UNDERSTANDING A PERMIT

2012 Spring Workshop: Permitting 101
Overall Structure of a Permit

- 6 Sections
  - Cover Page
  - Emission Source Table
  - General Conditions
  - Specific Conditions
  - Appendix A
    - Toxic Air Pollutant Review
  - Appendix B
    - Insignificant Activities
General Conditions

- **Administrative (G-1 – G-12)**
  - Requirement to Obtain a Permit prior to construction or operation of an air pollution source in Mecklenburg County
  - Duties and Power of the Director
    - Permit issuance, permit revocation, compliance demonstration, etc...

- **Operational (G-13 – G-20)**
  - Commencement of operation notification
  - Renovation and demolition requirements
  - Visible Emissions limitations, fugitive nuisance dust and odor
  - Toxic Air Pollutants
  - Recordkeeping: Reporting: Monitoring Requirements
Specific Conditions

- **Procedural**
- **Emission Standards**
  - Local Regulations (MCAPCO)
    - Federal Regulations
      - 40 CFR 60 New Source Performance Standards (NSPS)
      - 40 CFR 61 National Emissions Standards for Hazardous Air Pollutants (NESHAP)
      - 40 CFR 63 Major Sources (MACT); Area Sources (GACT)
        (Summary of Federal Regulations: [http://ecfr.gpoaccess.gov](http://ecfr.gpoaccess.gov))
  - Emission Limitations
    - Usage or Production
    - Air Dispersion Modeling (NC Air Toxics)
      - Emission Rates
Specific Conditions continued...

- **Monitoring and Recordkeeping Requirements**
  - Hourly, Daily, Monthly
  - Visible Emissions
  - Pressure-drop readings
  - Production Rates
  - Application Rates

- **Performance Testing Requirements**
  - Control Device Efficiency
  - Federal Requirement
Specific Conditions continued...

- **Performance Testing**
  - Compliance Demonstration
    - Modeling
    - Control efficiency
    - Federal Requirement (refer to applicable rule)
  - Notification
    - Testing Protocol must be submitted prior to test:
      - MACT: 60 days notice
      - Other: 30 day notice
  - Results
    - Submit to MCAQ w/in 60 days after test
  - MCAQ will review results
    - Notify facility of acceptance or disapproval
    - Notify of any necessary follow-up.
Specific Conditions continued...

- **Notification Requirements**
  - Local
    - Compliance Plan
    - Demonstration of Compliance
    - Performance test notification report
    - Prior to relocating (permitted portable facilities only)
  - Federal Reference
    - Initial Notification
    - Notification of Compliance
    - Semi-Annual Compliance Reports
    - Annual Compliance Reports

- **Reporting Requirements**
  - Monthly, Quarterly, or Annually
  - Annual Emission Report due April 30
AIR QUALITY
PERMIT TO CONSTRUCT/OPERATE
12-001-555

In accordance with the provisions of the Mecklenburg County Air Pollution Control Ordinance, PERMISSION IS HEREBY GRANTED TO

<table>
<thead>
<tr>
<th>COMPANY NAME</th>
<th>FACILITY LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example Company, Inc.</td>
<td>1234 Permit Lane</td>
</tr>
<tr>
<td></td>
<td>Charlotte, NC</td>
</tr>
</tbody>
</table>

FOR THE INSTALLATION AND OPERATION OF

A widget making process with associated air emission sources as listed in the emission source table.

Example Company, Inc. shall be subject to the General and Specific Conditions and Limitations, Emission Limits, Monitoring Requirements, Reporting and Recordkeeping Requirements contained herein.

This Permit shall be effective from the date of its issuance unless modified or void/revoked.

Appendices A and B are included to provide information relevant to this Permit.

__________________________________________/
Supervisor\Air Quality Program Manager, /Date

700 N. Tryon Street  ●  Suite 205  ●  Charlotte, NC  28202-2236
<table>
<thead>
<tr>
<th>Emission Source ID</th>
<th>Emission Source Description</th>
<th>Installation (I), Modification (M) Dates</th>
<th>Control Device (ID) or Method</th>
<th>Permitted Pollutant(s) Emitted from Emission Source</th>
<th>Applicable Specific Conditions and Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES-1</td>
<td>One (1) 21 million Btu/hour boiler fueled by natural gas, or #2 fuel oil</td>
<td>I=1968</td>
<td>None</td>
<td>TSP, PM10, PM2.5, SO2, NOx, CO, VOC, HAPs</td>
<td>S-1, S-2, S-4, S-10</td>
</tr>
<tr>
<td>ES-2</td>
<td>A widget making process including: Widget maker Parts cleaner</td>
<td>I=1983</td>
<td>CD-2 One (1) baghouse for particulate control</td>
<td>TSP, PM10, PM2.5, VOC, HAPs</td>
<td>S-1, S-3, S-5, S-8, S-10</td>
</tr>
<tr>
<td>ES-3</td>
<td>Two (2) ceramic powder plasma spray stations</td>
<td>I=2012</td>
<td>CFU1: One (1) Air Filter Cartridge Dust Collector in series with one HEPA filter</td>
<td>TSP, PM-10, HAPs, TAPs (Chromium, Nickel, Chromium VI)</td>
<td>S-3, S-6, S-7, S-8, S-9, S-10</td>
</tr>
</tbody>
</table>
MECKLENBURG COUNTY AIR QUALITY

Air Quality Permit Conditions and Limitations

Facility Name: Example Company, Inc.
Address: 1234 Permit Lane, Charlotte, NC
Permit to Construct/Operate No.: 12-001-555

GENERAL CONDITIONS AND LIMITATIONS

*General Conditions and Limitations apply to all facilities. These conditions are the same for all minor sources in Mecklenburg County. See Handouts for the full list of General Conditions and Limitations.*

SPECIFIC CONDITIONS AND LIMITATIONS

PROCEDURAL
S-1. Permit No. 07-001-555 shall be void upon issuance of this Permit.

EMISSION STANDARDS
S-2. The facility shall be operated in accordance with MCAPCO Regulation 2.0503 - “Particulates from Fuel Burning Indirect Heat Exchangers”, such that the maximum allowable particulate emission rate resulting from the combustion of a fuel shall not exceed 0.454 lb/million Btu input.

S-3. The facility shall be operated in accordance with MCAPCO Regulation 2.0515 - “Particulates from Miscellaneous Industrial Processes”, such that particulate emissions from any stack, vent or outlet shall not exceed the allowable emission rate. The allowable emission rate shall be determined using the appropriate formula below:

\[
E = 4.10 \times P^{0.67}
\]

For process weight rates greater than 30 tons/hr the following formula shall be used:

\[
E = 55.0 \times P^{0.11} - 40
\]

E = maximum allowable emission rate for particulate matter in lbs/hr
P = process rate in tons/hr

S-4. The facility shall be operated in accordance with MCAPCO Regulation 2.0516 - “Sulfur Dioxide Emissions from Combustion Sources”, such that sulfur dioxide emissions from any vent, stack or chimney shall not exceed 2.3 pounds per million Btu input.
S-5. The facility shall be operated in accordance with MCAPOCO 2.0958 - "Work Practices For Sources Of Volatile Organic Compounds". The owner or operator of emission sources subject to this regulation shall:
A. store all material, including waste material, containing volatile organic compounds in containers covered with a tightly fitting lid that is free of cracks, holes, or other defects, when not in use,
B. clean up spills as soon as possible following proper safety procedures,
C. store wipe rags in closed containers,
D. not clean sponges, fabric, wood, paper products, and other absorbent materials,
E. drain solvents used to clean supply lines and other coating equipment into closable containers and close containers immediately after each use,
F. clean mixing, blending, and manufacturing vats and containers by adding cleaning solvent, closing the vat or container before agitating the cleaning solvent. The spent cleaning solvent shall then be poured into a closed container.

When cleaning parts, the owner or operator of any facility subject to this Regulation shall:
A. flush parts in the freeboard area,
B. take precautions to reduce the pooling of solvent on and in the parts,
C. tilt or rotate parts to drain solvent and allow a minimum of 15 seconds for drying or until all dripping has stopped, whichever is longer,
D. not fill cleaning machines above the fill line,
E. not agitate solvent to the point of causing splashing.

Sources on which a control device was installed to comply with MCAPOCO Regulation 2.0518 - "Miscellaneous Volatile Organic Compound Emissions" Paragraph (d) (now repealed) shall continue to maintain and operate the control device providing at least 85% control efficiency, unless the Director determines that the removal of the control device shall not cause or contribute to a violation of the ozone ambient standard.

S-6. The facility shall be operated in accordance with MCAPOCO Regulation 2.1111 - "Maximum Achievable Control Technology" and 40 CFR Part 63 - "National Emission Standards For Hazardous Air Pollutants For Source Categories." The requirements are stated in 40 CFR 63.1 to 63.15 Subpart A - "General Provisions," and 40 CFR 63.11504 to 63.11513 Subpart (6) WWWWWW - "National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations," which includes the following pertinent sections:

A. 63.11504 - "Am I subject to this subpart?"
   (a)(1). Each tank that contains one or more of the plating and polishing metal HAP, as defined in §63.11511, "What definitions apply to this subpart?" and is used for non-chromium electroplating; electroforming; electropolishing; electroless plating or other non-electrolytic metal coating operations, such as chrome conversion coating, nickel acetate sealing, sodium dichromate sealing, and manganese phosphate coating.
   (a)(2). Each thermal spraying operation that applies one or more of the plating and polishing metal HAP, as defined in §63.11511, "What definitions apply to this subpart?"
   (a)(3). Each dry mechanical polishing operation that emits one or more of the plating and polishing metal HAP, as defined in §63.11511, "What definitions apply to this subpart?"

B. 63.11505 - "What parts of my plant does this subpart cover?"
C. 63.11506 - "What are my compliance dates?"
D. 63.11507 - "What are my standards and management practices?"

Portions of this section require you to:

If you own or operate an affected thermal spraying operation that applies one or more of the plating and polishing metal HAP, you must:
1. For existing permanent thermal spraying operations, you must operate a capture system that collects PM emissions from the thermal spraying process and transports the emissions to a water curtain, fabric filter, or HEPA filter, you must:
   a. operate all capture and control devices according to the manufacturer's specifications and instructions; and
   b. keep the manufacturer's operating instructions at the facility at all times in a location where they can be easily accessed by the operators.
2. For new permanent thermal spraying operations, you must operate a capture system that collects PM emissions from the thermal spraying process and transports the emissions to a fabric or HEPA filter, you must
   a. operate all capture and control devices according to the manufacturer's specifications and instructions; and
   b. keep the manufacturer's operating instructions at the facility at all times in a location where they can be easily accessed by the operators.
3. For temporary thermal spraying operations, as defined in §63.11511 “What definitions apply to this subpart?”, you must:
   a. document the amount of time the thermal spraying that occurs each day, and where it is conducted; and
   b. implement the applicable management practices specified in paragraph (g) of this section, as practicable.
E. 63.11508 – “What are my compliance requirements?”
   Portions of this section require you to:
   To demonstrate continuous compliance with the applicable management practices and equipment standards specified in this subpart, you must:
   1. always operate and maintain your affected source, including air pollution control equipment; and
   2. prepare an annual compliance certification according to the requirements specified in §63.11509(c), “Notification, Reporting, and Recordkeeping.”
F. 63.11509 – “What are my notification, reporting, and recordkeeping requirements?”
   Refer to 63.11509 and Specific Condition and Limitation Number(s) S-10 of this permit for all notification, reporting, and recordkeeping requirements.
G. 63.11510 – “What General Provisions apply to this subpart?”
H. 63.11511 - “What definitions apply to this subpart?”
I. 63.11512 – “Who implements and enforces this subpart?”
EMISSION LIMITS

In accordance with MCAPCO Regulations 1.5711 - “Emission Rates Requiring a Permit” and/or 2.1104 - “Toxic Air Pollutant Guidelines”, the facility shall not emit any of the following toxic air pollutants in such quantities that may cause or contribute beyond the premises to any significant ambient air concentration that may adversely affect human health:

Non-specific chromium VI compounds

To comply with these requirements, the facility shall be operated in accordance with the following limitation(s):

A. The facility is not to exceed the annual coating usage limits listed in the table below.

<table>
<thead>
<tr>
<th>Emission Source ID</th>
<th>Control Device ID</th>
<th>Coating</th>
<th>Annual Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES-3</td>
<td>CFU 1</td>
<td>Stainless Steel Powder</td>
<td>10,075 lbs</td>
</tr>
<tr>
<td>ES-3</td>
<td>CFU 1</td>
<td>Chrome Oxide Powder</td>
<td>23,684 lbs</td>
</tr>
</tbody>
</table>

The facility shall maintain a record of the above-specified parameter(s) for a period not less than two (2) years. The records shall be made available to MCAQ personnel upon request.

B. Parameters of the air dispersion modeling demonstration:

<table>
<thead>
<tr>
<th>ES-3 controlled by CFU1:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Non-specific chromium VI compounds emission rate</td>
<td>( \leq 0.045 \text{ lb/yr} )</td>
</tr>
<tr>
<td>2. Stack height</td>
<td>= 12.19 m (40 ft)</td>
</tr>
<tr>
<td>3. Stack diameter</td>
<td>= 0.533 m (1.75 ft)</td>
</tr>
<tr>
<td>4. Stack orientation</td>
<td>= vertical, no raincap.</td>
</tr>
<tr>
<td>5. Stack exit temperature</td>
<td>( \geq 305 \text{ K (89.33 F)} )</td>
</tr>
<tr>
<td>6. Stack exit velocity</td>
<td>( \geq 16.89 \text{ m/sec (3326.014 ft/sec)} )</td>
</tr>
</tbody>
</table>

Upon written request from MCAQ, the facility shall verify compliance with the above-specified modeling parameters and operating conditions.
**MONITORING AND RECORDKEEPING REQUIREMENTS**

S-8 In accordance with MCAPCO Regulation 1.5111 “General Recordkeeping, Reporting and Monitoring Requirements”, the facility shall monitor and record the following operating parameters for the control devices as listed below:

<table>
<thead>
<tr>
<th>CONTROL DEVICE</th>
<th>OPERATING PARAMETER</th>
<th>PARAMETER RANGE</th>
<th>MINIMUM MONITORING/RECORDING FREQUENCY (Once per...)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD-2: Baghouse for particulate control</td>
<td>Pressure drop across the fabric filter</td>
<td>6-8 inches H₂O</td>
<td>Month</td>
</tr>
<tr>
<td>CFU1: One (1) Air Filter Cartridge Dust Collector in series with one HEPA filter</td>
<td>Pressure drop across the control devices</td>
<td>0-6 inches H₂O</td>
<td>Month</td>
</tr>
</tbody>
</table>

**PERFORMANCE TESTING REQUIREMENTS**

S-9 The facility shall, at its own expense and using the most recent versions of the test methods contained in 40 CFR Part 60 (Appendix A) or Part 63 or as approved by the Administrator of the USEPA or MCAQ, demonstrate compliance with the appropriate regulatory requirement as follows:

<table>
<thead>
<tr>
<th>Emission Source Description and ID</th>
<th>Demonstrate Compliance with...</th>
<th>Scheduled Testing Frequency</th>
</tr>
</thead>
</table>
| ES-3: Two (2) ceramic powder plasma spray stations | MCAPCO Regulations 1.5711 - “Emission Rates Requiring a Permit” and/or 2.1104 - “Toxic Air Pollutant Guidelines” | Initial Test: within 180 days after initial startup of the emission source or following any modification to the emission source or control device
Second Test: within 14 months of the date of the initial test.
Additional Tests: upon written request by MCAQ or as requested by Permittee |
40 CFR 63 Subpart 40 CFR 63.11504 emissions sources

Refer to 40 CFR 63.7, 63.11504 and Specific Condition and Limitation S-6 of this permit for specific monitoring and recordkeeping requirements related to 40 CFR 63 emission sources

Refer to 40 CFR 63.7 and 63.11504

All performance tests shall be made by, or under the direction of, a person qualified by training and/or experience in the field of air pollution testing. MCAQ shall be notified at least 21 days in advance of the proposed test so that it may have a representative present to observe the test at its option. The notification shall include a detailed description of the test procedures so that MCAQ may review and approve them. The final test results shall be submitted to MCAQ for review within 60 days after completion of on-site testing. The performance test(s) specified in this condition do not preclude MCAQ from requesting performance testing for other emission sources or for other purposes as defined in MCAPCO Regulation 1.5104 - “General Duties of the Director with the Approval of the Board” and referenced in General Condition and Limitation No. G-6 of this Permit.

REPORTING AND RECORDKEEPING REQUIREMENTS

S-10. The facility shall be operated in accordance with MCAPCO Regulations 1.5111 - “General Recordkeeping, Reporting And Monitoring Requirements”, and/or 2.0903 - “Recordkeeping: Reporting: Monitoring”, such that the following specific reports and/or notifications shall be submitted to MCAQ by the specified dates:

(1) NOTIFICATIONS TO MCAQ

<table>
<thead>
<tr>
<th>POLLUTANT/PARAMETER</th>
<th>NOTIFICATION REQUIREMENT</th>
<th>SUBMITTAL DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOCs regulated under MCAPCO 2.0958</td>
<td>Submit a compliance plan to MCAQ to document how the facility will meet the requirements</td>
<td>Within 30 days of receipt of the Permit if the compliance plan has not been submitted to MCAQ</td>
</tr>
</tbody>
</table>
| 40 CFR 63 Subpart 6W emission sources | Refer to 40 CFR 63.9 and 63.11504 and Specific Condition and Limitation S-6 of this permit for all specific notification requirements. Requirements include:  
- Initial Notification submittal due not later than 120 calendar days after July 1, 2008  
- Notification of Compliance Status due upon initial startup.  
- Annual Compliance report due by January 31 of the following year | Refer to 40 CFR 63.9 and 63.11509 |
<table>
<thead>
<tr>
<th>POLLUTANT/PARAMETER</th>
<th>REPORTING REQUIREMENT</th>
<th>EMISSION PERIOD (For previous)</th>
<th>SUBMITTAL DATES (Postmarked by)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSP</td>
<td>A report of facility-wide emissions (in tons) emanating from the emission sources listed on this permit to include, at a minimum, the following information: 1. All supporting documentation, including emission calculations. (Calculations for previously submitted periods do not need to be re-submitted) 2. The type and amount of fuel used by the boiler. 3. The hours of operation for each emission source and the total hours the facility operated for the year. 4. VOC and HAP emissions to include for each product: a. Product Name and type b. VOC and HAP content c. Annual amount (gallons) used 5. Total amount of each ceramic powder and metallic arc bond used</td>
<td>Calendar Year</td>
<td>April 30 of following year</td>
</tr>
</tbody>
</table>
APPENDIX A: TOXIC AIR POLLUTANT REVIEW

As a result of a process modification or SIC call, the above-referenced facility has been reviewed for toxic air pollutant emissions under MCAPCO Regulation 1.5700 - "Toxic Air Pollutant Procedures" and been found to emit the following substances:

<table>
<thead>
<tr>
<th>Reviewed Toxic Air Pollutant (TAP)</th>
<th>CAS No.</th>
<th>Toxic Permit Emission Rate (TPER) as listed in MCAPCO Regulation 1.5711 - &quot;Emission Rates Requiring a Permit&quot;</th>
<th>Is TAP also a Hazardous Air Pollutant (HAP)</th>
<th>Compliance Demonstration Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>lb/year  lb/day lb/hour lb/hour</td>
<td>Y</td>
<td>Actual Emission Rate Below TPER?</td>
</tr>
<tr>
<td>nickel metal</td>
<td>7440-02-0</td>
<td>0.13</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>non-specific chromium (VI)</td>
<td>N/A .0056</td>
<td></td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>compounds, as chromium (VI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>equivalent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX B: INSIGNIFICANT ACTIVITIES TABLE

**Facility Name: Example Company, Inc.**  
**Facility Address: 1234 Permit Lane**  
**Date Issued: April 26, 2012**

### INSIGNIFICANT ACTIVITIES DUE TO SIZE AND PRODUCTION RATE

Operation of the following processes/equipment are exempted from permitting pursuant to MCAPCO Regulation 1.5211 - “Applicability” Subparagraph (g)(2), but are considered when determining compliance with facility-wide limits. For facilities with facility-wide emission limits, recordkeeping and reporting may be required, as listed below, pursuant to MCAPCO Regulation 1.5104 - “General Duties and Powers of the Director, With the Approval of the Board” and 1.5236 - “Synthetic Minor Facilities.”

<table>
<thead>
<tr>
<th>Process/Equipment</th>
<th>Exemption reference and explanation</th>
<th>Recordkeeping/Reporting Requirements</th>
<th>Submittal Date (No later than...)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One (1) 8.0 million Btu/hr Cleaver Brooks boiler, fueled with #2 fuel oil</td>
<td>MCAPCO 1.5211, Subpart (g)(2)(B)(i): fuel combustion equipment firing No.2 fuel oil with a heat input rating less than 10 million Btu per hour</td>
<td>Amount of fuel oil used for the boiler for the calendar year</td>
<td>April 30 of the following year</td>
</tr>
</tbody>
</table>

Note: Because the above process/equipment is exempt due to size and production rate, does not mean that the activity is exempted from any applicable requirement or that the owner or operator of the facility is exempted from demonstrating compliance with any applicable requirement. The above boiler is subject to the requirements of 40 CFR 63 Subpart JJJJJ as an existing boiler.

### INSIGNIFICANT ACTIVITIES DUE TO CATEGORY

Operation of the following processes/equipment is exempted from permitting pursuant to MCAPCO Regulation 1.5211 - “Applicability” Subparagraph (g)(1). There are no recordkeeping or reporting requirements associated with these activities.

<table>
<thead>
<tr>
<th>Process/Equipment</th>
<th>Exemption reference and explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling water towers</td>
<td>MCAPCO 1.5211, Subpart (g)(1)(K)(ix) - no emissions</td>
</tr>
</tbody>
</table>
| Two (2) fuel oil storage tanks:  
  T-1: One 12,000 gal, #2 fuel oil UST, installed 2004  
  T-2: One 275 gallon waste oil tank | MCAPCO 1.5211, Subpart (g)(1)(D)(i) - storage tanks used solely to store fuel oils, diesel, etc. |
**ACTIVITIES EXEMPTED DUE TO FACILITY POTENTIAL**

Operation of the following processes /equipment are exempted from permitting for the pollutant(s) indicated pursuant to MCAPCO Regulation 1.5211 - “Applicability” Paragraph (f). Facility-wide potential emissions of the listed pollutant are less than five tons annually. There are no recordkeeping or reporting requirements associated with these pollutants.

<table>
<thead>
<tr>
<th>Process / Equipment</th>
<th>Pollutant emitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

700 N. Tryon Street • Suite 205 • Charlotte, NC 28202-2236 • (704) 336-5500
Still Confused??

- Contact MCAQ
  - Questions Regarding this Presentation
    - Ruth Jacquot, Air Quality Specialist
      - Ruth.Jacquot@MecklenburgCountyNC.gov
  - Questions pertaining to your facilities permit
    - Contact your Local Air Quality Specialist