TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AGENDA ITEM REQUEST

for State Implementation Plan Revision Adoption

AGENDA REQUESTED: October 9, 2013

DATE OF REQUEST: September 20, 2013

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

CAPTION: Docket No. 2012-2361-SIP. Consideration of the adoption of revisions to the Stage II Vapor Recovery Program State Implementation Plan (SIP) revision.

The adopted SIP revision incorporates revisions to Chapter 115, Subchapter C, Division 4 (Rule Project No. 2013-001-115-AI) establishing that owners and operators of gasoline dispensing facilities are no longer required to install Stage II equipment and requiring the decommissioning of Stage II equipment at all gasoline dispensing facilities 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 SIP revision includes a detailed assessment demonstrating that decommissioning of Stage II vapor controls does not interfere with attainment or maintenance of areas classified as moderate or above for the ozone National Ambient Air Quality Standards. (Santos Olivarez, Terry Salem/Becky Petty) (SIP Project No. 2013-002-SIP-NR).

Steve Hagle, P.E.
Deputy Director

David Brymer
Division Director

Joyce Spencer-Nelson
Agenda Coordinator

Copy to CCC Secretary? NO YES X

Texas Commission on Environmental Quality
Interoffice Memorandum

To: Commissioners Date: September 20, 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 Adoption of the Stage II Vapor Recovery State Implementation Plan Revision
SIP Project No. 2013-002-SIP-NR

Background and reasons for the SIP revision:
In the May 16, 2012 issue of the *Federal Register* (77 FR 28772), the United States Environmental Protection Agency (EPA) finalized a rulemaking 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 (GDF) in nonattainment areas classified as moderate and above for the ozone 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 is 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) one-hour ozone nonattainment area; Collin, Dallas, Denton, and Tarrant Counties in the Dallas-Fort Worth (DFW) one-hour ozone nonattainment area; El Paso County (ELP) one-hour nonattainment area; and Hardin, Jefferson, and Orange Counties in the Beaumont-Port Arthur (BPA) one-hour ozone nonattainment 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.

In response to the EPA's final rule, an enforcement discretion directive was executed by the executive director on August 23, 2012 and retroactively effective as of May 16, 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 or commission) 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, is being proposed for adoption concurrently as revisions to the Stage II SIP.

Scope of the SIP revision:
The adopted SIP revision revises Chapters 1 through 10 of the Stage II Vapor Recovery Program to incorporate 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 adopted SIP revision authorizes and requires owners or operators of existing GDFs in the current program areas to properly decommission Stage II equipment. The adopted SIP revision maintains requirements for owners or operators of GDFs electing to continue monitoring and testing of equipment until the equipment has been completely decommissioned. The Stage II Vapor Recovery Program SIP revision narrative also removes or revises requirements that become effective once a facility completes Stage II decommissioning. Revisions to the Stage II rules in 30 Texas Administrative Code (TAC) Chapter 115, Subchapter C, Division 4 are being adopted concurrently (Rule Project No. 2013-001-115-AI).

On June 27, 2007, the commission adopted changes to 30 TAC Chapter 115 to add language exempting facilities from installing Stage II equipment if the facility could demonstrate that refueling at the facility involved a fleet of 95% or more ORVR-equipped vehicles. This rule change was submitted as a SIP revision with no change to the Stage II SIP narrative. The June 27, 2007 rule change is still under consideration by the EPA and has not been approved. The EPA expressed concerns that the language justifying the exemption needed to be more descriptive and explanatory. If the concurrent rulemaking concerning decommissioning is adopted by the commission, the commission will concurrently request withdrawal of the June 27, 2007 rule change regarding exemptions for facilities that can demonstrate refueling involves a fleet of 95% or more ORVR-equipped vehicles that is currently pending EPA review.

A corresponding rule revision enforcing the revisions to the Stage II program is being concurrently adopted with this SIP revision. Upon adoption, both the revised rule and SIP revision will be submitted to the EPA for approval. According to the EPA's guidance document[1] for decommissioning Stage II, it is necessary for the executive director to demonstrate under FCAA, §110(l) that air quality is not affected by the decommissioning

[1] EPA, 2012. "Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures" Air Quality Policy Division, Office of Transportation and Air Quality, United States Environmental Protection Agency,EPA-457/B-12-001, August 7, 2012.

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 air quality planning areas using the method documented in the EPA's guidance document. It was found that removal of Stage II requirements does not interfere with attainment or maintenance of the one-hour ozone NAAQS in the Texas air quality plans. A more detailed analysis is included in the corresponding Stage II SIP revision.

A.) Summary of what the SIP revision will do:
The adopted SIP revision incorporates activities related to decommissioning of Stage II equipment included in the corresponding adopted rulemaking. Revisions to the SIP include:

- new definitions of "decommissioning" and "gasoline dispensing facility";
- continued applicability of the Stage II requirements until the owner or operator of a GDF completes decommissioning;
- verification of approved systems at GDFs that elect to continue maintaining Stage II equipment will 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;
- continued training requirements for appropriate persons until Stage II equipment is decommissioned at an affected GDF or until August 31, 2018;
- continued availability of public information relating to Stage II vapor recovery requirements until all decommissioning has been completed or until August 31, 2018;
- notification requirements for owners or operators of GDFs;
- continued TCEQ investigations and any associated penalties for Stage II until decommissioning is completed at the GDF;
- a provision for owners or operators of GDFs to begin decommissioning activities 30 calendar days following the effective date of EPA approval of this SIP revision and corresponding rulemaking; and
- an FCAA, §110(l), Noninterference Demonstration demonstrating that the Stage II decommissioning will not interfere with attainment or maintenance of the ozone NAAQS.

B.) Scope required by federal regulations or state statutes:
None

C.) Additional staff recommendations 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 adopted SIP revision will affect 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 the owners of the GDFs approximately $600 per gasoline dispenser with total costs depending on the number of gasoline dispensers at the GDF. Owners of 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 range from $250 to $350 for annual inspections and approximately $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. 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 direct impact is anticipated.

C.) Agency programs:
The TCEQ's Office of Compliance and Enforcement's (OCE) Regional Offices employ Stage II investigators and have contracts in place with five local government entities to monitor and inspect Stage II equipment and installations. These programs will be necessary to continue monitoring of decommissioning activities. As owners or operators of GDFs complete the decommissioning process, these programs will see their workload for Stage II activities lessen.

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, El Paso, Houston, Beaumont, and Austin. The stakeholders consisted of industry representatives including installers and testers, owners and operators of GDFs, and local governments with

Stage II inspection and monitoring programs funded through contracts with TCEQ. Stakeholders generally offered acknowledgement that ORVR was in widespread use and offered support of a decommissioning process that could begin as soon as possible and was consistent with industry-recommended procedures.

Public comment:
The commission offered public hearings in: El Paso on May 28, 2013; Beaumont on May 30, 2013; Houston on May 31, 2013; Arlington on June 3, 2013; and Austin on June 4, 2013. Notice of the public hearing was published in the *Texas Register* and the *El Paso Times*, *Beaumont Enterprise*, *Houston Chronicle*, *Fort Worth Star Telegram*, and *Austin American Statesman* newspapers.

The public comment period opened on May 10, 2013 and closed on June 10, 2013. No comments were received regarding the SIP revision; however, comments were received regarding the associated rule revisions to Chapter 115. A summary of these comments as well as the TCEQ's responses are provided as part of the adopted SIP revision in the Response to Comments section.

Significant changes from proposal:
The adopted SIP revision has no significant changes from proposal.

Potential controversial concerns and legislative interest:
The TCEQ must demonstrate to the EPA that removing Stage II equipment does not interfere with attainment and maintenance with the ozone NAAQS. A FCAA, §110(l) demonstration has been developed establishing that the loss of VOC reductions from the decommissioning of Stage II equipment will not have a negative effect on air quality. 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 and approved.

According to the EPA guidance document mentioned previously in this document, states must continue implementing Stage II until the EPA approves a SIP revision that removes the requirement from the SIP. As stated in its guidance, the EPA may take up to 18 months to review and approve the SIP revision once it is adopted by the commission. However, in response to concerns expressed by some owners and operators of GDFs who have stated they prefer to decommission their Stage II equipment as soon as possible, the EPA has agreed to a parallel review of the rule and SIP revisions.

Does this SIP revision affect any current policies or require development of new policies?
Staff has identified two separate pressure tests related to Stage I components that would no longer be required once Stage II vapor recovery equipment is decommissioned. A separate rulemaking requiring these tests has been initiated to offset the loss of this requirement due to this adopted rulemaking. Additionally, once the rule is adopted and the

corresponding SIP revision is approved by the EPA, the commission will request the withdrawal of a pending 2007 Stage II SIP revision currently under review by the EPA.

What are the consequences if this SIP revision does not go forward? Are there alternatives?
Owners or operators of new GDFs will be required to install and/or continue to maintain Stage II equipment that is not cost-effective and no longer required by EPA.

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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

Adoption

October 9, 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 certain areas designated nonattainment of the National Ambient Air Quality Standard (NAAQS)for ozone and classified as serious or above. Previous to this adopted SIP revision, the Stage II program was 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. These area were designated as moderate and higher.

In the May 16, 2012 issue of the *Federal Register* (FR) the United States Environmental Protection Agency (EPA) finalized rulemaking 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 (77 FR 28772). As stated in EPA's rulemaking, 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 that ORVR systems be phased in beginning with 1998 model-year light-duty gasoline vehicles. As of 2006, all new light- and medium-duty gasoline vehicles are equipped with ORVR.

According to the EPA's guidance document[1], EPA may waive a state's Stage II requirement upon EPA approval of a SIP revision that includes (1) a demonstration that emission reductions from ORVR alone are equal to or greater than those from Stage II at gasoline dispensing facilities (GDF) in ozone nonattainment areas classified as serious and above for the NAAQS, and (2) a demonstration that the air quality will not be negatively affected by the removal of Stage II equipment. This SIP revision includes both of these determinations in Chapter 12: *Demonstrating Noninterference under Federal Clean Air Act, Section 110(l)* of this SIP revision.

This SIP revision authorizes the decommissioning of Stage II vapor recovery equipment at GDFs and requires current GDF owners or operators to maintain their equipment until decommissioning occurs. All decommissioning must be completed by August 31, 2018. The EPA's Motor Vehicle Emission Simulator (MOVES) model was used by the Texas Commission on Environmental Quality (TCEQ) to demonstrate that the one-hour and 1997 eight-hour ozone NAAQS in current Stage II counties will not be negatively affected by the removal of Stage II equipment. Appendix A: *Emission Benefit Assessment for Removal of Stage II Gasoline Vapor Control Programs*, includes the calculations that were completed using the formulas provided in EPA's guidance mentioned previously.

In addition, this SIP revision includes the following elements:

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[1]EPA, 2012. "Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures." Air Quality Policy Division, Office of Transportation and Air Quality, United States Environmental Protection Agency,EPA-457/B-12-001, August 7, 2012

- new definitions of “decommissioning” and “gasoline dispensing facility”;
- continued applicability of the Stage II requirements until the owner or operator of a GDF completes decommissioning;
- verification of approved systems at GDFs that elect to continue maintaining Stage II equipment will 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;
- continued training requirements for appropriate persons until Stage II equipment is decommissioned at relevant GDF or until August 31, 2018;
- continued availability of public information relating to Stage II vapor recovery requirements until all decommissioning has been completed or until August 31, 2018;
- notification requirements for owners or operators of GDFs ;
- continued TCEQ investigations any associated penalties for Stage II until decommissioning is completed at the GDF;
- a provision for owners or operators of GDFs to begin decommissioning activities 30 calendar days following the effective date of EPA approval of this SIP revision; and
- an FCAA, §110(l), Noninterference Demonstration demonstrating that the Stage II decommissioning will not interfere with attainment or maintenance of the ozone NAAQS.

A corresponding rule revision enforcing the revisions to the Stage II program is being concurrently adopted with this SIP revision.

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, 2011, and 2013. 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. In 2011, the 82nd Texas Legislature 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. 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, 2013
TEXAS WATER CODE	September 1, 2013

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	June 12, 2013
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	May 2, 2013
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)

      Chapter 2: Applicability (Revised)

      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	*Federal Register*
GDF	Gasoline Dispensing Facility
HGB	Houston-Galveston-Brazoria
MVEB	Motor Vehicle Emissions Budget
NAAQS	National Ambient Air Quality Standard
NO_X	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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LIST OF THE STAGE II VAPOR RECOVERY PROGRAM DEFINITIONS (REVISED)

Decommission – The permanent removal of all 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 BACKGROUND

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 §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 uses 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[2] and technical guidance[3] in 1991.

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[2] EPA, 1991. "Enforcement Guidance for Stage II Vehicle Refueling Control Programs." Office of Air and Radiation, Air Quality Policy Division, United States Environmental Protection Agency ,October 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.

1.2 INTRODUCTION

In the May 16, 2012 issue of the *Federal Register* (77 FR 28772), the United States Environmental Protection Agency (EPA) finalized a rulemaking 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. As stated in this rulemaking, 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.

According to the EPA's guidance document[4], EPA may waive a state's Stage II requirement upon EPA approval of a SIP revision that includes (1) a demonstration that emission reductions from ORVR alone are equal to or greater than those from Stage II at gasoline dispensing facilities (GDF) in ozone nonattainment areas classified as moderate and above for the NAAQS, and (2) a demonstration that the air quality will not be negatively affected by the removal of Stage II

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[3] EPA 1991. "Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume I: Chapters" and "Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume II: Appendices", Office of Air and Radiation, Office of Air Quality Planning and Standards, United States Environmental Protection Agency, EPA-450/3-91-022a and EPA-450/3-91-022b, November 1991.
[4]EPA, 2012. "Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures." Air Quality Policy Division, Office of Transportation and Air Quality, United States Environmental Protection Agency,EPA-457/B-12-001, August 7, 2012

equipment. This SIP revision includes both of these determinations in Chapter 12: *Demonstrating Noninterference under Federal Clean Air Act, Section 110(l)* of 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(l), of the Stage II Vapor Recovery Program*, and Appendix A: *Emissions Benefit Assessment for Removal of Stage II Gasoline Vapor Control Programs*, are adopted to provide for the removal of Stage II requirements and decommissioning. This SIP revision allows existing GDF owners or operators in the current program areas to properly decommission Stage II equipment using an approved and monitored process. The SIP revision maintains 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 are required to remove Stage II vapor controls by August 31, 2018 or penalties may be assessed. This SIP revision provides measures that must be followed and reported to the TCEQ before, during, and after decommissioning is completed. In addition, owners or operators of GDFs are required to complete all decommission activities 30 calendar days after initiating the decommissioning process, and all owners or operators of all GDFs, must complete the Stage II decommissioning no later than August 31, 2018.

A revision to Texas Administrative Code (TAC) Chapter 115, Subchapter C, Division 4 is being adopted concurrently with this SIP revision. This rule revision specifies that owners or operators of new GDFs are not required to install Stage II equipment and allows owners or operators of existing GDFs in the current program areas to properly decommission Stage II equipment.

1.3 PUBLIC HEARING AND COMMENT INFORMATION

The commission offered public hearings in: El Paso on May 28, 2013; Beaumont on May 30, 2013; Houston on May 31, 2013; Arlington on June 3, 2013; and Austin on June 4, 2013. Notice of the public hearing was published in the *Texas Register* and the *El Paso Times*, *Beaumont Enterprise*, *Houston Chronicle*, *Fort Worth Star Telegram*, and *Austin American Statesman* newspapers.

The public comment period opened on May 10, 2013 and closed on June 10, 2013. No comments were received regarding the SIP revision; however, comments were received regarding the associated rule revisions to Chapter 115. A summary of these comments as well as the TCEQ's responses are provided as part of this SIP revision in the Response to Comments section.

1.4 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-AI).

1.5 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 that applicability 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 previously required for GDFs that averaged more than 10,000 gallons a month. In the event a GDF was inactive for any period during the proposed calculation period, the state would 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 constructed after November 15, 1992 were required to install Stage II vapor recovery in these counties regardless of throughput. If the GDF exceeded 10,000 gallons of throughput in any given month between January 1, 1991 and November 15, 1992 the owner or operator of that 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 on emissions inventory data.

2.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE

This state implementation plan revision specifies that applicability of Stage II requirements continue to apply until the owner or operator of a GDF completes the approved decommissioning activities. The concurrently adopted rulemaking revises Chapter 115, Subchapter C, Division 4 to specify that owners or operators of new GDFs that began construction on or after May 16, 2012 in the affected counties and 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 owners or operators of GDFs that previously would have been required to install Stage II equipment due to increased throughput will not be required to install Stage II equipment. The concurrently adopted rulemaking also requires 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 these EPA requirements. However, 30 Texas Administrative Code (TAC) Part 1 Chapter 115 Subchapter C Division 4 §115.245, *Testing Requirements* require the vapor space manifold test (TXP-101) and the dynamic back-pressure test (TXP-103) every 36 months. These tests are described in the TCEQ's *Vapor Recovery Test Procedures Handbook*[5].

TAC §115.240, *Stage II Vapor Recovery Definitions and List of California Air Resources Board Certified Stage II Equipment*, provides that the state continue 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 requires all existing dispenser pumps to be retrofitted with OEM parts or agency approved third-party certified non-OEM aftermarket parts.

As also established in TAC §115.240, 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 specifies that verification of Stage II equipment continue until owners or operators of existing gasoline dispensing facilities (GDF) decommission 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 continues to require appropriate testing to ensure that Stage II equipment is operating properly until decommissioning occurs. Once the owner or operator of a GDF has properly decommissioned Stage II equipment, the testing requirements listed in this chapter will 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.

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[5] TCEQ, 2002. "*Vapor Recovery Test Procedures Handbook*", Field Operations Division, Texas Commission on Environmental Quality, RG-399, December 2002.

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 effectively present all Stage II requirements and procedures. The training program for investigators must consist of classroom and practical training and include information on the purpose and effects of Stage II systems, the types of Stage II systems, acceptable components, methods for identifying system configurations, and how to identify failures. Each investigator must meet a minimum standard of proficiency on each written and oral test in order to successfully complete the training course. Periodic updates to training procedures will be provided as needed in order to reflect any 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. Periodic updates to training procedures will be provided as needed 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 requires that training requirements 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) which states:

- the general purpose and benefit of the Stage II vapor recovery program;
- program requirements;
- enforcement consequences of noncompliance; and
- information about the commission, such as regional and headquarter office addresses and phone numbers.

The commission establishes public awareness information for general distribution to the public which:

- states the purposes and benefits of the Stage II program, including benefits to human health, the environment, and safety;
- provides basic information on how the vapor recovery system functions;
- provides basic information on operational procedures for refueling; and
- information about the commission, such as regional and headquarter office addresses and phone numbers 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.

5.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE

This state implementation plan revision specifies that the commission provide information on the EPA's final rule determining that ORVR is in widespread use on the TCEQ's website listed above. The commission will provide information on the requirements for properly decommissioning Stage II equipment. This information includes notification and recordkeeping requirements and 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 recordkeeping requirements. GDF owners or operators are required to maintain records for the purpose of verifying compliance with Stage II requirements. TCEQ inspectors review 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 that Stage II vapor recovery systems are 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 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 provided for in 30 TAC §115.246, *Recordkeeping Requirements*.

6.2 POST-ORVR WIDESPREAD USE WAIVER LANGUAGE

This state implementation plan revision maintains the requirements for guidance and review of an owner's or operator's GDF records until the Stage II equipment at the facility is decommissioned. In addition, owners or operators of GDFs are required to keep for five years following the date of completion of decommissioning:

- copy of the California Air Resources Board Executive Order(s) or third-party certification(s) for the Stage II vapor recovery system and any related components installed at the facility;
- copy of any owner or operator request for executive director approval of Alternate Control Requirements;
- decommissioning notifications;
- records sufficient to demonstrate compliance with decommissioning requirements; and
- results of all applicable system tests necessary to ensure that decommissioning was properly executed.

Decommissioning activities must be completed no later than August 31, 2018.

CHAPTER 7: TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RECORDKEEPING (REVISED)

7.1 PRE-ORVR WIDESPREAD USE WAIVER LANGUAGE

The Texas Commission on Environmental Quality (TCEQ or commission) maintains a general station file (also known as a compliance file) noting the gasoline dispensing facility (GDF) name, address, phone number, owner or operator names, the commission assigned account number, Stage II installation date, and other relevant information. If a GDF is exempt from installing Stage II equipment, then monthly gasoline throughput records are also kept.

The commission also maintains a file on all GDF investigations. In compliance with the United States Environmental Protection Agency guidelines, the reports are maintained in chronological order in each owner's or operator's GDF compliance file and include:

- the date of investigation;
- the investigator's name, identification number, and signature;
- any findings at investigation;
- necessary follow-up action; and
- a description of violations.

All GDF owner or operator records 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) requesting 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 requires the owner or operator of a GDF to submit notification of decommissioning activities to the appropriate TCEQ regional office and local government with jurisdiction in the area where the GDF is located. Notification must be submitted 30 calendar days and 24-72 hours before decommissioning activity begins and 10 calendar days after completion of decommissioning. The GDF owner or operator must submit to the appropriate TCEQ regional office and local government with jurisdiction in the area 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 as required by 30 Texas Administrative Code §115.246, *Recordkeeping Requirements*.

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* mentioned previously in this document. Any new, alternative, or equivalent testing methods and procedures developed or approved by the commission and not previously approved by the California Air Resources Board (CARB) will be submitted to the United States Environmental Protection Agency (EPA) for approval.
- 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 10 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 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 specifies 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 rulemaking determining that ORVR technology is in widespread use. This SIP revision specifies that 30 calendar days after the effective date of EPA approval of this SIP revision and corresponding rulemaking, the owners or operators of affected GDFs are authorized to begin the decommissioning process and no GDF owner or operator in Texas will be required to install Stage II equipment. Until decommissioning activities are complete, Stage II equipment must be repaired or replaced with equipment that complies with the requirements of §115.245, *Testing Requirements*.

Decommissioning activities must be completed no later than August 31, 2018.

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 GDF files to ensure compliance with all recordkeeping requirements; and
- reviews the 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 the mandatory decommission date are in compliance with program requirements. Upon 30 calendar days after the effective date of the EPA's approval of this SIP revision and corresponding rulemaking, GDF owners and operators will be authorized to begin Stage II decommissioning activities in compliance with 30 Texas Administrative Code §115.241, *Decommissioning of Stage II Vapor Recovery Equipment*. Investigations will be conducted to ensure that decommissioning activities are properly completed. GDF owners and operators are required to keep records for five years following completion of decommissioning and will make records available to commission and local governments with jurisdiction investigators to verify compliance at any time during that five year period. The TCEQ will continue all required investigations until the Stage II decommission process is complete.

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. Violations of these regulations 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 fuel dispensing if the violation is equipment related, until such time any violation is corrected and the commission is 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 provides that the owner or operator of a GDF will be subject to penalties for violations of Stage II and/or decommissioning requirements. All owners or operators of GDFs will be required to complete decommissioning activities no later than August 31, 2018. Owners or operators of GDFs will be subject to penalties as provided in 30 TAC §115.242(d)(6), *Control Requirements* until the decommissioning process is completed.

CHAPTER 11: STAGE II DECOMMISSIONING (NEW)

11.1 DECOMMISSIONING PROCEDURES

The procedures and requirements specified in the rulemaking adopted concurrently with this SIP revision are required for the decommissioning of Stage II equipment in place at gasoline dispensing facilities (GDF). The process for implementing decommissioning procedures can be found in 30 Texas Administrative Code (TAC) §115.241, *Decommissioning of Stage II Vapor Recovery Equipment*.

11.2 DECOMMISSION APPLICABILITY

Owners or operators of GDFs are authorized to begin decommissioning activities 30 calendar days after the effective date of the United States Environmental Protection Agency approval 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).

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 must be made 24-72 hours prior to beginning decommissioning activities.

The notifications must include detailed information on the GDF, the on-site supervisor overseeing 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. The owner or operator shall complete all decommissioning activity at a GDF location within 30 calendar days after the date decommissioning activity was initiated

11.5 DECOMMISSION COMPLETION AND RECORDKEEPING

Owners and operators of GDFs are required to notify the TCEQ regional office and local government with jurisdiction 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 Class A or A/B license number of the on-site supervisor overseeing the testing; and
- copies of all required test results including the TX-102 and TX-103 tests.

A copy of this notification must be kept at the GDF for five years or no later than August 31, 2023.

11.6 DECOMMISSIONING DEADLINE

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

CHAPTER 12: DEMONSTRATING NONINTERFERENCE UNDER FEDERAL CLEAN AIR ACT, SECTION 110(l) *(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 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. These vacuum systems have two stages: Stage I which controls evaporative emissions when the fuel is dispensed from delivery trucks into the underground storage tanks, and Stage II which controls evaporative emissions when the fuel is pumped from the underground storage tank into vehicles purchasing fuel. The third form of vapor recovery system is installed on the vehicle that is purchasing fuel. This last system 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 resulting from refueling vehicles. 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 United States Environmental Protection Agency (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. ORVR equipment has been installed on nearly all new gasoline-powered light-duty model 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.

In the May 16, 2012 issue of the *Federal Register* (77 FR 28772) the EPA finalized a rulemaking for 40 Code of Federal Regulations Part 51 determining that ORVR technology is in widespread use for the purposes of controlling motor vehicle refueling emissions throughout the motor vehicle fleet. As Stage II technology only provides emissions benefit from non-ORVR vehicles and ORVR is in widespread use, it is appropriate to no longer require Stage II vapor recovery systems.

A detailed assessment of the potential emission reduction benefit loss from Stage II removal is necessary to calculate any effect on air quality plans. In order to assess the effect of removing 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 commission performed necessary calculations as described in the EPA's guidance[6]. The EPA's guidance provides a method to estimate the loss of benefit in the control of volatile organic compounds (VOC) emissions if Stage II equipment is removed, and accounts for the continuing increase in the percentage of vehicles equipped with ORVR. The

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[6] EPA, 2012. "Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures." Air Quality Policy Division, Office of Transportation and Air Quality, United States Environmental Protection Agency,EPA-457/B-12-001, August 7, 2012.

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 were used to calculate the benefit loss for the four Texas ozone air quality planning areas. GDFs located in these counties are affected by Stage II requirements and the owners or operators of the affected GDFs are required to decommission Stage II equipment 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 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 loss from removing Stage II in Texas are small in 2012 and decrease rapidly as the percentage of vehicles with ORVR increases over time. The 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 12.4.5, *Dallas-Fort Worth and Houston-Galveston-Brazoria Attainment Demonstration SIP Revisions* of this SIP revision. 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

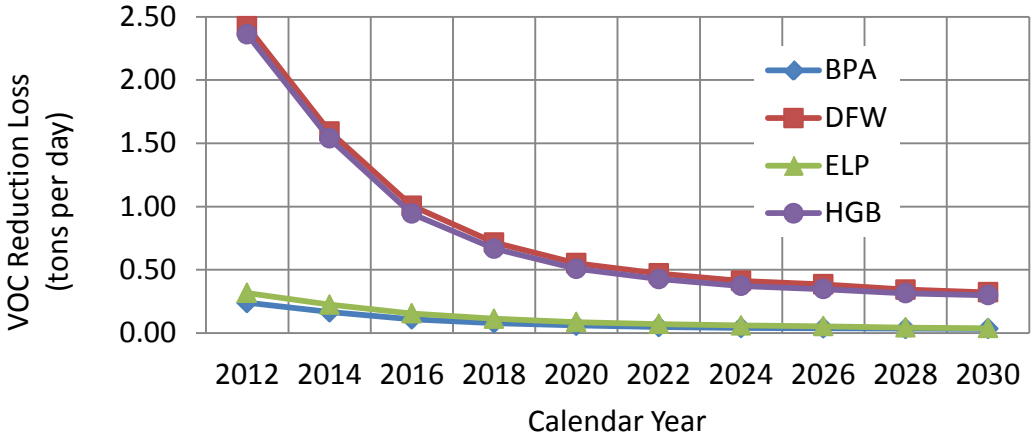

Figure 12-1: Stage II Benefit Loss Trend

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 of the SIP cited in Section 12.3: *Stage II Removal and Air Quality Plans*. Based on 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 emissions inventories 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 one percent. 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 12.4.5: *Dallas-Fort Worth and Houston-Galveston-Brazoria Attainment Demonstration SIP Revisions*.

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 does 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
Total	**210.51**	**216.60**	**217.37**	**219.25**	**222.75**	**12.24**

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). Removing emissions reductions associated with Stage II increases emissions to 12.24 tpd in 2021. This is a 0.49% change in overall emissions projections attributable to activates associated with removing Stage II equipment.

The slight estimated increase in VOC emissions over the 16 years projected for the BPA maintenance plan does not change significantly with removal of Stage II reductions. Overall decreases in nitrogen oxide (NO_X) 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_X emissions are projected to decline by 10.80 tpd from 2005 through 2021. Photochemical modeling analysis adopted with the 2008 BPA maintenance plan show that reductions in NO_X emissions are 3.76 times as effective as VOC reductions at reducing the ozone design value in the BPA area. Based on that modeling analysis, VOC and NO_X emissions in the BPA area are expected to remain consistent with the 1997 eight-hour ozone attainment level 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_X 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 does not change the emissions inventory estimates in the 2011 DFW RFP SIP Revision. This is because implementation of the Stage II removal will occur after the 2012 attainment year for the DFW 1997 eight-hour ozone standard nonattainment area. The RFP milestone years (2011 and 2012) included in the 2011 DFW RFP SIP Revision 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 2011 DFW RFP SIP Revision has a surplus of 21.92 tpd of NO_X and 0.05 tpd of

VOC for RFP analysis year 2012. The surplus NO_X may be used to offset either NO_X or VOC increases using the EPA's NO_X substitution factor found in the EPA's guidance for removing Stage II mentioned previously in this SIP revision and the standard NO_X substitution methodology. Due to the existing surplus in 2012, the expected increase in reductions attributable to fleet turn over, and NO_X 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 does 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 7.61 tpd. 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
Total	**52.44**	**47.53**	**44.83**	**7.61**

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 does not significantly change the emissions inventory estimates adopted with the 2012 HGB RFP SIP. 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 2014, 2017, and 2018, and contingency year 2019 with and without Stage II. The 2012 HGB RFP SIP 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 2012 HGB RFP SIP, the removal of Stage II will not affect the 2012 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_X (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_X (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_X (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_X (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 for removing Stage II requires that states "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_X 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 2011 DFW AD SIP for the 1997 ozone standard has an attainment date of June 15, 2011 and a 2012 attainment year. The 2010 HGB AD SIP for the 1997 ozone standard has an attainment date of June 15, 2019 and a 2018 attainment year. The VOC emission increases previously discussed that would result from the removal of Stage II were applied to the photochemical modeling analyses from the 2011 DFW AD SIP and the 2010 HGB AD SIP. 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; and
- *HGB 1997 Eight-Hour Ozone Standard Nonattainment Area Motor Vehicle Emissions Budgets Update SIP Revision*, which was adopted on April 23, 2013 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 resulting from Stage II removal in 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 provides an estimate of the maximum possible ozone increases that could occur due to Stage II removal prior to 2018. Greater detail on these scenarios follows Table 12.12: *Overview of Maximum Modeled Ozone Increases from Stage II Removal*. 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 *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 county by county summary of the 2012 VOC emission impacts from removing Stage II controls for an average summer weekday in the DFW area. The current refueling control scenario is 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*), adopted 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*), adopted on April 23, 2013. 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
HLAA	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
KATP	Katy Park	80.73	80.74	0.01

Site Code	Site Name	DVF With Stage II (ppb)	DVF Without Stage II (ppb)	DVF Impacts (ppb)
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
HCQA	Houston Croquet	78.17	78.18	0.01

Site Code	Site Name	DVF With Stage II (ppb)	DVF Without Stage II (ppb)	DVF Impacts (ppb)
HLAA	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

As ORVR becomes more prevalent 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 Stage II decommissioning to be a viable recommendation, an assessment of the value of Stage II emissions reductions towards meeting SIP obligations is necessary. 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 II 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 one percent of the total VOC emissions inventory for the BPA, DFW, ELP and HGB areas. The analyses of the

effects of removing Stage II on the Texas SIPs establishes 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_X	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(l), 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.

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 CCCCCC).

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.

η_{iuSII} - 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).12,13,14,15 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_{ORVRi} - 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_i - 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_{ORVRi} 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_{ORVRi} - 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_{ORVR} - 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
$Increment_i$	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_{SII}	Fraction of gasoline throughput covered by Stage II VRS	95%	Texas used 10,000 gpm for all GDFs.
Q_{ORVR}	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_{iuSII}	In use Stage II efficiency	60%	In their guidance document, *Guidance on Removing Stage II Gasoline Vapor Recovery Control Programs from SIPs and Assessing Comparable Programs*, 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_{SIIva}	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_{SIIva} is zero)	This value is multiplied by Q_{SIIva} 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*, 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	Based upon base year and growth factor
ΔT	Temperature difference vehicle fuel tank temperature and dispensed fuel temperature	7.1	Five Month Ozone Season Value for Region 3 from Table A3, *Seasonal Variation In Temperature Difference Between Vehicle Fuel Tank and Dispensed Fuel*, of EPA guidance document, *Guidance on Removing Stage II Gasoline Vapor Recovery Control Programs from SIPs and Assessing Comparable Programs*, August 7, 2012, Page 27. The Region 3 categorization comes from Table 6, *Weighted Temperatures and RVP Parameters, Refueling Emissions from Uncontrolled Vehicles*, 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, *Monthly Average Dispensed Liquid Temperature*, EPA guidance document, *Guidance on Removing Stage II Gasoline Vapor Recovery Control Programs from SIPs and Assessing Comparable Programs*, August 7, 2012, Page 26 (76+82+83+84+79)/5. The Region 3 categorization comes from Table 6, *Weighted Temperatures and RVP Parameters, Refueling Emissions from Uncontrolled Vehicles*, 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
η_{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: $Tons_i = (Increment_i)*(GC_i)*(EF)*(ConversionFactor1)*(ConversionFactor2)$

Where:

$Tons_i$ = overall emissions effect of removing Stage II for year i

$Increment_i$ = Annual area wide emission control gain for year i from Stage II at GDFs as ORVR phases in, See *Section 3.1*

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, $Increment_i$, 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 $Increment_i$. Since Q_{ORVR} is area and year specific, $Increment_i$ is also area and year specific. Using the Q_{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_{SII} and η_{iuSII} respectively, the values for $increment_i$ 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: *Incrementi by Area in Year*.

Equation 2: $$increment_i = (Q_{SII})*(1-Q_{ORVRi})*(\eta_{iuSII}) - (Q_{SIIva})*(CF_i)$$

Where:

$Increment_i$ = increment percentage impact on the refueling inventory of removing Stage II

Q_{SII} = 0.95

Q_{ORVRi} = Calculated using Equation NN

η_{iuSII} = 0.60

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

CF_i[1] = $(0.0777)*(Q_{ORVRi})$

Note 1: Because CFi is multiplied by Q_{SIIva}, and Q_{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

$$Increment_{i,\ BPA,\ 2012} = (Q_{SII})(1-Q_{ORVRi})(\eta_{iuSII}) - (Q_{SIIva})(CF_i)$$
$$= (0.95)(1-0.794)(0.60)- (0)$$
$$= 0.1176$$

Table 6: Increment$_i$ 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$_i$ 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 Table A-1: *Projected Penetration of ORVR in the National Gasoline Fueled Vehicle Fleet by Year* from the EPA guidance, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012. 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. 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} (gallons) = $GC_{2011Month}$*($GrowthFactor_{2011toi}$)

Where:

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

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

GrowthFactor2011toi = 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)[1]

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 Per 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 Per 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[1]	N/A	73,294,579	1,064,261,129	109,703,513	980,836,404
Ozone Season Per Day[2]	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*.

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

Where:

GC_i = ozone season daily gasoline consumption for year i

GC_{iMonth} = 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, ΔT, in ˚F. The equation presented in EPA's ORVR widespread use determination final rule was used for the calculations presented here, Equation 5.

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

Where:

EF = uncontrolled displacement refueling emission factor in grams per gallon

ΔT = 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 ΔT 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, ΔT, 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	ΔT	Td	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 the1997 Eight-Hour Ozone Standard, Project No. 2009-018-SIP-NR, Adopted March 10, 2010

RESPONSE TO COMMENTS

STAGE II VAPOR RECOVERY PROGRAM STATE IMPLEMENTATION PLAN REVISION

The Texas Commission on Environmental Quality (TCEQ or commission) offered public hearings in: El Paso on May 28, 2013; Beaumont on May 30, 2013; Houston on May 31, 2013; Arlington on June 3, 2013; and Austin on June 4, 2013. Notice of the public hearing was published in the *Texas Register* and the *El Paso Times*, *Beaumont Enterprise*, *Houston Chronicle*, *Fort Worth Star Telegram*, and *Austin American Statesman* newspapers. The Arlington public hearing was opened to receive comment regarding the revision to 30 Texas Administrative Code Chapter 115, Subchapter C, Division 4, (Rule Project Number 2013-001-115-AI) associated with this SIP revision. No other hearings were opened as no one signed in to provide oral testimony at any other hearing.

The public comment period for this SIP revision and the associated rule revision opened on May 10, 2013 and closed on June 10, 2013. The commission did not receive comment on this SIP revision but did receive comment on the associated rule revision. The commission received written comments from Arid Technologies, Buc-ee's Ltd. (Buc-ee's), Texas Chemical Council (TCC), Texas Food and Fuel Association (TFFA), and Texas Oil and Gas Association (TxOGA). These comments are summarized below.

TxOGA incorporated TFFA's comments by reference. Buc-ee's, TCC, TFFA, and TxOGA expressed overall support for the proposed rule change, and Arid Technologies submitted comments opposing the rule change. Changes to the rule were suggested by all six commenters.

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GENERAL COMMENTS

Arid Technologies questioned whether the TCEQ considered storage tank breathing loss in a non-Stage II environment.

The commission focused modeling in the associated SIP revision to the effects of Stage II decommissioning only in areas that have Stage II requirements in place in Texas as recommended 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*, August 7, 2012. Breathing losses from storage tanks are a separate source of emissions from refueling and are not included in the assessment on the decommissioning of Stage II. The EPA guidance document did not include a requirement for including storage tank breathing losses. No change to the rule has been made in response to this comment.

Arid Technologies suggested that enhancing Stage II systems will provide better emission reductions from refueling and storage tank emissions.

The onboard-refueling vapor-recovery (ORVR) systems on vehicles are designed to replace Stage II vapor recovery systems for capturing the emissions during vehicle refueling and are already required by federal law, as discussed elsewhere in this preamble. Once ORVR systems are in widespread use, the Stage II systems become redundant and more costly to maintain. Any future improvements to emission control systems for vehicle refueling will involve improving the effectiveness of these ORVR systems currently found in vehicles. In addition, the commission did not include Stage II vapor control enhancement as part of the proposed Stage II decommissioning rule revision. Consideration of Stage II vapor recovery enhancements is outside the scope of this rulemaking. No change to the rule has been made in response to this comment.

TFFA expressed support for most aspects of the changes to the Stage II Vapor Recovery Program. TFFA offered assistance in developing an owner/operator checklist to facilitate compliance.

The commission appreciates TFFA's support and will continue to work with all stakeholders to ensure successful implementation of decommissioning activities.

TFFA commented that it supports the continued inspection and appropriate testing for Stage II vapor recovery systems that continue in service until the final decommissioning deadline and would like for the inspection and testing activities to be counted towards SIP credit until such time as those systems are finally removed.

The commission has developed the rule and SIP revisions for the implementation of decommissioning of Stage II vapor recovery to ensure that emission reduction plans are not affected in any area. Using the EPA's *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012, the commission determined that the inspection, testing, and maintenance of Stage II vapor recovery equipment that continues in service until August 31, 2018 will prevent a harmful gap in area-wide emissions control and will not affect compliance with the National Ambient Air Quality Standard (NAAQS). Neither the guidance nor the Stage II SIP provide for continuing of SIP credit once ORVR widespread use has been determined and decommissioning of Stage II vapor control equipment has begun. No changes have been made as a result of this comment.

TCC and TXOGA requested that TCEQ provide clarification as to when the reports required under §115.247(2) are no longer applicable to these exempt facilities, and in particular, whether the report required for 2013 is still required after the rule is finalized.

As stated in the EPA's final rule making (77 FR 28772), the EPA further evaluated Stage II exemptions for facilities with throughputs of less than 10,000 gallons per month and determined the exemption rate is still appropriate. To ensure the control requirements outlined in the Stage II SIP are not affected, the commission will require facilities to continue to submit reports until the rule revision becomes effective. It is anticipated that the rule will become effective October 31, 2013. No change was made in response to this comment.

IMPACT OF DECOMMISSIONING

Arid Technologies stated that decommissioning Stage II vapor control equipment and relying solely on ORVR technology will increase volatile organic compounds (VOC) and hazardous air pollutants (HAP) emissions and that motorists in Environmental Justice areas will bear the brunt of increased emissions. The commenter provided a copy of a recent study conducted by Meszler Engineering and submitted to the Maryland Department of Environment that reviews the impact of removing Stage II vapor control equipment to support its claim.

The commission performed an assessment on the removal of Stage II vapor control equipment and included this assessment along with the calculations required by the EPA guidance for assessing the removal of Stage II vapor control programs in the Stage II SIP revision, Chapter 12: *Demonstrating Noninterference Under Federal Clean Air Act, Section 110(l)*. The SIP revision includes an assessment of the effects of decommissioning Stage II equipment on each nonattainment area with Stage II requirements in the state. The assessments were developed using local specific data from each affected area and local variables as required by EPA guidance. The assessment also included a determination of the emissions benefits of both Stage II and ORVR systems, an assessment of widespread use of ORVR, and the effects on air quality plans in all areas with Stage II vapor equipment requirements. The TCEQ found that by 2018 ORVR rule penetration will range from 93 to 95% and from 97 to 98% by 2030 in the four affected areas in Texas.

Each HAP emitted by motor vehicles is a subset of the VOC emissions. Since the VOC emissions from vehicle refueling are effectively controlled by ORVR systems, HAP emissions are also controlled.

In reviewing the Maryland study and other information provided by the commenter, the commission has determined that there are substantial differences between the Maryland assessment and Texas specific data. Additionally, some elements of the EPA's guidance document addressing removal of Stage II programs discussed elsewhere in this preamble make the direct comparison of the Texas assessment and Maryland study ineffective. Differences include: Uncontrolled emission factors of 7.01 pounds (lbs)/100 gallons (gals) in the Maryland study versus a range of 7.47 to 8.51 lbs/100 gals for Texas; ORVR Penetration of 85% in 2013 in the Maryland study versus 85 to 89% in 2014, 94 to

96% for 2020, and 96 to 98% for 2030 for Texas; and, Stage II efficiency of 75% in the Maryland study versus 60% for Texas as recommended by EPA guidance. The results of the Texas specific analyses best assess the Stage II removal in the Texas.

In addition, and as stated earlier in this preamble, the EPA published finalized rulemaking for 40 CFR Part 51 determining that vehicle ORVR technology is in widespread use for the purposes of controlling motor vehicle refueling emissions throughout the motor vehicle fleet (77 FR 28772). The EPA provided in the final rulemaking for the Widespread Use for Onboard Refueling Vapor Recovery and Stage II Waiver (28781 FR 95) that decommissioning of Stage II systems will not have disproportionally 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. Lastly, the study provided by the commenter did not provide specific information regarding the potential for emission increases in Texas from reliance on ORVR; nor did the study provide any information regarding increased impact to citizens in Environmental Justice areas other than an assertion regarding a lower population of ORVR equipped vehicles. No revision to the rule has been made in response to this comment.

Arid Technologies questioned whether the TCEQ considered the impact of emissions generated during fueling of tanks which do not have ORVR technology, such as motorcycles, boats, and gas cans.

The EPA guidance which includes analyses for ORVR widespread use requires the assessment to include an evaluation of vehicles that are not equipped with ORVR systems. The TCEQ assessment included: 1) the distribution of vehicles into categories of vehicles equipped and not equipped with ORVR including motorcycles; and, 2) the age distribution of ORVR-equipped vehicles to capture the percent of these vehicles that do not have ORVR systems. The percent of ORVR-equipped vehicles will increase for each future analysis year as the pre-ORVR vehicles are retired from the fleet. Data to assess the amount of fuel dispensed to non-road vehicles is not available, and the inclusion of non-road sources is not part of the Stage II vapor control system analysis and not included in the EPA's guidance of the decommissioning of Stage II vapor control equipment. No revision to the rule has been made in response to this comment.

DECOMMISSIONING REQUIREMENTS

TFFA comments that once a Stage II system has been removed they know of no reason an entity should maintain records relating to the decommissioned system. The commenter indicated that the TCEQ database will continue to show the facilities status as a former Stage II facility and asked if there is a purpose for the information beyond showing this history. TFFA expressed opposition to keeping any records on-site beyond an immediate use, or for an "indefinite period of time," as stated in the proposed rule. TFFA suggests amending §115.246 to clarify that the records, specifically CARB Executive Orders, must be kept on-site indefinitely or until such time as the system has been decommissioned in accordance with §115.242, Control Requirements.

The commission agrees that §115.246 of the proposed rule requires clarification. Recordkeeping retention requirements in the existing section vary depending on the type of record. The commission has revised the proposal language within §115.246 by placing proposed §115.246(1)-(7) requirements under a new subsection (a). The records retention schedule and availability requirements proposed as §115.246(8) are now adopted under a new subsection (b). The records specified under subsection (a)(1), (2), and (5) are existing records that were required to be maintained indefinitely. The adopted rule will require these records be maintained for five years following the date of decommissioning. The records contained in §115.246(a)(3), (4), and (6) are existing records that must be maintained for two years; however, these records are related to events that will cease once decommissioning has been completed. The adopted rule will require that these records be maintained for two years following the most recent event preceding decommissioning.

Buc-ee's requested clarification whether the notification required by §115.241(b)(1) may be submitted prior to the 30 calendar-day window between the EPA approval of the Stage II decommissioning rule and the effective date, if there is effectively a minimum 60-day waiting period from the date of EPA approval before decommissioning activities may commence.

The commission apologizes for confusion on this issue. There is not a 60-day waiting period from the effective date of the EPA's approval. Owners or operators of GDFs may begin submitting notices of intent to decommission on or after the EPA's effective date of their approval of the adopted rulemaking and SIP revision. Owners or operators of GDFs may begin decommissioning activities 30 calendar days after the submittal of the notice of intent to decommission. These 30 calendar days will support planning and review activities and provide for adequate compliance oversight. As discussed in the Section by Section portion of the accompanying rulemaking preamble, the commission changed language in adopted §115.241(a) to make clear that owners and operators could begin decommissioning activities 30 calendar days after the effective date of EPA's effective date of their approval of the adopted rulemaking and SIP revision.

TCC and TXOGA commented that requiring operators to notify TCEQ: (1) 30 days before decommissioning; (2) 24-72 hours before decommissioning; and (3) 10 days after decommissioning is excessive. TCC recommended that TCEQ streamline the notice requirements associated with decommissioning. Specifically, TCC and TXOGA recommended that TCEQ delete the electronic notice requirements.

The notification requirements are necessary to maintain communication between facilities, TCEQ regional staff, and the on-site supervisors and licensed contractors that will be performing the decommissioning and testing of equipment at the facilities. The notifications required prior to the commencement of decommissioning activities provide TCEQ notification that the facility plans to begin decommissioning activities. In addition, the 24-72 hour notification provides the facility an opportunity to extend or change decommissioning plans in the event

of weather or equipment issues. The 10-day notification after the decommissioning is necessary to provide notice to the TCEQ that all Stage II equipment has been removed, that testing has occurred, and that the final close out activities have occurred. Notifications of these types and durations are typically seen during construction activities and are necessary not only to maintain communication but to promote and enhance compliance oversight. No changes have been made in response to this comment.

TCC and TXOGA commented that §115.241(b)(3)(E), which requires the owner/operator to provide "Stage II vapor recovery system information" is not sufficiently clear and requested that the requirement for "Stage II vapor recovery system information" be struck from the notice requirements.

The commission agrees with the commenter that this phrase could be unclear and has made a change to the rule to clarify that the "Stage II vapor recovery system information" as referenced in §115.241(b)(3)(E) includes the vapor recovery system manufacturer and the CARB Executive Order for that system or other information necessary to provide identifying system information.

TCC and TXOGA commented that proposed §115.241(b)(5)(A) states that notification after decommissioning must include "a certified and signed document with the name, address, and license number of the licensed contractor who performed the decommissioning," and requested clarification on the licensing credentials of the contractor required by this rule.

The commission has made a change to the proposed rule to clarify the licensing credentials of the contractor who performed the decommissioning. The commission changed "licensed contractor" to "on-site supervisor" and requested license numbers for their Class A or Class A/B licenses in §115.241(b)(3)(D) and (5)(A) and (B).

DECOMMISSIONING PROCESS

Tarrant County suggested a transition period of relaxed enforcement while entities are in the process of decommissioning Stage II tanks.

The commission has determined that a relaxation of enforcement activity regarding compliance with the testing and inspection of Stage II vapor control equipment is not appropriate. The adopted rule provides for adequate notification and provides facilities a five-year period to plan for and implement decommissioning activities. The TCEQ is committed to working with facility owners to resolve unplanned issues on an individual basis. No revision to the rule has been made in response to this comment.

TFFA commented in support of the final date of decommissioning deadline of August 31, 2018 since this will allow those owners who wish to fully maximize Stage II equipment's useful life

and minimize the cost to those companies that have multiple sites with Stage II equipment installed. This date should also allow a more orderly transition to the industry for other issues such as daily and weekly inspections, budgeting for decommissioning costs, and other ancillary issues related to the use, maintenance, and operation of Stage II vapor recovery systems.

The commission appreciates TFFA's support. Section 115.245 of the adopted rulemaking has been modified to clarify that GDF owners and operators who elect to continue with Stage II systems until August 31, 2018 must also continue to repair, replace, and maintain Stage II vapor control equipment.

Buc-ee's urged the TCEQ to quickly implement the rule revisions necessary to allow for decommissioning of Stage II systems. Currently, facilities are delaying replacing existing dispensers because they do not want to purchase equipment that will need to be removed through the decommissioning process.

The commission appreciates Buc-ee's support and recognizes the difficulties inherent in transitioning from current Stage II requirements and testing. The commission will continue to work with all stakeholders to ensure that proper decommissioning activities are performed upon the EPA's approval. Additionally, the EPA has agreed to a parallel review process of this rulemaking change and accompanying Stage II SIP revision, which may expedite the EPA's approval and allow for entities to decommission as quickly as possible. In order to provide additional clarity and avoid a time gap between the EPA's effective date of the approval of the adopted rulemaking and SIP revision and the date that decommissioning activities may begin at GDFs, the commission revised language in proposed §115.241(a) to clarify the effective date of when GDF owners or operators could begin decommissioning Stage II vapor control equipment at their site. Additionally, §115.241(b)(1)(A) requires that notice of intent to decommission be submitted to the commission at least 30 days prior to the beginning of any decommissioning activity.

Buc-ee's questioned the time frame for when the various requirements of §115.241(b)(4)(A)–(P) should be completed. As currently written, the proposed rule did not stipulate when various components of the decommissioning process should be accomplished. Buc-ee's proposed that §115.241(b)(4) be modified to read as follows: "The owner or operator shall perform and complete all of the following decommissioning activities, as applicable, within 30 days of the initiation of decommissioning."

The commission agrees that the language in the proposed §115.241(b)(4)(A)–(P) requires clarification to provide for a deadline by which the decommissioning activities must be completed. In order to avoid the situation of owners or operators of GDFs partially decommissioning and being required to continue testing and inspection of remaining Stage II equipment at the site, the commission developed the rules requiring that owners and operators of GDFs would

decommission entirely once the activity was begun. The commission revised proposed new subsection (c) to establish deadlines for the decommissioning processes. The commission adopts new paragraph (1), which requires all decommissioning activity at a specific GDF location be completed within 30 calendars days after the date decommissioning activity was initiated. Additionally, as proposed under subsection (c), new paragraph (2) requires that all owners or operators of GDFs in the state complete all decommissioning activity no later than August 31, 2018.

Buc-ee's questioned why immediate replacement of the Stage II hanging hardware with conventional, industry-standard hanging hardware, required by §115.241(b)(4)(I), should be necessary if all other applicable portions of §115.241(b)(4) are met. Buc-ee's further commented that if the vacuum motors, vapor return lines, and other Stage II components are removed or plugged, the replacement of existing hanging hardware over time, through normal attrition, would not result in a negative environmental impact.

The commission agrees that if the system has been properly decommissioned in accordance with §115.241(b)(4) the continued use of hanging hardware equipment will not have an environmental impact. The commission has made a change to the rule requirement in §115.241(b)(4)(I) to allow owners or operators of GDFs to continue using existing hanging hardware equipment such as hoses, nozzles, swivels and break away components until the equipment is replaced through attrition or by August 31, 2018 at the latest.

TCC and TXOGA commented that the proposed rule states that the "owner/operator of every gasoline dispensing facility that has installed Stage II vapor controls shall complete decommissioning of Stage II vapor controls no later than August 31, 2018." TCEQ's proposal also states that equipment could be removed 30 days after the EPA approves the rule but no later than August 31, 2018. However, 40 CFR §51.126(b) states, "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." The commenters questioned how facilities could proceed with decommissioning and comply with both state and federal regulations in the event that the EPA does not act on the SIP revision incorporating this final rule prior to August 31, 2018.

As the EPA has indicated in its guidance document, *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*, August 7, 2012, and as the commission noted in the proposed preamble, the EPA may take up to 18 months to approve the SIP and rule submittal. However, the commission anticipates that approval will occur well before the August 31, 2018 deadline. The TCEQ will continue to work with stakeholders to ensure proper implementation of the decommissioning rules, in addition to working with the EPA, which has indicated its willingness to proceed

with a parallel review process of the rulemaking and SIP revision. No change to the rule has been made in response to this comment.

ORDER ADOPTING
REVISION TO THE STATE IMPLEMENTATION PLAN

Docket No. 2012-2361-SIP
Project No. 2013-002-SIP-NR

On October 9, 2013, the Texas Commission on Environmental Quality (Commission), during a public meeting, considered adoption of a revision to the SIP incorporating revisions to Chapter 115, Subchapter C, Division 4 (Docket No. 2012-2362-RUL and Rule Project No. 2013-001-115-AI) also considered by the Commission on October 9, 2013 establishing that owners and operators of gasoline dispensing facilities are no longer required to install Stage II equipment and to require the decommissioning of Stage II equipment at all gasoline dispensing facilities. The SIP revision includes a detailed assessment demonstrating that decommissioning of Stage II vapor controls does not interfere with attainment or maintenance of the National Ambient Air Quality Standards (NAAQS).

The Commission adopts the revision to the state implementation plan (SIP) incorporating revisions to Chapter 115, Subchapter C, Division 4 (Docket No. 2012-2362-RUL and Rule Project No. 2013-001-115-AI) also considered by the Commission on October 9, 2013 establishing that owners and operators of gasoline dispensing facilities are no longer required to install Stage II equipment requiring the decommissioning of Stage II equipment at all gasoline dispensing facilities, and providing a demonstration of noninterference with attainment or maintenance of the NAAQS. Under Tex. Health & Safety Code Ann. §§ 382.011, 382.012, and 382.023 (Vernon 2011), the Commission has the authority to control the quality of the state's air and to issue orders consistent with the policies and purposes of the Texas Clean Air Act, Chapter 382 of the Tex. Health & Safety Code.

Pursuant to 40 Code of Federal Regulations § 51.102 and after proper notice, the Commission conducted public hearings to consider the proposed SIP revision. Proper notice included prominent advertisement in the areas affected at least 30 days prior to the dates of the hearings. Public hearings were held in: El Paso on May 28, 2013; Beaumont on May 30, 2013; Houston on May 31, 2013; Arlington on June 3, 2013; and Austin on June 4, 2013.

The Commission circulated hearing notices of its intended action to the public, including interested persons, the Regional Administrator of the EPA, and all applicable local air pollution control agencies. The public was invited to submit data, views, and recommendations on the proposed SIP revisions, either orally or in writing, at the hearings or during the comment period. Prior to the scheduled hearings, copies of the proposed SIP revisions were available for public inspection at the Commission's central office and on the Commission's Web site.

Data, views, and recommendations of interested persons regarding the proposed SIP revisions were submitted to the Commission during the comment period, and were

considered by the Commission as reflected in the analysis of testimony incorporated by reference to this Order. The Commission finds that the analysis of testimony includes the names of all interested groups or associations offering comment on the SIP revisions and their position concerning the same.

IT IS THEREFORE ORDERED BY THE COMMISSION that the revisions to the SIP incorporated by reference to this Order are hereby adopted. The adopted revisions to the SIP are incorporated by reference in this Order as if set forth at length verbatim in this Order.

IT IS FURTHER ORDERED BY THE COMMISSION that on behalf of the Commission, the Chairman should transmit a copy of this Order, together with the adopted revisions to the SIP, to the Regional Administrator of EPA as a proposed revision to the Texas SIP pursuant to the Federal Clean Air Act, codified at 42 U.S. Code Ann. §§ 7401 - 7671q, as amended.

If any portion of this Order is for any reason held to be invalid by a court of competent jurisdiction, the invalidity of any portion shall not affect the validity of the remaining portions.

Date issued:

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

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Bryan W. Shaw, Ph.D., Chairman