

# Texas Commission on Environmental Quality

## Interoffice Memorandum

**To:** Commissioners **Date:** November 18, 2011

**Thru:** Bridget Bohac, Chief Clerk  
Mark R. Vickery, P.G., Executive Director

**From:** Susana M. Hildebrand, P.E., Chief Engineer

**Docket No.:** 2010-1773-RUL

**Subject:** Commission Approval for Rulemaking Adoption  
Chapter 115, Control of Air Pollution from Volatile Organic Compounds  
Chapter 115 Volatile Organic Compounds (VOC) Storage Rule Revisions  
Rule Project No. 2010-025-115-EN

### **Background and reason(s) for the rulemaking:**

The United States Environmental Protection Agency (EPA) reclassified the nine-county Dallas-Fort Worth (DFW) area as a serious nonattainment area under the 1997 eight-hour ozone National Ambient Air Quality Standard (NAAQS) effective January 19, 2011 (75 FR 79302). Federal Clean Air Act (FCAA), §172(c)(1) and §182(b)(2) require the attainment demonstration state implementation plan (SIP) revision to provide for the implementation of reasonably available control technology (RACT) requirements for all major stationary sources of emissions and all emission source categories addressed in an EPA-issued control techniques guidelines (CTG) document. The EPA defines RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53761, September 17, 1979). The primary purpose of this rulemaking is to implement FCAA RACT requirements for the storage of VOC in the DFW 1997 eight-hour ozone nonattainment area (DFW area).

### **Scope of the rulemaking:**

The rulemaking revises Chapter 115, Subchapter B, Division 1 to implement FCAA RACT requirements for VOC storage tanks in the DFW area. The rulemaking repeals §§115.115 - 115.117; adopts new §§115.111, 115.115 - 115.118; and amends §§115.110, 115.112 - 115.114, and 115.119.

### **A.) Summary of what the rulemaking will do:**

The rulemaking amends the existing Chapter 115 rules to include additional requirements for low-leaking storage tank fittings and to limit situations when a floating roof storage tank is allowed to emit VOC because the roof is not floating on the liquid. Although the revised requirements implement RACT for the petroleum liquid storage CTG emission source category, these rules are more stringent than the EPA's RACT recommendations for these sources (EPA Document Numbers EPA-450/2-77-036, EPA-450/2-78-047, and EPA-453/R-94-001). This rulemaking also requires 95% control of flash emissions from crude oil and condensate storage tanks with uncontrolled VOC emissions that equal or exceed 50 tons per year (tpy). This requirement implements RACT for major stationary sources in serious nonattainment areas. The TCEQ has determined that these new and

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revised control requirements are technologically and economically feasible and therefore represent RACT for the storage of VOC. In addition, the rulemaking clarifies and adds specificity to the existing rule requirements for storage tanks in all affected areas, including the Houston-Galveston-Brazoria 1997 eight-hour ozone nonattainment (HGB) area, the Beaumont-Port Arthur 1997 eight-hour ozone maintenance (BPA) area, and Aransas, Bexar, Calhoun, El Paso, Gregg, Matagorda, Nueces, San Patricio, Travis, and Victoria Counties.

**B.) Scope required by federal regulations or state statutes:**

The rulemaking implements RACT requirements for VOC storage in the DFW area as required by FCAA, §172(c)(1) and §182(b)(2).

**C.) Additional staff recommendations that are not required by federal rule or state statute:**

***General clarification of rule requirements***--The rulemaking reformats the existing rule in Chapter 115, Subchapter B, Division 1 to simplify and clarify the requirements. Some of these formatting changes include: clarifying rule applicability and definitions in §115.110; repealing §115.117 and adopting new §115.111 to move exemptions to the beginning of the division; repealing §115.116 and adopting new §115.115 and §115.118 to split the monitoring and recordkeeping requirements into separate sections; adopting new §115.116 to contain specific requirements for testing; and repealing §115.115 and adopting new §115.117 to move approved test methods after all test-related requirements. In addition, the rule includes other non-substantive revisions to update the rule language to current *Texas Register* style and format requirements.

***Explicit control options***--The rule revision clearly specifies design and operational parameters, along with monitoring and recordkeeping requirements, for several control devices not explicitly listed in the current rule but commonly used at affected sites.

- ***Vapor recovery units***--The rulemaking defines vapor recovery unit and specifies design and operational parameters, and monitoring requirements for these devices.
- ***Flares***--The rulemaking specifies design and operational requirements for flares. The rule revisions specifically allow the use of flares that are designed and operated in accordance with 40 Code of Federal Regulations (CFR) §60.18(b) - (f). In addition to complying with the operating parameters in 40 CFR §60.18, the commission is specifying that flares must be lit at all times when VOC vapors are routed to the device.
- ***Other devices***-- The rulemaking includes general monitoring, testing, and recordkeeping requirements to account for the emergence of unlisted devices.

***Testing requirements***--The rulemaking specifically requires an initial control efficiency demonstration for certain control devices installed to comply with the control requirements; the demonstration is intended to be a clarification of the existing requirements and is not intended to impose any additional requirements on affected sources. The control device is required to be retested after any modification that could

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reasonably be expected to decrease the efficiency of a control device. A flare is required to meet the one time testing requirements in 40 CFR §60.18(f) to verify the design.

*Floating roof landings*--An additional clarification is provided in the restrictions on the landing of floating roofs in the HGB area. The revised rule requires emissions to be controlled from the moment the storage tank has been emptied to the extent practical or the drain pump loses suction until the tank is within 10% of being refilled. Another change allows floating roof landings when necessary for preventative maintenance, roof repair, primary seal inspection, or removal and installation of a secondary seal, as long as product is not transferred into or out of the storage tank, emissions are minimized, and the repair is completed within seven calendar days. The same provision will apply to sources in the DFW area beginning March 1, 2013.

**Statutory authority:**

The repealed, amended, and new sections are adopted under Texas Water Code (TWC), §5.102, concerning General Powers, that provides the commission with the general powers to carry out its duties under the TWC; TWC, §5.103, concerning Rules, that authorizes the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §5.105, concerning General Policy, that authorizes the commission by rule to establish and approve all general policy of the commission; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, that authorizes the commission to adopt rules consistent with the policy and purposes of the Texas Clean Air Act. The repealed, amended, and new sections are also adopted under THSC, §382.002, concerning Policy and Purpose, that establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, that authorizes the commission to control the quality of the state's air; and THSC, §382.012, concerning State Air Control Plan, that authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air. The repealed, amended, and new sections are also adopted under THSC, §382.016, concerning Monitoring Requirements; Examination of Records, that authorizes the commission to prescribe reasonable requirements for the measuring and monitoring of air contaminant emissions and THSC, §382.021, concerning Sampling Methods and Procedures, that authorizes the commission to prescribe the sampling methods and procedures to determine compliance with its rules. The repealed, amended, and new sections are also adopted under FCAA, 42 United States Code (USC), §§7401 *et seq.*, which requires states to submit SIP revisions that specify the manner in which the NAAQS will be achieved and maintained within each air quality control region of the state. The repealed, amended, and new sections implement THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021, and FCAA, 42 USC, §§7401 *et seq.*

**Effect on the:**

**A.) Regulated community:**

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The rulemaking clarifies and adds specificity to the rule requirements for the owners and operators of VOC storage tanks in all affected areas that are currently subject to these rules, including the DFW, HGB, and BPA areas, and in Aransas, Bexar, Calhoun, El Paso, Gregg, Matagorda, Nueces, San Patricio, Travis, and Victoria Counties. Sources that are currently affected by these rules will continue to be affected by the adopted revisions. For sources in the DFW area, the rulemaking also includes new and revised control requirements that the TCEQ has determined are technologically and economically feasible and therefore represent RACT for the storage of VOC. The rulemaking incorporates additional RACT requirements in the DFW area for affected owners and operators of floating roof storage tanks by requiring low-leaking tank fittings and limiting floating roof landings. The rulemaking also implements new RACT requirements for major sources in the DFW area by requiring 95% control of flash emissions from crude oil and condensate storage tanks, prior to custody transfer, with uncontrolled VOC emissions that equal or exceed 50 tpy.

**B.) Public:** The rule revisions are not expected to directly affect the general public. However, people living or working near these sources may benefit from reductions of VOC emissions.

**C.) Agency programs:** The rule revisions may increase the workload for Office of Compliance and Enforcement staff when inspecting affected facilities to verify compliance with any new Chapter 115 VOC storage requirements.

**Stakeholder meetings:**

Stakeholder meetings were held June 24, 25, and 28, 2010, in Arlington, Austin, and Beaumont. A videoconference link of the Austin meeting was provided in Corpus Christi, El Paso, Houston, San Antonio, and Tyler. The stakeholder meetings were open to all participants, and stakeholders had the opportunity to submit informal written comments on the rule project. Attendees included private citizens, industry representatives, consultants, and environmental groups. Stakeholders expressed desire for VOC controls on all crude oil and condensate storage tanks, preferably installation of vapor recovery units. Stakeholders suggested that these regulations be included in either the permit by rule for maintenance or individual permits for maintenance, startup, and shutdown emissions rather than Chapter 115. Some stakeholders questioned the need for VOC controls in the DFW area since they would not advance attainment of the ozone NAAQS. The same group also questioned the need for controls on floating roof tanks since the VOC stored in the DFW area is different than the VOC stored in the HGB area and suggested that the rule revision wait until promulgation of a new ozone standard. Other stakeholders told of their success in controlling these emissions. Several stakeholders asked for a definition of condensate. No changes were made in response to these stakeholder suggestions.

**Public comment:**

Public hearings on the proposal were held on July 14, 2011, at 10:00 AM and 6:30 PM at the Arlington City Council Chambers in Arlington; on July 18, 2011, at 6:30 PM at the

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Houston-Galveston Area Council offices in Houston; and on July 22, 2011, at 10:00 AM and 2:00 PM at the Texas Commission on Environmental Quality headquarters in Austin. The July 22, 2011, hearing scheduled for 10:00 AM was not officially opened because no party indicated a desire to provide comment. Oral comments regarding Chapter 115 were presented by Barnett Shale Energy Education Council (BSEEC), Earthworks Oil & Gas Accountability Project (Earthworks), Lone Star Chapter of the Sierra Club (LSCSC), and North Texas Clean Air Steering Committee (NTCASC) and nine individuals.

Written comments regarding Chapter 115 were provided by BSEEC, COPPs for Clean Air (COPPs), Commissioners Court of Denton County (Denton), Emission Reduction Systems (ERS), KIDS for Clean Air (KIDS), LSCSC, NTCASC, REM Technology, Inc (REM), Texas Oil and Gas Association (TxOGA), Texas Pipeline Association (TPA), the EPA, and 370 individuals.

Local government organizations, LSCSC, and the individuals requested more stringent controls including lowering the applicability threshold on upstream oil and condensate storage tanks from 25 to 5.0 tpy. Industry groups requested either no new controls, controls only on major sources, or an extended compliance schedule, and use of Method 21. The EPA suggested additional recordkeeping requirements and preamble explanation.

**Significant changes from proposal:**

The commission proposed to control flash emissions from crude oil and condensate storage tanks, prior to custody transfer, in the DFW area with uncontrolled VOC emissions that equal or exceed 25 tpy. The 25 tpy threshold was proposed because preliminary analysis indicated that additional VOC reductions, beyond those reductions achieved from controlling flash emissions from major sources with uncontrolled VOC emissions that equal or exceed 50 tpy, were necessary to help meet FCAA Reasonable Further Progress (RFP) requirements. However, the commission has since determined that these additional VOC emission reductions are not necessary to meet RFP requirements. Therefore, the requirements to control flash emissions from crude oil and condensate storage tanks, prior to custody transfer, in the DFW area will only apply to major sources with uncontrolled VOC emissions that equal or exceed 50 tpy.

The commission is adopting a 95% control requirement on VOC storage tanks in the DFW area because it is technologically and economically feasible. The commission has determined that the 95% control requirement represents RACT for crude oil and condensate storage tanks prior to custody transfer that are major sources and for affected floating roof tanks in the DFW area.

In addition, the commission is also adopting a provision that specifies if the commission publishes notice in the *Texas Register* that the DFW area has been reclassified as severe for the 1997 eight-hour ozone standard, the control requirements for flash emissions will apply to major sources with uncontrolled VOC emissions that equal or exceed 25 tpy. Once the commission publishes notice in the *Texas Register*, affected sources will have 15 months to

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comply with these control requirements. The commission is adopting this provision to avoid a duplicative demonstration of the technological and economic feasibility of controlling flash emissions from crude oil and condensate storage tanks, prior to custody transfer, in the DFW area with uncontrolled VOC emissions that equal or exceed 25 tpy. The commission has determined these requirements represent RACT for major sources. The photochemical modeling and corroborative analyses show the DFW area will attain the 1997 eight-hour ozone standard in 2012. However, if in the future the DFW area were reclassified to severe for the 1997 eight-hour ozone standard, the commission would be required to implement RACT for major stationary sources with the potential to emit at least 25 tpy.

In response to comments from TxOGA the compliance date for the new and revised rule requirements has been extended to March 1, 2013. In response to comments from the EPA, records of degassing events are now required if an owner or operator extends compliance until the next time the storage tank is emptied and degassed. Also in response to industry comments, Method 21 has been added as an approved test method.

**Potential controversial concerns and legislative interest:**

Emissions from upstream oil and gas operations in the Barnett Shale have generated significant public, legislative, and media interest. Owners and operators of VOC storage tanks in the DFW area required to add controls or comply with new operational limits may object to the rule changes.

The production-based applicability threshold (barrels per year) for the requirement to control flash emissions from condensate storage tanks in the DFW area is based on an emission factor of 33.3 pounds of VOC per barrel of condensate. This emission factor provides a conservative estimate of the production threshold below which a regulated entity is exempt from demonstrating that the uncontrolled VOC emissions from an affected storage tank or tank battery are below 50 tpy. Above this production threshold, the regulated entity must either demonstrate that the uncontrolled VOC emissions from the affected storage tank or tank battery are below 50 tpy or install controls in accordance with the rule requirements. However, new data from Phase II of the Barnett Shale Special Inventory indicate that a lower emission factor may be more representative of the average VOC emissions per barrel of condensate in the 23-county Barnett Shale area, which includes the DFW area. Industry may object to the use of the 33.3 pounds of VOC per barrel emission factor to determine rule applicability for sources in the DFW area.

**Does this rulemaking affect any current policies or require development of new policies?** No.

**What are the consequences if this rulemaking does not go forward? Are there alternatives to rulemaking?**

FCAA, §172(c)(1) and §182(b)(2) require the attainment demonstration SIP revision to provide for the implementation of RACT requirements for all major stationary sources of

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emissions and all emission source categories addressed in an EPA-issued CTG document. The rulemaking implements FCAA RACT requirements for the storage of VOC in the DFW area. If the rules are not adopted, the EPA may determine that the state has not met its obligation to implement RACT and could then issue a finding of Failure to Submit concerning this SIP requirement. If a RACT determination was not submitted to EPA within 18 months of such a finding, Texas would be subject to sanctions by the EPA under FCAA, §179.

**Key points in the adoption rulemaking schedule:**

<b><i>Texas Register</i> proposal publication date:</b>	June 24, 2011
<b>Anticipated <i>Texas Register</i> publication date:</b>	December 23, 2011
<b>Anticipated effective date:</b>	December 29, 2011
<b>Six-month <i>Texas Register</i> filing deadline:</b>	December 24, 2011

**Agency contacts:**

Robert Gifford, Rule Project Manager, 239-3149 Air Quality Division  
Amy Browning, Staff Attorney, 239-0891  
Charlotte Horn, Texas Register Coordinator, 239-0779

**Attachments**

None.

cc: Chief Clerk, 2 copies  
Executive Director's Office  
Susana M. Hildebrand, P.E.  
Anne Idsal  
Curtis Seaton  
Ashley Morgan  
Office of General Counsel  
Robert Gifford  
Charlotte Horn