



Technical Services Group
Environmental Department

Pitfalls of Environmental Compliance in the Natural Gas Compression Industry

GCA Exposition

March – 2016





Topics of Discussion

Record Keeping

- ❖ Why is this Important?
- ❖ Common Challenges & Reporting

Inspections

- ❖ Types & Information Requests
- ❖ Low Hanging Fruit in the Natural Gas Industry

Permitting

- ❖ Air Permitting Basics
- ❖ Regularly found problems

Due Diligence

- ❖ Why is it Important
- ❖ Communication Silos
- ❖ Overcoming the obstacles

Commonly Found Regulatory Problems

- ❖ NSPS OOOO
- ❖ NSPS JJJJ
- ❖ NESHAP ZZZZ





Record Keeping – Why is it Important?

- Most common reason for violations and enforcement actions
- Provides point of reference for when penalties are assessed
- When kept properly verifies compliance of federal rules and state permits
- Shows efficiency of equipment and/ or where trouble is occurring
- Can predict compliance with targeted emissions
- Applicability determinations – Interpretations of Regulatory Definitions

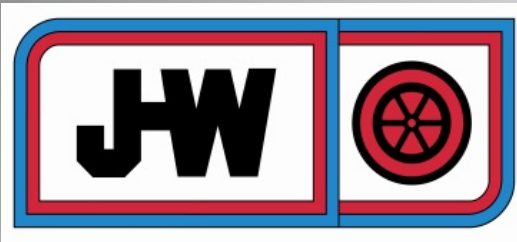




Record Keeping – Common Challenges

- Maintenance Record Inaccuracy
 - Dates
 - Times
 - Cause and Actions taken
- Record Retention Policy
 - Five years
 - Life records – serial numbers, manufacture dates
- Location of Records
 - Electronic
 - Centralized location
 - Hard Copies – Nearest manned facility





Record Keeping – Reporting Challenges

- Formatting and Copies
- Certification
 - Delegation of Authority
 - Responsible Officials
- Mailing Issues
 - Email Confidentiality
 - CMRRR vs. FedEx Overnight Delivery
- Records to be kept to meet environmental compliance not specifically mentioned in rules
 - Chains of Custody
 - Fuel Samples





Types of Inspections

- Advanced Notice
 - Unmanned facilities
 - EPA Inspections
 - Large Record Requests
 - Emergency Planning & Community Right to Know
 - States that routinely inspect facilities – Title V
- Unannounced Inspections
 - Public Complaints – Smaller Sites
 - Large manned facilities
 - Government Complaints – Drive by Incidents
- IR Cameras or “Forward Looking Infrared (FLIR) Cameras”
 - Unannounced or announced
 - Onsite or from a distance





Low Hanging Fruit in the Natural Gas Industry

- Recordkeeping (Desktop Inspection of Hard Copies)
- Pipe re-routing
- Engines with AFRs – must be in “Auto” mode
- Plaque with the correct make, model, Hp of an Engine
- Visible Engine Identification correlating to the permit
- Flares – visible emissions, not operating, no alarm system
- Condensate tanks
 - Submerged fill
 - Common headers
 - Thief hatches closed and no leaks (FLIR camera)
 - No leaks anywhere if tank battery routed to flare
- FLIR Camera – Looking for new piping construction
 - Did it require an Air Permit?
 - LDAR tagged/monitored within 30 days?
- Unauthorized equipment
 - New/replaced tanks, engines, etc





Air Permitting Basics – Types Commonly Found

MINOR SOURCE PERMITS

Construction Permits
True Minor Source Permits
Synthetic Minor Source Permits
Permits by Rule
General Permits
Standard Permits
State Specific Permits/ Non Rule Standard Permits

FEDERAL PERMITS

Title V Permits
PSD Permits
GOP (General Operating Permit)



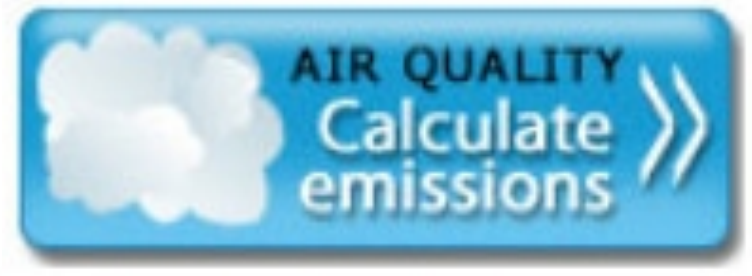
NOTE: SOME PERMITS HAVE AN EXPIRATION DATE OF 18 MONTHS OR 2 YEARS IF CONSTRUCTION HAS NOT COMMENCED.



Air Permitting Basics

What Goes Into a Typical Air Permit in Natural Gas Compression

- Administrative Documents – Cover Letter, Check, State Specific Application Paper Work, and Certification of Registration
- Actual Application Documents –
 - Process description and flow diagram
 - Maps of facility and any adjacent or co-located equipment
 - Extended gas sample of the facility and fuel gas sample
 - Tank calculations – Tanks 4.0 print out and light liquid speciation
 - Manufacture spec sheet and catalyst guarantee
 - Facility-wide ton per year totals for all pollutants and emission calculations





Air Permitting Basics – Commonly Found Challenges

- State Only Testing – Quarterly (OK), Semi-Annual (LA), Biennial (TX), every 5 years (AR)
- Each engine/turbine shall have a permanent identification plat indicating the make, model and serial number
- Each condensate storage tank shall be equipped with a permanent submerged fill pipe
- State Emergency Plan
- Facility condensate throughputs (monthly and rolling 12-month total)
- Records of capacity and contents of all storage tanks with the correct make, model, Hp of an Engine
- Analysis of fuel gas sulfur content (annually)
- Analysis of inlet gas sulfur content (quarterly)
- Definition of Construction
- ppmvd designation vs. g/hp-hr and O₂ correction (15%)
- Blowdown notification requirements
- Monitoring of Differential Pressure and/ or Temperature across the Catalyst



Common Regulatory Challenges – NSPS OOOO

- Wellsite Classification
- Reciprocating compressor operations information
 - Operating hours or number of months since startup or previous replacement
- Pneumatic controller manufacturer and installation information
 - Date, location, identification, and manufacturer specs for each pneumatic controller constructed, modified, or reconstructed after 8/23/11
 - Documentation of why a pneumatic has a bleed rate of >6 scfh is required
- Exempt storage vessel emissions calculations
- “Temporary” storage vessel information
- Storage vessels subject must have a closed vent system inspection, by-pass, and monitoring records
- Control device monitoring data (VRU)



Common Regulatory Challenges – NSPS 0000

- Reporting
 - Timing Intervals
 - Meter Reads: Engine Runtime vs. Compressor Runtime
 - Include all recordkeeping data
 - Requires certification by Responsible Official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.





Common Regulatory Challenges – NSPS JJJJ

- Keep all initial performance tests – Due Diligence Issues
- Keeping an up to date maintenance plan that includes troubleshooting and diagnostics for testing
- Testing protocol requirements per state
- Submission of testing results due to lab constraints
- Certified engine maintenance must be conducted in accordance with manufacture's maintenance schedule
- Control device efficiency
- G/hp-hr limit issues





Common Regulatory Challenges – NESHAP ZZZZ

- Remote vs. Non-remote classification and annual review documentation
- Oil analysis including the TAN, viscosity, and water content
 - Total Acid Number (TAN)
 - Condemning Limit – TAN increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from TAN of the oil when new.
 - Viscosity
 - Condemning Limit – > 20% change in viscosity from when oil was new
 - Percent Water Content (by volume)
 - Condemning Limit – > 0.5 water content
- Oil change within two business days of bad sample
- Inspection of spark plugs, belts and hoses at appropriate hour interval
- Incorporating the analysis program as part of the maintenance plan for the engine
- Documentation of gap engines





Due Diligence & Acquisitions

Why are Environmental
Due Diligence Audits
Important?

Maximize
efficiency of
work force

Increase
revenue and
opportunities

Promotes clear
expectations of
responsibility
and time lines

Avoid potential
fines and delay of
operations

Enhance
company
credibility

**MANAGE
YOUR
RISK!**



Due Diligence & Acquisitions

The Crux of the Problem
Communication Silos



Operations



Environmental
Health & Safety



Newly Acquired
Company



Marketing



Due Diligence & Acquisitions

Breaking down Silos – By Knowing What to Request

- Initial NSPS JJJJ Performance Tests
- Electronic files of all current permit applications and rental agreements
- Most recent gas and fuel analysis
- Facility throughputs
- Co-located and adjacent facility information
- Maintenance Records
- Wellsite status
- Remote/ Non-remote classification
- Copies of all on-going communication with the States and EPA
- Certified engine information, current maintenance plan language regarding NESHAP ZZZZ, NSPS JJJJ, and all applicability determinations on gap engines

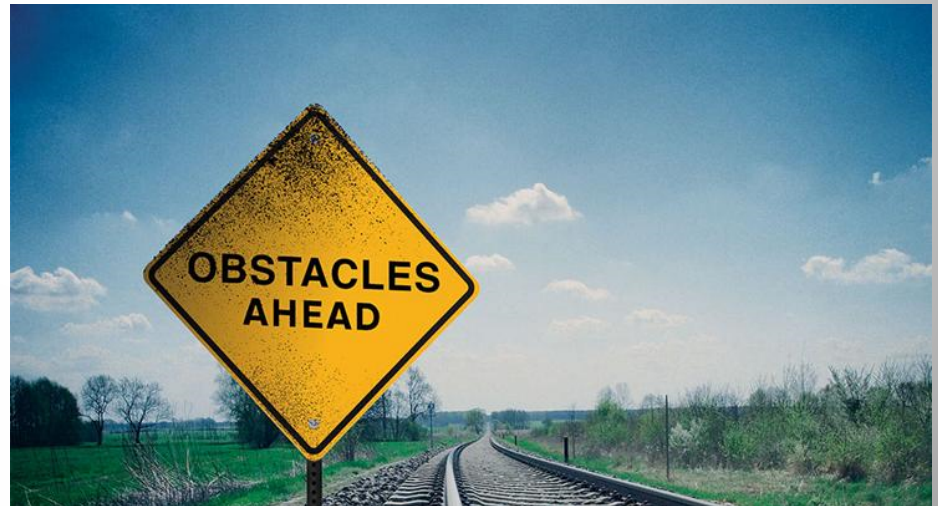




Due Diligence & Acquisitions

Overcoming the Obstacles

- Filing name and ownership transfer paperwork early with expected date of transfer in order to promote quick turn around on permit applications submitted
- Requesting Tax ID and Certificate of Good Standing as soon as possible
- Attending all site visits to check for engine plate information, tanks, and other process equipment
- While attending site visits request and/or take pictures of all hard copy environmental files





Technical Services Group
Environmental Department

Questions

