

Colorado Ozone SIP Update
For the Rocky Mountain EHS Peer Group

John R. Jacus
Denee DiLuigi
January 29, 2009

DCS Davis, Graham & Stubbs LLP
1550 17th St., Denver, CO 80202 | www.dgslaw.com | 303.892.9400
FINANCE & ACQUISITIONS . TRIAL . NATURAL RESOURCES

History of DMA/NFR Ozone Controls

- **1997:** EPA establishes 8-hour Ozone NAAQS of 0.08 ppm.
- **2002:** State enters into Early Action Compact with EPA.
- **2004:** Ozone Action Plan Rulemaking to promulgate controls to meet EAC requirements – Primarily Condensate Tank Controls & RICE.
- **2006:** Regulation No. 7 Revisions increase tank control requirements from 47.5% to 75% - NFR Vehicle I/M Program also Dismantled.

DCS Davis, Graham & Stubbs LLP

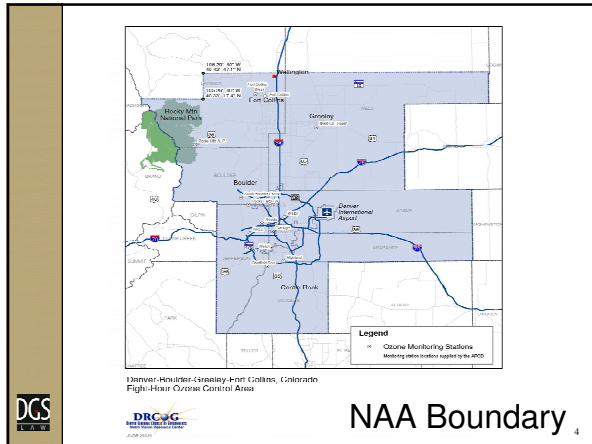
2

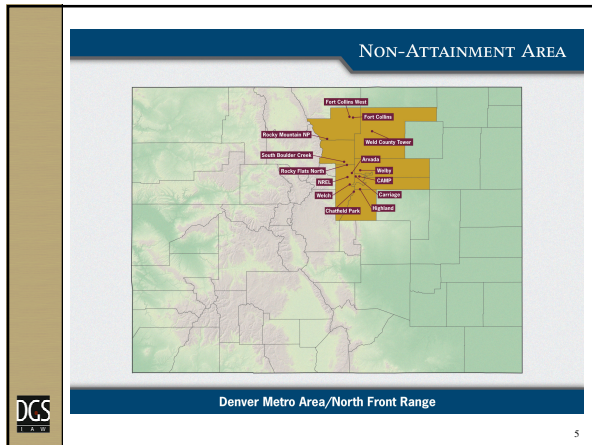
History of DMA/NFR Ozone Controls

- **2007:** Denver/North Front Range fails to meet EAC requirements, and EPA designates nine-county Denver/North Front Range Area (“NAA”) non-attainment for ozone (’97 Standard of 0.08)
- **March 2008:** EPA establishes stricter 8-hour Ozone NAAQS of 0.075 ppm – no implementation guidance yet, SIP development still a few years off.
- **December 2008:** Ozone Action Plan Rulemaking to demonstrate attainment of 0.08 ppm standard in 2010.

DCS Davis, Graham & Stubbs LLP

3





Condensate Tank Controls

- APCD proposed threshold approach,
 - emission control devices on all tanks ≥ 2 tpy of actual uncontrolled emissions – high incremental costs of approx. \$1,400 to \$14,000 per ton.
- Parties reached compromise with other stakeholders, then APCD:
 - retain system-wide approach;
 - increase control requirements:
 - 81% system-wide control beginning May 1, 2009;
 - 85% system-wide control beginning May 1, 2010;
 - 90% system-wide control beginning May 1, 2011.
- 95% control deferred for possible future consideration.

DCS
DENVER COUNTY SOUTHWESTERN

6

Incremental Cost for VOCs Emission Reductions (\$/year) For Each Tank Threshold

Tank Emission Levels	Incremental Reduction in Emissions of VOCs (Tons) @ 95% Reduction	Cost Per Ton of VOCs (\$/ton)
> 5	78,310	
4 to 5	1,569	\$1,497
3 to 4	1,071	\$1,894
2 to 3	765	\$2,612
1 to 2	391	\$4,578
< 1	146	\$14,426



7

Condensate Tank Controls for First 90 Days

- AQCC adopted a measure, effective February 1, 2009, requiring:
 - Installation of an ECD on new or modified tanks for the first 90 calendar days from when a tank is newly installed or a well was newly drilled or modified.
- After first 90 days, may remove the ECD if demonstrate the source complies with the system-wide standard.



8

Definition of Modification


- AQCC adopted a new definition of modification:
 - includes any physical change that results in an increase in VOC emissions from the previous calendar year;
 - includes drilling new wells and routing production to an existing tank, and also includes re-completing, re-fracing or otherwise stimulating existing wells where the prior definition is satisfied.
 - This triggers the “first 90 days” control requirement.



9

Electronic Surveillance Systems
(“ESS”)


- RAQC/APCD proposed:
 - ESS on all tanks with actual uncontrolled emissions ≥ 2 tpy;
 - Flare temperature reading every 15 minutes (in addition to requiring auto-igniters on all new and existing wells with flare ECDs).
- APCD later revised its proposal pre-hearing:
 - ESS on all tanks ≥ 100 tpy;
 - flare temperature reading every hour.
- Parties argued for flexibility:
 - allow daily human inspections *or* ESS



10

ESS cont.


- AQCC adopted broad definition of surveillance:
 - Daily human inspections; or
 - ESS with *at least daily readings*
 - on condensate tanks with actual uncontrolled emissions ≥ 100 tpy
 - Effective May 1, 2010.
- ESS Pilot Program
 - Anadarko Petroleum, Noble Energy and EnCana to work with the APCD
 - Each will install ESS on 20 tanks, study and report.



11

Auto-Igniters


- APCD proposed requiring installation of auto-igniters on all new *and existing* tanks with flares by May 1, 2009.
- AQCC adopted a compromise:
 - Install auto-igniters on existing tanks ≥ 50 tpy by May 1, 2009, and all remaining tanks by May 1, 2010.
- For new/modified tanks:
 - Auto-igniter must be installed and operational beginning the first date of production, eff. 5-1-09.



12

Responsible Officer Certification


- APCD proposed to require every report submitted pursuant to Reg. No. 7, Section XII be certified by a responsible corporate officer (“RO”).
- Compromise reached to require RO certification on just the semi-annual and annual reports submitted under Reg. No. 7, Section XII.



13

Division Approved Spreadsheet


- AQCC adopted the APCD’s proposal to require a “Division approved spreadsheet” for Reg. No. 7 reporting.
- Standardized spreadsheet will help APCD to determine compliance under the system-wide approach.
- APCD has not yet indicated what this “Division-approved spreadsheet” will look like.



14

30 Ton-Per-Year Exemption

- APCD proposed to eliminate the 30 ton-per-year exemption currently found in Reg. No. 7 Section XII.A.8.
- This exempted an owner/operator whose APENs for all condensate tanks totaled less than 30 tpy from the Reg. No. 7 Section XII requirements.
- AQCC retained the current 30 ton-per-year exemption without modification



15

Revisions to Regulation No. 3

Eliminated APEN exemptions for:

- Certain petroleum industry flares with uncontrolled emissions of any pollutant of than less than 5 tpy.
- Specified crude oil truck loading equipment at exploration and production sites.
- Produced water tanks containing equal to or more than 1% by volume crude oil on an annual average.
- Crude oil storage tanks with a capacity of 40,000 or less.
- Condensate tanks with a production rate of 730 barrels per year or less.



16

Revisions to Regulation No. 3

Eliminated Construction Permit Requirements for Certain Facilities:

- Certain petroleum industry flares with uncontrolled emissions of any pollutant of than less than 5 tpy.
- Specified crude oil truck loading equipment at exploration and production sites.
- Oil and gas produced water tanks, except for commercial wastewater facilities.
- Crude oil storage tanks with a capacity of 40,000 gallons or less.



17

State-wide Engine Controls

• Applies to natural gas fired RICE constructed or relocated to Colorado from another state:

- On or after July 1, 2007 for RICE > 500 HP
- On or after January 1, 2008 for RICE 100 HP < 500
- Anytime for RICE < 100 HP



18

State-wide Engine Controls

- Requires installation of specific after-market control technology by July 1, 2010.
 - **Lean burns** with manufacturer's name plate design rate > 500 HP require installation of oxidation catalyst.
 - Lean Burn = normal exhaust oxygen concentration of than 2% by volume, or greater
 - **Rich burns** with manufacturer's name plate design rate > 500 require installation of non-selective catalyst reduction ("NSCR") and an air-fuel ratio controller.
 - Rich Burn = Normal exhaust oxygen concentration of less than 2% by volume



See Reg. No. 7, Sections VII.E.3.A-B.

19

State-wide Engine Controls

\$5,000 Exemption Available for:

- Engines constructed or modified before **February 1, 2009**, where it will cost more than \$5,000 per ton of VOC reduced.
 - For rich burns, \$5,000 per ton combined VOCs and NOx
 - For lean burns, it is \$5,000 per ton VOCs reduced
- To obtain this exemption, owner/operator must submit application to the APCD by **August 1, 2009**.
 - Must provide supporting documentation
 - Costs should be supported by vendor quotes
 - Costs should be annualized in accordance with applicable EPA guidance.



See Reg. No. 7, Sections VII.E.3.A-B.

20

State-wide Engine Controls

MACT, BACT, and NSPS

- The state-wide engine controls do **not** apply if an engine is subject to:
 - federal MACT standard,
 - a BACT limit, or
 - a NSPS under 40 CFR Part 60, including NSPS Standard JJJJ



See Reg. No. 7, Sections XVII.B.4.

21

On-Going Regulatory Activities

- “NOx Forum” – Started New Stakeholder Process
 - Regional Haze, Reasonable Progress
 - RMNP Nitrogen Deposition
 - Ozone II
- State-wide condensate tank controls?
- State-wide pneumatic controls?
- Drill Rig Engine Emissions (NOx)?
- Modeling Meeting on February 4th at RAQC from 1:00 to 4:00



22

Questions? – Contact:

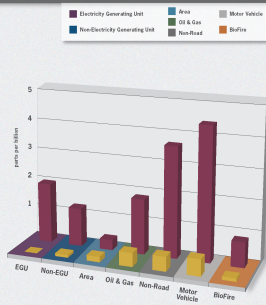
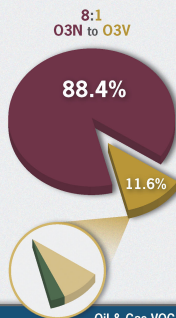
John Jacus, DGS
john.jacus@dgsllaw.com
 303-892-7305

Denee DiLuigi, DGS
denee.diluigi@dgsllaw.com
 303-892-7434



23

COMBINED AVERAGE



Oil & Gas VOC emissions account for 2.8% of ozone precursors



24
