

# Presentation to NCNJ Chapter of the Air & Waste Management Association (AWMA).

NJDEP Air Quality Permitting  
March 16<sup>th</sup>, 2009

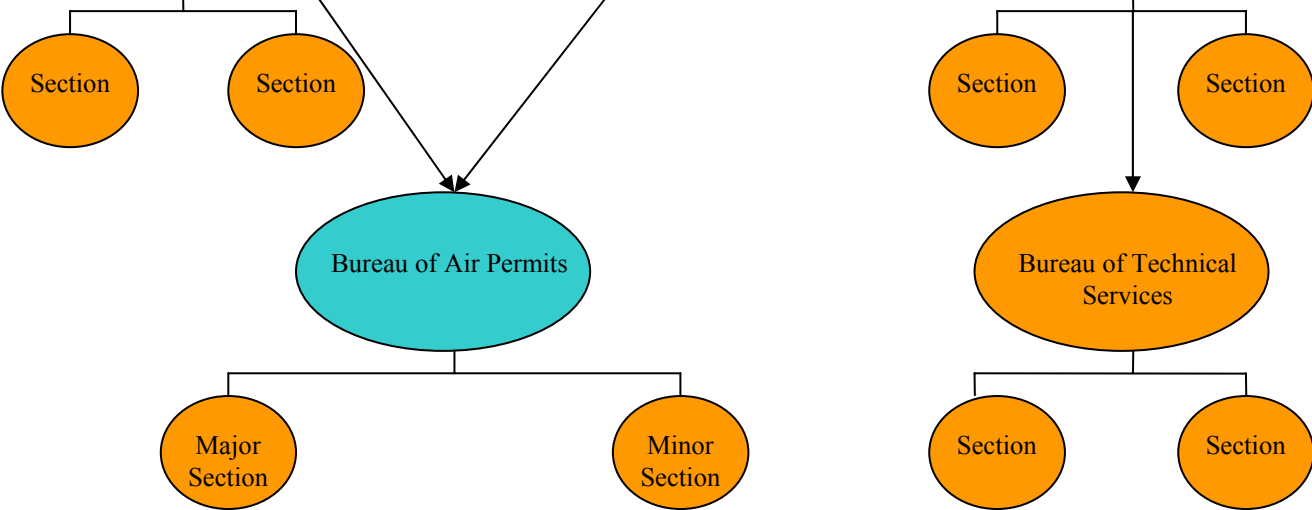
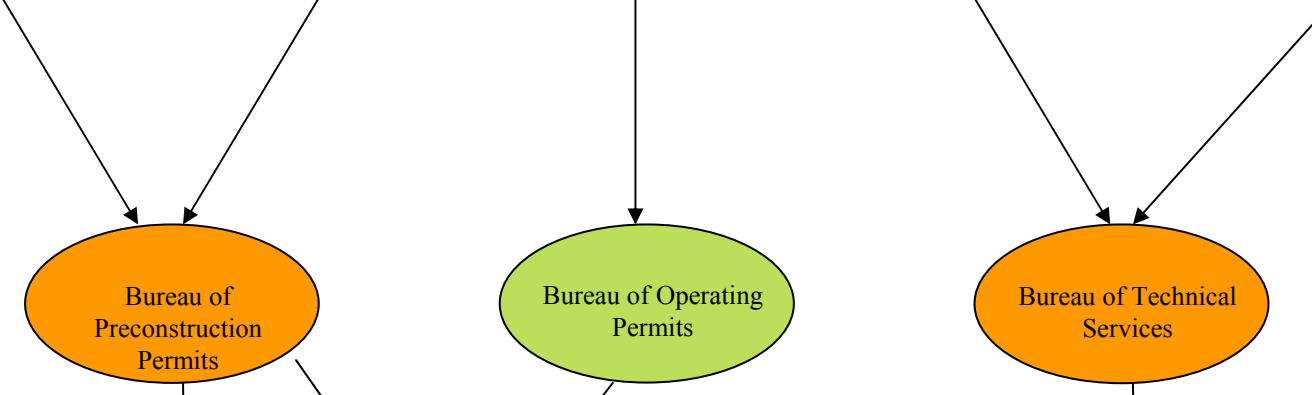
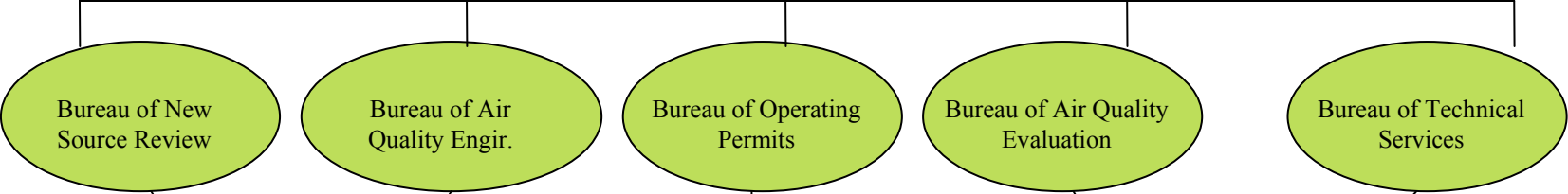
# Topics

- Planned Reorganization of Air Quality Permitting Program (AQPP)
- Staff Recommendations for RACT Plus adoption

# Air Quality Permitting Reorganization

- Diminishing resources have made reorganization of AQPP imperative
- Latest in series of consolidation of AQ Bureaus that began in 2004

Assistant Director for Air Quality Permitting



# RACT Plus Rule Adoption

# Staff Recommendations for RACT Plus Rule Adoption

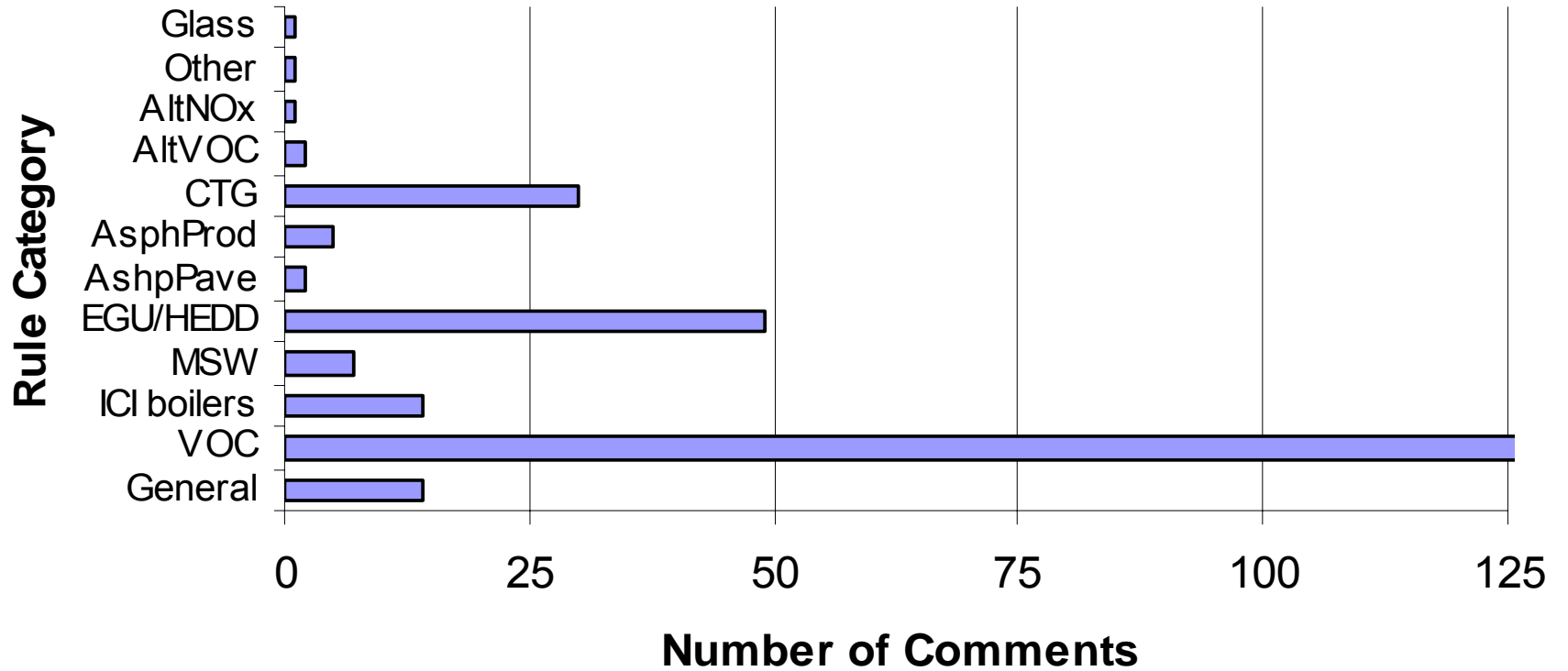
- Proposal appeared in NJ Register on Aug. 4, 2008
- Public hearing was held on Sept. 26, 2008
- Staff recommendations completed and sent to Commissioner
- Commissioner Signature is anticipated this month
- Effective date of rule is expected to be in Mid-May

# Affected Source Categories

1. Asphalt Used for Paving (VOC)
2. Asphalt Pavement Production Plants (NO<sub>x</sub>)
3. Industrial/Commercial/Institutional Boilers & other Indirect Heat Exchangers (NO<sub>x</sub>)
4. Boilers Serving Electric Generating Units (NO<sub>x</sub>, SO<sub>2</sub> & PM)
5. High Electric Demand Day Units (NO<sub>x</sub>)
6. Glass Manufacturing Furnaces (NO<sub>x</sub>)
7. VOC Stationary Storage Tanks (VOC)
8. New Control Technique Guidelines (CTGs) for three source categories (VOC)
9. Facility Specific Emission Limits and Alternative Emission Limits (VOC & NO<sub>x</sub>)
10. Municipal Solid Waste Incinerators (NO<sub>x</sub>)
11. Sewage Sludge Incinerators (NO<sub>x</sub>)

# Public Participation

## Public Comments



# Federal Clean Air Act (CAA)

- USEPA sets National Ambient Air Quality Standards (NAAQS) for criteria pollutants
  - ozone ( $O_3$ ), sulfur dioxide ( $SO_2$ ), particulate matter ( $PM_{10}$ ), lead, oxides of nitrogen ( $NO_x$ ), and carbon monoxide (CO)
- USEPA designates an area's attainment and classification
  - New Jersey is “moderate” nonattainment for 8-hour  $O_3$
- Subpart 2 provisions
  - Reasonably Available Control Technology (RACT)

# Ozone Health-based Standards

- 1-hour, 0.12 ppm ozone standard
  - promulgated in 1979, revoked in June 2005
  - 4th highest daily maximum hourly average concentration not to exceed 0.12 ppm over 3 consecutive years
  - EPA determined 1-hour standard not sufficiently protective of public health
- 8-hour, 0.08 ppm ozone standard
  - promulgated in 1997
  - 4th highest maximum 8-hour average concentration for 3 consecutive years not to exceed 0.08 ppm
- NEW 2008 8-hour ozone standard, 0.075 ppm (not part of this rulemaking)

# USEPA Guidance (for 1-hr ozone)

- Control Techniques Guideline (CTG) – control of volatile organic compounds (VOC) from stationary sources
- Alternate Control Techniques (ACT) – control of oxides of nitrogen ( $\text{NO}_x$ ) and VOC from stationary sources

# Existing NJ RACT Rules

- VOC RACT
  - Subchapter 16 – Control and Prohibition of Air Pollution by Volatile Organic Compounds [N.J.A.C.7:27-16]
- NO<sub>x</sub> RACT
  - Subchapter 19 – Control and Prohibition of Air Pollution by Oxides of Nitrogen [N.J.A.C.7:27-19]

# 1. Asphalt Used for Paving

- Application of Cutback and Emulsified Asphalts
- Amend existing State specific rule (N.J.A.C.7:27-16.19): bans use of cutback or emulsified asphalt during ozone season (April 16<sup>th</sup> to October 14<sup>th</sup>) with exceptions
- Comply 60 days after adoption (operative date of Rule amendments)
- Control measures
  - Establish ban on use of non-compliant cutback or emulsified asphalt during ozone season
  - Lower VOC content limits ( $\leq 0.1\%$  by wt or  $\leq 6.0$  ml oil distillate)
  - Require proper storage of non-compliant product in ozone season

## 2. Asphalt Pavement Production Plants

- All asphalt pavement production plants
- Amend existing State specific rule (N.J.A.C. 7:27-19.9):  
200 ppmvd @7% O<sub>2</sub> (batch or drum mix)
- Control measures: adopt more stringent NO<sub>x</sub> limits based on fuel type and implement Best Management Practices

| Fuel  | ppmvd<br>( @ 7% O <sub>2</sub> ) | lb/ton<br>(comparison to OTC ) | lb/ton*                       |
|---|----------------------------------|--------------------------------|-------------------------------|
| Natural Gas   | 75                               | 0.025                          | 0.020                         |
| #2 Fuel Oil   | 100                              | 0.040                          | 0.090 (batch)<br>0.040 (drum) |
| #4 FO & heavier,<br>and on-spec used oil,<br>or mixture | 125                              | 0.050                          | 0.090 (batch)<br>0.040 (drum) |

\*Note: Addendum to OTC Resolution 06-02 Emission Guidelines

# Asphalt Pavement Production Plants (continued)

- Sources greater than or equal to 100 MMBTU/Hour must comply
  - May 1, 2010 if no physical modification needed to comply
  - May 1, 2011 if physical modification needed to comply
- Sources less than 100 MMBTU/Hour must comply
  - May 1, 2011 if no physical modification needed to comply
  - May 1, 2012 if physical modification needed to comply

### 3. Industrial/Commercial/Institutional Boilers and other Indirect Heat Exchangers

- ICI boilers,  $25 \geq$  and  $< 250$  MMBtu/hr (medium to large) not including Refneries
- Amend existing State specific rules (N.J.A.C. 7:27-19.7)

# Industrial/Commercial/Institutional Boilers and other Indirect Heat Exchangers (continued)

- **Control measures**

- More stringent NO<sub>x</sub> limits for ≥ 50 MMBtu/hr (except other gaseous fuels and dual fuel burners using fuel oil and natural gas)
  - May 1, 2010 if no physical modification needed to comply
  - May 1, 2011 if physical modification needed to comply
- New NO<sub>x</sub> limits for ≥ 25 and < 50 MMBtu/hr
  - May 1, 2011 if no physical modification needed to comply
  - May 1, 2012 if physical modification needed to comply

# Industrial/Commercial/Institutional Boilers and other Indirect Heat Exchangers (continued)

- Maximum Allowable NO<sub>x</sub> Emission Rates

| <u>Heat Input Rate</u><br>(MMBtu/hr) | <u>Fuel Type</u>                             | <u>Rate</u><br>(lb/MMBtu) |
|--------------------------------------|--|---------------------------|
| ≥ 25 but <100                        | Natural gas only                             | 0.05                      |
|                                      | #2 fuel oil only                             | 0.08                      |
|                                      |  |                           |
|                                      | Other liquid fuels                           | 0.20                      |
|                                      | Dual fuel using fuel oil and natural gas     | 0.12                      |
| ≥ 100                                | Natural gas only                             | 0.10                      |
|                                      | #2 fuel oil only                             | 0.10*                     |
|                                      |  |                           |
|                                      | Other liquid fuels                           | 0.20                      |
|                                      | Dual fuel using fuel oil and for natural gas | 0.20                      |

## 4. Boilers Serving Electric Generating Units (continued)

- All electric generating boilers
- Amend existing State specific rules (N.J.A.C. 7:27-4.2, N.J.A.C. 7:27-10 & N.J.A.C. 7:27-19.4)
- Control measures for coal-fired boilers effective December 15, 2012:
  - Adopt same PM (for existing sources) and SO<sub>2</sub> (30-day rolling average) emission limits as the multi-pollutant Mercury Rule at N.J.A.C. 7:27-27.7(d)
  - Particulate Matter, 0.0300 lb/MMBtu (all existing sources), or 0.0150 lb/MMBtu (new, or reconstructed particulate control devices)
  - SO<sub>2</sub>, 0.150 lb/MMBtu (30-day rolling average) & 0.250 lb/MMBtu (24-hour daily)
  - NO<sub>x</sub>, 1.50 lb/ MWh (24-hour daily)

# Boilers Serving Electric Generating Units cont.

- Maximum Allowable NO<sub>x</sub> Emission Rates (lb/MWh) for gas and oil-fired boilers effective May 1, 2015

| <b><u>Boilers</u><br/>EGUs and HEDD</b> | <b><u>Type of fuel</u></b>     | <b><u>Emission Rate</u><br/>(24-hour daily)</b> |
|---|--------------------------------|---|
|   | Natural Gas                    | 1.00  |
|   | No. 2 Fuel Oil &<br>lighter    | 1.00  |
|   | Heavier than<br>No. 2 Fuel Oil | 2.00  |

## 5. High Electric Demand Day Units

- Peaking Units (gas and oil-fired combustion turbines and boilers)
- Amend existing State specific rules (N.J.A.C. 7:27-19)
- Available control measures (as applicable)
  - Ultra Low NO<sub>x</sub> Burners/SNCR
  - water injection
  - fuel switching
  - repowering & SCR (longer-term)
- Short-term (2009) – 28% reduction, flexible emission reduction plan
- Long-term (2015) –55% reduction, performance standards

# High Electric Demand Day Units cont.

- 2015 Max. Allowable NO<sub>x</sub> Emission Rates (lb/MWh)

| <u>Type of Turbine*</u>                    | <u>Type of Fuel</u> | <u>Emission Rate</u><br>(24-hour daily) |
|--|---------------------|---|
| Combined cycle<br>or regenerative<br>cycle | Gas                 | 0.75                                    |
|  | Oil                 | 1.20                                    |
| Simple cycle                               | Gas                 | 1.00                                    |
|  | Oil                 | 1.60                                    |

\*Note: NO<sub>x</sub> emission rates for HEDD boilers are same as oil & gas-fired EGUs. (See previous slide 12).

# Schedule for HEDD

- Submit 2009 Protocol no later than 60 days after adoption
  - Shows how emission reductions will be obtained
  - Start implementing 2009 Protocol no later than 60 days after adoption through September 30, 2014
- Submit 2015 Plan for each HEDD unit by May 1, 2010
  - Detail how units will comply with 2015 standards

# Reports for HEDD

- Annual report on obtaining 2009 plan reductions
  - Commence January 30, 2010 and continues through January 30, 2015
- Provide Annual Update on Progress to Meet 2015 Plan
  - First update January 31, 2011 and continue through January 31, 2016 for each non-complaint HEDD unit

## 6. Glass Manufacturing Furnaces

- Container (pressed and blown) and fiberglass furnaces
- Amend existing State specific rules (N.J.A.C. 7:27-19.10):
- Adopt more stringent NO<sub>x</sub> limits (block 24-hour avg.)
  - 5.5 lb NO<sub>x</sub>/ton removed, commercial container glass &
  - 11.0 lb NO<sub>x</sub>/ton removed, specialty container glass
  - 4.0 lb NO<sub>x</sub>/ton removed, container, pressed and blown glass, and fiberglass
  - 9.2 lb NO<sub>x</sub>/ton removed, flat glass
- All Standards apply May 1, 2010 but delay compliance until next rebuild

# 7. VOC Stationary Storage Tanks

- Floating roof tanks containing highly volatile VOC
- Amend existing State specific rules (N.J.A.C. 7:27-16.2)
- Control measures
  - tank inspections
  - degassing and cleaning emission control
  - slotted guide pole retrofits
  - deck fitting requirements for external floating roof tanks
  - control of roof landing losses
  - dome roof construction of external floating roof tanks
  - deck fitting requirements for internal floating roof tanks
  - seal requirements

# VOC Stationary Storage Tanks Schedule

- Tank inspections
  - Annually commencing 60 days after adoption
- Degassing and cleaning emission control
  - May 1 through September 30 commencing May 1, 2010
- Slotted guide pole retrofits
  - Commencing 180 days after adoption
- Deck fitting requirements for external floating roof tanks
  - Commencing 180 days after adoption

# VOC Stationary Storage Tanks Schedule (continued)

- Control of roof landing losses
  - Develop schedule to retrofit tanks as tanks are removed from service
  - Implement retrofit schedule completing all retrofits no later than 10 years after adoption
- Dome roof construction of external floating roof tanks
  - Retrofit tanks with domes when tanks are removed from service, completing no later than May 1, 2020
- Deck fitting requirements for internal floating roof tanks
  - Retrofit deck fittings when tanks are removed from service, completing no later than May 1, 2020
- Seal requirements
  - Retrofit tank seals when tanks are removed from service, completing no later than May 1, 2020

## 8. New Control Techniques Guidelines

- New CTGs effective October 5, 2006
  - Flexible Packaging Printing Materials
  - Lithographic and Letterpress Printing Materials
  - Flat Wood Paneling Coatings
- Amend existing State rules (N.J.A.C. 7:27-16.7)
- Implement Control Measures specified in CTG
  - Implement recommended control and capture efficiencies no later than May 1, 2010
  - Set maximum allowable VOC content standards 60 days after adoption
  - Require Best Management Practices 60 days after adoption

## 9. Alternative and Facility-specific VOC & NO<sub>x</sub> Emission Limits

- Facility-specific Emission Limits (FSELs) and Alternative Emission Limits (AELs)
- Amend existing State specific rules (N.J.A.C. 7:27-16.17 & N.J.A.C. 7:27-19.13)
- Control measures
  - adopt a 10-yr approval authorization period (AELs)
  - reevaluate the existing AEL (NO<sub>x</sub> & VOC) and FSEL (VOC) approvals

## Alternative and Facility-specific VOC & NO<sub>x</sub> Emission Limits (continued)

- All existing FSEL & AEL approvals must be resubmitted to Department within 150 after adoption for evaluation by Department
- During review applicant will continue to operate under existing approval
- Within 6 months of receipt Department will:
  - Approve
  - Modify
  - Disapprove

## 10. Municipal Solid Waste Incinerators

- Municipal solid waste (MSW) incinerators
- Adopt new rule
- Control measure: implement NO<sub>x</sub> limit, 150\* ppmvd @ 7% oxygen
- Must comply with limit 120 days after adoption unless construction is necessary to comply
- If construction is necessary to comply then must comply by May 1, 2011

\*Note: Based on USEPA NSPS limits for new MSWs

# 11. Sewage Sludge Incinerators

- Sewage sludge incinerators
- Adopt new rule
- Control measure: implement NO<sub>x</sub> limits
  - 7.0 lbs NO<sub>x</sub>/dry ton sludge, multiple hearth
  - 2.5 lbs NO<sub>x</sub>/dry ton sludge, fluidized bed
- Rule will require compliance 60 days after adoption (All existing sources currently comply with new rule)

# Rule Leads by Source Category

- Rule Managers  
Allan Willinger: 3-1120  
Kevin Greener: 4-3696
- Asphalt Used for Paving  
Stella Oluwaseun-Apo: 7-0430
- Asphalt Pavement Production  
Yaso Sivaganesh: 4-6349
- ICI Boilers & MSWs  
Sunila Agrawal: 2-9202
- EGUs w/ Boilers & HEDD Units  
Mike Hogan: 3-1124  
Tonalee Key: 4-2036
- Glass Manufacturing Furnaces  
Subhash Shah: 3-8224
- VOC Stationary Storage Tanks  
Bennett Yalartai: 3-8253  
Dave Owen: 3-1129
- FSELS/AELs & Sewage Sludge Incinerators  
Yogesh Doshi: 3-7249
- New CTGs  
Sharon Wallace: 3-8239  
Joel Leon: 4-3019

For further information regarding current and recent rule proposals, visit the following web site:

[www.nj.gov/dep/aqm/curformp.htm](http://www.nj.gov/dep/aqm/curformp.htm)

Or visit the web site listed below to sign up for the AQPP Listserv:

[www.state.nj.us/dep/baqp/airrules.html](http://www.state.nj.us/dep/baqp/airrules.html)