinking water at risk
  - Clean Water Action is skeptical of the Railroad Commission's view that its program is effective in protecting USDWs
  - Railroad Commission must reform UIC Oversight to protect drinking water
  - Now the RRC will oversee Class VI Permanent Storage Injections (Primacy was granting August 2025)

# Is Texas Ready for Widespread Commercial CCUS?

- There are no federal rules regulating CO2 pipeline safety.
- In Texas, people living next to Class II wells and oil and gas waste pits have reported numerous unresolved pollution issues.
- The impact of Class II injection on surface uplift and subsidence (sinkholes) and induced seismicity is well-documented.
  - <https://doi.org/10.1038/s41598-018-23143-6>
- We risk repeating Class II oversight failures with Class IV oversight for CCUS.

# A Few More Questions about CCS in Texas

Who?

What?

Where?

When?

Why?

How?

Who's getting rich?

Who's suffering?

# Resources: Clean Water Action/Clean Water Fund Reports

- [“Regulating Oil & Gas Activities to Protect Drinking Water: the Safe Drinking Water Act’s Underground Injections Control Program - Overview and Concerns”](#)
- [Aquifer Exemptions: A First-Ever Look at the Regulatory Program that Writes Off Drinking Water Resources for Oil, Gas, and Uranium Profits](#)
- [The Environmental Risks and Oversight of Enhanced Oil Recovery in the United States](#)
- [Roadmap for Reform: Federal and State Action Needed to Protect Water from Upstream Oil and Gas Activities, Summary of SDWA and Clean Water Act Recommendations](#)
- [Carbon Dioxide Enhanced Oil Recovery \(CO<sub>2</sub>-EOR\): A Threat to Drinking Water and the Environment](#)
- [Texas Aquifer Exemptions: Ignoring Federal Law to Fast Track Oil & Gas Drilling](#)

# CONTACT

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**cleanwater.org**

**@CleanH2OAction**



# Solutions



# Orphaned Well Policy Solutions

- Collect the right amount of financial assurance
  - Full cost bonding with a sinking trust fund
- Address well transfer liability
  - Full cost financial assurance for individual wells before transfer
  - Limit transfer of idle wells of with ongoing enforcement proceedings
  - Joint and several liability
- Limit inactive well plugging extensions - 15 years still too long
- Stop assuming a plugged well is plugged
  - Improve tracking and assess the condition of old plugged wells



ABANDONED and ORPHANED WELLS  
PART 1 OF 5  
INTRO

REPORT: ELIMINATING ORPHAN WELLS AND SITES IN TEXAS

**Eliminating Orphaned Wells and Sites in Texas**

Commission Shift


Public ▾

5 videos 10 views Updated today

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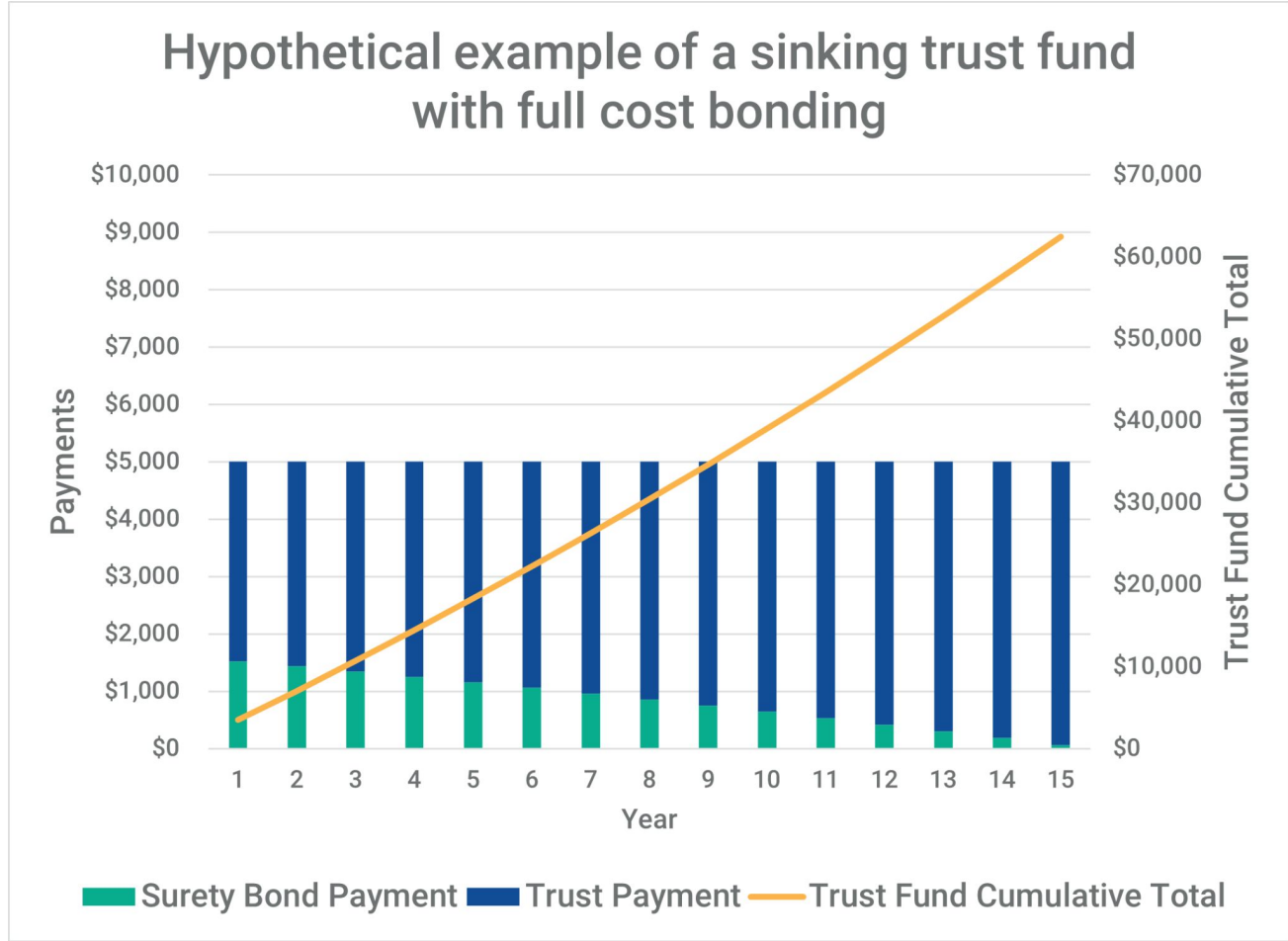
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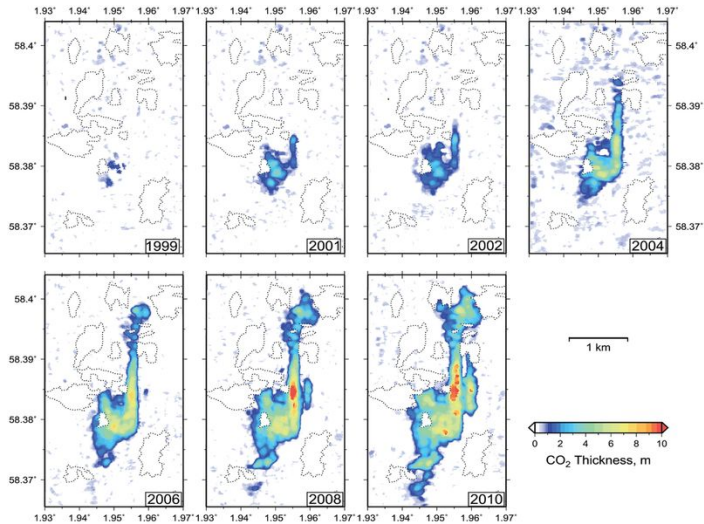


**Learn about solutions on YouTube:  
@CommissionShift**

**Solution:  
Save for  
retirement**



# Injection well permitting reforms needed



Mapped distribution model of CO<sub>2</sub> in the uppermost layer beneath the caprock with time

- Update rules for Class II injection wells
- Base Area of Review radius on where the fluid will go
  - May span multiple miles
- Stronger scrutiny of injection locations
  - End or reduce injection into overpressurized zones
- Greater scrutiny of penetrations in area of review
  - Wells in plume must be properly plugged
  - No plugging extensions
- Monitor injected fluid plume
- Injection pressure & volume limits

# Concerns with Produced Water Treatment for Beneficial Reuse

- Unproven at scale
  - More technology vetting needed
- Fill knowledge gaps
  - Water testing insufficient for unknown chemicals
  - Require disclosure for proprietary chemicals
- Ensure beneficial reuse rules protect humans and environment
  - Effective rules need to be based on solid science, complete risk assessments, and fully vetted treatment technologies
- Consortiums need more transparency

## ★ THE TEXAS TRIBUNE



### Texas farmers say sewage-based fertilizer tainted with “forever chemicals” poisoned their land and killed their livestock

The fertilizer was promoted as an environmental win-win for years. An untold number of farmers and ranchers across Texas have spread it on their land.

BY ALEJANDRA MARTINEZ

DEC. 2, 2024, 5:00 A.M. CENTRAL UPDATED MARCH 19, 2025, 11:53 A.M. CENTRAL

REPUBLISH 58



Images: Tony and Karen Coleman

*Rulemaking in progress now for SB 1145 that transfers land application authority to TCEQ from RRC*

# Failure disclosures and reporting reforms

- Increase reporting for injection volumes and pressures
- Strengthen clean up and monitoring requirements for failures
- Strengthen well failure reporting requirements
  - Individual well leak disclosures
    - Location, well, operator & lease information
    - Information about failures
      - Type & location of failure
        - In freshwater stratus? Signs of subsurface crossflow? Flow at surface?
      - Volumes leaked, constituents leaked
      - Clean up requirements & clean up status
  - Compiled failure report for all wells
- Make data publicly available

## Compensation requirements for those harmed




## (Just Some) Solutions for CCS

- Funding, training, & equipment provision for first responders during CCUS permitting
- Require injection wells to be plugged within one year of closure, without plugging extensions
- Robust and consistent carbon accounting methodologies; is it really staying “down there”?
- Provide for long-term monitoring and financial liability after post injection site-closure (PISC)
- Make sure no one ever uses it later for industrial uses
- Allow injured people to make claims for non-economic damages

# Always a Solution: Party!

## (Actually, Building Community)



Clean Water Action & Clean Water Fund's  
**2026 Spring for Water  
Benefit Bash**

**CLEAN WATER ACTION** | **CLEAN WATER FUND**

**Saturday, May 2nd**  
**5:30-8:00pm**  
The Gallery at  
**Chez Zee American Bistro**  
5406 Balcones Drive, Austin, TX 78731  
[www.chez-zee.com](http://www.chez-zee.com)

For more information  
or to make an online donation:  
[cleanwater.org/TXSpringEvent](http://cleanwater.org/TXSpringEvent)



# Q&A

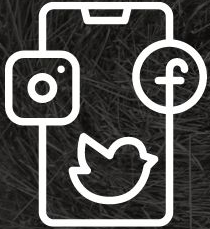


# Talk to Us

## Social Media

[www.commissionshift.org](http://www.commissionshift.org)

@CommissionShift



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Executive Director  
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(512) 791-1973

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