Oil and Gas Update

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Topics

• Ohio Oil & Gas Program
• Natural Gas Permitting/General Permits
• Air Quality Issues
• Extra slides
Who Regulates Natural Gas Production?

- ODNR primacy – Drilling, fracturing, etc.
- Ohio Department of Public Health – soil radiation, other
- Department of Commerce, PUCO
- Ohio EPA – Air, land, water pollution; solid, hazardous waste; etc.
- U.S. EPA – federal air rules, NSPS & NESHAPS
Oil & Gas Air Permits from Ohio EPA

- Permanent equipment on site
- Well sites
- Mid-stream compressor stations
- Gas treatment facilities
- Compressor stations for large interstate pipelines
- Compressor stations for smaller intrastate pipelines
Types of permits

- Installation
  - Permit-to-install (PTI for Title V facilities)
  - Permit-to-install-and-operate (for non Title V facilities)

- Operating
  - Title V
  - PTIO (non Title V)
What Major Air Rules Apply?

• Ohio EPA Permit to Install requirements (OAC Chapter 3745-31) including Best Available Technology for new sources
• Ohio EPA Particulate rules (OAC Chapter 3745-17)
• MACT Subpart HH, Oil & Gas
• MACT Subpart ZZZZ (SI ICE)
• NSPS Subpart JJJJ, IIII (SI, CI ICE)
• NSPS Kb, tanks
• NSPS Subpart OOOO: Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution
General Permit Approach

• Drilling and fracturing phases are exempt
• Production phase is not
• GPs designed to cover most, but not all, well sites
• Covers well site (six wells typical)
• Two well site GPs, 12.1 or 12.2
  – 12.1 - Smaller flare and larger total engine HP
  – 12.2 - Larger flare and smaller total engine HP
GP Unique Features

• Allows installation of various size engines if combined HP limit met
• Allows swapping of engines w/o new permit
• Allows installation of various size tanks
• Restricts total flow to tanks
• Requires leak detection/repair program
  – Portable Analyzer (Method 21), or
  – Infrared Camera
Updated GP Status

• GP 12.1 and 12.2 developed in 2014
• Want to update them with updated NSPS
• Waiting for U.S. EPA to finalize NSPS updates
• US EPA recognized Ohio EPA’s General Permit as compliance with NSPS
GP Status

• 888 applications submitted (2011 to March 2019)
• 885 GP permits have been issued so far
• Issued 103 in 2018 – activity still ongoing
Permit Statistics

• 1760 permits issued since 2011 for:
  – 885 at well sites
  – 660 at Mid-stream facilities
  – 68 at gas processing facilities
  – 145 at other oil & gas facilities
Emissions Inventory

• Accurate actual emissions from sources remain challenging
• Ohio EPA working with other states/U.S. EPA to improve emissions inventory
• Actual emissions heavily reliant on actual operations – well maintained equipment have less losses
• Difficult to characterize in an “emission factor”
Compliance Status

• Inspection frequency based on size of facility
  – Large facilities – annual inspection
  – Medium facilities – inspections every 3 years
  – Others – as needed due to complaints

• Emissions from each well site expected to be small, periodic inspections not likely – Ohio Dept. of Natural Resources visits sites
Compliance Status

• No significant citizen complaints concerning the operation of well site
• Complaints mostly about compressor stations
• Mainly related to odors and noise
• Violations that have been found include undersized equipment – not designed to handle the amount of “wet gas”
• Other violations include not operating controls on dehydration equipment, thief hatches, leaks, etc.
Ambient Monitoring Plan

• Two-Tiered Well Monitoring Approach
  – Installed temporary monitors to evaluate emissions during initial drilling phase.
    • Measure particulate and VOC
  – Installed a permanent structure (monitoring trailer) to evaluate emissions during long term operations at the well site.
    • Operated for 3 years
    • Measure multiple compounds
    • Continuous measurements for many compounds

• Installed monitor station at fractionation plant
  • VOCs, H2S, NOx, CO, and meteorological data
  • Nothing of significance detected
Fractionation Monitoring Location
Bonus Slides
Natural Gas Well Sites

• ODNR covers drilling, fracturing, flow back, etc. Must get a drilling permit. Must report various activities. ODNR inspects facilities for compliance.

• U.S. EPA has air rules for drilling and fracturing engines, permitting requirements

• U.S. EPA has air rule that covers flow back and other activities
Natural Gas Well Sites

- Ohio EPA has air rules that apply
- Ohio EPA requires permits for “production” activities
- U.S. EPA has air rules for well sites
Typical Equipment Covered

- NG compressor engines
- Compressors
- Diesel Engines
- Storage tanks
- Dehydrators
- Flares
- Components that can leak
Permit Processing Flow

• General Permit
  – Receive application, check qualifications, issue pre-written permit
  – 2-4 weeks
  – Well sites

• Case-by-case
  – Receive application, review rules, do calculations, write permit, issue permit.
  – 3-6 months
  – Compressor stations, gas clean-up operations
Requirements

• Must apply for and obtain air permit
• Can’t construct until either the application is submitted or after permit issued.
• Lots of applicable rules:
  • MACT Subpart HH, Oil & Gas
  • MACT Subpart ZZZZ (SI ICE)
  • NSPS Subpart JJJJ, IIII (SI, CI ICE)
  • NSPS Kb, tanks
  • NSPS Subpart OOOO: Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution
Monitoring Network

• Ohio EPA has an extensive monitoring network
• Over 260 monitors state-wide
• See: http://wwwapp.epa.ohio.gov/gis/mapportal/
## County Locations of Issued GPs

- Belmont (181)
- Carroll (147)
- Columbiana (54)
- Coshocton (4)
- Guernsey (69)
- Harrison (132)
- Jefferson (70)
- Knox (1)
- Mahoning (9)
- Medina (1)

- Monroe (120)
- Morgan (1)
- Muskingum (4)
- Noble (58)
- Paulding (1)
- Portage (4)
- Stark (4)
- Trumble (8)
- Tuscarawas (8)
- Washington (10)
Sources of Information

- Air permit program: http://www.epa.state.oh.us/dapc/permits/permitdes
- Air permit search: http://www.epa.state.oh.us/dapc/newpermits/issued
- Typical air permit (general permits): http://www.epa.ohio.gov/dapc/genpermit/genpermits#127854016-available-permits
Questions?

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