



# **Subpart W Compliance: A Practical Users Guide**

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# Overview

- Health and safety moment
- Path to compliance (major dates)
- Facilities and emission sources
- Major changes
- BMM requirements
- GHG monitoring plan
- Compliance cliff notes
- Monitoring, reporting, recordkeeping
- Summary



# Safety Moment: Winter Hazards

During the holiday season, work-related incidents generally increase, and stem from four primary factors:

- ◆ **Less Daylight**
- ◆ **Colder Temperatures**
- ◆ **Interruptions and Distractions**
- ◆ **Budget or Schedule Concerns**

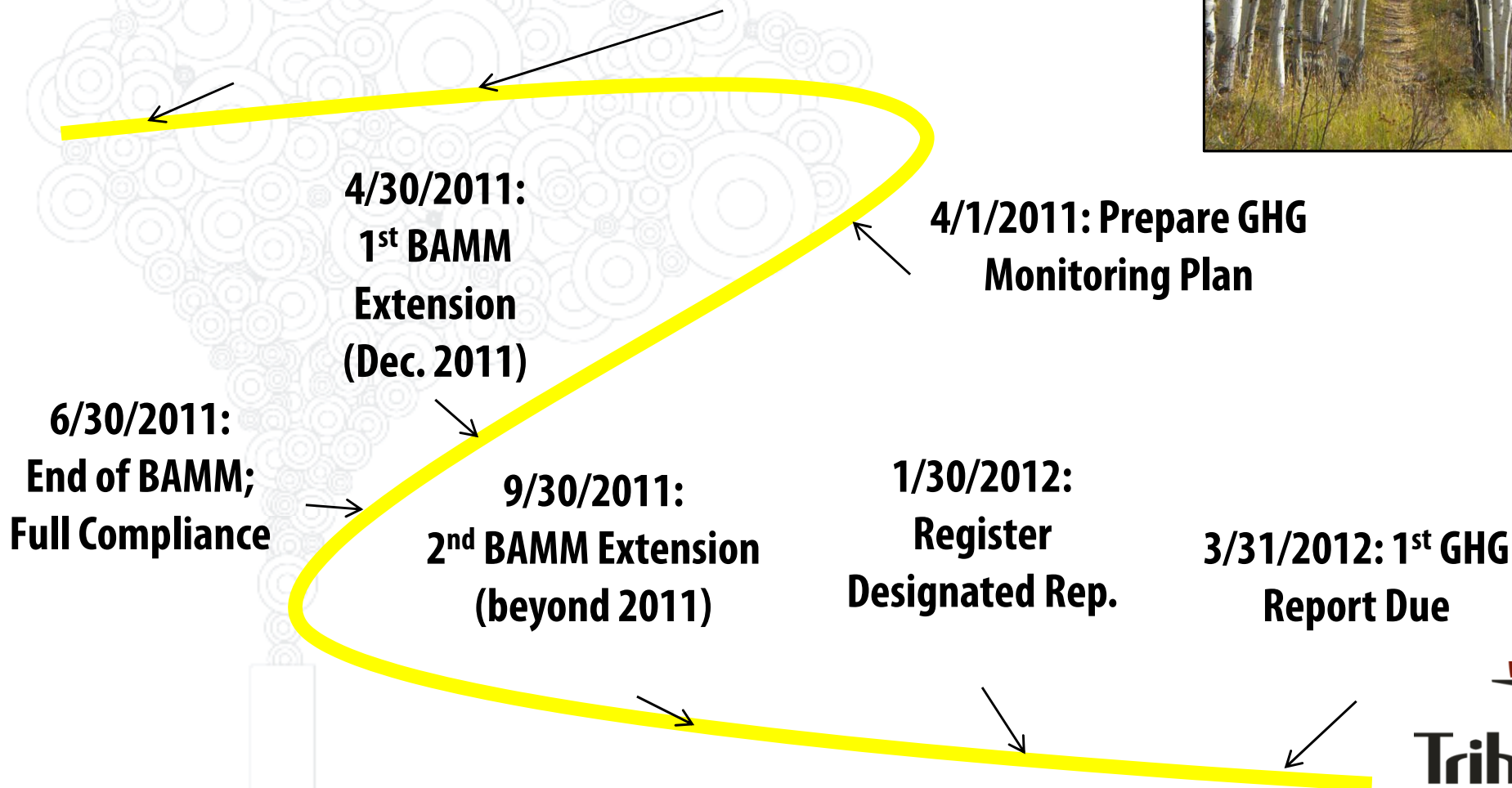


# Path to Compliance: Major Dates



**12/2010: Conduct AD  
and Data Gap Analysis**

**1/1/2011: Begin  
Data Collection**



# Subpart W: Source Categories

- Onshore petroleum and natural gas production
- Onshore natural gas processing plants
- Onshore natural gas transmission compression
- Natural gas distribution



- Offshore petroleum and natural gas processing
- Underground natural gas storage
- LNG Storage
- LNG import and export equipment

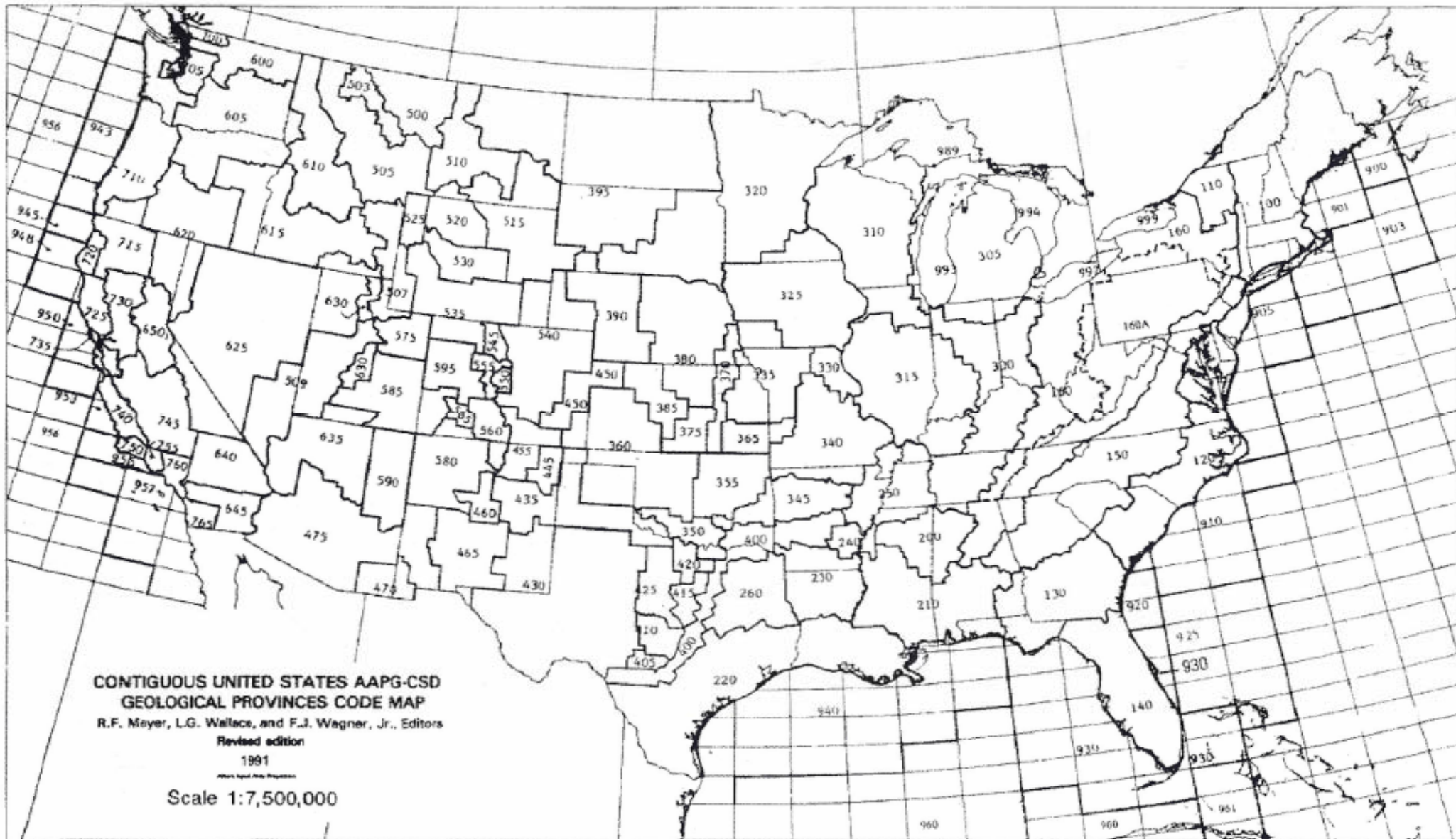
# Who Must Report: Facility Defined

Source Category	Threshold Determination: 25,000 Tonnes
Onshore Petroleum and Natural Gas Production	Facility as Basin (defined by AAPG)**
Onshore Natural Gas Processing	Facility as Fenceline*
Onshore Natural Gas Transmission Compression	Facility as Fenceline*
Natural Gas Distribution	All applicable emission sources owned by LDC**

\*Subpart A definition

\*\* Subpart W definition

# American Association of Petroleum Geologists: Hydrocarbon Basins





# Emission Sources – Subpart W

Source Type	Offshore Production	Onshore Production	Natural Gas Processing	Natural Gas Transmission Compression	Underground Storage	LNG Storage	LNG Import & Export Equipment	Distribution
NG Pneumatic Device Venting		X		X	X			
NG Driven Pneumatic Pump Venting		X						
AGR Vent Stack		X	X					
Dehydrator Vent Stack		X	X					
Well Venting for Liquids Unloading		X						
Gas Well Venting During Well Completions and Workovers with Hydraulic Fracturing		X						
Gas Well Venting During Well Completions and Workovers without Hydraulic Fracturing		X						
Blowdown Vent Stacks		X	X	X			X	
Onshore Production Storage Tanks		X						
Transmission Storage Tanks				X				
Well Testing Venting Flaring		X						

# Emissions Sources – Subpart W con't.

Source Type	Offshore Production	Onshore Production	Natural Gas Processing	Natural Gas Transmission Compression	Under-ground Storage	LNG Storage	LNG Import & Export Equipment	Distribution
Associated Gas Venting and Flaring		X						
Flare Stacks		X	X					
Centrifugal Compressor Venting		X	X	X	X	X	X	
Reciprocating Compressor Rod Packing Venting		X	X	X	X	X	X	
Other Emissions from Equipment Leaks		X	X	X	X	X	X	X
Population Count and Emission Factor		X			X	X	X	X
Vented, Equipment Leaks and Fugitive Emissions	X							
EOR Hydrocarbon Liquids Dissolved CO <sub>2</sub>		X						
EOR Recovery Injection Pump Blowdown		X						
Onshore Production and Distribution Combustion Emissions		X						X

# Major Changes: Highlights

- **Excluded:** gathering lines and boosting stations from onshore production and processing
- **Removed:** reporting requirements for produced water from CBM and EOR operations
- **Removed:** blowdown emissions for equipment vessel chambers  $< 50 \text{ ft}^3$
- **Revised:** one measurement of each compressor in the not operating, depressurized mode every three years
- **Revised:** completed pneumatic devices count within 1<sup>st</sup> 3 years
- **Revised:** definition of natural gas processing to include those that fractionate and those that do not fractionate with throughput of  $\geq 25$  MMscf/day
- **Revised:** Activity data only for portable and stationary combustion with a rated heat capacity of  $\leq 5$  mmBTUs.
- **Optional:** permanent meters for compressors

# Major Changes: Highlights

- **Included:** Emission factors for vented GHGs tanks < 10 barrels/day throughput
- **Included:** Emission factors for dehydrators < 0.4 MMscf/day throughput
- **Included:** Acoustic leak detection devices to monitor leakage through compressor scrubber dump valves (transmission tanks)
- **Included:** major equipment counts and default average counts for onshore production
- **Included:** emissions factors for small compressors (production)
- **Included:** Method 21 and infrared laser beam illuminated instruments for accessible equipment leaks
- **Included:** BAMM

# Best Available Monitoring Methods (BAMM) - June 30, 2011

- ◆ BAMM Methods:
  - Monitoring methods
  - Supplier data
  - Engineering calculations
  - Other
- ◆ Three specific cases:
  - Well related emissions (automatic)
  - Activity data (automatic)
  - Leak detection or emissions measurement (need approval)



# Best Available Monitoring Methods (BAMM) - June 30, 2011

- ◆ Unique or extreme circumstances (upon approval)
- ◆ Dates to remember
  - 2011 Extensions: April 30, 2011
  - 2012 Extensions: September 30, 2011
- ◆ EPA will only approve requests that meet the BAMM requirements



# GHG Monitoring Plan (Subpart A): “A Living Document”



- Deadline: April 1, 2011
- Recordkeeping requirement
- Positions of responsibility
- Data collection methodologies
- Maintenance and repair
- Monitoring and QA/QC requirements
- Engineering estimates
- BMM

# Cliff Notes: Boosting and Compressor Stations?

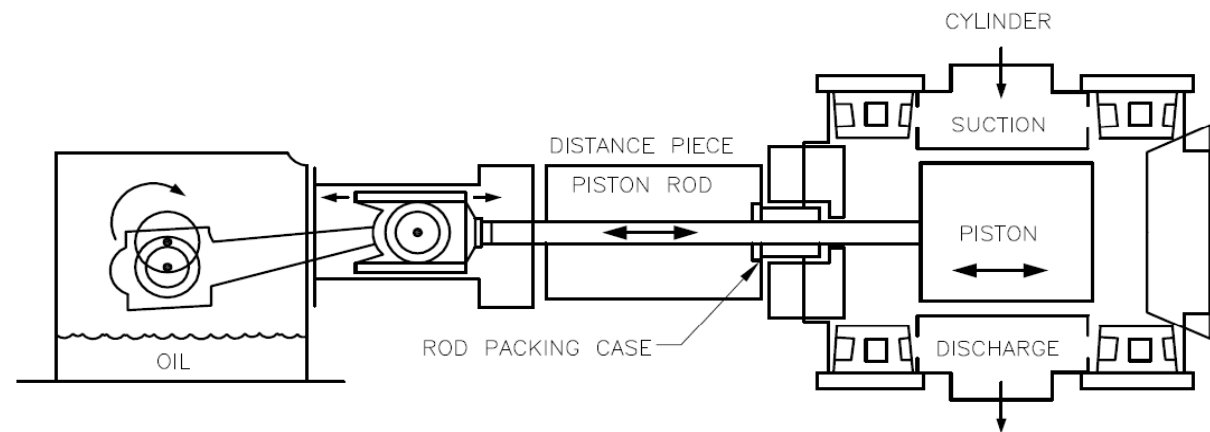
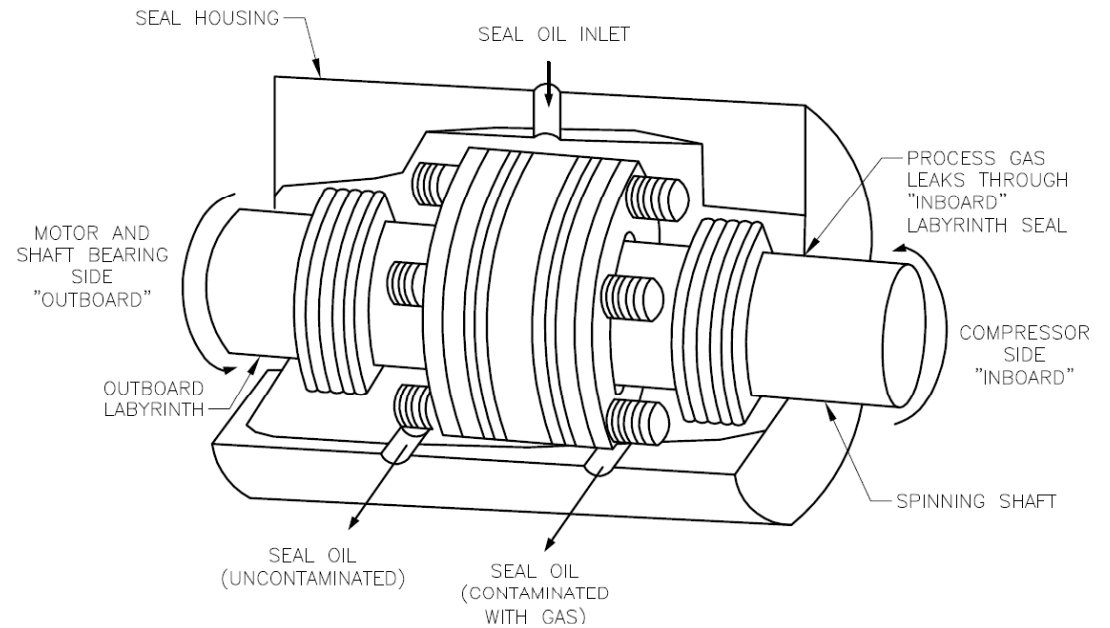
- ◆ No definition?!?!
- ◆ NG Processing Plants:  
“separates and recovers”
- ◆ If  $> 25$  MM scf/day (actual annual average) assume subject to rule





# Cliff Notes: Compressor Testing Protocols

- Establish methodology now!
- May require modifications
- No guidance for EF in 2011
- Adjust emissions if VRU



# Cliff Notes: If Routed to Flare?

- Comment was specific to reciprocating compressor rod emissions.
- EPA Response: If “captured by vapor recovery or routed to a flare, they do not need to be reported”

\*\*\*\*\*

*Flare emissions must be corrected for flare emissions calculated and report under other paragraphs to avoid double counting.*

Comments #: EPA-HQ-OAR-2009-0923-0959-1 and  
EPA-HQ-OAR-2009-0923-1018-37



# Cliff Notes: Potential or Actual Emissions?

- NG Processing - throughput  $\geq$  25 MMscf/day (average annual throughput)
- Blowdown vents – 50 SCF (physical container volume)
- Dehydrator vents – 0.4 MMscf (average annual throughput)
- Production storage tanks – 10 bbls/day (average annual throughput)

\*EPA responses to GPA comments



# Cliff Notes: Portable Emission Sources

- “Non-self propelled”
- Well drilling and completion equipment, workover equipment, gravity separation equipment, auxiliary non-transportation-related equipment, and leased, rented or contracted equipment
- Rented, contracted, and leased



# Monitoring, Reporting, Recordkeeping

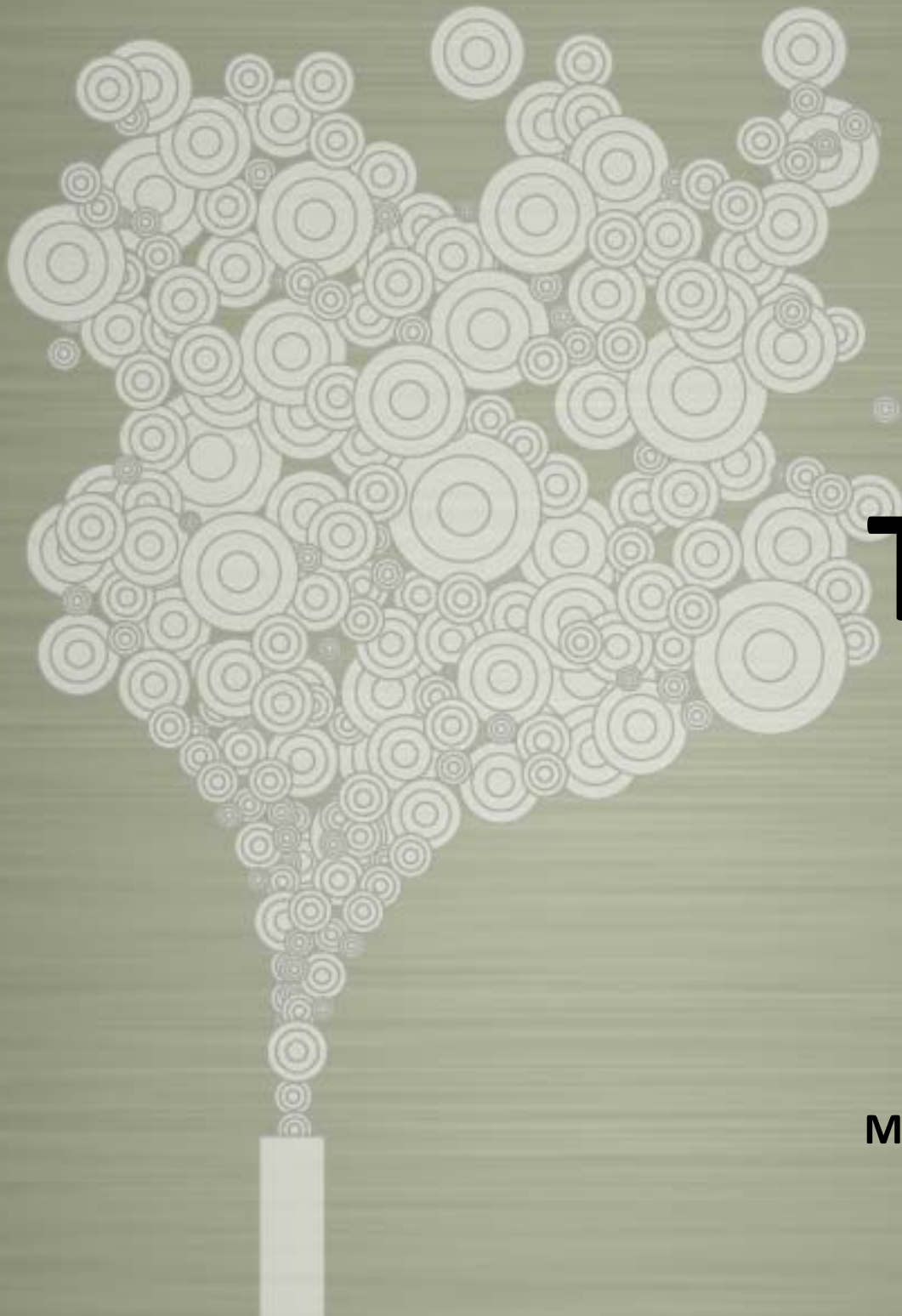
- Calibration procedures and schedules (Subpart A)
- Data collection/storage
- Non-emissions data still needs to be reported
- Do your own calculations!
- Recordkeeping requirements



# Summary

- ◆ Establish compliance strategy
- ◆ Inventory potential emissions sources
- ◆ BMM extensions
- ◆ Prepare GMPs
- ◆ Document, document, document





# Thank You.

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