



Local Government/ Environmental Coalition:

Recommended Oil and Gas Emission Reduction Strategies

Sabrina Williams-Denver Environmental Health

Jeremy Nichols-Rocky Mountain Clean Air Action



Latest Recommendations a Good First Step

- A good step forward, we need to focus on condensate tanks and pneumatics.
- Concern that cost-effective opportunities to reduce emissions discarded.
- Division has not scrutinized emission inventories appropriately.
- Industry is showing us that further emission reduction opportunities are possible.



Industry is Leading, Division Needs to Follow

- Ex: EnCana retrofitting pneumatics, replacing glycol dehydrators, achieving a 95% reduction in emissions from tanks.
- Unfortunately, not everyone rising to the challenge. The Division needs to close the gaps and help bring everyone up to standard.
- This is about making sure everyone is doing it right.



Our Recommended Strategies

- Tanks
- Dehydrators
- Well completions
- Pneumatics
- Engines
- Fugitive emissions/Leak detection



Tanks

- Adopt a 95% control requirement for all tanks emitting at least 5tpy.
- Why is Division focusing on flares?
 - Flare combustion efficiency in the field is ~70%, not the 95% they are credited with.
 - VRUs reduce emissions of VOCs and GHGs.
 - VRU technology for low-pressure fields is improving.
- Division should develop incentives for operators to use VRUs in the NAA.

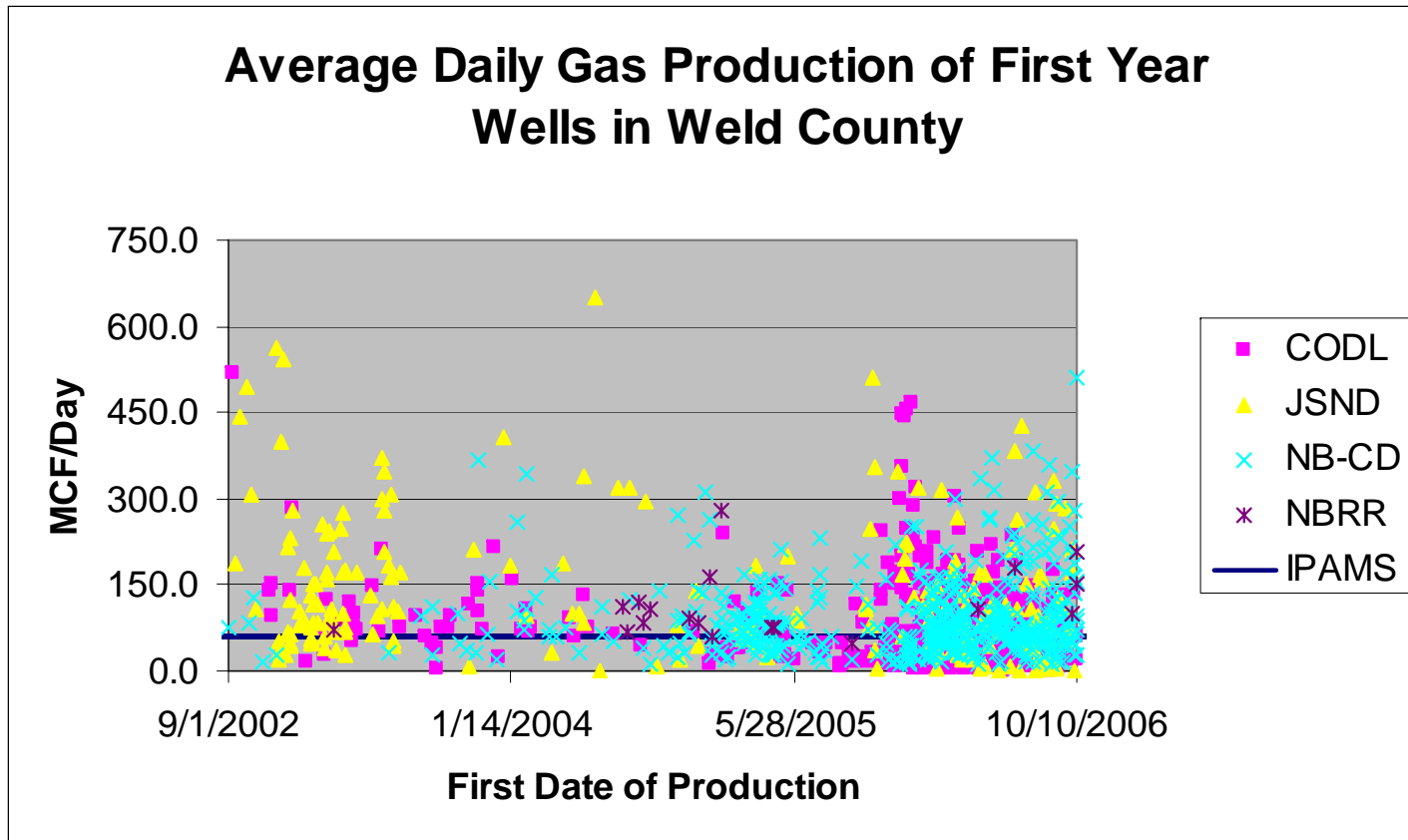


Well Completions

- IPAMS reports an average of 58.6 MCF vented per completion?
- The DJ Basin is low pressure, BUT:
 - average daily gas production for first year wells is 101.4MCF, not the 20-44 MCF that industry has reports to us.
- Total lack of transparency with IPAMS data:
 - How many wells make up this “average”
 - What formations were they in?
- Division needs to look at this source in greater detail!



COGCC vs. IPAMS





Why are we not going further?

oDivision should analyze how emissions vary by formation and look for opportunities to cost-effectively reduce venting of completion gases.

oIPAMS data is in the low end (~35% percentile) and is not truly representative of an average.

oGreen Completions may not be feasible for every well, but should not be overlooked entirely.

Percentile	MCF/Day
20%	33.5
30%	48.3
35%	55.7
40%	62.1
50% (Median)	74.8
70%	108.3
80%	142.7
90%	215.5



Fugitive Emissions

- Emissions inventory for fugitives is also highly uncertain and needs to be better developed.
 - Leak thresholds and timeframes for repair should not be different for O&G than other large sources.
- Pneumatics were also once thought to be a very insignificant source.
- Division “prefers” not to implement programs at wellheads?
 - EPA Gas Star reports that routing wellhead gases to VRUs is “a technology that pays back quickly” (less than 1 year).



Dehydrators

- Opportunities to reduce VOCs from dehydrators should not be overlooked.
- Emissions may be small; cost-effective VOC reduction opportunities are big.
- **EnCana:** Replaced glycol dehys with zero emission, closed loop dehys. “Great technology to reduce emissions[.]”
http://www.epa.gov/gasstar/workshops/glenwood_sept2007/08_gas_star_jatco_units.pdf
- **Wyoming:** All new/modified glycol dehys must reduce VOC emissions by 98% using vapor recovery device, combustor, or other device in Jonah-Pinedale field.
<http://deg.state.wy.us/aqd/Oil%20and%20Gas/AUGUST%202007%20O&G%20GUIDANCE%20-%20FINAL.pdf>
- **Our recommendation:** All new/modified glycol dehys should reduce VOC emissions by at least 98%. 90% threshold should be increased to 98% for existing dehys subject to Reg. 7 XII.



Pneumatics

- We commend the Division's focus on high-bleed pneumatics.
- Cost-effective emission reduction opportunities are significant.
- Low/No-bleed means more natural gas saved.
- Many companies already retrofitting/replacing pneumatics. Division needs to follow that lead.
- **Our recommendation:** All high-bleed pneumatics should be replaced or retrofitted with low or no-bleed pneumatics, unless technically infeasible. All new sources should be limited to low or no-bleed pneumatics.



Engines

- Compressor engines and drill rig NOx emissions need to be addressed. If we're addressing control strategies, NOx reductions need to be on the table.
- Inappropriate to defer to Regional Haze: what's good for haze planning is not necessarily good for ozone planning.
- **Drill Rigs:** IPAMS inventory shows 3,101.4 tons of NOx from rigs in metro area; nearly 40% of Colorado rig emissions (based on WRAP Phase II inventory). 90% NOx reduction is feasible and cost-effective (\$3,000-7,700/ton of NOx).
- **Compressors:** Are the largest source of NOx related to oil and gas operations. While new Reg. 7 and NSPS will help, these only apply to new and relocated engines, achieve no effective reductions. We need to apply Reg. 7 engine standards to existing engines in nonattainment area.