

## Regulatory Impact Analysis

**Rule Topic:** Revisions to Volatile Organic Compound (VOC) Rules (532)

**RULE CITATION:** 15A NCAC 02D .0902 Applicability

**DENR Division:** Division of Air Quality

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**Impact Summary:** State government: No  
Local government: No  
Substantial impact: No  
Federal government: No

**Authority:** G.S. 143-215.3(a) (1); 143-215.107(a) (5); 62-133.8; S.L. 2013-413. G.S.150B-19.1(a).

**Necessity:** The Rule 15A NCAC 02D .0902, Applicability, needs to be amended to remove unnecessary requirements and reduce burden upon those persons or entities who must comply with this Rule in accordance with requirements of G.S.150B-19.1(a).

### I. Executive Summary

The purpose of this document is to provide a regulatory impact analysis of proposed amendments to the Rule 15A NCAC 02D .0902, Applicability, to satisfy the requirements under N.C.G.S. Chapter 150B and E.O. 70.

Rule 15A NCAC 02D .0902, Applicability, is proposed to be amended to remove unnecessary burden associated with permitting and complying with the work practice standards in 15A NCAC 02D .0958, Work Practices for Sources of Volatile Organic Compounds. The work practices are essentially designed to minimize or keep volatile organic compound (VOC) containing product evaporative losses down and include actions such as storing VOC materials in containers with tight lids when not in use, cleaning up spills as soon as possible, storing wipe rags in closed containers, and not splashing solvent when cleaning parts.

To effect this change, Rule 02D .0902 is proposed to be amended to narrow the current statewide applicability of work practice requirements under Rule 02D .0958 to the former Charlotte moderate

nonattainment area for the 1997 8-hour ozone national ambient air quality standard (NAAQS), now a maintenance area, where Clean Air Act (CAA) anti-backsliding provisions and maintenance requirements for the ozone standard currently continue to apply.

As a result of the amendments, affected facilities outside the maintenance area may incur some minimal savings of time due to elimination of monthly visual observation of work practices, monthly recording of those observations, and semi-annual reporting of the recorded observations for purposes of Rule 02D .0958. However, the work practices may continue in practice at facilities because of similar requirements under other applicable federal standards, the incentive of potential savings inherent from minimizing material losses, and compliance with worker safety practices included on material Safety Data Sheets under Office of Safety and Health Administration (OSHA) requirements. The Division of Air Quality (DAQ) may experience some minimal time savings from having one less permit condition to include or inspect for compliance at a facility; however, most facilities have many other applicable requirements for which the agency would continue to permit, inspect, and provide compliance assistance.

These rule amendments do not cause substantial economic impacts, as defined in the Administrative Procedure Act in N.C.G.S. 150B-21.4, meaning that the estimated impact does not exceed \$1,000,000 in a 12-month period. The proposed amendments are not estimated to impact the expenditure or distribution of state funds or expenditure or revenue of local government.

## **II. Background**

The rules in 15A NCAC 02D Section .0900 address VOC emissions and are largely based on requirements of the Clean Air Act (CAA) related to attainment of the NAAQS for ozone. Ozone is formed by a complex set of chemical reactions involving VOCs, nitrogen oxides (NO<sub>x</sub>), and sunlight. VOCs are emitted by various sources including industrial processes, mobile sources, and even natural sources such as trees. The rules in 02D .0900 address stationary source VOC emissions from industrial processes.

Rule 15A NCAC 02D .0902, Applicability, defines the general applicability of the various VOC related rules in Section .0900 in terms of generally applicable thresholds, geographic extent, and attainment status of a location relative to the ozone NAAQS. The bulk of the rules in the Section establish reasonably available control technology (RACT) requirements based on EPA Control Technique Guidelines (CTGs) applicable to sources that are in areas not attaining the NAAQS for ozone. Such areas are referred to as nonattainment areas. Former nonattainment areas that have come into attainment with a NAAQS are referred to as maintenance areas. Some of the rules in the Section apply statewide while others only apply to ozone nonattainment or subsequent maintenance areas.

Rule 02D .0902, Applicability, was amended effective July 1, 2000 to add a reference to newly adopted Rule 02D .0958, Work Practices for Sources of Volatile Organic Compounds, to the list of rules in Paragraph (e) that apply statewide. Rule 02D .0958 established work practice standards for all facilities that use volatile organic compounds as solvents, carriers, material processing media, industrial chemical reactants, or in similar uses that mix, blend, or manufacture VOC. At the time, North Carolina was facing the potential designation of multiple areas within the state as nonattainment for ozone relative to the 1997 NAAQS.

Currently, all areas of North Carolina are in attainment for the 1997 and subsequent ozone NAAQS; however, a maintenance plan for the 1997 8-hour ozone standard remains in place for the Charlotte area. Anti-backsliding provisions of the Clean Air Act require that RACT requirements implemented in an area prior to an area being re-designated to attainment of the NAAQS subsequently remain in place.

On April 30, 2004, the Environmental Protection Agency (EPA) designated the Charlotte area as a moderate nonattainment area with respect to the 1997 8-hour ozone NAAQS. As a result of this moderate nonattainment designation, North Carolina was required to amend its state implementation plan (SIP) to satisfy the requirements of section 182 of the Clean Air Act.

After the State had clean data demonstrating the NAAQS was being met and submitted an amended Rule 02D.0902 to the EPA as a part of a SIP revision, on December 2, 2013 the EPA approved the redesignation request and maintenance plan and published a notice in the *Federal Register* designating the area as having achieved attainment with the 1997 ozone standard. Per the maintenance plan and .0902, facilities with emissions of VOC will continue to comply with the RACT requirements implemented prior to redesignation including Rule 02D .0958 requirements. Under the maintenance plan provisions of Rule 02D.0902(f), rules in Section .0900, Volatile Organic Compounds, will apply to facilities located in the maintenance area with potential to emit less than 100 tons per year of VOCs in categories for which the EPA has issued CTGs only if the area has a violation of the 1997 8-hour ozone standard after redesignation and such measures are required to be implemented as a result of technical analysis triggered under the contingency plan provisions described in Rule 02D .0902(h). Provisions of the Rule 02D .0958 are part of the RACT requirements applicable to major sources and are based on CTGs issued as a part of EPA's recommendation of the RACT requirements.

### **III. Description of Existing Rules 15A NCAC 02D .0902 and .0958**

Rule 15A NCAC 02D .0902, Applicability, defines the general applicability of the various volatile organic compound (VOC) related rules in Section .0900. Under the current version of Rule 15A NCAC 02D .0902, Applicability, Rule 15A NCAC 02D .0958, is listed as a rule that applies to any facility with VOC emissions greater than or equal to 15 pounds per day located statewide with the exception of architectural or maintenance coating or sources subject to National Emission Standards for Hazardous Air Pollutants for Wood Furniture Manufacturing defined in 40 CFR Part 63, Subpart JJ. The Rule 02D .0958 regulates work practice standards such as VOC storage, mixing, and cleaning using VOC content material. 02D .0958 requires actions such as storing VOC materials in containers with tight lids when not in use, cleaning up spills as soon as possible, storing wipe rags in closed containers, and not splashing solvent when cleaning parts. Compliance with these work practice standards is determined by visual observations during routine source inspections and review of records of monthly visual inspections conducted by facility personnel by DAQ inspectors.

### **IV. Establishment of the Regulatory Baseline**

The State of North Carolina Budget Manual identifies "Baseline" as the best assessment of the way the world would look absent the proposed rule change. The current VOC work practice requirements in the Rule 02D .0902 that are enforceable by DAQ inspections and work practice requirements of the manufacturers' Safety Data Sheet (SDS) for mixing, and storing VOC content material or using VOC

content material for cleaning that are enforceable by OSHA under its Hazard Communication Standard (HCS) program are selected as the baseline for these amendments.

The regulatory baseline also includes a visual inspection that affected sources shall perform once per month of all operations and processes utilizing VOCs, keeping a logbook of the results of the inspections, and semiannual reporting of the observations to comply with permit requirements for those facilities required to have a permit.

Over time, many sources subject to Rule 02D .0958 have also become subject to federal Maximum Achievable Control Technology (MACT), Generally Available Control Technology (GACT), New Source Performance Standard (NSPS) or other requirements containing similar work practices and will have to continue any work practice requirements specified in those standards.

## **V. Changes from the Baseline**

The proposed amendments remove Rule 02D .0958, Work Practices for Sources of Volatile Organic Compounds, from the list of rules that apply statewide as regulated in Paragraph (e) of Rule 02D .0902 and thus narrow its applicability to the maintenance area for the 1997 8-hour ozone NAAQS consisting of Cabarrus, Gaston, Lincoln, Mecklenburg, Rowan, Union counties and Davidson Township and Coddle Creek Township in Iredell County. Antibacksliding provisions of the Clean Air Act require that the VOC RACT requirements previously implemented in a nonattainment area prior to redesignation of the area to attainment remain in place. Rule 02D .0958 was implemented as part of the RACT requirements applicable to major sources of VOC prior to the area's redesignation. As a result, sources in the maintenance area required to implement RACT requirements by a compliance deadline that preceded redesignation of the area to attainment and establishment of the maintenance plan for the 1997 8-hour ozone standard must continue to implement those requirements.

After the proposed amendments become effective, the requirements of the Rule 02D .0958 will apply to the affected sources with less than 100 tpy VOC emissions only if the area where the facility is located violates the 1997 ozone standard and requirements on less than 100 tpy sources are implemented as part of the contingency plan provisions. The amendment does not affect facilities with 100 tpy or more VOC emissions located in the area, as they will continue to comply with the Rule 02D .0958 without any changes because they were required to comply as part of RACT prior to the area being redesignated. All facilities with VOC emissions greater than or equal to 15 pounds per day located outside the maintenance area will no longer need to comply with the Rule 02D .0958.

That means that the current VOC work practice requirements referenced in the Rule 02D .0902(e) that are enforceable by DAQ inspections will no longer be part of permit conditions applicable for affected sources.

The amendments also make conforming changes to Paragraph (f) to update the current status of the area by adding the phrase "prior to January 2, 2014" to indicate that this area was designated as nonattainment only prior to January 2, 2014 which is the effective date of the redesignation. The current rule became effective prior to this date when this area still was designated as nonattainment. Finally, the amendments clarify the new status of the Rule 02D .0958 as applicable only to facilities subject to RACT requirements by specifically including this rule in the list of the rules which are part of RACT requirements in Rule 02D .0902(f).

## VI. Motivation for the Proposed Changes

As part of the ongoing review of rules to identify unnecessary requirements, Rule 02D .0958 was identified by DAQ staff as imposing unnecessary requirements.

Over time, the state of science and understanding of ozone formation has progressed. It has become more widely recognized that ozone formation in the Southeast is limited by the availability of NO<sub>x</sub> rather than VOCs. Ozone formation is promoted by strong sunlight, warm temperatures, and light winds. High concentrations tend to be a problem in the eastern United States only during the hot summer months when these conditions frequently occur. In its planning efforts the DAQ has examined both the manmade and natural sources of VOC emissions and their contribution to ozone formation in North Carolina. Because of the generally warm and moist climate of North Carolina, vegetation abounds in many forms, and forested lands naturally cover much of the state. As a result, the biogenic sector is the most abundant source of VOCs in North Carolina and accounts for approximately 90% of the total VOC emissions statewide. The overwhelming abundance of biogenic VOCs makes the majority of North Carolina a NO<sub>x</sub> limited environment for the formation of ozone. This is supported by a study published in the *Journal of Environmental Management* that concludes that the sensitivity of ozone to anthropogenic, or manmade, VOC emissions in the Southeastern United States is 2-3 orders of magnitude smaller than the sensitivity of ozone to NO<sub>x</sub> emissions, primarily due to the abundance of biogenic VOC emissions in this region.<sup>1</sup> As a result, controlling manmade VOC emissions in the Southeast is far less effective than controlling NO<sub>x</sub> emissions for purposes of reducing ozone levels.<sup>1</sup>

The removal of the Rule .0958 from the list of rules that apply statewide in Paragraph (e) of Rule 02D .0902, meets provisions of G.S.150B-19.1(a) to remove unnecessary requirements that are not required by federal or State law and thus reduce burden upon regulated facilities.

However, affected sources will likely continue to maintain work practices for sources of VOC because they are also part of the manufacturers' Safety Data Sheets (SDS) that are enforceable by OSHA under the Hazard Communication Standard program and are longstanding, generally accepted industry good housekeeping type practices.

## VII. Costs and Benefits by Affected Party

### State Impacts

Under the current Rule 02D .0902, VOC work practice standards are enforced by DAQ visual observations during routine source inspections. Based on discussion with DAQ compliance staff, visual observation and review of a facility's observation records are very simple and quick. The overall inspection time for all requirements varies from one hour for a small facility to 8 hours for a Title V facility. For purposes of this analysis, an estimated average time of 4 hours for inspection per facility was used. Based on discussion with DAQ compliance staff, staff estimates that 5% of the average inspection time is spent on determining compliance with 02D .0958. Thus approximate savings could be between 2 to 12 minutes on each facility annually. Such inspections are generally conducted every other year for non-Title V facilities and each year for the Title V facilities. The amount of time spent

<sup>1</sup> Odman, M Talat et al., *Quantifying the sources of ozone, fine particulate matter, and regional haze in the Southeastern United States*, 90 *Journal of Environmental Management* 3155-3168 (2009).

on inspection for any given facility relative to 02D .0958 can vary depending on the number of subject sources present at the facility.

A query of the DAQ's iBEAM database indicates that DAQ has approximately 1323 facilities reporting VOC emissions outside the maintenance area. The database indicates that 629 have Rule 02D .0958 permit conditions. Conservatively assuming all the facilities reporting VOC emissions are subject to Rule 02D .0958 and inspected by DAQ staff annually, at an average inspection time of 4 hours; and 5% of inspection time is spent on observations of work practices and record review to determine compliance with Rule 02D .0958, staff estimates the overall value of time saved by DAQ in a 12 month period to be approximately 265 hours. Although this is direct savings, the small fraction of time saved would likely be used to ensure compliance with other applicable requirements at the facility, so on net there would be little to no time saved. Therefore, the impact is minimal.

The proposed amendments would not require the expenditure or distribution of funds subject to the State Budget Act and are not expected to cause any additional costs to the state or change the allocation of state funds.

#### Local Government

The impact to state and local government facilities is expected to be minimal. Any state, local or federally owned facilities would experience similar burden reduction as a private sector source. There would be one less permit condition to include in a facility's permit and one less applicable requirement per subject source for which compliance must be determined. Any state, local or federally owned or operated facilities with sources subject to Rule 02D .0958 would be expected to receive the same type of benefits of burden reduction estimated for affected sources overall below.

There is one local air quality program, Mecklenburg County Air Quality, in the maintenance area and sources that previously had to comply with RACT prior to redesignation of the area to maintenance would have to continue to comply in that jurisdiction. There are two local air quality programs outside the maintenance area that implement 02D .0958 requirements in their areas of jurisdiction; however, impacts to the local air permitting programs are not included in this analysis because the DAQ cannot determine how the local programs will change their regulatory structure as a result of the changes to 02D .0902.

The rule change reduces burden on the regulated sources and no additional costs to local government are imposed.

#### Affected Sources

All facilities with VOC emissions, except facilities located in the Charlotte maintenance area, will no longer be required to perform a visual observation once per month of all operations and processes utilizing VOCs, maintain the results of the observations in a logbook, and submit semiannual summary reports of the VOC work practice observations to comply with permit requirements solely for the purposes of 02D .0958. Sources subject to federal maximum achievable control technology (MACT), generally available control technology (GACT), new source performance standard (NSPS) or other requirements will have to continue any similar work practice requirements specified in those standards.

As a maximum impact scenario, assuming all 1323 facilities reporting VOC emissions are subject to 02D .0958 recordkeeping and reporting requirements associated with permit conditions, facility staff

observations, recording, and reporting take the same amount of time as DAQ inspections. For purposes of this analysis, it is estimated that the overall time saved in a 12-month period to be a total of 3175 hours across all facilities. Therefore, the impact is minimal.

### **VIII. Conclusions**

The proposed rule amendments serve to reduce unnecessary burden associated with compliance with VOC work practice requirements. Overall, regulated sources and the DAQ may see minor savings of time related to reducing the unnecessary burden associated with visual observations, reporting, recordkeeping and inspection of VOC sources currently subject to work practice standards under Rule 02D .0958. Because the observation, the recordkeeping, and the reporting of VOC work practices is generally only a small part of the overall observation, recordkeeping, and reporting for all permit requirements, the savings is small. The minor time savings is estimated to total approximately 265 hours of DAQ staff time redirected to compliance with other applicable requirements during the inspections and 3175 hours of facility time over all facilities in a twelve month period.

The rule amendments do not impose additional costs to state government or require the expenditure or distribution of state funds.

The rule amendments do not impose costs or affect the expenditure or revenues of local government.

These rule amendments do not cause substantial economic impacts, as defined in the Administrative Procedure Act in N.C.G.S. 150B-21.4, meaning that the estimated impact does not exceed \$1,000,000 in a 12-month period.

1 15A NCAC 02D .0902 is proposed for amendment as follows:  
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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  
6 unless specified otherwise in this Section.

7 (c) Rules .0925, .0926, .0927, .0928, .0931, .0932, .0933, and .0958 of this Section apply regardless of the level of  
8 emissions of volatile organic 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  
12 control purposes, staff instruction, water or wastewater analyses, or non-production  
13 environmental compliance assessments;

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

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

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

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

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

25 (1) .0925, Petroleum Liquid Storage in Fixed Roof Tanks, for fixed roof tanks at gasoline bulk plants and  
26 gasoline bulk terminals;

27 (2) .0926, Bulk Gasoline Plants;

28 (3) .0927, Bulk Gasoline Terminals;

29 (4) .0928, Gasoline Service Stations Stage I;

30 (5) .0932, Gasoline Truck Tanks and Vapor Collection Systems;

31 (6) .0933, Petroleum Liquid Storage in External Floating Roof Tanks, for external floating roof tanks at  
32 bulk gasoline plants and bulk gasoline terminals;

33 (7) .0948, VOC Emissions from Transfer Operations;

34 (8) .0949, Storage of Miscellaneous Volatile Organic Compounds; and

35 ~~(9) .0958, Work Practices for Sources of Volatile Organic Compounds.~~

36 (f) Except as provided in Paragraph (e) of this Rule, the rules in this Section apply to facilities subject to Section  
37 182(b)(2) of the Clean Air Act with potential to emit 100 or more tons per year of VOC and to facilities with potential to

1 emit less than 100 tons per year of volatile organic compounds in categories for which the United States Environmental  
2 Protection Agency has issued Control Technique Guidelines that are located in the following moderate nonattainment  
3 areas for the 1997 8-hour ozone standard as designated in 40 CFR ~~81.334~~81.334 prior to January 2, 2014:

- 4 (1) Cabarrus County;
- 5 (2) Gaston County;
- 6 (3) Lincoln County;
- 7 (4) Mecklenburg County;
- 8 (5) Rowan County;
- 9 (6) Union County; and
- 10 (7) Davidson Township and Coddle Creek Township in Iredell County.

11 These facilities are subject to reasonably available control technology requirements under this Section and shall comply  
12 with these requirements in accordance with Rule .0909 of this Section through use of Rule .0951 of this ~~Section~~Section  
13 and with Rule .0958 of this Section.

14 (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  
15 becomes a maintenance area for the 1997 8-hour ozone standard, all sources in that county or part of county subject to  
16 Paragraph (f) of this Rule that achieved compliance in accordance with Rule .0909 of this Section shall continue to  
17 comply with this Section. Facilities with potential to emit less than 100 tons of volatile organic compounds per year for  
18 which the compliance date in Rule .0909 of this Section has not passed before redesignation of the area to attainment for  
19 the 1997 ozone standard shall comply in accordance with Paragraph (h) of this Rule.

20 (h) If a violation of the 1997 ambient air quality standard for ozone occurs when the areas listed in Paragraph (f) become  
21 ozone maintenance area, no later than 10 days after the violation occurs, the Director shall initiate technical analysis to  
22 determine the control measures needed to attain and maintain the 1997 8-hour ambient air quality standard for ozone. By  
23 the following May 1, the Director shall implement the specific stationary source control measures contained in this  
24 Section that are required as part of the control strategy necessary to bring the area into compliance and to maintain  
25 compliance with the 1997 8-hour ambient air quality standard for ozone. The Director shall implement the rules in this  
26 Section identified as being necessary by the analysis by notice in the North Carolina Register. The notice shall identify  
27 the rules that are to be implemented and shall identify whether the Rules implemented are to apply in the areas listed in  
28 Paragraph (f) of this Rule. At least one week before the scheduled publication date of the North Carolina Register  
29 containing the Director's notice implementing rules in this Section, the Director shall send written notification to all  
30 permitted facilities within the counties in which the Rules of this Section are being implemented notifying them that they  
31 are or may be subject to the requirements defined in Rule .0909 of this Section.

32 For Mecklenburg County, "Director" means, for the purpose of notifying permitted facilities in Mecklenburg County, the  
33 Director of the Mecklenburg County local air pollution control program.

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

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

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*Eff. July 1, 1979;*

*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; July 1, 1996; July 1, 1995; May 1, 1995; July 1, 1994.*