Overview

- What is the SBEAP?
- Overview of air regulations that might apply
- What is an air pollution permit and why do I need one?
- How do I calculate emissions for permits?
- What is the permit application and review process?
- My facility is exempt or the final permit is issued. Now what?
- How do I get help on permits?
- Other resources

What is SBEAP?

- Small Business Environmental Assistance Program is a non-regulatory program providing small businesses with information and connections, helping them do the right thing for the environment and their business.
- Assistance with business start-up, permitting, compliance, understanding state & federal environmental regulations, property transactions, and sustainable practices.
- (855) 889-3021 OR DNRsmallbusiness@wi.gov
- Website: http://dnr.wi.gov/topic/smallbusiness/
OVERVIEW OF AIR REGULATIONS

Clean Air Act
- Authorizes EPA to set national standards to protect public health and the environment
  - Standards specific to “criteria” air pollutants
  - Other regulations target non-criteria air pollutants
- Last amended 1990
Air Regulations for Grain Elevators

**WABA Safety Day**

**July 13, 2017**

**Air Pollution Regulations**
- EPA sets standards and states implement in rules
  - Code of Federal Regulation (CFR)
  - State Implementation Plans (SIPs)
- National Ambient Air Quality Standards (NAAQS)
  - Regulate criteria pollutants
  - Set at different time periods
- Air Permits
  - EPA only regulates major sources
  - States decide on minor source permitting
- Air Toxics Standards
  - Categories for industries/pollutants
  - Differ for major/area stationary sources

**Regulated Sources of Air Pollution**
- Stationary Sources
  - Fixed sources: factories, power plants, gas stations and other industrial
- Mobile Sources
  - Vehicle capable of emitting any air pollutant while moving
- Area Sources
  - All other sources too small and numerous to regulate individually

**Regulated Air Pollutants**
- Criteria Pollutants (EPA's term)
  - Ozone - $O_3$ (ground level - smog)
  - Carbon Monoxide - CO
  - Particulate Matter - PM (soot, dust, fumes)
  - Nitrogen Oxides - NOx
  - Sulfur Oxides - SOx
  - Lead - Pb
  - Asthma, lung inflammation and infection
  - Nausea, drowsiness, brain damage, death
  - Lung problems - bronchitis and asthma
  - Emphysema, weakened immune system
  - Lung problems - bronchitis and asthma
  - Decreases respiratory functions
  - Kidney and brain damage, learning disabilities, infertility
Other Regulated Air Pollutants

- **Hazardous Air Pollutants or HAPs**
  - Also called Toxic Air Pollutants
  - Chemicals known or suspected of causing cancer, birth defects, gene mutations, and damages the respiratory, nervous and immune system

- **Ozone Depleters**
  - Substances that deplete the upper stratospheric ozone layer, exposing the earth to harmful ultraviolet radiation

- **Greenhouse Gases**
  - Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulfur hexafluoride (SF₆)
  - Reported as carbon dioxide equivalents (CO₂e)

When is a Business Impacted?

- **Calculate emissions to learn if over any thresholds for permits or federal standards**
  - Actual emissions
  - Maximum theoretical/potential emissions

- **Located in "nonattainment" areas for NAAQS?**
  - May have more stringent limits
  - Limits may be on specific pollutants or threshold for major source permitting

- **Some federal standards apply simply by process description and installation date of equipment**
  - New Source Performance Standards (NSPS)
  - National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Federal NSPS

- **Grain storage or processing affected by NSPS**:
  - Also in NR 440.47, Wis. Adm. Code

- **Grain terminal elevator**:
  - Has a permanent storage capacity (capacity of storage inside of silos, bins, or buildings) over 2.5 million bushels

- **Grain storage elevator**:
  - Has a permanent storage capacity (capacity of storage inside of silos, bins, or buildings) over 1 million bushels

- **Meet PM and opacity limits for equipment**
AIR PERMITS

What is an Air Pollution Permit & Why Do I Need One?

- Legal document compiling all air pollution regulations that apply to a facility
- Covers all state and federal air regulations
- Required by Federal or State Law
- Due diligence requires that a facility evaluates whether or not an air permit is required

Permit Types Applicable to Grain Facilities

<table>
<thead>
<tr>
<th>1. Exemption</th>
<th>2. Registration Operation Permit</th>
<th>3. Construction &amp; Operation Permit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee if want verified by WI DNR</td>
<td>Annual flat fee; no fees for construction</td>
<td>Fee for construction permit and annual emission fee</td>
</tr>
<tr>
<td>Keep records proving exempt</td>
<td>General recordkeeping requirements and conditions</td>
<td>Specific recordkeeping requirements and conditions</td>
</tr>
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http://dnr.wi.gov/topic/SmallBusiness/Exemptions.html

http://dnr.wi.gov/topic/AirPermits/Options.html
How to Determine if You Need a Permit

1. Calculate your facility’s actual emissions or expected actual emissions and maximum theoretical emissions
2. Compare against thresholds for exemptions & permits:
   A. Determine if exempt from air permit:
      - EXEMPTIONS - based on actual emissions or specific categories
   B. If not exempt, determine if Registration Permit is the best fit
      - ROP - based on actual emissions at various threshold levels and other requirements
   C. If not exempt and the Registration Permit options don’t apply, you will need a source specific construction and operation permit – contact SBEAP or consultant for more assistance

Grain Specific Exemptions

- Not NSPS source
- Grain drying
  - rack dryer designed to dry no more than 1,500 bushels per hour, or at least 50 mesh screens or
  - a column dryer
  - AND
- Grain storage at an average of at least 4,500 ton/mo of grain (160,714.3 bushels/mo corn, or 300,000 bushels/mo cotton, or 150,000 bushels/mo bean, or 150,000 bushels/mo wheat, or a combination of grain to reach 4,500 ton/mo), OR
- Grain processing at an average of at least 5,500 ton/mo of grain (196,428.6 bushels/mo corn, or 366,666 bushels/mo cotton, or 183,333 bushels/mo bean, or 183,333 bushels/mo wheat, or a combination of grain to reach 5,500 ton/mo).

Key Terms for Calculations

- Maximum theoretical emissions (MTE):
  - Amount of air pollution you would put into the air if you operated your equipment at maximum production capacity (hourly) without any control device.
- Potential to emit (PTE):
  - Refers to a facility's maximum capacity to emit air pollutants if both physical design and operational limitations are taken into account. Limitations can include pollution control equipment, type of materials used in the process, and restricted hours of operation.
- Actual Emissions:
  - The total emissions generated by a facility over a specified period of time taking into account any reductions made by a control device or technique.
Calculating Emissions

**FUEL BURNING UNITS**

\[
\text{Actual Fuel Use (MMCF/YR)} \times \text{Emission Factor (pollutant LB/MMCF)} = \text{Actual Emissions of Pollutant (LB/YR)}
\]

\[
\text{Heating Equipment Rating (MMBtu/HR)} \times \text{Fuel Emission Factor (LB pollutant/MMBtu)} = \text{Maximum Emissions of Pollutant (LB/HR)}
\]

- MMBtu/HR = million British thermal units per hour
- LB pollutant/Unit = pounds of pollutant emission factor
- LB/HR = pounds per hour

**GRAIN HANDLING UNITS**

\[
\text{Actual Material Use (Tons of grain/YR)} \times \text{Emission Factor (pollutant LB/tons of grain)} \times \frac{\text{Fraction of Emissions Not Controlled (1 - CE)}}{\text{Maximum Grain Handled (TON/HR)}} = \text{Emissions of Pollutant (LB/YR)}
\]

Note: For grain operations, the control efficiency is often included in the emission factor. If that is the case, the Control emission factor (CE) in this equation would be 0 and a control factor would not be included in the calculations.

**Emission Factors**

- Find Emission Factors for each type of equipment
- EPA published emission factors
  - Grain processes: [https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s0909-1.pdf](https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s0909-1.pdf)
- Site-specific emissions test
  - Follow EPA test methods for each pollutant testing
    - [https://www.epa.gov/env](https://www.epa.gov/env)
  - Notify WI DNR to allow witnessing of test
    - 20 day advance notice
    - provide test plan
- Similar process/equipment test results
Calculating Facility-wide Emissions

- Set up equations to calculate emissions for each process
  - For grain handling, see PM Emissions tab
  - For fuel burning units, see both Boiler Fuel and Engine Fuel calculations
- Add emissions across all processes to obtain facility totals for each pollutant
  - Actual Emissions (tons per year)
  - Maximum Theoretical Emissions (tons per hour)
Is a Permit Required?

- Compare the facility emission totals against the exemption and permitting thresholds
  - Is facility affected by the federal NSPS or NESHAP that may exclude from certain exemptions or permit types?
- If permit is required (the facility or project is not exempt) submit the appropriate application

Actuals-based Exemptions

- Operation permit exemptions (see NR 407)
  - Facility actual emissions must be ≤10 TPY for each criteria pollutant & below NR 445 HAP thresholds
  - Includes control efficiency
  - Apply for exemption if above NR 438 thresholds or if already issued/applied for an operation permit.
  - There is a $1250 fee for DNR review, but no annual fee.
- Construction permit exemptions (see NR 406)
  - At any size source, where project <1,666 lb/month
  - Include control efficiency
  - There is a $1250 fee for DNR review, but no annual fee.

Registration Operation Permits (ROPs)

ROP-A

- Facilities with actual emissions < 25% of major source thresholds may be eligible:
  - Equates to 25 tpy of PM, VOC, CO, SO2, and NOX; and 0.5 tpy lead; 2.5 tpy of single federal HAPs and 6.25 tpy for all federal HAPs.
- Allows for construction without a permit if total actual emissions remain < 25% major source
Registration Operation Permits (ROPs)

- ROP-B
  - Actual emissions < 50% of major source thresholds:
    - Equates to < 50 tpy of PM, VOC, CO, SO2, and NOX; and < 1.0 tpy lead; < 5.0 tpy of single federal HAPs and < 12.5 tpy for all federal HAPs.
  - Differs from ROP-A in certain compliance demonstrations

ROP Benefits

- No application fee
- No construction permit or related fees
  - ROP eligibility needs to be maintained after each change
  - Keep records of changes
- Low annual emissions fee = $400
- Simplified application process
- Permit issued within 15 business days after complete application is provided
- Application help:

ROP Disadvantages

- No document to identify exactly which federal or state air regulations apply
  - ROP only states “shall comply with all applicable air pollution control requirements”
  - References ch. 285 of Wis Statutes, chs. NR 400-499 of Wis Admin Code, and Clean Air Act
- Does not detail how source should comply with the rules
  - Left to source to figure out
  - Compliance checklist can help:
Site Specific Permit

- If not exempt, and not eligible for ROP, what next?
- Site specific construction and operation permit
  - More detailed application
  - Longer review process, timeframe
  - Additional fees for construction permit
  - Annual emissions fees

Summary of Permit Types Applicable to Grain Facilities

1. Exemption - construction & operation permit
   - Keep records proving exempt
   - $1250 fee if verified by WI DNR
   - Operation permit exemption: Facility actual emissions <10 TPY for each criteria pollutant & <1 NR 445 HAP threshold.
   - Specific exemptions for Grain Processing or Storage
   - http://dnr.wi.gov/topic/AirPermits/Options.html

2. ROP – A & B
   - General recordkeeping requirements and conditions
   - Annual $400 fee with reported emissions
   - ROP A = 25% of major source
   - ROP B = 50% of major source

3. Construction & Operation Permit
   - Specific recordkeeping requirements and conditions
   - Fee for construction permit and annual emission fee (varies)
   - Varies

READY TO SUBMIT PERMIT APPLICATION
Permit Applications

- Some applications may be submitted online:
  [http://dnr.wi.gov/topic/AirPermits/Apply.html](http://dnr.wi.gov/topic/AirPermits/Apply.html)
- For printable or PDF-fillable forms:
  [http://dnr.wi.gov/topic/AirPermits/Forms.html](http://dnr.wi.gov/topic/AirPermits/Forms.html)
- Need more help?
  - Small Business Environmental Assistance Program
  - Permit Primer:
    [http://dnr.wi.gov/topic/smallbusiness/Primer/](http://dnr.wi.gov/topic/smallbusiness/Primer/)
    - walks through all DNR permits
    - covers both exemptions from air permits as well as traditional application process
    - tips on the air application forms, example calculations, etc.

Permit Process

- Complete application packet
  - Use WI DNR application forms
    - May add information via cover letter and spreadsheets
    - Submit to central office to ensure quick assignment
  - Clearly identify type of permit action requested
    - Requesting exemption vs notifying of exemption may mean exemption fee required for DNR review

Permit Process

- DNR process, once application received:
  - Review for completeness – request additional info
  - Issue ROP or send letter of concurrence with exemption request
  - Source specific permits will have longer DNR review process, public notice period and additional DNR review documents
WHAT TO DO WHEN...
FACILITY IS EXEMPT
OR FINAL PERMIT IS ISSUED

Exemption Misconceptions

- I don’t have a permit. That means I don’t need to do anything else for air regulations, right?
  - Check whether exempt or if a permit is needed
  - Regulations apply even if exempt from permits
  - Check each chapter for applicability
    - Some requirements have own exemption threshold
  - Always keep records to demonstrate meeting exemption and other requirements
  - Check actual emissions against annual reporting thresholds in NR438

What Do I Do With My Final Permit?

- Isn't it just like a license or registration? I just need to keep it on file.
  - No.
    - While it should always be on file in the facility, it is a document you should be reviewing periodically

- Many violations stem from NOT reading permit or NOT understanding
  - Ask questions if confused by language - usually taken directly from rule so not always in plain-English
  - Review each condition and decide how you will manage
Compliance Tips

- Setup a compliance calendar
  - Use electronic calendar functions
  - Put in reminders of deadlines or track periodic records
- Setup a folder for all compliance records
  - Collect all “one time records”, e.g., physical stack parameters, and verify compliance
  - Add a date and signature to records
- Prepare any plans required
  - Malfunction Prevention and Abatement Plan
  - Fugitive dust control plan

Annual Reports/Certifications

File all reports as required by the facility’s permit:

- See permit for due dates
- Typically due 30 - 60 days after January 1st
- Optional forms available
- Have the compliance certification signed by the Responsible Official

Submit emissions inventory report required in NR 438:

- Required if any pollutant emitted above thresholds in previous calendar year
- Due March 1st each year
- Most thresholds range 6,000 to 10,000 pounds per year
- Fees charged only if permit required
- Once DNR checks, source contact certifies the final report

OTHER RESOURCES
Assistance Tools

- WI web page:
  http://dnr.wi.gov/topic/SmallBusiness/Resources/GrainHandling.html

- Other states:
  - IL – dust control fact sheet:
    https://www.illinois.gov/dceo/SmallBizAssistance/EnvironmentalAssistanceProgram/Documents/grain%20handling%20operations%20dust%20control.pdf
  - KS – NSPS fact sheet:
  - MN – air, waste and water, fact sheets and spreadsheets:
    https://www.pca.state.mn.us/quick-links/sbeap-industry-sector-grain-elevators

- What could WI SBEAP provide to better assist you?

Compliance Audit Program

- What if I have an existing facility and I want to do my due diligence in checking if an air permit is applicable?
- What if I have concerns about meeting environmental regulations? Will I get fined?

  **DNR’s Compliance Audit Program may limit those fines if you audit your compliance voluntarily.**

  - (855) 889-3021
  - DNRSmallBusiness@wi.gov
  - http://dnr.wi.gov/business/audit.html

Do you want to get involved & help others?

- Are you interested in attending or serving as a council member?
- Are you interested in assisting with the development of tools to assist other grain operation facilities?
- Inquire about the Small Business Environmental Council

Questions?

Contact us at:
• (855) 889-3021 OR DNRsmallbusiness@wi.gov
• Website: http://dnr.wi.gov/topic/smallbusiness/

SBEAP is here to help!