

# Environmental Regulatory Developments Affecting the Oil and Gas Industry in Texas

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# Regulatory Issues

- Trespass Case Before Supreme Court on Liability of Water Injected into Disposal Well Migrating under Another Party's Property
- Water Use, Recycling, and Reuse
- Innovation in Fracturing Technology
- Brackish Water Use and RRC Regulation
- RRC Proposed Rule on Seismic Activity

# Texas Drought



# Water and Oil and Gas

- Ten years ago, water issues involved groundwater contamination and litigation
- Today, water use is more of a constant concern for oil and gas companies, at least for their operations in West and South Texas
  - Such as the Permian Basin and Eagle Ford

# Water and Oil and Gas

- Focus on Groundwater
  - Fracking water generally from groundwater sources, and historically has been “fresh water”
- Public Focus on Fracking in General
- Water Use of Particular Concern West of I-35

# Water Use and Hydraulic Fracturing

- Water and Oil and Gas Now Tied at the Hip
  - Although some technologies exist or under development, well fracturing now requires significant amount of water
  - For each frac job, about two to six million gallons of water is required
  - Perhaps not as significant in terms of overall annual statewide use of groundwater by all parties
  - Public focuses on oil and gas related uses and has become political and public controversy

1. Water Acquisition



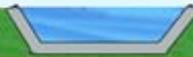
2. Chemical Mixing



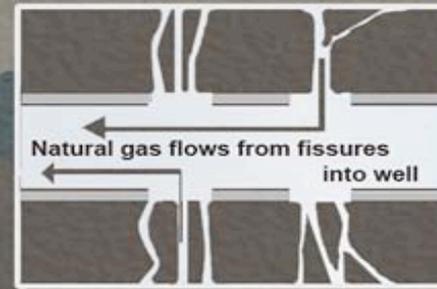
3. Well Injection

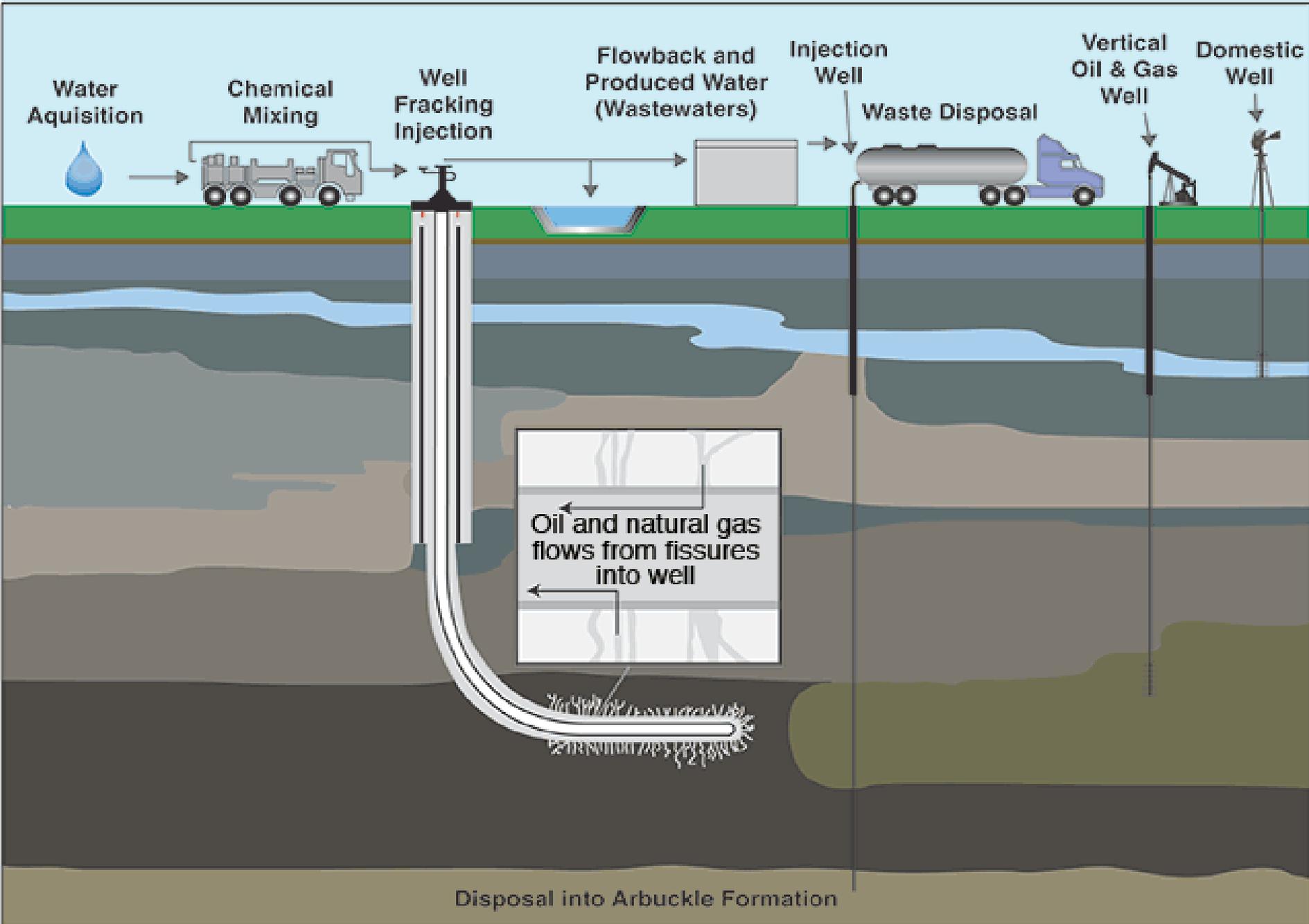


4. Flowback and Produced Water (Wastewaters)



5. Wastewater Treatment and Waste Disposal





# Injection Well Lawsuit

- Texas Supreme Court Case Could Alter Texas Oil and Gas Industry
- A Rice Farming Entity, FPL Farming, Brought Suit against a Company Operating an Injection Well for Nonhazardous Industrial Waste, Environmental Processing Systems, Alleging Trespass
  - Injection at 7,000 feet into a brackish aquifer
  - Plaintiff asserts that migration constitutes trespass, even without “harm”

# Prior Texas Supreme Court Decisions

- 2012, the Supreme Court ruled that landowners have a constitutional property interest in the groundwater in place beneath their land.
  - *Edwards Aquifer Authority v. Day*, 369 S.W.3d 814 (Tex., 2012).

# Prior Texas Supreme Court Decisions

- In prior *FPL* ruling, the Supreme Court ruled that
  - an injection permit did not shield operator “from civil tort liability that may result from actions governed by the permit,”
  - “[w]e do not decide today whether subsurface wastewater migration can constitute a trespass, or . . . whether it did so in this case,” and
  - the case be remanded to the Beaumont Court of Appeals to address the merits of FPL’s trespass claim.
  - *FPL Farming Ltd. v. Environmental Processing Systems, L.C.*, 351 S.W.3d 306, 314 (Tex. 2011).

# Appeals Court Decision

- We conclude that Texas law recognizes FPL's property interest in the briny water underneath its property. We do not agree with EPS that no trespass action exists under Texas law to protect FPL's legal interest to its property.
- FPL Farming Ltd. v. Env'tl. Processing Sys., L.C., 383 S.W.3d 274, 282 (Tex. App., 2012), review granted (Nov. 22, 2013).

# Appeal of Appeals Court Decision Back to Supreme Court

- January 7, 2014, Oral Argument Held before the Supreme Court
- Consent Issue—The jury in original case ruled no trespass occurred because FPL consented to injection
  - Could provide the Supreme Court with a way of avoiding ruling on the larger trespass questions

# Oral Argument

- One justice asked the FPL attorney:
  - If the water being injected and migrating underground was not harmful, and was instead the exact same type of water as already found in the formation, would a trespass still occur?
  - FPL's attorney admitted this would not be a trespass, even though had argued no harm needs to be shown to prove a trespass claim

# Oral Argument

- Surface Ownership of Groundwater
  - FPL's attorney argued that the Supreme Court held in *Edwards Aquifer Authority v. Day*, and the Texas Legislature in passing Texas Water Code Section 36.002 created law that all groundwater beneath the land is the property of the overlying landowner
  - To refute counsel for Environmental Processing's argument that the salty water at 7,000 feet was not being used for any beneficial purpose

# Oral Argument

- One justice raised issue of propant being pushed under someone's land not being trespass, but wastewater migration would be.
- FPL's counsel argued that the first case involved oil and gas, governed by the Rule of Capture, while the second case was not, but rather a right of a surface owner to exclude others and migrating materials from its land

# Oral Argument

- The EPS attorney argued that no limits were being placed on FPL's use of the water as a result of wastewater injection, whereas in prior *Edwards Aquifer Authority v. Day* case, a governmental agency was limited the amount of water that could be pumped from the landowner's property.

# Oral Argument

- The justices asked the EPS attorney what if rather than injection at 7,000 feet in this case, EPS had injected at 50 feet into fresh water.
- The EPS attorney argued in either case, there would not be trespass.

# Potential Implications of Case

- If the surface owner can exclude other persons and materials from their land at any depth, then what would be the implications for injection wells, particularly those used to dispose of oil and gas waste and wastewater?
  - Allow surface owner to obtain injunction to stop injection into a well
  - Could require company injecting water to obtain lease from surface owner at the depth of the injection and for a specific surface area
  - Impact on existing and future disposal wells

# Groundwater Regulation

- In Texas, Generally “Right of Capture”
- However, Groundwater Control Districts under Current Statutes Have Regulatory Power
- Oil and Gas Use and GCDs
  - Can require permits
  - For exporting groundwater out of county, fees sometimes charged
  - County export has been very controversial

# RRC Regulations—Water Recycling and Reuse

- 2013 RRC Regulation for Water Recycling for Non-commercial Operation--16 TAC § 3.8
- Rule Authorizes On-lease Recycling and Pit Storage of Water, with Conditions
  - Construction, operation and closure standards
  - Notice
  - Authorizes reuse
    - As makeup water, other “wellbore” use
    - Other manner pursuant to state or federal permit
  - ANY reuse if water is distilled, except discharge to surface water w/o a permit
- Permits for off-lease recycling facilities

# Drought Causing New Interest in Brackish Water

- Cities considering brackish water as source of drinking water
- Oil companies pressured to use less freshwater for hydraulic fracturing
- Legislature in 2013 considered bills relating to brackish water
- Litigation over brackish water and injection of produced water into brackish aquifers

# What Is Brackish Water?

- Texas Water Development Board
  - brackish groundwater is water with a total dissolved solids concentration of 1,000 to 10,000 mg/L.
- Railroad Commission of Texas
  - “Fresh Water” considered by RRC to be less than 1,000 mg/L total dissolved solids (TDS).
  - “Usable-quality Water” generally less than 3,000 mg/L TDS, but may include higher levels of total dissolved solids if identified as currently being used or identified by the Texas Water Development Board as a source of water for desalination. TCEQ and RRC Memorandum.
  - “Underground Source of Drinking Water” defined as: “Contains fewer than 10,000 mg/L total dissolved solids.” 16 Tex. Admin. Code § 3.79(27). Also used in Memorandum between the TCEQ and RRC.
- In studies of brackish groundwater by the Texas Water Development Board, brackish water has been defined as water containing between 1,000 to 10,000 mg/L of TDS.

# Railroad Commission Position on Brackish Water Pits

- The RRC has stated that it regulates the storage of brackish water intended for use in oil and gas exploration.
- Since it is groundwater and not produced or fracking water, pits used to store the water are governed by Rule 8(d)(4)(E), which authorizes freshwater makeup pits.

# Authorized Pits

- A person may, without a permit, maintain or use reserve pits, mud circulation pits, completion/workover pits, basic sediment pits, flare pits, *fresh makeup water pits*, fresh mining water pits, non-commercial fluid recycling pits, and water condensate pits on the following conditions.
  - Rule 8(d)(4).

# Fresh Makeup Water Pits

- A person shall not deposit or cause to be deposited into a fresh makeup water pit any oil and gas wastes or any oil field fluids other than *fresh water* used to make up drilling fluid or hydraulic fracturing fluid.
  - Rule 8(d)(4)(E).
- RRC is allowing brackish water to be stored in makeup water pits.

# Do Liner Requirements Apply?

- The liner shall be designed, constructed, and installed to prevent any migration of materials from the pit into adjacent subsurface soils, ground water, or surface water at any time during the life of the pit. The liner shall be installed according to standard industry practices, shall be constructed of materials that have sufficient chemical and physical properties, including thickness, to prevent failure during the expected life of the pit. All liners shall have a hydraulic conductivity that is  $1.0 \times 10^{-7}$  cm/sec or less. A liner may be constructed of either natural or synthetic materials.
  - Rule 8(d)(4)(G)(v)

# Pit Liner Requirements

- The RRC relies on liner requirements for “non-commercial fluid recycling pits.” Rule 8(d)(4)(G) is entitled “commercial fluid recycling pits.”
- Such pits are “for the storage of fluid for the purpose of non-commercial fluid recycling or for the storage of treated fluid.”
- Do these requirements apply to all other pits listed in Rule 8(d)(4), such as Rule 8(d)(4)(E) “fresh makeup water pits”?

# Innovation in Hydraulic Fracturing

- Brackish Water
- Wastewater from Other Sources
  - Pioneer entered agreement to purchase treated municipal wastewater from City of Odessa
- New Technology Development
  - Removing Constituents from Water
  - Alternative Treatment to reduce chemical use
    - Replaces biocides, scaling inhibitors, etc.
  - Evaporation rather than injection or treatment
- Alternatives to Water
  - Gases
  - Other technologies

# Seismic Activity

- “Earthquakes” and fracking have become a major news item and controversy in the press, among politicians, and public
- First Key Point—Not the fracturing that is potentially related to the recent seismic activity
- Potential Source—Injection into Saltwater Disposal Wells near a geologic fault
  - Question of whether a particular well is actually contributing to seismic activity

# RRC Proposed Rule-- Seismic Activity

- RRC Concerned about Seismic Activity Potentially Caused by Injection Wells
- Proposed Rule with Comment Period ending September 29, 2014
- Application must provide information from USGS of any historic seismic activity within 10-year injection period at 5 PSI pressure front
- Pressure front is increased pressure caused by injection into subsurface

# RRC Proposed Rule—Seismic Activity

- May require additional information that injected material will remain in injection zone
- May include logs, geologic cross-sections, and/or structure maps

# RRC Proposed Rule—Seismic Activity

- Conditions that may raise questions of concern could be
  - Complex geology,
  - Proximity of the baserock to the injection interval,
  - Transmissive faults, and/or
  - A history of seismic events in the area as demonstrated by information available from the USGS

# RRC Proposed Rule—Seismic Activity

- Allows RRC action “if injection is suspected of or shown to be causing seismic activity”
  - May require more frequent monitoring and reporting if suspect seismic activity issues
  - May modify, suspend, or terminate injection well permit