Role of The Railroad Commission in Regulating Development of Geothermal Energy in Texas

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GEOTHERMAL – TEXAS STYLE!

Introduction

- Geothermal Resources Act of 1975 – Codified as Chapter 141 of the Natural Resources Code.
- RRC rules applicable to oil and gas formally extended to apply to geothermal operations.
- Summary of basic requirements.
- Useful information maintained by the RRC.

Background

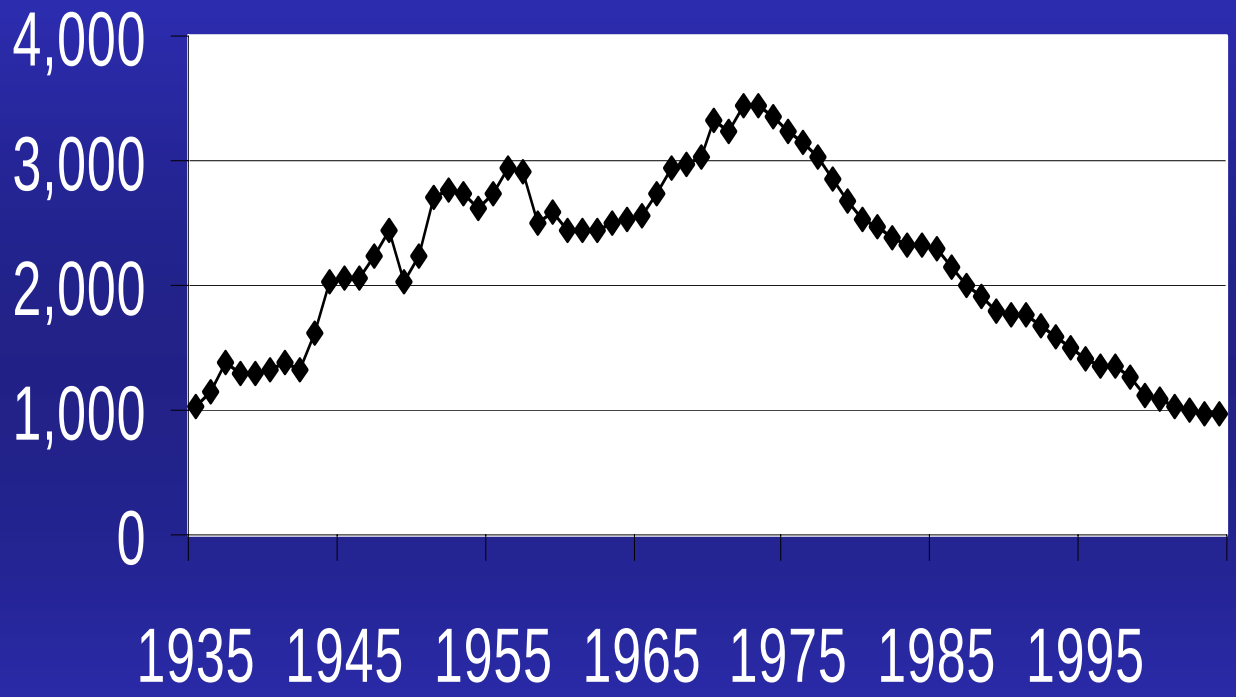
- **RRC curtailed production to meet market demand until 1972.**
- **The first Arab Oil Embargo began in October 1973. Supply plummets and prices skyrocket.**
- **America scrambles to find alternative fuels, including geothermal.**

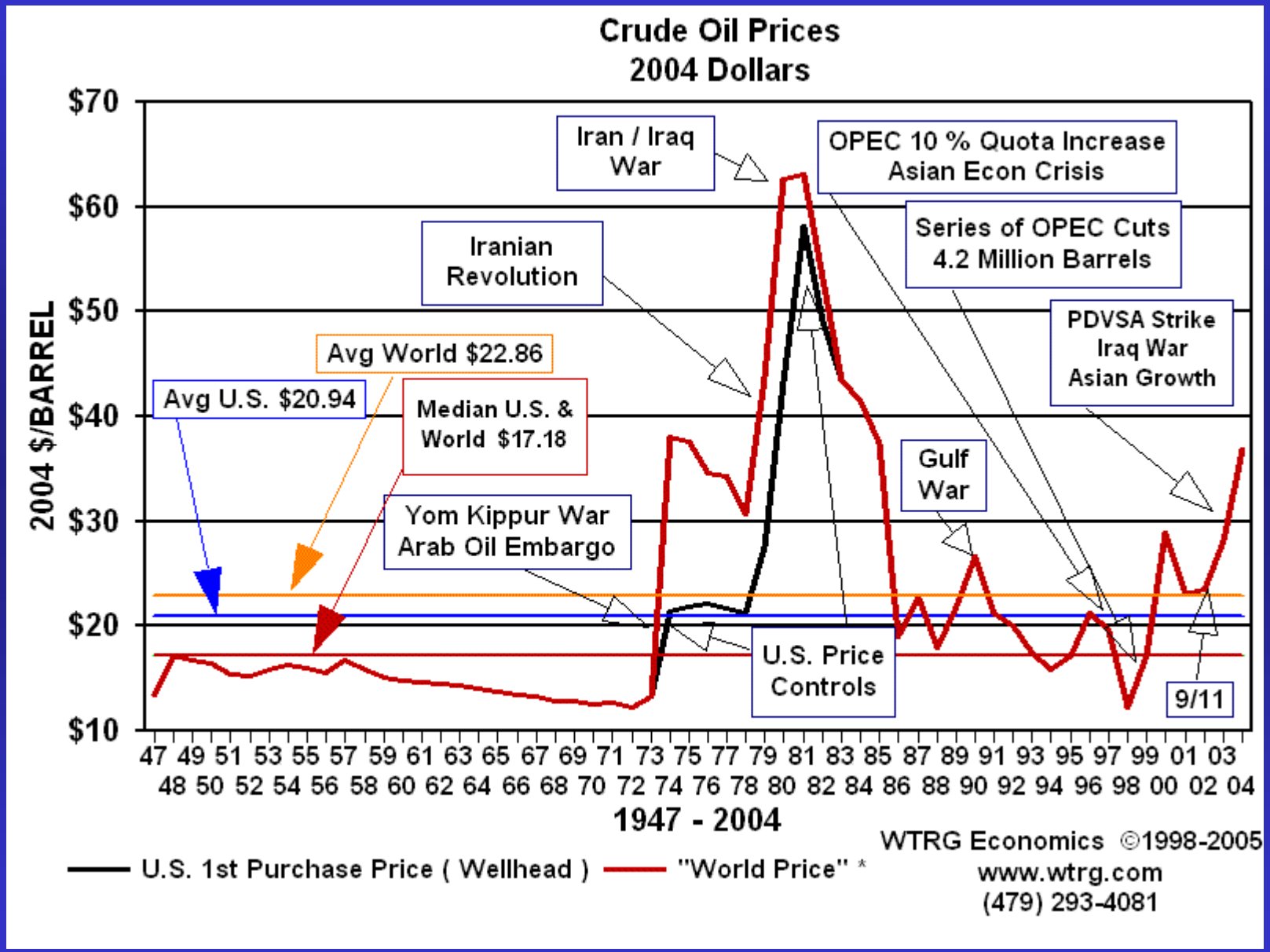
Key Dates

- 1972 – peak US production
- 1973 – Arab Oil Embargo
- 1975 – Geothermal Resources Act
  - RRC Rulemaking
  - State Energy Conservation Office (SECO)
  - GLO and TCEQ
- 1983 – Texas gets primacy over UIC
- 1989 – 1st and only Texas GT-power plant
- Present – renewed emphasis on alternatives

Texas Crude Oil Production

(mmbbl/day)




Crude Oil Prices
2004 Dollars
2004 $/BARREL
$70
$60
$50
$40
$30
$20
$10
Iran / Iraq War
OPEC 10 % Quota Increase
Asian Econ Crisis
Series of OPEC Cuts
4.2 Million Barrels
Iranian Revolution
PDVSA Strike
Iraq War
Asian Growth
Avg World $22.86
Avg U.S. $20.94
Median U.S. & World $17.18
Gulf War
Yom Kippur War
Arab Oil Embargo
U.S. Price Controls
9/11
47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 01 03
48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 00 02 04
1947 - 2004
U.S. 1st Purchase Price (Wellhead)
"World Price" *
WTRG Economics ©1998-2005
www.wtrg.com
(479) 293-4081

RRC Regulations

- **Primary directives:**
  - **Prevent waste**
  - **Promote conservation**
  - **Protect correlative rights**
  - **Protect environmental health and safety**

- **Applicable to oil, gas and geothermal operations.**

RRC Regulations

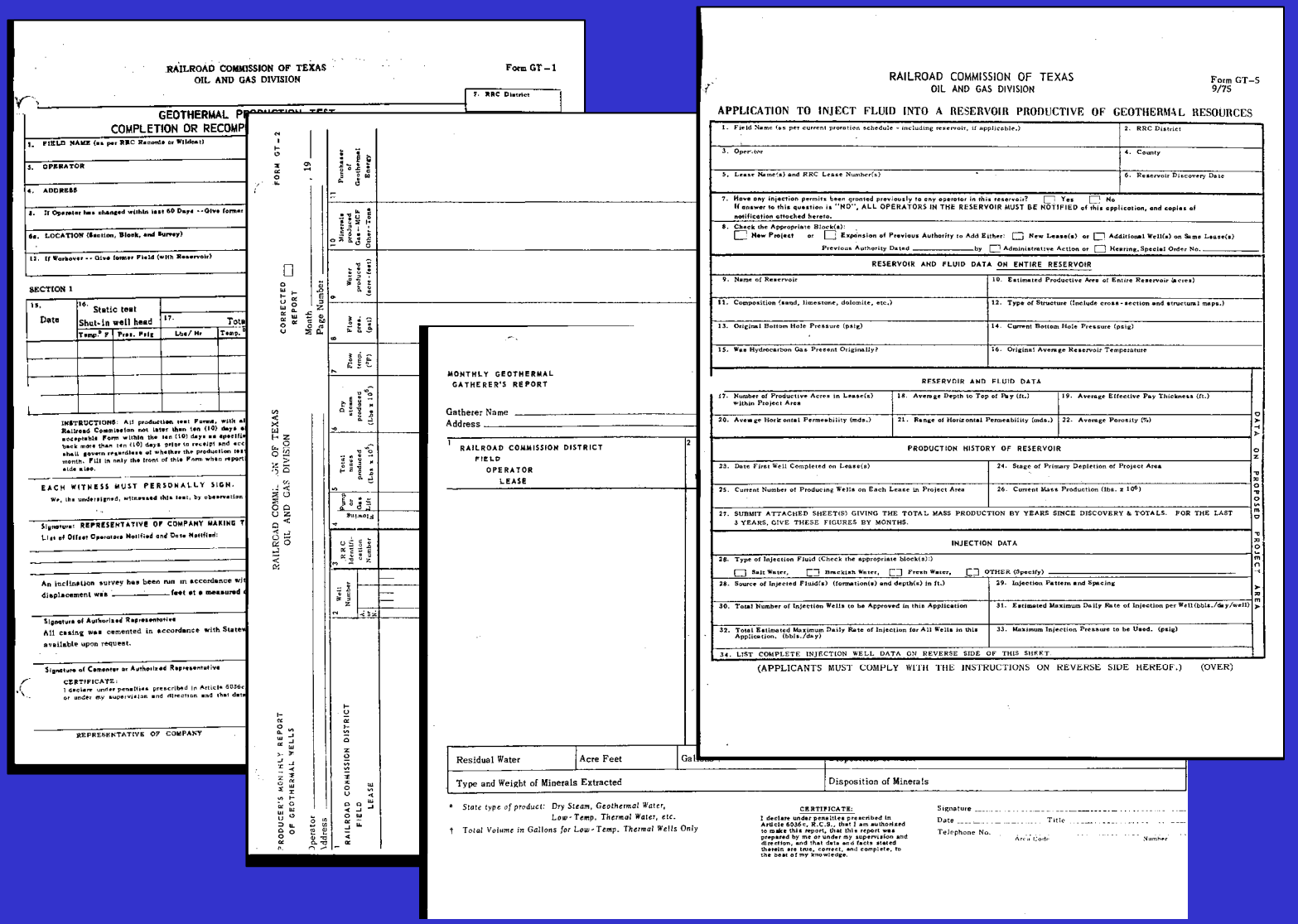
- Must have a valid Organization Report (Form P-5) updated annually.
- Maintain adequate financial security.
- Drilling permits (Form W-1) done online.
- Compliance certificate (Form P-4) designates operator of well property.
- Production reports.
- Injection permits

Geothermal Injection Wells

- **Underground Injection Control provisions of Safe Drinking Water Act**
- **Oil and Gas waste injected into Class II wells**
- **Injection of geothermal fluids considered Class V for UIC purposes**

Oil & Gas Wells in Texas

- 250,000 ± active oil and gas wells
- 141,000 oil wells
- 71,000 gas wells
- 31,000 active injection wells
- 110,000 inactive wells



RRC - Geothermal Forms

Information Resources

Central Records

- Hearing records
- Geologic maps
- Reservoir studies

Web Site

- “Interactive Data”
- “Information Resources”

Information Resources

- www.rrc.state.tx.us
- GIS map viewer
- Gas well completion reports (Form G-1)
- Annual well status reports (Forms G-10, W-10, and H-10)

Other Texas State Agencies

- General land office – manages State-owned natural resources.
- TCEQ – has established requirements heat pump/sink wells.
- SECO – part of Comptrollers Office promotes energy efficiency and alternative energy sources.


HOOK 'EM HORNS!

Thank you!

Questions?