

## ECONOMIC ANALYSIS

<b>Rule Citation Number:</b>	15A NCAC 02D .0902, Applicability, 15A NCAC 02D .0903 Recordkeeping: Reporting: Monitoring, 15A NCAC 02D .0909, Compliance Schedules for Sources in Nonattainment Areas, 02D .0951 RACT For Sources of Volatile Organic Compounds, Rule 15A NCAC 02D .0961, Offset Lithographic Printing and Letterpress Printing, Rule 15A NCAC 02D .0962, Industrial Cleaning Solvents, 15A NCAC 02Q .0102 Activities Exempted From Permit Requirements.
<b>Rule Topic:</b>	VOC RACT applicability (513) and clarifications (511) for Sources in Nonattainment Areas
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<b>Authority:</b>	G.S. 143-215.3(a)(1); 143-215.107(a)(5);
<b>Necessity:</b>	These amendments are necessary to meet EPA requirements for re-designation of the Charlotte-Gastonia-Rock Hill Area for attainment of the 1997 8-hour ozone standard and to receive EPA approval for the State Implementation Plan (SIP).

### I. EXECUTIVE SUMMARY

These proposed rule amendments respond to Environmental Protection Agency (EPA) comments on North Carolina's re-designation demonstration and maintenance plan for the Charlotte-Gastonia-Rock Hill, NC 8-hour Ozone Nonattainment Area. In their comments on North Carolina's submittal, EPA identified the need for an adjustment of applicability of the state's reasonably available control technology (RACT) rules. Section 182(b)(2) of the Clean Air Act (CAA) requires RACT for all sources addressed by Control Technique Guidelines (CTGs) issued by EPA in areas classified as moderate nonattainment for ozone. North Carolina's current RACT rule, 02D .0902, applies only to facilities that have the potential to emit (PTE) greater than or equal to 100 tons of volatile organic compounds (VOC) per year located in the Charlotte-Gastonia-Rock Hill, NC 8-hour Moderate Ozone Nonattainment Area. The proposed amendments bring North Carolina into compliance with federal

law by extending this applicability to all VOC sources covered by any CTG in the nonattainment area. This proposal also amends rule 02D .0909 to clarify compliance schedules for the newly affected facilities, makes conforming changes to 02D .0951, and a corresponding update to related language in 02Q .0102.

Amendments to 02D .0962, which addresses RACT for industrial solvent cleaning, are included, in response to industry comments. These amendments provide compliance alternatives for coatings, inks, adhesives, and resins manufacturers that are consistent with the underlying solvent cleaning CTG recommendations. Amendments to 02D .0961, and corresponding update to Rule .0903, that address RACT for lithographic and letterpress printing are included to clarify existing language and add an equivalent alternative applicability threshold consistent with the CTG.

The Division of Air Quality anticipates EPA will approve the re-designation request and maintenance plan once the proposed applicability change has been made. Upon approval of the maintenance plan and re-designation request, EPA will publish a notice in the Federal Register designating the area as having achieved attainment with the 1997 ozone standard. In extreme circumstances, failure to adopt these rules could lead to more federal regulation and, eventually, potential sanctions on highway transportation funding.

The Clean Air Act requires facilities that are already in compliance with RACT shall continue to comply with the RACT requirements even after the area becomes attainment. For the most likely scenario, the division estimates that this rule change will have no direct impacts on affected parties. If, as expected, re-designation occurs prior to the compliance date of the amendments, then the proposed rule changes will apply only under the contingency plan and would become applicable only if: (1) the area later fails to meet the 1997 standard and (2) implementation of the proposed amendments would assist in bringing the area back into attainment as part of the contingency plan. This important administrative correction fixes the SIP inadequacy and would generate no direct costs and some indirect benefits. Based on current knowledge of the federal approval procedures, this is the most probable outcome.

The impacts estimated in this analysis were developed for a worst-case scenario that is detailed in the risk analysis section. Although such impacts could be substantial, they are highly unlikely and not expected to occur.

Under the worst-case scenario, DAQ estimates private industry would incur annual costs of up to \$9.7 million, and cost-savings of \$18.4 million. Combined annual impacts amount to net cost-savings of up to \$8.8 million (with potential costs and benefits attributed to different entities). There are no impacts on the expenditure of state funds. The North Carolina Division of Air Quality would not experience new costs associated with these proposed rule changes. Local governments operate three coating and adhesive facilities and these may incur costs up to \$39,000 annually. The federal government operates one coating and adhesive facility that may incur costs up to \$3,600 annually to comply with the new regulations. The general public may benefit from cleaner air, and workers in facilities that use VOC materials may be exposed to fewer toxics if solvent switching is the compliance mechanism of choice. These benefits are not quantified because they are not expected to occur under the most likely scenario.

All of the estimates in the risk analysis were made using worst-case scenario assumptions that: (1) all VOC emissions from affected facilities are coming only from sources of VOC emissions covered by

control techniques guidelines (CTG), (2) all affected facilities are currently not meeting RACT requirements, (3) EPA does not re-designate the area to attainment status prior to the compliance date, and (4) there is a violation of the 1997 ozone standard. In reality, even if EPA does not re-designate the area or if there is a future violation of the 1997 ozone standard, DAQ expects compliance costs to be much lower because many facilities may already be meeting RACT requirements or not have emissions covered by CTG. In addition, the current section .0900 provides a couple of simple, low-cost options for facilities that would need to achieve compliance with these new RACT requirements.

The anticipated effective date of these amendments is May 1, 2013.

## **II. BACKGROUND AND PURPOSE**

These amendments would revise the applicability of the volatile organic compound (VOC) reasonably available control technology (RACT) rules to meet all Clean Air Act and EPA requirements for re-designation of the Charlotte-Gastonia-Rock Hill Area for attainment of the 1997 8-hour ozone National Ambient Air Quality Standards (NAAQS) to finalize NC SIP (State Implementation Plan) approval by EPA.

On November 15, 2011, EPA determined that the Charlotte-Gastonia-Rock Hill, NC, 8-hour Moderate Ozone Nonattainment Area had attained the 1997 8-hour ozone standard. This determination (known as a Clean Data Determination) was based upon complete, quality-assured, quality-controlled, and certified ambient air monitoring data from 2008–2010. This determination means the division could request that EPA change its designation from nonattainment to attainment, making the area a maintenance area. The state must amend the current rules to extend applicability of the RACT rules to facilities in Control Technique Guideline (CTG) categories with less than 100 tons per year of VOC emissions in order to receive EPA approval of the re-designation.

A “nonattainment” classification means that air quality in a particular region does not meet (or “attain”) a federal air quality standard. Under the Clean Air Act, the EPA sets limits on how much pollution can be in the air. These pollution limits are called National Ambient Air Quality Standards (NAAQS). There are NAAQS for six common air pollutants including ground-level ozone ( $O_3$ ).

Ground level ozone, which we breathe, can harm our health. Even relatively low levels of ozone can cause health effects. People with lung disease, children, older adults, and people who are active outdoors may be particularly sensitive to ozone.

The Clean Air Act requires EPA to review its standards based on scientific evidence every five years to ensure they still effectively protect human health and the environment. When an area’s monitored air pollution exceeds the NAAQS, EPA designates it as a nonattainment area. This designation is determined by a formula that uses the number of times the standard is exceeded each year. The formula includes three years of data to ensure that an area isn’t designated as nonattainment because of one unusual year.

When an area is designated as a nonattainment area for ground-level ozone, the state is required to develop a SIP and submit it to EPA. A SIP is a plan for restoring air quality and bringing the area back into attainment status as quickly as possible. The SIP must define what actions will be taken to control air pollution, how these actions will lead to attainment, and project when air quality will

meet the relevant standards. EPA then evaluates the SIP for approval.

If a state doesn't complete a SIP to improve air quality, the EPA may impose a federal plan (Federal Implementation Plan, or FIP). A federal plan may require solutions that are not the best to fit a particular area.

Nonattainment areas that don't clean up their air pollution could receive cuts in federal transportation funding if new highway projects could add to the air pollution problem. EPA could also withhold all or part of the grant funds it provides to the state to support air quality monitoring, planning, and control programs. The Division cannot estimate the probability that EPA would impose such sanctions, but the Division recognizes that such a situation could have significant financial consequences for the state if it were to occur.

Once monitoring data show air quality has improved, the state can request that EPA re-designate an area from nonattainment to attainment, making it a maintenance area. A maintenance area is an area that has been re-designated to attainment for a NAAQS. EPA can only approve this request if the following conditions are met: (1) air quality monitoring data shows the area meets the standard; (2) reductions in the area's emissions are permanent and enforceable; (3) the SIP developed for the area meets the requirements of the federal Clean Air Act and is fully approved by EPA; (4) EPA fully approves a 10-year maintenance plan for the area; and (5) the area meets requirements of the Clean Air Act for infrastructure SIPs and nonattainment areas.

North Carolina has already met most of the requirements for EPA approval. Nevertheless, the EPA noted that in order to receive SIP approval DAQ must amend the RACT rule applicability requirements to cover facilities that have PTE VOC emissions of less than 100 tons per year. This rulemaking is being undertaken to meet the CAA requirement and ensure approval of the state's SIP.

The following section outlines the proposed changes to the existing RACT rules that are necessary to receive SIP approval from the EPA. Unless otherwise noted, none of the proposed rule changes would apply under the scenario that DAQ believes is the most likely (i.e. EPA re-designates the Charlotte-Gastonia nonattainment area to a maintenance area). The impacts associated with these proposed rule changes would only occur under either of the following highly unlikely scenarios: 1) the EPA does not re-designate the area as a maintenance area or 2) the maintenance area fails at some future date and the DAQ director chooses to implement the proposed changes as part of a contingency plan to re-attain maintenance-area status. The impacts under these unlikely scenarios are outlined in detail in the risk analysis section of this fiscal note (Section VI).

There are five proposed changes to Rule 15A NCAC 02D.0902 Applicability for Sources in Nonattainment Areas:

1. The first set of changes in Paragraph (f) will extend RACT to apply to all sources addressed by CTGs in the Charlotte-Gastonia nonattainment area and clarify the provision that certain rules continue to apply statewide. A statement added to the end of Paragraph (f) clarifies the applicable RACT requirements and references the rules for achieving compliance.

In Paragraph (g) "subject to this Section before the re-designation to attainment" is replaced with "subject to Paragraph (f) of this Rule that achieved compliance in accordance

with Rule .0909 of this Section" and "Facilities with the potential to emit less than 100 tons of volatile organic compounds per year for which the compliance date in Rule .0909 of this Section has not passed before re-designation of the area to attainment for the 1997 ozone standard shall comply in accordance with Paragraph (h) of the Rule" in Paragraph (g) is added to define the range of applicable facilities in accordance with Section 182(b)(2) of the Clean Air Act and allow for transition of the requirements to contingency measures upon re-designation of the area consistent with EPA procedures.

2. This proposal would remove outdated language in Paragraph (h) to address a past potential scenario under which the area might have been bumped to a higher classification with a lower applicability threshold. Replacement language will address the contingency plan in the event that a violation of the 1997 ozone standard occurs. The phrase "If EPA reclassifies the nonattainment area as serious for ozone under Section 182 of the federal Clean Air Act, the rules in this Section shall apply to facilities in Cabarrus, Gaston, Lincoln, Mecklenburg, Rowan, and Union Counties and Davidson and Coddle Creek townships in Iredell County with the potential to emit at least 50 tons of volatile organic compounds per year. Within 60 days of the reclassification..." and the phrase "shall notice the applicability of these Rules to these facilities in the North Carolina Register and..." are replaced with "If a violation of the 1997 ambient air quality standard for ozone occurs in the maintenance area, the Director shall initiate technical analysis to determine the control measures needed to attain and maintain the 1997 8-hour ambient air quality standard for ozone. By the following May 1, the Director shall implement the specific stationary source control measures contained in this Section that are required as part of the control strategy necessary to bring the area into compliance and to maintain compliance with the 1997 8-hour ambient air quality standard for ozone. The Director shall implement the rules in this Section identified as being necessary by the analysis by notice in the North Carolina Register. The notice shall identify the rules that are to be implemented and shall identify whether the rules implemented are to apply in the areas listed in Paragraph (f) of this Rule. At least one week before the scheduled publication date of the North Carolina Register containing the Director's notice implementing rules in this Section," in Paragraph (h) to specify measures required by the CAA in case a violation of the 1997 ambient air quality standard for ozone would occur.
3. The third group of the proposed changes makes several minor clarifications by adding the phrase "to facilities located" in Paragraph (e) and the word "located" in Paragraph (f).
4. The phrase "day unless specified otherwise in this Section" was added to Paragraph (b). This update was requested by Printing Industries of America. This amendment provides some flexibility for alternative compliance options that is specified by the amendment to the rule .0961.
5. Finally, adding the phrase "unless provisions specified in Paragraph (d)(1) of this Rule are applied" in Paragraph (c) clarifies interaction of Paragraphs (c) and the exceptions in Paragraph (d) that exempt laboratories that emit less than 800 pounds of VOC per month from provisions of the Section.

The Rule 15A NCAC 02D .0903(a)(2), was updated by adding the phrase "unless otherwise specified in the Section" to reflect incorporation of the monthly recordkeeping alternative provided in 02D

.0961 in response to industry representatives' comments and for consistency with the CTG.

There are also five changes to Rule 15A NCAC 02D .0909, Compliance Schedules for Sources in Nonattainment Areas:

1. First, a change would add the word "Moderate" in Paragraph (d), (f) and (g) and delete the phrase "and Charlotte ozone nonattainment area" in Paragraphs (f) and (g) to define the status of the nonattainment area in accordance with the current 8-Hour Ozone Classifications for the 1997 standard.
2. Subparagraphs (i) and (ii) in Paragraphs (c)(2)(B) and (d)(2)(B) are deleted as unnecessary because rules in Section .0900 that were amended in 2010 have already incorporated EPA CTG recommendations on VOC content limits.
3. Paragraph (c)(2)(C) is amended to allow two years for achieving compliance if low solvent coating technology is to be used.
4. Paragraph (d)(1)(C) and (D) are modified to reflect the compliance schedule for the newly affected facilities establishing a compliance date of May 1, 2015 for compliance via use of solvent coating technology and May 1, 2016 for compliance via control devices. (These dates are expected to provide EPA sufficient amount of time to approve the redesignation and avoid subjecting these facilities to RACT prior to these occurring.)
5. Finally, these proposed rule changes also make several minor clarifications to avoid ambiguity and confusion.

In addition, the amendment to Paragraph 2D .0902(h) clarifies that compliance with necessary contingency requirements will be initiated only after a violation of the 1997 ambient air quality standard for ozone occurs and the measures are determined to be necessary as part of the control strategy to bring the area into compliance and maintain compliance with the 1997 ozone standard.

Amendments to Rule 15A NCAC 02D .0951, RACT for Sources of Volatile Organic Compounds, give affected facilities covered by CTG recommended RACT rules of the Section .0900 a choice whether to apply the RACT requirements defined in .0900 Section rules or choose RACT requirements demonstrated to the Director to advance attainment.

The current Rule 15A NCAC 02D .0961, Offset Lithographic Printing and Letterpress Printing, offers control options to comply with RACT requirements for VOC emissions from heatset inks, fountain solutions, and cleaning materials used in offset lithographic printing operations and for VOC emissions from heatset inks used in letterpress printing operations. The division is proposing changes to reduce daily recordkeeping burden based on feedback from the industry.

Following the original adoption of the rule in 2010, the Printing Industry of America, a trade group, commented and requested several clarifications of the rule language. The proposed amendments are made in response to these comments and include clarification of definitions of "offset lithography", "sheet-fed printing" and "web printing". The phrase, "listed in rules .0101, .0902 of this Section and in Paragraph (a)(1) through (10) of this rule shall apply" is added to Paragraph (a) to indicate that some definitions that apply to this rule can be found in rules .0101 and .0901. Wording

in Paragraphs (b), (c), (d), (e), (f), (g), (h), (i), and (l) were updated. There are no impacts from these changes to the affected parties other than to eliminate confusion, misunderstanding, and typographical errors.

In addition to the language update in Paragraph (b), the new Subparagraph (b)(2) was added to address the Printing Industries of America's concerns regarding economic and technical feasibility of compliance period frequency established on a daily basis. The association noted in its comments that the cost of developing a daily recordkeeping system to meet the requirements of the current rule is financially impracticable for printing operations. Monthly recordkeeping requirements decreases cost to the printing facility by ten-fold when compared to monthly recordkeeping.

The contention of the printing association regarding higher recordkeeping costs is supported by the following facts:

- (1) An accurate determination of process emissions on daily basis requires development and maintenance of extremely detailed daily records. The variety, combinations and consumption rate of inks alone would make this a costly and burdensome task. A typical facility can easily use 20 different inks during a day. However, a particular container of ink opened may take several days, weeks, or months to be completely consumed.
- (2) Separate records for material consumption will have to be developed for each material used on each press. In the situations where a production run may involve more than one day, the press would have to be stopped at the end of each day and all of the input materials such as the ink, fountain solution, cleaning solution, coating, and other miscellaneous chemicals that were consumed would have to be measured in some fashion.
- (3) The ink consumption rates are better gauged over a longer averaging period because consumption based on purchasing can be correlated with measured values.

Paragraph (f) was updated to clarify a threshold for emission limitations of a single web offset lithographic printing press dryer or letterpress printing heatset press. The provisions of the old Paragraph (h) were moved to the Paragraph (f) to locate in one paragraph for clarity the threshold for add-on control and add-on control provisions. Wording in Paragraph (f) was revised to eliminate confusion and the provisions of Paragraph (i) in the current version were moved to new Subparagraph (f)(2)(C), in response to industry's comments, to reflect specific VOC outlet concentrations consistent with EPA's CTG recommendations.

Paragraphs (g) and (i) in the current version were deleted and all testing requirements were moved to the new Paragraphs (h) and (i) to locate all testing requirements in one place. The new Paragraphs (h) and (i) define the usage of approved test methods in accordance with CTG recommendations. The cost of testing is the same for all test methods; consequently, this change wouldn't impose new costs.

Paragraph (j) was updated to clarify compliance demonstration with RACT applicability. The rest of Paragraph (j) was changed to provide the appropriate emission/retention factors and capture efficiencies. Since the applicability threshold is being lowered, the appropriate emission/retention factors and capture efficiencies will give many smaller printers an easy way to determine applicability. Per industry comments some small printers do not know how to calculate VOC emissions, but they do know how much material they purchase and use. The paragraph gives these sources the ability to calculate their emissions more readily. The material-use factors have

been approved by EPA and are consistent with the 1998 Potential to Emit (PTE) Guidance for Specific Source Categories and its accompanying technical support document.

The language in Paragraph (k) was updated in response to industry's request to clarify conditions when VOC content or vapor pressure limits apply to cleaning materials used for cleaning a press, press parts, or to remove dried ink from areas around the press.

Finally, the new Paragraph (l) was updated to address the industry recommendation of providing some specificity regarding recordkeeping and monitoring requirements while retaining facility flexibility to address site-specific considerations through the permitting process.

Proposed amendments to Rule 15A NCAC 02D .0962, Industrial Cleaning Solvents, exempt cleaning solvent emissions from RACT applicability by changing 0.42 pounds per gallon of VOC content in cleaning material, as recommended for RACT applicability, to 1.67 pounds of VOC per gallon per EPA recommendations. These provisions apply only to resin, coating, ink, and adhesive mixing, molding, and application equipment cleaning of coating, ink, and adhesive manufacturing as a category with specific exemptions under Bay Area Rules 8-4 116 and 8-4-117 on which the CTG was based.

The Rule 15A NCAC 02D .0962 defines measures for controlling emissions of VOC from the use, storage, and disposal of industrial cleaning solvents. These measures include work practice standards, limitations on VOC content of the cleaning materials, and an optional alternative limit on composite vapor pressure of the cleaning materials. They also allow facilities to include the use of add-on controls with an overall emission reduction of at least 85 percent by mass.

In comments on the existing rule, industry representatives recommended exempting coating, ink, and adhesive manufacturing from VOC content limits established in .0962 since 0.42 pounds per gallon of VOC content is not feasible for industrial solvent used for cleaning coatings, ink, adhesive and resin manufacturing equipment.

Coatings- and ink-manufacturing facilities have instituted pollution-prevention programs where they clean and rinse process equipment with recycled/reclaimed solvents. They use the solvent until it is dirty and either reclaim the solvent onsite or send it offsite for reclamation. The reclaimed solvent is then used again for cleaning and rinsing process equipment. Reusing solvents is cost effective and minimizes the generation and disposal of hazardous wastes. The 50 g/l (same as the 0.42 lb/gal) limit would force manufacturers to dispose of all existing solvents and purchase compliant solvent at considerable cost. These costs impacts are considered especially problematic by the industry representatives given the recent economic downturn.

Cleaning manufacturing equipment is very important since incomplete cleaning of process equipment and tanks can cause cross-contamination of manufactured products, negatively impact product quality, and could result in an off-specification product. Chemistries also vary considerably from batch to batch of product and are very difficult to clean unless effective cleaning solvents are used. The 50 g/l cleaning solvent limit essentially only leaves two compliance options: exempt solvents or force the use of caustic cleaning systems.

While low-VOC solvents are not effective for cleaning equipment used to manufacture current coating formulations, these solvents are even less effective at cleaning newer low-VOC products now coming into the market. This is especially true for industrial-maintenance coatings that are high

in solids, involve two components and/or have exotic chemistries.

The proposed amendments exclude solvent cleaning operations of specific equipment in the inks, coatings, and resins manufacturing sector from the 0.42 pounds per gallon of VOC limit, as long as cleaning is conducted using one or more compliance options, including an alternative solvent content limit of 1.67 pounds of VOC per gallon, use of a control device, use of solvents with content greater than 1.67 pounds/gallon limited to 60 gallons per month, and work practices for solvent cleaning in this sector. These options are consistent with those associated with the Bay Area rules on which the CTG recommendations are based.

Finally, Rule 15A NCAC 02Q .0102, Activities Exempted from Permit Requirements. Paragraph (b)(5) of the Rule 02Q .0102 is revised to update a cross reference.

### **III. COSTS IMPACTS BY AFFECTED PARTIES**

For the most likely scenario, the division estimates that these amendments will have no direct impacts on affected parties. If, as expected, re-designation occurs prior to the compliance date of the amendments, then the proposed rule changes will apply only under the contingency plan and would become applicable only if: (1) the area later fails to meet the 1997 standard and (2) implementation of the proposed amendments would assist in bringing the area back into attainment as part of the contingency plan. This important administrative correction fixes the SIP inadequacy and would generate no direct costs; the only impacts under the most likely scenario would be the impacts associated with the EPA's re-designation. Based on current knowledge of the federal approval procedures EPA re-designation is the most probable outcome.

### **IV. BENEFITS.**

The primary benefit of this set of amendments is to meet the Clean Air Act requirements and to obtain approval of the VOC RACT state implementation plan by EPA. Without the applicability amendments, EPA would not be able to approve the re-designation and maintenance plan for the Charlotte-Gastonia-Rock Hill 1997 ozone nonattainment area and requirements for moderate nonattainment areas such as nonattainment new source review would continue to apply even though monitoring data show compliance with the 1997 8-hour ozone standard. The EPA approval can mitigate the consequences of a SIP deficiency including possible disapproval and, lacking correction within required timeframes, implementation of a federal program. If not eventually corrected, potential sanctions on highway transportation funding could be imposed by EPA.

In the unlikely event that the area is not re-designated or the requirements are determined to be necessary in response to a future violation as a contingency measure, the proposed rule changes may potentially decrease VOC emissions from printing, solvent coating, and cleaning operations, and because many VOCs also are air toxics, the proposed amendments may decrease the emissions of air toxics. An added potential co-benefit of lower VOC emissions from the implementation of the CTGs and work practice standards includes less exposure to hazardous air pollutants to those working at such facilities.

### **V. CONSIDERATION OF ALTERNATIVES**

Several alternative approaches to address the applicability issue were explored and considered in

development of the proposed rule changes.

#### Alternative 1 – Retain the Status Quo

Retaining the current rule as is would result in EPA not being able to approve the RACT state implementation plan and a disapproval of that portion of the SIP. The state would have 18 months to address the SIP deficiency and EPA would have to approve the correction within 24 months from the disapproval. At 24 months EPA would be required to implement a federal program. If a deficiency occurred and was not corrected and approved within the timeframes, the federal government could impose sanctions on highway transportation funding until the state corrects the SIP deficiency. As a result EPA would not be able to approve the re-designation request and maintenance plan for the North Carolina area of the Charlotte-Gastonia-Rock Hill nonattainment area despite the fact that monitoring results show compliance with the 1997 8-hour ozone standard. The area would continue to be considered moderate nonattainment for the 1997 8-hour ozone standard and associated requirements, such as nonattainment new source review, would continue to apply until such time as the requirements could be met.

#### Alternative 2- Include applicability to less than 100 tpy VOC facilities only in contingency measures

Given that the area already has a Clean Data Determination relative to the 1997 8-hour ozone standard and the fact that North Carolina, like other states in the southeastern United States, has an abundance of biogenic VOC emissions and is in a nitrogen oxides (NOx)-limited environment with respect to ozone formation, staff explored the possibility of including applicability of the RACT requirements for less than 100 tpy sources only in the contingency measures provisions. Based on further review of the CAA, EPA re-designation procedures, and discussions with EPA staff, this approach would not be consistent with the requirements of the Clean Air Act. As a result EPA would not be able to approve the RACT SIP and the re-designation request. Therefore this approach was ruled out since it would not successfully address the applicability issue identified by EPA.

## **VI. RISK ANALYSIS**

This analysis concludes that there are no direct costs and likely indirect benefits due to the proposed amendments under the most likely circumstances. In an effort to identify all possible outcomes, worst-case scenario cost estimates were also developed for this analysis. Even though the possibility of such outcome is unlikely, these impacts are discussed below in this section. The Division of Air Quality does not anticipate any costs or cost-savings to occur as a result of this rulemaking.

Under the worst-case scenario, DAQ estimates private industry would incur annual costs of up to \$9.7 million, and cost-savings of \$18.4 million. Combined annual impacts amount to net cost-savings of up to \$8.8 million (with potential costs and benefits attributed to different entities). There are no impacts on the expenditure of state funds. The North Carolina Division of Air Quality would not experience new costs associated with these proposed rule changes. Local governments operate three coating and adhesive facilities and these may incur costs up to \$39,000 annually. The federal government operates one coating and adhesive facility that may incur costs up to \$3,600 annually to comply with the new regulations.

These cost estimations were made for the worst-case scenario assuming that: (1) all VOC emissions from affected facilities are coming only from sources of VOC emissions covered by control techniques guidelines (CTG); and (2) all affected facilities are currently not meeting RACT requirements. The federal, state, and local costs are part of the aggregated impact. The North Carolina Division of Air Quality would not experience new costs or benefits associated with these

proposed rule changes under the worst-case scenario.

If (1) the maintenance area later fails to meet the 1997 standard and (2) the Division of Air Quality Director implements the proposed amendments as part of the contingency plan to bring the area back into attainment, there would be potential impacts. This scenario is highly unlikely because the air monitoring data collected during the last three years has consistently shown compliance with the 1997 air quality standard for ozone. The Division doesn't expect any changes in ozone formation related to the changes in volatile organic compounds emissions that would affect attainment status.

In addition North Carolina, like most areas in the southeastern United States, is in what is known as a "NO<sub>x</sub>(nitrogen oxides)-limited" environment with respect to the formation of ground-level ozone. Ozone is formed through the photochemical reaction of VOCs, NO<sub>x</sub> and sunlight in the atmosphere. North Carolina has a large amount of biogenic VOCs emitted from trees and other living sources. Industrial and government facilities are smaller sources of VOC emissions compared to biogenic sources. The amount of NO<sub>x</sub> available in the atmosphere is far less than needed to react with the abundance of VOC in the atmosphere and, as a result, is the limiting factor in how much ozone forms. As such, the director would be unlikely to invoke the proposed amendments as part of the contingency plan because they would have little impact on ozone reduction. These estimates were developed to demonstrate a worst-case scenario. In reality, the expected cost to regulated entities is zero.

The proposed amendments to Rules 15A NCAC 02D .0902, Applicability, 15A NCAC 02D .0909, Compliance Schedules for Sources in Nonattainment Areas, Rule 15A NCAC 02D .0951, RACT for Sources of Volatile Organic Compounds and Rule 15A NCAC 02Q .0102, Activities Exempted from Permit Requirements, have the potential to affect five entities: regulated private facilities, facilities operated by local governments, a federal facility, the regulatory programs that oversee this area and the general public. The worst-case scenario costs and benefits are presented below, organized by entity.

We adjusted EPA values from 2005 to current dollars by using the producer price index for inflating values since these chemicals are inputs to industrial processes.

The current versions of the rules 02D .0902, .0903, .0909, .0951, .0961, .0962, and 02Q .0102 serve as the baseline for these proposed amendments. Under this version all facilities with potential to emit less than 100 tpy of VOC emissions located in the Charlotte-Gastonia-Rock Hill 1997 8-hour ozone area are not subject to RACT requirements and are subject to work practice requirements under Rule 02D .0958 rule. The current versions of the rules 02D .0902, .0909, .0951, and 02Q .0102 also include some obsolete language relative to 1-hour ozone NAAQS requirements that has become outdated due to revocation of that standard and is no longer enforceable.

#### Private Industry

The newly regulated community under the proposed rules includes the owners or operators of approximately 150 facilities with potential to emit 100 tpy or less of VOC emissions located in the Charlotte-Gastonia-Rock Hill ozone area and covered by CTG documents. However, this list doesn't include the cleaning solvent emissions from cleaning of resin, coating, ink, and adhesive mixing, molding, and application equipment of coating, ink, and adhesive manufacturing. Exempting cleaning solvent emissions is consistent with EPA recommendations to exclude facilities with cleaning operations that are subject to specific rules and exemptions under Bay Area Rule 8-4-117

from RACT applicability.<sup>1</sup> The cost savings associated with excluding these facilities is estimated separately. The Division of Air Quality estimates that more than 95 percent of the affected businesses are small businesses, or facilities with 500 or fewer employees. This estimation was made using the database presented at [www.referenceusagov.com](http://www.referenceusagov.com).

The proposed changes to the Rule .0902 will make facilities with the potential to emit VOC emissions less than 100 tpy located in the 8-hour Charlotte-Gastonia-Rock Hill ozone area subject to the RACT requirements for sources in categories covered by CTGs. These requirements are established in rules .0909, .0918, .0919, .0922, .0923-.0924, .0930, .0931, .0935, .0937, .0943, .0944, .0947-.0949, .0951, .0952, .0959, .0961-.0968.

These rules have established requirements for achieving RACT by offering two alternatives: either by using materials with VOC content that is low enough to achieve the limits during application, or by reducing the amount of VOC emitted through the use of add-on controls. EPA noted in the CTGs' recommendations that pollution prevention, including product substitution/reformulation, is the most prevalent control technique being used by facilities subject to RACT requirements. Add-on control systems are available to these facilities, but EPA estimated during the development of the 2002 National Emission Standards for Hazardous Air Pollutants (NESHAP), that only a few facilities would install add-on control devices as a result of the standard. The capital cost and annual operation cost of add-on control devices usually make them less desirable than other compliance options for reducing VOC emissions from spray-coating operations.<sup>2</sup>

Rule 02D .0902 also includes provisions that allow the requirements to be shifted to contingency measures upon re-designation of the area to attainment status.

The proposed changes to the Rule 02D .0909 will update language to better reflect the 1997 nonattainment area consistent with updates to the applicability rule and establish a compliance schedule for the newly affected sources.

The amendments to Rule 15A NCAC 02D .0951, RACT for Sources of Volatile Organic Compounds give affected facilities covered by CTG recommended RACT rules of Section .0900 a choice whether to apply the RACT requirements defined in .0900 Section rules or choose RACT requirements demonstrated to the Director to advance attainment.

The proposed change to the Rule 02Q .0102 corrects a cross-reference and has no effect on cost estimation.

This cost analysis is based on EPA's control techniques guidelines (CTGs) published between 2006 and 2008. EPA noted that to develop these recommendations, it conducted a model plant analysis, in which it evaluated hazardous air pollutant (HAP) emissions associated with different kinds of coating processes, the emission reduction capabilities of various control options, and the costs of such controls. The model plants were developed to represent a range of sizes and emissions. EPA figures were reported using 2005 dollars. In this analysis, all EPA figures have been inflated into 2012 dollars using the Producer Price Index produced by the Bureau of Labor Statistics for total manufacturing industries. This index inflated original 2005 figures by 38.3 percent.

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1 [Control Techniques Guidelines for Industrial Cleaning Solvents](#), EPA-453/R-06-001, 2006/09

2 [Control Techniques Guidelines for Large Appliance Coatings](#)). EPA 453/R-07-004, 2007/09

The following assumptions were used to develop an algorithm of cost estimation for the facilities that could be affected by these changes in the event that the area is not re-designated prior to the proposed compliance date:

1. All VOC emissions of affected facilities are only from sources covered by control techniques guidelines (CTG).
2. DAQ assumes that the overwhelming majority of the affected facilities are most likely to choose the low-VOC materials alternative to implement the levels of control required by these rule changes. This assumption was made for two reasons. First, EPA's final rule "Approval and Promulgation of Implementation Plans and Designations of Areas for Air Quality Planning Purposes; Charlotte- Gastonia-Rock Hill, NC and SC; Determination of Attainment of the 1997 8-Hour Ozone Standard" published in 40 CFR Part 52 on November 15, 2011,<sup>3</sup> indicates that the 1997 8-hour ozone National Ambient Air Quality Standards (NAAQS) has been achieved without add-on control installation. Secondly, according to EPA calculations, the cost of low-VOC content material is not significantly greater than the cost of materials with higher-VOC contents. Thirdly, the use of add-on controls to reduce emissions from typical application processes is a more costly alternative.
3. Due to the fact that the current rules do not require any VOC reductions from the newly affected facilities, DAQ makes an assumption, consistent with EPA assumptions regarding VOC emissions reductions, that the facilities have to reduce VOC emissions by 81 percent to comply with the RACT requirements.<sup>4</sup>
4. DAQ made a logical assumption that the facilities located in Mecklenburg County, for which DAQ was unable to obtain relevant data, use the same VOC content material for similar production units as the facilities located in Mooresville Region (from which DAQ was able to obtain relevant data).

Emission reductions are calculated separately for each type of operations: (1) industrial cleaning solvents; (2) coating and adhesive units; (3) lithographic printing and letterpress printing units; and (4) flexible printing units in accordance with EPA recommendations. All costs are calculated as the difference between cost of compliance with current rule requirements and a projected cost of compliance with the RACT requirements. Current rules require these facilities to maintain certain working standards to minimize VOC emissions. However, there are no limits required to maintain certain VOC content in material or VOC emissions for the newly affected facilities.

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<sup>3</sup> [Approval and Promulgation of Implementation Plans and Designations of Areas for Air Quality Planning Purposes; Charlotte- Gastonia-Rock Hill, NC and SC; Determination of Attainment of the 1997 8-Hour Ozone Standard](#)

<sup>4</sup> [Memo from William T. Harnett, Director, Air Quality Policy Division to Regional Air Division Directors dated May 18, 2006 Subject: RACT Qs & As– Reasonably Available Control Technology \(RACT\).](#)

### ***Cost estimation for the facilities with the Industrial Cleaning Solvents.***

The number of facilities with industrial cleaning solvents affected by these amendments is calculated below by using EPA data published in Control Techniques Guidelines for Industrial Cleaning Solvents, Appendix D.<sup>5</sup>

According to this data, there are 154 facilities located in the 8-hour Charlotte-Gastonia-Rock Hill ozone area having a total 13,242 ton/yr baseline level of VOC emissions from solvent utilization during cleaning operations. This number includes 15 facilities that have potential to emit 100 tons or more VOC emissions per year (total actual 2010 emissions of 1,148 ton/yr), which already have been in compliance with the RACT requirements since 2010 when the compliance with these requirements became effective for such facilities. Thus, only 139 facilities with a total of 12,094 tons/yr of VOC emissions from solvent utilization during cleaning operations would need to comply with RACT requirements under the proposed rules. These facilities are the subject of these cost estimations.

In accordance with EPA methodology, DAQ did not include in this analysis cleaning solvent emissions from CAA Section 183(e) sources; cleaning solvent emissions from research and development facilities; emissions from manufacturing and assembly of electrical and electronic components; and emissions from activities that are covered by provisions of other rules. EPA also excluded sources that were exempted under the Bay Area rules in its CTG calculations. Thus, the cost savings associated with proposed amendments regarding industrial solvent cleaning of adhesive mixing, molding, and application equipment for coating, ink, and adhesive manufacturing are estimated separately in this assessment.

To estimate the cost of compliance for the facilities with the industrial cleaning solvents, DAQ used EPA's assumption that eight percent of all industrial cleaning VOC emissions come from a "degreasing" or cold solvent cleaning/stripping classification and the remaining 92 percent comes from other solvent cleaning operations.

Industry association representatives estimated that facilities currently use solvents with an average VOC concentration of 500 grams/liter (4.2 lbs/gal) for industrial cleaning operations. The RACT requirements limit VOC concentration to 50 grams of VOC per liter (0.42 lbs/gal) of cleaning material. However, based on comments from industry representatives, the 50 g/l limit is not feasible for industrial solvent used for cleaning coatings, ink, adhesive and resin manufacturing equipment. The proposed amendments exclude these operations from the 0.42 lb/gal limit in Rule .0962 for consistency with EPA recommendations in the Control Techniques Guidelines for industrial cleaning solvents (page 9).<sup>6</sup> The associated cost savings is calculated separately (below) in this assessment.

For other sources DAQ estimated baseline emissions and emission reductions from parts cleaners and other solvent cleaning operations by using EPA's figures presented in the Control Techniques Guidelines for Industrial Cleaning Solvents.<sup>7</sup>

#### Parts Cleaners

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5; 6; 7 [Control Techniques Guidelines for Industrial Cleaning Solvents](#), EPA-453/R-06-001, 2006/09

The total VOC Emissions from Parts Cleaners used by the facilities with less than 100 tpy potential VOC emissions located in the 8-hour Charlotte-Gastonia-Rock Hill ozone area are equal to eight percent<sup>8</sup> of all VOC emissions from cleaning operations of all solvent cleaning facilities located in the 8-hour Charlotte-Gastonia-Rock Hill ozone area:

$$12,094 \text{ tons/yr} \times 8\% = 968 \text{ tons/yr}$$

$$\text{VOC emissions from 139 (facilities)} \times 8\% = 11 \text{ (part cleaning facilities)}$$

In accordance with data provided by the American Coating Association (ACA,) the average VOC concentration (density) of the solvents used by these facilities is 500 g/liter. After the replacement of the organic solvent that these facilities are currently using with a cleaning solution that has 50 g/liter VOC content (concentration) the VOC emissions would be as follows:

$$968 \text{ tons/yr} * (50 \text{ g/liter}/500 \text{ g/liter}) = 96.8 \text{ tons/yr}$$

The actual emission reduction from switching to low-content VOC material is:

$$968 \text{ tons/yr} - 96.8 \text{ tons/yr} = 871.2 \text{ tons/yr}$$

Using the EPA assumption<sup>9</sup> that reduction of each ton of VOC emissions costs on average \$2,301, the cost of switching to low VOC content solvents for parts cleaners is:

$$\$2,301/\text{ton reduced} * 871.2 \text{ tons/yr} = \$2.0 \text{ million}$$

#### Other Solvent Cleaning Operations

Other solvent cleaning operations is the method of cleaning a surface by physically rubbing it with a material such as a rag, paper, sponge or a cotton swab moistened with a solvent. The total VOC emissions from other solvent cleaning operations used by these facilities are equal to 100% - 8% = 92% of all VOC emissions from cleaning operations:

$$12,094 \text{ tons/yr} \times 92\% = 11,126.5 \text{ tons/yr}$$

In accordance with the industry information, the average VOC concentration (density) of the solvents used by these facilities is 500 g/liter. If the facilities replace the organic solvent that they are currently using with a cleaning solution that has 50 g/liter VOC content (concentration), the controlled emissions would be as follows:

$$11,126.5 \text{ tons/yr} * (50 \text{ g/liter}/500 \text{ g/liter}) = 1,112.6 \text{ tons/yr}$$

The actual emission reduction from switching to low content VOC material is:

$$11,126.5 \text{ tons/yr} - 1,112.6 \text{ tons/yr} = 10,014 \text{ tons/yr}$$

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8 , 9 [Control Techniques Guidelines for Industrial Cleaning Solvents](#),

Using the same EPA assumption as above that a reduction of one ton of VOC emissions saves companies using other solvent cleaning operations -\$1,832.5, the cost savings of switching to low VOC content solvents for industrial cleaning operations is:

$$-\$1,832.5/\text{ton reduced} * 10,014 \text{ tons/yr} = - \$18.4 \text{ million (savings)}$$

This is the maximum amount of cost reduction (benefits) associated with the proposed rule changes, which assume that none of the regulated parties have already made the switch to reduce costs. The actual cost reduction in this scenario is likely to be lower (probably much lower). These savings are derived from the significantly lower cost of recycling material with low VOC content material as opposed to high-VOC materials.

In accordance with the ACA information, application of low-VOC content material for industrial cleaning will increase the material (acetone) usage by approximately 5 tons/yr. The cost of low-VOC content(acetone) material is \$500 per ton ( in 2005 dollars) adjusted to \$692 (in 2012 dollars). The final savings are:

$$5 \text{ tons} * \$692 * 139 \text{ facilities} = \$481,000 \text{ per year}$$

This estimation is used for the worst case scenario summary. For industrial cleaning solvents, DAQ estimates that the private sector would incur annual costs of up to \$2.5 million, [\$0.5 million (acetone usage) + \$2.0 million (part cleaners)] and cost-savings of \$18.4 million. Combined annual impacts amount to net cost-savings of up to \$15.9 million. However, these potential costs and benefits would not be evenly distributed, with some facilities incurring net costs and others obtaining net benefits.

These savings are supported by EPA's study published by the Bay Area AQMD to estimate the cost of compliance for the measures recommended in this CTG. According to these estimates, EPA believes that affected sources may either incur minimal additional costs or realize a savings on a case-by-case basis, depending primarily on facts such as how much they currently spend to operate high-VOC content solvent-based parts cleaners, and the cost of organic solvent disposal. The Bay Area AQMD studies indicate that there is a cost savings associated with replacing high-VOC cleaning materials with low-VOC, water-based cleaning materials.

The DAQ industrial-cleaning estimates were adjusted and reduced from estimations that EPA provided in the CTG. DAQ used 500 g/liter as the current average VOC concentration (density) of the solvents as provided by ACA for the inks, coatings, adhesives, and resins manufacturing sector, whereas EPA used 900g/liter as the worst case scenario in its example.DAQ is using real data provided by the industry.

Industry representatives identified a concern with the assumption that there would be a similar cost savings resulting from application of the solvent cleaning requirements for the inks-, coatings-, adhesives-, and resins- manufacturing sector related to mitigating factors at potentially affected facilities (discussed in more detail below).

#### Cleaning of Resin, Coating, Ink, and Adhesive Mixing, Molding, and Application Equipment in Coating, Ink, and Adhesive Manufacturing

Sources that were exempt from the cleaning-solvent requirements under the Bay Area rules, which served as the basis for the cleaning-solvent CTG, were not included in the CTG cost calculations. The current North Carolina rule did not make a distinction regarding applicability of the cleaning-solvent limit to the resin, coating, ink and adhesive manufacturing category. The proposed amendments to 02D .0962 incorporate the underlying exclusion from the 0.42 lb/gal limit for this subset of sources and associated compliance alternatives based on the Bay Area rules.

To estimate the potential cost reduction associated with excluding cleaning-solvent emissions from cleaning of resin, coating, ink, and adhesive mixing, molding, and application equipment in coating, ink, and adhesive manufacturing from the general 0.42 pounds per gallon of VOC content cleaning material limit and establish the 1.67 pounds VOC per gallon limit and other compliance alternatives, DAQ is using cost estimates provided by industry representatives in this analysis.

DAQ initially identified five potentially affected sources in the nonattainment area counties in this sector. Further review determined that: one facility has closed; one facility has moved to South Carolina; one facility has less than five tons per year emissions and already uses acetone which is not considered a VOC relative to ozone formation; one facility produces water-based products; and the remaining facility is outside the boundary of the portion of Iredell county that is part of the NAA and thus is not subject. Given that one of the two remaining facilities in the resins-, inks-, coatings-, and adhesives-manufacturing sector in the current nonattainment area already uses acetone and the other produces water based products, it appears that the cost savings described would not be realized at this time.

***Cost estimation for the facilities with the coating, adhesive and printing units.***

DAQ estimated the number of facilities affected by the amendments to rule .0902 by analyzing data provided by Mooresville Regional Office (MRO) and Mecklenburg County Air Quality local program. MRO regulates 77 facilities with total VOC emissions of 636 tons/year and Mecklenburg County has 73 facilities with total actual VOC emissions of 636 tons/year. These facilities were selected from both databases by cross-referencing the following criteria: (1) facilities with VOC emissions more than 15 lbs/day (2.74 ton/year) and the potential to emit less than 100 tons/year; (2) facilities with the units covered by the CTG.

These facilities are divided in two categories: (1) printing facilities and (2) coating and adhesive facilities, in accordance with EPA recommendations.

Total VOC Emissions from the Affected Facilities Located in Mooresville Region and Mecklenburg County.						
Database	Number of Facilities		Total	Emissions (tpy)		Total Tons per year
	Printing	Coating		Printing	Coating	
Mooresville Region	4	73	77	107	529	636
Mecklenburg	18	55	73	187	449	636
Total	22	128	150	294	978	1,272

Among printing facilities there are twenty one (21) offset lithographic and letterpress printing units and one (1) flexible package printing unit. Among coating and adhesive facilities there are 128 units with different types of coatings and adhesive applications. Accordingly, there is necessarily some uncertainty in material estimation in any prediction of costs and emission impacts associated with the fact that the CTG recommendations are based on multiple EPA assumptions.

Cost estimation for lithographic printing and letterpress printing units

DAQ has chosen to adopt the CTG approach to estimate cost of compliance with the RACT requirements for the offset lithographic printing and letterpress printing units. These recommendations are based on EPA model plant analysis in which it evaluated VOC emissions associated with different kinds of printing processes, the VOC emission reduction capabilities of various control options, and the costs of such controls. The model plants were developed to represent a range of sizes and emissions.

Because of the similarities between offset lithographic printing and letterpress printing, in terms of the nature of the processes at issue, the sources of VOC emissions and available control approaches, EPA made an assumption that the cost-effectiveness for control of VOC from heatset inks and control of VOC from cleaning materials apply equally to the letterpress printing industry. Finally, EPA came up with four different numbers for total annual cost of control per facility for four different types of model plants.<sup>10</sup>

To estimate cost of compliance with the RACT requirements for printing facilities located in the 8-hour Charlotte-Gastonia-Rock Hill ozone area, DAQ averaged the costs of four different types of EPA's model plants, which equaled \$248,525 per facility.

There are 21 offset lithographic printing and letterpress printing units and one facility with three flexible printing units in the ozone area.

DAQ calculated the cost for 21 lithographic printing and letterpress printing facilities located in the 1997 8-hour Charlotte-Gastonia-Rock Hill ozone area as:

$$21 \text{ facilities} * \$248,525 = \$5.2 \text{ million}$$

The baseline is the current rule, which requires daily recordkeeping for all printing facilities to assure compliance with the 15 lbs-per-day limit. Currently, no printing facilities must comply with current recordkeeping rules, as none have a potential to emit more than 100 tons of VOCs per year. The proposed amendments to O2D .0961 would allow an equivalent level of three tons per 12-consecutive month rolling period. The change allows printing facilities to avoid unnecessary daily recordkeeping costs. In the worst-case event (if EPA fails to re-designate the area as a maintenance area), under the existing rule, all printing facilities would have to maintain daily records to assure 15 lbs-per-day limit.

Printing Industries of America illustrated the financial impracticability for printing operations by estimating the average cost of implementing a daily recordkeeping system to meet the requirements of the current rule. The estimated average costs are associated with daily

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10 [Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing](#) EPA-453/R-06-002  
2006/09

recordkeeping for an operation with three sheetfed offset lithographic presses. The example is for a 6-color 40 inch, 4-color 26 inch, and a 2-color 20 inch press, which are common in commercial printing operation. The full cost, based on 2008 data, includes wages, equipment, and all overhead with the assumption that the presses are running at an 85-percent utilization rate, which is the theoretical maximum utilization rate. Most facilities will use a 70 percent utilization rate for their budgeting.

Average of 1 hour of lost production time per day for each press:

Press 001 (6-color) - \$505.00/hour

Press 002 (4-color) - \$264.00/hour

Press 003 (2-color) - \$ 77.00/hour

Total: \$846.00/hour

Average total baseline monthly cost associated with daily recordkeeping:

\$ 846 (Total Per Day Lost Production and Press Operator Costs)

x 20 (Average Work Days Per Month)

\$16,920 (Average Total Monthly Cost)

The baseline cost is zero because there are no facilities that are currently subject to the daily recordkeeping requirements in the current rules.

Under the proposed monthly recordkeeping rule, affected facilities would bear these costs on a once-per-month basis, leading to a total cost of:

\$846 (monthly recordkeeping costs) x 21 (number of the affected facilities) x 12 (months) =  
\$213,000

Compared to an alternative baseline of daily recordkeeping for printing facilities, the annual savings of switching the average facility from daily to monthly recordkeeping are estimated to be:

\$4.3 million -\$213,000 = \$4.1 million (savings relative to an *alternative* baseline of daily recordkeeping for all affected printing facilities)

Relative to the *current* baseline for lithographic printing and letterpress printing facilities, the proposed rules would impose \$5.4 million in additional costs (\$5.2 million for RACT compliance costs plus \$0.2 million for monthly recordkeeping).

#### Cost estimation for flexible printing units

Due to insufficient information about flexible printing units in the database, DAQ has chosen to adopt the EPA-recommended algorithm to estimate the cost for the flexible package printing units. The cost is for a fixed-bed catalytic oxidizer with 95-percent destruction efficiency, which is the equipment likely to be used to control emissions to comply with the RACT requirements at a typical or average facility with individual presses for flexographic printing. EPA estimated the total capital investment (TCI) for the fixed-bed catalytic oxidizer as \$471,603 per press.<sup>11</sup> The database indicated

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11 [Control Techniques Guidelines for Flexible Package Printing](#) EPA-453/R-06-003 2006/09

that only one facility with three flexible printing units is affected by these amendments. TCI for three presses is:

$$\$471,603 * 3 = \$1.4 \text{ million (one-time capital investment)}$$

The annualized capital recovery factor of 0.10979 was based on 7 percent interest rate and 15 years of useful life. The annualized capital cost is:

$$\$1.4 \text{ million} * 0.10979 = \$155,000$$

Finally, EPA estimated the total annual operating cost (TAC) for the high-end scenario as \$131,385 for each press per year and for the low-end scenario as \$121,704 for each press per year. In accordance with EPA recommendations, the low end scenario is chosen for the solvent use rate of 25 ton/yr and the high end is chosen for the solvent use rate of 100 ton/yr. Consequently, the high end TAC cost for the three presses is:

$$\$131,385 * 3 = \$394,000 \text{ per year}$$

The low end TAC for the three presses is:

$$\$121,704 * 3 = \$365,000 \text{ per year}$$

The total annual cost is:

$$\$365,000 + \$155,000 = \$520,000 \text{ low end, end}$$

$$\$394,000 + \$155,000 = \$549,000 \text{ high end}$$

The high estimate of \$549,000 is used for the worst case scenario summary.

#### Cost estimation for coating and adhesive units

This cost estimation is based on data provided by the MRO. It includes information on VOC content in material that the coating and adhesive facilities use to comply with the current air quality regulations. DAQ made an assumption that the facilities located in Mecklenburg County use the same VOC content material for similar production units as the facilities located in MRO.

To calculate the emission reduction, DAQ estimated the average VOC concentration limits required to comply with RACT requirements by interpolating VOC concentrations limits established for the RACT compliance and the current VOC concentrations by interpolating the data presented by MRO and Mecklenburg County. The reduction is calculated in accordance with EPA recommendations<sup>12</sup>. The results are presented in the Table below.

VOC Concentration Limits Reduction Required to Comply with the RACT Requirements			
Units	Current concentration of VOC	RACT requirements	Reduction

Coating	0.17 lb/gal	0.07 lb/gal	574 tons/yr
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The emission level required to comply with RACT is calculated as the ratio between projected VOC concentrations needed to comply with the RACT requirements and current VOC concentrations multiplied by the current emission level from coating and adhesive units:

$$978 \text{ tons/yr}^{13} * 0.07 \text{ lb/gal} / 0.17 \text{ lb/gal} = 402 \text{ tons/yr}$$

Emission reduction is calculated as the difference between the current (table on page 15) and required emission level:

$$978 \text{ tons/yr} - 402 \text{ tons/yr} = 574 \text{ tons/yr}$$

EPA estimated that the cost effectiveness to comply with RACT requirements for coating and adhesive units is in the range between 0 and \$3,596 per ton of reduction depending on coating operations. DAQ analyzed data provided by the MRO and Mecklenburg County. It included information about specific types of coating operations for each facility. EPA cost effectiveness data was then applied to each affected facility with specific coating operation. The results indicated that most likely the affected facilities with coating and adhesive units have the range between \$553 and \$2,213.

The cost of emission reduction for the affected facilities with coating and adhesive units (including facilities with local and federal funds) is between:

$$\begin{aligned} 574 \text{ tons/yr} * \$553 &= \$317,000 \text{ low end, and} \\ 574 \text{ tons/yr} * \$2,213 &= \$1.3 \text{ million high end} \end{aligned}$$

The high estimate of \$1.3 million is used for the worst case scenario summary.

All estimations are made in accordance with Control Techniques Guidelines for Industrial Cleaning Solvents<sup>14</sup> recommendations.

Actual costs could be lower. The current section .0900 provides a couple of simple, low-cost options for facilities that would need to achieve compliance with these new RACT requirements. For instance, if a facility owner or operator can demonstrate that an alternative operational or equipment control is superior to the required control, they may petition the director to allow the use of alternative controls for VOC emissions reduction. This option may be useful for facilities with flexibility to switch to an alternative operational schedule or to change production levels. For example, a facility may choose to change its operational schedule to avoid daily VOC emissions above 15 lb/day, or it may change production to lower VOC emissions.

Alternative controls for RACT also can be an option for facilities that demonstrate compliance with the rules in Section .0900 would be technologically or economically infeasible. Such facilities may

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13 Total VOC Emissions from the Affected Facilities from the table on page 17

14 [Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings](#)

petition the Director to allow the use of alternative operational or equipment controls for the reduction of volatile organic compound emissions. This option may be especially attractive to facilities with high total capital investments (TCI). EPA guidance<sup>15</sup> indicates that a facility may choose an alternative, less expensive than add-on control method for RACT compliance.

#### Local Government

Of the 128 total coating and adhesives facilities, DAQ identified three facilities operated by local governments. The cost of compliance with the RACT requirements for these facilities is calculated separately in accordance with the state budget manual.

Taken together, the three facilities operated by local funds have the potential to emit 29.9 tons of VOC per year (27,125 kg/yr). The cost of emission reduction is calculated using the same algorithm as the private facilities with coating and adhesive units.

Local government facilities:

$$29.84 \text{ tons/yr} * 0.07 \text{ lb/gal}/0.17 \text{ lb/gal} = 12.29 \text{ tons/yr}$$

$$29.84 \text{ tons/yr} - 12.29 \text{ tons/yr} = 17.6 \text{ tons/yr}$$

$$17.6 \text{ tons/yr} * \$553 = \$9,700 \text{ low end, and}$$

$$17.6 \text{ tons/yr} * \$2,213 = \$39,000 \text{ high end}$$

The high estimate of \$39,000 is used for the worst case scenario summary.

#### Federal Government

DAQ identified one coating and adhesives facility operated by a federal entity. The federal facility has potential to emit 2.8 tons of VOC per year. The cost of emission reduction is calculated using the same algorithm as the private facilities with coating and adhesive units.

Federal government facility:

$$2.8 \text{ tons/yr} * 0.07 \text{ lb/gal}/0.17 \text{ lb/gal} = 1.15 \text{ tons/yr}$$

$$2.8 \text{ tons/yr} - 1.15 \text{ tons/yr} = 1.65 \text{ tons/yr}$$

$$1.65 \text{ tons/yr} * \$553 = \$900 \text{ low end and}$$

$$1.65 \text{ tons/yr} * \$2,213 = \$3,700 \text{ high end}$$

The high estimate of \$3,700 is used for the worst case scenario summary.

#### North Carolina Division of Air Quality and Mecklenburg County Air Quality Program

In accordance with Rule 15A NCAC 02Q .0203, Permit and Application Fees, no additional permit application fees will be required for the affected facilities after these amendments become effective. While staff would have to spend some time to incorporate appropriate permit conditions, since all these facilities are already permitted and are subject to compliance inspections, changes in permit writing procedures or facility inspection schedule caused by these amendments are insignificant. No additional DAQ staff would be anticipated, nor would existing staff be expected to

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<sup>15</sup> Guidance Document for Correcting Common VOC & Other Rule

undertake any significant additional activities. Consequently, DAQ and Mecklenburg County Air Quality Program cost/savings for implementing these amendments are negligible.

#### General Public

The primary benefit of this set of amendments under the expected scenario is to meet the requirements of the CAA and ensure approval of the VOC RACT State Implementation Plan (SIP) by EPA. The EPA approval can mitigate the consequences of a SIP deficiency including possible disapproval and, lacking correction within required timeframes, implementation of a federal program, and if not eventually corrected, potential sanctions on highway transportation funding. In addition, without the amendments, EPA would not be able to approve the re-designation and maintenance plan for the Charlotte-Gastonia-Rock Hill 1997 nonattainment area, and requirements for moderate nonattainment areas such as nonattainment new source review would continue to apply even though monitoring data show compliance with the 1997 8-hour ozone standard.

These VOC RACT requirements are unlikely to have a substantial impact on atmospheric ozone concentrations because in North Carolina most VOC emissions come from biogenic sources and the state, like much of the southeast, is in a NOx-limited environment with respect to ozone formation. However, although not their direct purpose, the proposed rule changes (if implemented under one of the unexpected scenarios) may provide secondary benefits for manufacturing workers who may be exposed to fewer or less toxic chemicals depending on what is currently used if solvent switching is the chosen compliance mechanism. Air toxics are a group of chemical air contaminants, defined by EPA, that have been associated with wide-ranging and significant adverse health effects, including cancer and other serious health effects such as reproductive effects or birth defects, or adverse environmental effects.

The reduction of toxics in manufacturing facilities or in production practices that reduce or eliminate the use and emissions of toxic materials into the environment is generally preferable to add-on controls. As a possible secondary benefit, these proposed rule changes may lessen potential worker exposure to hazardous air pollutants in printing, solvent coatings and cleaning operations.

#### ***Summary of Costs and Benefits Under Unlikely Scenario***

If (1) the maintenance area later fails to meet the 1997 standard and (2) the Division of Air Quality Director implements the proposed amendments as part of the contingency plan to bring the area back into attainment, there would be potential impacts. Under the worst-case scenario, DAQ estimates private industry would incur annual costs of up to \$9.7 million, and cost-savings of up to \$18.4 million. Combined annual impacts amount to net cost-savings of up to \$8.8 million (with potential costs and benefits attributed to different entities), and up to \$28 million when aggregated. There are no impacts on the expenditure of State funds. The North Carolina Division of Air Quality would not experience new costs associated with these proposed rule changes. Local governments operate three coating and adhesive facilities and these may incur costs up to \$39,000. The federal government operates one coating and adhesive facility that may incur costs up to \$3,600 to comply with the new regulations.

These cost estimations were made for the worst-case scenario assuming that: (1) all VOC emissions from affected facilities are coming only from sources of VOC emissions covered by control techniques guidelines (CTG); and (2) all affected facilities are currently not meeting RACT requirements. The annual impacts to state, local and federal government, and the private sector,

are summarized in the following table.

Annual Impact of the Worst Case Scenario

Entity	Number of Facilities	Annual Cost In Million US Dollars (2012) (A)	Annual Cost-Savings In Million US Dollars (2012) (B)	Annual Net Cost/Benefit In Million US Dollars (2012) (B)-(A)	Annual Aggregate In Million US Dollars (2012) (A)+(B)	Reference to Estimation Description
State Government	0	\$0	\$0	\$0	\$0	
Parts Cleaners	11	\$2.0	\$0	-\$2.0	\$2.0	pp. 14-15
Other Solvent Cleaning	128	\$0.5	\$18.4	+\$17.9	\$18.9	pp. 15-16
Lithographic Printing	21	\$5.4	\$0	-\$5.4	\$5.4	pp. 17-19
Flexible Printing	1	\$0.5	\$0	-\$0.5	\$0.5	Pp. 19-20
Coating & Adhesive	124	\$1.3	\$0	-\$1.2	\$1.3	pp. 20-21
Local government (Coating & Adhesive)	3	\$0.039	\$0	-\$0.039	\$0.039	p. 21
Federal Government (Coating & Adhesive)	1	\$0.004	\$0	-\$0.004	\$0.004	p.21
General Public	Unquantifiable minor or no impacts					p. 23
Total:	289	\$9.7	\$18.4	+8.8	\$28	

To the extent that facilities have already reduced the VOC content of the solvents and coatings they use and have already achieved levels in the CTGs, then no additional reductions would be needed and the costs and benefits estimated in this assessment would be much higher than would actually be realized, resulting in an overestimate of the impact.

The general public may benefit from cleaner air, and workers in facilities that use VOC materials may be exposed to fewer toxics if solvent switching is the compliance mechanism of choice. These benefits are not quantified because they are not expected to occur under the most likely scenario.

#### Sources of Uncertainty in Estimates

The estimation of the emission reductions associated with the selected control strategies described above is subject to important limitations and uncertainties. There are several sources of uncertainty that may affect the results of this analysis.

Due to DAQ lacking a comprehensive database on the facilities that use the industrial cleaning solvents for cleaning operations, DAQ estimated the cost of RACT compliance for the facilities with industrial cleaning solvents by using the number of affected facilities and the current level of VOC emissions from these facilities estimated by EPA and obtained from Control Techniques Guidelines for Industrial Cleaning Solvents.<sup>16</sup> EPA noted that this information was determined by first assigning the VOC emissions from solvent cleaning operations at each facility from 2002 National Emissions Inventory (NEI) database to one of two general groups: parts cleaners, or other solvent cleaning operations. The parts cleaner subgroup included emissions from all source classification codes (SCCs) with a “degreasing” or cold solvent cleaning/stripping classification.

The EPA estimation that DAQ used for the cost estimations is based on compliance with the RACT requirements that are recommended by Alternative Control Techniques (ACT) Document issued in February 1994. EPA simply established the baseline as a VOC emission levels which meet RACT requirements recommended by the ACT Document issued in February 1994 and calculated the emission reduction as a difference between RACT requirements recommended by the ACT issued in 1994 and the CTG issued in 2006. While using this difference for the cost reduction calculation, DAQ found that the 500 g/liter average VOC concentration (density) of the solvents for the year 2012 provided by American Coating Association is more reliable number than the 900 g/liter figure used by EPA in its example cost estimation as the worst-case scenario in 2006 when CTG was issued. DAQ is using the data provided by the industry.

The second source of uncertainty is completeness of information on VOC units and VOC concentrations that affected facilities are using obtained from MRO and Mecklenburg County Air Quality local program. In this situation, DAQ made several assumptions described above based on staff members’ best judgment and engineering experience to quantify the impacts in these areas. There is also uncertainty regarding what share of facilities that could save money by using low-VOC content materials have already converted to the lower-cost materials. If a significant number of those facilities have made the transition, then the potential cost savings would be substantially lower.

As a general matter, DAQ selected the best-available information from available databases and EPA’s CTGs and has set up what it believes is the most reasonable framework for analyzing the cost, potential emission changes, and other impacts of regulatory controls.

## VII. CONCLUSION.

The DAQ is required, under provisions of CAA Section 172(c)(1), to submit a SIP that will lead to attainment of the NAAQS for ozone. Section 182(b)(2) of the CAA also provides that North Carolina must revise its ozone SIP to include RACT for each category of VOC sources covered by any CTG document issued after November 15, 1990, and prior to the date of attainment.

The proposed rule amendments are needed in order for the state’s SIP to meet the requirements of the CAA and receive approval from EPA. North Carolina’s current RACT rule, O2D .0902, applies only

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16 [Control Techniques Guidelines for Industrial Cleaning Solvents](#) EPA-453/R-06-001, 2006/09

to facilities that have the potential to emit (PTE) greater than or equal to 100 tons of volatile organic compounds (VOC) per year located in the Charlotte-Gastonia-Rock Hill, NC 8-hour Moderate Ozone Nonattainment Area. The proposed amendments bring North Carolina into compliance with federal law by extending this applicability to all VOC sources covered by any CTG in the nonattainment area. This proposal also amends rule 02D .0909 to clarify compliance schedules for the newly affected facilities, makes conforming changes to 02D .0951, and a corresponding update to related language in 02Q .0102. In response to comments from industry associations on the existing rules, the amendments to 02D .0903, .0961, and .0962 clarify language and provide compliance alternatives consistent with the CTGs.

The Division of Air Quality anticipates no direct costs to result from this rulemaking. In extreme circumstances, failure to adopt these rules could lead to more federal regulation and, eventually, potential sanctions on highway transportation funding.

The proposed rules would not result in any immediate costs for regulated facilities. The amendments do not require additional permitting or inspection of additional facilities and consequently, they would have no economic impact on NCDAQ and Mecklenburg County (Land Use and Environmental Services Agency). There are no economic impacts related to permitting for NC Department of Transportation projects.

If (1) the maintenance area later fails to meet the 1997 standard and (2) the Division of Air Quality Director implements the proposed amendments as part of the contingency plan to bring the area back into attainment, there would be potential impacts. This scenario is highly unlikely because the current state of the science regarding atmospheric formation of ground level ozone indicates implementing these rules would do little to improve ozone levels.

Under the worst-case scenario, DAQ estimates private industry would incur annual costs of up to \$9.7 million, and cost-savings of \$18.4 million. Combined annual impacts amount to net cost-savings of up to \$8.8 million (with potential costs and benefits attributed to different entities), and up to \$28 million when aggregated. There are no impacts on the expenditure of State funds. The North Carolina Division of Air Quality would not experience new costs associated with these proposed rule changes. There would be no additional permitting or inspection activity and consequently, this scenario would have no economic impact on NCDAQ and Mecklenburg County (Land Use and Environmental Services Agency). Local governments operate three coating and adhesive facilities and these may incur costs up to \$39,000. The federal government operates one coating and adhesive facility that may incur costs up to \$3,600 to comply with the new regulations.

Appendix A.	Rule 15A NCAC 02D .0902 Amended
Appendix B.	Rule 15A NCAC 02D .0903 Amended
Appendix C.	Rule 15A NCAC 02D .0909 Amended
Appendix D.	Rule 15A NCAC 02D .0951 Amended
Appendix E.	Rule 15A NCAC 02Q .0102 Amended
Appendix F.	Rule 15A NCAC 02D .0961 Amended
Appendix G.	Rule 15A NCAC 02D .0962 Amended

1 15A NCAC 02D .0902 is proposed for amendment as follows:

2

3 **15A NCAC 02D .0902 APPLICABILITY**

4 (a) The rules in this Section do not apply except as specifically set out in this Rule.

5 (b) This Section applies to sources that emit greater than or equal to 15 pounds of volatile organic compounds per day. day unless specified otherwise in this  
6 Section.

7 (c) Rules .0925, .0926, .0927, .0928, .0931, .0932, .0933, and .0958 of this Section apply regardless of the level of emissions of volatile organic ~~compounds~~  
8 compounds unless provisions specified in Paragraph (d)(1) of this Rule are applied.

9 (d) This Section does not apply to:

10 (1) sources that emit less than 800 pounds of volatile organic compounds per calendar month and that are:

11 (A) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water  
12 or wastewater analyses, or non-production environmental compliance assessments;

13 (B) bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational  
14 laboratories;

15 (C) bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to  
16 the determination or diagnoses of illness; or

17 (D) research and development laboratory activities provided the activity produces no commercial product or feedstock material; or

18 (2) emissions of volatile organic compounds during startup or shutdown operations from sources which use incineration or other types of  
19 combustion to control emissions of volatile organic compounds whenever the off-gas contains an explosive mixture during the startup or  
20 shutdown operation if the exemption is approved by the Director as meeting the requirements of this Subparagraph.

21 (e) The following rules of this Section apply to facilities located statewide:

22 (1) .0925, Petroleum Liquid Storage in Fixed Roof Tanks, for fixed roof tanks at gasoline bulk plants and gasoline bulk terminals;

23 (2) .0926, Bulk Gasoline Plants;

24 (3) .0927, Bulk Gasoline Terminals;

25 (4) .0928, Gasoline Service Stations Stage I;

26 (5) .0932, Gasoline Truck Tanks and Vapor Collection Systems;

- 1           (6) .0933, Petroleum Liquid Storage in External Floating Roof Tanks, for external floating roof tanks at bulk gasoline plants and bulk gasoline  
2           terminals;  
3           (7) .0948, VOC Emissions from Transfer Operations;  
4           (8) .0949, Storage of Miscellaneous Volatile Organic Compounds; and  
5           (9) .0958, Work Practices for Sources of Volatile Organic Compounds.

6       (f) Except as provided in Paragraph (e) of this Rule, The the Rules in this Section apply to facilities subject to Section 182(b)(2) of the Clean Air Act with  
7       potential to emit 100 or more tons per year of VOC and to facilities with potential to emit less than 100 tons per year of volatile organic compounds in categories  
8       for which the United States Environmental Protection Agency has issued Control Technique Guidelines with the potential to emit greater than or equal to 100  
9       tons of volatile organic compounds per year that are located in the following moderate nonattainment areas:areas for the 1997 8-hour ozone standard as  
10      designated in 40 CFR 81.334:

- 11          (1) Cabarrus County;  
12          (2) Gaston County;  
13          (3) Lincoln County;  
14          (4) Mecklenburg County;  
15          (5) Rowan County;  
16          (6) Union County; and  
17          (7) Davidson Township and Coddle Creek Township in Iredell County.

18       These facilities are subject to reasonably available control technology requirements under this Section and shall comply in accordance with Rule .0909 of this  
19      Section through use of Rule .0951 of this Section.

20       (g) If any county or part of a county to which this Section applies is later designated in 40 CFR 81.334 as attainment and becomes a maintenance area for the  
21      1997 8-hour ozone standard, all sources in that county or part of county subject to Paragraph (f) of this Rule that achieved compliance in accordance with Rule  
22      .0909 of this Section subject to this Section before the redesignation to attainment shall continue to comply with this Section. Facilities with potential to emit less  
23      than 100 tons of volatile organic compounds per year for which the compliance date in Rule .0909 of this Section has not passed before redesignation of the area  
24      to attainment for the 1997 ozone standard shall comply in accordance with Paragraph (h) of this Rule.

25       (h) If EPA reclassifies a violation of the 1997 ambient air quality standard for ozone occurs in the Charlotte-Gastonia-Rock Hill ozone nonattainment  
26      maintenance area as serious for ozone under Section 182 of the federal Clean Air Act, the rules in this Section shall apply to facilities in Cabarrus, Gaston,  
27      Lincoln, Mecklenburg, Rowan, and Union Counties and Davidson and Coddle Creek townships in Iredell County with the potential to emit at least 50 tons of

1    ~~volatile organic compounds per year. Within 60 days of the reclassification area, the Director shall initiate technical analysis to determine the control measures~~  
2    ~~needed to attain and maintain the 1997 8-hour ambient air quality standard for ozone. By the following May 1, the Director shall implement the specific~~  
3    ~~stationary source control measures contained in this Section that are required as part of the control strategy necessary to bring the area into compliance and to~~  
4    ~~maintain compliance with the 1997 8-hour ambient air quality standard for ozone. The Director shall implement the rules in this Section identified as being~~  
5    ~~necessary by the analysis by notice in the North Carolina Register. The notice shall identify the rules that are to be implemented and shall identify whether the~~  
6    ~~rules implemented are to apply in the areas listed in Paragraph (f) of this Rule. At least one week before the scheduled publication date of the North Carolina~~  
7    ~~Register containing the Director's notice implementing rules in this Section, the Director shall notice the applicability of these Rules to these facilities in the~~  
8    ~~North Carolina Register and shall send written notification to all permitted facilities within the counties in which the rules are being implemented that are or may~~  
9    ~~be subject to the requirements of this Section informing them that they are or may be subject to the requirements of this Section. (For Mecklenburg County,~~  
10   ~~"Director" means for the purpose of notifying permitted facilities in Mecklenburg County, the Director of the Mecklenburg County local air pollution control~~  
11   ~~program.) Compliance shall be according to Rule .0909 of this Section.~~

12   (i) Sources whose emissions of volatile organic compounds are not subject to limitation under this Section may still be subject to emission limits on volatile  
13   organic compounds in Rules .0524, .1110, or .1111 of this Subchapter.

14

15   *History Note:*   Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);

16   *Eff. July 1, 1979;*

17   *Amended Eff. May 1, 2013; September 1, 2010; January 1, 2009; July 1, 2007; March 1, 2007; August 1, 2004; July 1, 2000; April 1, 1997;*  
18   *July 1, 1996; July 1, 1995; May 1, 1995; July 1, 1994.*

19

1    15A NCAC 02D .0903 is proposed for amendment as follows:

2

3    **15A NCAC 02D .0903    RECORDKEEPING: REPORTING: MONITORING**

4    (a) The owner or operator of any volatile organic compound emission source or control equipment shall:

5                (1) install, operate, and maintain process and control equipment monitoring instruments or procedures as necessary to comply with the  
6                requirements of this Section; and

7                (2) maintain, in writing, data and reports relating to monitoring instruments or procedures which will, upon review, document the compliance  
8                status of the volatile organic compound emission source or control equipment; such data and reports shall, as a minimum, be maintained daily,  
9                daily unless otherwise specified in this Section.

10      (b) The owner or operator of any volatile organic compound emission source or control equipment subject to the requirements of this Section shall comply with  
11      the monitoring, recordkeeping, and reporting requirements in Section .0600 of this Subchapter.

12

13      *History Note:*    Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);

14      *Eff. July 1, 1979;*

15      *Amended Eff. May 1, 2013; April 1, 1999; July 1, 1993; July 1, 1991; December 1, 1989; January 1, 1985.*

16

1 15A NCAC 02D .0909 is proposed for amendment as follows:

2

3 **15A NCAC 02D .0909 COMPLIANCE SCHEDULES FOR SOURCES IN OZONE NONATTAINMENT AND MAINTENANCE AREAS**

4 (a) Applicability. With the exceptions in Paragraph (b) of this Rule, this Rule applies to all sources located at any facility covered by Paragraph Paragraphs (f) 5 or and (h) of Rule .0902 of this Section.

6 (b) Exceptions. This Rule does not apply to sources facilities required to comply with the requirements subject to rules listed of this Section under Paragraph (e) 7 of in Rule .0902 of this Section. Facilities subject to Rules listed in Paragraph (e) of Rule .0902 shall comply in accordance with the provisions defined in those 8 rules rather than the schedule in Paragraphs (c) and (d) of this Rule.

9 (c) Maintenance area and Charlotte ozone nonattainment area contingency plan. The owner or operator of any source subject to this Rule because of the 10 application of Paragraph (h) of Rule .0902 of this Section subject to Paragraph (a) in this Rule shall adhere to the following increments of progress and schedules:

11 (1) if compliance with applicable rules in this Section is to be achieved by installing emission control equipment, replacing process equipment, or 12 modifying existing process equipment:

13 (A) The owner or operator shall submit a permit application and a compliance schedule within six months after the Director notices the 14 implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone;

15 (B) The compliance schedule shall contain the following increments of progress:

16 (i) a date by which contracts for the emission control system and process equipment shall be awarded or orders shall be issued 17 for purchase of component parts;

18 (ii) a date by which on-site construction or installation of the emission control and process equipment shall begin; and

19 (iii) a date by which on-site construction or installation of the emission control and process equipment shall be completed; and

20 (C) Final compliance with applicable rules in this Section shall be achieved within three years after the Director notices the 21 implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone.

22 (2) if compliance with applicable rules in this Section is to be achieved by using low solvent content coating technology:

23 (A) The owner or operator shall submit a permit application and a compliance schedule within six months after the Director notices the 24 implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone;

25 (B) The compliance schedule shall contain the following increments:

26 (i) a date by which research and development of low solvent content coating shall be completed if the Director determines that 27 low solvent content coating technology has not been sufficiently researched and developed to assure compliance;

- 1                             (ii) a date by which evaluation of product quality and commercial acceptance shall be completed;  
2                             (iii)(i) a date by which purchase orders shall be issued for low solvent content coatings and process modifications;  
3                             (iv)(ii) a date by which process modifications shall be initiated; and  
4                             (v)(iii) a date by which process modifications shall be completed and use of low solvent content coatings shall begin; and  
5                         (C) Final compliance with applicable rules in this Section shall be achieved within three years two years after the Director notices the  
6                             implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone.

- 7                         (3) The owner or operator shall certify to the Director within five days after each increment deadline of progress defined in this Paragraph, whether  
8                             the required increment of progress has been met.

9                         (d) Moderate Nonattainment nonattainment areas. The owner or operator of any source subject to this Rule because of the application of Paragraph (f) of Rule  
10                         .0902 of this Section subject to Paragraph (a) of this Rule shall adhere to the following increments of progress and schedules:

- 11                         (1) if compliance with applicable rules in this Section is to be achieved by installing emission control equipment, replacing process equipment, or  
12                             modifying existing process equipment:

- 13                             (A) The owner or operator shall submit a permit application and a compliance schedule by  
14                                     August 1, 2007;

- 15                             (B) The compliance schedule shall contain the following increments of progress:  
16                                     (i) a date by which contracts for the emission control system and process equipment  
17   shall be awarded or orders shall be issued for purchase of component parts;  
18                                     (ii) a date by which on-site construction or installation of the emission control and  
19   process equipment shall begin; and  
20                                     (iii) a date by which on-site construction or installation of the emission control and  
21   process equipment shall be completed; and

- 22                             (C) For facilities with potential to emit 100 tons or more of volatile organic compounds per year, final compliance with applicable  
23                                 rules in this Section shall be achieved no later than April 1, 2009;

- 24                             (D) For facilities with potential to emit less than 100 tons of volatile organic compounds per year, final compliance with applicable rules  
25                                 in this Section shall be achieved no later than May 1, 2016.

- 26                         (2) if compliance with applicable rules in this Section is to be achieved by using low solvent content coating technology:  
27                             (A) The owner or operator shall submit a permit application and a compliance schedule by-August 1, 2007;

- (B) The compliance schedule shall contain the following increments:

  - (i) a date by which research and development of low solvent content coating shall be completed if the Director determines that low solvent content coating technology has not been sufficiently researched and developed;
  - (ii) a date by which evaluation of product quality and commercial acceptance shall be completed;
  - (iii)(i) a date by which purchase orders shall be issued for low solvent content coatings and process modifications;
  - (iv)(ii) a date by which process modifications shall be initiated; and
  - (v)(iii) a date by which process modifications shall be completed and use of low solvent content coatings shall begin; and

(C) Final compliance with applicable rules in this Section shall be achieved no later than April 1, 2009.

(D) For facilities with potential to emit less than 100 tons of volatile organic compounds per year, final compliance with applicable rules in this Section shall be achieved no later than May 1, 2015.

The owner or operator shall certify to the Director within five days after the deadline, for each increment of progress defined in this Paragraph, whether the required increment of progress has been met.

or requires a test to demonstrate that compliance has been achieved, the owner or operator of sources subject to this Rule shall conduct a test and report within six months after the stated date of final compliance.

and in compliance.

Maintenance area ~~and Charlotte ozone nonattainment area~~ contingency plan. Paragraph (c) of this Rule shall not apply to sources any source subject to Paragraph (a) of this Rule that is in compliance with applicable rules of this Section when the Director notices the implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone and that have determined and certified compliance to the satisfaction of the Director within six months after the Director notices the implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone.

Moderate and Nonattainment nonattainment areas. Paragraph Paragraph (d) of this Rule does not apply to sources ~~in an area named in Paragraph (f) of Rule .0902 of this Section that subject to Paragraph (a) of this Rule if they~~ are in compliance with applicable rules of this Section on March 1, 2007.

Maintenance area ~~and Charlotte ozone nonattainment area~~ contingency plan. The owner or operator of any ~~new source of volatile organic compounds~~ subject to Paragraph (a) of this Rule not in existence or under construction before the date that the Director notices in the North Carolina Register in accordance with Paragraph (h) of Rule .0902 of this Section the implementation of rules in the North Carolina Register

1           that resolves a violation of the ambient air quality standard for ozone, shall comply with all applicable rules in this Section upon start-up of the  
2           source.

3           (2) Moderate and Nonattainment nonattainment areas. The owner or operator of any new source ~~of volatile organic compounds subject to~~  
4           Paragraph (a) of this Rule not in existence or under construction before March 1, 2007 in an area identified ~~in~~ ~~of volatile organic compounds~~  
5           Paragraph (f) of Rule .0902 shall comply with all applicable rules in this Section upon start-up of the source.

6  
7       *History Note*    *Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);*

8       *Eff. July 1, 1979;*

9       *Amended Eff. May 1, 2013; September 1, 2010; January 1, 2009; July 1, 2007; March 1, 2007; July 1, 2000; April 1, 1997; July 1, 1995; July*

10      *1, 1994; July 1, 1988; January 1, 1985.*

11

1 15A NCAC 02D .0951 is proposed for amendment as follows:

2

3 **15A NCAC 02D .0951    RACT FOR SOURCES OF VOLATILE ORGANIC COMPOUNDS~~MISCELLANEOUS VOLATILE ORGANIC  
4 COMPOUND EMISSIONS~~**

5 (a) Facilities required to install RACT pursuant to Rule .0902 of this Section shall determine the emissions control level according to this Rule. With the  
6 exceptions in Paragraph (b) of this Rule, this Rule applies to all facilities that use volatile organic compounds as solvents, carriers, material processing media, or  
7 industrial chemical reactants, or in other similar uses, or that mix, blend, or manufacture volatile organic compounds for which there is no other applicable  
8 emissions control rule in this Section except Rule .0958 of this Section. If the only other applicable emissions control rule for the facility in this Section is Rule  
9 .0958, then both this Rule and Rule .0958 apply.

10 (b) This Rule does not apply to architectural or maintenance coating.

11 (c) The owner or operator of any facility to which this Rule applies ~~shall~~shall comply by either of the following:

12        (1) install and operate reasonable available control technology~~technology as defined by category specific emission standards defined in this~~  
13 ~~Section; or~~

14        (2) limit emissions of volatile organic compounds from coating lines not covered by Rules .0922, .0923, .0924, .0934, .0935, .0936, or .0961  
15 ~~through .0968 from this Section to no more than 6.7 pounds of volatile organic compounds per gallon of solids delivered to the coating~~  
16 ~~applicator~~install and operate reasonable available control technology demonstrated to the Director and the U.S. Environmental Protection  
17 Agency to advance attainment.

18 (d) If the owner or operator of a facility chooses to install reasonable available control technology under Subparagraph (c)(1)(2) of this Rule, the owner or  
19 operator shall submit:

20        (1) the name and location of the facility;  
21        (2) information identifying the source for which a reasonable available control technology limitation or standard is being proposed;  
22        (3) a demonstration that shows the proposed reasonable available control technology limitation or standard satisfies the requirements for  
23 reasonable available control technology; and  
24        (4) a proposal for demonstrating compliance with the proposed reasonable control technology limitation or standard.

25

26 *History Note:* Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);

27 *Eff. July 1, 1994;*

## Appendix D

2

1           *Amended Eff. May 1, 2013; September 1, 2010; July 1, 2000; July 1, 1996.*

2

1 15A NCAC 02Q .0102 is proposed for amendment as follows:

2

3 **15A NCAC 02Q .0102 ACTIVITIES EXEMPTED FROM PERMIT REQUIREMENTS**

4 (a) This Rule does not apply to facilities required to have a permit under Section .0500 of this Subchapter. This  
5 Rule applies only to permits issued under Section .0300 of this Subchapter.

6 (b) If a source is subject to any of the following rules, then the source is not exempted from permit requirements,  
7 and the exemptions in Paragraph (c) of this Rule do not apply:

8 (1) new source performance standards under 15A NCAC 02D .0524 or 40 CFR Part 60, except when  
9 the following activities are eligible for exemption under Paragraph (c) of this Rule:

10 (A) 40 CFR Part 60, Subpart Dc, industrial, commercial, and institutional steam generating  
11 units;

12 (B) 40 CFR Part 60, Subparts K, Ka, or Kb, volatile organic liquid storage vessels;

13 (C) 40 CFR Part 60, Subpart AAA, new residential wood heaters;

14 (D) 40 CFR Part 60, Subpart JJJ, petroleum dry cleaners;

15 (E) 40 CFR Part 60, Subpart WWW, municipal solid waste landfills;

16 (F) 40 CFR Part 60, Subpart IIII, stationary compression ignition internal combustion  
17 engines; or

18 (G) 40 CFR Part 60, Subpart JJJJ, stationary spark ignition internal combustion engines;

19 (2) national emission standards for hazardous air pollutants under 15A NCAC 02D .1110 or 40 CFR  
20 Part 61, except asbestos demolition and renovation activities, which are eligible for exemption  
21 under Paragraph (c) of this Rule;

22 (3) prevention of significant deterioration under 15A NCAC 02D .0530;

23 (4) new source review under 15A NCAC 02D .0531 or .0532;

24 (5) sources of volatile organic compounds subject to the requirements of ~~15A NCAC 02D .0900~~  
25 Section .0900, Volatile Organic Compounds, that are located in Mecklenburg County according to  
26 ~~15A NCAC 02D .0902(d); 15A NCAC 02D .0902(f)~~.

27 (6) sources required to apply maximum achievable control technology (MACT) for hazardous air  
28 pollutants under 15A NCAC 02D .1109, .1111, .1112, or 40 CFR Part 63 that are required to have  
29 a permit under Section .0500 of this Subchapter;

30 (7) sources at facilities subject to 15A NCAC 02D .1100. (If a source does not emit a toxic air  
31 pollutant for which the facility at which it is located has been modeled, it shall be exempted from  
32 needing a permit if it qualifies for one of the exemptions in Paragraph (c) of this Rule).

33 (c) The following activities do not need a permit or permit modification under Section .0300 of this Subchapter;  
34 however, the Director may require the owner or operator of these activities to register them under 15A NCAC 02D  
35 .0200:

36 (1) activities exempted because of category:

37 (A) maintenance, upkeep, and replacement:

- (i) maintenance, structural changes, or repairs which do not change the capacity of such process, fuel-burning, refuse-burning, or control equipment, and do not involve any change in quality or nature or increase in quantity of emission of regulated air pollutants;
  - (ii) housekeeping activities or building maintenance procedures, including painting buildings, resurfacing floors, roof repair, washing, portable vacuum cleaners, sweeping, use and associated storage of janitorial products, or insulation removal;
  - (iii) use of office supplies, supplies to maintain copying equipment, or blueprint machines;
  - (iv) use of fire fighting equipment;
  - (v) paving parking lots; or
  - (vi) replacement of existing equipment with equipment of the same size, type, and function that does not result in an increase to the actual or potential emission of regulated air pollutants and that does not affect the compliance status, and with replacement equipment that fits the description of the existing equipment in the permit, including the application, such that the replacement equipment can be operated under that permit without any changes in the permit;

(B) air conditioning or ventilation: comfort air conditioning or comfort ventilating systems that do not transport, remove, or exhaust regulated air pollutants to the atmosphere;

(C) laboratory activities:

  - (i) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments;
  - (ii) bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratories;
  - (iii) bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness; or
  - (iv) research and development laboratory activities provided the activity produces no commercial product or feedstock material;

(D) storage tanks:

  - (i) storage tanks used solely to store fuel oils, kerosene, diesel, crude oil, used motor oil, lubricants, cooling oils, natural gas or liquefied petroleum gas;
  - (ii) storage tanks used to store gasoline or ethanol-based fuels for which there are no applicable requirements except Stage I controls under 15A NCAC 02D .0928;
  - (iii) storage tanks used solely to store inorganic liquids; or

- (iv) storage tanks or vessels used for the temporary containment of materials resulting from an emergency response to an unanticipated release of hazardous materials;
  - (E) combustion and heat transfer equipment:
    - (i) space heaters burning distillate oil, kerosene, natural gas, or liquefied petroleum gas operating by direct heat transfer and used solely for comfort heat;
    - (ii) residential wood stoves, heaters, or fireplaces;
    - (iii) hot water heaters which are used for domestic purposes only and are not used to heat process water;
  - (F) wastewater treatment processes: industrial wastewater treatment processes or municipal wastewater treatment processes for which there are no applicable requirements;
  - (G) gasoline distribution: gasoline service stations or gasoline dispensing facilities;
  - (H) dispensing equipment: equipment used solely to dispense diesel fuel, kerosene, lubricants or cooling oils;
  - (I) solvent recycling: portable solvent distillation systems used for on-site solvent recycling if:
    - (i) The portable solvent distillation system is not:
      - (I) owned by the facility, and
      - (II) operated at the facility for more than seven consecutive days; and
    - (ii) The material recycled is recycled at the site of origin;
  - (J) processes:
    - (i) electric motor burn-out ovens with secondary combustion chambers or afterburners;
    - (ii) electric motor bake-on ovens;
    - (iii) burn-off ovens for paint-line hangers with afterburners;
    - (iv) hosiery knitting machines and associated lint screens, hosiery dryers and associated lint screens, and hosiery dyeing processes where bleach or solvent dyes are not used;
    - (v) blade wood planers planing only green wood;
  - (K) solid waste landfills: municipal solid waste landfills (This Part does not apply to flares and other sources of combustion at solid waste landfills; these flares and other combustion sources are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph.);
  - (L) miscellaneous:
    - (i) motor vehicles, aircraft, marine vessels, locomotives, tractors or other self-propelled vehicles with internal combustion engines;

- (ii) non-self-propelled non-road engines, except generators, regulated by rules adopted under Title II of the Federal Clean Air Act (Generators are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph.);
  - (iii) portable generators regulated by rules adopted under Title II of the Federal Clean Air Act;
  - (iv) equipment used for the preparation of food for direct on-site human consumption;
  - (v) a source whose emissions are regulated only under Section 112(r) or Title VI of the Federal Clean Air Act;
  - (vi) exit gases from in-line process analyzers;
  - (vii) stacks or vents to prevent escape of sewer gases from domestic waste through plumbing traps;
  - (viii) refrigeration equipment that is consistent with Section 601 through 618 of Title VI (Stratospheric Ozone Protection) of the Federal Clean Air Act, 40 CFR Part 82, and any other regulations promulgated by EPA under Title VI for stratospheric ozone protection, except those units used as or in conjunction with air pollution control equipment (A unit used as or in conjunction with air pollution control equipment is required to be permitted under 15A NCAC 02Q .0300 unless it qualifies for another exemption under this Paragraph);
  - (ix) equipment not vented to the outdoor atmosphere with the exception of equipment that emits volatile organic compounds (Equipment that emits volatile organic compounds is required to be permitted under 15A NCAC 02Q .0300 unless it qualifies for another exemption under this Paragraph);
  - (x) equipment that does not emit any regulated air pollutants;
  - (xi) facilities subject only to a requirement under 40 CFR Part 63 (This Subpart does not apply when a control device is used to meet a MACT or GACT emission standard; a control device used to meet a MACT or GACT emission standard is required to be permitted under 15A NCAC 02Q .0300 unless it qualifies for another exemption under this Paragraph);
  - (xii) sources for which there are no applicable requirements;
  - (xiii) animal operations not required to have control technology under 15A NCAC 02D .1800 (If an animal operation is required to have control technology, it shall be required to have a permit under this Subchapter).

(2) activities exempted because of size or production rate:

(A) storage tanks;

- (i) above-ground storage tanks with a storage capacity of no more than 1100 gallons storing organic liquids with a true vapor pressure of no more than 10.8 pounds per square inch absolute at 70° F; or
  - (ii) underground storage tanks with a storage capacity of no more than 2500 gallons storing organic liquids with a true vapor pressure of no more than 10.8 psi absolute at 70° F;

(B) combustion and heat transfer equipment:

  - (i) fuel combustion equipment, except for internal combustion engines, firing exclusively kerosene, No. 1 fuel oil, No. 2 fuel oil, equivalent unadulterated fuels, or a mixture of these fuels or one or more of these fuels mixed with natural gas or liquefied petroleum gas with a heat input of less than:
    - (I) 10 million Btu per hour for which construction, modification, or reconstruction commenced after June 9, 1989; or
    - (II) 30 million Btu per hour for which construction, modification, or reconstruction commenced before June 10, 1989;

(Internal combustion engines are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph);

  - (ii) fuel combustion equipment, except for internal combustion engines, firing exclusively natural gas or liquefied petroleum gas or a mixture of these fuels with a heat input rating less than 65 million Btu per hour (Internal combustion engines are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph);
  - (iii) space heaters burning waste oil if:
    - (I) The heater burns only oil that the owner or operator generates or used oil from do-it-yourself oil changers who generate used oil as household wastes;
    - (II) The heater is designed to have a maximum capacity of not more than 500,000 Btu per hour; and
    - (III) The combustion gases from the heater are vented to the ambient air;
  - (iv) fuel combustion equipment with a heat input rating less than 10 million Btu per hour that is used solely for space heating except:
    - (I) space heaters burning waste oil, or
    - (II) internal combustion engines;
  - (v) emergency use generators and other internal combustion engines not regulated by rules adopted under Title II of the Federal Clean Air Act, except self-propelled vehicles, that have a rated capacity of no more than:

- (I) 680 kilowatts (electric) or 1000 horsepower for natural gas-fired engines;
  - (II) 1800 kilowatts (electric) or 2510 horsepower for liquefied petroleum gas-fired engines;
  - (III) 590 kilowatts (electric) or 900 horsepower for diesel-fired or kerosene-fired engines; or
  - (IV) 21 kilowatts (electric) or 31 horsepower for gasoline-fired engines;  
(Self-propelled vehicles with internal combustion engines are exempted under Subpart (1)(c)(L)(i) of this Paragraph.)

(vi) portable generators and other portable equipment with internal combustion engines not regulated by rules adopted under Title II of the Federal Clean Air Act, except self-propelled vehicles, that operate at the facility no more than a combined 350 hours for any 365-day period provided the generators or engines have a rated capacity of no more than 750 kilowatt (electric) or 1100 horsepower each and provided records are maintained to verify the hours of operation (Self-propelled vehicles with internal combustion engines are exempted under Subpart (1)(c)(L)(i) of this Paragraph.);

(vii) peak shaving generators that produce no more than 325,000 kilowatt-hours of electrical energy for any 12-month period provided records are maintained to verify the energy production on a monthly basis and on a 12-month basis;  
gasoline distribution: bulk gasoline plants with an average daily throughput of less than 4000 gallons;  
processes:

  - (i) graphic arts operations, paint spray booths or other painting or coating operations without air pollution control devices (water wash and filters that are an integral part of the paint spray booth are not considered air pollution control devices), and solvent cleaning operations located at a facility whose facility-wide actual emissions of volatile organic compounds are less than five tons per year (Graphic arts operations, coating operations, and solvent cleaning operations are defined in 15A NCAC 02Q .0803);
  - (ii) sawmills that saw no more than 2,000,000 board feet per year provided only green wood is sawed;
  - (iii) perchloroethylene dry cleaners that emit less than 13,000 pounds of perchloroethylene per year;
  - (iv) electrostatic dry powder coating operations with filters or powder recovery systems including electrostatic dry powder coating operations equipped with curing ovens with a heat input of less than 10,000,000 Btu per hour;

- 1                         (E)     miscellaneous:
- 2                             (i)     any source whose emissions would not violate any applicable emissions  
3                             standard and whose potential emissions of particulate, sulfur dioxide, nitrogen  
4                             oxides, volatile organic compounds, and carbon monoxide before air pollution  
5                             control devices, i.e., potential uncontrolled emissions, are each no more than  
6                             five tons per year and whose potential emissions of hazardous air pollutants are  
7                             below their lesser quantity cutoff except:  
8                                 (I)     storage tanks,  
9                                 (II)    fuel combustion equipment,  
10                              (III)    space heaters burning waste oil,  
11                              (IV)    generators, excluding emergency generators, or other non-self-  
12                                     propelled internal combustion engines,  
13                              (V)    bulk gasoline plants,  
14                              (VI)    printing, paint spray booths, or other painting or coating operations,  
15                              (VII)   sawmills,  
16                              (VIII)   perchloroethylene dry cleaners, or  
17                              (IX)    electrostatic dry powder coating operations, provided that the total  
18                                     potential emissions of particulate, sulfur dioxide, nitrogen oxides,  
19                                     volatile organic compounds, and carbon monoxide from the facility are  
20                                     each less than 40 tons per year and the total potential emissions of all  
21                                     hazardous air pollutants are below their lesser quantity cutoff emission  
22                                     rates or provided that the facility has an air quality permit. (A source  
23                                     identified in Sub-subpart (I) through (IX) of this Part is required to be  
24                                     permitted under 15A NCAC 02Q .0300 unless it qualifies for another  
25                                     exemption under this Paragraph);  
26                             (ii)    any facility whose actual emissions of particulate, sulfur dioxide, nitrogen  
27                                     oxides, volatile organic compounds, and carbon monoxide before air pollution  
28                                     control devices, i.e., uncontrolled emissions, are each less than five tons per  
29                                     year, whose potential emissions of all hazardous air pollutants are below their  
30                                     lesser quantity cutoff emission rate, and none of whose sources would violate an  
31                                     applicable emissions standard;  
32                             (iii)   any source that only emits hazardous air pollutants that are not also a particulate  
33                                     or a volatile organic compound and whose potential emissions of hazardous air  
34                                     pollutants are below their lesser quantity cutoff emission rates; or  
35                             (iv)    any incinerator covered under Subparagraph (c)(4) of 15A NCAC 02D .1201;  
36                             (F)     case-by-case exemption: activities that the applicant demonstrates to the satisfaction of  
37                                     the Director:

- (i) to be negligible in their air quality impacts;
  - (ii) not to have any air pollution control device; and
  - (iii) not to violate any applicable emission control standard when operating at maximum design capacity or maximum operating rate, whichever is greater.

(d) Because an activity is exempted from being required to have a permit does not mean that the activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.

(e) Emissions from stationary source activities identified in Paragraph (c) of this Rule shall be included in determining compliance with the toxic air pollutant requirements under 15A NCAC 02D .1100 or 02Q .0700 according to 15A NCAC 02Q .0702 (exemptions from air toxic permitting).

(f) The owner or operator of a facility or source claiming an exemption under Paragraph (c) of this Rule shall provide the Director documentation upon request that the facility or source is qualified for that exemption.

(g) If the Director finds that an activity exempted under Paragraph (c) of this Rule is in violation of or has violated a rule in 15A NCAC 02D, he shall revoke the permit exemption for that activity and require that activity to be permitted under this Subchapter if necessary to obtain or maintain compliance.

*History Note:* Authority G.S. 143-215.3(a)(1); 143-215.107(a)(4); 143-215.108;

*Temporary Adoption Eff. March 8, 1994 for a period of 180 days or until the permanent rule becomes effective, whichever is sooner;*

*Eff. July 1, 1994;*

*Amended Eff. April 1, 1999; July 1, 1998; July 1, 1997; November 1, 1996;*

*Temporary Amendment Eff. December 1, 1999;*

*Amended Eff. M*

*July 1, 2000.*

1 15A NCAC 02D .0961 is proposed for amendment as follows:

2

3 **15A NCAC 02D .0961    OFFSET LITHOGRAPHIC PRINTING AND LETTERPRESS PRINTING**

4 (a) For the purpose of this Rule, the ~~following~~ definitions listed in rules .0101, 0902 of this Section apply: and in Paragraph (a)(1) through (10) of this rule shall  
5 apply.

6 (1) "Composite partial vapor pressure" means the sum of the partial pressure of the compounds defined as volatile organic compounds. Volatile  
7 organic compounds composite partial vapor pressure is calculated as follows:

$$PP_c = \sum_{i=1}^n \frac{(W_i)(VP_i)/MW_i}{\frac{W_w}{MW_w} + \frac{W_c}{MW_c} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

8 Where:

9  $W_i$  = Weight of the "i" volatile organic compound, in grams

10  $W_w$  = Weight of water, in grams

11  $W_c$  = Weight of exempt compound, in grams

12  $MW_i$  = Molecular weight of the "i" volatile organic compound, in g/g-mole

13  $MW_w$  = Molecular weight of water, in g/g-mole

14  $MW_c$  = Molecular weight of exempt compound, in g/g-mole

15  $PP_c$  = Volatile organic compounds composite partial vapor pressure at 20 degrees Celsius (68 degrees Fahrenheit), in mm Hg

16  $VP_i$  = Vapor pressure of the "i" volatile organic compound at 20 degrees Celsius (68 degrees Fahrenheit), in mm Hg

17 (2) "First installation date" means the actual date when this control device becomes operational. This date does not change if the control device is  
18 later redirected to a new press.

19 (3) "Fountain solution" means water-based solution that applies to lithographic plate to render the non-image areas unreceptive to the ink.

20 (4) "Heatset" means any operation in which heat is required to evaporate ink oils from the printing ink, excluding ultraviolet (UV) curing, electron  
21 beam curing and infrared drying.

22 (5) "Letterpress printing" means a printing process in which the image area is raised relative to the non-image area and the paste ink is transferred  
23 to the substrate directly from the image surface.

24

- 1                 (6) "Non-heatset" means a lithographic printing process where the printing inks are set by absorption or oxidation of the ink oil, not by evaporation  
2                 of the ink oils in a dryer. For the purposes of this Rule, use of an infrared heater or printing conducted using ultraviolet-cured or electron  
3                 beam-cured inks is considered non-heatset.
- 4                 (7) "Offset lithography" means ~~an indirect method of a printing process that uses sheet-fed or web method of press feeding when and transfers ink transferred~~ from the lithographic plate to a rubber-covered intermediate "blanket" cylinder and then ~~transferred~~ from the blanket cylinder to the substrate.
- 5                 (8) "Press" means a printing production assembly composed of one or more units used to produce a printed substrate including any associated  
6                 coating, spray powder application, heatset web dryer, ultraviolet or electron beam curing units, or infrared heating units.
- 7                 (9) "Sheet-fed printing" means ~~indirect method of offset lithographic printing when ink transferred from the lithographic plate to a rubber covered intermediate "blanket" cylinder and then transferred from the blanket cylinder to the substrate, individual sheets of paper or other substrate are fed to the press.~~
- 8                 (10) "Web printing" means ~~offset lithographic~~ printing when continuous rolls of substrate material are fed to the press and rewound or cut to size  
9                 after printing.
- 10                 (b) This Rule applies to any offset lithographic and any letterpress printing operations sources ~~that are not covered by Subparagraph (c)(1) of Rule .0966 of this Section and whose emissions of volatile organic compounds exceed the threshold established in Paragraphs (b) and (f) of Rule .0902 of this Section and is not covered by Subparagraph (c)(1) of Rule .0966 of this Section~~ exceed:
- 11                         (1) ~~the threshold established in Paragraphs (b) and (f) of Rule .0902 of this Section; or~~  
12                         (2) ~~an equivalent level of three tons per 12-consecutive month rolling period.~~
- 13                 (c) Volatile organic compounds content in the fountain solution ~~from~~~~for~~ on-press (as-applied) ~~for~~ heatset web offset lithographic printing shall ~~not exceed 1.6 percent alcohol (by weight) in the fountain solution or equivalent. This level of control for volatile organic compounds shall be achieved by:~~ meet one of the following requirements or equivalent level of control as determined in permit conditions:
- 14                         (1) ~~reducing the on press (as applied) alcohol content to contain 1.6 percent alcohol or less, (by weight), by weight, as applied, in the fountain solution; or~~  
15                         (2) ~~use~~contain three percent alcohol or less (by weight) ~~less, by weight, the~~ on-press (as-applied) in the fountain solution if the fountain solution is refrigerated to below 60 degrees Fahrenheit; or  
16                         (3) ~~use~~contain five percent alcohol substitute or less (by weight)~~less, by weight, the~~ on-press (as-applied) and no alcohol in the fountain solution.

1       (d) Volatile organic compounds content in the fountain solution ~~from~~for on-press (as-applied) sheet-fed lithographic printing shall ~~not exceed five percent~~  
2       ~~alcohol (by weight) in the fountain or equivalent.~~ This level of control for volatile organic compounds shall be achieved by:meet one of the following  
3       requirements or equivalent level of control as determined in permit conditions:

- 4           (1) ~~reducing the on press (as applied) alcohol content to contain~~ five percent alcohol or less (by weight);less, by weight, on-press (as-applied) in the  
5           fountain solution; or
- 6           (2) ~~use contain~~ 8.5 percent alcohol or less (by weight) ~~the less, by weight,~~ on-press (as-applied) in the fountain solution if the fountain solution is  
7           refrigerated to below 60 degrees Fahrenheit; or
- 8           (3) ~~use contain~~ five percent alcohol substitute or less (by weight) ~~the less, by weight,~~ on-press (as-applied) and no alcohol ~~in the~~ in the fountain  
9           solution.

10      (e) Volatile organic compounds content ~~emissions from fountain solution from on-press (as applied)~~ for non-heatset web offset lithographic printing shall not  
11     exceed five percent alcohol substitute (by weight) ~~on-press (as applied)~~ and no alcohol in the fountain solution.

12      (f) Emissions of volatile organic compounds ~~from any single letterpress printing heatset press subject to this Rule shall not exceed 25 tons per year. This level of~~  
13     control shall be achieved by using petroleum ink oil with volatile organic compounds content 31.25 tons per year volatile organic compounds or less because of  
14     the 20 percent ink oil retention.

15      (g) EPA Method 25A (40CFR Part 60, Appendix A-7) shall be used to determine the volatile organic compounds content of the materials used at offset  
16     lithographic printing and letterpress printing facilities unless the facility maintains records to document the volatile organic compounds content of the materials  
17     from the manufacturer.

18      (h) Any single letterpress printing heatset dryer owner or operator subject to this Rule, who has chosen to use add-on  
19     control for letterpress printing operation rather than to comply with the emission limits established in Paragraph (f) of this Rule shall install control equipment  
20     with:

- 21           (1) 90 percent control efficiency for a control device whose first installation date was prior to July 1,  
22           2010;
- 23           (2) 95 percent control efficiency for a control device whose first installation date was on or after July 1,  
24           2010.

25      (i) When the inlet of volatile organic compounds concentration is low or there is no identifiable measurable inlet, the control device outlet concentration shall be  
26     reduced to 20 parts per million by volume as hexane on a dry basis.

1       (j) Volatile organic compounds capture efficiency can be demonstrated by showing that the dryer is operating at negative pressure relative to the surrounding  
2       pressroom. The capture efficiency for volatile organic compounds can be assumed to be 100 percent of the volatile organic compounds (ink oils) volatilized in  
3       the dryer. Capture efficiency test is not required in this situation.

4       (f) An owner or operator of an individual web offset lithographic printing press dryer or letterpress-printing heatset press subject to this Rule that emits 25 or  
5       more tons per year potential emissions of volatile organic compounds shall:

- 6       (1) use an enforceable limitation on potential emissions to keep individual heatset press below 25 tons per year potential to emit volatile organic  
7       compounds threshold, which can be achieved by using inks and coatings that contain less than 31.25 tons per year volatile organic compound  
8       where 20 percent retention factor of petroleum ink oil applies, or by using other methods established by permit conditions; or
- 9       (2) use an add-on control system for web offset lithographic printing or letterpress printing operations that meets one of the following  
10      requirements:
  - 11       (A) reduces volatile organic compounds emissions from each dryer by at least 90 percent volatile organic compounds emissions control  
12       efficiency established by procedures defined in Paragraph (h) of this rule for a control device from heatset dryers whose first  
13       installation date was prior to July 1, 2010; or
  - 14       (B) reduces volatile organic compounds emissions from each dryer by at least 95 percent volatile organic compounds emissions control  
15       efficiency established by procedures defined in Paragraph (h) of this rule for a control device from heatset dryers whose first  
16       installation date was on or after July 1, 2010; or
  - 17       (C) maintains a maximum volatile organic compounds outlet concentration of 20 parts per million by volume (ppmv), as hexane ( $C_6H_{14}$ )  
18       on a dry basis.

19       (k)(g) The control limits established in:

- 20       (1) Paragraphs (c), (d), and (e), shall not be applied to any press with total fountain solution reservoir of less than one gallon; and
- 21       (2) Paragraph (d) shall not be applied to sheet-fed presses with maximum sheet size 11x 17 inches or smaller; and
- 22       (3) Paragraph (f)(2) shall not be applied to a heatset press used for book printing, ~~and~~ or to a ~~heatset~~ heatset press with maximum web width of  
23       22 inches or less.

24       (h) If the owner or operator of a printing press is required by permit conditions to determine:

- 25       (1) the volatile organic compounds content, the EPA test Method 24 or approved alternative methods shall be used;
- 26       (2) the control efficiency by measuring volatile organic compounds at the control device inlet and outlet, the EPA test Methods 18, 25, 25A, or  
27       approved alternative methods shall be used.

1       ~~(f) All cleaning materials used in amount more than 110 gallons per year for cleaning a press, press parts, or to remove dried ink from areas around the press  
2 shall contain less than 70 weight percent volatile organic compounds or have volatile organic compounds composite vapor pressure less than 10 mm Hg at 20  
3 degrees Celsius.~~

4       ~~(i) All test methods defined in Paragraph (h) of this Rule, shall be conducted at typical operating conditions and flow rates.~~

5       ~~(j) The owner or operator of any facility subject to this Rule shall demonstrate compliance with RACT applicability requirements by calculating volatile organic  
6 compounds emissions and keep records of the basis of the calculations required by the Rules .0605 and .0903 of this Subchapter. Volatile organic compounds  
7 emissions from offset lithographic printing and letterpress printing shall be determined by permit condition requirements or by using the following retention and  
8 capture efficiency factors:~~

9       ~~(1) retention factors are:~~

10       ~~(A) 20 percent for heatset petroleum ink oils;~~

11       ~~(B) 100 percent for heatset vegetable ink oils;~~

12       ~~(C) 95 percent for sheet-fed and coldset web petroleum ink oils;~~

13       ~~(D) 100 percent for sheet-fed and coldset web vegetable ink oils.~~

14       ~~(2) retention factor is 50 percent for low volatile organic compounds composite vapor pressure cleaning materials in shop towels where:~~

15       ~~(A) volatile organic compounds composite vapor pressure of the cleaning material is less than 10 mm Hg at 20 °C; and~~

16       ~~(B) cleaning materials and used shop towels are kept in closed containers.~~

17       ~~(3) Carryover (capture) factors of volatile organic compounds from automatic blanket wash and fountain solution to offset lithographic heatset  
18 dryers are:~~

19       ~~(A) 40 percent VOC carryover (capture) factor for automatic blanket washing when the volatile organic compounds composite vapor  
20 pressure of the cleaning material is less than 10mm Hg at 20°C.~~

21       ~~(B) 70 percent VOC carryover (capture) factor for alcohol substitutes in fountain solution.~~

22       ~~(4) Capture efficiency for volatile organic compounds (petroleum ink oils) from oil-based~~

23       ~~paste inks and oil-based paste varnishes (coatings) in heatset web offset lithographic presses and heatset web letterpress presses shall be  
24 demonstrated by showing that the dryer is operating at negative pressure relative to the surrounding              pressroom. As long as the dryer is  
25 operated at negative pressure, the capture efficiency for VOC from the heatset lithographic inks and varnishes (coatings) formulated with low  
26 volatility ink oils is 100 percent of the VOC (ink oils) volatilized in the dryer. Capture efficiency test is not required in this situation~~

1       (k) Except as specified in this Paragraph, all cleaning materials used for cleaning a press, press parts, or to remove dried ink from areas around the press shall  
2       meet one of the following requirements:

3           (1) The volatile organic compounds content shall be less than 70 percent by weight, or;

4           (2) Composite partial vapor pressure of volatile organic compounds shall be less than 10 mm Hg at 20 degrees Celsius.

5       No more than 110 gallons per year of cleaning materials that do not meet the requirements of Subparagraph (1) or (2) of this Paragraph shall be used during any  
6       twelve consecutive months.

7       (l) The owner or operator of any facility subject to this Rule shall maintain the following records for a minimum of five years:

8           (1) parametric monitoring for processes and control devices as determined and at the frequency specified in the permit or by Paragraph (f) of this  
9           Rule; and

10          (2) the total amount of each individual or class of fountain solution and ink used monthly for the printing operations and the percentage of volatile  
11           organic compounds, alcohol, and alcohol substitute as applied in it; and

12          (3) the total amount of each individual or class of cleaning solutions used monthly with vapor pressure and the percentage of volatile organic  
13           compounds as applied in it; and

14          (4) the total amount of cleaning solutions used monthly with vapor pressure and the percentage of volatile organic compounds as applied which  
15           does not meet the vapor pressure or percentage of volatile organic compounds requirements of Paragraph (k) of this Rule; and

16          (5) temperature of fountain solutions for lithographic printing presses using alcohol at the frequency specified in the permit; and

17          (6) any other parameters required by the permit in accordance with the Rules .0903 and .0605 of this Subchapter.

18       (m) The owner or operator of any source subject to this Rule shall comply with Rules .0903, and .0958 of this Section.

19  
20       *History Note:* Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);

21       *Eff. September 1, 2010.*

22       *Amended Eff. May 1, 2013.*

23

1 15A NCAC 02D .0962 is proposed for amendment as follows:

2

3 **15A NCAC 02D .0962 INDUSTRIAL CLEANING SOLVENTS**

4 (a) For the purpose of this Rule, the following definitions apply:

5 (1) "Organic solvent" means a liquid hydrocarbon, such as methyl ethyl ketone or toluene, used to dissolve paints, varnishes, grease, oil, or other  
6 hydrocarbons.

7 (2) "Solvent cleaning" means the process of removing the excess penetrant from the surface or a part by wiping, flushing, or spraying with a  
8 solvent for the penetrant.

9 (3) "Wipe cleaning" The method of cleaning which utilizes a material such as a rag wetted with a solvent, prior to a physical rubbing process to  
10 remove contaminants from surfaces.

11 (b) This Rule applies, with exemptions defined in Paragraphs (c) and (d) of this Rule, to sources whose volatile organic compound emissions exceed the  
12 threshold established in Paragraph (b) of Rule .0902 of this Section from the following cleaning operations:

13 (1) spray gun cleaning;

14 (2) spray booth cleaning;

15 (3) large manufactured components cleaning;

16 (4) parts cleaning;

17 (5) equipment cleaning;

18 (6) line cleaning;

19 (7) floor cleaning;

20 (8) tank cleaning; and

21 (9) small manufactured components cleaning.

22 (c) Paragraph (e) of this Rule does not apply to any cleaning material used for:

23 (1) cleaning operations covered by Rules .0918, .0919, .0921, .0923, .0924, .0930, .0934, .0935, .0936, .0961, .0963, .0964, .0965, .0966, .0967,  
24 and .0968 of this Section.

25 (d) Cleaning operations of portable or stationary mixing vats, high dispersion mills, grinding mills, tote tanks and roller mills for manufacturing of coating, ink,  
26 or adhesive shall apply one or more of the following methods:

1       (1) use industrial cleaning solvents that either contains less than 1.67 pounds VOC per gallon or has an initial boiling point greater than 120  
2       degrees Celsius, and where the initial boiling point exceeds the maximum operating temperature by at least 100 degrees Celsius. The industrial  
3       cleaning solvents shall be collected and stored in closed containers; or

4       (2) implement the following work practices:

5           (A) maintain the equipment being cleaned as leak free; and

6           (B) drain volatile organic compounds containing cleaning materials from the cleaned equipment upon completion of cleaning;  
7           and

8           (C) store or dispose of volatile organic compounds containing cleaning materials, including waste solvent, in a manner that will prevent  
9           evaporation into atmosphere; and

10          (D) store all volatile organic containing cleaning materials in closed containers; or

11       (3) collect and vent the emissions from equipment cleaning to an add-on control system defined in Paragraph (g) of this Rule; or

12       (4) use organic solvents other than those defined in Paragraph (d)(1) of this Rule if no more than 60 gallons of fresh solvent shall be used per  
13       month (organic solvent that is reused or recycled either onsite or offsite for further use in equipment cleaning or the manufacture of coating,  
14       ink, or adhesive shall not be included in this limit); or

15       ~~(e) Cleaning operations covered by Rules .0918, .0919, .0921, .0923, .0924, .0930, .0934, .0935, .0936, .0961, .0963, .0964, .0965, .0966, .0967, and .0968 of~~  
16       ~~this Section are exempted from the requirements of this Rule.~~

17       ~~(f)~~(e) Any cleaning material of the nine cleaning operations listed in Paragraph (b) of this Rule shall have:

18           (1) volatile organic compounds content that does not exceed 0.42 pounds per gallon; or

19           (2) composite vapor limit of eight millimeters of mercury (mmHg) at 20 degrees Celsius.

20       ~~(f)~~(g) EPA Method 24 (40CFR Part 60, Appendix A-7) shall be used to determine the volatile organic compounds content of coating materials used in industrial  
21       cleaning solvents operations unless the facility maintains records to document the volatile organic compounds content of coating materials from the  
22       manufacturer.

23       ~~(g)~~(h) Facilities which have chosen to use add-on control rather than to comply with the emission limits established in Paragraph (e) of this Rule shall install  
24       control equipment with 85 percent overall efficiency.

25       ~~(g)~~(h) The owner or operator of any facility subject to this Rule shall comply with the Rules .0903 and .0958 of this Section.

27       *History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);*

1           *Eff. September 1, 2010.*  
2           *Amended Eff. May 1, 2013.*  
3

**ADDENDUM TO  
APPROVED ECONOMIC ANALYSIS**

**Rule Citation Number:** 15A NCAC 02D .0902, Applicability  
15A NCAC 02D .0903, Recordkeeping: Reporting: Monitoring  
15A NCAC 02D .0909, Compliance Schedule for Sources in Ozone Nonattainment and Maintenance Areas  
15A NCAC 02D .0951, RACT for Sources of Volatile Organic Compounds  
15A NCAC 02D .0961, Offset Lithographic Printing and Letterpress Printing  
15A NCAC 02D .0962, Industrial Cleaning Solvents  
15A NCAC 02Q .0102, Activities Exempted from Permits

**Rule Topic:** VOC RACT Applicability (513) and Clarifications (511) for Sources in Nonattainment Areas

**DENR Division:** Division of Air Quality

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**Initial OSBM approval:**

November 5, 2012  
[http://www.osbm.state.nc.us/files/pdf\\_files/DENR11052012.pdf](http://www.osbm.state.nc.us/files/pdf_files/DENR11052012.pdf)

**Reason for Addendum:**

This addendum is provided to describe the impact of changes made in response to comment on the fiscal note for this rulemaking. During the public comment period, comments were received resulting in minor wording changes and clarifications to Rule 15A NCAC 02D .0961, Offset Lithographic and Letterpress Printing. Any effect from these changes would only be realized under the unlikely scenario for which costs were estimated in the risk analysis section of the fiscal note rather than the most likely scenario's anticipated effects of the rule amendments on which the fiscal impact is based. No comments were received on the fiscal note itself.

**Rule Changes:**

In response to comment the language of paragraph 15A NCAC 02D .0961(f)(1) is revised as recommended in the EPA Control Techniques Guideline on which the rule is based, to clarify that volatile organic compound (VOC) emissions referenced in the paragraph are from petroleum ink oil. Redundant language in paragraph 02D .0961(f)(2) was removed. The format of paragraph 02D .0961(k) was revised to label the third provision of the paragraph as subparagraph (3).

Rule 15A NCAC 02D .0961 was also amended to clarify the date that delineates the level of control required for particular sources newly affected by the applicability amendments that use control devices to comply. The date clarification delineates the level of control required for particular sources that would be affected by the rule under the unlikely scenario that the area has a future violation of the 1997 8-hour ozone standard and this rule is determined to be a necessary contingency measure to bring the area back into attainment. The delineating date incorporated in 02D .0961(f)(2)(A) and (B) for the newly affected sources is the anticipated effective date of the rule amendments, May 1, 2013.

**Change to OSBM approved fiscal note:**

Because the impact associated with the rule amendments is based on the most likely scenario, and the estimates for the unlikely scenario were based on the average of several model plants costs and thus it's not possible to make a distinction in impact based on the date clarification, no changes are being made to the fiscal note calculations. The clarification of the date in the rule delineates the level of control required for particular sources affected by the rule under the unlikely scenario that the area has a future violation of the 1997 8-hour ozone standard and this rule is determined to be a necessary contingency measure to bring the area back into attainment. This unlikely scenario was included in the risk analysis section of the fiscal note. As described in the risk analysis section, implementation of the contingency measures is considered an unlikely scenario that is not expected to occur. An average of model plant costs for sources that would potentially be subject to this rule was used to estimate impact under the unlikely scenario that the requirements are required as contingency measures. Available data is not adequate to make a distinction in impact on the basis of the delineating date under the unlikely scenario. Addition of the clarifying date in the rule appropriately avoids inadvertently placing sources in a situation of noncompliance with a date that precedes the effective date of the amendments subjecting the sources to the requirements. Specification of the date appropriately defines requirements consistent with guidance in the Control Techniques Guidelines on which the rule requirements are based.

Although the unlikely scenario is described and potential associated costs are estimated in the risk analysis section of the fiscal note, the fiscal note impact is based on the most likely scenario that the nonattainment area is redesignated once the rule amendments become effective and a future violation of the 1997 8-hour ozone standard doesn't occur. Based on the construct of the fiscal note and use of average costs, there is no change to the calculated fiscal impact due to addition of the clarifying date under the unlikely scenario.

The minor changes to the rule made in response to comments clarify requirements on potentially affected sources under the unlikely scenario contemplated in the risk analysis section of the fiscal note rather than the most likely scenario anticipated outcome of the rule amendments on which the fiscal impact is based and do not result in a change in the calculated fiscal impact.

## CHAPTER II

**REGULATIONS PROPOSED FOR AMENDMENTS WITH CHANGES  
SECTION .0900 - VOLATILE ORGANIC COMPOUNDS**

15A NCAC 02D .0902 is proposed for amendment as follows:

**15A NCAC 02D .0902 APPLICABILITY**

(a) The rules in this Section do not apply except as specifically set out in this Rule.

(b) This Section applies to sources that emit greater than or equal to 15 pounds of volatile organic compounds per day, day unless specified otherwise in this Section.

(c) Rules .0925, .0926, .0927, .0928, .0931, .0932, .0933, and .0958 of this Section apply regardless of the level of emissions of volatile organic ~~compounds~~, compounds unless provisions specified in Paragraph (d)(1) of this Rule are applied.

(d) This Section does not apply to:

(1) sources that emit less than 800 pounds of volatile organic compounds per calendar month and that are:

(A) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments;

(B) bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratories;

(C) bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness; or

(D) research and development laboratory activities provided the activity produces no commercial product or feedstock material; or

(2) emissions of volatile organic compounds during startup or shutdown operations from sources which use incineration or other types of combustion to control emissions of volatile organic compounds whenever the off-gas contains an explosive mixture during the startup or shutdown operation if the exemption is approved by the Director as meeting the requirements of this Subparagraph.

(e) The following rules of this Section apply to facilities located statewide:

(1) .0925, Petroleum Liquid Storage in Fixed Roof Tanks, for fixed roof tanks at gasoline bulk plants and gasoline bulk terminals;

(2) .0926, Bulk Gasoline Plants;

(3) .0927, Bulk Gasoline Terminals;

(4) .0928, Gasoline Service Stations Stage I;

(5) .0932, Gasoline Truck Tanks and Vapor Collection Systems;

- 1                         (6) .0933, Petroleum Liquid Storage in External Floating Roof Tanks, for external floating roof tanks  
2                         at bulk gasoline plants and bulk gasoline terminals;  
3                         (7) .0948, VOC Emissions from Transfer Operations;  
4                         (8) .0949, Storage of Miscellaneous Volatile Organic Compounds; and  
5                         (9) .0958, Work Practices for Sources of Volatile Organic Compounds.

6 (f) Except as provided in Paragraph (e) of this Rule, The the Rules in this Section apply to facilities subject to  
7 Section 182(b)(2) of the Clean Air Act with potential to emit 100 or more tons per year of VOC and to facilities with  
8 potential to emit less than 100 tons per year of volatile organic compounds in categories for which the United States  
9 Environmental Protection Agency has issued Control Technique Guidelines with the potential to emit greater than or  
10 equal to 100 tons of volatile organic compounds per year that are located in the following moderate nonattainment  
11 areas: areas for the 1997 8-hour ozone standard as designated in 40 CFR 81.334:

- 12                         (1) Cabarrus County;  
13                         (2) Gaston County;  
14                         (3) Lincoln County;  
15                         (4) Mecklenburg County;  
16                         (5) Rowan County;  
17                         (6) Union County; and  
18                         (7) Davidson Township and Coddle Creek Township in Iredell County.

19 These facilities are subject to reasonably available control technology requirements under this Section and shall  
20 comply in accordance with Rule .0909 of this Section through use of Rule .0951 of this Section.

21 (g) If any county or part of a county to which this Section applies is later designated in 40 CFR 81.334 as  
22 attainment, attainment and becomes a maintenance area for the 1997 8-hour ozone standard, all sources in that  
23 county or part of county subject to Paragraph (f) of this Rule that achieved compliance in accordance with Rule  
24 .0909 of this Section subject to this Section before the redesignation to attainment shall continue to comply with this  
25 Section. Facilities with potential to emit less than 100 tons of volatile organic compounds per year for which the  
26 compliance date in Rule .0909 of this Section has not passed before redesignation of the area to attainment for the  
27 1997 ozone standard shall comply in accordance with Paragraph (h) of this Rule.

28 (h) If EPA reclassifies a violation of the 1997 ambient air quality standard for ozone occurs in the Charlotte-  
29 Gastonia-Rock Hill ozone nonattainment maintenance area as serious for ozone under Section 182 of the federal  
30 Clean Air Act, the rules in this Section shall apply to facilities in Cabarrus, Gaston, Lincoln, Mecklenburg, Rowan,  
31 and Union Counties and Davidson and Coddle Creek townships in Iredell County with the potential to emit at least  
32 50 tons of volatile organic compounds per year. Within 60 days of the reclassification, area, the Director shall  
33 initiate technical analysis to determine the control measures needed to attain and maintain the 1997 8-hour ambient  
34 air quality standard for ozone. By the following May 1, the Director shall implement the specific stationary source  
35 control measures contained in this Section that are required as part of the control strategy necessary to bring the area  
36 into compliance and to maintain compliance with the 1997 8-hour ambient air quality standard for ozone. The  
37 Director shall implement the rules in this Section identified as being necessary by the analysis by notice in the North

1    Carolina Register. The notice shall identify the rules that are to be implemented and shall identify whether the rules  
2    implemented are to apply in the areas listed in Paragraph (f) of this Rule. At least one week before the scheduled  
3    publication date of the North Carolina Register containing the Director's notice implementing rules in this Section,  
4    ~~the Director shall notice the applicability of these Rules to these facilities in the North Carolina Register and~~ shall  
5    send written notification to all permitted facilities within the counties in which the rules are being implemented that  
6    are or may be subject to the requirements of this Section informing them that they are or may be subject to the  
7    requirements of this Section. (For Mecklenburg County, "Director" means for the purpose of notifying permitted  
8    facilities in Mecklenburg County, the Director of the Mecklenburg County local air pollution control program.)  
9    Compliance shall be according to Rule .0909 of this Section.

10    (i) Sources whose emissions of volatile organic compounds are not subject to limitation under this Section may still  
11    be subject to emission limits on volatile organic compounds in Rules .0524, .1110, or .1111 of this Subchapter.

13    *History Note:*    Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);

14    *Eff. July 1, 1979;*

15    *Amended Eff. May 1, 2013; September 1, 2010; January 1, 2009; July 1, 2007; March 1, 2007;*  
16    *August 1, 2004; July 1, 2000; April 1, 1997; July 1, 1996; July 1, 1995; May 1, 1995; July 1,*  
17    *1994.*

20    15A NCAC 02D .0903 is proposed for amendment as follows:

## 22    **15A NCAC 02D .0903    RECORDKEEPING: REPORTING: MONITORING**

23    (a) The owner or operator of any volatile organic compound emission source or control equipment shall:

- 24        (1) install, operate, and maintain process and control equipment monitoring instruments or procedures  
25        as necessary to comply with the requirements of this Section; and  
26        (2) maintain, in writing, data and reports relating to monitoring instruments or procedures which will,  
27        upon review, document the compliance status of the volatile organic compound emission source or  
28        control equipment; such data and reports shall, as a minimum, be maintained ~~daily~~, daily unless  
29        otherwise specified in this Section.

30    (b) The owner or operator of any volatile organic compound emission source or control equipment subject to the  
31    requirements of this Section shall comply with the monitoring, recordkeeping, and reporting requirements in Section  
32    .0600 of this Subchapter.

34    *History Note:*    Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);

35    *Eff. July 1, 1979;*

36    *Amended Eff. May 1, 2013; April 1, 1999; July 1, 1993; July 1, 1991; December 1, 1989; January*  
37    *1, 1985.*

1  
2  
3  
4  
5 15A NCAC 02D .0909 is proposed for amendment as follows:  
6

7 **15A NCAC 02D .0909 COMPLIANCE SCHEDULES FOR SOURCES IN OZONE NONATTAINMENT**  
8 **AND MAINTENANCE AREAS**

9 (a) Applicability. With the exceptions in Paragraph (b) of this Rule, this Rule applies to all-sources located at any  
10 facility covered by Paragraph Paragraphs (f) ~~or and~~ (h) of Rule .0902 of this Section.

11 (b) Exceptions. This Rule does not apply to sources facilities required to comply with the requirements subject to  
12 rules listed of this Section under Paragraph (e) ~~of in~~ Rule .0902 of this Section. Facilities subject to Rules listed in  
13 Paragraph (e) of Rule .0902 shall comply in accordance with the provisions defined in those rules rather than the  
14 schedule in Paragraphs (c) and (d) of this Rule.

15 (c) Maintenance area ~~and Charlotte ozone nonattainment area~~ contingency plan. The owner or operator of any  
16 source subject to ~~this Rule because of the application of Paragraph (h) of Rule .0902 of this Section~~ Paragraph (a) in  
17 this Rule shall adhere to the following increments of progress and schedules:

18 (1) if compliance with applicable rules in this Section is to be achieved by installing emission control  
19 equipment, replacing process equipment, or modifying existing process equipment:

20 (A) The owner or operator shall submit a permit application and a compliance schedule  
21 within six months after the Director notices the implementation of rules in the North  
22 Carolina Register that resolves a violation of the ambient air quality standard for ozone;

23 (B) The compliance schedule shall contain the following increments of progress:  
24 (i) a date by which contracts for the emission control system and process equipment  
25 shall be awarded or orders shall be issued for purchase of component parts;  
26 (ii) a date by which on-site construction or installation of the emission control and  
27 process equipment shall begin; and  
28 (iii) a date by which on-site construction or installation of the emission control and  
29 process equipment shall be completed; and

30 (C) Final compliance with applicable rules in this Section shall be achieved within three  
31 years after the Director notices the implementation of rules in the North Carolina Register  
32 that resolves a violation of the ambient air quality standard for ozone.

33 (2) if compliance with applicable rules in this Section is to be achieved by using low solvent content  
34 coating technology:

35 (A) The owner or operator shall submit a permit application and a compliance schedule  
36 within six months after the Director notices the implementation of rules in the North  
37 Carolina Register that resolves a violation of the ambient air quality standard for ozone;

- (B) The compliance schedule shall contain the following increments:

  - (i) a date by which research and development of low solvent content coating shall be completed if the Director determines that low solvent content coating technology has not been sufficiently researched and developed to assure compliance;
  - (ii) a date by which evaluation of product quality and commercial acceptance shall be completed;
  - (iii)(i) a date by which purchase orders shall be issued for low solvent content coatings and process modifications;
  - (iv)(ii) a date by which process modifications shall be initiated; and
  - (v)(iii) a date by which process modifications shall be completed and use of low solvent content coatings shall begin; and

(C) Final compliance with applicable rules in this Section shall be achieved within ~~three years~~ two years after the Director notices the implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone. The owner or operator shall certify to the Director within five days after each increment deadline of progress defined in this Paragraph, whether the required increment of progress has been met. ~~nonattainment~~ nonattainment areas. The owner or operator of any source subject to ~~this Rule because~~ ~~of Paragraph (f) of Rule .0902 of this Section~~ Paragraph (a) of this Rule shall adhere to the increments of progress and schedules:  
if compliance with applicable rules in this Section is to be achieved by installing emission control equipment, replacing process equipment, or modifying existing process equipment:

  - (A) The owner or operator shall submit a permit application and a compliance schedule by August 1, 2007;
  - (B) The compliance schedule shall contain the following increments of progress:
    - (i) a date by which contracts for the emission control system and process equipment shall be awarded or orders shall be issued for purchase of component parts;
    - (ii) a date by which on-site construction or installation of the emission control and process equipment shall begin; and
    - (iii) a date by which on-site construction or installation of the emission control and process equipment shall be completed; and
  - (C) For facilities with potential to emit 100 tons or more of volatile organic compounds per year, final compliance with applicable rules in this Section shall be achieved no later than April 1, 2009;2009.
  - (D) For facilities with potential to emit less than 100 tons of volatile organic compounds per year, final compliance with applicable rules in this Section shall be achieved no later than May 1, 2016.

- (2) if compliance with applicable rules in this Section is to be achieved by using low solvent content coating technology:

(A) The owner or operator shall submit a permit application and a compliance schedule by August 1, 2007;

(B) The compliance schedule shall contain the following increments:

(i) ~~a date by which research and development of low solvent content coating shall be completed if the Director determines that low solvent content coating technology has not been sufficiently researched and developed;~~

(ii) ~~a date by which evaluation of product quality and commercial acceptance shall be completed;~~

(iii)(i) a date by which purchase orders shall be issued for low solvent content coatings and process modifications;

(iv)(ii) a date by which process modifications shall be initiated; and

(v)(iii) a date by which process modifications shall be completed and use of low solvent content coatings shall begin; and

(C) Final compliance with applicable rules in this Section shall be achieved no later than April 1, 2009.

(D) For facilities with potential to emit less than 100 tons of volatile organic compounds per year, final compliance with applicable rules in this Section shall be achieved no later than May 1, 2015.

(3) The owner or operator shall certify to the Director within five days after the deadline, for each increment of progress defined in this Paragraph, whether the required increment of progress has been met.

The Director requires a test to demonstrate that compliance has been achieved, the owner or operator of subject to this Rule shall conduct a test and submit a final test report within six months after the stated date compliance.

ces already in compliance.

(1) Maintenance area and Charlotte ozone nonattainment area contingency plan. Paragraph (c) of this Rule shall not apply to sources any source subject to Paragraph (a) of this Rule that is in compliance with applicable rules of this Section when the Director notices the implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone and that have determined and certified compliance to the satisfaction of the Director within six months after the Director notices the implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone.

(2) Moderate and Nonattainment nonattainment areas. Paragraphs Paragraph (d) of this Rule does not apply to sources in an area named in Paragraph (f) of Rule .0902 of this Section that subject to

1           Paragraph (a) of this Rule if they are in compliance with applicable rules of this Section on March  
2           1, 2007.

3           (g) New sources.

4           (1) Maintenance area ~~and Charlotte ozone nonattainment area~~ contingency plan. The owner or  
5           operator of any ~~new source of volatile organic compounds subject to Paragraph (a) of this Rule~~ not  
6           in existence or under construction before the date that the Director notices in the North Carolina  
7           Register in accordance with Paragraph (h) of Rule .0902 of this Section the implementation of  
8           rules in the North Carolina Register that resolves a violation of the ambient air quality standard for  
9           ozone, shall comply with all applicable rules in this Section upon start-up of the source.

10          (2) ~~Moderate and Nonattainment~~ nonattainment areas. The owner or operator of any new source ~~of~~  
11           ~~volatile organic compounds subject to Paragraph (a) of this Rule~~ not in existence or under  
12           construction before March 1, 2007 in an area identified in Paragraph (f) of Rule .0902 shall  
13           comply with all applicable rules in this Section upon start-up of the source.

15          History Note     Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);

16           *Eff. July 1, 1979;*

17           Amended Eff. May 1, 2013; September 1, 2010; January 1, 2009; July 1, 2007; March 1, 2007;  
18           July 1, 2000; April 1, 1997; July 1, 1995; July 1, 1994; July 1, 1988; January 1, 1985.

19          15A NCAC 02D .0951 is proposed for amendment as follows:

22          **15A NCAC 02D .0951     RACT FOR SOURCES OF VOLATILE ORGANIC**  
23           COMPOUNDS~~MISCELLANEOUS VOLATILE ORGANIC COMPOUND~~  
24           EMISSIONS

25          (a) Facilities required to install RACT pursuant to Rule .0902 of this Section shall determine the emissions control  
26           level according to this Rule. ~~With the exceptions in Paragraph (b) of this Rule, this Rule applies to all facilities that~~  
27           ~~use volatile organic compounds as solvents, carriers, material processing media, or industrial chemical reactants, or~~  
28           ~~in other similar uses, or that mix, blend, or manufacture volatile organic compounds for which there is no other~~  
29           ~~applicable emissions control rule in this Section except Rule .0958 of this Section.~~ If the only other applicable  
30           emissions control rule for the facility in this Section is Rule .0958, then both this Rule and Rule .0958 apply.

31          (b) This Rule does not apply to architectural or maintenance coating.

32          (c) The owner or operator of any facility to which this Rule applies ~~shall~~shall comply by either of the following:

- 33           (1) install and operate reasonable available control ~~technology~~technology as defined by category  
34           specific emission standards defined in this Section; or  
35           (2) limit emissions of volatile organic compounds from coating lines not covered by Rules .0922,  
36           .0923, .0924, .0934, .0935, .0936, or .0961 through .0968 from this Section to no more than 6.7  
37           pounds of volatile organic compounds per gallon of solids delivered to the coating

1                   applicator install and operate reasonable available control technology demonstrated to the Director  
 2                   and the U.S. Environmental Protection Agency to advance attainment.

3       (d) If the owner or operator of a facility chooses to install reasonable available control technology under  
 4 Subparagraph (e)(1)(c)(2) of this Rule, the owner or operator shall submit:

- 5                 (1) the name and location of the facility;
- 6                 (2) information identifying the source for which a reasonable available control technology limitation  
                  or standard is being proposed;
- 7                 (3) a demonstration that shows the proposed reasonable available control technology limitation or  
                  standard satisfies the requirements for reasonable available control technology; and
- 8                 (4) a proposal for demonstrating compliance with the proposed reasonable control technology  
                  limitation or standard.

12                  *History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);*

13                  *Eff. July 1, 1994;*

14                  *Amended Eff. May 1, 2013; September 1, 2010; July 1, 2000; July 1, 1996.*

16                  15A NCAC 02D .0961 is proposed for amendment with changes as follows:

#### 19                  **15A NCAC 02D .0961    OFFSET LITHOGRAPHIC PRINTING AND LETTERPRESS PRINTING**

20       (a) For the purpose of this Rule, the following definitions listed in rules .0101, 0902 of this Section apply: and in  
 21 Paragraph (a)(1) through (10) of this rule shall apply.

- 22                 (1) "Composite partial vapor pressure" means the sum of the partial pressure of the compounds  
                  defined as volatile organic compounds. Volatile organic compounds composite partial vapor  
                  pressure is calculated as follows:

$$PP_c = \sum_{i=1}^n \frac{(W_i)(VP_i)/MW_i}{\frac{W_w}{MW_w} + \frac{W_c}{MW_c} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

26                  Where:

27                  W<sub>i</sub> = Weight of the "i" volatile organic compound, in grams

28                  W<sub>w</sub> = Weight of water, in grams

29                  W<sub>c</sub> = Weight of exempt compound, in grams

30                  MW<sub>i</sub> = Molecular weight of the "i" volatile organic compound, in g/g-mole

31                  MW<sub>w</sub> = Molecular weight of water, in g/g-mole

32                  MW<sub>c</sub> = Molecular weight of exempt compound, in g/g-mole

33                  PP<sub>c</sub> = Volatile organic compounds composite partial vapor pressure at 20 degrees Celsius (68  
 34                   degrees Fahrenheit), in mm Hg

1            $VP_i$  = Vapor pressure of the "i" volatile organic compound at 20 degrees Celsius (68 degrees  
2           Fahrenheit), in mm Hg

- 3           (2) "First installation date" means the actual date when this control device becomes operational. This  
4           date does not change if the control device is later redirected to a new press.
- 5           (3) "Fountain solution" means water-based solution that applies to lithographic plate to render the  
6           non-image areas unreceptive to the ink.
- 7           (4) "Heatset" means any operation in which heat is required to evaporate ink oils from the printing  
8           ink, excluding ultraviolet (UV) curing, electron beam curing and infrared drying.
- 9           (5) "Letterpress printing" means a printing process in which the image area is raised relative to the  
10          non-image area and the paste ink is transferred to the substrate directly from the image surface.
- 11          (6) "Non-heatset" means a lithographic printing process where the printing inks are set by absorption  
12          or oxidation of the ink oil, not by evaporation of the ink oils in a dryer. For the purposes of this  
13          Rule, use of an infrared heater or printing conducted using ultraviolet-cured or electron beam-  
14          cured inks is considered non-heatset.
- 15          (7) "Offset lithography" means ~~an indirect method of a printing process that uses sheet-fed or web~~  
16          ~~method of press feeding when and transfers ink transferred~~ from the lithographic plate to a rubber-  
17          covered intermediate "blanket" cylinder and then ~~transferred~~ from the blanket cylinder to the  
18          substrate.
- 19          (8) "Press" means a printing production assembly composed of one or more units used to produce a  
20          printed substrate including any associated coating, spray powder application, heatset web dryer,  
21          ultraviolet or electron beam curing units, or infrared heating units.
- 22          (9) "Sheet-fed printing" means ~~indirect method of offset lithographic printing when ink transferred~~  
23          ~~from the lithographic plate to a rubber covered intermediate "blanket" cylinder and then~~  
24          ~~transferred from the blanket cylinder to the substrate. individual sheets of paper or other substrate~~  
25          ~~are fed to the press.~~
- 26          (10) "Web printing" means offset lithographic printing when continuous rolls of substrate material are  
27          fed to the press and rewound or cut to size after printing.

28         (b) This Rule applies to any offset lithographic and any letterpress printing operations sources ~~that are not covered~~  
29         ~~by Subparagraph (c)(1) of Rule .0966 of this Section and~~ whose emissions of volatile organic compounds ~~exceed the~~  
30         ~~threshold established in Paragraphs (b) and (f) of Rule .0902 of this Section and is not covered by Subparagraph~~  
31         ~~(e)(1) of Rule .0966 of this Section. Section exceed:~~

- 32           (1) the threshold established in Paragraphs (b) and (f) of Rule .0902 of this Section; or  
33           (2) an equivalent level of three tons per 12-consecutive month rolling period.

34         (c) Volatile organic compounds content in the fountain solution ~~from for~~ on-press (as-applied) ~~for~~ heatset web offset  
35         lithographic printing shall ~~not exceed 1.6 percent alcohol (by weight) in the fountain solution or equivalent. This~~  
36         ~~level of control for volatile organic compounds shall be achieved by: meet one of the following requirements or~~  
37         ~~equivalent level of control as determined in permit conditions:~~

- 1       (1) ~~reducing the on press (as applied) alcohol content to contain~~ 1.6 percent alcohol or less, ~~by weight); by weight, as applied, in the fountain solution; or~~
- 2       (2) ~~use contain~~ three percent alcohol or less ~~(by weight) less, by weight, the on-press (as-applied) in~~ the fountain solution if the fountain solution is refrigerated to below 60 degrees Fahrenheit; or
- 3       (3) ~~use contain~~ five percent alcohol substitute or less ~~(by weight) less, by weight, the on-press (as-~~ applied) and no alcohol in the fountain solution.

7       (d) Volatile organic compounds content in the fountain solution ~~from~~for on-press (as-applied) sheet-fed lithographic  
8 printing shall ~~not exceed five percent alcohol (by weight) in the fountain or equivalent. This level of control for~~  
9 ~~volatile organic compounds shall be achieved by:~~meet one of the following requirements or equivalent level of  
10 control as determined in permit conditions:

- 11      (1) ~~reducing the on press (as applied) alcohol content to contain~~ five percent alcohol or less ~~(by weight); less, by weight, on-press (as-applied) in the fountain solution; or~~
- 12      (2) ~~use contain~~ 8.5 percent alcohol or less ~~(by weight) the less, by weight, on-press (as-applied) in the~~ fountain solution if the fountain solution is refrigerated to below 60 degrees Fahrenheit; or
- 13      (3) ~~use contain~~ five percent alcohol substitute or less ~~(by weight) the less, by weight, on-press (as-~~ applied) and no alcohol in the fountain solution.

17      (e) Volatile organic compounds content ~~emissions from fountain solution from on press (as applied)~~for non-heatset  
18 web offset lithographic printing shall not exceed five percent alcohol substitute (by weight) on-press (as-applied)  
19 and no alcohol in the fountain solution.

20 ~~(f) Emissions of volatile organic compounds from any single letterpress printing heatset press subject to this Rule~~  
21 ~~shall not exceed 25 tons per year. This level of control shall be achieved by using petroleum ink oil with volatile~~  
22 ~~organic compounds content 31.25 tons per year volatile organic compounds or less because of the 20 percent ink oil~~  
23 ~~retention.~~

24 ~~(g) EPA Method 25A (40CFR Part 60, Appendix A 7) shall be used to determine the volatile organic compounds~~  
25 ~~content of the materials used at offset lithographic printing and letterpress printing facilities unless the facility~~  
26 ~~maintains records to document the volatile organic compounds content of the materials from the manufacturer.~~

27 ~~(h) Any single letterpress printing heatset dryer owner or operator subject to this Rule, who has chosen to use add on~~  
28 ~~control for letterpress printing operation rather than to comply with the emission limits established in Paragraph (f)~~  
29 ~~of this Rule shall install control equipment with:~~

- 30      (1) ~~90 percent control efficiency for a control device whose first installation date was prior to July 1,~~  
31 ~~2010;~~
- 32      (2) ~~95 percent control efficiency for a control device whose first installation date was on or after~~  
33 ~~July 1,~~  
34 ~~2010.~~

35 ~~(i) When the inlet of volatile organic compounds concentration is low or there is no identifiable measurable inlet,~~  
36 ~~the control device outlet concentration shall be reduced to 20 parts per million by volume as hexane on a dry basis.~~

1       (j) Volatile organic compounds capture efficiency can be demonstrated by showing that the dryer is operating at  
2 negative pressure relative to the surrounding pressroom. The capture efficiency for volatile organic compounds can  
3 be assumed to be 100 percent of the volatile organic compounds (ink oils) volatilized in the dryer. Capture  
4 efficiency test is not required in this situation.

5       (f) An owner or operator of an individual web offset lithographic printing press dryer or letterpress-printing heatset  
6 press subject to this Rule that emits 25 or more tons per year potential emissions of volatile organic compounds  
7 shall:

8           (1) use an enforceable limitation on potential emissions to keep individual heatset press below 25 tons  
9 per year potential to emit volatile organic compounds (petroleum ink oil) threshold, which can be  
10 achieved by using inks and coatings that contain less than 31.25 tons per year volatile organic  
11 compound (petroleum ink oil) where 20 percent retention factor of petroleum ink oil applies, or by  
12 using other methods established by permit conditions; or

13           (2) use an add-on control system for web offset lithographic printing or letterpress printing operations  
14 that meets one of the following requirements:

15              (A) reduces volatile organic compounds emissions from each dryer by at least 90 percent  
16 volatile organic compounds emissions control efficiency established by procedures  
17 defined in Paragraph (h) of this rule for a control device from heatset dryers whose first  
18 installation date was prior to July 1, 2010; or 2010 at facilities with potential to emit 100  
19 tons or more of volatile organic compounds per year and prior to May 1, 2013, at  
20 facilities with potential to emit less than 100 tons of volatile organic compounds per year;  
21 or

22              (B) reduce volatile organic compounds emissions from each dryer by at least 95 percent  
23 volatile organic compounds emissions control efficiency established by procedures  
24 defined in Paragraph (h) of this rule for a control device from heatset dryers whose first  
25 installation date was on or after July 1, 2010; or 2010 at facilities with potential to emit  
26 100 tons or more of volatile organic compounds per year and on or after May 1, 2013, at  
27 facilities with potential to emit less than 100 tons of volatile organic compounds per year;  
28 or

29              (C) maintain a maximum volatile organic compounds outlet concentration of 20 parts per  
30 million by volume (ppmv), as hexane ( $C_6H_{14}$ ) on a dry basis.

31       (k)(g) The control limits established in:

32           (1) Paragraphs (c), (d), and (e), shall not be applied to any press with total fountain solution reservoir  
33 of less than one gallon; and

34           (2) Paragraph (d) shall not be applied to sheet-fed presses with maximum sheet size 11x 17 inches or  
35 smaller; and

36           (3) Paragraph (f)(2) shall not be applied to a heatset press used for book printing, and/or to a  
37 heatset heatset press with maximum web width of 22 inches or less.

1       (h) If the owner or operator of a printing press is required by permit conditions to determine:

2           (1) the volatile organic compounds content, the EPA test Method 24 or approved alternative methods  
3           shall be used;

4           (2) the control efficiency by measuring volatile organic compounds at the control device inlet and  
5           outlet, the EPA test Methods 18, 25, 25A, or approved alternative methods shall be used.

6       ~~(1) All cleaning materials used in amount more than 110 gallons per year for cleaning a press, press parts, or to~~  
7       ~~remove dried ink from areas around the press shall contain less than 70 weight percent volatile organic compounds~~  
8       ~~or have volatile organic compounds composite vapor pressure less than 10 mm Hg at 20 degrees Celsius.~~

9       (i) All test methods defined in Paragraph (h) of this Rule, shall be conducted at typical operating conditions and flow  
10      rates.

11       (j) The owner or operator of any facility subject to this Rule shall demonstrate compliance with RACT applicability  
12      requirements by calculating volatile organic compounds emissions and keep records of the basis of the calculations  
13      required by the Rules .0605 and .0903 of this Subchapter. Volatile organic compounds emissions from offset  
14      lithographic printing and letterpress printing shall be determined by permit condition requirements or by using the  
15      following retention and capture efficiency factors:

16           (1) retention factors are:

- 17              (A) 20 percent for heatset petroleum ink oils;  
18              (B) 100 percent for heatset vegetable ink oils;  
19              (C) 95 percent for sheet-fed and coldset web petroleum ink oils;  
20              (D) 100 percent for sheet-fed and coldset web vegetable ink oils.

21           (2) retention factor is 50 percent for low volatile organic compounds composite vapor pressure  
22      cleaning materials in shop towels where:

- 23              (A) volatile organic compounds composite vapor pressure of the cleaning material is less than  
24              10 mm Hg at 20 °C; and  
25              (B) cleaning materials and used shop towels are kept in closed containers.

26           (3) Carryover (capture) factors of volatile organic compounds from automatic blanket wash and  
27      fountain solution to offset lithographic heatset dryers are:

- 28              (A) 40 percent VOC carryover (capture) factor for automatic blanket washing when the  
29              volatile organic compounds composite vapor pressure of the cleaning material is less than  
30              10mm Hg at 20°C.  
31              (B) 70 percent VOC carryover (capture) factor for alcohol substitutes in fountain solution.

32           (4) Capture efficiency for volatile organic compounds (petroleum ink oils) from oil-based  
33      paste inks and oil-based paste varnishes (coatings) in heatset web offset lithographic presses and  
34      heatset web letterpress presses shall be demonstrated by showing that the dryer is operating at  
35      negative pressure relative to the surrounding pressroom. As long as the dryer is operated at  
36      negative pressure, the capture efficiency for VOC from the heatset lithographic inks and varnishes

(coatings) formulated with low volatility ink oils is 100 percent of the VOC (ink oils) volatilized in the dryer. Capture efficiency test is not required in this situation

(k) Except as specified in this Paragraph, all cleaning materials used for cleaning a press, press parts, or to remove dried ink from areas around the press shall meet one of the following requirements:

- (1) The volatile organic compounds content shall be less than 70 percent by weight, or;
- (2) Composite partial vapor pressure of volatile organic compounds shall be less than 10 mm Hg at 20 degrees Celsius.
- (3) No more than 110 gallons per year of cleaning materials that do not meet the requirements of Subparagraph (1) or (2) of this Paragraph shall be used during any twelve consecutive months.

(l) The owner or operator of any facility subject to this Rule shall maintain the following records for a minimum of five years:

- (1) parametric monitoring for processes and control devices as determined and at the frequency specified in the permit or by Paragraph (f) of this Rule; and
- (2) the total amount of each individual or class of fountain solution and ink used monthly for the printing operations and the percentage of volatile organic compounds, alcohol, and alcohol substitute as applied in it; and
- (3) the total amount of each individual or class of cleaning solutions used monthly with vapor pressure and the percentage of volatile organic compounds as applied in it; and
- (4) the total amount of cleaning solutions used monthly with vapor pressure and the percentage of volatile organic compounds as applied which does not meet the vapor pressure or percentage of volatile organic compounds requirements of Paragraph (k) of this Rule; and
- (5) temperature of fountain solutions for lithographic printing presses using alcohol at the frequency specified in the permit; and
- (6) any other parameters required by the permit in accordance with the Rules .0903 and .0605 of this Subchapter.

(m) The owner or operator of any source subject to this Rule shall comply with Rules .0903, and .0958 of this Section.

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);*

*Eff. September 1, 2010.*

*Amended Eff. May 1, 2013.*

15A NCAC 02D .0962 is proposed for amendment as follows:

## **15A NCAC 02D .0962 INDUSTRIAL CLEANING SOLVENTS**

(a) For the purpose of this Rule, the following definitions apply:

- (1) "Organic solvent" means a liquid hydrocarbon, such as methyl ethyl ketone or toluene, used to dissolve paints, varnishes, grease, oil, or other hydrocarbons.

1                   (2) "Solvent cleaning" means the process of removing the excess penetrant from the surface or a part  
2                   by wiping, flushing, or spraying with a solvent for the penetrant.

3                   (3) "Wipe cleaning" The method of cleaning which utilizes a material such as a rag wetted with a  
4                   solvent, prior to a physical rubbing process to remove contaminants from surfaces.

5                   (b) This Rule applies applies, with exemptions defined in Paragraphs (c) and (d) of this Rule, to sources whose  
6                   volatile organic compound emissions exceed the threshold established in Paragraph (b) of Rule .0902 of this Section  
7                   from the following cleaning operations:

- 8                   (1) spray gun cleaning;  
9                   (2) spray booth cleaning;  
10                  (3) large manufactured components cleaning;  
11                  (4) parts cleaning;  
12                  (5) equipment cleaning;  
13                  (6) line cleaning;  
14                  (7) floor cleaning;  
15                  (8) tank cleaning; and  
16                  (9) small manufactured components cleaning.

17                  (c) Paragraph (e) of this Rule does not apply to any cleaning material used for:

- 18                  (1) cleaning operations covered by Rules .0918, .0919, .0921, .0923, .0924, .0930, .0934, .0935,  
19                  .0936, .0961, .0963, .0964, .0965, .0966, .0967, and .0968 of this Section.

20                  (d) Cleaning operations of portable or stationary mixing vats, high dispersion mills, grinding mills, tote tanks and  
21                  roller mills for manufacturing of coating, ink, or adhesive shall apply one or more of the following methods:

- 22                  (1) use industrial cleaning solvents that either contains less than 1.67 pounds VOC per gallon or has  
23                  an initial boiling point greater than 120 degrees Celsius, and where the initial boiling point  
24                  exceeds the maximum operating temperature by at least 100 degrees Celsius. The industrial  
25                  cleaning solvents shall be collected and stored in closed containers; or  
26                  (2) implement the following work practices:  
27                      (A) maintain the equipment being cleaned as leak free; and  
28                      (B) drain volatile organic compounds containing cleaning materials from the cleaned  
29                      equipment upon completion of cleaning; and  
30                      (C) store or dispose of volatile organic compounds containing cleaning materials, including  
31                      waste solvent, in a manner that will prevent evaporation into atmosphere; and  
32                      (D) store all volatile organic containing cleaning materials in closed containers; or  
33                  (3) collect and vent the emissions from equipment cleaning to an add-on control system defined in  
34                  Paragraph (g) of this Rule; or  
35                  (4) use organic solvents other than those defined in Paragraph (d)(1) of this Rule if no more than 60  
36                  gallons of fresh solvent shall be used per month (organic solvent that is reused or recycled either

1           onsite or offsite for further use in equipment cleaning or the manufacture of coating, ink, or  
2           adhesive shall not be included in this limit).

3       ~~(e) Cleaning operations covered by Rules .0918, .0919, .0921, .0923, .0924, .0930, .0934, .0935, .0936, .0961,~~  
4       ~~.0963, .0964, .0965, .0966, .0967, and .0968 of this Section are exempted from the requirements of this Rule.~~

5       ~~(d)(e)~~ Any cleaning material of the nine cleaning operations listed in Paragraph (b) of this Rule shall have:

- 6           (1) volatile organic compounds content that does not exceed 0.42 pounds per gallon; or  
7           (2) composite vapor limit of eight millimeters of mercury (mmHg) at 20 degrees Celsius.

8       ~~(e)(f)~~ EPA Method 24 (40CFR Part 60, Appendix A-7) shall be used to determine the volatile organic compounds  
9           content of coating materials used in industrial cleaning solvents operations unless the facility maintains records to  
10          document the volatile organic compounds content of coating materials from the manufacturer.

11       ~~(f)(g)~~ Facilities which have chosen to use add-on control rather than to comply with the emission limits established  
12          in Paragraph (e) of this Rule shall install control equipment with 85 percent overall efficiency.

13       ~~(g)(h)~~ The owner or operator of any facility subject to this Rule shall comply with the Rules .0903 and .0958 of this  
14          Section.

16       *History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);*

17           *Eff. September 1, 2010.*

18           *Amended Eff. May 1, 2013.*

20       15A NCAC 02Q .0102 is proposed for amendment as follows:

22       **15A NCAC 02Q .0102 ACTIVITIES EXEMPTED FROM PERMIT REQUIREMENTS**

23       (a) This Rule does not apply to facilities required to have a permit under Section .0500 of this Subchapter. This  
24          Rule applies only to permits issued under Section .0300 of this Subchapter.

25       (b) If a source is subject to any of the following rules, then the source is not exempted from permit requirements,  
26          and the exemptions in Paragraph (c) of this Rule do not apply:

- 27           (1) new source performance standards under 15A NCAC 02D .0524 or 40 CFR Part 60, except when  
28           the following activities are eligible for exemption under Paragraph (c) of this Rule:  
29           (A) 40 CFR Part 60, Subpart Dc, industrial, commercial, and institutional steam generating  
30           units;  
31           (B) 40 CFR Part 60, Subparts K, Ka, or Kb, volatile organic liquid storage vessels;  
32           (C) 40 CFR Part 60, Subpart AAA, new residential wood heaters;  
33           (D) 40 CFR Part 60, Subpart JJJ, petroleum dry cleaners;  
34           (E) 40 CFR Part 60, Subpart WWW, municipal solid waste landfills;  
35           (F) 40 CFR Part 60, Subpart IIII, stationary compression ignition internal combustion  
36           engines; or  
37           (G) 40 CFR Part 60, Subpart JJJJ, stationary spark ignition internal combustion engines;

- 1           (2) national emission standards for hazardous air pollutants under 15A NCAC 02D .1110 or 40 CFR  
2           Part 61, except asbestos demolition and renovation activities, which are eligible for exemption  
3           under Paragraph (c) of this Rule;
- 4           (3) prevention of significant deterioration under 15A NCAC 02D .0530;
- 5           (4) new source review under 15A NCAC 02D .0531 or .0532;
- 6           (5) sources of volatile organic compounds subject to the requirements of ~~15A NCAC 02D .0900~~  
7           Section .0900, Volatile Organic Compounds, that are located in Mecklenburg County according to  
8           ~~15A NCAC 02D .0902 (d); 15A NCAC 02D .0902(f)~~.
- 9           (6) sources required to apply maximum achievable control technology (MACT) for hazardous air  
10          pollutants under 15A NCAC 02D .1109, .1111, .1112, or 40 CFR Part 63 that are required to have  
11          a permit under Section .0500 of this Subchapter;
- 12          (7) sources at facilities subject to 15A NCAC 02D .1100. (If a source does not emit a toxic air  
13          pollutant for which the facility at which it is located has been modeled, it shall be exempted from  
14          needing a permit if it qualifies for one of the exemptions in Paragraph (c) of this Rule).

15       (c) The following activities do not need a permit or permit modification under Section .0300 of this Subchapter;  
16       however, the Director may require the owner or operator of these activities to register them under 15A NCAC 02D  
17       .0200:

- 18           (1) activities exempted because of category:
- 19           (A) maintenance, upkeep, and replacement:
- 20           (i) maintenance, structural changes, or repairs which do not change the capacity of  
21           such process, fuel-burning, refuse-burning, or control equipment, and do not  
22           involve any change in quality or nature or increase in quantity of emission of  
23           regulated air pollutants;
- 24           (ii) housekeeping activities or building maintenance procedures, including painting  
25           buildings, resurfacing floors, roof repair, washing, portable vacuum cleaners,  
26           sweeping, use and associated storage of janitorial products, or insulation  
27           removal;
- 28           (iii) use of office supplies, supplies to maintain copying equipment, or blueprint  
29           machines;
- 30           (iv) use of fire fighting equipment;
- 31           (v) paving parking lots; or
- 32           (vi) replacement of existing equipment with equipment of the same size, type, and  
33           function that does not result in an increase to the actual or potential emission of  
34           regulated air pollutants and that does not affect the compliance status, and with  
35           replacement equipment that fits the description of the existing equipment in the  
36           permit, including the application, such that the replacement equipment can be  
37           operated under that permit without any changes in the permit;

- (B) air conditioning or ventilation: comfort air conditioning or comfort ventilating systems that do not transport, remove, or exhaust regulated air pollutants to the atmosphere;
  - (C) laboratory activities:
    - (i) bench-scale, on-site equipment used exclusively for chemical or physical analysis for quality control purposes, staff instruction, water or wastewater analyses, or non-production environmental compliance assessments;
    - (ii) bench-scale experimentation, chemical or physical analyses, training or instruction from not-for-profit, non-production educational laboratories;
    - (iii) bench-scale experimentation, chemical or physical analyses, training or instruction from hospitals or health laboratories pursuant to the determination or diagnoses of illness; or
    - (iv) research and development laboratory activities provided the activity produces no commercial product or feedstock material;
  - (D) storage tanks:
    - (i) storage tanks used solely to store fuel oils, kerosene, diesel, crude oil, used motor oil, lubricants, cooling oils, natural gas or liquefied petroleum gas;
    - (ii) storage tanks used to store gasoline or ethanol-based fuels for which there are no applicable requirements except Stage I controls under 15A NCAC 02D .0928;
    - (iii) storage tanks used solely to store inorganic liquids; or
    - (iv) storage tanks or vessels used for the temporary containment of materials resulting from an emergency response to an unanticipated release of hazardous materials;
  - (E) combustion and heat transfer equipment:
    - (i) space heaters burning distillate oil, kerosene, natural gas, or liquefied petroleum gas operating by direct heat transfer and used solely for comfort heat;
    - (ii) residential wood stoves, heaters, or fireplaces;
    - (iii) hot water heaters which are used for domestic purposes only and are not used to heat process water;
  - (F) wastewater treatment processes: industrial wastewater treatment processes or municipal wastewater treatment processes for which there are no applicable requirements;
  - (G) gasoline distribution: gasoline service stations or gasoline dispensing facilities;
  - (H) dispensing equipment: equipment used solely to dispense diesel fuel, kerosene, lubricants or cooling oils;
  - (I) solvent recycling: portable solvent distillation systems used for on-site solvent recycling if:
    - (i) The portable solvent distillation system is not:
      - (I) owned by the facility, and

- (II) operated at the facility for more than seven consecutive days; and
  - (ii) The material recycled is recycled at the site of origin;

(J) processes:

  - (i) electric motor burn-out ovens with secondary combustion chambers or afterburners;
  - (ii) electric motor bake-on ovens;
  - (iii) burn-off ovens for paint-line hangers with afterburners;
  - (iv) hosiery knitting machines and associated lint screens, hosiery dryers and associated lint screens, and hosiery dyeing processes where bleach or solvent dyes are not used;
  - (v) blade wood planers planing only green wood;

(K) solid waste landfills: municipal solid waste landfills (This Part does not apply to flares and other sources of combustion at solid waste landfills; these flares and other combustion sources are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph.);

(L) miscellaneous:

  - (i) motor vehicles, aircraft, marine vessels, locomotives, tractors or other self-propelled vehicles with internal combustion engines;
  - (ii) non-self-propelled non-road engines, except generators, regulated by rules adopted under Title II of the Federal Clean Air Act (Generators are required to be permitted under 15A NCAC 02Q .0300 unless they qualify for another exemption under this Paragraph.);
  - (iii) portable generators regulated by rules adopted under Title II of the Federal Clean Air Act;
  - (iv) equipment used for the preparation of food for direct on-site human consumption;
  - (v) a source whose emissions are regulated only under Section 112(r) or Title VI of the Federal Clean Air Act;
  - (vi) exit gases from in-line process analyzers;
  - (vii) stacks or vents to prevent escape of sewer gases from domestic waste through plumbing traps;
  - (viii) refrigeration equipment that is consistent with Section 601 through 618 of Title VI (Stratospheric Ozone Protection) of the Federal Clean Air Act, 40 CFR Part 82, and any other regulations promulgated by EPA under Title VI for stratospheric ozone protection, except those units used as or in conjunction with air pollution control equipment (A unit used as or in conjunction with air

- 1                   pollution control equipment is required to be permitted under 15A NCAC 02Q  
2                   .0300 unless it qualifies for another exemption under this Paragraph);  
3                   (ix) equipment not vented to the outdoor atmosphere with the exception of  
4                   equipment that emits volatile organic compounds (Equipment that emits volatile  
5                   organic compounds is required to be permitted under 15A NCAC 02Q .0300  
6                   unless it qualifies for another exemption under this Paragraph);  
7                   (x) equipment that does not emit any regulated air pollutants;  
8                   (xi) facilities subject only to a requirement under 40 CFR Part 63 (This Subpart does  
9                   not apply when a control device is used to meet a MACT or GACT emission  
10                  standard; a control device used to meet a MACT or GACT emission standard is  
11                  required to be permitted under 15A NCAC 02Q .0300 unless it qualifies for  
12                  another exemption under this Paragraph);  
13                  (xii) sources for which there are no applicable requirements;  
14                  (xiii) animal operations not required to have control technology under 15A NCAC  
15                  02D .1800 (If an animal operation is required to have control technology, it shall  
16                  be required to have a permit under this Subchapter).

17                 (2) activities exempted because of size or production rate:

- 18                 (A) storage tanks:  
19                   (i) above-ground storage tanks with a storage capacity of no more than 1100  
20                   gallons storing organic liquids with a true vapor pressure of no more than 10.8  
21                   pounds per square inch absolute at 70o F; or  
22                   (ii) underground storage tanks with a storage capacity of no more than 2500 gallons  
23                   storing organic liquids with a true vapor pressure of no more than 10.8 psi  
24                   absolute at 70o F;  
25                 (B) combustion and heat transfer equipment:  
26                   (i) fuel combustion equipment, except for internal combustion engines, firing  
27                   exclusively kerosene, No. 1 fuel oil, No. 2 fuel oil, equivalent unadulterated  
28                   fuels, or a mixture of these fuels or one or more of these fuels mixed with  
29                   natural gas or liquefied petroleum gas with a heat input of less than:  
30                      (I) 10 million Btu per hour for which construction, modification, or  
31                      reconstruction commenced after June 9, 1989; or  
32                      (II) 30 million Btu per hour for which construction, modification, or  
33                      reconstruction commenced before June 10, 1989;  
34                   (Internal combustion engines are required to be permitted under 15A NCAC 02Q .0300  
35                   unless they qualify for another exemption under this Paragraph);  
36                   (ii) fuel combustion equipment, except for internal combustion engines, firing  
37                   exclusively natural gas or liquefied petroleum gas or a mixture of these fuels

1           with a heat input rating less than 65 million Btu per hour (Internal combustion  
2           engines are required to be permitted under 15A NCAC 02Q .0300 unless they  
3           qualify for another exemption under this Paragraph);

4           (iii) space heaters burning waste oil if:

5               (I)     The heater burns only oil that the owner or operator generates or used  
6                oil from do-it-yourself oil changers who generate used oil as household  
7                wastes;

8               (II)    The heater is designed to have a maximum capacity of not more than  
9                500,000 Btu per hour; and

10              (III)   The combustion gases from the heater are vented to the ambient air;

11           (iv) fuel combustion equipment with a heat input rating less than 10 million Btu per  
12           hour that is used solely for space heating except:

13               (I)     space heaters burning waste oil, or

14               (II)    internal combustion engines;

15           (v) emergency use generators and other internal combustion engines not regulated  
16           by rules adopted under Title II of the Federal Clean Air Act, except self-  
17           propelled vehicles, that have a rated capacity of no more than:

18               (I)     680 kilowatts (electric) or 1000 horsepower for natural gas-fired  
19                engines;

20               (II)    1800 kilowatts (electric) or 2510 horsepower for liquefied petroleum  
21                gas-fired engines;

22               (III)   590 kilowatts (electric) or 900 horsepower for diesel-fired or kerosene-  
23                fired engines; or

24               (IV)    21 kilowatts (electric) or 31 horsepower for gasoline-fired engines;

25              (Self-propelled vehicles with internal combustion engines are exempted under  
26              Subpart (1)(c)(L)(i) of this Paragraph.)

27           (vi) portable generators and other portable equipment with internal combustion  
28           engines not regulated by rules adopted under Title II of the Federal Clean Air  
29           Act, except self-propelled vehicles, that operate at the facility no more than a  
30           combined 350 hours for any 365-day period provided the generators or engines  
31           have a rated capacity of no more than 750 kilowatt (electric) or 1100  
32           horsepower each and provided records are maintained to verify the hours of  
33           operation (Self-propelled vehicles with internal combustion engines are  
34           exempted under Subpart (1)(c)(L)(i) of this Paragraph.);

35           (vii) peak shaving generators that produce no more than 325,000 kilowatt-hours of  
36           electrical energy for any 12-month period provided records are maintained to  
37           verify the energy production on a monthly basis and on a 12-month basis;

- 1                   (C) gasoline distribution: bulk gasoline plants with an average daily throughput of less than  
2                   4000 gallons;
- 3                   (D) processes:  
4                       (i) graphic arts operations, paint spray booths or other painting or coating  
5                       operations without air pollution control devices (water wash and filters that are  
6                       an integral part of the paint spray booth are not considered air pollution control  
7                       devices), and solvent cleaning operations located at a facility whose facility-  
8                       wide actual emissions of volatile organic compounds are less than five tons per  
9                       year (Graphic arts operations, coating operations, and solvent cleaning  
10                  operations are defined in 15A NCAC 02Q .0803);  
11                  (ii) sawmills that saw no more than 2,000,000 board feet per year provided only  
12                  green wood is sawed;  
13                  (iii) perchloroethylene dry cleaners that emit less than 13,000 pounds of  
14                  perchloroethylene per year;  
15                  (iv) electrostatic dry powder coating operations with filters or powder recovery  
16                  systems including electrostatic dry powder coating operations equipped with  
17                  curing ovens with a heat input of less than 10,000,000 Btu per hour;
- 18                  (E) miscellaneous:  
19                  (i) any source whose emissions would not violate any applicable emissions  
20                  standard and whose potential emissions of particulate, sulfur dioxide, nitrogen  
21                  oxides, volatile organic compounds, and carbon monoxide before air pollution  
22                  control devices, i.e., potential uncontrolled emissions, are each no more than  
23                  five tons per year and whose potential emissions of hazardous air pollutants are  
24                  below their lesser quantity cutoff except:  
25                       (I) storage tanks,  
26                       (II) fuel combustion equipment,  
27                       (III) space heaters burning waste oil,  
28                       (IV) generators, excluding emergency generators, or other non-self-  
29                       propelled internal combustion engines,  
30                       (V) bulk gasoline plants,  
31                       (VI) printing, paint spray booths, or other painting or coating operations,  
32                       (VII) sawmills,  
33                       (VIII) perchloroethylene dry cleaners, or  
34                       (IX) electrostatic dry powder coating operations, provided that the total  
35                       potential emissions of particulate, sulfur dioxide, nitrogen oxides,  
36                       volatile organic compounds, and carbon monoxide from the facility are  
37                       each less than 40 tons per year and the total potential emissions of all

hazardous air pollutants are below their lesser quantity cutoff emission rates or provided that the facility has an air quality permit. (A source identified in Sub-subpart (I) through (IX) of this Part is required to be permitted under 15A NCAC 02Q .0300 unless it qualifies for another exemption under this Paragraph);

- (ii) any facility whose actual emissions of particulate, sulfur dioxide, nitrogen oxides, volatile organic compounds, and carbon monoxide before air pollution control devices, i.e., uncontrolled emissions, are each less than five tons per year, whose potential emissions of all hazardous air pollutants are below their lesser quantity cutoff emission rate, and none of whose sources would violate an applicable emissions standard;
  - (iii) any source that only emits hazardous air pollutants that are not also a particulate

(F) case-by-case exemption: activities that the applicant demonstrates to the satisfaction of the Director:

- (i) to be negligible in their air quality impacts;
  - (ii) not to have any air pollution control device; and
  - (iii) not to violate any applicable emission control standard when operating at maximum design capacity or maximum operating rate, whichever is greater.

22 (d) Because an activity is exempted from being required to have a permit does not mean that the activity is  
23 exempted from any applicable requirement or that the owner or operator of the source is exempted from  
24 demonstrating compliance with any applicable requirement.

25 (e) Emissions from stationary source activities identified in Paragraph (c) of this Rule shall be included in  
26 determining compliance with the toxic air pollutant requirements under 15A NCAC 02D .1100 or 02Q .0700  
27 according to 15A NCAC 02Q .0702 (exemptions from air toxic permitting).

28 (f) The owner or operator of a facility or source claiming an exemption under Paragraph (c) of this Rule shall  
29 provide the Director documentation upon request that the facility or source is qualified for that exemption.

30 (g) If the Director finds that an activity exempted under Paragraph (c) of this Rule is in violation of or has violated a  
31 rule in 15A NCAC 02D, he shall revoke the permit exemption for that activity and require that activity to be  
32 permitted under this Subchapter if necessary to obtain or maintain compliance.

1           *Amended Eff. April 1, 1999; July 1, 1998; July 1, 1997; November 1, 1996;*  
2           *Temporary Amendment Eff. December 1, 1999;*  
3           *Amended Eff. May 1, 2013; January 1, 2009; July 1, 2007; June 29, 2006; July 18, 2002;*  
4           *July 1, 2000.*

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