Draft Oil and Gas Ozone Reduction Strategies

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Presentation Background

- 10 oil and gas ozone reduction strategies
- Posted at ozoneaware.org
- Presented December 14, 2007 stakeholder meeting
- Draft; input is welcome

Presentation Overview (cont.)

- Draft strategies (focusing on 5)
- Next step for strategies
- VOC Stationary Source stakeholder meeting

VOC Emission Reduction Options and Issues for Oil and Gas Sources (Presented to RAQC in December 2007)	Corresponding Strategy Paper (Presented to RAQC in February 2008)
Front Range Oil and Gas Growth	NA - Not an emissions reduction strategy
Quantification of Emissions from Uncategorized O&G Sources	Unregulated Source Categories
Eliminate Permitting and Reporting Exemptions for O&G Activities in Regulation No. 3 where Equipment Emissions are Likely to Exceed 2 tpy	NA - Not an emissions reduction strategy
Inclusion of Sources not Currently Addressed Through Specific Regulation	NA - Combined into Strategy No. 2
Retrofit and/or Replacement of High-Bleed Valves to Low-Bleed and/or No-Bleed Valves for Oil & Gas Systems in Reg. 7 New Installation Standards for Use of Low or No-Bleed Pnuematics or Instrument Air	High-Bleed Pneumatic Devices
40 hp - 100 hp Engines Subject to Reg. 7 Emission Limits	Engines
Statewide Oil and Gas BACT Program	NA - Will be addressed in future stakeholder meeting
Green Completions for Oil and Gas Well Development	Well Completions
Leak Detection and Repair (LDAR) Program at E&P Sites and Compressor Stations; Extend LDAR to Gas Plants Statewide	Leak Detection
Install Insulation on Separators	Heated Separator Insulation
Increase Stringency of Regulation No. 7 Condensate Tank Control Program	Condensate Tanks
Increase Stringency of Regulation No. 7 Dehydrator Control Program	Glycol Dehydrators
Require New Heater Treaters, Reboilers, and Process Heaters to be Equipped with BASO Valves	BASO Valves
Require Vapor Balance Recycling Lines during Condensate Loadout Operations	Condensate Loadout Operations
Funding for Initiatives	NA - Will be addressed in future stakeholder meeting
Require Existing Engines Outside of Front Range NA Area to Meet Requirements of Regulation No. 7 for EAC	NA - Combined into Strategy No. 6

Strategies (cont.)

- What is in strategies?
- What is not in strategies?
- Prioritizing

Strategies (cont.)

- Unregulated Source Categories
- High-Bleed Pneumatic Devices**
- Engines
- Well Completions**
- Leak Detection**
- Heated Separator Insulation
- Condensate Tanks**
- Glycol Dehydrators**
- BASO® Valves
- Condensate Loadout Operations

High-Bleed Pneumatic Devices

- Uses gas to operate valve
- Emits at least 6 scfh per device
- IPAMS data: approx. 34 tpd VOC in NAA

Pneumatic Control Options

- Low- or no-bleed (new facilities)
- Retrofit or replace with low- or no-bleed (existing facilities)
- Enhanced maintenance (high-bleed)
- Keep discharge from being vented
- Instrument air system
- Solar generated electricity (E&P sites)

Well Completions

- Green completion method
- Natural gas recovery potential, nationwide
  - 99.2 % (high pressure wells)
  - 0.7 % (low pressure wells)
  - 0.1 % (well workovers)
- Data suggests DJ Basin is low pressure

Well Completions (cont.)

- Green completion method most effective:
  - High well pressure
  - High VOC concentrations
  - Large well volumes
  - Long flowback periods
  - Natural gas gathering lines in place
- Being considered by COGCC

Leak Detection Control Options

- Expand LDAR source applicability
- Reduce LDAR detection thresholds
- Require "first attempt at repairs"
- Require DI&M programs
- Expand Reg. 7 LDAR area applicability

Leak Detection (cont.)

DI&M Program:

- Baseline survey to identify leaks
- Repairs made if cost-effective
- Effective at most locations, including those subject to KKK

Condensate Tanks

Flash tank emissions large NAA VOC source per:

- APEN data
- IPAMS data

Condensate Tanks Control Options

- Increase system-wide VOC emission control requirement
- Replace system-wide with emission threshold control requirements
- Increase effective control eff. from 95 to 98% (>20 tpy)
- Eliminate APEN sized-based exemption

Glycol Dehydrator Control Options

- Modify dehydrator applicability threshold
- Increase control requirement from 90 to 98 %
- Optimize lean glycol pump circulation rates
- Install flash tank separators & control emissions
- Use portable desiccant dehydrators

Next Step for Strategies

- Incorporate IPAMS data
- Evaluate emission source categories
- Determine which of the 10 strategies will be further developed
- Continue to receive/consider stakeholder input

VOC Stationary Source Stakeholder Meeting

- Oil and gas sources will be included
- March 5, 9:00-12:00
- Stationary Source APEN Analysis
- Control Technique Guidelines in Regulation 7
- Increase applicability of BACT/RACT requirements
- Reconsider current exemptions (Reg. 3&7)
- Expand Reg. 7 applicability to NAA

Questions?