COGCC Overview

Town of Timnath Public Forum

January 8, 2015

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Agenda

- WHAT and Who is the Commission?
- Colorado Oil and Gas Overview and how we regulate the oil and gas industry
- Public Involvement Opportunities
What and Who is the Commission?
The COGCC is...

- Regulatory agency created by statute in 1951 (Oil and Gas Conservation Act of 1951)
- Legislative directive then was to: “The waste of oil and gas . . . is hereby prohibited.”
- C.R.S § 34-60-101 is legal citation of current Oil and Gas Conservation Act, or “the Act”
COGCC Mission (adopted 2007)

- Foster the responsible, balanced development of oil and gas
- Protect public health, safety, and welfare, including the environment and wildlife resources
- Protect correlative rights
- Prevent waste
Commission's Authority

- The Commission acts in quasi-legislative, quasi-judicial, and executive branch capacities.

- In these capacities, the Commission:
  - Engages in rulemaking
  - Adjudicates disputes
  - Enforces violations
Who is the Commission?

- **1951**: 5 members - All with oil and gas production experience.

- **Pre-2007**: 7 members - 5 with O&G experience

- **2007**: 9 members - 3 with O&G experience
  - Executive Directors of DNR and CDPHE
  - 7 volunteer citizens appointed by Governor
  - Represent broad constituencies by statute
Who is the Commission?

- Director and professional staff carry out the day-to-day administration of the “Act” and regulation of oil and gas operations

- 99 COGCC employees (FTEs) at present

- 5 Units: Engineering, Environmental, Field Inspection, Permitting, Hearings, and Financial

- Many (~ 57) employees are field-based and are our “boots on the ground”
Spindletop Texas, 1903
Oil and Gas in Colorado

Florence, CO (1890)
Colorado Oil & Gas Statistics

- National Rank:
  - 7th in oil production
  - 6th in natural gas production
- 64,878,078 bbls oil produced in 2013
- 52,906 active wells as of 12/15/2014
- Larimer County has 257 active wells as of 12/15/2014
Colorado County Oil & Gas Activity
Active Wells, 2013 Permits, and 2014 Well Starts

- **Rio Blanco**: 3rd for 2013 Permits
- **Garfield**: 2nd
- **Mesa**: 4th for 2013 Permits
- **Montezuma**: 4th for Active Wells
- **La Plata**: 4th for Active Wells
- **Jackson**: 1st
- **Weld**: 3rd for 2014 Well Starts
- **Yuma**: 3rd for 2014 Well Starts
- **Arapahoe**: 4th for 2014 Well Starts
- **Lincoln**: 4th for 2014 Well Starts
- **Las Animas**: 5th for Active Wells

*Exploratory Horizontal Permits*
Cross Section of the Denver Basin

Modified from Colorado Geological Survey
Common Well Types
Subsurface View Multi-well Pad with Horizontal wells

Photo from online video by Shell Oil “Life of an Onshore Well”.
How does the COGCC Regulate Oil & Gas Operations?
How Does COGCC Regulate Oil & Gas Operations?

- Regulations
- Permitting
- Inspections
- Enforcement
- Collaborate with local governments
## COGCC Regulations

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<td>1100</td>
<td>Pipelines</td>
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<td>1200</td>
<td>Wildlife</td>
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Construction Standards and Rules to Protect Groundwater

- Engineering Design for Wells - Casing and Cement
- Testing Program for Wells - Bradenhead and Mechanical Integrity Tests
- Tank and Berm Specifications
- Groundwater Monitoring
- FracFocus Disclosure
Wells are built with multiple barriers of steel and concrete. More barriers are built in sensitive zones (aquifer - shown in blue).

Goal (through proper well construction, adherence to rules, inspections), is well bore integrity and isolation of production zones from freshwater zones.

For example, COGCC Rules require surface casing installed a minimum of 50 feet below fresh water zones.

Engineering Unit reviews all APDs and well completion Reports; Focus on reviewing well construction (casing and cementing plan) to isolate and protect groundwater.
Two Permit Process

Application for Permit-to-Drill

Provides information regarding the permitting of the wellbore and its construction.

- Surface & bottom hole location
- Casing
- Cementing

Oil and Gas Location Assessment

Provides an assessment of surface location.

- Area of disturbance
- Environmental review
- Hydrology
  - Groundwater
  - Surface water
- Inter-agency consultation
Inspections

- 23,500 wells inspected in 2013
- 30,675 wells inspected in 2014 (through 12/15/2014)
- COGCC inspects oil & gas operations at various stages
  - Pre-drilling site review
  - Cementing of well casing
  - Mechanical integrity testing
  - Hydraulic fracturing
  - Producing well
  - Reclamation of well pad
  - Inspection of waste injection wells
  - Inspection of public complaint
Enforcement Recent Changes

- Commission has authority to impose penalties for violations of Act, or COGCC rules, orders, or permits.

- HB 14-1356 increased penalty authority from $1K to $15K
  - Supported by COGA
  - Rulemaking to implement HB-1356 completed on 1-5-2014
Enforcement Statistics

- **2013** issued 40 enforcement orders
  - Imposed $1.16 million in penalties
- **2014** issued 47 enforcement orders
  - Imposed $1.728 million in penalties
- **2014** revamped enforcement procedures to improve efficiency and transparency
Major Rulemakings Since 2008

- Comprehensive Rulemaking - 2008
- Fracture Treatment Disclosure - 2011
- Groundwater Sampling - 2012
- Setback-Notification-BMPs - 2012
- Spill Reporting - 2013
- Wildlife Habitat Maps - 2013
- Methane emissions (2014 CDPHE)
- Penalties & Enforcement - 2015
2013 Setback Rules

- **1,000 foot Buffer Zone Setback**
  - Any O&G Location within 1,000’ of Building Unit subject to extensive mitigation measures.
  - Notification to and communication with adjacent Building Unit owners and LGD.

- **500’ Exception Zone Setback**
  - No Oil and Gas Location within 500’ of Building Unit, subject to specific, limited exceptions.
  - All Locations subject to Buffer Zone Setback mitigation measures, plus additional measures.
2013 Setback Rules

1,000 foot High Occupancy Building setback

- Commission approval required for O&G Location within 1,000 feet of:
  - Schools; Nursing homes; Hospitals; Correctional facilities (50-person threshold)
  - Child Care facilities - capacity of 5 people or more

- Exception Zone Setback mitigation measures apply, unless Commission determines otherwise.
Groundwater Sampling Rules

- Requires samples from all Available Water Sources (max of 4) within a ½ mile radius
  - All analytical results provided to COGCC
  - Posted to website
  - Provided to local government upon request

- Requires an initial baseline and 2 subsequent samples
  - Pre-drilling; 6-12 months after completion
  - 60-72 months after completion

- WY & NV implementing CO Rule
Collaborative State-Local Regulation

- Local Governmental Designee Program
- Operator-Local Gov. Agreement
- Public participation
Local Governmental Designee Program

- Voluntary program
- 167 local governmental entities participate
- LGDs have specific rights and opportunities to participate in COGCC permitting, hearings, and enforcement actions
- LGDs wear two (or more) hats
  - Usually part of planning staff
  - Level of participation discretionary
Public Participation

- Any person may comment on any matter before the Commission during a hearing.

- Any person may submit written comments on drilling or location permits.

- Any person may enlist the local government to request a hearing on a drilling permit or alleged rule violation.

- Public comment taken at various quarterly or monthly meetings around state (Garfield County EAB, GORT meeting Durango, Northwest Forum on western slope).
Public Participation

- Any person may participate as a party or a stakeholder in a rule making.

- Anyone who has been adversely affected or aggrieved by a Commission order may seek modification of that order.

- Persons affected or aggrieved by final Commission action may seek judicial review.
How to Comment on a Pending Permit Application

✴ Specific directions and printable documents on how to do so is on COGCC website [http://cogcc.state.co.us/](http://cogcc.state.co.us/) and under the PERMITS link

✴ eForms (web-based platform) is preferred method for comment submittal, but letter to COGCC or e-mail to [dnr_dnr.ogcc@state.co.us](mailto:dnr_dnr.ogcc@state.co.us) is viable

✴ Must be done during finite comment period

✴ Comments may result in COAs added to permit
Governor’s Task Force on State and Local Regulation of Oil and Gas Operations

❖ Charged with crafting and finding recommendations to address land use conflicts in siting oil and gas facilities

❖ Report due February 27, 2015

❖ Comment via attend meeting in person or via e-mail to ogtaskforce@state.co.us

❖ http://dnr.state.co.us/ogtaskforce/Pages/home.aspx
Filing a Complaint (as of 1-9-2015)

✧ New dedicated link on COGCC homepage
http://cogcc.state.co.us/Complaints/Complaints.html

- Recently improved process to File a formal complaint online
- Formal complaints required to be in a written format (fill out online, may remain anonymous)
- All complaints filed will be investigated and responded to by staff
Where do we go from here?

- Industry needs to continue to increase its engagement with the public, including opponents to O&G development. Be open and honest.

- Opponents need to be open to engagement and have discussion engaged based on facts, not on fear. Be open and honest.

- Ensure regulations are enforced, and modified and strengthened as technology improves, data is obtained, and studies are completed.

- Change operator culture to one that exceeds (not just meets) regulatory requirements.
Where do we go from here?

✧ Continue to fund and conduct research and studies (Garfield County CSU study, EPA review, others)

✧ Continue to move to an “all of the above” energy plan, with real support from the oil and gas industry

✧ Continue fact-based and science-based education, with a civil and respectful debate

✧ Continue public outreach, expand and improve LGD program to be more inclusive
PUBLIC ANNOUNCEMENTS

Continuation of Rulemaking Hearing (12/22/2014)
The Commission has scheduled the continued rulemaking hearing on Rules 522 and 523.

Encana Oil and Gas Inc. Comment Period Extended (12/17/2014)
The comment period for the Encana - Rasmussen Well Pad 19H-M268 Form 2A #400750429 and 12 associated Form 2s located in Section 19 T2N R68W has been extended by LGD request to 1/14/2015.

Encana Oil and Gas Inc. Comment Period Extended (12/17/2014)
The comment period for the Encana - Rasmussen Facilities Pad 19H-M268 Form 2A #400662720 planned to be located in Section 19 T2N R68W has been extended by LGD request to 1/14/2015.

HOT TOPICS

Commission Rulemaking Hearing
Live Audio of the January 5th Rulemaking Hearing.

Liquid & Natural Gas Pipelines Regulations
Representatives of the pipeline industry, elected officials, and local government at an overview of hydrocarbon pipeline regulation.

1412-RM-03 Rulemaking to Implement
The Commission will consider additions to the Commission's Rules of Practice and Procedure.
THANK YOU!

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January 8, 2015
White Acres 40 acres

Black Acres 40 Acres

Green Acres 80 acres
Spacing and Pooling

White Acres 40 acres

Green Acres 80 acres
Split Estates and Reasonable Accommodation

✧ Mineral estate may be severed from surface estate
  – Separate sticks in the bundle of property rights
  – Common occurrence in Colorado.

✧ CO. S. Ct.: Severed mineral rights lack value unless they can be developed.

✧ Mineral estate owner is entitled to use that portion of the surface estate as is reasonably necessary to develop the mineral interest.

Gerrity Oil and Gas Corp. v. Magness, 946 P.2d 913 (Colo. 1997).
Split Estates and Reasonable Accommodation

- Both surface and mineral estate are mutually subservient and mutually dominant with respect to the other.

- Inability of one estate to exclude the other from the surface may create tension.

  - Gerrity Oil and Gas Corp. v. Magness, 946 P.2d 913 (Colo. 1997)
Recent COGCC Policies

- Horizontal Offset Well Policy
- Modular Large Volume Storage Tanks Policy
- Drill Cuttings Management Policy
- Rule 604.c(2)E.i “as far as possible”
Commenting on a Pending Permit - Click on “PERMITS”
Hydraulic Fracturing Information - COGCC.state.co.us
**Hydraulic Fracturing Information on COGCC Website**

**HYDRAULIC FRACTURING INFORMATION**

Hydraulic fracturing (aka “fracing”) has been used by the natural gas and oil industry since the 1940s. In Colorado by the 1970’s fracing became a routine completion technique for most wells. When properly conducted, modern fracing is a safe, sophisticated, highly engineered and controlled procedure. Because of the public’s interest in and concern about the potential impacts of fracing on public health and the environment, including surface and ground water resources, the COGCC has compiled the documents and links listed below. We hope that you find this information useful in helping to understand more about fracing: what it is, why it is done, how it is regulated, and how the public and environment are protected.

<table>
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<tr>
<th>DOCUMENTS</th>
<th>LINKS</th>
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<tr>
<td><strong>COGCC Presentation On Hydraulic Fracturing</strong> (05/2011) A presentation on hydraulic fracturing in Colorado, with a focus on regulations, engineering review, environmental, groundwater protection, inspection and how complaints are handled by the COGCC.</td>
<td><strong>COGCC Rules Related to Hydraulic Fracturing</strong></td>
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<td><strong>COGCC Frequently Asked Questions</strong> A list of questions compiled and answered by the COGCC staff.</td>
<td><strong>FracFocus</strong> The hydraulic fracturing chemical registry website, where you can search for information about the chemicals used in the hydraulic fracturing of oil and gas wells.</td>
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<td><strong>COGCC Gasland Correction Document</strong> (10/29/2010) A memorandum that corrects errors in Gasland’s portrayal of several Colorado incidents.</td>
<td><strong>Colorado Fluids Disclosure</strong> A site provide by Halliburton listing the fluids used in Colorado during the hydraulic fracking process.</td>
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<td><strong>COGCC Natural Gas Drilling: Public Health and Environmental Impacts</strong> (04/17/2011) Director Neslin’s testimony before the U.S. Senate Committee on Environment and Public Works &amp; Subcommittee on Water and Wildlife regarding hydraulic fracturing</td>
<td><strong>Material Data Sheets for Ohio</strong></td>
</tr>
<tr>
<td><strong>COGCC Response to Follow-Up Questions from the Senate Committee on the Environment and Public Works</strong> (05/17/2011) Director Neslin’s written response to questions from the Senate regarding hydraulic fracturing</td>
<td><strong>Chemicals Used by Hydraulic Fracturing Companies in Pennsylvania</strong></td>
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Hydraulic Fracturing and Trade Secrets

If a vendor, service provider or operator claims a chemical and/or its concentration as a trade secret, a form (Form 41) must be submitted to the Director of the Oil and Gas Conservation Commission.

The Form 41 must include contact information for a representative should further information be promptly needed regarding the composition of the trade secret chemical claimed.

By signing the Form 41 document, the signer is legally attesting to the legitimacy of the trade secret claim.

Trade secret information must be provided promptly to the COGCC Director and health professionals upon request.

Existing provisions allow any person who believes a trade secret has been inappropriately claimed to seek redress through the Commission and through the courts.
Where do the fractures go?

- They stay in the formation of interest.

- Typical fracture:
  - “Half” Length: 300’ to 1500’.
  - Height: 20’ to 300’.
  - Width: 0.1” - 0.3”.

- Energy Force: less than 1 on Richter Scale
Mapped microseismic height for Niobrara

- Top: shallowest microseism; Bottom: deepest microseism
- Aquifers: USGS deepest water well levels by county
Common Uses of oil and gas

- Gasoline, jet fuel, diesel, propane
- Fuel for heating
- Plastics (cell/smart phones, toys, computers)
- Tires, asphalt, pesticides
- Clothes, skis, surfboards, paint
# CO Oil Production 2003-2013

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<th>Year</th>
<th>Oil Production in Barrels</th>
<th>Year over Year Increase</th>
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<tr>
<td>2003</td>
<td>21,596,362</td>
<td>5%</td>
</tr>
<tr>
<td>2004</td>
<td>22,571,057</td>
<td>5%</td>
</tr>
<tr>
<td>2005</td>
<td>23,225,677</td>
<td>3%</td>
</tr>
<tr>
<td>2006</td>
<td>24,560,380</td>
<td>6%</td>
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<tr>
<td>2007</td>
<td>26,055,849</td>
<td>6%</td>
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<tr>
<td>2008</td>
<td>29,556,032</td>
<td>13%</td>
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<td>2009</td>
<td>30,223,251</td>
<td>2%</td>
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<tr>
<td>2010</td>
<td>32,748,379</td>
<td>8%</td>
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<tr>
<td>2011</td>
<td>39,200,611</td>
<td>20%</td>
</tr>
<tr>
<td>2012</td>
<td>49,126,759</td>
<td>25%</td>
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<td>2013</td>
<td>64,882,078</td>
<td>32%</td>
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Steel Surface Casing cemented in place to protect aquifers per COGCC Rules 317.e, f, g, & h.

- CEMENTED CONDUCTOR
- AQUIFER (100-600 ft bgs)
- CEMENT
- SURFACE CASING (At least 50 feet below aquifer)
- HYDROCARBON FORMATIONS (~ 7,000 ft bgs)
WELL BORE DIAGRAM
PLACE & CEMENT PRODUCTION CASING
FLUID INFLOW PREVENTED BY CEMENT

Per COGCC Rules 317.i, j, & k and verified per Rule 308A
Operator-Local Government Agreements

- Contractual; outside of local ordinance
- BMPs can go beyond COGCC rule requirements
- BMPs can be incorporated into state drilling permit and are enforceable by COGCC