

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
**AGENDA ITEM REQUEST**  
for Proposed State Implementation Plan (SIP) Revision

**AGENDA REQUESTED:** April 23, 2013

**DATE OF REQUEST:** April 4, 2013

**INDIVIDUAL TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED:** Joyce-Spencer-Nelson, (512) 239-5017

**CAPTION: Docket No. 2012-2361-SIP.** Consideration for publication of, and hearing on, proposed revisions to the Stage II Vapor Recovery Program State Implementation Plan (SIP revision).

The proposed SIP revision would incorporate proposed revisions to Chapter 115, Subchapter C, Division 4 (Rule Project No. 2013-001-115-AI) specifying that new gasoline dispensing facilities are not required to install Stage II equipment and requiring existing gasoline dispensing facilities in the current program areas to properly decommission existing Stage II equipment no later than August 31, 2018. Gasoline dispensing facilities electing to retain Stage II equipment until the mandatory removal date of August 31, 2018 would be required to comply with current Stage II rules. The proposed SIP revision would also include an assessment demonstrating that decommissioning of Stage II vapor controls would not interfere with attainment or maintenance of the ozone National Ambient Air Quality Standard. (Santos Olivarez, Chrissie Angeletti) (Non-rule Project No.2013-002-SIP-NR).

Steve Hagle  
\_\_\_\_\_  
**Deputy Director**

David Brymer  
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**Division Director**

Joyce Spencer-Nelson  
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**Agenda Coordinator**

**Copy to CCC Secretary? NO X YES**

# Texas Commission on Environmental Quality

## Interoffice Memorandum

**To:** Commissioners **Date:** April 4, 2013

**Thru:** Bridget C. Bohac, Chief Clerk  
Zak Covar, Executive Director

**From:** Steve Hagle, P.E., Deputy Director, Office of Air

**Docket No.:** 2012-2361-SIP

**Subject:** Commission Approval for Proposed Stage II SIP Revision  
SIP Project No. 2013-002-SIP-NR

### **Background and reason(s) for the SIP revision:**

The United States Environmental Protection Agency (EPA) finalized a rulemaking (published in the May 16, 2012, *Federal Register*, 77 FR 28772) for 40 Code of Federal Regulations (CFR) Part 51, determining that vehicle on-board refueling vapor recovery (ORVR) technology is in widespread use for the purposes of controlling motor vehicle refueling emissions throughout the motor vehicle fleet. This action allows the EPA to waive the requirement for states to implement Stage II gasoline vapor recovery systems at gasoline dispensing facilities (GDFs) in ozone nonattainment areas classified as serious and above for the National Ambient Air Quality Standard (NAAQS). States that have implemented a Stage II program may revise their Stage II State Implementation Plan (SIP) showing that the air quality will be maintained after removing the Stage II equipment.

Vehicle ORVR provides greater pollution reduction than Stage II control systems. Given the widespread use of ORVR, the use of Stage II control systems are not cost-effective. Stage II, a volatile organic compounds (VOC) control strategy, is a requirement of Federal Clean Air Act (FCAA), §182(b)(3), that requires the installation of technology at GDFs to prevent gasoline vapors from escaping during the refueling of on-road motor vehicles. Currently, the Stage II program is required in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties in the Houston-Galveston-Brazoria (HGB) area; Collin, Dallas, Denton, and Tarrant Counties in the Dallas-Fort Worth (DFW) area; El Paso County (ELP); and Hardin, Jefferson, and Orange Counties in the Beaumont-Port Arthur (BPA) area.

Vehicle ORVR systems are passive systems that force gasoline vapors displaced from a vehicle's fuel tank during refueling to be directed into a carbon-canister holding system within the vehicle and ultimately to the engine where the vapors are consumed. The EPA required ORVR systems to be phased in beginning with 1998 model-year light duty gasoline vehicles and since 2006, all new light and medium duty gasoline vehicles are equipped with ORVR.

The existing Stage II SIP revision, last revised on March 23, 2005, requires all owners or operators of GDFs to install Stage II vapor recovery equipment unless construction began prior to November 15, 1992 regardless of throughput. The existing SIP revision also

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requires that all Stage II vapor recovery systems must be ORVR compatible by April 1, 2007.

In response to the EPA's final rule, an enforcement discretion directive was executed by the executive director on August 23, 2012. The directive stated that the owners and operators of new GDFs in the current Stage II program areas will not be subject to enforcement if Stage II equipment is not installed on or after May 16, 2012. The executive director also instructed Texas Commission on Environmental Quality (TCEQ) staff to initiate rulemaking and a SIP revision for the decommissioning of Stage II vapor control equipment at affected GDFs.

A corresponding rulemaking (Rule Project Number 2013-001-115-AI), relating to the proper decommissioning of Stage II vapor recovery equipment, would be proposed concurrently as revisions to the Stage II SIP.

**Scope of the SIP revision:**

The proposed SIP revision would revise Chapters 1 through 10 of the Stage II Vapor Recovery Program to incorporate proposed revisions to the Stage II rules in Chapter 115 and add new Chapters 11 and 12 to discuss the decommissioning process and demonstrate noninterference under FCAA, §110(l). The proposed SIP revision would authorize and require owners or operators of existing GDFs in the current program areas to properly decommission Stage II equipment. The proposed SIP revision would maintain requirements for owners or operators of GDFs electing to continue monitoring and testing of equipment until the equipment has been completely decommissioned at the site. The Stage II Vapor Recovery Program SIP narrative also includes requirements that will be revised or removed once a facility has completed decommissioning, such as the TCEQ investigations and training requirements. Revisions to the Stage II rules in 30 Texas Administrative Code (TAC) Chapter 115, Subchapter C, Division 4 are being proposed concurrently.

According to the EPA's guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012, for decommissioning Stage II, the executive director will need to demonstrate under FCAA, §110(l) that the air quality will not be affected by the decommissioning of, or failure to install, Stage II equipment. An assessment has been performed of the exact amount of benefit loss from removing Stage II and any effect on air quality programs in the four Texas ozone nonattainment areas using the method documented in the EPA's guidance document and found that removal of Stage II requirements does not interfere with attainment or maintenance of the ozone NAAQS in the Texas air quality plans. A detailed analysis is included in the proposed Stage II SIP revision.

**A.) Summary of what the SIP revision will do:**

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The proposed SIP revision would incorporate activities related to decommissioning of Stage II equipment included in the corresponding proposed rulemaking. Revisions to the SIP include:

- New definitions of “Decommissioning” and “Gasoline Dispensing Facility” will be added.
- The Applicability Section would be revised to specify applicability of the Stage II requirements will continue until the owner or operator of a GDF completes decommissioning. Owners or operators of GDFs that began construction of permanent gasoline dispensing equipment on or after May 16, 2012 or had begun construction before May 16, 2012 but can certify that Stage II equipment has not been installed prior to May 16, 2012 would not be required to install Stage II vapor control equipment.
- Verification of approved systems at GDFs that elect to continue maintaining Stage II equipment would continue until the GDF completes decommissioning or August 31, 2018, the date by which the owners or operators of all GDFs must complete decommissioning of their equipment.
- Training would continue until GDFs complete Stage II decommissioning.
- Public information will continue to be made available relating to Stage II vapor recovery requirements until all decommissioning has been completed on August 31, 2018.
- Owners or operators of GDFs will be required to submit decommissioning notification forms and checklists to the TCEQ 10 calendar days after decommissioning is completed and keep records on site for five years following the completion of decommissioning.
- TCEQ investigations for Stage II and appropriate penalties would continue until decommissioning is completed at the GDF.
- Owners or operators of GDFs would be allowed to begin decommissioning activities 30-calendar days following the EPA approval of this SIP revision.
- A FCAA, §110(l), Noninterference Demonstration will be incorporated that specifies the proposed revisions to the Stage II SIP would not interfere with attainment or maintenance of the ozone NAAQS.

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

None

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**C.) Additional staff recommendations that are not required by federal rule or state statute:** None

**Statutory authority:**

Texas Water Code (TWC), §5.103, and §5.105, authorizes the commission to adopt rules necessary to carry out its powers and duties under the TWC; and under Texas Health and Safety Code (THSC), §382.017, which authorizes the commission to adopt rules consistent with the policy and purposes of the Texas Clean Air Act. THSC, §382.002 also establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; §382.011, which authorizes the commission to control the quality of the state's air; §382.012, which authorizes the commission to prepare and develop a general, comprehensive plan for the control of the state's air; and §382.019, which authorizes the commission to adopt Stage II rules in nonattainment areas if demonstrated as necessary for attainment of the ozone NAAQS, or upon a determination that it is necessary to protect public health; and §382.208, which authorizes the commission to develop and implement transportation programs and other measures necessary to demonstrate attainment and protect the public from exposure to hazardous air contaminants from motor vehicles.

**Effect on the:**

**A.) Regulated community:**

The proposed SIP revision will have an effect on the current owners of GDFs and licensed contractors who install, uninstall, test, and monitor the Stage II equipment. Removal of the Stage II equipment will cost GDFs approximately \$600 per gasoline dispenser with total costs depending on the number of gasoline dispensers at the GDF. GDFs that remove the Stage II equipment as soon as authorized may realize a positive impact from no longer having to monitor and test the equipment. Testing costs, dependent on the type of equipment at a GDF, range from \$250 to \$350 for annual inspections and around \$350 for a more comprehensive test required once every three years. Stage II equipment is deteriorating at older GDFs that have participated in the program for the past 20 years, and the cost to maintain and repair Stage II equipment may average up to \$1,000 per year depending on the type of equipment being maintained or repaired. Businesses that manufacturer, sell, monitor, and test the Stage II equipment may be negatively impacted due to Stage II being decommissioned and monitoring no longer being necessary.

**B.) Public:**

No impact is anticipated.

**C.) Agency programs:**

The TCEQ's Office of Compliance and Enforcement's (OCE) Field Operations Division has Stage II investigators and contracts with five other local government entities that currently monitor and inspect Stage II equipment and installments. These same programs will be

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needed to monitor the decommissioning activities, but will also see their workload for Stage II activities lessen as GDF owners decommission their equipment.

**Stakeholder meetings:**

Informal stakeholder meetings on the widespread use determination of ORVR and potential Stage II decommissioning issues were held in October 2012 in Arlington, Austin, Beaumont, El Paso, and Houston. The stakeholders consisted of industry representatives including installers and testers, GDF owners and operators, and local governments with Stage II inspection and monitoring programs funded through contacts with TCEQ. Stakeholders generally offered acknowledgement that ORVR was in widespread use and were in support of a decommissioning process that could begin as soon as possible and was consistent with industry-recommended procedures.

**Potential controversial concerns and legislative interest:**

The TCEQ would have to demonstrate to the EPA that removing Stage II equipment would not interfere with attainment and maintenance with the ozone NAAQS. A FCAA, §110(l) demonstration has been developed to explain how the loss of volatile organic compounds reductions from the decommissioning of Stage II equipment would not have a negative effect on air quality in the Stage II program areas. The EPA requires Stage II to remain in effect for a period of time in order to maintain the ozone NAAQS in the current program areas until a FCAA, §110(l) can be demonstrated.

From some of the businesses that own GDFs and provided comments at the stakeholder meetings or submitted comments by mail or e-mail, concerns were expressed about wanting the rule to be adopted and implemented quickly because they are ready to remove the Stage II equipment. However, some small and independent convenient store owners that attended the meetings said that they may want to keep and maintain the Stage II equipment for the remaining life of the equipment because they thought decommissioning would be too expensive.

According to the EPA guidance document on removing Stage II programs, states would need to continue implementing Stage II until the EPA approves a SIP revision that removes the requirement from the SIP. As stated in the EPA guidance document, the EPA may take up to 18 months to review and approve the SIP revision once it is adopted by the agency. Some owners and operators of GDFs may be ready to decommission their Stage II equipment sooner than the EPA timeline.

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

GDF owners will be required to maintain and install the Stage II equipment, which is not cost-effective and provides no additional benefit to air quality beyond ORVR.

**Key points in the proposal SIP revision schedule:**

**Anticipated proposal date:** April 23, 2013

**Anticipated *Texas Register* publication date:** May 10, 2013

**Public hearing dates (if any):**

May 28, 2013 El Paso

May 30, 2013 Beaumont

May 31, 2013 Houston

June 3, 2013, Arlington

June 4, 2013 Austin

**Public comment period:** May 10, 2013 through June 10, 2013

**Anticipated adoption date:** October 23, 2013

**Agency contacts:**

Santos Olivarez, Rule Project Manager, 239-4718, Air Quality Division

Chrissie Angeletti, Staff Attorney, 239-1204

Bruce McAnally, Texas Register Coordinator, 239-2141

**Attachments**

1. *Federal Register*, 77 FR 28772, May 16, 2012
2. *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, EPA, August 7, 2012

cc: Chief Clerk, 2 copies  
Executive Director's Office  
Susana M. Hildebrand, P.E.  
Anne Idsal  
Curtis Seaton  
Tucker Royall  
Office of General Counsel  
Bruce McAnally  
Santos Olivarez

REVISIONS TO THE STATE OF TEXAS AIR QUALITY  
IMPLEMENTATION PLAN FOR THE CONTROL OF OZONE AIR  
POLLUTION



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY  
P.O. BOX 13087  
AUSTIN, TEXAS 78711-3087

**STAGE II VAPOR RECOVERY PROGRAM STATE  
IMPLEMENTATION PLAN REVISION**

Project Number 2013-002-SIP-NR

Proposal

April 23, 2013

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## EXECUTIVE SUMMARY

The Stage II vapor recovery program (Stage II) is a requirement of the Federal Clean Air Act (FCAA), §182(b)(3), that requires the installation of technology to prevent gasoline vapors from escaping during the refueling of on-road motor vehicles in ozone nonattainment areas classified as serious and above of the National Ambient Air Quality Standard (NAAQS). Currently, the Stage II program is required in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties in the Houston-Galveston-Brazoria area; Collin, Dallas, Denton, and Tarrant Counties in the Dallas-Fort Worth (DFW) area; El Paso County; and Hardin, Jefferson, and Orange Counties in the Beaumont-Port Arthur area.

The United States Environmental Protection Agency (EPA) finalized a rulemaking (published in the May 16, 2012 *Federal Register*, 77 FR 28772) for 40 Code of Federal Regulations (CFR) Part 51, determining that vehicle on-board refueling vapor recovery (ORVR) technology is in widespread use for the purposes of controlling motor vehicle refueling emissions throughout the motor vehicle fleet. According to the EPA, ORVR widespread use occurs when emission reductions from ORVR alone are equal to or greater than those from Stage II alone. Vehicle ORVR systems are passive systems that force gasoline vapors displaced from a vehicle's fuel tank during refueling to be directed into a carbon-canister holding system within the vehicle and ultimately to the engine where the vapors are consumed. The EPA required ORVR systems to be phased in beginning with 1998 model-year light duty gasoline vehicles and since 2006, all new light and medium duty gasoline vehicles are equipped with ORVR.

Since the FCAA provides for a waiver from Stage II requirements if states can determine ORVR is in widespread use, EPA's rule permits the EPA to waive the requirement for states to implement Stage II gasoline vapor recovery systems at gasoline dispensing facilities (GDF) in ozone nonattainment areas classified as serious and above for the NAAQS. States that have implemented a Stage II program may revise their Stage II State Implementation Plan (SIP) by submitting a revision demonstrating that the air quality will be maintained after removing the Stage II equipment. A corresponding proposed rule revision would revise Chapter 115, Subchapter C, Division 4 specifying that owners or operators of new GDFs are not required to install Stage II equipment and allowing owners or operators of existing GDFs in the current program areas to properly decommission Stage II equipment. According to the EPA Stage II guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012, the executive director will need to demonstrate under FCAA, §110(l) that the air quality will not be affected by the decommissioning of, or failure to install, Stage II equipment. This demonstration will be incorporated into this SIP revision.

The proposed SIP revision would revise the Stage II SIP to authorize the decommissioning of Stage II vapor recovery equipment at GDFs and require current GDF owners or operators to maintain their equipment until decommissioning occurs. All decommissioning must be completed by August 31, 2018. This proposed SIP revision will be submitted to the EPA for approval, and GDF owners or operators would be allowed to remove the Stage II controls once the SIP is approved by the EPA. The EPA's Motor Vehicle Emission Simulator (MOVES) model was used by the Texas Commission on Environmental Quality (TCEQ) to demonstrate that the ozone NAAQS in the current Stage II counties will not be affected when the Stage II vapor controls are removed. Appendix A, *Emission Benefit Assessment for Removal of Stage II Gasoline Vapor Control Programs*, includes the calculations that were completed using the EPA formulas in the EPA Stage II guidance document mentioned above. These increments were analyzed in each area to determine if Stage II decommissioning would affect the ozone NAAQS or any air strategy plan.

Specific revisions to the existing Stage II SIP revision would incorporate procedures related to decommissioning activities.

- A new “List of Tables” is proposed to be added.
- A new “List of Appendices” is proposed to be added.
- An amended “List of the Stage II Vapor Recovery Program Definitions”, adding new definitions of “Decommissioning” and “Gasoline Dispensing Facility (GDF)” is proposed to be added.
- Chapter 2, Applicability, would specify continued applicability of the Stage II requirements until an owner or operator of a GDF completes decommissioning. Owners or operators of GDFs that began construction of permanent gasoline dispensing equipment on or after May 16, 2012 or had begun construction before May 16, 2012 but can certify that Stage II equipment was not installed prior to May 16, 2012 would not be required to install Stage II vapor control equipment.
- Chapter 3, Certification of Approved Vapor Recovery Systems, would ensure that verification of approved systems at GDFs that elect to continue maintaining Stage II equipment would continue until decommissioning is complete, or August 31, 2018, the date by which all owners or operators GDFs must complete decommissioning of their equipment.
- Chapter 4, Training, would specify that training requirements would continue until owners or operators of GDFs complete decommissioning.
- Chapter 5, Public Information, would include that information related to Stage II vapor recovery requirements would be made available until all decommissioning has been completed on August 31, 2018.
- Chapter 6, Facility Recordkeeping, would specify that owners or operators of GDFs would be required to keep records on-site for five years following the completion of decommissioning.
- Chapter 7, Recordkeeping, would specify that decommissioning notification forms and checklists must be submitted to the TCEQ 10 calendar days after decommissioning is completed.
- Chapter 8, Equipment Installation and Testing, would specify that owners of new GDFs would not be required to install Stage II equipment after May 16, 2012.
- Chapter 9, TCEQ Investigations, would include that Stage II decommissioning activities may be investigated.
- Chapter 10, Program Penalties, would specify that the assessing of appropriate penalties would continue until decommissioning is completed at the GDF.
- New Chapter 11, Decommissioning Process, would specify that GDF owners or operators may begin decommissioning activities 30-calendar days following the EPA approval of these SIP revisions. The chapter would establish the procedures found in the 30 Texas

Administrative Code §115.241, *Decommissioning of Stage II Vapor Recovery Equipment* as the procedures and requirements for properly decommissioning Stage II equipment.

- New Chapter 12, Demonstrating Noninterference Under Federal Clean Air Act, Section 110(l), would incorporate a FCAA, §110(l), noninterference demonstration that specifies the proposed revisions to Stage II SIP revision would not interfere with attainment or maintenance of the ozone NAAQS.
- New Appendix A, Emission Benefit Assessment For Removal Of Stage II Gasoline Vapor Control Programs, provides a description of the calculations used to development the assessment.

## **SECTION V-A: LEGAL AUTHORITY**

### **A. General**

The Texas Commission on Environmental Quality (TCEQ) has the legal authority to implement, maintain, and enforce the National Ambient Air Quality Standards (NAAQS) and to control the quality of the state's air, including maintaining adequate visibility.

The first air pollution control act, known as the Clean Air Act of Texas, was passed by the Texas Legislature in 1965. In 1967, the Clean Air Act of Texas was superseded by a more comprehensive statute, the Texas Clean Air Act (TCAA), found in Article 4477-5, Vernon's Texas Civil Statutes. The legislature amended the TCAA in 1969, 1971, 1973, 1979, 1985, 1987, 1989, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, and 2011. In 1989, the TCAA was codified as Chapter 382 of the Texas Health and Safety Code.

Originally, the TCAA stated that the Texas Air Control Board (TACB) is the state air pollution control agency and is the principal authority in the state on matters relating to the quality of air resources. In 1991, the legislature abolished the TACB effective September 1, 1993, and its powers, duties, responsibilities, and functions were transferred to the Texas Natural Resource Conservation Commission (TNRCC). With the creation of the TNRCC, the authority over air quality is found in both the Texas Water Code and the TCAA. Specifically, the authority of the TNRCC is found in Chapters 5 and 7. Chapter 5, Subchapters A - F, H - J, and L, include the general provisions, organization, and general powers and duties of the TNRCC, and the responsibilities and authority of the executive director. Chapter 5 also authorizes the TNRCC to implement action when emergency conditions arise and to conduct hearings. Chapter 7 gives the TNRCC enforcement authority. In 2001, the 77th Texas Legislature continued the existence of the TNRCC until September 1, 2013 and changed the name of the TNRCC to the TCEQ. In 2009, the 81st Texas Legislature, during a special session, amended section 5.014 of the Texas Water Code, changing the expiration date of the TCEQ to September 1, 2011 unless continued in existence by the Texas Sunset Act. The 82nd Texas Legislature, 2011, Regular Session, continued the existence of the TCEQ until 2023.

The TCAA specifically authorizes the TCEQ to establish the level of quality to be maintained in the state's air and to control the quality of the state's air by preparing and developing a general, comprehensive plan. The TCAA, Subchapters A - D, also authorize the TCEQ to collect information to enable the commission to develop an inventory of emissions; to conduct research and investigations; to enter property and examine records; to prescribe monitoring requirements; to institute enforcement proceedings; to enter into contracts and execute instruments; to formulate rules; to issue orders taking into consideration factors bearing upon health, welfare, social and economic factors, and practicability and reasonableness; to conduct hearings; to establish air quality control regions; to encourage cooperation with citizens' groups and other agencies and political subdivisions of the state as well as with industries and the federal government; and to establish and operate a system of permits for construction or modification of facilities.

Local government authority is found in Subchapter E of the TCAA. Local governments have the same power as the TCEQ to enter property and make inspections. They also may make recommendations to the commission concerning any action of the TCEQ that affects their territorial jurisdiction, may bring enforcement actions, and may execute cooperative agreements with the TCEQ or other local governments. In addition, a city or town may enact and enforce ordinances for the control and abatement of air pollution not inconsistent with the provisions of the TCAA and the rules or orders of the commission.

Subchapters G and H of the TCAA authorize the TCEQ to establish vehicle inspection and maintenance programs in certain areas of the state, consistent with the requirements of the Federal Clean Air Act; coordinate with federal, state, and local transportation planning agencies to develop and implement transportation programs and measures necessary to attain and maintain the NAAQS; establish gasoline volatility and low emission diesel standards; and fund and authorize participating counties to implement vehicle repair assistance, retrofit, and accelerated vehicle retirement programs.

#### **B. B. Applicable Law**

The following statutes and rules provide necessary authority to adopt and implement the state implementation plan (SIP). The rules listed below have previously been submitted as part of the SIP.

#### **Statutes**

All sections of each subchapter are included, unless otherwise noted.

TEXAS HEALTH & SAFETY CODE, Chapter 382

September 1, 2011

TEXAS WATER CODE

September 1, 2011

#### **Chapter 5: Texas Natural Resource Conservation Commission**

Subchapter A: General Provisions

Subchapter B: Organization of the Texas Natural Resource Conservation Commission

Subchapter C: Texas Natural Resource Conservation Commission

Subchapter D: General Powers and Duties of the Commission

Subchapter E: Administrative Provisions for Commission

Subchapter F: Executive Director (except §§5.225, 5.226, 5.227, 5.2275, 5.231, 5.232, and 5.236)

Subchapter H: Delegation of Hearings

Subchapter I: Judicial Review

Subchapter J: Consolidated Permit Processing

Subchapter L: Emergency and Temporary Orders (§§5.514, 5.5145, and 5.515 only)

Subchapter M: Environmental Permitting Procedures (§5.558 only)

#### **Chapter 7: Enforcement**

Subchapter A: General Provisions (§§7.001, 7.002, 7.0025, 7.004, and 7.005 only)

Subchapter B: Corrective Action and Injunctive Relief (§7.032 only)

Subchapter C: Administrative Penalties

Subchapter D: Civil Penalties (except §7.109)

Subchapter E: Criminal Offenses and Penalties: §§7.177, 7.179-7.183

#### **Rules**

All of the following rules are found in 30 Texas Administrative Code, as of the following latest effective dates:

Chapter 7: Memoranda of Understanding, §§7.110 and 7.119

December 13, 1996 and May 2, 2002

Chapter 19: Electronic Reporting

March 15, 2007

Chapter 35: Subchapters A-C, K: Emergency and Temporary Orders and Permits; Temporary Suspension or Amendment of Permit Conditions

July 20, 2006

Chapter 39: Public Notice, §§39.402(a)(1)-(6), (8), and (10)-(12), 39.405(f)(3) and (g), (h)(1)(A)-(4), (6), (8)-(11), (i) and (j), 39.407, 39.409, 39.411(a), (e)(1)-(4)(A)(i) and (iii), (4)(B), (5)(A) and (B), and (6)-(10), (11)(A)(i) and (iii) and (iv), (11)(B)-(F), (13) and (15), and (f)(1)-(8), (g) and (h), 39.418(a), (b)(2)(A), (b)(3), and (c), 39.419(e), 39.420(c)(1)(A)-(D)(i)(I) and (II), (D)(ii), (c)(2), (d)-(e), and (h), and 39.601-39.605	June 24, 2010
Chapter 55: Requests for Reconsideration and Contested Case Hearings; Public Comment, §§55.150, 55.152(a)(1), (2), (5), and (6) and (b), 55.154(a), (b), (c)(1)-(3), and (5), and (d)-(g), and 55.156(a), (b), (c)(1), (e), and (g)	June 24, 2010
Chapter 101: General Air Quality Rules	April 19, 2012
Chapter 106: Permits by Rule, Subchapter A	May 15, 2011
Chapter 111: Control of Air Pollution from Visible Emissions and Particulate Matter	February 16, 2012
Chapter 112: Control of Air Pollution from Sulfur Compounds	July 16, 1997
Chapter 113: Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants	May 14, 2009
Chapter 114: Control of Air Pollution from Motor Vehicles	September 13, 2012
Chapter 115: Control of Air Pollution from Volatile Organic Compounds	December 29, 2011
Chapter 116: Permits for New Construction or Modification	August 16, 2012
Chapter 117: Control of Air Pollution from Nitrogen Compounds	April 19, 2012
Chapter 118: Control of Air Pollution Episodes	March 5, 2000
Chapter 122: §122.122: Potential to Emit	December 11, 2002
Chapter 122: §122.215: Minor Permit Revisions	June 3, 2001
Chapter 122: §122.216: Applications for Minor Permit Revisions	June 3, 2001
Chapter 122: §122.217: Procedures for Minor Permit Revisions	December 11, 2002
Chapter 122: §122.218: Minor Permit Revision Procedures for Permit Revisions Involving the Use of Economic Incentives, Marketable Permits, and Emissions Trading	June 3, 2001

## **SECTION VI: CONTROL STRATEGY**

- A. Introduction (No change)
- B. Ozone (Revised)
  - 1. Dallas-Fort Worth (No Change)
  - 2. Houston-Galveston-Brazoria (No change)
  - 3. Beaumont-Port Arthur (No change)
  - 4. El Paso (No change)
  - 5. Regional Strategies (No change)
  - 6. Stage II Vapor Recovery Program (Revised)
    - Chapter 1: General (Revised)
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    - Chapter 3: Certification of Approved Vapor Recovery Systems (Revised)
    - Chapter 4: Training (Revised)
    - Chapter 5: Public Information (Revised)
    - Chapter 6: Facility Recordkeeping (Revised)
    - Chapter 7: TCEQ Recordkeeping (Revised)
    - Chapter 8: Equipment Installation and Testing (Revised)
    - Chapter 9: TCEQ Investigations (Revised)
    - Chapter 10: Program Penalties (Revised)
    - Chapter 11: Stage II Decommissioning (New)
    - Chapter 12: Demonstrating Noninterference under Federal Clean Air Act, Section 110(l) (New)
- C. Particulate Matter (No change)
- D. Carbon Monoxide (No change)
- E. Lead (No change)
- F. Oxides of Nitrogen (No change)
- G. Sulfur Dioxide (No change)
- H. Conformity with the National Ambient Air Quality Standards (No change)
- I. Site Specific (No change)
- J. Mobile Sources Strategies (No change)

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## LIST OF ACRONYMS

BPA	Beaumont Port Arthur
CARB	California Air Resources Board
CFR	Code of Federal Regulations
DFW	Dallas-Fort Worth
EPA	United States Environmental Protection Agency
EVR	Enhanced Vapor Recovery
FCAA	Federal Clean Air Act
FR	<i>Federal Register</i>
GDF	Gasoline Dispensing Facility
HGB	Houston-Galveston-Brazoria
MVEB	Motor Vehicle Emissions Budget
NAAQS	National Ambient Air Quality Standard
NO <sub>x</sub>	Nitrogen Oxides
OEM	Original Equipment Manufacturer
ORVR	Onboard Refueling Vapor Recovery
ppb	Parts per Billion
RFP	Reasonable Further Progress
ROP	Rate of Progress
SIP	State Implementation Plan
TAC	Texas Administrative Code
TACB	Texas Air Control Board
TCAA	Texas Clean Air Act
TCEQ	Texas Commission on Environmental Quality (commission)
TNRCC	Texas Natural Resource Conservation Commission
tpd	Tons per Day
TXP-101	Vapor Space Manifold Test
TXP-103	Dynamic Back-Pressure Test
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

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**Decommission** – The permanent removal of Stage II vapor controls from a gasoline dispensing facility.

**Gasoline Dispensing Facility (GDF)** – A location that dispenses gasoline to motor vehicles and includes retail outlets and private and commercial outlets.

**Major System Replacement or Modification** – As follows.

(A) The repair or replacement of any stationary storage tank equipped with a Stage II vapor recovery system;

(B) The replacement of an existing California Air Resources Board (CARB) certified Stage II vapor recovery system with a system certified by CARB under a different CARB Executive Order, or certified by an approved third-party;

(C) The repair or replacement of any part of a piping system attached to a stationary storage tank equipped with a Stage II vapor recovery system, excluding the repair or replacement of piping which is accessible for such repair or replacement without excavation or modification of the vapor recovery equipment; or

(D) The replacement of at least one fuel dispenser.

**Motor Vehicle Refueling Facility** - Any site where gasoline is transferred from a stationary storage tank to a motor vehicle fuel tank used to provide fuel to the engine of that motor vehicle.

**On-board Refueling Vapor Recovery (ORVR)** - A system on motor vehicles designed to recover hydrocarbon vapors that escape during refueling.

**On-board Refueling Vapor Recovery (ORVR) Compatible** - A Stage II vapor recovery system certified by CARB or other acceptable independent third-party evaluator, using test methods approved by the executive director, as onboard refueling vapor recovery (ORVR) compatible or a system listed in subsection (b) of this section, either of which maintains a required minimum overall system efficiency of 95% (as certified under third-party evaluation) while dispensing fuel without difficulty to both ORVR-equipped and non ORVR-equipped vehicles.

**Owner or operator of a motor vehicle fuel dispensing facility** - Any person who owns, leases, operates, or controls the motor vehicle gasoline dispensing facility.

**Vapor recovery systems** - Systems at the facility designed to control the vapors generated during the vehicle refueling process.

## **STAGE II VAPOR RECOVERY SIP**

### **CHAPTER 1: GENERAL (REVISED)**

#### **1.1 STAGE II VAPOR RECOVERY PROGRAM**

The 1990 Amendments to the Federal Clean Air Act (FCAA) authorized the United States Environmental Protection Agency (EPA) to designate areas failing to meet the National Ambient Air Quality Standard (NAAQS) for ozone as nonattainment and to classify them according to degree of severity. For the one-hour ozone standard in 1990, four areas were designated nonattainment and classified as moderate or above in Texas, and required to submit nonattainment plans: Beaumont-Port Arthur (BPA), Dallas-Fort Worth (DFW), El Paso, and Houston-Galveston-Brazoria (HGB). For these areas, states were required to submit a revision to the SIP no later than November 15, 1992, which included a Stage II vapor recovery program (Stage II) to control gasoline vapors from the refueling of motor vehicles. In 1994 the EPA promulgated rules for onboard refueling vapor recovery (ORVR) for light duty vehicles at which point Moderate ozone areas were no longer subject to section 182(b)(3) Stage II requirements. Currently, the Stage II program is required in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties in the HGB area; Collin, Dallas, Denton, and Tarrant Counties in the DFW area; El Paso County; and Hardin, Jefferson, and Orange Counties in the BPA area. In 1997, the EPA replaced the one-hour ozone standard with a more protective eight-hour ozone standard. The one-hour ozone standard has been revoked in all areas, although the former one-hour ozone nonattainment areas have continuing obligations to comply with the anti-backsliding requirements described in 40 Code of Federal Regulations § 51.905(a). The following areas in Texas were designated nonattainment for the 1997 eight-hour ozone NAAQS, and classified according to degree of severity: BPA, DFW, and HGB. Subsequently, the BPA area has been redesignated to attainment for the 1997 eight-hour ozone standard effective November 19, 2010. The Stage II program remains in place to meet the volatile organic compounds (VOC) emissions requirements and to avoid backsliding in all one-hour and 1997 eight-hour ozone areas: BPA, DFW, El Paso, and HGB.

The Stage II vapor recovery program involves use of technology that prevents gasoline vapors from being emitted into ambient air during refueling. Gasoline vapors include VOC emissions which can react with nitrogen oxides in the presence of sunlight to form ozone. As part of the control strategy for ozone attainment, the EPA mandates that Stage II refueling requirements apply to all public and private gasoline dispensing facilities (GDF) dispensing 10,000 gallons or more of gasoline per month. The federal throughput constitutes a minimum threshold, but a state may be more stringent in adopting a throughput standard. The Texas Commission on Environmental Quality (TCEQ or commission) applied a more stringent throughput standard to the affected counties in (30 Texas Administrative Code (TAC) Chapter 115, Subchapter C, Division 4, §115.249) by requiring all GDFs constructed after November 15, 1992 to install Stage II vapor recovery regardless of throughput.

In compliance with the FCAA, the EPA issued enforcement guidance dated October 1991 and technical guidance dated November 1991. The EPA published the following technical guidance documents for states to use in developing their Stage II program:

- a. *Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume I: Chapters (EPA-450/3-91-022a), November 1991.*

b. *Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume II: Appendices (EPA-450/3-91-022b)*, November 1991.

A Stage II vapor recovery SIP was first approved in Texas on October 16, 1992, and later revised on November 10, 1993. These SIP revisions satisfied requirements outlined in the aforementioned EPA guidance documents.

The original Stage II vapor recovery rules relied upon the California Air Resources Board (CARB) certification procedures for vapor recovery equipment. The CARB implemented an enhanced vapor recovery (EVR) program and now no longer certifies non-EVR systems. In response, the Stage II SIP was revised in 2002, to require more frequent testing and more on-site evaluation of testing performed on vapor recovery systems at GDFs as well as a phase-in schedule to retrofit and/or install ORVR compatible Stage II vapor recovery systems in lieu of the CARB EVR program. The 2005 Stage II SIP revision established an expanded definition for "ORVR compatible" to allow for the use of other gasoline vapor control technologies.

In June of 2007, the Stage II vapor recovery SIP revision was adopted by the commission (project number 2006-049-115-EN). The 2007 SIP revision added exemption language for fleets that had 95% or more vehicles with ORVR. However, the EPA did not approve this SIP revision because of their concern that decommissioning requirements and continued monitoring and testing by exempted GDFs were not explicit in the adopted rulemaking. Therefore, the 2005 Stage II SIP revision is the latest SIP revision approved by the EPA.

The EPA finalized a rulemaking (published in the May 16, 2012 *Federal Register*, 77 FR 28772) for 40 Code of Federal Regulations (CFR) Part 51, determining that ORVR technology is in widespread use for the purposes of controlling motor vehicle refueling emissions throughout the motor vehicle fleet. According to the EPA, ORVR widespread use occurs when emission reductions from ORVR alone are equal to or greater than those from Stage II alone. Vehicle ORVR systems are passive systems that force gasoline vapors displaced from a vehicle's fuel tank during refueling to be directed into a carbon-canister holding system within the vehicle and ultimately to the engine where the vapors are consumed. The EPA required ORVR systems to be phased in beginning with 1998 model-year light duty gasoline vehicles and since 2006, all new light and medium duty gasoline vehicles are equipped with ORVR.

Since the FCAA provides for a waiver from Stage II requirements if states can determine ORVR is in widespread use, EPA's rule permits the EPA to waive the requirement for states to implement Stage II gasoline vapor recovery systems at GDFs in ozone nonattainment areas classified as serious and above for the NAAQS. States that have implemented a Stage II program may revise their Stage II SIP by submitting a revision demonstrating that the air quality will be maintained after removing the Stage II equipment. A corresponding proposed rule revision would revise Chapter 115, Subchapter C, Division 4 specifying that owners or operators of new GDFs are not required to install Stage II equipment and allowing owners or operators of existing GDFs in the current program areas to properly decommission Stage II equipment. According to the EPA Stage II guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012, the executive director will need to demonstrate under FCAA, §110(I) that the air quality will not be affected by the decommissioning of, or failure to install, Stage II equipment. This demonstration will be incorporated into this SIP revision.

Revisions to Chapters 1 through 10 and the addition of Chapter 11, *Decommissioning Process*, Chapter 12, *Demonstrating Noninterference under Federal Clean Air Act, Section 110(I)*, of the

*Stage II Vapor Recovery Program*, and Appendix, *Emissions Benefit Assessment for Removal of Stage II Gasoline Vapor Control Programs*, are proposed to provide for the removal of Stage II requirements and decommissioning. This SIP revision would allow existing GDF owners or operators in the current program areas to decommission Stage II equipment properly using an approved and monitored process. The proposed SIP revision will maintain requirements for GDF owners or operators to continue monitoring and testing the Stage II vapor control equipment until the facility has been decommissioned. All GDF owners or operators would need to remove the Stage II vapor controls by August 31, 2018 or penalties may be assessed. The proposed SIP revision provides measures that must be followed and reported to the TCEQ before, during, and after decommissioning is completed. A list of close-out requirements is also being proposed in this SIP revision. The proposed SIP narrative also includes requirements that may need to be revised or removed so that Stage II requirements will no longer be expanded to other areas of the state. Concurrent rulemaking is intended to revise the Stage II rules in 30 TAC Chapter 115, Subchapter C, Division 4.

According to the EPA guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012, for decommissioning Stage II vapor recovery equipment, the TCEQ would need to demonstrate that the air quality will not be affected by the decommissioning of, or failure to install, Stage II equipment by submitting a §110(l) demonstration that is required by the FCAA.

Under the FCAA, §110(l), the EPA cannot approve a SIP revision if it would interfere with attainment of the ozone NAAQS, reasonable further progress (RFP) toward attainment, or any other applicable requirement of the FCAA. Therefore, the EPA could propose to approve a SIP revision that removes or modifies Stage II gasoline refueling vapor control measure(s) in the SIP only if there is a basis in the state's submittal for concluding that approval of the revision would not interfere with attainment of the ozone NAAQS, RFP, or any other applicable requirement of the FCAA. Although the EPA had determined that ORVR is in widespread use and Stage II is a redundant strategy, the 110(l) demonstration will consider elements of the program which require that all Stage II systems be ORVR compatible. The FCAA 110(l) will be discussed in more detail in Chapter 12 of this SIP and in Appendix A, *Emission Benefit Assessment for Removal of Stage II Gasoline Vapor Control Programs*.

## 1.2 PUBLIC HEARING AND COMMENT INFORMATION

The commission will offer public hearings at the times and locations listed below.

**Table 1.1: Public Hearing Information**

City	Date	Time	Location
Arlington, Texas	June 3, 2013	2:00 P.M.	Arlington City Council Chambers, 101 West Abram Street
Austin, Texas	June 4, 2013	2:00 P.M.	TCEQ Central Office, Building E, Room 201
Houston, Texas	May 31, 2013	2:00 P.M.	Houston-Galveston Area Council, 2 <sup>nd</sup> Floor, Room A, 3555 Timmons
Beaumont, Texas	May 30, 2013	2:00 P.M.	TCEQ Region 10 Office, 3870 Eastex Freeway
El Paso, Texas	May 28, 2013	2:00 P.M.	El Paso Public Library Auditorium, 501 N. Oregon

The public comment period will open on May 10, 2013 and close on June 10, 2013. Notice of public hearings for this SIP revision will be published in the *Texas Register* and various newspapers. Written comments will be accepted via mail, fax, or through the eComments system. All comments should reference the Stage II Decommission SIP Revision, Project Number 2013-002-SIP-NR and Project Number 2013-002-SIP-NR. Comments may be submitted to Santos Olivarez, MC 206, Mobile Source Programs Team, Air Quality Division, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087 or faxed to (512) 239-5687. If you choose to submit electronic comments, they must be submitted through the [eComments](http://www5.tceq.texas.gov/rules/ecomments/) (<http://www5.tceq.texas.gov/rules/ecomments/>) system. All comments should reference Stage II Decommission SIP Revision, Project Number 2013-002-SIP-NR. File size restrictions may apply to comments being submitted via the eComments system. Comments must be received by June 10, 2013.

### **1.3 SOCIAL AND ECONOMIC CONSIDERATIONS**

For a detailed explanation of the social and economic issues involved with the revised 30 TAC Chapter 115, Subchapter C, Division 4, please refer to the preamble that precedes the rule package accompanying this SIP revision (2013-001-115-EN).

### **1.4 FISCAL AND MANPOWER RESOURCES**

The state has determined that its fiscal and manpower resources are adequate and will not be adversely affected through the implementation of this plan.

## **CHAPTER 2: APPLICABILITY (REVISED)**

### **2.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The United States Environmental Protection Agency's guidelines required applicability to be determined by calculating the average monthly volume of gasoline dispensed at a gasoline dispensing facility (GDF) over the two-year period prior to the state's adoption of Stage II requirements in 1992. Stage II equipment was required for GDFs that averaged more than 10,000 gallons a month. In the event a GDF has been inactive for any period during the proposed calculation period, the state shall extend the period to include two full years of data.

The Texas Commission on Environmental Quality (TCEQ or commission) applied a more stringent throughput standard to the affected counties of Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Harris, Hardin, Jefferson, Liberty, Montgomery, Orange, Tarrant, and Waller (30 Texas Administrative Code (TAC) Part 1 Chapter 115 Subchapter C Division 4 §115.249) All owners or operators of GDFs in these counties constructed after November 15, 1992 were required to install Stage II vapor recovery regardless of throughput, according to the requirements in 30 TAC Part 1 Chapter 115 Subchapter C Division 4. If an exceedance of 10,000 gallons or more occurred in any given month at a GDF between January 1, 1991 through November 15, 1992 the owner or operator of a GDF was required to implement Stage II.

The commission developed and maintains a computerized database to track GDFs in the regulated community. The commission established a method for ensuring that GDFs that were initially exempt from these regulations due to low throughput are in compliance with Stage II requirements. The owners or operators of GDFs were initially exempted because their gasoline throughput did not exceed the exemption level specified in §115.247, *Exemptions*, based upon emissions inventory data.

### **2.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE**

This state implementation plan revision would specify that applicability of Stage II requirements would continue to apply until the owner or operator of a GDF completes the approved decommissioning process. The concurrent proposed rulemaking would revise Chapter 115, Subchapter C, Division 4 to specify that owners or operators of new GDFs that began construction on or after May 16, 2012 and that had not begun dispensing fuel or had Stage II equipment installed at the facility before May 16, 2012 are not required to install Stage II equipment. In addition, the owner or operator a GDF that would be subject to install Stage II equipment due to increased throughput on or after May 16, 2012 are not required to install Stage II equipment. The proposed rulemaking would also require existing GDF owners or operators in the current program areas to properly decommission Stage II equipment by August 31, 2018.

## **CHAPTER 3: CERTIFICATION OF APPROVED VAPOR RECOVERY SYSTEMS (REVISED)**

### **3.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The United States Environmental Protection Agency (EPA) requires that all Stage II vapor recovery systems be capable of at least 95% vapor control efficiency. The Texas Commission on Environmental Quality (TCEQ or commission) implements this requirement in 30 Texas Administrative Code (TAC) §115.241, *Emissions Specifications*.

Verification of proper operation of Stage II equipment is required every 12 months to meet the EPA requirements. However, the vapor space manifold test (TXP-101) and the dynamic back-pressure test (TXP-103) in the TCEQ's *Vapor Recovery Test Procedures Handbook* (test procedures handbook located at <http://www.tceq.texas.gov/publications/rg/rg-399.html>) is required every 36 months (§115.245, *Testing Requirements*).

According to §115.240, *Stage II Vapor Recovery Definitions and List of California Air Resources Board Certified Stage II Equipment*, the state continues to ensure that each system is tested for proper installation. The commission does not approve vapor recovery systems which include remote vapor check valves in balance systems. In addition, all balance vapor recovery systems must include coaxial hoses. The commission only approves original equipment manufacturer (OEM) rebuilt nozzles, and all existing dispenser pumps must be retrofitted with OEM parts or agency approved third-party certified non-OEM aftermarket parts.

According to 115.240, *Stage II Vapor Recovery Definitions and List of California Air Resources Board Certified Stage II Equipment*, only Stage II vapor recovery systems that are onboard refueling vapor recovery (ORVR) compatible will be approved for Stage II vapor recovery systems installed after April 1, 2005. All Stage II vapor recovery systems installed prior to April 1, 2005 must have been ORVR compatible no later than April 1, 2007.

### **3.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The State Implementation Plan revision would specify that verification of the equipment would continue until owners or operators of existing gasoline dispensing facilities (GDF) decommission their Stage II vapor recovery control equipment. Repair or replacement of Stage II equipment must continue to meet the certification requirements in this chapter. The commission would continue to require the appropriate testing to ensure the Stage II equipment is operating properly. Once the owner or operator of a GDF has properly decommissioned the Stage II vapor recovery equipment, the testing requirements listed in this chapter would no longer be applicable. The owners or operators of GDFs must have decommissioned their Stage II vapor recovery equipment no later than August 31, 2018.

## **CHAPTER 4: TRAINING (REVISED)**

### **4.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The United States Environmental Protection Agency guidelines require the state to provide or approve training for Stage II investigators and at least one owner or operator from each regulated gasoline dispensing facility (GDF). Investigator training must be effective in presenting all Stage II requirements and procedures. The training program for investigators consists of classroom and practical training and includes information on the purpose and effects of Stage II vapor recovery system, the types of Stage II systems, acceptable components, methods for identifying system configurations, and how to identify failures. A written and practical test to verify proficiency will be required for investigators. Each investigator must meet a minimum standard of proficiency on each test in order to successfully complete the training course. As needed, periodic updates to the training will be provided in order to reflect all technological and programmatic changes.

Owner or operator training must provide instruction on the proper operation and maintenance of Stage II equipment. Literature and equipment necessary to facilitate training will be provided by an approved training provider. As needed, periodic updates to the training will be provided in order to reflect all technological and programmatic changes. At least one owner or operator from each regulated GDF is required to successfully complete a training course.

An approved training course includes the following elements in all training programs offered to regulated GDF owners or operators:

- federal and state Stage I and Stage II statutes, regulations (including enforcement consequences of noncompliance), and vapor recovery health effects and benefits;
- equipment operation and function of each type of vapor recovery system;
- general overview of maintenance schedules and requirements for Stage II vapor recovery equipment;
- general overview of structure and content of California Air Resources Board Executive Orders and approved third-party certifications; and
- recordkeeping and investigation requirements for Stage I and Stage II vapor recovery systems.

These training requirements are required by 30 Texas Administrative Code §115.248, *Training Requirements*.

### **4.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE**

This state implementation plan revision would require that training requirements would remain applicable until Stage II equipment is decommissioned at the GDF or August 31, 2018.

## **CHAPTER 5: PUBLIC INFORMATION (REVISED)**

### **5.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The Texas Commission on Environmental Quality (TCEQ or commission) develops and provides information to owners or operators of regulated gasoline dispensing facilities (GDF) stating the general purpose and benefit of the Stage II vapor recovery program; specific program requirements; enforcement consequences of noncompliance; and information about the commission, such as office address (regional and headquarters) and phone numbers. The commission establishes public awareness information for general distribution to the public stating the purposes and benefits of the Stage II program, including those benefits to human health, the environment, and safety. The information includes a basic description of how the vapor recovery system functions, operational procedures for refueling, and information about the commission, such as an office address (regional and headquarters), phone numbers, and any other information to facilitate the public's comments, questions, or complaints about the program or a particular GDF.

The commission provides information to regulated GDFs as required by the United States Environmental Protection Agency (EPA) rules and guidance. The above mentioned information can be found on the TCEQ Gasoline Vapor Recovery (Stages I and II) website at: [http://www.tceq.texas.gov/airquality/mobilesource/vapor\\_recovery.html](http://www.tceq.texas.gov/airquality/mobilesource/vapor_recovery.html).

### **5.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE**

This state implementation plan revision would specify that the commission would provide information on the EPA's final rule determining that ORVR was in widespread use in the vehicle fleet on the TCEQ's Gasoline Vapor Recovery (Stages I and II) website listed above. The commission would provide information on the requirements for properly decommissioning Stage II equipment. This information would include notification and recordkeeping requirements and the procedures for the decommissioning of Stage II equipment.

## **CHAPTER 6: FACILITY RECORDKEEPING (REVISED)**

### **6.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The Texas Commission on Environmental Quality (TCEQ or commission) provides guidance to regulated gasoline dispensing facilities (GDF) regarding all recordkeeping requirements. All GDF owners or operators are required to maintain Stage II vapor recovery records for the purpose of verifying compliance. The commission reviews each GDF owner's or operator's records to ensure that all initial and annual testing was successfully completed and that all maintenance, investigation, and training records are properly documented. Copies of the California Air Resources Board Executive Order certifying Stage II vapor recovery systems in effect as of January 1, 2002 and cited in 30 Texas Administrative Code (TAC) §115.240, *Stage II Vapor Recovery Definitions and List of California Air Resources Board Certified Stage II Equipment*, or approved third-party certifications for the Stage II vapor recovery system and any related components installed at the GDF must be maintained at the site. The commission has developed and made available the necessary forms each GDF owner or operator needs in order to comply with all recordkeeping requirements.

The recordkeeping requirements are required by 30 TAC §115.246, *Recordkeeping Requirements*.

### **6.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE**

This state implementation plan revision would continue to provide guidance and review of an owner's or operator's GDF records by the commission until the Stage II equipment at the facility is decommissioned. In addition, the owners or operators of GDFs would be required to keep decommissioning notifications, records sufficient to demonstrate compliance with decommissioning requirements, and results of all applicable system tests required to ensure the decommissioning was properly executed for five years following the date of completion of decommissioning. Decommissioning activities must be completed no later than August 31, 2018.

## **CHAPTER 7: RECORDKEEPING (REVISED)**

### **7.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The Texas Commission on Environmental Quality (TCEQ or commission) maintains a general station file (compliance file) denoting the gasoline dispensing facility (GDF) name, address, phone number, owner or operator names, a commission assigned account number, system installation date, and other relevant information. In the case of GDFs that are exempt from installing Stage II vapor control equipment, monthly gasoline throughput records are also kept.

The commission maintains a file on all GDF investigations by assigned account number. In compliance with the United States Environmental Protection Agency guidelines, the reports are filed in each owner's or operator's GDF compliance file in chronological order and include the date of investigation; the investigator's name, identification number, and signature; findings at investigation; follow-up action to be performed; and a notation of violations. Documentation of all enforcement action taken against each GDF owner or operator is maintained in the commission compliance file for each GDF owner or operator. The compliance files may also be kept electronically. All GDF owner or operator records are maintained by the commission and are available to the public upon request. GDF owner or operator records may be requested by submitting an Open Records Request form (Form Number TCEQ-20383) to request public information (PIR). The PIR request form may be found at the TCEQ website: (<http://www.tceq.texas.gov/>).

### **7.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE**

This state implementation plan revision would require the owner or operator of a GDF to submit to the appropriate TCEQ Regional Office and local government with jurisdiction in the area where the GDF is located notification of decommissioning 30-calendar days before the decommissioning activity begins. Within 10-calendar days of completion of decommissioning, a GDF's owner or operator must submit to the same TCEQ Regional Office and local government with jurisdiction in the area where the facility is located, the completed TCEQ decommissioning form and the results of all applicable system tests required to ensure the decommissioning was properly executed. These forms will be added to the GDF owner's or operator's general station file and maintained for five years following completion of decommissioning.

## **CHAPTER 8: EQUIPMENT INSTALLATION AND TESTING (REVISED)**

### **8.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The owner or operator of each gasoline dispensing facility (GDF) must install equipment that meets all Stage II and other related regulations. The commission verifies that each GDF owner or operator complies with the regulations listed below:

- Functional testing must be performed at the owner or operator of the GDF's expense. These tests include the TXP-101, TXP-102, TXP-103, TXP-104, and TXP-106, or approved equivalent test.
- The owner or operator is required to successfully complete all tests to determine compliance upon initial system startup and every twelve months thereafter, with the exception of the vapor space manifold test (TXP-101) and the dynamic back-pressure test (TXP-103) which will be required every 36 months. System testing will also be required following major system replacement or modification. All tests are conducted according to the applicable portions of the Texas Commission on Environmental Quality's (TCEQ or commission) *Vapor Recovery Test Procedures Handbook*, RG-399, November 2002. Any new, alternative, or equivalent testing methods and procedures, not approved by the California Air Resources Board (CARB), which are developed or approved by the commission, shall be submitted to the United States Environmental Protection Agency (EPA) for approval in the state implementation plan (SIP) or other EPA concurrence procedure.
- The owner or operator is required to conduct test(s) on the system or system components and must notify the appropriate TCEQ regional office and any local air pollution program with jurisdiction in writing at least 10 working days in advance of the test of when, where, by whom, and which tests will be conducted. The owner or operator must submit the results of the test(s) to the appropriate TCEQ regional office and any local air pollution program with jurisdiction within 10 working days of completion of the tests.
- The commission must allow only original equipment manufacturer (OEM) parts or CARB-certified or commission approved third party certified non-OEM aftermarket parts to be used as replacement parts.

The installation and testing requirements are required by 30 Texas Administrative Code §115.245, *Testing Requirements*.

### **8.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE**

This state implementation plan (SIP) revision would specify that owners or operators of newly constructed GDFs are not required to install Stage II equipment after May 16, 2012, the date that the EPA finalized the rulemaking determining that ORVR technology was in widespread use for the purposes of controlling motor vehicle refueling emissions throughout the motor vehicle fleet. This proposed SIP revision would specify that 30-calendar days after approval by the EPA of this proposed SIP revision and the corresponding rule revisions to Chapter 115, the owners or operators of affected existing GDFs would be authorized to begin the decommissioning process. The owners or operators of all GDFs would be required to complete decommissioning by August 31, 2018 and no GDF owner or operator in the state would be allowed to install Stage II equipment. The owner or operator of affected GDFs would be required to repair and replace Stage II equipment with equipment that complies with the requirements of this Chapter until August 31, 2018, unless the GDF owner or operator has decommissioned the Stage II equipment in accordance with the proposed rules and SIP.

## **CHAPTER 9: INVESTIGATIONS (REVISED)**

### **9.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The Texas Commission on Environmental Quality (TCEQ or commission) or local governments with jurisdiction performs on-site investigations in conjunction with an annual system test at each regulated gasoline dispensing facility (GDF) at least once in a five year period. The commission or local government with jurisdiction verifies that all equipment meets configuration requirements and that the system operates within parameters established during the certification period.

Based on data gathered during a pilot program conducted in the Houston-Galveston-Brazoria and Dallas-Fort Worth nonattainment areas and summarized in a final report, *Pilot Program for the State of Texas Stage II Vapor Recovery Program*, October 30, 2001, evidence supported that investigations conducted in conjunction with a vapor recovery system testing event enabled investigators to evaluate the performance of each individual system.

Unannounced investigations of record-keeping and above-ground equipment are also conducted at between 5% and 25% of all GDFs each year. These unannounced investigations serve to maintain the element of surprise and provide a mechanism for investigating citizen complaints. During an investigation, the commission or local government investigator, at a minimum:

- verifies compliance with all Stage I equipment requirements regarding control of vapors from the filling of storage tanks at GDFs;
- observes the use of the equipment by either the GDF operator or the general public;
- inspects the owner's or operator's GDF files to ensure compliance with all recordkeeping requirements; and
- reviews the required results of testing conducted on the vapor recovery system.

If a non-clerical violation is detected at any GDF, the commission will conduct a follow-up investigation as needed.

The commission investigations are required by 30 Texas Administrative Code §115.244, *Inspection Requirements*.

### **9.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE**

This state implementation plan (SIP) revision specifies that the commission will continue Stage II investigations at GDFs to ensure that owners and operators of GDFs electing to continue using Stage II equipment until August 31, 2018 are in compliance with program requirements. Upon EPA approval of this SIP revision and corresponding rulemaking, GDF owners and operators would be authorized to begin Stage II decommissioning activities. Investigations would be conducted, as appropriate, to ensure that decommissioning activities are properly completed. GDF owners and operators would be required to keep records for five years following completion of decommissioning and would make the records available to commission and local governments with jurisdiction investigators to verify compliance at any time during that five year period.

## **CHAPTER 10: PROGRAM PENALTIES (REVISED)**

### **10.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE**

The Texas Commission on Environmental Quality (TCEQ or commission) established a penalty schedule designed to deter noncompliance with Stage II vapor recovery program requirements as required by the United State Environmental Protection Agency. Violations of these regulations found in 30 Texas Administrative Code (TAC) Chapter 115, Subchapter C, Division 4 may result in administrative and civil penalties of up to \$25,000 per day per violation. The commission may:

- issue a notice of violation to the owner or operator of a gasoline dispensing facility (GDF) upon confirmation of a violation of any rule related to Stage I or II vapor recovery. A follow-up investigation must be conducted as necessary;
- prohibit the continued dispensing of fuel, if the violation is equipment related, until such time any violation is corrected and the commission notified of the correction;
- not consider any equipment clearly tagged by the owner or operator as out-of-order as a violation; or
- label any noncompliant equipment as "out of order" until necessary repairs are made.

The program penalty requirements are provided in 30 TAC §115.242, *Control Requirements*.

### **10.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE**

This state implementation plan revision would provide that the owner or operator of a GDF would be subject to penalties for violations of Stage II and/or decommissioning requirements. All owners or operators of GDFs would be required to complete decommissioning activities no later than August 31, 2018.

## **CHAPTER 11: STAGE II DECOMMISSIONING (NEW)**

### **11.1 DECOMMISSIONING PROCEDURES**

The procedures and requirements specified in the proposed rulemaking would be required to be followed for the decommissioning of the Stage II vapor recovery equipment that is in place at gasoline dispensing facilities (GDF). The process for implementing decommissioning procedures can be found in proposed 30 Texas Administrative Code (TAC) §115.241, *Decommissioning of Stage II Vapor Recovery Equipment*.

### **11.2 DECOMMISSION APPLICABILITY**

Owners or operators of GDFs would be authorized to begin decommissioning activities 30-calendar days after the approval by the United States Environmental Protection Agency of this state implementation plan (SIP) revision and the corresponding rulemaking, 30 TAC Chapter 115, Subchapter C, Control of Vehicle Refueling Emissions (Stage II) at Motor Vehicle Fuel Dispensing Facilities (Rule Project No. 2013-001-115-AI).

The owners and operators of all GDFs with Stage II vapor recovery equipment would be required to complete decommissioning no later than August 31, 2018.

### **11.3 NOTIFICATION PRIOR TO DECOMMISSIONING**

Owners and operators of the GDFs would be required to submit written notification to the Texas Commission on Environmental Quality (TCEQ) regional office and local government with jurisdiction where the GDF is located 30-calendar days prior to the beginning of decommissioning activities.

An additional notification to the TCEQ regional office and local government with jurisdiction where the GDF is located must be made at least three days prior to beginning decommissioning by either telephone, e-mail, or facsimile.

The notifications would include detailed information on the GDF, the contractor performing the decommissioning activity, the Stage II system specifics and the scheduled dates for decommissioning.

### **11.4 DECOMMISSIONING ACTIVITIES**

Owners and operators of GDFs will ensure that all applicable decommissioning activities required in 30 TAC §115.241, *Decommissioning of Stage II Vapor Recovery Equipment* are performed and completed.

### **11.5 DECOMMISSION COMPLETION AND RECORDKEEPING**

Owners and operators of GDFs are required to notify the TCEQ regional office and local government with jurisdiction where the GDF is located within 10-calendar days of completion of decommissioning. The notification is required to include: documentation sufficient to demonstrate compliance with decommissioning requirements; the name, address and license number of the licensed contractor who performed the testing to ensure that no leaks have been detected; and copies of all required test results including the TX-102 and TX-103 tests. A copy of the checklist and notification must be kept at the GDF for five years.

## **CHAPTER 12: DEMONSTRATING NONINTERFERENCE UNDER FEDERAL CLEAN AIR ACT, SECTION 110(I) (NEW)**

### **12.1 STAGE II REMOVAL EMISSION BENEFIT CHANGES AND AIR QUALITY PLANS: BENEFIT LOSS METHODOLOGY AND RESULTS**

When gasoline is delivered or dispensed at a gasoline dispensing facility (GDF) gasoline vapors can be released into the surrounding air. In order to reduce the amount of vapor emissions, three forms of vapor recovery systems are used. Two of the vapor recovery systems are vacuum systems that have been implemented at GDFs. The vacuum systems at GDFs have two stages, one stage to control evaporative emissions when the fuel is dispensed from delivery trucks into the underground storage tanks, which is Stage I, and a second system to control evaporative emissions when the fuel is pumped from the underground storage tank into vehicles purchasing fuel, which is Stage II. The third form of vapor recovery system is installed on the vehicle that is purchasing fuel, which is referred to as onboard refueling vapor recovery (ORVR).

Stage II and ORVR are two types of emission control systems designed to control the same source of vapors that will result from refueling vehicles purchasing fuel. ORVR is installed on vehicles at the time of manufacture and has been phased in for new passenger vehicles beginning with model-year 1998 and starting in 2001 for light-duty trucks and most heavy-duty gasoline-powered vehicles. ORVR equipment has been installed on nearly all (~99%) new gasoline-powered light-duty vehicles, light-duty trucks, and heavy-duty vehicles since 2006. While Stage II was an important component in controlling vapors from refueling when first implemented, it is currently only needed to capture vapors for vehicles that are not equipped with ORVR. As the percentage of vehicles equipped with ORVR increases, the emission reduction benefit of Stage II declines, since Stage II only provides benefit from non-ORVR vehicles.

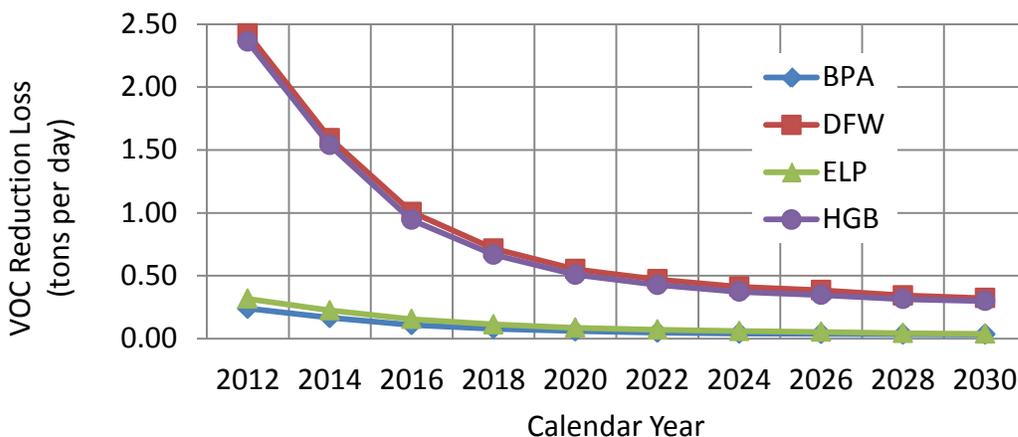
Since Stage II and ORVR control the same vapors, when ORVR has been determined to be in widespread use by the United States Environmental Protection Agency (EPA), it is appropriate to remove Stage II vapor recovery systems, since the emission reduction benefit from Stage II declines. However, an assessment of the exact amount of potential emission reduction benefit loss from removing Stage II needs to be calculated and any effect on air quality plans needs to be assessed. In order to assess the effect of the removal of Stage II control systems from GDFs in the four Texas ozone air quality planning areas, Beaumont-Port Arthur (BPA), Dallas-Fort Worth (DFW), El Paso (ELP), and Houston-Galveston-Brazoria (HGB), the data sources and equations documented in the United States Environmental Protection Agency (EPA) guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012, were used. The EPA's guidance provides a method to estimate the loss of benefit in the control of volatile organic compounds (VOC) emissions if the Stage II equipment is removed, which only affects non-ORVR vehicles, and accounts for the continuing increase in the percentage of vehicles equipped with ORVR. The method takes into account area specific variables such as fuel properties and local vehicle age distributions.

The equations in the EPA's Stage II removal guidance, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012 were used to calculate the benefit loss for the four Texas ozone air quality planning areas: BPA, DFW,ELP, and HGB. GDFs located in counties in these areas are affected by Stage II vapor recovery requirements and the owners or operators of the affected GDFs would be required to decommission Stage II equipment at their locations no later than August 31, 2018. A summary of the results of VOC reduction loss in tons per day (tpd) for years

2012 through 2030 for the four Texas areas with Stage II systems is provided in Table 12.1: *Stage II VOC Emission Reduction Benefit Loss Estimates Summary in Tons per Day*. The losses for each area summarized in Table 12.1 represent less than half of one percent of the total VOC emissions inventory. As shown in Figure 12.1: *Stage II Reduction Loss Trend*, the potential emission reduction benefit losses from removing Stage II in Texas are small in 2012 and decrease rapidly as the percentage of vehicles with ORVR increases over time. The small changes to the VOC emissions inventories due to removal of Stage II do not significantly change any of the results of the state implementation plan (SIP) revision attainment demonstrations or maintenance plans for any of the affected areas. The specific effects of the emission reduction benefit losses on the maintenance, reasonable further progress (RFP), and attainment SIP revisions are discussed for each individual plan in Sections 12.3, *Stage II Removal and Air Quality Plans*, through 12.3.5, *Dallas-Fort Worth and Houston-Galveston-Brazoria Attainment Demonstration Plan*. Complete documentation of the step-by-step calculations is provided in Appendix A, *Emissions Benefit Assessment for Removal of Stage II Gasoline Vapor Control Programs*.

**Table 12.1: Stage II VOC Emission Reduction Benefit Loss Estimates Summary in Tons per Day**

Year	BPA	DFW	ELP	HGB
2012	0.240	2.425	0.316	2.361
2014	0.166	1.594	0.224	1.539
2016	0.109	1.006	0.155	0.944
2018	0.078	0.716	0.113	0.667
2020	0.059	0.552	0.086	0.507
2022	0.048	0.471	0.071	0.426
2024	0.041	0.412	0.059	0.372
2026	0.038	0.384	0.053	0.347
2028	0.034	0.343	0.043	0.314
2030	0.032	0.322	0.038	0.298



**Figure 12-1: Stage II Benefit Loss Trend**

## 12.2 AREA SOURCE INVENTORY

The calculations of estimated Stage II emission reduction losses discussed in Section 12.1, *Stage II Removal Emission Benefit Changes and Air Quality Plans: Benefit Loss Methodology and Results* were applied to the controlled nonpoint (area) source VOC emissions in the emissions inventories (EI) of the SIP cited in Section 12.3, *Stage II Removal and Air Quality Plans*. Based upon the changes to the area source inventory, the change on the total SIP inventory can be assessed. The estimated emission reduction losses, resulting from the removal of Stage II controls, are incorporated as tons per day emissions added back into the total VOC emissions inventories. The additions are relatively minor and will have an insignificant effect on the total SIP VOC emissions. Tables 12.2: *Stage II VOC Emission Reduction Benefit Loss Estimates Summary in Tons per Day for Houston-Galveston-Brazoria* through 12.5: *Stage II VOC Emission Reduction Benefit Loss Estimates Summary in Tons per Day for El Paso* indicate the changes in VOC emissions to the total SIP EIs. For 2014 and 2018 in HGB, 2012 in DFW, 2014 in BPA, and 2014 in ELP, the changes to the total VOC emissions are less than 1%. The effect of the changes on the individual air quality plans are discussed in Sections 12.3, *Stage II Removal and Air Quality Plans*, through 12.3.5, *Dallas-Fort Worth and Houston-Galveston-Brazoria Attainment Demonstration Plans*.

**Table 12.2: Stage II VOC Emission Reduction Benefit Loss Estimates Summary in Tons per Day for Houston-Galveston-Brazoria**

Year	Total VOC with Stage II	Reduction Loss	Total VOC: Stage II Removed	Percent Loss
2014	682.18	1.539	683.72	0.23%
2018	695.63	0.667	696.30	0.10%

**Table 12.3: Stage II VOC Emission Reduction Benefit Loss Estimates Summary in Tons per Day for Dallas-Fort Worth**

Year	Total VOC with Stage II	Reduction Loss	Total VOC: Stage II Removed	Percent Loss
2012	528.77	2.425	531.20	0.46%

**Table 12.4: Stage II VOC Emission Reduction Benefit Loss Estimates Summary in Tons per Day for Beaumont-Port Arthur**

Year	Total VOC with Stage II	Reduction Loss	Total VOC: Stage II Removed	Percent Loss
2014	217.20	0.166	217.37	0.08%

**Table 12.5: Stage II VOC Emission Reduction Benefit Loss Estimates Summary in Tons per Day for El Paso**

Year	Total VOC with Stage II	Reduction Loss	Total VOC: Stage II Removed	Percent Loss
2014	44.61	0.224	44.83	0.50%

## 12.3 STAGE II REMOVAL AND AIR QUALITY PLANS

The Stage II emission reduction losses were assessed for the effects on BPA, DFW, El Paso, and HGB areas. The plans assessed include:

- *Beaumont-Port Arthur Attainment Area On-road Mobile Source Emissions Inventory and Motor Vehicle Emissions Budget Update State Implementation Plan Revision*, TCEQ Project Number 2012-005-SIP-NR, Adopted November 14, 2012;
- *Dallas-Fort Worth Reasonable Further Progress State Implementation Plan Revision for the 1997 Eight-Hour Ozone Standard*, TCEQ, Project Number 2010-023-SIP-NR, Adopted December, 7, 2011;
- *El Paso Eight-Hour Maintenance Plan, Revisions to the State Implementation Plan for the Control of Ozone Air Pollution*, TCEQ, Project Number 2005-027-SIP-NR, Adopted January 11, 2006;
- *Houston-Galveston-Brazoria Reasonable Further Progress State Implementation Plan Revision for the 1997 Eight Hour Ozone Standard*, TCEQ, Project Number 2009-018-SIP-NR, Adopted March 10, 2012;
- *Dallas-Fort Worth Attainment Demonstration State Implementation Plan Revision for 1997 Eight-Hour Ozone Standard*, TCEQ, Project Number 2010-022-SIP-NR, Adopted December 7, 2011; and
- *Houston-Galveston-Brazoria Attainment Demonstration State Implementation Plan Revision for the 1997 Eight Hour Ozone Standard*, TCEQ, Project Number 2009-017-SIP-NR, Adopted March 10, 2010.

## **12.4 DISCUSSION OF THE EFFECTS OF STAGE II REMOVAL ON EACH AIR QUALITY PLAN**

### **12.4.1 Beaumont-Port Arthur Area On-Road Mobile Source Emissions Inventory and Motor Vehicle Emissions Budget Update SIP Revision**

Removing VOC emissions reductions associated with the Stage II rule would not significantly change the emissions inventory estimates adopted with the 2008 BPA maintenance plan and the 2012 BPA maintenance plan update. Table 12.6: *Beaumont-Port Arthur VOC Emissions Projection Summary with Stage II Removal in Tons per Day* summarizes the estimated change in VOC emissions inventory projections for 2014, 2017, and 2021. Emissions inventory projections for 2005 and 2011 were not updated, because Stage II reductions were still in effect at that time.

**Table 12.6: Beaumont-Port Arthur VOC Emissions Projection Summary with Stage II Removal in Tons per Day**

Source Category	2005	2011	2014	2017	2021	Net Change
Area Source	151.57	155.68	157.01	158.51	160.60	9.03
MOVES-Based On-Road Mobile Source	11.30	8.30	6.30	5.00	3.90	-7.40
Non-Road Mobile Source	4.96	4.36	4.23	4.20	4.30	-0.66
Stationary Point Source	42.68	48.26	49.83	51.54	53.95	11.27
<b>Total</b>	<b>210.51</b>	<b>216.60</b>	<b>217.37</b>	<b>219.25</b>	<b>222.75</b>	<b>12.24</b>

Note: For the 2017 estimate, the potential reduction loss calculation for 2016 was used. For the 2021 estimate, the potential reduction loss calculation for 2020 was used.

The existing BPA maintenance plan demonstrates that overall VOC emissions are projected to increase from 2005 through 2021 by 12.18 tons per day (tpd). With the removal of Stage II emissions reductions, that emissions increase is projected to rise to 12.24 tpd in 2021. This is a 0.49% change in overall emissions projections once Stage II is removed from the SIP and as a requirement for the area.

The slight estimated increase in VOC emissions over the 16 years projected for the BPA maintenance plan would not change significantly with removal of Stage II reductions. Overall decreases in nitrogen oxide (NO<sub>x</sub>) emissions from 2005 through 2021 due to control strategies in the BPA maintenance plan are expected to fully offset the VOC increase. The existing BPA maintenance plan demonstrates that overall NO<sub>x</sub> emissions are projected to decline by 10.80 tpd from 2005 through 2021. Photochemical modeling analysis adopted with the 2008 BPA maintenance plan, which was approved by the EPA effective November 19, 2010, showed that reductions in NO<sub>x</sub> emissions are 3.76 times as effective as VOC reductions at reducing the BPA-area ozone design value. Based on that modeling analysis, VOC and NO<sub>x</sub> emissions in the BPA area are expected to remain at levels consistent with attainment of the 1997 eight-hour ozone standard through 2021. See Section 4.2: *Future Emissions and Verification of Continued Attainment of the Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Beaumont-Port Arthur Ozone Nonattainment Area*, Project Number 2008-006-SIP-NR, Adopted December 10, 2008, for further details on the photochemical modeling analysis demonstrating the effectiveness of NO<sub>x</sub> in reducing ozone design values in the BPA area.

#### **12.4.2 Dallas-Fort Worth Reasonable Further Progress State Implementation Plan Revision for 1997 Eight-Hour Ozone Standard**

Removing VOC emissions reductions associated with the Stage II rule would not change the emissions inventory estimates adopted with the 2011 DFW RFP SIP Revision because implementation of the Stage II removal will occur after the attainment year (2012) for the DFW 1997 eight-hour ozone standard nonattainment area. The RFP milestone years included in the DFW RFP SIP Revision (2011 and 2012) also occur before implementation of the Stage II removal. Should there be subsequent air quality RFP plans required for the DFW area with milestone years beyond 2012, there may be a slight estimated increase in VOC emissions ranging from 1.549 tpd in 2014 to 0.322 tpd by 2030 (see Table 12.1: *Stage II Reduction Loss Summary*). The current 2011 DFW RFP SIP Revision has a surplus of 21.92 tpd of NO<sub>x</sub> and 0.05

tpd of VOC for RFP analysis year 2012. The surplus NO<sub>x</sub> reductions can be used to offset either NO<sub>x</sub> or VOC increases using the EPA's NO<sub>x</sub> substitution factor found in EPA's *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012 and standard NO<sub>x</sub> substitution methodology. Between the existing surplus in 2012, the expected increases in reductions due to additional fleet turn over in on-road and non-road emissions, and NO<sub>x</sub> substitution, current and future reductions are expected to fully offset the slight VOC emissions increase due to Stage II removal.

#### **12.4.3 El Paso Eight Hour Maintenance Plan, Revisions to the State Implementation Plan for the Control of Ozone Air Pollution**

Removing VOC emissions reductions associated with the Stage II rule would not significantly change the emissions inventory estimates adopted with the 2006 El Paso maintenance plan. Table 12.7: *El Paso County VOC Emission Inventory Baseline (2002) and Projections to 2008 and 2014 with Area Source Stage Removal Loss in Tons per Day* summarizes the estimated VOC emissions inventory projections for 2002, 2008, and 2014 with the effects of Stage II removal included. Emissions inventory projections for 2002 and 2008 were not updated because Stage II reductions were still in effect for those years. The 2006 El Paso maintenance plan demonstrates that overall VOC emissions are projected to decrease by 8.83 tpd from 2002 through 2014. With the removal of Stage II emissions reductions, the emissions will decrease by a slightly smaller amount, 7.61 tons per day. Because the slight increase in VOC emissions due to Stage II removal is far less than surplus emission reductions required for maintenance, the removal of Stage II will not affect the 2006 El Paso ozone maintenance plan.

**Table 12.7: El Paso County VOC Emission Inventory Baseline (2002) and Projections to 2008 and 2014 with Area Source Stage Removal Loss in Tons per Day**

Source Category	2002	2008	2014	Net Change
Non-Road Mobile Source	5.94	4.75	3.94	2.00
Area Source	22.85	25.15	27.99	-5.14
Stationary Point Source	2.36	2.51	2.51	-0.15
On-Road Mobile Source	21.29	15.12	10.39	10.90
<b>Total</b>	<b>52.44</b>	<b>47.53</b>	<b>44.83</b>	<b>7.61</b>

Note: The reduction loss changes the emissions values from the 2006 El Paso Maintenance SIP only for 2014 Area Source and 2014 Total.

#### **12.4.4 Houston-Galveston-Brazoria Reasonable Further Progress State Implementation Plan for the 1997 Eight-Hour Ozone Standard**

Removing VOC emissions reductions associated with the Stage II rule would not significantly change the emissions inventory estimates adopted with the 2012 HGB reasonable further progress plan. Tables 12.8: *HGB 2014 RFP Estimated Reduction Surplus With and Without Stage II* through 12.11: *HGB 2019 RFP Contingency Estimated Reduction Surplus With and Without Stage II* summarize the estimated surplus emissions reductions for RFP milestone years of 2014, 2017, and 2018 and RFP contingency year 2019 with and without Stage II. The existing HGB RFP demonstrates there is an overall VOC emissions reduction surplus for all four years that ranges from 33.02 to 5.88 tpd. The loss in VOC emission reductions for the same period of years ranges from 1.539 to 0.667 tpd (see Table 12.1: *Stage II Reduction Loss Summary*). With the removal of Stage II emissions reductions, the VOC surplus emissions reductions needed to demonstrate reasonable progress and contingency decrease by a small amount to a range of 31.48 to 5.21 tpd. Because the slight increase in VOC emissions due to

Stage II removal is far less than surplus emission reductions in the current RFP and contingency plan, the removal of Stage II will not affect the HGB RFP SIP revision for the 1997 Eight-Hour Ozone Standard.

**Table 12.8: HGB 2014 RFP Estimated Reduction Surplus With and Without Stage II**

Description	NO <sub>x</sub> (tpd)	VOC (tpd)
Surplus Reductions From the 2012 HGB SIP Update	95.83	33.02
Surplus Reductions Without Stage II Reductions	95.83	31.48

**Table 12.9: HGB 2017 RFP Estimated Reduction Surplus With and Without Stage II**

Description	NO <sub>x</sub> (tpd)	VOC (tpd)
Surplus Reductions From the 2012 HGB SIP Update	52.23	16.13
Surplus Reductions Without Stage II Reductions	52.23	15.19

**Table 12.10: HGB 2018 RFP Estimated Reduction Surplus With and Without Stage II**

Description	NO <sub>x</sub> (tpd)	VOC (tpd)
Surplus Reductions From the 2012 HGB SIP Update	33.04	5.88
Surplus Reductions Without Stage II Reductions	33.04	5.21

**Table 12.11: HGB 2019 RFP Contingency Estimated Reduction Surplus With and Without Stage II**

Description	NO <sub>x</sub> (tpd)	VOC (tpd)
Surplus Reductions From the 2012 HGB SIP Update	29.95	6.85
Surplus Reductions Without Stage II Reductions	29.95	6.18

#### **12.4.5 Dallas-Fort Worth and Houston-Galveston-Brazoria Attainment Demonstration SIP Revisions**

##### 12.4.5.1 Ozone Attainment Demonstration Impacts from Stage II Removal

The EPA's *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2013, requires that states must "explain how the SIP revision that modifies an existing SIP-approved Stage II control program does not interfere with attainment of all applicable ozone National Ambient Air Quality Standard (NAAQS), including the 2008 NAAQS, and any applicable reasonable further progress requirements." In making such a demonstration, this guidance allows that "under the circumstances created by the Federal Clean Air Act's (FCAA) widespread use waiver, a planned Stage II phase-out that is shown to result in an area-wide VOC emissions increase may also be consistent with the conditions of FCAA § 110(l). A phase-out plan that would result in very small foregone emissions reductions in the near term that continue to diminish rapidly over time as ORVR phase-in continues, may result in temporary increases that are too small to interfere with attainment or progress toward attainment. This may be particularly evident in areas that are already attaining the ozone NAAQS or where emissions and/or air quality projections already demonstrate that an area is likely to maintain the NAAQS into the future. Similarly, in areas where ozone formation is limited by the availability of NO<sub>x</sub> emissions, a small (and ever-

declining) increase in VOC emissions may have little or no effect on future ozone levels. The EPA would consider any air quality analyses and supporting information provided by a state to show that a proposed SIP revision would not interfere with attainment and maintenance of the NAAQS.”

The Dallas-Fort Worth (DFW) area has an attainment date of June 15, 2013 for the 84 parts per billion (ppb) 1997 ozone standard and relied on a 2012 summer season for its most recent attainment demonstration SIP. The Houston-Galveston-Brazoria (HGB) area has an attainment date of June 15, 2019 for the 84 ppb 1997 ozone standard and will rely on a 2018 summer season for its most recent attainment demonstration SIP. The VOC emission increases previously discussed that would result from the removal of Stage II were applied to the photochemical modeling analyses from these most recent attainment demonstration SIP revisions. The DFW and HGB attainment SIP revisions are available at:

- *DFW Attainment Demonstration SIP Revision for the 1997 Eight-Hour Ozone Standard Nonattainment Area*, which was adopted on December 7, 2011 and is available at [http://www.tceq.texas.gov/airquality/sip/dfw\\_revisions.html](http://www.tceq.texas.gov/airquality/sip/dfw_revisions.html); and
- *HGB 1997 Eight-Hour Ozone Standard Nonattainment Area Motor Vehicle Emissions Budgets Update SIP Revision*, which was proposed on October 17, 2012 and is available at <http://www.tceq.texas.gov/airquality/sip/hgb/hgb-latest-ozone>.

Table 12.12: *Overview of Maximum Modeled Ozone Increases from Stage II Removal* provides an overview of the maximum modeled ozone increases that result from removal of Stage II for the DFW, and HGB areas. In the case of DFW, the 2012 VOC emissions increases from Stage II removal were applied directly to 2012 ozone modeling inventories. In the case of HGB, 2018 VOC emissions increases from Stage II removal were applied directly to 2018 ozone modeling inventories. Since 2018 is several years in the future but 2013 through 2017 interim year modeling inventories are not available, 2012 VOC emissions increases from Stage II were applied to the 2018 ozone modeling inventories. This was done to provide an estimate of the maximum possible ozone increases that could occur from Stage II removal prior to 2018. Greater detail on these scenarios follows Table 12.12. This discussion uses the attainment SIP revisions referenced previously in this Chapter as a starting point for the Stage II removal scenarios that were modeled. Details of the photochemical modeling used in the development of this assessment can be found at the [TCEQ's file transfer protocol](ftp://amdaftp.tceq.texas.gov/pub/Area_EI/Refuel/) ([ftp://amdaftp.tceq.texas.gov/pub/Area\\_EI/Refuel/](ftp://amdaftp.tceq.texas.gov/pub/Area_EI/Refuel/)).

**Table 12.12: Overview of Maximum Modeled Ozone Increases from Stage II Removal**

Stage II Area	Stage II Impact Year	Stage II Removal VOC Impacts (tpd)	Inventory Year Modeled	Maximum Ozone Increase (ppb)
DFW	2012	2.42	2012	0.01
HGB	2012	2.36	2018	0.02
HGB	2018	0.67	2018	0.01

Table 12.13: *2012 DFW Area VOC Refueling Emission Impacts from Stage II Removal* provides a summary of the 2012 VOC emission impacts by county of removing Stage II controls for an average summer weekday in the DFW area. The current refueling control scenario is for a combination of ORVR and Stage II for Collin, Dallas, Denton, and Tarrant Counties. The VOC emissions impacts of removing Stage II are added to these values to obtain the “ORVR Only”

control scenario that was photochemically modeled. As shown, the refueling emission estimates were unchanged for Ellis, Johnson, Kaufman, Parker, and Rockwall Counties since Stage II controls were not required.

**Table 12.13: 2012 DFW Area VOC Refueling Emission Impacts from Stage II Removal**

DFW Area County	ORVR and Stage II (VOC tpd)	Stage II Removal (VOC tpd)	ORVR Only (VOC tpd)
Collin	0.64	0.31	0.95
Denton	2.51	0.96	3.47
Dallas	0.62	0.28	0.90
Ellis	1.00	N/A	1.00
Johnson	0.94	N/A	0.94
Kaufman	0.83	N/A	0.83
Parker	0.62	N/A	0.62
Rockwall	0.34	N/A	0.34
Tarrant	2.05	0.87	2.92
Nine-County Total	9.55	2.42	11.97

The modeled ozone increases for nineteen monitors in the DFW area are presented below in Table 12.14: *2012 Ozone DVF Impacts from Stage II Removal in the DFW Area by Monitor*. The 2012 future design value (DVF) for each scenario is shown, along with the net DVF change from the Stage II removal. For more detail, see Table ES-2: *Summary of Modeled 2006 Baseline and 2012 Future Year Eight-Hour Ozone Design Values for DFW Monitors* from the [DFW Attainment Demonstration SIP Revision for the 1997 Eight-Hour Ozone Standard Nonattainment Area](http://www.tceq.texas.gov/airquality/sip/dfw_revisions.html) ([http://www.tceq.texas.gov/airquality/sip/dfw\\_revisions.html](http://www.tceq.texas.gov/airquality/sip/dfw_revisions.html)), which was adopted on December 7, 2011. As shown, the estimated ozone increases ranges from 0.00 to 0.01 ppb for all monitors.

**Table 12.14: 2012 Ozone DVF Impacts from Stage II Removal in the DFW Area by Monitor**

Site Code	Site Name	DVF With Stage II (ppb)	DVF Without Stage II (ppb)	DVF Impacts (ppb)
DENT	Denton Airport South	77.03	77.04	0.01
EMTL	Eagle Mountain Lake	78.06	78.06	0.00
KELC	Keller	76.45	76.46	0.01
GRAP	Grapevine Fairway	76.17	76.18	0.01
FWMC	Fort Worth Northwest	75.36	75.36	0.00
FRIC	Frisco	74.45	74.46	0.01
WTFD	Parker County	72.71	72.71	0.00
DALN	Dallas North Number 2	71.15	71.15	0.00
REDB	Dallas Executive Airport	70.58	70.58	0.00
CLEB	Cleburne Airport	70.85	70.85	0.00
ARLA	Arlington Municipal Airport	70.32	70.33	0.01
DHIC	Dallas Hinton Street	67.89	67.90	0.01
PIPT	Pilot Point	67.35	67.35	0.00
MDLT	Midlothian Tower	66.63	66.63	0.00
RKWL	Rockwall Heath	63.27	63.27	0.00
MDLO	Midlothian OFW	62.24	62.24	0.00
KAUF	Kaufman	60.42	60.42	0.00
GRAN	Granbury	69.66	69.66	0.00
GRVL	Greenville	59.96	59.96	0.00

Similar ozone modeling work was done for the HGB area, but the 2018 future year was used instead. Table 12.15: *2018 HGB Area VOC Refueling Emission Impacts from Stage II Removal* summarizes the VOC emission impacts of removing Stage II controls in the HGB area for an average summer weekday in 2018.

**Table 12.15: 2018 HGB Area VOC Refueling Emission Impacts from Stage II Removal**

HGB Area County	ORVR and Stage II (VOC tpd)	Stage II Removal (VOC tpd)	ORVR Only (VOC tpd)
Brazoria	0.45	0.04	0.49
Chambers	0.08	<0.01	~0.09
Fort Bend	0.51	0.05	0.56
Galveston	0.40	0.04	0.44
Harris	5.00	0.46	5.46
Liberty	0.15	0.01	0.16
Montgomery	0.61	0.05	0.66
Waller	0.09	0.01	0.10
Eight-County Total	7.29	0.67	7.96

Table 12.16: 2018 DVF Impacts from Stage II Removal in the HGB Area by Monitor summarizes the 2018 future DVF impacts in the HGB area from removal of Stage II at 40 different ozone monitors. For more detail, see Table 3-19: Summary of 2006 Baseline Modeling, RRF, and Future Design Values from the [HGB 1997 Eight-Hour Ozone Standard Nonattainment Area Motor Vehicle Emissions Budgets Update SIP Revision](http://www.tceq.texas.gov/airquality/sip/hgb/hgb-latest-ozone) (<http://www.tceq.texas.gov/airquality/sip/hgb/hgb-latest-ozone>), which was proposed on October 17, 2012. As shown, the estimated ozone increases ranges from 0.00 to 0.01 ppb for all monitors.

**Table 12.16: 2018 DVF Impacts from Stage II Removal in the HGB Area by Monitor**

Site Code	Site Name	DVF With Stage II (ppb)	DVF Without Stage II (ppb)	DVF Impacts (ppb)
BAYP	Houston Bayland Park	87.04	87.05	0.01
C35C	Clinton	74.98	74.98	0.00
CNR2	Conroe Relocated	72.86	72.86	0.00
DRPK	Houston Deer Park 2	86.20	86.20	0.00
GALC	Galveston Airport	75.77	75.78	0.01
HALC	Houston Aldine	78.00	78.00	0.00
HCHV	Channelview	77.69	77.70	0.01
HCQA	Houston Croquet	78.17	78.17	0.00
HAAA	Lang	69.71	69.71	0.00
HNWA	Northwest Harris County	78.14	78.14	0.00
HOEA	Houston East	75.77	75.78	0.01
HROC	Houston Regional Office	75.78	75.79	0.01
HSMA	Houston Monroe	83.01	83.01	0.00
HTCA	Houston Texas Avenue	74.46	74.46	0.00
HWAA	Houston North Wayside	71.26	71.27	0.01
LKJK	Lake Jackson	68.65	68.65	0.00
LYNF	Lynchburg Ferry	77.09	77.09	0.00
MACP	Manvel Croix Park	80.79	80.80	0.01
SBFP	Seabrook Friendship Park	78.90	78.91	0.01
SHWH	Houston Westhollow	80.21	80.21	0.00
DNCG	Danciger	70.82	70.82	0.00
H03H	HRM-3 Haden Road	79.38	79.38	0.00
MSTG	Mustang Bayou	76.30	76.30	0.00
TXCT	Texas City 34th Street	77.73	77.73	0.00
WALV	Wallisville Road	86.15	86.15	0.00
ATAS	Atascocita	78.04	78.04	0.00
BUHV	Bunker Hill Village	79.59	79.59	0.00
BYWC	Baytown Wetlands Center	80.94	80.94	0.00
CCHS	Clear Creek High School	77.31	77.31	0.00
CLHS	Clear Lake High School	77.04	77.04	0.00
CRBL	Crosby Library	77.22	77.22	0.00
FWCB	Clear Brook High School	76.45	76.45	0.00

Site Code	Site Name	DVF With Stage II (ppb)	DVF Without Stage II (ppb)	DVF Impacts (ppb)
KATP	Katy Park	80.73	80.74	0.01
KGWD	Kingwood	72.08	72.08	0.00
LPSB	La Porte Sylvan Beach	80.71	80.71	0.00
MERC	Mercer Arboretum	78.71	78.71	0.00
MEYE	Meyer Park	77.31	77.31	0.00
SHLD	Sheldon	74.98	74.98	0.00
TOMB	Tom Bass	89.67	89.68	0.01
WHOU	West Houston	85.73	85.74	0.01

In order to ascertain what the maximum possible impacts could be of removing Stage II between now through 2018, the TCEQ modeled the 2012 Stage II removal impacts for HGB and BPA with the 2018 ozone modeling input files. Table 12.17: *2012 HGB Area VOC Refueling Emission Impacts from the Stage II Removal Applied to 2018* present these 2012 VOC emissions impacts for the HGB area.

**Table 12.17: 2012 HGB Area VOC Refueling Emission Impacts from Stage II Removal Applied to 2018**

HGB Area County	2018 ORVR and Stage II (VOC tpd)	2012 Stage II Removal (VOC tpd)	ORVR Only (VOC tpd)
Brazoria	0.45	0.15	0.60
Chambers	0.08	0.01	0.09
Fort Bend	0.51	0.17	0.68
Galveston	0.40	0.14	0.54
Harris	5.00	1.64	6.64
Liberty	0.15	0.04	0.19
Montgomery	0.61	0.19	0.80
Waller	0.09	0.02	0.11
Eight-County Total	7.29	2.36	9.65

For the HGB area, adding 2012 Stage II removal estimates to the 2018 modeling inventory resulted in a maximum ozone increase of 0.02 ppb ozone, as shown in Table 12.18: *2018 DVF Impacts from Stage II Removal in the HGB Area*.

**Table 12.18: 2018 DVF Impacts from Stage II Removal in the HGB Area**

Site Code	Site Name	DVF With Stage II (ppb)	DVF Without Stage II (ppb)	DVF Impacts (ppb)
BAYP	Houston Bayland Park	87.04	87.05	0.01
C35C	Clinton	74.98	74.99	0.01
CNR2	Conroe Relocated	72.86	72.86	0.00
DRPK	Houston Deer Park 2	86.20	86.21	0.01
GALC	Galveston Airport	75.77	75.78	0.01
HALC	Houston Aldine	78.00	78.00	0.00
HCHV	Channelview	77.69	77.70	0.01

Site Code	Site Name	DVF With Stage II (ppb)	DVF Without Stage II (ppb)	DVF Impacts (ppb)
HCQA	Houston Croquet	78.17	78.18	0.01
HCAA	Lang	69.71	69.72	0.01
HNWA	Northwest Harris County	78.14	78.14	0.00
HOEA	Houston East	75.77	75.79	0.02
HROC	Houston Regional Office	75.78	75.79	0.01
HSMA	Houston Monroe	83.01	83.02	0.01
HTCA	Houston Texas Avenue	74.46	74.47	0.01
HWAA	Houston North Wayside	71.26	71.27	0.01
LKJK	Lake Jackson	68.65	68.65	0.00
LYNF	Lynchburg Ferry	77.09	77.10	0.01
MACP	Manvel Croix Park	80.79	80.80	0.01
SBFP	Seabrook Friendship Park	78.90	78.91	0.01
SHWH	Houston Westhollow	80.21	80.21	0.00
DNCG	Danciger	70.82	70.82	0.00
H03H	HRM-3 Haden Road	79.38	79.39	0.01
MSTG	Mustang Bayou	76.30	76.30	0.00
TXCT	Texas City 34th Street	77.73	77.74	0.01
WALV	Wallisville Road	86.15	86.15	0.00
ATAS	Atascocita	78.04	78.05	0.01
BUHV	Bunker Hill Village	79.59	79.59	0.00
BYWC	Baytown Wetlands Center	80.94	80.95	0.01
CCHS	Clear Creek High School	77.31	77.31	0.00
CLHS	Clear Lake High School	77.04	77.04	0.00
CRBL	Crosby Library	77.22	77.23	0.01
FWCB	Clear Brook High School	76.45	76.46	0.01
KATP	Katy Park	80.73	80.74	0.01
KGWD	Kingwood	72.08	72.08	0.00
LPSB	La Porte Sylvan Beach	80.71	80.72	0.01
MERC	Mercer Arboretum	78.71	78.72	0.01
MEYE	Meyer Park	77.31	77.31	0.00
SHLD	Sheldon	74.98	74.99	0.01
TOMB	Tom Bass	89.67	89.68	0.01
WHOU	West Houston	85.73	85.74	0.01

With the widespread use of ORVR, the benefit of Stage II systems has steadily decreased to a level that may no longer justify installation of new systems or maintenance of existing systems. In order for decommissioning of Stage II to be a viable recommendation, an assessment of the value of Stage II emissions reductions to meet SIP obligations was needed. Stage II benefit loss analyses were completed for all four Texas ozone air quality planning areas for even numbered years from 2012 to 2030. The Stage benefit loss values were used to establish a benefit loss trend and to assess the effects on Texas SIPs. The emission benefit loss trend indicates that for years beyond 2012 the benefit loss reduction is less than 1% of the total VOC emissions inventory for

BPA, DFW, ELP and HGB. The analyses of removing Stage II from the Texas SIPs establish that even without emission reduction benefits of Stage II vapor recovery systems beyond 2014, all air quality planning commitments in the maintenance, RFP and attainment demonstration SIPs for BPA, DFW, El Paso and, HGB will be achieved. Therefore decommissioning of Stage II vapor recovery systems in Texas is recommended.

**APPENDIX A: EMISSION BENEFIT ASSESSMENT FOR  
REMOVAL OF STAGE II GASOLINE VAPOR CONTROL  
PROGRAMS**

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## **LIST OF SELECTED ACRONYMS AND ABBREVIATIONS**

A/L	air to liquid ratio
FCAA	Federal Clean Air Act
CAPCOA	California Air Pollution Control Officers Association
CF	Compatibility Factor
EE	Excess Vent Emissions
EPA	Environmental Protection Agency
FR	Federal Register
GDF	gasoline dispensing facility
GPM	gallons per month
GVWR	gross vehicle weight rating
IUVP	Input Use Verification Program
MOVES	Motor Vehicle Emissions Simulator
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NO <sub>x</sub>	nitrogen oxides
OBD	onboard diagnostics
ORVR	onboard refueling vapor recovery
RFP	reasonable further progress
RFG	reformulated gasoline
RVP	Reid vapor pressure
SIP	state implementation plan
VOC	volatile organic compound
UST	underground storage tank
VMT	vehicle miles traveled
VRS	vapor recovery systems

## 1.1 INTRODUCTION

When gasoline is delivered or dispensed at a gasoline dispensing facility (GDF) gasoline vapors can be released into the surrounding air. In order to reduce the amount of vapor emissions, three forms of vapor recovery systems are used. Two of the vapor recovery systems are vacuum systems that have been implemented at GDFs. The vacuum systems at GDFs have two stages, one stage to control evaporative emissions when the fuel is dispensed from delivery trucks into the underground storage tanks, which is Stage I, and a second system to control evaporative emissions when the fuel is pumped from the underground storage tank into vehicles purchasing fuel, which is Stage II. The third form of vapor recovery system is installed on the vehicle that is purchasing fuel, which is referred to as onboard refueling vapor recovery (ORVR).

Stage II and ORVR are two types of emission control systems designed to control the same source of vapors, that result from refueling vehicles purchasing fuel. ORVR is installed on vehicles at the time of manufacture and has been phased in for new passenger vehicles beginning with model-year 1998 and starting in 2001 for light duty trucks and most heavy duty gasoline-powered vehicles. ORVR equipment has been installed on nearly all (~99%) new gasoline-powered light duty vehicles, light duty trucks and heavy duty vehicles since 2006. While Stage II was an important component in controlling vapors from refueling when first implemented, it is currently needed to capture vapors for vehicles that are not equipped with ORVR. As the percentage of vehicles equipped with ORVR increases, the emissions reduction benefit of Stage II declines, since Stage II only provides benefit from non-ORVR vehicles.

Since Stage II and ORVR control the same vapors, when ORVR has been determined to be in widespread use by the United States Environmental Protection Agency (EPA), it is appropriate to remove Stage II vapor recovery systems, since the emission reduction benefit from Stage II declines. However, an assessment of the exact amount of potential emission reduction benefit loss from removing Stage II needs to be calculated and any effect on air quality plans needs to be assessed. In order to assess the effect of the removal of Stage II control systems from GDFs in the four Texas ozone air quality planning areas, Beaumont-Port Arthur (BPA), Dallas-Fort Worth (DFW), El Paso (ELP), and Houston-Galveston-Brazoria (HGB), the data sources and equations documented in the United States Environmental Protection Agency's (EPA) guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, EPA-47/B-12-001, August 7, 2012, was used. The guidance provides a method to estimate the loss of benefit in the control of volatile organic compounds (VOC) emissions if the Stage II equipment is removed, which only affects non-ORVR vehicles, and accounts for the continuing increase in the percentage of vehicles equipped with ORVR. This method also takes into account area specific variables such as fuel properties and local vehicle age distributions.

The equations in the EPA's Stage II removal guidance, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, EPA-47/B-12-001, August 7, 2012, was used to calculate the benefit loss for four Texas ozone air quality planning areas: BPA, DFW, ELP, and HGB. A summary of the results of VOC reduction loss in tons per day for years 2012 through 2030 for the four Texas areas with Stage II systems is provided in Table 12.1: *Stage II VOC Emission Reduction Benefit Loss Estimates Summary in Tons per Day*, Chapter 12: *Demonstrating Noninterference under Federal Clean Air Act (FCAA), Section 110(I), Stage II Vapor Recovery Program State Implementation Plan (SIP) Revision*, Proposed, April 23, 2013. The losses for each area summarized in Table 12.1 represent less than half of 1% of the total VOC emissions inventory. As shown in Figure 12-1: *Stage II Reduction Loss Trend* in Chapter 12 of the proposed Stage II SIP revision, the potential emission reduction benefit losses from removing Stage II in Texas are

small in 2012 and decrease rapidly as the percentage of vehicles with ORVR increases over time. The step by step details of the methodology and results to determine the benefit losses in each of the Texas air quality plans are provided in Sections 12.3, *Stage II Removal and Air Quality Plans* through 12.3.5, *Dallas-Fort Worth and Houston-Galveston-Brazoria Attainment Demonstration Plan* in Chapter 12. Section 1.2, *Parameters and Variables for Stage II VRS and ORVR*, of this Appendix identifies and describes a series of parameters and variables related to the implementation of Stage II and ORVR. Section 1.3, *Calculating Impacts On The Area Wide Refueling Emission Inventory*, uses the parameters and variables in equations that evaluate the emission reduction effects of Stage II and ORVR control technologies in Texas in the context of the provisions of FCAA sections 110(l), 184(b)(2), and 193 to conduct SIP-related analyses.

Details of the photochemical modeling used in the development of this assessment can be found at: [ftp://amdaftp.tceq.texas.gov/pub/Area\\_EI/Refuel](ftp://amdaftp.tceq.texas.gov/pub/Area_EI/Refuel).

## **1.2 PARAMETERS AND VARIABLES FOR STAGE II VRS AND ORVR**

To conduct analyses of the impact of phasing out Stage II VRS, several key pieces of information and data are needed for the equations used in the assessments. The variables and components are used as described in the EPA document *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012. Each of the parameters used for the phase out of Stage II calculations is described in Section 1.2.1, *Definition of Terms*. The data sources and values used for each variable are provided in Section 1.2.2, *Sources of Data and Values for Parameters and Variables*.

### **1.2.1 Definition of Terms**

All terms used in the Stage II removal analysis are derived from the EPA document *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012. To facilitate reading of the documentation of the calculations for Texas air quality areas, the definitions from the guidance document are provided below for reference. Additional reference information for some of the variables are provided in the reference guidance document.

**Gasoline dispensing facility (GDF):** A location which dispenses gasoline to highway motor vehicles and serves as a fueling point for non-road engines and equipment. It includes all retail outlets such as traditional service stations, convenience stores, truck stops, and hypermarkets (e.g., warehouse clubs and big box stores) as well as private and commercial outlets such as those for centrally-fueled fleets, government operations, and private businesses as well as private outlets such as centrally-fueled fleet and government operations. For these purposes, it generally does not include marinas and general aviation airports dispensing aviation gasoline. Note that some lower throughput GDFs are exempt from Stage II vapor recovery by state regulations.

**Stage II Vapor Recovery System (VRS):** A system designed to capture displaced vapors that emerge from inside a vehicle's fuel tank, when gasoline is dispensed into the tank. There are two basic types of Stage II systems, the balance type and the vacuum assist type.

**Balance-type Stage II system:** The balance system transfers vapors from the vehicle tank to the GDF underground storage tank (UST) based on pressure differential. A key feature in the balance system is a hose nozzle that makes a tight connection with the fill pipe on the vehicle

fuel tank. The nozzle spout is fitted with an accordion-like bellows that presses snugly against the fill pipe lip. The vapors flow into the port, through the nozzle bellows, through a coaxial hose that connects the nozzle to the dispenser, and finally on through a vapor-return pipe back into the UST.

Vacuum assist-type Stage II system: This system relies on a vacuum source to help move the vapors out of the vehicle tank and into the UST. Current designs do not rely on a tight-fitting seal at the nozzle-fill pipe interface. Traditional vacuum systems are of two types: passive and active. In a passive vacuum-assist system, which is the dominant approach today, an electrically driven vacuum pump, typically in the dispenser cabinet, provides the vacuum power. An active system maintains a vacuum on the entire Stage II vapor recovery system through a central pump (jet pump) to recover vapors from the entire system to the tank. A key feature of vacuum assist system design and operation is the design air/liquid (A/L) volume ratio which is a measure of the volume of air returned to the tank to the volume of liquid dispensed. (When refueling a non-ORVR vehicle this "air" also contains gasoline vapor.) The larger the design A/L ratio, the greater the amount of fresh air returned to the UST. Some passive vacuum assist systems employ loose-fitting mini-bellows to help reduce the design A/L ratio. Sometimes these are called hybrid systems. Active vacuum assist systems often have A/L ratios somewhat greater than unity and employ a post-processor to reduce excess vent pipe emissions created by the higher A/L ratio with these systems.

Vent pipe: A pipe from the UST to the atmosphere which allows the tank to "breathe" during normal operation. This allows the tank to bring in fresh air to relieve negative pressure or release vapor to reduce positive pressure in the UST as needed. Vent pipes are generally 12 feet in height and two inches in diameter.

Pressure vacuum vent valve: A device, usually referred to as a "P/V vent valve," installed at the discharge end of a vent pipe connected to a gasoline storage tank, to regulate the pressure at which vapor is allowed to escape from the tank, and the vacuum at which outside air is allowed to enter the tank. The inflow/outflow of air through the vent pipe is controlled at specified pressures. These vent valves generally inhibit vapor release and are used to ensure the proper operation of Stage II balance systems. These P/V vent valves are now widely required as a result of EPA's GDF "Stage I" National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulation (40 CFR 63 CCCCC).

Onboard Refueling Vapor Recovery (ORVR): A system employed on gasoline-powered highway motor vehicles to capture gasoline vapors displaced from a vehicle fuel tank during refueling events. These systems are required under section 202(a)(6) of the FCAA and implementation of these requirements began in the 1998 model year. Currently they are now used on all gasoline-powered passenger cars, light trucks, and complete heavy trucks of less than 14,000 pounds gross vehicle weight rating (GVWR). ORVR systems typically employ a liquid fill neck seal to block vapor escape to the atmosphere and otherwise share many components with the vehicle's evaporative emission control system including the onboard diagnostic system (OBD) sensors.

ORVR/Stage II Compatibility: Compatibility problems can result in an increase in emissions from the UST vent pipe and other system fugitive emissions related to the refueling of ORVR vehicles with some types of vacuum assist-type Stage II systems. This occurs during refueling an ORVR vehicle when the vacuum assist system draws fresh air into the UST rather than an air vapor mixture from the vehicle fuel tank. Vapor flow from the vehicle fuel tank is blocked by the liquid seal in the fill pipe which forms at a level deeper in the fill pipe than can be reached by the end of the nozzle spout. The fresh air drawn into the UST enhances gasoline evaporation in the UST which increases pressure in the UST. Unless it is lost as a fugitive emission, any tank

pressure in excess of the rating of the pressure/vacuum valve is vented to the atmosphere over the course of a day. The magnitude of these emissions at a specific GDF is primarily a function of the fraction of total gasoline throughput dispensed to the ORVR vehicles and the A/L ratio of the dispensers.

The compatibility factor is an especially important consideration in calculating the emissions impacts of Stage II controls. Even if a state/local area wishes to keep Stage II controls to address non-ORVR equipped vehicles being refueled at Stage II GDFs, for non-ORVR compatible Stage II vacuum assist systems there will come a point where the emissions impact of the compatibility factor surpasses any gain from controlling non-ORVR vehicles. After that point, Stage II would lead to a net area-wide loss in emissions control. The point in time when this occurs depends on the nature of the Stage II program and the rate of ORVR penetration into the fleet.

**ORVR-compatible vacuum assist-type Stage II system:** A vacuum assist type Stage II system that is designed to sense when an ORVR vehicle is being refueled and reduces the A/L ratio to near zero to avoid compatibility emission effects. Current ORVR compatible nozzles are certified to meet California Air Resource Board (CARB) requirements for Stage II enhanced vapor recovery (EVR) efficiency with up to 80 percent ORVR vehicles in the fleet mix. Balance type nozzles are ORVR compatible as well.

**$\eta_{iisII}$  - Stage II VRS in-use control efficiency:** This is the current best estimate of the average in-use control efficiency for Stage II VRS in the state/area when applied to vehicles that are not equipped with ORVR. It is expressed as a fraction of 1. This value considers not only vapor capture at the vehicle fill pipe opening but also its transmittal to and storage in the UST. This value likely varies somewhat by state/area depending on how well GDF operators follow the inspection, testing, and maintenance activities specified in the state's implementing regulations and the frequency of inspection and follow-on enforcement actions by state/local authorities in implementing the regulations. This judgment should be informed by test data if available either from within the state/area or from other sources if no local data is available. Publicly available data suggests typical current values are in the range of 60-75 percent (0.60 – 0.75).<sup>12,13,14,15</sup> As a result, it may be appropriate to identify significantly lower Stage II in-use control efficiencies than were identified in EPA's 1991 technical guidance on Stage II systems.

**$Q_{SII}$  - Fraction of highway gasoline throughput covered by Stage II VRS:** The fraction of gasoline that is sold through dispensers equipped with Stage II VRS equipment expressed as a fraction of 1. This likely varies somewhat by state/area and can be derived from state data. Typical default values are 0.9 for states/areas that adopted the FCAA allowed exemption value of 10,000 gallons per month (gpm) for private GDFs and 50,000 gpm for independent small business marketers and 0.95-0.97 for states/areas that adopted 10,000 gpm exemption criteria for all GDFs.

**$Q_{SIIva}$  – Fraction of highway gasoline throughput dispensed through vacuum-assist type Stage II VRS:** The fraction of annual gasoline consumption in the state/area dispensed through vacuum assist type Stage II VRS expressed as a fraction of 1. This would not include gasoline dispensed through dispensers with traditional nozzles, balance-type Stage II VRS nozzles, or ORVR-compatible Stage II nozzles. If the fraction dispensed through traditional vacuum assist VRS is not known, then the fraction of GDFs with traditional vacuum assist Stage II VRS may be substituted based on the assumption that throughput is evenly distributed across the various GDFs that are not exempt from Stage II requirements.

VMT<sub>ORVRi</sub> - ORVR Vehicle Miles Traveled (VMT): The fraction of annual area-wide VMT traveled by ORVR-equipped vehicles. The subscript i denotes that this term varies by calendar year.

CF<sub>i</sub> - Compatibility Factor: This is an increase in UST vent pipe emissions over the normal breathing/emptying loss emissions. As discussed above, this is a function of the fraction of gasoline dispensed to ORVR vehicles in any given year (using VMT of ORVR vehicles as a surrogate), the design features of the traditional vacuum assist Stage II nozzles, and the proportion of vacuum assist Stage II stations with various A/L ratios. This term may be calculated as the product of VMT<sub>ORVRi</sub> and a constant term 0.07645. It should be noted that for a state/area with all balance systems or with a requirement for ORVR compatible nozzles, the CF term is zero because there is no compatibility problem by definition.

Q<sub>ORVRi</sub> - Fraction of annual gallons of highway motor gasoline dispensed to ORVR-equipped vehicles: This is likely to vary by state/area depending on the fleet turnover/scrappage rate, annual VMT, and fuel economy of the vehicles involved in the analysis. The subscript i denotes that this term varies by calendar year. Table A-1, column 4 in the Appendix in the EPA guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, shows national average values that a state could use or adapt by extrapolation or interpolation as appropriate. For example, if the fleet in the state was one year newer than the national average then the analysis would use the data for the next calendar year (e.g., 2014 for 2013). Conversely, for example, if the fleet in the state was on average six months older than the national average then the analysis would interpolate between the current and past year (e.g., halfway between 2012 and 2013). Data on the fleet average age distributions by vehicle class for 2012 used in these calculations is provided in Appendix Table A-9 of the EPA guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*.

η<sub>ORVR</sub> - In-use control efficiency for ORVR: EPA recommends a value of 0.98.21 States may use a lower or higher value, if justified. This value is based on testing of over 1,600 in-use vehicles with mileages ranging from about 6,000 – 135,000. This value does not reflect other adjustments found in the EPA's Motor Vehicle Emission Simulator (MOVES) model. The current MOVES model does not fully consider the in-use verification program (IUVP) test results as mentioned above. Other MOVES model efficiency adjustments are based on data from older vintage evaporative emission control systems and do not fully reflect the benefits derived from OBD, inspection and maintenance (I/M) programs, or improved durability resulting from the integrated ORVR/evaporative control systems used in vehicles meeting the progressively more stringent evaporative emission standards which were implemented in the mid-1990s and later.

Overall Stage II-ORVR increment: The overall increment identifies the annual area-wide emission control gain from Stage II installations at GDFs as ORVR technology phases in. Thus, it also indicates the emission reduction potential loss (in year i) from removing Stage II.

Overall Stage II - ORVR delta: The overall delta is the comparison between the Stage II efficiency and the ORVR efficiency with both technologies in place.

### **1.2.2 Sources of Data and Values for Parameters and Variables**

The first step in the calculation of the loss of benefit from removal of Stage II controls is to define all variables used in the calculations. Once the variables are defined, values for each variable need to be assigned collected from data sources or calculated. Whenever possible,

values specific to each local area were obtained. In other cases EPA default values were used. Table 1: *Summary of Stage II Variable Values and Data Sources* summarizes the data sources and values used for each of the Stage II calculation variables. The equations used for values that required calculations to be determined are documented in Section 1.3, *Calculating Impacts on the Area Wide Refueling Emission Inventory*.

**Table 1: Summary of Stage II Variable Values and Data Sources**

Variable	Description	Value Used	Notes
Increment <sub>i</sub>	Annual area wide emission control gain for year i from Stage II at GDFs as ORVR phases in the vehicle fleet	See Section 3.1 EPA Guidance on Removing Stage II Gasoline Vapor Recovery Control Programs from SIPs and Assessing Comparable Programs, August 7, 2012	Area and year specific
Q <sub>SII</sub>	Fraction of gasoline throughput covered by Stage II VRS	95%	Texas used 10,000 gpm for all GDFs.
Q <sub>ORVR</sub>	Fraction of annual gallons of highway motor gasoline to ORVR vehicles	See Section 3.1 EPA Guidance on Removing Stage II Gasoline Vapor Recovery Control Programs from SIPs and Assessing Comparable Programs, August 7, 2012	Analysis done by Area by Year
η <sub>iuSII</sub>	In use Stage II efficiency	60%	In their guidance document, <i>Guidance on Removing Stage II Gasoline Vapor Recovery Control Programs from SIPs and Assessing Comparable Programs</i> , August 7, 2012, EPA suggested using a value in the range of 60-75%, however recommended using a lower Stage II in-use control efficiency unless test data is available to support the higher value. TCEQ staff agreed on a 60% value.

Variable	Description	Value Used	Notes
$Q_{Silva}$	Fraction of gasoline throughput covered by traditional vacuum assist Stage II VRS	Zero	All GDFs in Texas are required to be ORVR compatible.
$CF_i$	Compatibility Factor	$0.07645VMT_{ORVR}$ (not needed because $Q_{Silva}$ is zero)	This value is multiplied by $Q_{Silva}$ which is zero in Texas, so the product becomes zero and is not really needed in the equation.
$GC_i$	Projected gasoline consumption for the area in year i	See Section 3.2, <i>Parameters and Variables Related to Implementing Stage II VRS and ORVR, EPA Guidance on Removing Stage II Gasoline Vapor Recovery Control Programs from SIPs and Assessing Comparable Programs, August 7, 2012</i>	Based upon base year and growth factor
$\Delta T$	Temperature difference vehicle fuel tank temperature and dispensed fuel temperature	7.1	Five Month Ozone Season Value for Region 3 from Table A3, <i>Seasonal Variation In Temperature Difference Between Vehicle Fuel Tank and Dispensed Fuel</i> , of EPA guidance document, <i>Guidance on Removing Stage II Gasoline Vapor Recovery Control Programs from SIPs and Assessing Comparable Programs, August 7, 2012, Page 27</i> . The Region 3 categorization comes from Table 6, <i>Weighted Temperatures and RVP Parameters, Refueling Emissions from Uncontrolled Vehicles</i> , EPA.OMS, EPA-AA-SDSB-85-6. June 1985.

Variable	Description	Value Used	Notes
Td	Dispensed liquid temperature	80.8	Calculated five month ozone season average for Region 3 from values in Table A-2, <i>Monthly Average Dispensed Liquid Temperature</i> , EPA guidance document, <i>Guidance on Removing Stage II Gasoline Vapor Recovery Control Programs from SIPs and Assessing Comparable Programs</i> , August 7, 2012, Page 26 (76+82+83+84+79)/5. The Region 3 categorization comes from Table 6, <i>Weighted Temperatures and RVP Parameters, Refueling Emissions from Uncontrolled Vehicles</i> , EPA.OMS, EPA-AA-SDSB-85-6. June 1985.
RVP	Reid Vapor Pressure	7.8 BPA, 7.0 ELP, 6.8 DFW, 6.8 HGB	BPA-1992 Federal RVP limit 7.8; ELP-Federal NNNNN, 7.0; DFW and HGB-RFG RVP combined with values from the Texas Summer Fuel Field Study provide specific values of 6.8 for both DFW and HGB
$\eta_{ORVR}$	In-use control efficiency for ORVR	98%	Not used because Stage II systems are 100% compatible with ORVR in Texas

### 1.3 CALCULATING IMPACTS ON THE AREA WIDE REFUELING EMISSION INVENTORY

There is a step by step process for calculating the loss of emission credit documented in the EPA guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012. Calculating the impact on the VOC inventory is important in the context of assessing a SIP action against the provisions of CAA section 110(l). The methodology involves multiplying three different terms, which are area/state specific, as well as appropriate unit conversion factors, and is shown in Equation 1.

Equation 1: 
$$\text{Tons}_i = (\text{Increment}_i) * (\text{GC}_i) * (\text{EF}) * (\text{ConversionFactor1}) * (\text{ConversionFactor2})$$

Where:

$\text{Tons}_i$  = overall emissions effect of removing Stage II for year i

$\text{Increment}_i$  = Annual area wide emission control gain for year i from Stage II at GDFs as ORVR phases in, See *Section 3.1*

$\text{GC}_i$  = Projected gasoline consumption for the area in year i, See *Section 3.2*

EF = uncontrolled displacement refueling emission factor in grams per gallon (g/gal), See *Section 3.3*

ConverisonFactor1 = 0.002204634 pounds per gram  
 ConverisonFactor2 = 0.0005 tons per pound

The results for Equation 1 for each area are summarized in Table 2: *BPA Stage II VOC Reduction Loss, Tons per Ozone Season Day* through Table 5: *HGB Stage II VOC Reduction Loss, Tons per Ozone Season Day*.

**Table 2: BPA Stage II VOC Reduction Loss, Tons per Ozone Season Day**

Year	Hardin	Jefferson	Orange	Total
2012	0.033	0.149	0.057	0.240
2014	0.023	0.104	0.040	0.166
2016	0.015	0.068	0.026	0.109
2018	0.011	0.049	0.019	0.078
2020	0.008	0.037	0.014	0.059
2022	0.007	0.030	0.012	0.048
2024	0.006	0.025	0.010	0.041
2026	0.005	0.023	0.009	0.038
2028	0.005	0.021	0.008	0.034
2030	0.005	0.020	0.008	0.032

**Table 3: DFW Stage II VOC Reduction Loss, Tons per Ozone Season Day**

Year	Collin	Dallas	Denton	Tarrant	Total
2012	0.313	0.965	0.277	0.870	2.425
2014	0.206	0.634	0.182	0.572	1.594
2016	0.130	0.400	0.115	0.361	1.006
2018	0.092	0.285	0.082	0.257	0.716
2020	0.071	0.220	0.063	0.198	0.552
2022	0.061	0.187	0.054	0.169	0.471
2024	0.053	0.164	0.047	0.148	0.412
2026	0.050	0.153	0.044	0.138	0.384
2028	0.044	0.137	0.039	0.123	0.343

Year	Collin	Dallas	Denton	Tarrant	Total
2030	0.042	0.128	0.037	0.116	0.322

**Table 4: ELP Stage II VOC Reduction Loss, Tons per Ozone Season Day**

YEAR	El Paso
2012	0.316
2014	0.224
2016	0.155
2018	0.113
2020	0.086
2022	0.071
2024	0.059
2026	0.053
2028	0.043
2030	0.038

**Table 5: HGB Stage II VOC Reduction Loss, Tons per Ozone Season Day**

Year	Brazoria	Chambers	Fort Bend	Galveston	Harris	Liberty	Montgomery	Waller	Total
2012	0.148	0.015	0.168	0.142	1.636	0.039	0.190	0.024	2.361
2014	0.097	0.010	0.109	0.092	1.066	0.025	0.124	0.016	1.539
2016	0.059	0.006	0.067	0.057	0.654	0.016	0.076	0.010	0.944
2018	0.042	0.004	0.047	0.040	0.462	0.011	0.054	0.007	0.667
2020	0.032	0.003	0.036	0.030	0.351	0.008	0.041	0.005	0.507
2022	0.027	0.003	0.030	0.026	0.295	0.007	0.034	0.004	0.426
2024	0.023	0.002	0.026	0.022	0.257	0.006	0.030	0.004	0.372
2026	0.022	0.002	0.025	0.021	0.240	0.006	0.028	0.004	0.347
2028	0.020	0.002	0.022	0.019	0.218	0.005	0.025	0.003	0.314
2030	0.019	0.002	0.021	0.018	0.207	0.005	0.024	0.003	0.298

### 1.3.1 Area Specific Increments

The overall Stage II-ORVR increment,  $\text{Increment}_i$ , identifies the annual area-wide emission control gain from Stage II installations at GDFs as ORVR technology phases in. Thus, it also indicates the emission reduction potential loss, in year I, from removing Stage II. Equation 2, from the EPA guidance, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012, is used to calculate  $\text{Increment}_i$ . Since  $Q_{\text{ORVR}}$  is area and year specific,  $\text{Increment}_i$  is also area and year specific. Using the  $Q_{\text{ORVR}}$  values from Section 1.3.1.1, *Fraction of Gasoline Dispensed to ORVR Equipped Vehicles*, and the fixed values of 0.95 and 0.60 for  $Q_{\text{SII}}$  and  $\eta_{\text{iuSII}}$  respectively, the values for  $\text{increment}_i$  can be calculated for all areas and analysis years. An example calculation for BPA in 2012 is provided. A summary of all the values is provided in Table 6: *Increment<sub>i</sub> by Area in Year*.

Equation 2: 
$$\text{increment}_i = (Q_{\text{SII}}) * (1 - Q_{\text{ORVR}_i}) * (\eta_{\text{iuSII}}) - (Q_{\text{SIIva}}) * (CF_i)$$

Where:

$\text{Increment}_i$  = increment percentage impact on the refueling inventory of removing Stage II

$Q_{\text{SII}}$  = 0.95

$Q_{\text{ORVR}_i}$  = Calculated using Equation NN

$\eta_{\text{iuSII}}$  = 0.60

$Q_{\text{SIIva}}$  = Zero (100% of Texas Stage systems are ORVR compatible)

$CF_i^1$  =  $(0.0777) * (Q_{\text{ORVR}_i})$

Note 1: Because  $CF_i$  is multiplied by  $Q_{\text{SIIva}}$ , and  $Q_{\text{SIIva}}$  is equal to zero in Texas, the last group in the equation is to zero, the value of  $CF_i$  will not affect the answer.

Example 1: BPA year 2012

$$\begin{aligned} \text{Increment}_{i, \text{BPA}, 2012} &= (Q_{\text{SII}})(1 - Q_{\text{ORVR}_i})(\eta_{\text{iuSII}}) - (Q_{\text{SIIva}})(CF_i) \\ &= (0.95)(1 - 0.794)(0.60) - (0) \\ &= 0.1176 \end{aligned}$$

**Table 6: Increment<sub>i</sub> by Area in Year**

Year	BPA	DFW	ELP	HGB
2012	0.1176	0.0934	0.1150	0.0987
2014	0.0811	0.0610	0.0811	0.0639
2016	0.0528	0.0384	0.0557	0.0391
2018	0.0385	0.0277	0.0413	0.0280
2020	0.0294	0.0216	0.0319	0.0215
2022	0.0242	0.0185	0.0263	0.0182
2024	0.0210	0.0166	0.0226	0.0163
2026	0.0194	0.0155	0.0201	0.0152
2028	0.0175	0.0138	0.0165	0.0137
2030	0.0166	0.0129	0.0144	0.0130

If the increment<sub>i</sub> value is greater than zero for the year under consideration there is still a remaining emission reduction benefit for Stage II for the year relative to ORVR. If it is zero there is no net difference in the inventory. If it is zero or negative, this would indicate that removing Stage II would not increase the refueling emissions inventory because the higher efficiency from ORVR and the incompatibility emissions offset the increment due to non-ORVR vehicles being refueled at Stage II GDFs.

### 1.3.1.1 Fraction of Gasoline Dispensed to ORVR Equipped Vehicles

To calculate the percentage of gasoline dispensed to ORVR equipped vehicles three variables are needed. The three variables are: the phase in schedule for ORVR by vehicle type; vehicle type specific age distributions; and vehicle fuel economy. Since these variables are dependent on age and vehicle type, the calculations need to be done using a matrix of variables by vehicle type and age. The ORVR phase in schedule was obtained from the citation needed. The phase in schedule varies by vehicle type. Combining the ORVR phase in schedule with an age distribution by vehicle type and year allows for calculation of the percentage of vehicles equipped with ORVR. If area specific age distributions are used, the vehicle penetration percentage will be specific to the area. For this analysis 2011 county registrations by age and by vehicle type were obtained from the Texas Department of Motor Vehicles for the 16 Texas counties with Stage II control equipment. The county registrations were summed to obtain area total registration values. The 2011 area total registrations were used to calculate age distributions. The 2011 age distributions were used for all analysis years. Using vehicle type specific annual mileage accumulation rates by age in conjunction with the ORVR phase in schedule and the age distributions allows for calculation of the percentage of vehicles miles traveled attributed to ORVR equipped vehicles. National default annual miles accumulation rates were used to calculate the vehicles miles travelled (VMT) ORVR fractions for each area for each analysis year. If the fuel economy for vehicles by age is used, the VMT fractions can be converted into fuel fractions attributed to ORVR equipped vehicles. For this analysis national default fuel economy values were used to calculate the percentage of gasoline dispensed to vehicles equipped with ORVR, the  $Q_{ORVRi}$  values needed in Equation 1. A summary of the results are provided in Table 7: *ORVR Penetration Rates by Model Year and Vehicle Type* through Table 11: *Projected Penetration of ORVR in Houston-Galveston-Brazoria by Year*. Because the process needed to calculate the ORVR penetration rates requires multiple matrices for each year and area, electronic documentation is more efficient and clearer, so the spreadsheet file has not been printed or

added as an attachment. The spreadsheet used to perform the calculations is available upon request from the TCEQ Mobile Source Programs Team.

**Table 7: ORVR Penetration Rates by Model Year and Vehicle Type**

Model Year	Vehicle Type					
	LDGV	LDGT1	LDGT2	LDGT3	LDGT4	HDGV2b
2006 & Newer	100%	100%	100%	100%	100%	100%
2005	100%	100%	100%	80%	80%	80%
2004	100%	100%	100%	40%	40%	40%
2003	100%	100%	100%	0%	0%	0%
2002	100%	80%	80%	0%	0%	0%
2001	100%	40%	40%	0%	0%	0%
2000	100%	0%	0%	0%	0%	0%
1999	80%	0%	0%	0%	0%	0%
1998	40%	0%	0%	0%	0%	0%
1997 & Older	0%	0%	0%	0%	0%	0%

**Table 8: Projected Penetration of ORVR in Beaumont-Port Arthur by Year**

Area	End of Calendar Year	Vehicle Population Percentage	VMT Percentage	Gasoline Dispensed Percentage
BPA	2012	0.732	0.790	0.794
BPA	2014	0.807	0.856	0.858
BPA	2016	0.871	0.907	0.907
BPA	2018	0.905	0.932	0.932
BPA	2020	0.928	0.947	0.948
BPA	2022	0.943	0.956	0.958
BPA	2024	0.952	0.961	0.963
BPA	2026	0.958	0.965	0.966
BPA	2028	0.965	0.968	0.969
BPA	2030	0.969	0.970	0.971

**Table 9: Projected Penetration of ORVR in Dallas-Fort Worth by Year**

Area	End of Calendar Year	Vehicle Population Percentage	VMT Percentage	Gasoline Dispensed Percentage
DFW	2012	0.785	0.833	0.836
DFW	2014	0.853	0.891	0.893
DFW	2016	0.904	0.931	0.933
DFW	2018	0.931	0.950	0.951
DFW	2020	0.946	0.961	0.962
DFW	2022	0.955	0.966	0.968
DFW	2024	0.961	0.969	0.971
DFW	2026	0.965	0.971	0.973
DFW	2028	0.972	0.975	0.976
DFW	2030	0.976	0.977	0.977

**Table 10: Projected Penetration of ORVR in El Paso by Year**

Area	End of Calendar Year	Vehicle Population Percentage	VMT Percentage	Gasoline Dispensed Percentage
ELP	2012	0.729	0.794	0.798
ELP	2014	0.798	0.854	0.858
ELP	2016	0.855	0.899	0.902
ELP	2018	0.889	0.924	0.928
ELP	2020	0.913	0.940	0.944
ELP	2022	0.928	0.950	0.954
ELP	2024	0.939	0.956	0.960
ELP	2026	0.947	0.961	0.965
ELP	2028	0.962	0.968	0.971
ELP	2030	0.970	0.973	0.975

**Table 11: Projected Penetration of ORVR in Houston-Galveston-Brazoria by Year**

Area	End of Calendar Year	Vehicle Population Percentage	VMT Percentage	Gasoline Dispensed Percentage
HGB	2012	0.774	0.824	0.827
HGB	2014	0.847	0.886	0.888
HGB	2016	0.903	0.931	0.931
HGB	2018	0.931	0.950	0.951
HGB	2020	0.947	0.961	0.962

Area	End of Calendar Year	Vehicle Population Percentage	VMT Percentage	Gasoline Dispensed Percentage
HGB	2022	0.957	0.967	0.968
HGB	2024	0.963	0.970	0.971
HGB	2026	0.966	0.972	0.973
HGB	2028	0.973	0.975	0.976
HGB	2030	0.976	0.977	0.977

### 1.3.2 Area Specific Fuel Consumption

In order to determine gasoline consumption for each area for each analysis year national consumption values for the most recent data year, 2011, were adjusted for each area, projected to each analysis year and reduced from annual to ozone season daily consumption. Section 1.3.2.1, *Gasoline Consumption Growth Factors*, through Section 1.3.2.3, *Nonattainment Area Ozone Season Daily Gasoline Consumption*, document the calculation of the area specific fuel consumption values for each analysis year.

#### 1.3.2.1 Gasoline Consumption Growth Factors

The data source for 2011 to projected year growth are based on values from the United States Energy Information Administration, Annual Energy Outlook (AEO) 2011, Motor Gasoline Production for year 2011 and all projection analysis years. The values were posted at: <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2011&subject=0-AEO2011&table=11-AEO2011&region=0-0&cases=ref2011-d020911a>.

A summary of the values from the AEO and the resulting growth factors are summarized in Table 12: *Motor Gasoline Growth from 2011 to Projected Years*.

**Table 12: Motor Gasoline Growth from 2011 to Projected Years**

Year	Motor Gasoline Supply (million barrels per day)	Growth Factor
2011	9.09	N/A
2012	9.33	1.026
2014	9.39	1.033
2016	9.42	1.036
2018	9.29	1.022
2020	9.19	
2022	9.13	
2024	8.90	
2026	8.89	
2028	8.92	
2030	8.95	

### 1.3.2.2 Projected Fuel Consumption

The projected values for national fuel consumption are calculated by multiplying base year data by year specific growth factors. National fuel consumption values by month for 2011 were obtained from the Federal Highway Administration, National Totals from Monthly Motor Fuel Reported by States available :

[http://www.fhwa.dot.gov/policyinformation/motorfuelhwy\\_trustfund.cfm](http://www.fhwa.dot.gov/policyinformation/motorfuelhwy_trustfund.cfm). The 2011 values were multiplied by the 2011 to projected year growth factors, Equation 4. The projections are done for each month. The monthly information will be needed to determine the consumption for the ozone season in the last step of the consumption calculation. A summary of the results for a sample year, 2012, is provided in Table 13: *National Gallons Motor Fuel Projected from 2011 to 2012*.

Equation 3:  $GC_{iMonth} \text{ (gallons)} = GC_{2011Month} * (\text{GrowthFactor}_{2011toi})$

Where:

$GC_{iMonth}$  = gallons consumption for year i for each Month

$GC_{2011Month}$  = gallons consumption for year 2011 for each Month

$\text{GrowthFactor}_{2011toi}$  = consumption growth between data year 2011 and projected year i

Month = each calendar month, January to December

**Table 13: National Gallons Motor Fuel Projected from 2011 to 2012**

Month	2011 Fuel Consumption (Gallons)	Growth Factor 2011 to 2012	2012 Projected Fuel Consumption
January	10,693,040,761	1.026	10,975,365,270
February	10,354,644,164	1.026	10,628,034,109
March	11,246,844,342	1.026	11,543,790,727
April	11,031,804,745	1.026	11,323,073,517
May	11,572,850,469	1.026	11,878,404,277
June	11,655,070,334	1.026	11,962,794,963
July	11,599,045,109	1.026	11,905,290,524
August	11,680,938,682	1.026	11,989,346,304
September	11,548,346,074	1.026	11,853,252,901
October	11,327,553,992	1.026	11,626,631,325
November	11,173,161,223	1.026	11,468,162,179
December	11,331,538,330	1.026	11,630,720,860
Total	135,214,838,225		138,784,866,957

### 1.3.2.3 Nonattainment Area Ozone Season Daily Gasoline Consumption

The fuel consumption values for each nonattainment area can be calculated from the national value if the percent attributed to each nonattainment area or county is known. In the EPA

guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012, EPA provides values for determining the gasoline consumption each nonattainment area from the national fuel consumption value. The values for all nonattainment areas are provided in Table A-4 - *Percent of 50 State Gasoline Consumption for Areas Covered by FCAA Sections 182(b)(3) or 184(b)(2)* of the EPA guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012. The values for the four Texas nonattainment areas were taken from the table and are summarized in Table 14: *Percent of 50 State Gasoline Consumption for Areas Covered by FCAA Sections 182(b)(3) or 184(b)(2)*.

**Table 14: Percent of 50 State Gasoline Consumption for Areas Covered by FCAA Sections 182(b)(3) or 184(b)(2)<sub>1</sub>**

Area Name	% of 50 State Gasoline Consumption
Houston-Galveston-Brazoria	0.016460
El Paso	0.001841
Dallas-Ft. Worth	0.017860
Beaumont-Port Arthur	0.001230

Note 1: Excerpt from Table A-4 - Percent of 50 State Gasoline Consumption for Areas Covered by CAA Sections 182(b)(3) or 184(b)(2) of the EPA guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*

The gasoline consumption for any nonattainment area can be calculated by multiplying the national total fuel consumption by the nonattainment percent of national total value. The projected fuel consumption for each analysis year is multiplied by the nonattainment area percent to obtain values for each nonattainment area for each year. A sample of the nonattainment area results are provided for the year 2012 in Table 15: *2012 Texas Monthly Ozone Season Total and Ozone Pre Day Gasoline Consumption for Four Texas Nonattainment Areas*. The calculations are done for each month because the monthly values are needed to calculate the ozone season total and daily consumption values.

**Table 15: 2012 Monthly, Ozone Season Total and Ozone Pre Day Gasoline Consumption for Four Texas Nonattainment Areas**

Month	2012 Projected	BPA 2012 Projected	DFW 2012 Projected	ELP 2012 Projected	HGB 2012 Projected
January	10,975,365,270	13,499,699	196,020,024	20,205,647	180,654,512
February	10,628,034,109	13,072,482	189,816,689	19,566,211	174,937,441
March	11,543,790,727	14,198,863	206,172,102	21,252,119	190,010,795
April	11,323,073,517	13,927,380	202,230,093	20,845,778	186,377,790

Month	2012 Projected	BPA 2012 Projected	DFW 2012 Projected	ELP 2012 Projected	HGB 2012 Projected
May	11,878,404,277	14,610,437	212,148,300	21,868,142	195,518,534
June	11,962,794,963	14,714,238	213,655,518	22,023,506	196,907,605
July	11,905,290,524	14,643,507	212,628,489	21,917,640	195,961,082
August	11,989,346,304	14,746,896	214,129,725	22,072,387	197,344,640
September	11,853,252,901	14,579,501	211,699,097	21,821,839	195,104,543
October	11,626,631,325	14,300,757	207,651,635	21,404,628	191,374,352
November	11,468,162,179	14,105,839	204,821,377	21,112,887	188,765,949
December	11,630,720,860	14,305,787	207,724,675	21,412,157	191,441,665
Total	138,784,866,957	170,705,386	2,478,697,724	255,502,940	2,284,398,910
Ozone Season Total <sub>1</sub>	N/A	73,294,579	1,064,261,129	109,703,513	980,836,404
Ozone Season Per Day <sub>2</sub>	N/A	479,050	6,955,955	717,016	6,410,695

Note 1: Ozone season is May through September. The total for the five months is the ozone season total.

Note 2: There are 153 days in the five month ozone season. The ozone season day value is obtained by dividing the ozone season total by 153.

In order to calculate the ozone season daily gasoline consumption, the fuel consumption for the five ozone seasons months is summed to obtain an ozone season total, and then the ozone season total is divided by 153, the number of days in the ozone season, Equation 5. Table 15: *2012 Texas Monthly Ozone Season Total and Ozone Pre Day Gasoline Consumption for Four Texas Nonattainment Areas* has a sample of the ozone season daily result for analysis year 2012. A summary of the values for all nonattainment areas and years is provided in Table 16: *Ozone Season Daily Gasoline Consumption by Years and Areas*. The ozone season daily gasoline consumption for each nonattainment, for each year is the  $GC_i$  value used in Equation 1.

$$\text{Equation 4: } GC_i \text{ (gallons)} = (GC_{i\text{May}} + GC_{i\text{June}} + GC_{i\text{July}} + GC_{i\text{August}} + GC_{i\text{September}}) / 153$$

Where:

$GC_i$  = ozone season daily gasoline consumption for year i

$GC_{i\text{Month}}$  = gallons consumption for year I, for each ozone season Month

153 = number of days in the five month ozone season

**Table 16: Ozone Season Daily Gasoline Consumption by Years and Areas**

Year	BPA	DFW	ELP	HGB
2012	479,050	6,955,955	717,016	6,410,695
2014	482,130	7,000,688	721,627	6,451,922

Year	BPA	DFW	ELP	HGB
2016	483,671	7,023,054	723,933	6,472,535
2018	476,996	6,926,133	713,942	6,383,211

### 1.3.3 Area Specific Emission Factor

The term emissions factor (EF) in Equation 1 is the uncontrolled displacement refueling emission factor in grams per gallon (g/gal). The value of EF depends on: the Reid vapor pressure (RVP); the dispensed fuel temperature,  $T_d$ , in degrees Fahrenheit (°F); and the difference between tank fuel temperature and the dispensed fuel temperature,  $\Delta T$ , in °F. The equation presented in EPA's ORVR widespread use determination final rule was used for the calculations presented here, Equation 5.

$$\text{Equation 5: EF (g/gal)} = \exp[-1.2798 - 0.0049(\Delta T) + 0.0203(T_d) + 0.1315(\text{RVP})]$$

Where:

EF = uncontrolled displacement refueling emission factor in grams per gallon

$\Delta T$  = the difference between tank fuel temperature and the dispensed fuel temperature in °F

$T_d$  = dispensed fuel temperature in °F

RVP = Reid vapor pressure in pounds per square inch (psi)

The three terms used in Equation 10 vary by region/state by month or season. Values used by the EPA for  $\Delta T$  and  $T_d$  are contained in the Appendix Table A-2: *Monthly Average Dispensed Liquid Temperature* and Table A-3: *Seasonal Variation in Temperature Difference Between Vehicle Fuel Tank and Dispensed Fuel* of the EPA guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012. The regulated values for RVP derived from 40 CFR 80.27: 7.8 for BPA; 7.0 for ELP; and for DFW and HGB the lower value of 7.0 psi RVP gasoline needed to meet the RFG VOC performance standard. A summary of RVP,  $\Delta T$ ,  $T_d$ , and the resulting exp factor and EF values are provided in Table 17: *Uncontrolled Displacement Refueling Emission Factor by Area*.

**Table 17: Uncontrolled Displacement Refueling Emission Factor by Area**

Area	EF (grams/gallons)	RVP	$\Delta T$	$T_d$	exp factor
BPA	3.86	7.8	7.1	80.8	1.35135
DFW	3.39	6.8	7.1	80.8	1.21985
ELP	3.48	7.0	7.1	80.8	1.24615
HGB	3.39	6.8	7.1	80.8	1.21985

#### **1.4 LIST OF REFERENCES**

Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures, EPA-457/B-12-001 August 7, 2012, U. S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711

Federal Register, Vol. 77, No. 95, Wednesday, May 16, 2012, Rules and Regulations, Agency: Environmental Protection Agency (EPA), 40 CFR Part 51 [EPA-HQ-OAR-2010-1076; FRL-9671-3] RIN 2060-AQ97, Air Quality: Widespread Use for Onboard Refueling Vapor Recovery and Stage II Waiver, Action: Final Rule

Motor Vehicle Emission Simulator (MOVES) User Guide for MOVES2010b, U.S. Environmental Protection Agency, Assessment and Standards Division, Office of Transportation and Air Quality, EPA-420-B-12-001b, June 2012

Beaumont-Port Arthur (BPA) Attainment Area On-Road Mobile Source Emissions Inventory and Motor Vehicle Emissions Budget (MVEB) Update State Implementation Plan (SIP) Revision, SIP Project No. 2012-005-SIP-NR, October 26, 2012

Dallas-Fort Worth Reasonable Further Progress State Implementation Plan Revision For The 1997 Eight-Hour Ozone Standard, Project Number 2010-023-SIP-NR, Adoption December 7, 2011

El Paso County 8-Hour Ozone Maintenance State Implementation Plan Revision, Project Number 2005-027-SIP-NR, Adopted on January 11, 2006

Houston-Galveston-Brazoria Reasonable Further Progress State Implementation Plan Revision for the 1997 Eight-Hour Ozone Standard, Project No. 2009-018-SIP-NR, Adopted March 10, 2010

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 51**

[EPA-HQ-OAR-2010-1076; FRL-9671-3]

RIN 2060-AQ97

**Air Quality: Widespread Use for Onboard Refueling Vapor Recovery and Stage II Waiver**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** The EPA has determined that onboard refueling vapor recovery (ORVR) technology is in widespread use throughout the motor vehicle fleet for purposes of controlling motor vehicle refueling emissions, and, therefore, by this action, the EPA is waiving the requirement for states to implement Stage II gasoline vapor recovery systems at gasoline dispensing facilities in nonattainment areas classified as Serious and above for the ozone national ambient air quality standards (NAAQS). This finding will be effective as noted below in the **DATES** section. After the effective date of this notice, a state previously required to implement a Stage II program may take appropriate action to remove the program from its State Implementation Plan (SIP). Phasing out the use of Stage II systems may lead to long-term cost savings for gas station owners and operators while air quality protections are maintained. **DATES:** This rule is effective on May 16, 2012.

**ADDRESSES:** The EPA has established a docket for this rule, identified by Docket ID No. EPA-HQ-OAR-2010-1076. All documents in the docket are listed in [www.regulations.gov](http://www.regulations.gov). Although listed in the index, some information is not publicly available, *i.e.*, confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in [www.regulations.gov](http://www.regulations.gov) or in hard copy at the Air and Radiation Docket and Information Center, EPA Headquarters Library, Room Number 3334 in the EPA West Building, located at 1301 Constitution Ave. NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744.

**FOR FURTHER INFORMATION CONTACT:** Mr. Lynn Dail, Office of Air Quality Planning and Standards, Air Quality Policy Division, Mail code C539-01, Research Triangle Park, NC 27711, telephone (919) 541-2363; fax number: 919-541-0824; email address: [dail.lynn@epa.gov](mailto:dail.lynn@epa.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Purpose of Regulatory Action**

Since 1990, Stage II gasoline vapor recovery systems have been a required emissions control measure in Serious, Severe, and Extreme ozone nonattainment areas. Beginning with model year 1998, ORVR equipment has been phased in for new vehicles, and has been a required control on nearly all new highway vehicles since 2006. Over time, non-ORVR vehicles will continue to be replaced with ORVR vehicles. Stage II and ORVR emission control systems are redundant, and the EPA has determined that emission reductions from ORVR are essentially equal to and will soon surpass the emission reductions achieved by Stage II alone. In this action, the EPA is eliminating the largely redundant Stage II requirement in order to ensure that refueling vapor control regulations are beneficial without being unnecessarily burdensome to American business. This action allows, but does not require, states to discontinue Stage II vapor recovery programs.

**II. Summary of the Major Provisions of This Final Rule**

Clean Air Act (CAA) section 202(a)(6) provides discretionary authority to the EPA Administrator to, by rule, revise or waive the section 182(b)(3) Stage II requirement for Serious, Severe and Extreme ozone nonattainment areas after the Administrator determines that ORVR is in widespread use throughout the motor vehicle fleet. Based on criteria that the EPA proposed last year (76 FR 41731, July 15, 2011), the EPA is determining that ORVR is in widespread use. As of the effective date of today's action, states that are implementing mandatory Stage II programs under section 182(b)(3) of the CAA may submit revisions to their SIPs to remove this program.

The EPA will also be issuing non-binding guidance on developing and submitting approvable SIP revisions.<sup>1</sup>

This guidance will address SIP requirements for states in the Ozone Transport Region (OTR), which are separately required under section 184(b)(2) of the CAA to adopt and implement control measures capable of achieving emissions reductions comparable to those achievable by Stage II. The EPA is updating its guidance for estimating what Stage II comparable emissions reductions could be, in light of the ORVR widespread use determination. The EPA now expects Stage II comparable emissions reductions to be substantially less than what was estimated in the past before ORVR use became widespread. Therefore, the EPA encourages states to consult the updated guidance before submitting a SIP revision removing Stage II controls.

**III. Costs and Benefits**

The primary purpose of this final rule is to promulgate a determination that ORVR is in widespread use as permitted in section 202(a)(6) of the CAA. In this final rule, EPA is exercising the authority provided by section 202(a)(6) of the CAA to, by rule, revise or waive the section 182(b)(3) Stage II requirement for Serious, Severe, and Extreme ozone nonattainment areas after the Administrator determines that ORVR is in widespread use throughout the motor vehicle fleet. This in turn gives states that were required to implement Stage II vapor recovery under section 182(b)(3) of the CAA the option to submit for the EPA's review and approval revised ozone SIPs that will remove this requirement. The EPA projects that during 2013-2015, gasoline-dispensing facilities (GDFs) in up to 19 states and the District of Columbia could seek to decommission and remove Stage II systems from their dispensers. There are about 30,600 GDFs with Stage II in these 20 areas. If the states submit and EPA approves SIP revisions to remove Stage II systems from these GDFs, the EPA projects savings of about \$10.2 million in the first year, \$40.5 million in the second year, and \$70.9 million in the third year. Long-term savings are projected to be about \$91 million per year, compared to the current use of Stage II systems in these areas. No significant emission

<sup>1</sup> "Phasing Out Stage II Gasoline Refueling Vapor Recovery Programs: Guidance on Satisfying Requirements of Clean Air Act Sections 110(e), 193, and 184(b)(2) (tentative title)." U.S. EPA Office of Air and Radiation, forthcoming. This guidance will provide the EPA's recommendations for states to consider when developing SIP revisions following today's rulemaking. Unlike the final rule, the

guidance is not final agency action, and is not binding on or enforceable against any person. Consequently, it is subject to possible revision without additional rulemaking. In addition, the approaches suggested in the guidance (or in any changes thereto) will not represent final agency action unless and until the EPA takes a final SIP approval or disapproval action implementing those approaches.

increases or decreases are expected from this action.

#### IV. General Information

##### A. Does this action apply to me?

Entities directly affected by this action include states (typically state air pollution control agencies) and, in some cases, local governments that develop air pollution control rules that apply to areas classified as Serious and above for nonattainment of the ozone NAAQS. Individuals and companies that operate gasoline dispensing facilities may be indirectly affected by virtue of state action in SIPs that implement provisions resulting from final rulemaking on this action; many of these sources are in the following groups:

Industry group	SIC <sup>a</sup>	NAICS <sup>b</sup>
Gasoline stations	5541	447110, 447190

<sup>a</sup> Standard Industrial Classification.

<sup>b</sup> North American Industry Classification System.

##### B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this notice will be posted at <http://www.epa.gov/air/ozonepollution/actions.html#impl> under "recent actions."

##### C. How is this notice organized?

The information presented in this preamble is organized as follows.

- I. Purpose of Regulatory Action
- II. Summary of the Major Provisions of This Final Rule
- III. Costs and Benefits
- IV. General Information
  - A. Does this action apply to me?
  - B. Where can I get a copy of this document and other related information?
  - C. How is this notice organized?
- V. Background
  - A. What requirements for Stage II gasoline vapor recovery apply for ozone nonattainment areas?
  - B. Stage II Vapor Recovery Systems
  - C. Onboard Refueling Vapor Recovery (ORVR) Systems
  - D. Compatibility Between Some Vapor Recovery Systems
  - E. Proposed Rule to Determine Widespread Use of ORVR
- VI. This Action
  - A. Analytical Rationale for Final Rule
  - B. Updated Analysis of Widespread Use
  - C. Widespread Use Date
  - D. Implementation of the Rule Provisions
  - E. Implementation of Rule Revisions in the Ozone Transport Region
  - F. Comments on Other Waiver Implementation Issues
- VII. Estimated Cost
- VIII. Statutory and Executive Order Reviews

- A. Executive Orders 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review
- B. Paperwork Reduction Act
- C. Regulatory Flexibility Act
- D. Unfunded Mandates Reform Act
- E. Executive Order 13132: Federalism
- F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
- G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks
- H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use
- I. National Technology Transfer and Advancement Act
- J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
- K. Congressional Review Act
- IX. Statutory Authority

#### V. Background

##### A. What requirements for Stage II gasoline vapor recovery apply in ozone nonattainment areas?

The requirements in the 1990 CAA Amendments regarding Stage II vapor recovery are contained in Title I: Provisions for Attainment and Maintenance of National Ambient Air Quality Standards. Under CAA section 182(b)(3), Stage II gasoline vapor recovery systems are required to be used at higher throughput GDFs located in Serious, Severe, and Extreme nonattainment areas for ozone.<sup>2</sup> States were required to adopt a Stage II program into their SIPs, and the controls were to be installed according to specified deadlines following state rule adoption.<sup>3</sup> Since the early 1990s, Stage 2 gasoline vapor controls have provided

<sup>2</sup> Originally, the section 182(b)(3) Stage II requirement also applied in all Moderate ozone nonattainment areas. However, under section 202(a)(6) of the CAA, 42 U.S.C. 7521(a)(6), the requirements of section 182(b)(3) no longer apply in Moderate ozone nonattainment areas after the EPA promulgated ORVR standards on April 6, 1994, 59 FR 16262, codified at 40 CFR parts 86 (including 86.098–8), 88 and 600. Under implementation rules issued in 2002 for the 1997 8-hour ozone standard, the EPA retained the Stage II-related requirements under section 182(b)(3) as they applied for the now-revoked 1-hour ozone standard. 40 CFR 51.900(f)(5) and 40 CFR 51.916(a).

<sup>3</sup> This requirement only applies to facilities that sell more than a specified number of gallons per month and is set forth in sections 182(b)(3)(A)–(C) and 324(a)–(c). Section 182(b)(3)(B) has the following effective date requirements for implementation of Stage II after the adoption date by a state of a Stage II rule: 6 months after adoption of the state rule, for GDFs built after the enactment date (which for newly designated areas would be the designation date); 1 year after adoption date, for gas stations pumping at least 100,000 gal/month based on average monthly sales over 2-year period before adoption date; 2 years after adoption, for all others.

substantial emissions reductions and have contributed to improved air quality over time.

##### B. Stage II Vapor Recovery Systems

When a gasoline-powered automobile or other vehicle is brought into a GDF to be refueled, the empty portion of the fuel tank on the vehicle contains gasoline vapors. When liquid gasoline is pumped into the partially empty gas tank, gasoline vapors are forced out of the tank and fill pipe as the tank fills with liquid gasoline. Where air pollution control technology is not used, these vapors are emitted into the ambient air. In the atmosphere, these vapors can react with sunlight, nitrogen oxides and other volatile organic compounds to form ozone.

There are two basic technical approaches to Stage II vapor recovery: A "balance" system, and a vacuum assist system. A balance type Stage II control system has a rubber boot around the gasoline nozzle spout that fits snugly up to a vehicle's gasoline fill pipe during refueling of the vehicle. With a balance system, when gasoline in the underground storage tank (UST) is pumped into a vehicle, a positive pressure differential is created between the vehicle tank and the UST. This pressure differential draws the gasoline vapors from the vehicle fill pipe through the rubber boot and the concentric hoses and underground piping into the UST. This is known as a balance system because gasoline vapors from the vehicle tank flow into the UST tank to balance pressures. About 30 percent of Stage II GDFs nationwide use the balance type Stage II system.

The vacuum assist system is the other primary type of Stage II system currently in operation. This type of Stage II system uses a vacuum pump on the vapor return line to help draw vapors from the vehicle fill pipe into the UST. An advantage of this type of system is that the rubber boot around the nozzle can be smaller and lighter (or not used at all) and still draw the vapors into the vapor return hose. This makes for an easier-to-handle nozzle, which is popular with customers. About 70 percent of Stage II GDFs nationwide use the vacuum assist approach.

New Stage II equipment is normally required to achieve 95 percent control effectiveness at certification. However, studies have shown that in-use control efficiency depends on the proper installation, operation, and maintenance of the control equipment at the GDF.<sup>4</sup>

<sup>4</sup> The Petroleum Equipment Institute has published recommended installation practices (PEI/Continued

Damaged, missing, or improperly operating components or systems can significantly degrade the control effectiveness of a Stage II system.

In-use effectiveness ultimately depends on the consistency of inspections, follow-up review by state agencies, and actions by operators to perform inspections and field tests and conduct maintenance in a correct and timely manner. The EPA's early guidance for Stage II discussed expected training, inspection, and testing criteria, and most states have adopted and supplemented these criteria as deemed necessary for balance and vacuum assist systems.<sup>5</sup> In some cases, states have strictly followed the EPA guidance but other states have required a lesser level of inspection and enforcement efforts. Past EPA studies have estimated Stage II in-use efficiencies of 92 percent with semi-annual inspections, 86 percent with annual inspections and 62 percent with minimal or less frequent state inspections.<sup>6</sup> The in-use effectiveness of Stage II control systems may vary from state to state, and may vary over time within any state or nonattainment area because the in-use efficiency of Stage II vapor recovery systems depends heavily on the ongoing maintenance and oversight by GDF owners/operators and the state/local agencies.

### C. Onboard Refueling Vapor Recovery (ORVR) Systems

In addition to Stage II controls, the 1990 CAA Amendments required another method of controlling emissions from dispensing gasoline. Section 202(a)(6) of the CAA requires an onboard system of capturing vehicle-refueling emissions, commonly referred to as an ORVR system.<sup>7</sup> ORVR consists of an activated carbon canister installed on the vehicle into which vapors are routed from the vehicle fuel tank during refueling. There the vapors are captured by the activated carbon in the canister. To prevent the vapors from escaping through the fill pipe opening, the vehicle employs a seal in the fill pipe which allows liquid gasoline to enter but blocks vapor escape. In most cases,

these are "liquid seals" created by the incoming liquid gasoline slightly backing near the bottom of the fill pipe. When the engine is started, the vapors are purged from the activated carbon and into the engine where they are burned as fuel.

The EPA promulgated ORVR standards on April 6, 1994 (59 FR 16262). Section 202(a)(6) of the CAA required that the EPA's ORVR standards apply to light-duty vehicles manufactured beginning in the fourth model year after the model year in which the standards were promulgated, and that ORVR systems provide a minimum evaporative emission capture efficiency of 95 percent.

Automobile manufacturers began installing ORVR on new passenger cars in 1998 when 40 percent of new cars were required to have ORVR. The regulation required the percentage of new cars with ORVR increase to 80 percent in 1999 and 100 percent in 2000. The regulation also required that ORVR for light duty trucks and vans (<6000 pounds (lbs) gross vehicle weight rating (GVWR)) was to be phased-in during 2001 with 40 percent of such new vehicles required to have ORVR in 2001, 80 percent in 2002 and 100 percent in 2003. New heavier light-duty trucks (6001–8500 lbs GVWR) were required to have 40 percent with ORVR by 2004, 80 percent by 2005 and 100 percent by 2006. New trucks up to 10,000 lbs GVWR manufactured as a complete chassis were all required to have ORVR by 2006.<sup>8</sup> Complete vehicle chassis for heavy-duty gasoline vehicles between 10,001 and 14,000 lbs GVWR (Class 3) are very similar to those between 8,501 and 10,000 lbs GVWR. For model consistency purposes, manufacturers began installing ORVR on Class 3 complete chassis in 2006 as well. So, after 2006, essentially all new gasoline-powered vehicles less than 14,000 lbs GVWR are ORVR-equipped.

ORVR does not apply to all vehicles, but those not covered by the ORVR requirement comprise a small percentage of the gasoline-powered highway vehicle fleet (approximately 1.5 percent of gasoline consumption). The EPA estimates that by the end of 2012, more than 71 percent of vehicles currently on the road will have ORVR.<sup>9</sup> This percentage will increase over time as older cars and trucks are replaced by

new models. However, under the current regulatory construct, motorcycles and heavy-duty gasoline vehicles not manufactured as a complete chassis are not required to install ORVR, so it is likely that there will be some very small percentage of gasoline refueling emissions not captured by ORVR controls.

Even prior to the EPA's adoption of ORVR requirements, in 1993 EPA adopted Onboard Diagnostic (OBD) System requirements for passenger cars and light trucks, and eventually did so for heavy-duty gasoline vehicles up to 14,000 lbs GVWR.<sup>10</sup> These systems are designed to monitor the in-use performance of various vehicle emission control systems and components, including protocols for finding problems in the purge systems and large and small vapor leaks in ORVR/evaporative emission controls.<sup>11</sup> OBD II systems were phased in for these vehicle classes over the period from 1994–1996 for lighter vehicles and 2005–2007 for heavy-duty gasoline vehicles, so, during the same time frame that manufacturers were implementing ORVR into their vehicles, they already had implemented or were implementing OBD II systems.

In 2000, the EPA published a report addressing the effectiveness of OBD II control systems.<sup>12</sup> This study concluded that enhanced evaporative and ORVR emission control systems are durable and low emitting relative to the FTP (Federal Test Procedure) enhanced evaporative emission standards, and that OBD II evaporative emissions checks are a suitable replacement for functional evaporative emission tests in state inspection and maintenance (I/M) programs. OBD system codes are interrogated and evaluated in a 30-vehicle emission I/M program. A recent EPA review of OBD data gathered from I/M programs from five states<sup>13</sup> indicated relatively few vehicles had any evaporative system-related OBD codes that would indicate a potential

RP300–93) and most states require inspection, testing, and evaluation before a system is commissioned for use.

<sup>5</sup> "Enforcement Guidance for Stage II Vehicle Refueling Control Programs," U.S. EPA, Office of Air and Radiation, Office of Mobile Sources, December 1991.

<sup>6</sup> "Technical Guidance—Stage II Vapor Recovery Systems for Control of Vehicle Refueling at Gasoline Dispensing Facilities Volume I: Chapters," EPA-450/3-91-022a, November 1991. This study is a composite of multiple studies.

<sup>7</sup> Unlike Stage II, which is a requirement only in ozone nonattainment areas, ORVR requirements apply to vehicles everywhere. More detail on ORVR is available at <http://www.epa.gov/otaq/orvr.htm>.

<sup>8</sup> The EPA promulgated ORVR standards for light duty vehicles and trucks on April 6, 1994, 59 FR 16262, codified at 40CFR parts 86 (including 86.098–8), 88 and 600.

<sup>9</sup> See EPA Memorandum "Onboard Refueling Vapor Recovery Widespread Use Assessment." A copy of this memorandum is located in the docket for this action EPA-HQ-OAR-2010-1076.

<sup>10</sup> See Federal Register at 58 FR 9468 published February 19, 1993, and subsequent amendments and the latest OBD regulations at 40 CFR part 86.1806–05 for program requirements in various years.

<sup>11</sup> ORVR systems are basically a subset of evaporative emission systems because they share the same vapor lines, purge valves, purge lines, and activated carbon canister.

<sup>12</sup> "Effectiveness of OBD II Evaporative Emission Monitors—30 Vehicle Study," EPA 420-R-00-018, October 2000.

<sup>13</sup> See EPA Memorandum, "Review of Frequency of Evaporative System Related OBD Codes for Five State I/M Programs." A copy of this memorandum is located in the docket for this action EPA-HQ-OAR-2010-1076.

problem with the vapor management system.

Based on emissions tests of over 1,100 in-use ORVR-equipped vehicles, EPA concluded that the average in-use efficiency of ORVR is 98 percent. The legal requirement for ORVR is 95 percent efficiency. Thus, the actual reported control achieved in practice is greater than the statutorily required level of control.

#### *D. Compatibility Between Some Vapor Recovery Systems*

Even though the per-vehicle vapor recovery efficiency of ORVR exceeds that of Stage II, Stage II vapor recovery systems have provided valuable reductions in ozone precursors and air toxics as ORVR has been phased into the motor vehicle fleet. In fact, overall refueling emissions from vehicle fuel tanks are minimized by having both ORVR and Stage II in place, but the incremental gain from retaining Stage II decreases relatively quickly as ORVR penetration surpasses 75 percent of dispensed gasoline. Please see Table 2 below. This occurs not only because of a decreasing amount of gasoline being dispensed to non-ORVR equipped vehicles, but also because differences in operational design characteristics between ORVR and vacuum assist Stage II systems may in some cases cause a reduction in the overall control system efficiency compared to what could have been achieved relative to the individual control efficiencies of either ORVR or Stage II emissions from the vehicle fuel tank. The problem arises because the ORVR canister captures the gasoline vapor emissions from the motor vehicle fuel tank rather than the vapors being drawn off by the vacuum assist Stage II system. This occurs because the fill pipe seal blocks the vapor from reaching the Stage II nozzle. Thus, instead of drawing vapor-laden air from the vehicle fuel tank into the underground storage tank (UST), the vacuum pump of the Stage II system draws mostly fresh air into the UST. This fresh air causes gasoline in the UST to evaporate inside the UST and creates an internal increase in UST pressure. As the proportion of ORVR vehicles increases, the amount of fresh air, void of gasoline vapors, pumped into the UST also increases. Even with pressure/vacuum valves in place this eventually leads to gasoline vapors being forced out of the UST vent pipe

into the ambient air. These new UST vent-stack emissions detract from the overall recovery efficiency at the GDF. As discussed in the proposed rule, the level of these UST vent stack emissions varies based on several factors but can result in a net 1 to 10 percent decrease in overall control efficiency of vehicle fuel tank emissions at any given GDF.<sup>14</sup> The decrease in efficiency varies depending on the vacuum assist technology design (including the use of a mini-boot for the nozzle and the ratio of volume of air drawn into the UST compared to the volume of gasoline dispensed (A/L) ratio), the gasoline Reid vapor pressure, the air and gasoline temperatures, and the fraction of throughput dispensed to ORVR vehicles. There are various technologies that address these UST vent-stack emissions and can extend the utility of Stage II to further minimize the overall control of gasoline vapor emissions at the GDF. These technologies include nozzles that sense when fresh air is being drawn into the UST and stop or reduce the air flow. These ORVR-compatible nozzles are now required in California and Texas. Another solution is the addition of processors on the UST vent pipe that capture or destroy the gasoline vapor emissions from the vent pipe. A number of these systems were presented in comments on the proposed rule. While they may have merit, installing these technologies adds to the expense of the control systems.

#### *E. Proposed Rule To Determine Widespread Use of ORVR*

Section 202(a)(6) of the CAA provides discretionary authority to the EPA Administrator to, by rule, revise or waive the section 182(b)(3) Stage II

<sup>14</sup> See EPA Memorandum "Onboard Refueling Vapor Recovery Widespread Use Assessment." A copy of this memorandum is located in the docket for this action EPA-HQ-OAR-2010-1076. The level of these UST vent stack emissions varies based on several factors; EPA estimates a 5.4 to 6.4 percentage point decrease in Stage II control efficiency in the 2011-2015 time frame at GDFs employing non-ORVR compatible vacuum assist Stage II nozzles. The decrease in efficiency varies depending on the vacuum assist technology design (including the use of a mini-boot for the nozzle and the ratio of volume of air drawn into the UST compared to the volume of gasoline dispensed (A/L) ratio), the gasoline Reid vapor pressure, the air and gasoline temperatures, and the fraction of throughput dispensed to ORVR vehicles. The values will increase over time as the fraction of total gasoline dispensed to ORVR vehicles at Stage II GDFs increases.

requirement for Serious, Severe, and Extreme ozone nonattainment areas after the Administrator determines that ORVR is in widespread use throughout the motor vehicle fleet. The percentage of non-ORVR vehicles and the percentage of gasoline dispensed to those vehicles grow smaller each year as these older vehicles wear out and are replaced by new ORVR-equipped models. Given the predictable nature of this trend, the EPA proposed a date for ORVR widespread use.

In the Notice of Proposed Rulemaking (NPRM) (76 FR 41731, July 15, 2011), the EPA proposed that ORVR widespread use will occur at the midpoint in the 2013 calendar year, relying upon certain criteria outlined in the proposed rule. This date was also proposed as the effective date for the waiver of the CAA section 182(b)(3) Stage II requirements for Serious, Severe and Extreme ozone nonattainment areas.

The EPA used two basic approaches in determining when ORVR would be in widespread use in the motor vehicle fleet. Both approaches focused on the penetration of ORVR-equipped vehicles in the gasoline-powered highway motor vehicle fleet. The first proposed approach focused on the volume of gasoline that is dispensed into vehicles equipped with ORVR, and compared the emissions reductions achieved by ORVR alone to the reductions that can be achieved by Stage II controls alone. The second approach focused on the fraction of highway motor gasoline dispensed to ORVR-equipped vehicles.

In the proposal, the EPA included Table 1 (republished below). This work was based on outputs from EPA's MOVES 2010 motor vehicle emissions model, which showed information related to the penetration of ORVR in the national motor vehicle fleet projected to 2020. These model outputs have been updated for the final rule to be consistent with the latest public release of the model (MOVES 2010a) since that is the version of the model states would use in any future inventory assessment work related to refueling emissions control. Overall, ORVR efficiency was shown in column 5 of Table 1 and was determined by multiplying the fraction of gasoline dispensed into ORVR-equipped vehicles by ORVR's 98 percent in-use control efficiency.

TABLE 1—PROJECTED PENETRATION OF ORVR IN THE NATIONAL VEHICLE FLEET BY YEAR—BASED ON MOVES 2010

Calendar year	Vehicle population percentage	VMT Percentage	Gasoline dispensed percentage	ORVR Efficiency percentage
1	2	3	4	5
2006	39.5	48.7	46.2	45.3
2007	45.3	54.9	52.5	51.5
2008	50.1	60.0	57.6	56.4
2009	54.3	64.5	62.1	60.9
2010	59.0	69.3	66.9	65.6
2011	63.6	73.9	71.5	70.1
2012	67.9	78.0	75.6	74.1
2013	71.7	81.6	79.3	77.7
2014	75.2	84.6	82.6	80.9
2015	78.4	87.2	85.3	83.6
2016	81.2	89.4	87.7	85.9
2017	83.6	91.2	89.7	87.9
2018	85.6	92.7	91.3	89.5
2019	87.5	93.9	92.7	90.8
2020	89.0	94.9	93.9	92.0

See EPA Memorandum "Onboard Refueling Vapor Recovery Widespread Use Assessment" in the docket (number EPA-HQ-OAR-2010-1076) addressing details on issues related to values in this table.

Note: In this table, the columns have the following meaning.

1. Calendar year that corresponds to the percentages in the row associated with the year.
2. Percentage of the gasoline-powered highway vehicle fleet that have ORVR.
3. Percentage of vehicle miles traveled (VMT) by vehicles equipped with ORVR.
4. Amount of gasoline dispensed into ORVR-equipped vehicles as a percentage of all gasoline dispensed to highway motor vehicles.
5. Percentage from the same row in column 4 multiplied by 0.98.

In the proposal, the EPA estimated that ORVR would need to achieve in-use emission reductions of about 77.4 percent to be equivalent to the amount of control Stage II alone would achieve. This estimate was based on the in-use control efficiency of Stage II systems and exemptions for Stage II for lower throughput GDFs. In the NPRM, the EPA assumed that in areas where basic Stage II systems are used the control efficiency of Stage II gasoline vapor control systems is 86 percent. The use of this value depends on the assumption that daily and annual inspections, periodic testing, and appropriate maintenance are conducted in a correct and timely manner. In addressing comments, we have stated that this efficiency could be nearer to 60% if inspections testing and maintenance are not conducted and there is minimal enforcement.<sup>15</sup>

In the NPRM, the EPA estimated that the percentage of gasoline dispensed in an area that is covered by Stage II controls is 90 percent. Multiplying the estimated efficiency of Stage II systems (86 percent) by the estimated fraction of gasoline dispensed in nonattainment areas from Stage II-equipped gasoline pumps yielded an estimate of the area-wide control efficiency of Stage II

programs of 77.4 percent ( $0.90 \times 0.86 = 0.774$  or 77.4 percent) for emissions displaced from vehicle fuel tanks.<sup>16 17</sup> Table 1 indicated this level of ORVR control efficiency is expected to be achieved during calendar year 2013.

In the second approach for estimating when ORVR is in widespread use, we also observed from Table 1 that by the end of calendar year 2012 more than 75 percent of gasoline will be dispensed into ORVR-equipped vehicles. As discussed in the NPRM, the EPA believed that this percentage of ORVR coverage ( $\geq 75$  percent) is substantial enough to inherently be viewed as "widespread" under any ordinary

understanding of that term.

Furthermore, in Table 1, the percentage of VMT by ORVR-equipped vehicles (column 3) and the amount of gasoline dispensed into ORVR-equipped vehicles (column 4) reached or exceeded 75 percent between the end of year 2011 and end of 2012. The EPA believed this provided further support for establishing a widespread use date after the end of calendar year 2012. Based on the dates derived from these two basic approaches, the EPA proposed to determine that ORVR will be in widespread use by June 30, 2013, or the midpoint of calendar year 2013.

**VI. This Action**

*A. Analytical Rationale for Final Rule*

Section 202(a)(6) of the CAA provides discretionary authority to the EPA Administrator to, by rule, revise or waive the section 182(b)(3) Stage II requirement after the Administrator determines that ORVR is in widespread use throughout the motor vehicle fleet. As discussed in the NPRM, the EPA has broad discretion in how it defines widespread use and the manner in which any final determination is implemented. In our review of the public comments received on the proposal, no commenter indicated that a widespread use determination was inappropriate or took issue with the EPA's two-pronged analytical approach. We have integrated responses to many comments throughout the preamble to

<sup>16</sup> See section 4.4.3 (especially Figure 4-14 and Table 4-4) in "Technical Guidance—Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume I: Chapters," EPA-450/3-91-022a, November 1991. A copy of this document is located in the docket for this action EPA-HQ-OAR-2010-1076. This is based on annual enforcement inspections and on allowable exemptions of 10,000/50,000 gallons per month as described in section 324(a) of the CAA. The EPA recognizes that these two values vary by state and that in some cases actual in-use efficiencies, prescribed exemption levels, or both may be either higher or lower.

<sup>17</sup> AP-42, The EPA's emission factors document, identifies three sources of refueling emissions: Displacement, spillage, and breathing losses. In the EPA Memorandum "Onboard Refueling Vapor Recovery Widespread Use Assessment" (available in the public docket), the EPA determined that for separate Stage II and ORVR refueling events, spillage and breathing loss emission rates are similar. Thus, this analysis focuses on differences in controlled displacement emissions. Compatibility effects related to ORVR and Stage II vacuum assist systems are addressed separately.

<sup>15</sup> See, "Determination of Widespread Use of Onboard Refueling Vapor Recovery (ORVR) and Waiver of Stage II Vapor Recovery Requirements: Summary of Public Comments and Responses," March 2012. Document contained in docket EPA-HQ-OAR-2010-1076.

this final rule. A more detailed set of responses is in a document titled, "Determination of Widespread Use of Onboard Refueling Vapor Recovery (ORVR) and Waiver of Stage II Vapor Recovery, Summary of Public Comments and Responses" that can be found in the docket, EPA-HQ-OAR-2010-1076.

The analytical approaches used by the EPA to determine the widespread use date are influenced by several key input parameters that affect the estimates of the emission reduction benefits of Stage II alone versus the benefits of ORVR alone and the phase-in of ORVR-equipped vehicles. We received several comments on the assumptions and parameters used by the EPA in the NPRM, and in some cases we have updated the information used in calculations that support the final rule, as discussed in the following paragraphs.

#### 1. ORVR Parameters

- *ORVR efficiency.* The EPA used an in-use control efficiency of ORVR of 98 percent in the proposal. This was based on the testing of 1,160 vehicles drawn from the field. EPA has updated its analysis to include an additional 478 refueling emission test results for ORVR-equipped vehicles that were conducted in calendar years 2010 and 2011. The data set, which now includes over 1,600 vehicle tests for vehicles from model years 2000-2010 with mileages ranging from 10,000 to over 100,000, continues to support the conclusion that the 98 percent in-use efficiency values remain appropriate.<sup>18</sup>

- *Modeling program inputs.* The NPRM relied on EPA's MOVES 2010 model for estimating ORVR vehicle fleet penetration, VMT by ORVR vehicles, and gallons of gasoline dispensed to ORVR vehicles. Since the development of the NPRM, the EPA has publicly released MOVES 2010a. The updated model incorporates many improvements. Those relevant here include updates in ORVR vehicle sales, sales projections, scrappage, fleet mix, annual VMT, and fuel efficiency. The EPA believes that the modeling undertaken to determine the widespread use date for the final rule should employ the EPA's latest MOVES modeling program because it contains updated information that bears on the subject of this rulemaking, and because the EPA expects states to also use it in any state-specific demonstrations

<sup>18</sup> See the EPA memorandum "Updated ORVR In-Use Efficiency." A copy of this memorandum is located in the docket for this action EPA-HQ-OAR-2010-1076.

supporting future SIP revisions, including revisions that seek to remove Stage II programs.

#### 2. Stage II Parameters

- *Stage II efficiency.* The EPA used an in-use control efficiency of 86 percent for Stage II in the proposal. As discussed above, Stage II control efficiency depends on inspection, testing, and maintenance by GDF owner/operators, and inspection and enforcement by state/local agencies. Typical values range from 62 percent to 86 percent. The public comments referred the EPA to additional reported information directly related to in-use effectiveness of Stage II vapor recovery.<sup>19</sup> The reports indicate that for balance and vacuum-assist type Stage II systems in use in many states today, the in-use effectiveness of Stage II is typically near 70 percent. Nonetheless, the EPA has elected to retain the use of an 86 percent efficiency value in the analyses supporting the final rule. This is because many state programs have included the maintenance and inspection provisions recommended by EPA to achieve this level of efficiency in their initial SIPs that originally incorporated Stage II controls.<sup>20</sup> Current in-use efficiency values may well be lower based on the performance of the Stage II technology itself or for other reasons related to maintenance and enforcement. We are not rejecting the additional information from commenters or the possibility that Stage II efficiency may be lower in some states or nonattainment areas. However, the EPA believes these issues are best examined in the SIP review process. If real in-use efficiency across all existing Stage II programs is, in fact, lower than 86 percent, the EPA's final analysis overestimates the length of time required for emissions reductions from ORVR alone to eclipse the reductions that can be achieved by Stage II alone.

- *Stage II exemption rate.* In sections 182(b)(3) and 324 of the CAA, Congress permitted exemptions from Stage II controls for GDFs of less than 10,000 gallons/month (privates) and 50,000 gallons/month (independent small

<sup>19</sup> See "Draft Vapor Recovery Test Report," April 1999 by CARB and CAPCOA (now cleared for public use), and "Performance of Balance Vapor Recovery Systems at Gasoline Dispensing Facilities", prepared by the San Diego Air Pollution Control District, May 18, 2000. Both reports are available in the public docket.

<sup>20</sup> The EPA report, "Enforcement Guidance for Stage II Vehicle Refueling Control Programs," U.S. EPA, Office of Air and Radiation, Office of Mobile Sources, December 1991, provides basic EPA guidance on what a state SIP and accompanying regulations should include to achieve high efficiency.

business marketers). The EPA analysis indicated that these GDF throughput values exempted about 10 percent of annual throughput in any given area. Some states included more strict exemption rates, most commonly 10,000 gallons per month (3 percent of throughput) for both privates and independent small business marketers. A few other states' exemption provisions used values that fell within or outside this range.<sup>21</sup> Of the 21 states and the District of Columbia with areas classified as Serious, Severe, or Extreme for ozone and/or within the Ozone Transport Region, the plurality incorporated exemption provisions in their state regulations, which exempted about 10 percent of throughput.<sup>22</sup> Therefore, we believe it remains reasonable to use that value within this analysis.

- *Compatibility factor for vacuum assist Stage II systems.* The EPA discussed the compatibility factor at length in the NPRM and provided relevant materials in the docket. Several commenters asked that the EPA provide guidance on how the compatibility factor should be incorporated into any similar analysis conducted by a state for purposes of future SIP revisions involving Stage II programs. The magnitude of the compatibility factor for any given area varies depending on ORVR penetration, fraction of vacuum assist nozzles relative to balance nozzles, and excess A/L for vacuum assist nozzles. Two states have adopted measures to reduce this effect through the use of ORVR-compatible nozzles and one state prohibits vacuum assist nozzles completely. Due to these significant variables, the EPA is electing not to include the compatibility factor in the widespread use date determination analysis, but will provide the guidance requested by the commenters for use in making future SIP revisions. To the extent that compatibility emissions across all existing Stage II programs as a whole are significant, the EPA's final analysis overestimates the length of time required for emissions reductions from ORVR alone to eclipse the reductions that can be achieved by Stage II alone.

#### B. Updated Analysis of Widespread Use

As discussed previously, the EPA has used two approaches for determining

<sup>21</sup> There are a few states that limit Stage II exemptions to only GDFs with less than 10,000 gpm throughput, which would exempt about three to five percent of area-wide throughput.

<sup>22</sup> See the EPA memorandum "Summary of Stage II Exemption Program Values." A copy of this memorandum is located in the docket for this action in EPA-HQ-OAR-2010-1076.

when ORVR is in widespread use on a nationwide basis. After reviewing our methodology and reviewing the related comments on the NPRM, we are retaining three of the four basic

analytical input parameters and updating one. The in-use ORVR efficiency, the in-use Stage II efficiency, and the Stage II exemption rate parameters are the same as in the

NPRM. However, we have updated the modeling program inputs as discussed previously, and the results are reflected in Table 2.

TABLE 2—PROJECTED PENETRATION OF ORVR IN THE NATIONAL VEHICLE FLEET BY YEAR—BASED ON MOVES 2010(a)

End of calendar year	Vehicle population percentage	VMT Percentage	Gasoline dispensed percentage	ORVR Efficiency percentage
1	2	3	4	5
2006	42.6	51.2	49.2	48.2
2007	48.4	57.3	55.5	54.4
2008	53.3	62.3	60.5	59.2
2009	57.7	66.8	64.8	63.5
2010	62.4	71.6	69.5	68.1
2011	67.1	76.0	73.9	72.4
2012	71.4	80.0	77.7	76.1
2013	75.3	83.4	81.0	79.4
2014	78.7	86.3	84.0	82.3
2015	81.8	88.8	86.5	84.8
2016	84.5	90.9	88.6	86.8
2017	86.8	92.5	90.3	88.5
2018	88.8	93.9	91.9	90.0
2019	90.5	95.0	93.2	91.3
2020	92.0	95.9	94.3	92.4

See EPA Memorandum "Onboard Refueling Vapor Recovery Widespread Use Assessment" in the docket (number EPA-HQ-OAR-2010-1076) addressing details on issues related to values in this table.

**Note:** In this table, the columns have the following meaning.

1. Calendar year that corresponds to the percentages in the row associated with the year.
2. Percentage of the gasoline-powered highway vehicle fleet that have ORVR.
3. Percentage of vehicle miles traveled (VMT) by vehicles equipped with ORVR.
4. Amount of gasoline dispensed into ORVR-equipped vehicles as a percentage of all gasoline dispensed to highway motor vehicles.
5. Percentage from the same row in column 4 multiplied by 0.98.

The results in Table 2 are applied in the context of the two basic analytical approaches used in the NPRM for supporting the final date associated with the EPA's widespread use determination. First, using the analysis based on equal reductions for Stage II and ORVR, the 77.4 percent in-use emission reduction efficiency for ORVR will occur in May 2013 (See column 5 of Table 2). Second, 75 percent of gasoline will be dispensed to ORVR-equipped vehicles by April 2012 (See column 4 of Table 2).

#### C. Widespread Use Date

The updated analysis indicates that the two benchmarks will occur about a year apart, and that one benchmark of April 2012 has already passed. At the time of the NPRM, both of the benchmark dates for the ORVR widespread use determination were in the future, many months after the EPA's expected final action. Thus, given the basic merits of both approaches, the EPA believed it was reasonable to propose a date between the dates associated with the two analytical approaches.

The EPA's updated analysis presents a somewhat different picture. The April 2012 benchmark date has already

passed, and the May 2013 benchmark date is less than 1 year away. We believe it is reasonable for the EPA Administrator to determine that ORVR is in widespread use in the motor vehicle fleet as of the date this final action is published in the **Federal Register** because this final rule is being promulgated within the window bounded by the two benchmark dates derived from the updated analyses.

As discussed previously in this notice and in the NPRM, the EPA has discretion in setting the widespread use date. It is evident from the public comments on the NPRM from states and members of the regulated industry, and from recent state actions, that there is a desire to curtail Stage II installations at newly constructed GDFs, and to initiate an orderly phase-out of Stage II controls at existing GDFs.<sup>23</sup> Since one of the two analytical benchmark dates (April 2012)

<sup>23</sup> For example, in November 2011, New Hampshire put new regulations in place that eliminate the need for new GDFs to install Stage II, allows current GDFs with Stage II to decommission the systems, and requires all systems to be decommissioned by December 22, 2015. In May of 2011, New York issued an enforcement discretion directive which curtailed the need for new stations to install Stage II and permitted current installations to be decommissioned. These actions remain under review of EPA.

has passed, and we expect in most cases the second analytical benchmark date (May 2013) will have passed by the time the EPA is able to complete approvals of SIP revisions removing Stage II programs and pass any revised regulations, then in response to comments asking us to expedite the ORVR widespread use finding, the EPA Administrator is determining that ORVR is in widespread use in the motor vehicle fleet as of May 16, 2012. Accordingly, as of May 16, 2012 the requirement to implement a Stage II emissions control program under section 182(b)(3) of the CAA is waived.

#### D. Implementation of the Rule Provisions

In this final action, the ORVR widespread use determination and waiver of the section 182(b)(3) requirement applies to the entire country. This includes areas that are now classified as Serious or above for ozone nonattainment, as well as those that may be classified or reclassified as Serious or above in the future.

In the NPRM, we indicated that states could potentially demonstrate that ORVR was in widespread use in specific areas sooner than the general, national date. Such a provision is no longer

needed because today's action provides for a nationwide determination of widespread use effective on May 16, 2012.

As stated in this final action and as pointed out by several commenters, the ORVR widespread use determination and section 182(b)(3) waiver determination does not obligate states to remove any existing Stage II vapor recovery requirements. It is possible that a state would determine it beneficial to continue implementation of a Stage II program. For example, in an area where ORVR-equipped fleet penetration is considerably less than the national average, or where Stage II exemptions are significantly more restrictive than the national assumptions used in this analysis, a state may determine that it would not be appropriate to modify its program immediately, but that it would be more appropriate to do so at a later date. In assessing whether and how to phase out Stage II requirements, states are encouraged to review, and as needed revise the area-specific assumptions about taking into consideration their inspection and enforcement resource commitments as well as ORVR/vacuum-assist Stage II compatibility.

A state that chooses to remove the program must submit a SIP revision requesting EPA to approve such action and provide, as appropriate, a demonstration that the SIP revision is consistent with CAA section 110(1), and in some cases consistent with CAA section 193. The EPA will provide additional guidance on conducting assessments to support Stage II-related SIP revisions.<sup>24</sup> The EPA encourages states to review this guidance and consult with the EPA Regional Offices on developing SIP revisions seeking EPA approval for phasing out existing Stage II programs in a manner that ensures air quality protections are maintained.

Section 110(l) precludes the Administrator from approving a SIP revision if it would interfere with applicable CAA requirements (including, but not limited to, attainment and maintenance of the ozone NAAQS and achieving reasonable further progress). A state may demonstrate through analysis that removing a Stage II program in an area as of a specific date will not result in an emissions increase in the area, or that the small and ever-declining increase is offset by other simultaneous changes in the implementation plan. However, a

state may find that by removing Stage II requirements, they are reducing the overall level of emissions reductions they have previously applied toward meeting CAA rate of progress (ROP) or reasonable further progress (RFP) requirements, or demonstrating attainment. If so, the state should explain how removing Stage II controls in the area would not interfere with attaining and maintaining the ozone NAAQS in the area. In such circumstances, it is possible that additional emissions reductions from other measures may be needed to offset the removal of Stage II.

If EPA has approved a state's adoption of Stage II requirements into a SIP before November 15, 1990, section 193 would also apply. Section 193 provides that removal of an emissions control program cannot result in any emissions increase unless the increase is offset. Section 193 only applies if an area is nonattainment for the standard.

State and local agencies should also consider any transportation conformity impacts related to removing Stage II if emissions reductions from Stage II are included in a SIP-approved on-road motor vehicle emissions budget. States may need to adjust conformity budgets or the components of the budget if removing Stage II requirements would alter expected air quality benefits.

In previous memoranda, the EPA provided guidance to states on removing Stage II at refueling facilities dedicated to certain segments of the motor vehicle fleet (e.g., new automobile assembly plants, rental car facilities, E85 dispensing pumps, and corporate fleet facilities). In these specific cases where all or nearly all of the vehicles being refueled are ORVR-equipped, the EPA could conservatively conclude that widespread use of ORVR had occurred in these fleets.<sup>25</sup>

#### *E. Implementation of Rule Provisions in the Ozone Transport Region*

States and the District of Columbia in the OTR in the northeastern U.S. are also subject to a separate Stage II-related requirement. Under section 184(b)(2) of the CAA (42 U.S.C. 7511c(b)(2)), all areas in the OTR, both attainment and nonattainment areas, must implement control measures capable of achieving emissions reductions comparable to those achievable through Stage II controls. The CAA does not contain specific provisions giving authority to the EPA Administrator to waive this

independent requirement. The section 184(b)(2) requirement does not impose Stage II *per se*, but rather is a requirement that OTR states achieve an amount of emissions reductions comparable to the amount that Stage II would achieve. Moreover, section 202(a)(6), in allowing for a waiver of the section 182(b)(3) Stage II requirement for nonattainment areas, does not refer to the independent section 184(b)(2) requirements. Therefore, the section 184(b)(2) Stage II-related requirement for the OTR will continue to remain in place even after the ORVR widespread use determination and section 182(b)(3) waiver effective date.

In the mid-1990s, the EPA issued guidance on estimating what levels of emissions reductions would be "comparable" to those reductions achieved by Stage II.<sup>26</sup> In response, most OTR states simply adopted Stage II programs rather than identify other measures that got the same degree of emissions reductions. Given the continued penetration of ORVR-equipped vehicles into the overall vehicle fleet, Stage II-comparable emissions are significantly less than in the past, and continue to decline. Accordingly, the EPA is issuing updated guidance on determining "comparable measures." States in the OTR should refer to that guidance if preparing a SIP revision to remove Stage II programs in areas of the OTR.<sup>27</sup>

Commenters on the NPRM urged the EPA to revise its previous interpretation of section 184(b)(2) to permit ORVR to be recognized as a Stage II comparable emission reduction measure. This issue is not within the scope of this rulemaking, and EPA is not taking final agency action implementing section 184(b)(2) or an interpretation thereof. However, for informational purposes, we point out that simply treating the ORVR requirements under section 202(a)(6) as a comparable measure that an OTR SIP must additionally contain would arguably render the 184(b)(2) requirement a nullity, which could be an impermissible statutory interpretation. If commenters wish to further address this issue, we ask that they raise their concerns in any future SIP actions under section 184(b)(2) regarding OTR states that may affect them. In addition, we note that the expected level of emissions reductions

<sup>24</sup> "Phasing Out Stage II Gasoline Refueling Vapor Recovery Programs: Guidance on Satisfying Requirements of Clean Air Act Sections 110(l), 193, and 184(b)(2) (tentative title)." U.S. EPA Office of Air and Radiation, forthcoming.

<sup>25</sup> "Removal of Stage II Vapor Recovery in Situation where Widespread Use of Onboard Refueling Vapor Recovery is Demonstrated," from Stephen D. Page and Margo Tsigotis Oge, EPA, December 12, 2006.

<sup>26</sup> "Stage II Comparability Study for the Northeast Ozone Transport Region," (EPA-452/R-94-011; January 1995).

<sup>27</sup> "Phasing Out Stage II Gasoline Refueling Vapor Recovery Programs: Guidance on Satisfying Requirements of Clean Air Act Sections 110(l), 193, and 184(b)(2) (tentative title)." U.S. EPA Office of Air and Radiation, forthcoming.

that Stage II programs can obtain has changed significantly in the past 15 years with ORVR-equipped vehicles phasing in at the rate of 3–4 percent of the fleet each calendar year. Therefore, the EPA is issuing updated guidance on estimating the emissions reductions needed to be comparable to those achievable through Stage II controls. Theoretically, comparable measures could in some areas mean no additional control beyond ORVR is required if Stage II is achieving no additional emission reduction benefit in the area, or has reached a point of providing only a declining *de minimis* benefit.

#### F. Comments on Other Waiver Implementation Issues

Numerous commenters on the NPRM urged the EPA to adopt provisions in the final rule that would exempt new gasoline dispensing facilities with construction occurring between the final rule publication and the effective Stage II waiver date from installing Stage II equipment. The timing issue is now largely moot since widespread use is deemed to have occurred on the effective date of this action. However, under the CAA, states adopt state-specific or area-specific rules, which are then submitted to the EPA for approval into the SIP. These rules are independently enforceable under state law, and also become federally enforceable when the EPA approves them into the SIP. The EPA cannot unilaterally change legally-adopted state statutes or rules or otherwise revise an approved SIP that was not erroneously approved. The EPA's only authority to establish requirements that would apply in lieu of approved SIPs is its authority under CAA section 110(c) to promulgate a Federal Implementation Plan (FIP). To trigger FIP authority, the EPA must first determine that a state has failed to submit a required SIP or that the state's SIP must be disapproved. The circumstances of this ORVR widespread use finding and waiver of the section 182(b)(3) Stage II requirement to do not present either of those situations. According to requirements established by the CAA that are applicable here, states will need to develop and submit SIP revisions to the EPA in order to change or eliminate SIP-approved state rules that set forth the compliance dates for newly constructed GDFs.

Commenters also urged EPA to simply allow states to eliminate all active Stage II programs from certain nonattainment areas after the widespread use date, without requiring SIP revisions from states. While the EPA has discretion to determine the widespread use date, the EPA cannot simply nullify states' rules

that are binding and enforceable under state law. In order to change the federal enforceability of SIPs, states must go through the SIP revision process, and the EPA can approve the SIP revision only if the provisions of section 110(l) and any other applicable requirements, such as the requirements of section 193 and the comparable measures requirement for OTR states, are satisfied. Today's final rule takes no action in implementing CAA sections 110(l), 193, or 184(b)(2), and any future final actions regarding "comparable measures" SIPs will be fact-specific in response to individual state submissions. Also, subsequent to the effective waiver date of the section 182(b)(3) Stage II requirements, areas currently implementing the EPA-approved Stage II programs in their SIPs as a result of obligations under the 1-hour or 1997 8-hour ozone NAAQS, would be required to continue implementing these programs until the EPA approves a SIP revision adopted under state law removing the requirement from the state's ozone implementation plan.

#### VII. Estimated Cost

As part of the NPRM, the EPA conducted an initial assessment of the costs and savings to gasoline dispensing facility owners related to this proposed action. The report titled, "Draft Regulatory Support Document, Decommissioning Stage II Vapor Recovery, Financial Benefits and Costs," is available in the public docket for this action. The report examines the initial costs and savings to facility owners incurred in the decommissioning of Stage II vapor recovery systems, as well as changes in recurring costs associated with above ground hardware maintenance, operations, and administrative tasks. The EPA received no substantive comment on the draft report, other than a concern that the savings identified therein may not come to pass as quickly as envisioned in the draft report if the EPA does not provide updated guidance on comparable measures for the OTR states. We intend to address this concern by issuing separate guidance for the states.<sup>28</sup> EPA will post this action at the following web site address: <http://www.epa.gov/glo/actions.html>.

As part of the re-analysis following the NPRM, the EPA reviewed the input values used for the proposal draft. Most input values were confirmed as

reasonable and representative but it was concluded that two of the values should be updated. These include: (1) The pre-tax price of gasoline used in the foregone vapor recovery savings calculation, which increased from \$2.30 in 2010 to \$3.04 in 2011 (average price per gallon), and (2) the number of Stage II facilities potentially affected by SIP revisions removing Stage II requirements in non-California Serious, Severe and Extreme ozone nonattainment areas which increased from 26,900 to 30,600 in 19 states and the District of Columbia. As discussed in our final regulatory support document, the EPA estimates recurring cost savings of about \$3,000 per year for a typical gasoline dispensing facility, and an annual nationwide savings of up to \$91 million if Stage II is phased out of the approximately 30,600 dispensing facilities outside of California that are required to have Stage II vapor recovery systems under section 182(b)(3) of the CAA.<sup>29</sup> This analysis assumes that Stage II is removed from GDFs over a three year time frame in an equal number each year. What actually occurs will depend on actions by the individual states. If the states submit and EPA approves SIP revisions to remove Stage II systems from these GDFs, the EPA projects savings of about \$10.2 million in the first year, \$40.5 million in the second year, and \$70.9 million in the third year. Long term savings are projected to be about \$91 million per year, compared to the current use of Stage II systems in these areas.

#### VIII. Statutory and Executive Order Reviews

##### A. Executive Orders 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

Under Executive Order (EO) 12866 (58 FR 51735, October 4, 1993), this action is a "significant regulatory action" because it raises novel legal or policy issues arising out of legal mandates. Accordingly, the EPA submitted this action to the Office of Management and Budget (OMB) for review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011) and any changes made in response to OMB recommendations have been documented in the docket for this action.

<sup>28</sup> "Phasing Out Stage II Gasoline Refueling Vapor Recovery Programs: Guidance on Satisfying Requirements of Clean Air Act Sections 110(l), 193, and 184(b)(2) (tentative title)." U.S. EPA Office of Air and Radiation, forthcoming.

<sup>29</sup> See "Final Regulatory Support Document, Decommissioning Stage II Vapor Recovery, Financial Benefits and Costs," available in public docket, EPA-HQ-OAR-2010-1076.

### B. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. Burden is defined at 5 CFR 1320.3(b). It does not contain any recordkeeping or reporting requirements.

### C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this action on small entities, small entity is defined as: (1) A small business as defined in the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this action on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This rule will not impose any new requirements on small entities. Rather, it provides criteria for reducing existing regulatory requirements on gasoline dispensing facilities, some of which may qualify as small businesses.

### D. Unfunded Mandates Reform Act

This action contains no federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531–1538 for state, local, or tribal governments or the private sector. The action imposes no enforceable duty on any state, local or tribal governments, or the private sector. Therefore, this action is not subject to the requirements of sections 202 and 205 of the UMRA.

This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments. This action addresses the removal of a requirement regarding gasoline vapor

recovery equipment, but does not impose any obligations to remove these programs.

### E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This action does not impose any new mandates on state or local governments. Thus, Executive Order 13132 does not apply to this rule.

### F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have substantial direct effects on tribal governments, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this rule.

### G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

The EPA interprets Executive Order 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the Executive Order has the potential to influence the regulation. This action is not subject to Executive Order 13045 because it does not establish an environmental standard intended to mitigate health or safety risks.

### H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a “significant energy action” as defined in Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. It does not impose additional costs on gasoline distribution, but rather promises to lower operating and maintenance costs for gasoline dispensing facilities by facilitating removal of redundant gasoline refueling vapor controls.

### I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law 104–113, 12(d), (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

### J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

The EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not directly affect the level of protection provided to human health or the environment under the EPA's NAAQS for ozone. This action proposes to waive the requirement for states to adopt largely redundant Stage II programs, based on a determination of widespread use of ORVR in the motor vehicle fleet.

### K. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the

Congress and to the Comptroller General of the United States. The EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective upon publication in the **Federal Register**.

#### IX. Statutory Authority

The statutory authority for this action is provided by the CAA, as amended (42 U.S.C. 7401, et seq.); relevant provisions of the CAA include, but are not limited to sections 182(b)(3), 202(a)(6), 301(a)(1), and 307(b), and 307(d)(4) U.S.C. 7511a(b)(3), 7521(a)(6), 7601(a)(1), 7607(b), and 7607(d)).

#### List of Subjects in 40 CFR Part 51

Environmental protection, Administrative practice and procedure, Air pollution control, Ozone, Particulate matter, Volatile organic compounds.

Dated: May 9, 2012.

Lisa P. Jackson,  
Administrator.

For reasons set forth in the preamble, part 51 of chapter I of title 40 of the Code of Federal Regulations is amended as follows:

#### PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS.

■ 1. The authority citation for part 51 continues to read as follows:

Authority: 23 U.S.C. 101; 42 U.S.C. 7401–7671q.

#### Subpart G—[Amended]

■ 2. Section 51.126 is added to read as follows:

#### § 51.126 Determination of widespread use of ORVR and waiver of CAA section 182(b)(3) Stage II gasoline vapor recovery requirements.

(a) Pursuant to section 202(a)(6) of the Clean Air Act, the Administrator has determined that, effective May 16, 2012, onboard refueling vapor recovery (ORVR) systems are in widespread use in the motor vehicle fleet within the United States.

(b) Effective May 16, 2012, the Administrator waives the requirement of Clean Air Act section 182(b)(3) for Stage II vapor recovery systems in ozone nonattainment areas regardless of

classification. States must submit and receive EPA approval of a revision to their approved State Implementation Plans before removing Stage II requirements that are contained therein.

[FR Doc. 2012–11846 Filed 5–15–12; 8:45 am]  
BILLING CODE 6560–50–P

#### ENVIRONMENTAL PROTECTION AGENCY

#### 40 CFR Part 52

[EPA–R03–OAR–2011–0714; FRL–9670–3]

#### Approval and Promulgation of Air Quality Implementation Plans; Delaware, New Jersey, and Pennsylvania; Determinations of Attainment of the 1997 Annual Fine Particulate Standard for the Philadelphia-Wilmington Nonattainment Area

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

**SUMMARY:** EPA is making two determinations regarding the Philadelphia-Wilmington, PA-NJ-DE fine particulate (PM<sub>2.5</sub>) nonattainment area (the Philadelphia Area). First, EPA is making a determination that the Philadelphia Area has attained the 1997 annual PM<sub>2.5</sub> national ambient air quality standard (NAAQS) by its attainment date of April 5, 2010. This determination is based upon quality assured and certified ambient air monitoring data that show the area monitored attainment of the 1997 annual PM<sub>2.5</sub> NAAQS for the 2007–2009 monitoring period. Second, EPA is making a clean data determination, finding that the Philadelphia Area has attained the 1997 PM<sub>2.5</sub> NAAQS, based on quality assured and certified ambient air monitoring data for the 2007–2009 and 2008–2010 monitoring periods. In accordance with EPA's applicable PM<sub>2.5</sub> implementation rule, this determination suspends the requirement for the Philadelphia Area to submit an attainment demonstration, reasonably available control measures/reasonably available control technology (RACM/RACT), a reasonable further progress (RFP) plan, and contingency measures related to attainment of the 1997 annual PM<sub>2.5</sub> NAAQS for so long as the area continues to attain the 1997 annual PM<sub>2.5</sub> NAAQS. These actions are being taken under the Clean Air Act (CAA).

**DATES:** This rule is effective on June 15, 2012.

**ADDRESSES:** EPA has established a docket for this action under Docket ID

Number EPA–R03–OAR–2011–0714. All documents in the docket are listed in the [www.regulations.gov](http://www.regulations.gov) Web site. Although listed in the electronic docket, some information is not publicly available, i.e., confidential business information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through [www.regulations.gov](http://www.regulations.gov) or in hard copy for public inspection during normal business hours at the Air Protection Division, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103.

**FOR FURTHER INFORMATION CONTACT:** If you have questions concerning EPA's action related to Delaware or Pennsylvania, please contact Maria A. Pino, (215) 814–2181, or by email at [pino.maria@epa.gov](mailto:pino.maria@epa.gov). If you have questions concerning EPA's action related to New Jersey, please contact Henry Feingersh, (212) 637–3382, or by email at [feingersh.henry@epa.gov](mailto:feingersh.henry@epa.gov).

**SUPPLEMENTARY INFORMATION:** The following outline is provided to aid in locating information in this action.

- I. Background
- II. Summary of Actions
- III. Summary of Public Comments and EPA Responses
- IV. Final Actions
- V. Statutory and Executive Order Reviews

#### I. Background

On January 23, 2012, EPA published a direct final rulemaking (77 FR 3147) and companion notice of proposed rulemaking (NPR) (77 FR 3223) for the States of Delaware and New Jersey and the Commonwealth of Pennsylvania (the States). In the January 23, 2012 rulemaking action, EPA proposed to determine that the Philadelphia Area attained the 1997 PM<sub>2.5</sub> NAAQS by its attainment date, April 5, 2010. EPA also proposed to make a clean data determination, finding that the Philadelphia Area has attained the 1997 PM<sub>2.5</sub> NAAQS.

Because EPA received adverse comment, EPA withdrew the direct final rule on March 13, 2012 (77 FR 14697), and the direct final rule was converted to a proposed rule.

#### II. Summary of Actions

These actions do not constitute a redesignation to attainment under section 107(d)(3) of the CAA. The designation status of the Philadelphia Area will remain nonattainment for the 1997 annual PM<sub>2.5</sub> NAAQS until such