Oklahoma Groundwater Law - More Than Acres – Times-Two?

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Dean Couch
General Counsel
Oklahoma Water Resources Board
Oklahoma Groundwater Law

- Ownership – since 1890: “The owner of the land owns water standing thereon, or flowing over or under its surface but not forming a definite stream”
- “Use” regulation –
  - 1936 case declares American rule of reasonable use, NOT English rule of absolute ownership or Texas’ rule of capture
  - Not reasonable to use off premises
Oklahoma Groundwater Law

- Current “use” regulation adopted in 1972 – a “correlative rights” doctrine which allocates water in proportion to ownership of land overlying the aquifer (2 acre-feet per acre = irrigation need)
- Altered reasonable use rule – use or non-use by one landowner does not decrease or increase proportionate share of another
- Replaced 1949 appropriation conservation law – yields could be restricted to safe annual recharge
What is “groundwater”

• “Fresh” water under the surface of the earth regardless of the geologic structure in which it is standing or moving outside the cut bank of any definite stream

• “The provisions of the Oklahoma Groundwater Law shall not apply to the taking, using or disposal of salt water associated with the exploration, production or recovery of oil and gas or to the taking, using or disposal of water trapped in producing mines”
Groundwater Availability

- Determining amount allocated per acre of land:
  - Hydrologic Surveys – USGS, OWRB Reports
  - Major Basins (50/150 gallons per minute):
    - Total Land Area Overlying the Basin
    - Amount of Water in Storage
    - Rate of Recharge and Discharge
    - Transmissivity of the Basin
    - Possibility of Pollution of the Basin from Natural Sources
    - 20-year minimum basin life – “mining” contemplated
  - Minor Basins:
    - Present and Reasonably Foreseeable Future Use In The Basin
    - Total Recharge and Total Discharge
    - Geographical Region
    - Other Relevant Factors (i.e., area of basin, transmissivity, storage)
- Determination of Maximum Annual Yield
Groundwater Availability

• Before maximum annual yield determined
• “Interim” allocation – Legislative determination = 2 acre-feet per acre
• “Temporary” permit issued
• After MAY determined - “Regular” permit issued for equal proportionate part (based on acres owned) of maximum annual yield – More or less than 2 acre-feet per acre
Groundwater Availability

- Groundwater Flow Models
Groundwater Availability

- Determinations of Saturated Thickness
Groundwater Availability
MAY determined - 16 major, 14 minor basins
Permitting Requirements

• Applications (except for domestic use);
• Notice of application (hearing if protested):
  • mail notice
  • publish notice
• Administrative Procedures Act process
• Four (five) elements:
  – Own or lease the land
  – Land overlies a basin
  – Beneficial use
  – No waste by depletion or pollution (DEQ, OSDAFF or Corporation Commission regulated?)
Permitting Issues

- Macro management vs. micro management
- Basin-wide effect vs. well interference
- Well spacing, location exceptions, reasonableness?
- Conditions – screen level, limit pump capacity
Permitting Issues

• Impact on streams and springs
• Senate Bill 288 (2003) – sensitive sole source groundwater basins
Oklahoma’s Groundwater Resources

- 23 major groundwater aquifers store 320 million acre-feet of water

Ogallala Aquifer:
- state’s largest groundwater basin;
- 86.6 million acre-feet in storage (enough to cover the entire state 2 feet deep).

Water Well Log Database
Oklahoma’s Water Resources

- Irrigation is the #1 use of water in Oklahoma:
  - accounts for 49 percent of total withdrawals:
    - water supply = 32 percent
    - stock watering = 8 percent
  - accounts for 80 percent of groundwater withdrawals.

During a peak irrigation day (assuming 1,000 wells pumping at 1,000 gallons per minute), Texas County uses as much water as New York City during an average day.
Oklahoma’s Water Resources

- 2,600 stream water use permits on file (OWRB):
  - appropriate 2.4 million ac-ft/year
- 9,500 groundwater permits:
  - allocate 3.2 million ac-ft/year

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<thead>
<tr>
<th></th>
<th>Authorized</th>
<th>Annual Use</th>
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</thead>
<tbody>
<tr>
<td>City of Tulsa</td>
<td>324,778 ac-ft/yr</td>
<td>139,000 ac-ft</td>
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<tr>
<td>City of Oklahoma City</td>
<td>215,463 ac-ft/yr</td>
<td>136,000 ac-ft</td>
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Annual Withdrawals:
Texas/Cimarron/Beaver Counties = 701,000 ac-ft
State Municipal Water Supply = 637,000 ac-ft