

# Welcome!

The program will begin soon.





# IOGCC Council of Oil and Gas Attorneys

Chair: Ryan Hoffman

Continuing Legal Education

Friday, January 20, 2023

1:00pm – 2:15pm CST



*“Pore Space Law and Its Application to CCUS”*

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# Pore Space Law and its Application to CCUS

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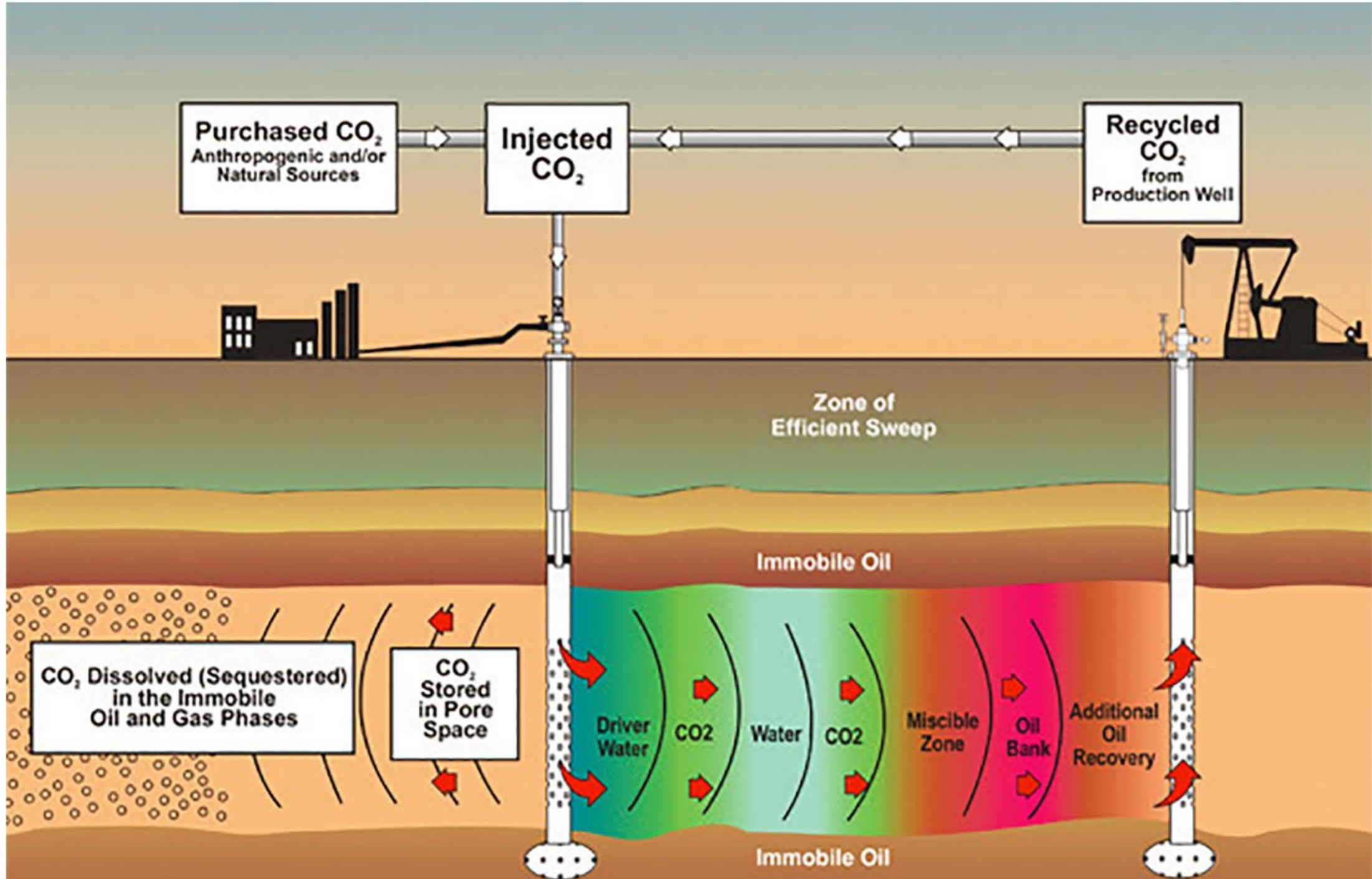
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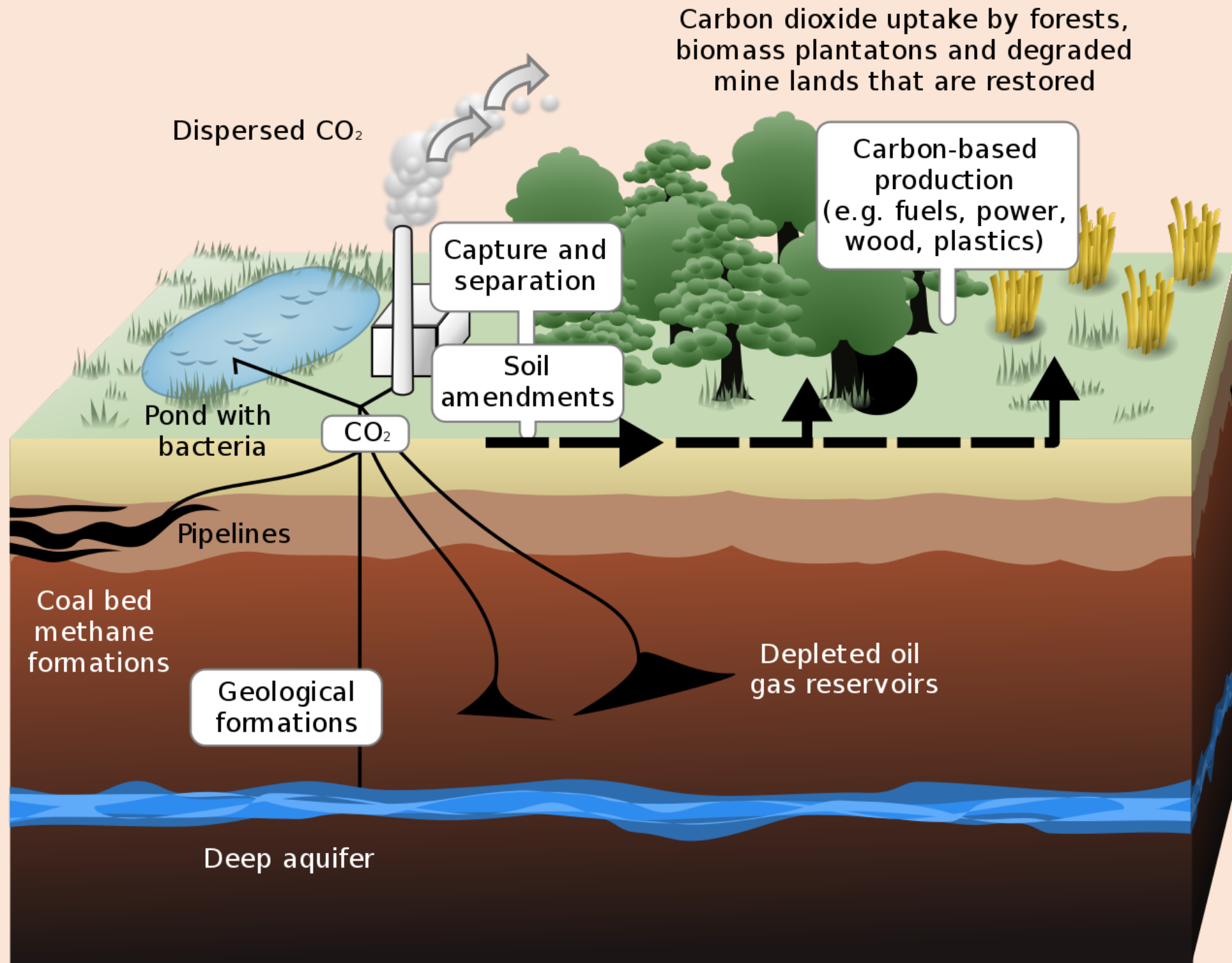
# Road Map

- 1) Introducing CCUS
  - a) EOR
  - b) Permanent Storage
- 2) Intro to Pore Space Law
  - a) Ownership of pore space
  - b) Concurrent mineral development
  - c) Subsurface trespass
- 3) Statutory Frameworks for Consolidating Pore Space
  - a) Eminent domain and unitization models
  - b) Regulatory takings issues

# Introducing CCUS



[https://www.costain.com/media/597769/eor\\_main.jpg](https://www.costain.com/media/597769/eor_main.jpg)



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# Permanent Storage: Some Legally Relevant Facts

- Injected carbon remains in place permanently.
- Injected carbon creates a pressure plume that migrates ahead of the injected carbon.
- Both the pressure plume and the carbon plume may disperse over hundreds or thousands of square miles over time.
  - The carbon plume from an average injection well may migrate across 2-3 sections (72-180 square miles).
- Often occurs proximate to oil and natural gas production.

# Relevant Federal Law

- Injection for EOR requires a Class II UIC permit.
- Injection for permanent storage requires a Class VI UIC permit.
  - Requires comprehensive long-term monitoring and post-injection site care (50-year default).
- 45Q tax credit for carbon capture projects
  - \$60/ton for carbon stored through EOR
  - \$85/ton for carbon stored not through EOR (permanent storage)
  - Projects that commence construction before 2024 can claim the credit for up to 12 years.
  - The party eligible to claim the credit is the owner of the equipment that captures the carbon, but credits may be transferred to another party that stores the carbon.

# Intro to Pore Space Law

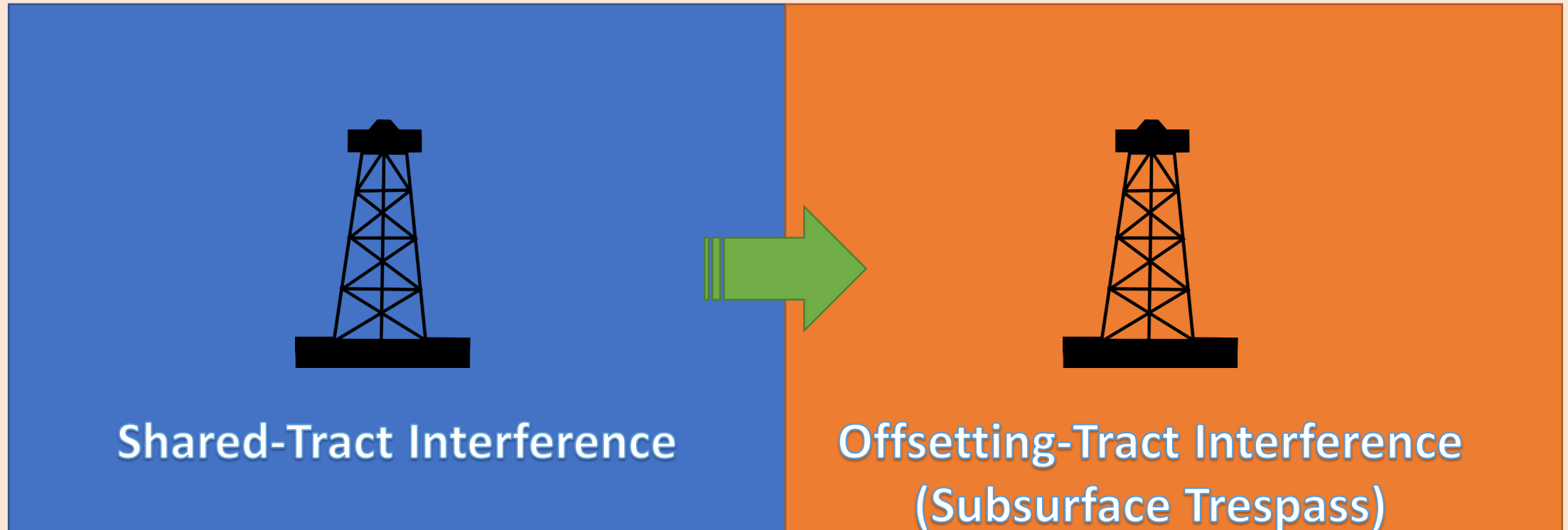
# Basic Principles

- *Cujus est solum, ejus est usque ad coelum et ad inferos* (To whomsoever the soil belongs, he owns also to the sky and to the depths)
- A conveyance of a severed mineral interest usually includes only the fair opportunity to recover the hydrocarbons in place or their equivalents in kind.
- The landowner (surface estate owner) usually retains the geologic structures beneath the surface including the geologic porosity or “storage space.”



# Concurrent CCUS and Mineral Development

# Carbon Storage v. Mineral Production



# Shared-Tract Interference

- Although the storage space is usually part of the surface estate, the holder of a severed mineral estate or lease enjoys an implied easement in the surface estate.
  - As reasonably necessary for exploration, drilling, production, transportation, etc.
  - To benefit only the underlying mineral estate
- Where a separate estate in the storage space is severed, it too may enjoy implied easement rights in the surface estate.

# Shared-Tract Interference

## **Surface Activities**

- Geophysical exploration
- Wells and well pads
- Tank batteries
- Pipelines
- Roads

## **Subsurface Activities**

- Geological and geophysical exploration
- Drilling
- Injection
- Penetration of carbon plume



# Legal Principles

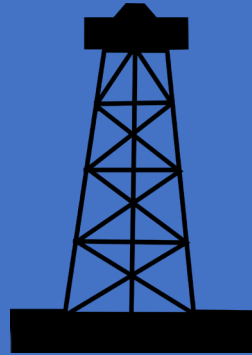
- Knowns

- The mineral estate is dominant and the surface estate is servient.
- The mineral estate may have to accommodate the subsurface activities of the surface estate in states that follow the accommodation doctrine. *See Lightning Oil & Gas Co. v. Anadarko Onshore E&P*, 520 S.W.3d 39, 50 (Tex. 2017).

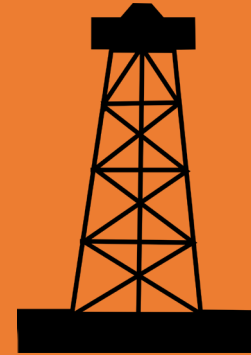
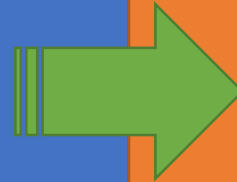
- Unknowns

- How to prioritize the surface-use rights of a (1) surface estate (2) severed mineral estate and (3) leases, easements, or estates in the pore space.
- Whether state surface owner protection and surface damage statutes apply to portions of the surface estate located below the surface.

# Subsurface Trespass from Migrating Carbon



**Shared-Tract Interference**



**Offsetting-Tract Interference  
(Subsurface Trespass)**

Offsetting-tract interference (or “subsurface trespass”) may occur to either mineral or surface estate interests in tracts beyond the borders of the injection-site tract, e.g.,

- Interference with producing wells or SWD wells
- Contamination of oil or gas-bearing formations
- Pressurization of saline aquifers that increases the cost of injection
- Unauthorized entry into the subsurface of another

# A Potpourri of Common Law Doctrines

- *Rule of capture*: there is no liability for draining oil or gas from beneath neighboring land from a wellbore legally drilled on one's own land.
- *Doctrine of correlative rights*: owners within a common reservoir have reciprocal rights to capture a proportional share of the reserves and reciprocal duties not to injure the common reservoir or take an undue portion.
- *Negative rule of capture*: there is no liability for trespass or drainage caused by a duly permitted secondary or enhanced recovery unit.
- *Subsurface trespass*: the bottoming of a well on the land of another without consent.

# Easy Cases

- Trespass by Deviated Wellbore—*Alphonzo E. Bell Corp.*
  - Held: Actionable
- Damage to Producing Wells from Waterflood—*Tidewater v. Jackson*
  - Held: Actionable
- Damage to Producing Wells from Destruction of Producing Reservoir—*Comanche Duke Oil Co.*
  - Held: Actionable



# Hard Cases

- Trespass by Lawful Secondary and Enhanced Recovery—*Manziel*
  - Held: No action, because liability is unsupported by policy reasons.
- Trespass by Fluid Injection—*Chance v. BP Chemicals*
  - Held: No action, because liability requires actual harm to the plaintiff's ability to use or enjoy the land.
- Trespass by Hydraulic Fracturing—*Garza Energy Trust*
  - Held: No action, because liability is unsupported by policy reasons.
- Trespass by Non-Producing Horizontal Wellbore—*Lightning Oil*
  - Held: No action, because liability is unsupported by policy reasons.

# Synthesizing a Framework: *The Fair Opportunity Doctrine*

- The unifying principle of subsurface property rights—in oil and gas reservoirs as well as storage space—is that each owner has a co-equal, fair opportunity to use a proportional share of the common formation.
- There is liability for injuring another’s subsurface property interest where:
  - 1) An act of the defendant
  - 2) causes a physical invasion of the plaintiff’s property boundaries and
  - 3) damages the plaintiff either by
    - a) harming its ongoing subsurface activities or
    - b) depriving it of a fair opportunity to use the subsurface or produce its contents, unless the defendant has made a fair, reasonable, and nondiscriminatory offer to participate in the activity.

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# The Fair Offer Exception

Suppose Carbon Co. acquired the storage rights in all of Section 15 and injected carbon dioxide for storage from a location in the Northeast Quarter. Aware that the carbon plume would likely migrate into the South Half of Section 10, Carbon Co. approached the owner, Al Holdout, with an offer to participate in the storage project. Carbon Co. offered Holdout the same terms that the owners in Section 15 had accepted. Holdout rejected without making a counteroffer. Holdout later sued Carbon Co. for trespass when he learned that Carbon Co.'s carbon plume had migrated beneath Section 10. What result?

# Statutory Solutions

# Statutory Solutions

## Pooling and Unitization

- Wyoming
- North Dakota
- Kentucky



## Eminent Domain

- Louisiana
- Indiana
  - For a qualifying “pilot project”



# *Northwest Landowners Ass'n v. North Dakota*, 2022 N.D. 150—Background

- ND Cent. Code 47-31-09(1): “Injection or migration of substances into pore space for disposal operations, for secondary or tertiary oil recovery operations, or otherwise to facilitate production of oil, gas, or other minerals is not unlawful and, by itself, does not constitute trespass, nuisance, or other tort.”
- ND Cent. Code 28-08-25(5): “Any other provision of law may not be construed to entitle the owner of a subsurface geologic formation to prohibit or demand payment for the use of the subsurface geologic formation for unit operations for enhanced oil recovery, utilization of carbon dioxide for enhanced recovery of oil, gas, and other minerals, disposal operations, or any other operation conducted under this chapter.”

# *Northwest Landowners Ass'n v. North Dakota*, 2022 N.D. 150—Reasoning

- “[P]rior to the enactment of S.B. 2344, surface owners could sue for trespass for the use of their surface estate that was not “reasonably necessary” to develop the mineral estate. *See Mosser v. Denbury Res., Inc.*, 112 F. Supp. 3d 906, 918-19 (D.N.D. 2015).”
- “Government-authorized physical invasions of property constitute the ‘clearest sort of taking’ and therefore are a per se taking.”
- “Senate Bill 2344 constitutes a per se taking. It allows third-party oil and gas operators to physically invade a landowner's property by injecting substances into the landowner's pore space.”
- “Allowing such usage takes away one of the most treasured property rights because it takes away landowners' right to exclude oil and gas operators from trespassing and disposing waste into their pore space.”

# References

- *Subsurface Trespass: Private Remedies and Public Regulation*, 101 Neb. L. Rev. (forthcoming 2023)
  - Available at: [SSRN](#)
- *A Unifying Doctrine of Subsurface Property Rights*, 46 HARV. ENVTL. L. Rev. 525 (2022)
  - Available at: [UNM-DR](#)
- *Pore Space Property*, 2021 UTAH L. REV. 1 (2021)
  - Available at: [UNM-DR](#)




## **IOGCC Council of Oil and Gas Attorneys**

### **Contact Information**

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Thank you for joining  
us today!