Oil and Gas Development: Land Use Considerations

RMLUI March 12, 2015
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Activity within Greeley city limits

- **Working numbers**
  - 435 active wells (approx.)
    - All require Use by Special Review
    - Equals about 800 ac (1.3 sq miles) surface (2.7%)
  - 1,221 within city + Growth Area
  - 259 inactive wells
    - Includes 161 abandoned & 55 plugged/abandoned

- **Generally clustered – multiple wells at each site**
  - 6 urbanized areas (i.e., not “everywhere”)

± 7,500 FEET BELOW SURFACE

APPROXIMATELY 1 MILE
Typical Equipment

- Typical Tanks
- Typical Separators
- Typical Wellheads
Context

- **Land use process**
  - Trained for all types of land use scenarios
  - Regulations start with the general, go to specific
  - Zoning, subdivision, site planning

- **Transparency & public education process**
  - Oil and gas mineral extraction process
    - Resource page on website
    - [www.greeleygov.com/oilandgas](http://www.greeleygov.com/oilandgas)
Mineral extraction is exercising a private property right
Mineral rights may or may not be severed from the surface property right
Operations are regulated by the state
Basic land & surface regulation is relegated to local government
Handled in context of broader land use controls
Considerations during the early site planning process
Vertical vs. directional in a section of land

Vertical Wells

Directional Wells
Example of a subdivision plat designed around oil/gas well locations (example is not in Greeley)
ORIGIN - Property Information Map

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Printed: Feb 29, 2012
Colorado law sets rules for downhole spacing of wells
Surface locations are different if drilling comes before vs. after surface development
Spacing can change with a mutual Surface Use Agreement
If drilling (or potential drilling) comes BEFORE development, then
  • Subdivision plats accommodate drilling windows (or Surface Use Agreement)
  • Or, if no objection from mineral owners, plat as desired
Notice must be provided to mineral owners at least 30 days prior to platting/surface development decisions (i.e., zoning, preliminary plan, USR)

This was a key addition to state law to ensure mineral owners are notified of surface plans
Example of a subdivision plat designed around oil/gas well locations (example is not in Greeley)
If drilling comes AFTER surface development in the area, then

- Drilling facility must meet 500’ setback (set by the State), OR per variance criteria set by State statutes
- Some other setback might be allowed by local regulations
Greeley oil & gas setbacks

- 150’ from roads, trails, railroads, and “low-density areas”
- 200’ from occupied buildings (“high-density”)
- 350’ from educational, hospital, etc. (“high-density”)
- Option for less (blast wall, etc.)
350’ Exception Zone
Chapter 18.56, Oil & Gas Operations

USR §18.20.070

- Comp Plan
- Compatible with surrounding land uses
- Site physically suitable
- Traffic flow/parking
- Cumulative effect of USRs in area
Common Questions

- Fracking impact on water quality
- Quantity of water used in fracking
- Disposal of fracking waste water
- Composition/environmental aspects of drilling fluids
- Forced ‘pooling’ arrangements
- Noise, traffic, air quality for adjacent properties
- Sub-surface degradation/impact on surface uses
State Interests

- State setbacks

Other COGCC considerations:
  - Mitigation of impacts
  - Downhole monitoring
  - Coordination with state/fed (water/air)
  - Surface monitoring (drill setup, noise)
  - Chemical tracking/records management
Local control on matters that are not state interest
  • Colorado Supreme Court ruling in 1992
  • Traditional function of local land use control

Matters of State interest vs. matters of Local
  • Not always easy to discern
  • A matter of administration
  • The Grey Area: “creating operational conflicts”
MOU Clauses

- Working with mutual understanding & trust (through an MOU) creates better outcome
- Commitment to communication & coordination
- Recognize respective authorities
  - Of city: local land use code, including design & development standards
  - “Harmonize” such regulations
  - COGCC will defer to City, where existing plans
Land Use Considerations

- Effects & opportunities from directional / horizontal
- “Leap-frog” concerns
  - Doubling setbacks (4.5 ac → 18 ac)
  - Conceptually, if no development within 500’ of existing wells, 1/3 of future would be unbuildable
350’ Exception Zone
1,000’ Zone
Theoretical land use impacts

- 500’ radius (1000’ diameter) = 18 acres
- 2000’ radius (4000’ diameter) = 288 acres

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<tr>
<th>Buffer Distance</th>
<th>Acres</th>
<th>Sq. Mi.</th>
<th>% of City (47.25 sq. mi.)</th>
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<tr>
<td>Existing City (200’)</td>
<td>828</td>
<td>1.3</td>
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<tr>
<td>Proposed COGCC (500’)</td>
<td>4,738</td>
<td>7.4</td>
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<td>Proposed COGCC (1000’)</td>
<td>11,668</td>
<td>18.2</td>
<td>36.6%</td>
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* Active wells are those with status codes for permitted, drilling, shut-in, and producing
** See attached map for visual representation

Buffer Impact Area for active** well locations within the Greeley City limits: **

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<th>Buffer Distance</th>
<th>Acres</th>
<th>Sq. Mi.</th>
<th>% of City (91.1 sq. mi.)</th>
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<td>Proposed COGCC (1000’)</td>
<td>36,157</td>
<td>56.5</td>
<td>62.0%</td>
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</tbody>
</table>

* Active wells are those with status codes for permitted, drilling, injecting, shut-in, and producing
** See attached map for visual representation

• Buffer Impact Area for active** well locations within the Greeley Future Growth Area – i.e., the Long Range Expected Growth Area (includes existing built City limits)
Questions?