Geothermal Leases and the Regulatory Environment

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Texas Geothermal Policy

• Texas Geothermal Resources Act of 1975
  – RRC has
    • Duty to regulate the exploration, development, and production of geothermal energy and associated resources on both public and private land.
    • Geothermal Energy and Associated Resources Defined
      – all products of geothermal processes, embracing indigenous steam, hot water and hot brines, and geopressured water
      – steam and other gases, hot water and hot brines resulting from water, gas, or other fluids artificially introduced into geothermal formations
      – heat or other associated energy found in geothermal formations
      – any by-product derived from them.
Texas Geothermal Implementation

• RRC
  – Same rules on development of geothermal resources as imposed on the development of oil and gas
    • Permitting to drill, deepen, plug back or reenter a well
    • Spacing rules, well density rules
    • Limitations on waste disposal and the like.
  – Practical
    • Most proposals for development of geothermal energy contemplate using existing oil and gas wells to reach the geothermal resources.
Texas Geothermal To Do

• General Land Office and School Land Board
  – Power to lease state lands for geothermal energy development.

• Geo-Trio
  – RRC, Texas Natural Resource Conservation Commission and GLO to make rules providing for the *rapid and orderly* exploration, development, and production of geothermal energy and associated
  – Must work together to coordinate the development of the geothermal resources of Texas.
Texas Geothermal More Specific

• Texas Public Utility Commission
  – Targets levels of renewable energy capacity, with a long-term goal of 10,000 MW of installed renewable capacity by January 1, 2025.

• Texas Tax Code
  – Amended September 1, 2009
  – Exempt oil and gas which is incidentally produced in association with the production of geothermal energy from the severance taxes on those substances.

• What is “incidental production”? 
Texas Geothermal Portent

- Anthropogenic Global Warming
  - House of cards will collapse
    - No warming since 1998
    - Cooling for last 3 years
    - Antarctic Ice reached record levels in 2007
    - Arctic Ice rapidly increasing
    - Cool PDO
    - Fading warm AMO
    - Polar Bears NOT at risk
    - Anthropogenic connection obscure, at best

- Lessons
  - Financing, tax and regulatory benefits may be fleeting
  - Projects need to stand on their own economically
Texas Geothermal Legal

• Who owns the right to produce geothermal resources?
  – California
    • Part of the mineral estate
  – Nevada and Oregon, by statute
    • Belongs to surface owner
  – Washington, by statute
    • Surface owner, not a mineral nor a water resource
  – Colorado, by statute
    • Hot water belongs to the state, hot rocks belong to the surface owner.
Texas Geothermal Legal

- Who owns the right to produce geothermal resources?
  - Federal
    - Mineral lease does not convey geothermal rights.
  - Texas
    - No cases, no statute
    - A.W. Overbeck says geothermal belongs to the mineral owner
      - Policy argument only
      - Not supported by direct authority.
Texas Geothermal Legal

• Texas
  – We believe geothermal belongs to the surface owner, absent a specific reservation of geothermal
    • Heat and hot water, cannot fit in Texas definitions of minerals.
    • Water and non-mineral rocks belong to the surface owner.
  – Complications
    • Heat from produced water.
      – Generally, mineral owner or lessee has the right to use so much of the water as is necessary to exploit the minerals.
        » We conclude that a mineral lessee could use the heat in the water to generate electricity to power mineral operations.
Texas Geothermal Legal

• Heat from Produced Water
  – Mineral owner has no right to utilize the heat for sale
  – Might be able to sell as “incidental” to mineral production.
    • But surface owner gets all proceeds
      – May get to deduct costs
  – Mineral owner may be liable for waste for not capturing heat from produced water
  – Solution: implied duty to notify surface owner of availability of heat and make available. Surface owner would take responsibility for installing facilities and disposing of produced water.
Texas Geothermal Legal

• Geothermal drilling operations
  – Risk of geothermal operations
    • Exciting developments
      – 36 inch pipe to 3,000 feet
      – Use as leverage in negotiations
    • What happens if the geothermal operator encounters oil and gas in its drilling?
      • Should be able to produce “incidental” amounts, but no financial benefit without prior agreement with mineral owner.
        – Changes in Texas Tax Code does not grant ownership
    • Some potential liability for damage to oil and gas reservoir.
Texas Geothermal Legal

• Suggestions
  – For the geothermal lessee
    • Seek a separate or combined oil and gas lease from unsevered owner
      – Or geothermal lease from surface owner and lease from mineral owner
        » Option: case the producing zone
        » Use as leverage in negotiations
    – Do your engineering. How are you going to deal with oil or gas encountered in the geothermal well?
Texas Geothermal Legal

• For the mineral lessee
  – Try to get grant of geothermal rights in your oil and gas lease from unsevered owner.
  – Or geothermal lease from surface owner.
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