

# Air Permitting 101: Demystifying MassDEP Requirements, Strategies for Compliance

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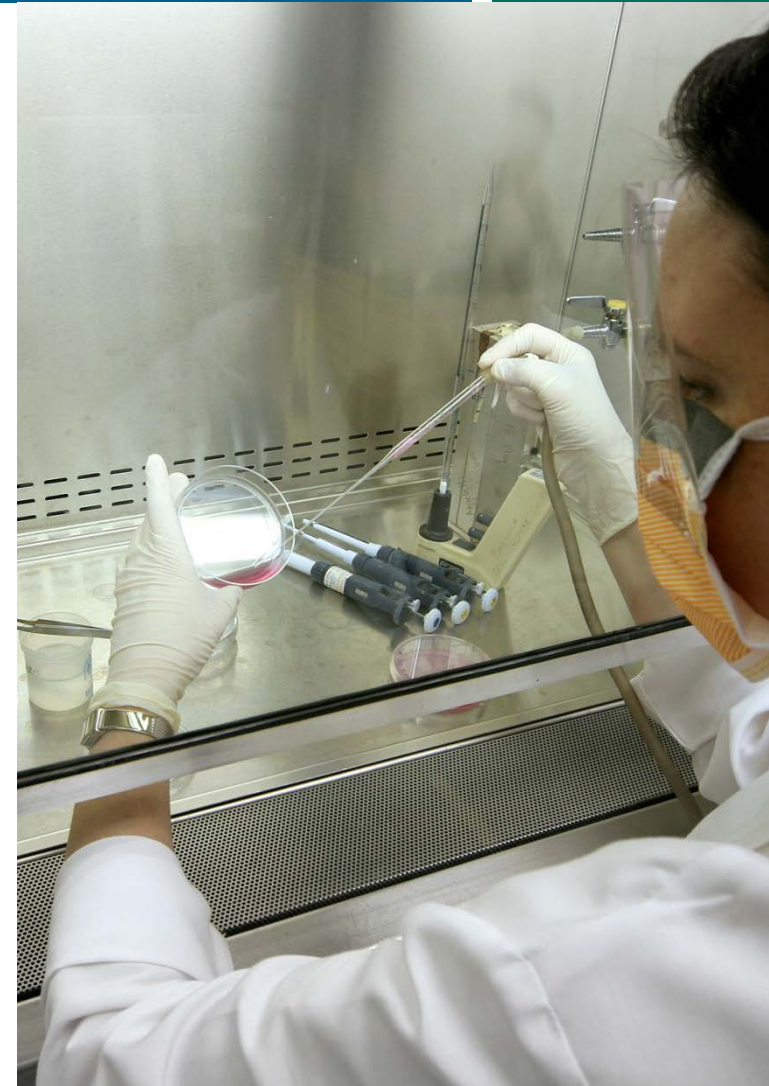
# Air Permitting 101

- Applicability
- Enforcement
- Compliance Strategies
- Other Considerations



# Applicability

- When is air permit needed
- Permit categories – types and thresholds
- Determining actual and potential emissions
- Permitting process
- Permit maintenance



# When is an Air Permit Necessary

- Emissions over certain thresholds
- Potential emissions over certain thresholds
- Most common pollutants:
  - Volatile Organic Compounds
  - Hazardous Air Pollutants (HAPs)
  - Nitrous oxides (fuel burning equipment)

# Air Permit Categories

- Limited Plans Approval (LPA)
  - =>1, <10 TPY potential NO<sub>x</sub>, VOCs
- Non-major Comprehensive Plans Approval (CPA)
  - =>10, <50 TPY potential NO<sub>x</sub>, VOCs
  - < 10 TPY potential individual HAP
  - < 25 TPY potential combined HAPs
- Operating Permit (major source permit)
  - =>50 TPY potential NO<sub>x</sub>, VOCs
  - =>10 TPY potential individual HAP
  - =>25 TPY potential combined HAPs

# Determining Potential Emissions

- Assume facility in operation 24 hours/day, 7 days/week, 52 weeks/year
- Assume “worst-case scenario”
- Grey area up to 1 ton actual emissions- regulation states 1 TPY potential is threshold
- Documentation and communication with MassDEP are key



# Air Permitting Process

- Characterize processes, identify areas of actual and potential VOC losses
- Identify permit category and requirements
- Evaluate existing processes for best practices
- In some cases, BACT analysis (best available control technology) or MACT (maximum available control technology) will be required. This may include controls
- Air Quality Dispersion modeling may be required
- Process takes many months. Allow time for all the steps if planning expansion.

# Sample Calculation- Actual Emissions

- EPA Method 1664 O&G
- Current:  $1164 \times 90 \text{ ml hexane} = 0.08 \text{ tons/yr}$
- Assumptions
  - no recapture of hexane
  - SG hexane is 0.66
  - Includes all samples and QC
  - Only 90 ml hexane/sample
  - Does not include other VOCs



# Sample Calculation- Potential Emissions- no restrictions

- EPA Method 1664 O&G
- Current:  $9 \text{ samples/day} \times 6 \text{ separatory funnels} \times 90 \text{ ml hexane} \times 7 \text{ days/wk} \times 52 \text{ weeks/yr} = 1.28 \text{ tons/yr}$
- Automated:  $90 \text{ samples/day} \times 45 \text{ ml hexane} \times 7 \text{ days/wk} \times 52 \text{ weeks/yr} = 1.07 \text{ tons/yr}$

# Sample Calculation- Potential Emissions- restricted to 40 hours

- EPA Method 1664 O&G
- Current:  $3 \text{ samples/day} \times 6 \text{ separatory funnels} \times 90 \text{ ml hexane} \times 7 \text{ days/wk} \times 52 \text{ weeks/yr} = 0.31 \text{ tons/yr}$
- Automated:  $30 \text{ samples/day} \times 45 \text{ ml hexane} \times 5 \text{ days/wk} \times 52 \text{ weeks/yr} = 0.26 \text{ tons/yr}$

# Permit Maintenance

- Recordkeeping- as required by permit, or to document that facility is below permitting thresholds. Emissions calculations by chemical
- Reporting as required by permit, includes Source Registration, maybe other requirements.
- Specific work practices may be required to minimize emissions
- Major sources of Hazardous Air Pollutants (HAPs) will be subject to extensive NESHAP requirements

# Enforcement

- MassDEP has been out there
- Analytical Labs have come to their attention
- EPA is looking over the shoulders of MassDEP and other state agencies
- Other states are paying attention
- Fines based on numerous factors- may include previous history, pattern of noncompliance, actual/potential damage or impact, economic benefit gained, duration, willful violations, cooperation and efforts to return to compliance, and others

# The DEP Perspective

- Charged with protecting the public health, safety, welfare and environment of the Commonwealth, including meeting certain air quality standards
- Regulations written more with manufacturing in mind
- DEP is in turn audited by EPA, EPA is watching this
- Also being monitored by citizens and environmental groups
- Varying pressures over time

# Compliance Strategies

- Track VOC emissions monthly, use rolling calendar year system
- Identify issues and address before regulators do
- Permit Restrictions – RES, Emissions Caps (25/50% cap), documentation
- Audit policy provides self-disclosure opportunities
- Be aware of compliance deadlines/requirements- Source Registration, Haz Waste manifests, other reporting
- Major Sources have NESHAPs requirements in January, July, sometimes March
- EH&E customized SharePoint solutions



# Other Considerations

- Permitting of Base-Building Systems- boilers, emergency generators
- EPCRA reporting
- MWRA permitting or other water discharge requirements/permitting
- Hazardous Waste
- EH&S Program Support

# Resources

- MassDEP Website:  
<http://www.mass.gov/eea/agencies/massdep/>
- Mass Regulations 310 CMR 7.00
- CT DEP Website: [www.ct.gov/deep/](http://www.ct.gov/deep/)
- RIDEM Website: [www.dem.ri.gov](http://www.dem.ri.gov)
- NHDES Website: [www.des.nh.gov](http://www.des.nh.gov)



# SharePoint Tracking System

Site  Building  Division

Form Month  2014

	MEASUREMENT	UNITS	
Natural Gas Usage	<input type="text" value="888,567"/>	CCF	916,113 THERMS
Electricity Usage	<input type="text" value="113,456"/>	kWh	
Water Usage	<input type="text" value="576.00"/>	Cubic Meter	152,163 GALLONS
Trash Disposal	<input type="text" value="3,342.00"/>	Pounds	3,342 POUNDS
<b>Other Fuels</b>	<b>MEASUREMENT</b>	<b>UNITS</b>	<b>FUEL TYPE</b>
Forklifts	<input type="text" value="3,453.00"/>	Gallons	PROPANE 14,606 POUNDS
Yard Trucks	<input type="text" value="435.0"/>	GALLONS	DIESEL
Generators	<input type="text" value="5,345.0"/>	GALLONS	DIESEL
Other ( <input type="text"/> )	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>Chemical Waste Disposal</b>	<b>MEASUREMENT</b>	<b>UNITS</b>	
Hazardous Waste	<input type="text" value="567.00"/>	Liters	1,196 POUNDS
Non-Hazardous	<input type="text" value="345.00"/>	kg	761 POUNDS
<b>Recycling</b>	<b>MEASUREMENT</b>	<b>UNITS</b>	
Cardboard	<input type="text" value="34,534.00"/>	Pounds	34,534 POUNDS
Plastics	<input type="text" value="345.00"/>	Pounds	345 POUNDS
Metals	<input type="text" value="3,453.00"/>	Pounds	3,453 POUNDS

**Calculations (Corp. Use Only)**

Total CO2 EQ (MT)

Save

Exit Without Save

# Benefits of Sharepoint System

- Monthly updates can be monitored. Access available to multiple parties
- Monthly updates could potentially be automated
- Alerts automatically generated if updates not entered. Escalated as desired by facility.
- Automatically generate alerts if certain criteria reached (such as nearing thresholds)
- Rolling calendar year calculations automatically calculated
- Dashboards visually display data

# Survey Offer

Fill out survey about your facility and EH&E will connect with you by phone to help you make a preliminary assessment of your current status and potential risk for noncompliance.

<https://www.surveymonkey.com/s/5F6C5R3>

For more information:  
[www.eheinc.com](http://www.eheinc.com)  
800-825-5343

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