Economic Development & Housing Committee

Gas Exploration in the City of Dallas

August 21, 2006
Outline

• Purpose
• Background
• City of Dallas SUP requirements
• Possible Changes to current Development Code
• Available property for drilling operations
• Attracting Gas Exploration Companies to the City of Dallas
• What’s next
Purpose

• Advise Council of the potential for gas exploration in the City of Dallas and obtain feedback on policy issues
Background

• The Barnett Shale is the remnants of a coral reef which existed 300 to 600 million years ago.
• Anaerobic bacteria break down the organic mater in the reef to form natural gas
• The Barnett Shale Basin extends under the western portions of Dallas County
• I 35 East is the approximate Eastern border of the Barnett Shale Basin in the City of Dallas
The Barnett Shale
Background Cont.

• Barnett Shale gas wells are between 9,000 and 10,000 feet deep

• Lateral drilling techniques reduce the number of wells to be drilled, but increase the size of the primary shaft
  – Lateral lines extend up to 5,000 feet from the primary shaft in any or all directions.
  – Royalties are paid to the owners of the mineral rights
    • Paid on a proportional basis to all owners
    • Additional payment for surface use for drilling operations
Natural Gas Drilling

Vertical v. Horizontal Drilling

Vertical v. Horizontal Drilling
A TYPICAL 3-STAGE FRAC USES:
2 MILLION GALLONS OF WATER
1.2 MILLION POUNDS OF SAND
Overview Cont.

• Drilling Rig is approximately 150 feet high

• Closed Loop Mud System requires a larger pad site and is more expensive
  – Pad site is approximately 200 feet by 300 feet

• Open Pit Mud System uses a smaller pad site, but requires a mud pit
  – Mud pit is approximately 100 feet by 50 feet
  – Mud pit is lined with plastic and is around 4 feet deep
Overview Cont.

• Drilling is a 24/7 operation and lasts approximately 6 weeks
  – A lot of heavy equipment is moved to the site during this phase
• After the well is drilled, it is lined and then the surrounding shale is fractured
• Then a well head is installed and the drilling rig is moved to a new location
Gas Well Drilling Process

ACCESS ROAD

PAD SITE

Pad site construction
Gas Well Drilling Process

DIGGING THE MUD PIT

LINING THE MUD PIT

ACTIVE MUD PIT

Lined mud reserve pit
Gas Well Drilling Process

CLOSED LOOP MUD SYSTEM

MUD RETURN PUMPS

MUD TANKS

MUD PARTICLE TANK

Closed loop mud system
Gas Well Drilling Process

Rig move in
Drilling and completing
Background Continued

• Typical gas well in the Barnett Shale produces approximately 1/2 Billion cubic feet (Bcf) to 2 Bcf of natural gas

• Natural gas prices are expected to remain in the $7/mcf to $8/mcf range for several years

• Royalties for gas wells on City property could exceed $2 million per well over the life of the well
Background Continued

• Three types of revenue from gas lease
  – Bonus payment or signing bonus
    • Paid at signing of lease
    • Paid even if no gas is ever produced
    • Based on land area and potential gas reserves
  – Rent for surface use of land for drilling/production facilities
  – Royalties paid as a percentage of the gross revenue from the sale of gas
Background Continued

• Possible Additional Revenue Sources
  – Gas reserves are subject to ad valorem tax
    • After wells are producing on private property, value of gas reserves under the land are calculated and added to appraised value of land
  – Permitting fees will offset cost of regulating gas wells within the City
Review of other cities permitting requirements

• Three basic schemes for permitting
  – Planned Development Zone (Keller)
  – Special Use Permit (Argyle)
  – No Zoning requirement, all regulation through well permitting process (Ft. Worth)

• Other requirements may include fire permits, road repair agreements and seismic testing permits
Dallas Development Code

• Gas Exploration is considered a mining use
• Code permits mining within the City
• A Special Use Permit (SUP) is required
• Allowed in the following Zoning Districts
  – IM Industrial Manufacturing
  – A(A) Agricultural districts
Dallas SUP Requirements

• 51A-4.203(3.1) Mining.
  – SUP required for extraction of oil or gas
  – Must submit to Director of Development Services:
    • Site plan
    • Operations plan
    • Reclamation plan
    • And performance bond
Dallas SUP Requirements Cont.

• 51A-4.203(3.1) Mining.
  – SUP requires recommendation by
    • Development Services Department
    • Park and Recreation Department
    • Environmental quality Committee of the City Plan Commission
  – Directors of Public Works and Development services must inspect and monitor the mining and reclamation operation at least annually
  – No SUP may be issued for mining on City Park Land
Possible Changes to Development Code

• Should gas exploration be allowed in other zoning districts? (IR)

• Should evaluation of land use criteria for mining be standardized or evaluated on a case by case basis (conditions in an SUP)?

• Should gas exploration be allowed on park land?
Gas Well Permitting

• Permitting is a more appropriate regulatory scheme than zoning alone

• Permitting requirements to include such things as noise limitations, proximity to other structures, drill site security, environmental considerations, site remediation, etc.

• May require additional City resources that will be off set by permitting fees
Need For Road Repair Agreements

• Drilling operations require a lot of heavy equipment to be moved to drill site
  – May damage abutting roads or access routes
  – Access roads built by drilling company may be dedicated for public use after drilling is complete
  – Could be a condition of an SUP or drilling permit
Available City Property Gas Exploration

• The following City owned properties have been identified as potential sites for gas exploration
  1. Hensley Field
  2. Trinity River Levee Areas
  3. Kiest Park
  4. Florina/Nature Preserve Areas
  5. Gun Range (Mountain Creek Area)
  6. Illinois Service Center
  7. Executive Airport
Available City Property Gas Exploration

- Mineral rights must be deeded in Texas
- Need to determine if COD owns mineral rights on available property
- Gas lease cannot interfere with the intended public purpose of the land
RFP for gas exploration on City owned property

- If gas exploration on City owned property is appropriate, RFP is needed to solicit interest
  - Should RFP be done concurrently with Development Code changes
  - Exploration company will want a gas lease prior to investing in seismic study and drilling
  - It will be necessary to retain outside counsel with expertise in oil and gas leases
RFP for Gas Exploration cont.

• Other area cities surveyed issued requests for proposed oil and gas leases
  – Dallas can use format and structure of other RFPs used recently

• All requested minimum of 25% royalty and up-front cash bonus

• Primary term of up to 3 years
  – Arlington limited term to 18 months
Vendor Recruitment

- BDPS will use vendor lists from other area cities for solicitation
- Solicitation efforts will include direct mailing, follow-up phone contacts and at two pre-proposal conferences at a minimum
- Also include additional advertisement in oil and gas trade publications
What’s Next

• Retain legal counsel with oil and gas expertise
• Ordinance to establish requirement for drilling permit
• Code amendment to permit gas exploration on park land and/or in other Zoning Districts
• RFP for gas exploration on City owned property