Revision to the Georgia State Implementation Plan for the Removal of Georgia Rule 391-3-1-.02(zz) Gasoline Dispensing Facilities – Stage II

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DRAFT ***Revision to the Georgia State Implementation Plan for the Removal of Georgia Rule 391-3-1-.02(zz) Gasoline Dispensing Facilities – Stage II***

Executive Summary

This document contains Georgia's request to revise the Georgia State Implementation Plan (SIP) to remove Georgia Rule 391-3-1-.02(2)(zz), Gasoline Dispensing Facilities – Stage II otherwise known as Georgia Rule (zz) from the Georgia SIP.

As a former 1990 Clean Air Act serious ozone nonattainment area, Georgia submitted its initial Stage II gasoline vapor recovery rule Georgia Rule (zz) on November 13, 1992, to the U.S. Environmental Protection Agency (EPA) for initial approval. EPA approved Georgia Rule (zz) into the Georgia SIP on February 2, 1996 [61 FR 3819]. This request to remove Georgia Rule (zz) is based on EPA Guidance Document EPA-457/B-12-001, August 7, 2012, "*Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*".

Georgia EPD demonstrates in this SIP revision that removal of Georgia Rule 391-3-1-.02(2)(zz), "Gasoline Dispensing Facilities – Stage II" from Georgia's SIP is consistent with section 110 (l) of the CAA and will not interfere with the attainment of the NAAQS and with reasonable further progress toward that attainment. Removal of Georgia Rule 391-3-1-.02(2)(zz), "Gasoline Dispensing Facilities – Stage II" from Georgia's SIP will result in VOC emission reductions beginning in 2016.

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Acronym	Meaning	Acronym	Meaning
AERR	Air Emissions Reporting Requirement	NAA	Nonattainment Area
ARC	Atlanta Regional Commision	NAAQS	National Ambient Air Quality Standard
CAA	Clean Air Act	NO_x	Nitrogen Oxides
CAAA	Clean Air Act Amendment	O3	Ozone
CB-IV	Carbon Bond IV	ORVR	On-Board Refueling Vapor Recovery
CDR	Conformity Determination Report	OTR	Ozone Transport Region
CFR	Code of Federal Regulations	Ppt	Parts Per Trillion
CMAQ	Community Multiscale Air Quality	RFP	Reasonable Further Progress
DV	Design Value	SIP	State Implementation Plan
EPA	Environmental Protection Agency	TPD	Tons Per Day
EPD	Environmental Protection Division	UST	Underground Storage Tank
GDF	Gasoline Dispensing Facilities	VISTAS	Visibility Improvement State and Tribal Association of the Southeast
MOVES	Motor Vehicle Emissions Simulator	VOC	Volatile Organic Compound
MVEB	Motor Vehicle Emissions Budget		

1.0 Introduction and Background

This document contains the technical support for the Georgia Environmental Protection Division's (EPD's) request to modify the Georgia State Implementation Plan (SIP) by removing Georgia Rule 391-3-1-.02(zz) (Gasoline Dispensing Facilities—Stage II). This plan will focus on the Atlanta Ozone Nonattainment Area since the primary pollutant emitted from gasoline dispensing facilities is volatile organic compounds (VOCs), a precursor along with nitrogen oxide (NO_x) for ozone. VOC is not a precursor for $PM_{2.5}$.

1.1 The Atlanta Ozone Nonattainment Area

1990 1-Hour Ozone Standard

Pursuant to the Clean Air Act Amendments of 1990 (CAAA), the Atlanta area was designated as nonattainment for the 1-hour ozone National Ambient Air Quality Standard (NAAQS) by U.S. EPA and was classified as a serious nonattainment area on November 6, 1991. The nonattainment area (NAA) was, at that time, geographically defined as the following 13 Georgia counties: Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale.

Because Atlanta failed to attain the 1-hour ozone NAAQS by November 15, 1999, EPA issued a final rulemaking action in the September 26, 2003, Federal Register (68 FR 55469) determining that, by operation of law, the Atlanta area was being reclassified as a "severe" ozone nonattainment area (NAA) effective January 1, 2004.

In addition to having been required to submit state implementation plan(SIP) revisions meeting requirements for marginal, moderate, and serious ozone nonattainment areas, Georgia was required to submit plans meeting the additional requirements for areas classified as severe, including Stage II VOC emission controls for gasoline dispensing facilities. As a result of EPA's implementation of the original federal Clean Air Act (CAA) of 1970, the Clean Air Act Amendments of 1977, and the Clean Air Act Amendments of 1990, Georgia EPD completed, and EPA approved (67 FR 30574), SIP revisions to address the 1-hour ozone Atlanta NAA.

On February 1, 2005, EPD requested under the CAAA of 1990 that the Atlanta area be redesignated from nonattainment to attainment with respect to the 1-hour ozone NAAQS. This request was based on three years, 2002 through 2004, of ambient monitoring data at all 11 ozone monitors in the Atlanta NAA showing no violation of the 1-hour ozone NAAQS; the implementation of permanent and enforceable reductions in ozone precursor emissions; compliance with all applicable requirements; and the Atlanta Maintenance Plan with projections demonstrating that the 2002 emission levels in this area will not be exceeded through at least the year 2015. EPD also petitioned EPA to make a determination that the Atlanta area was eligible for application of EPA's Clean Data Policy, based on the Atlanta area's attainment of the 1-hour ozone NAAQS. EPA approved the plan and redesignation request effective June 14, 2005 (70 FR 34660).

1997 and 2008 8-Hour Ozone Standards Georgia EPD submitted its nonattainment area designation recommendations under the 8-hour ozone standard to EPA on July 15, 2003. Georgia recommended

the following counties be designated nonattainment for the 8-hour ozone standard: Barrow, Bartow, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Rockdale, Spalding, and Walton. Georgia recommended that Pickens County be excluded from the nonattainment designation even though the county is part of the Atlanta Metropolitan Statistical Area (MSA). Georgia based this exclusion, in part, on the fact that the county did not exceed any of the State's criteria for inclusion into a nonattainment area. Other parameters used in the analysis included the county's population and summer day NO_x and VOC emissions. EPA concurred with Georgia's recommendations in a letter dated December 3, 2003.

On April 30, 2004, EPA designated 20 metropolitan Atlanta counties as a "marginal" nonattainment area under the 1997 8-hour ozone standard. The eight-hour ozone nonattainment area encompasses the 13 counties of the former 1-hour ozone nonattainment area plus seven additional "ring" counties: Barrow, Bartow, Carroll, Hall, Newton, Spalding, and Walton. With an attainment deadline of June15, 2007, marginal areas were required to attain the NAAQS by the 2006 ozone season. On October 16, 2007, the U.S. EPA published a rulemaking proposing its determination that the Atlanta Area did not attain the 8-hour ozone NAAQS by June 15, 2007, the applicable attainment date for marginal nonattainment areas. The proposed finding was based on ambient air quality data from years 2004, 2005, and 2006. The U.S. EPA explained that, consistent with Section 181(b)(2) of the CAA, when EPA finalizes its determination that the Atlanta Area failed to attain, and that requirement becomes effective, the Atlanta Area would be reclassified by operation of law to the next highest classification or “moderate” nonattainment. The "moderate" area attainment date for the Atlanta, Georgia, area would then be "as expeditiously as practicable," but no later than June 15, 2010. The U.S. EPA finalized this finding on March 6, 2008 [73FR 12013-12017].

The State of Georgia prepared and submitted an ozone attainment demonstration plan for the metro Atlanta 8-hour Ozone Nonattainment Area to EPA Region 4 on October 21, 2009. The plan was based on a modeled attainment demonstration performed according to EPA guidance. The modeling resulted in a single monitor in the Atlanta NAA exceeding the 8-hour ozone NAAQS (design value of 86 ppb at the Confederate Avenue monitoring site). However, the weight of evidence analysis demonstrated in Section 6.2 of the October 2009 plan provides strong evidence that the Atlanta 8-Hour Ozone NAA would demonstrate attainment of the ozone NAAQS by 2009. The attainment demonstration with the weight of evidence analysis was shown to be effective since the unmonitored area analysis showed no modeling grid cell greater than 86 ppb.

On June 9, 2010, Georgia EPD submitted a request for a one-year extension of the attainment date in accordance with 40 CFR 51.907. The Atlanta nonattainment area qualified for an extension because it had met the condition specified in 69 FR 23968 in which an area is eligible for the first of the 1-year extensions if, for the attainment year, the area’s fourth highest daily 8-hour average is 0.084ppm or less. On November 30, 2010, EPA published a final rule extending the attainment date for the Atlanta nonattainment area to June 15, 2011 [75FR 73969-73972].

On June 23, 2011, EPA promulgated its determination [76 FR 36873] that the metro Atlanta nonattainment area had attained the 1997 8-Hour Ozone NAAQS. This determination was based upon quality-assured and certified ambient air monitoring data for the 2008-2010 period, which showed design values ranging from 0.068 ppm to 0.080 ppm. With the clean data determination, EPA suspended the requirements for the nonattainment area to submit an attainment demonstration, a reasonable further progress (RFP) plan, and contingency measures. The attainment demonstration was subsequently withdrawn on April 4, 2012. These requirements are suspended as long as the area

continues to attain the standard. This final rule became effective on July 25, 2011. On December 15, 2011, EPA proposed its determination [76 FR 77950] that the metro Atlanta nonattainment area attained the 1997 8-hour ozone NAAQS by its applicable attainment date of June 15, 2011.On April 4, 2012, EPD requested under CAAA of 1990 that the Atlanta area be redesignated from nonattainment to attainment with respect to the 1997 8-hour ozone NAAQS based on ambient monitoring data from 2008-2010. This includes provisions showing no violation of the 1997 8-hour ozone NAAQS, the implementation of permanent and enforceable reductions in ozone precursor emissions, compliance with all applicable requirements; and the Atlanta Maintenance Plan with projections demonstrating that 2008 emissions levels in this area will not be exceeded through at least the year 2024. EPD also petitioned EPA to make a determination that the Atlanta area was eligible for application of EPA's Clean Data Policy, based on the Atlanta area's attainment of the 1997 8-hour ozone NAAQS. EPA approved the plan and redesignation request and promulgated a proposed rule on February 4, 2013 (78 FR 7705), that was published in the federal register as a final rule on December 2, 2013 (78 FR 72040).

On May 21, 2012, EPA published a final rule in the federal register designating a new **15-county** Atlanta area marginal nonattainment for the 2008 8-hour Ozone National Ambient Air Quality Standard (which lowered the NAAQS from 0.08 ppm to 0.075 ppm). The 15-county area includes the counties of Bartow, Cherokee, Clayton, Cobb, Coweta, Dekalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Newton, Paulding, and Rockdale.

1.2 Stage II Vapor Recovery Rule

Volatile organic compounds (VOC) are emitted from the refueling of gasoline vehicles and trucks at gasoline dispensing facilities (GDF). Stage II Vapor Recovery Systems (VRS) refers to processes at GDFs when the gasoline is delivered or transferred from the underground storage tank (UST) to the vehicle fuel tank. When gasoline is pumped into a vehicle, the empty space in the tank has gasoline vapors that are forced out of the tank. With Stage II VRS, instead of being emitted into the air, those vapors are directed into the UST.

There are two types of Stage II VRS controls. The first is a balance type of Stage II system. A balance system has a rubber boot around the gasoline nozzle spout that fits snugly up to a vehicle's fill pipe. When the gasoline is pumped into the vehicle, an increase in pressure in the vacant space of the vehicle gas tank, combined with a slight decrease in pressure in the UST from emptying fuel, forces the gasoline vapors from the tank, through fill pipe into the UST. The second is a vacuum assist system that uses a vacuum pump on the vapor return line to help draw the vapors from the vehicle fill pipe into the UST. Nearly all commercial facilities in Georgia use vacuum assist systems.

The Stage II Vapor Recovery Program is required by section 182(b)(3) of the Clean Air Act (CAA). State and local agencies with nonattainment areas classified as "moderate" or worse ozone are required to implement Stage II VRS at gasoline dispensing facilities.

Georgia submitted its initial Stage II gasoline vapor recovery rule Georgia Rule (zz) on November 13, 1992, to EPA for initial approval and EPA approved Georgia Rule (zz) into the Georgia SIP on February 2, 1996 [61 FR 3819]. Georgia Rule (zz) Gasoline Dispensing Facilities--Stage II requires all gasoline dispensing facilities located in the counties of Cherokee,

Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Henry, Paulding, and Rockdale to be equipped with and operating with an approved Stage II VRS to recover the displacement vapors from the vehicle's gasoline storage tank.

1.3 On-Board Refueling Vapor Recovery Controls

Onboard Refueling Vapor Recovery (ORVR) is a vehicle emission control system that captures fuel vapors from the vehicle gas tank during refueling on the vehicle itself. With ORVR, the gas tank and fill pipe are designed so that when refueling the vehicle, fuel vapors in the gas tank travel to an activated carbon packed canister, which adsorbs the vapor. To prevent vapors from escaping through the fill pipe opening, a seal in the fill pipe allows liquid gasoline to enter, but blocks the vapors from escaping. When the engine is in operation, it draws the gasoline vapors into the engine intake manifold to be used as fuel.

There is some incompatibility between ORVR and the vacuum assisted Stage II VRS where emissions can increase rather than decrease. Incompatibility refers to excess emissions resulting from Stage II VRS and ORVR being used together because the two emission controls together result in extra venting of VOCs from the underground storage tank into the ambient air. Studies, including one conducted by the California Air Resources Board (CARB), further indicate that incompatibility between the vacuum assist version of the Stage II VRS (the type used in Atlanta) and ORVR degrade the benefit of keeping the Stage II VRS[1].

On April 16, 1994, EPA promulgated regulations [59 FR 16262] under Section 202(a)(6) of the CAA requiring the phase-in of ORVR controls on new vehicles, beginning in 1998 for passenger cars, 2001 for light duty trucks, and 2004 for heavy duty trucks under 14,000 GVWR (Gross Vehicle Weight Rating).

1.4 Widespread Use

Section 202(a)(6) of the CAA also allows EPA to waive certain requirements of the Stage II vapor recovery program when the EPA Administrator finds that ORVR systems are in widespread use in the vehicle fleet:

> ***"the requirements of section [182]a(b)(3) of this title (relating to stage II gasoline vapor recovery) for areas classified under section [181] of this title as moderate for ozone shall not apply*** *after promulgation of such standards and the Administrator may, by rule, revise or waive the application of the requirements of such section [182]a (b)(3) of this title for areas classified under section [181] of this title as Serious, Severe, or*

[1] CARB, Preliminary Draft Test Report, Total Hydrocarbon Emissions from Two Phase II Vacuum Assist Vapor Recovery Systems During Baseline Operations and Simulated Refueling of Onboard Refueling Vapor Recovery (ORVR) Equipped Vehicles, Project Number ST-98-XX, June 1999.

> *Extreme for ozone, as appropriate,* ***after such time as the Administrator determines that onboard emissions control systems required under this paragraph are in widespread use throughout the motor vehicle fleet."***

On May 16, 2012, EPA published in the federal register its determination that the use of ORVR for capturing gasoline vapor when gasoline-powered vehicles are refueled is in widespread use throughout the highway motor vehicle fleet [77 FR 28772].

Section 202(a)(6) of the CAA gives EPA discretionary authority to revise or waive the section 182(b)(3) Stage II requirement by rule after the Administrator determines that ORVR is in widespread use throughout the motor vehicle fleet. EPA also has broad discretion in how it defines widespread use and the manner in which any final determination is implemented.

Stage II VRS control efficiency is assumed by EPA to be 86 percent from the MOVES 2010b default database. The percentage of gasoline pumped into vehicles from GDFs with Stage II control is estimated by EPA to be 90 percent as per EPA guidance. By multiplying these two numbers, the expected area-wide control efficiency of Stage II VRS is 77.4 percent.

Because the percentage of vehicles without ORVR is decreasing on a yearly basis and the amount of gasoline pumped to these vehicles is decreasing as well, EPA could predict a date for ORVR widespread use. EPA considered two different approaches. They first looked at the assumed 98 percent control efficiency of ORVR [77FR 28775 and EPA guidance], and then used the Motor Vehicle Emissions Simulator (MOVES) 2010 motor vehicle emissions model to determine the number of vehicles with ORVR projected out to the year 2020. Overall ORVR efficiency was determined by multiplying the fraction of gasoline dispensed into vehicles with ORVR by the assumed 98 percent average in-use control efficiency. Using this approach, ORVR control efficiency reached the equivalent Stage II VRS control efficiency of 77.4 percent by May 2013 [77Fr 28778]. The second approach used observations from the first approach to determine that by the end of the calendar year 2012; more than 75 percent of gasoline will be dispensed into vehicles with ORVR, resulting in an overall ORVR control efficiency close to the Stage II VRS control efficiency and allowing for a phased-in approach to ORVR. Further information on EPA's approach for determining widespread use can be found in EPA's determination [77 FR 28772] and its proposal published in the federal register on July 15, 2011 [76 FR 41731].

2.0 Removal Request

2.1 Clean Air Act Provisions

EPA can only propose approval of a SIP revision seeking to discontinue an existing SIP-approved Stage II control program if the SIP revision meets the following CAA provisions:

- The requirements of 110(ℓ),
- The requirements of Section 193 for any current nonattainment area that adopted a Stage II control program into its SIP prior to November 15, 1990, and
- The requirements of Section 184(b)(2) which applies to any area of the northeast ozone transport region (OTR).

The State of Georgia is not a part of the northeast OTR, as such Section 184(b)(2) does not apply. Additionally, since the State of Georgia adopted its Stage II Vapor Recovery Program into its SIP on February 2, 1996 [61 FR 3819], Section 193 also does not apply. Therefore, the remainder of this section includes a detailed description of the requirements of Section 110(ℓ).

2.2 110(ℓ)

Section 110(ℓ) of the CAA, governs EPA's ability to approve all SIP revisions. Specifically, section 110(ℓ) states:

Each revision to an implementation plan submitted by a State under this chapter shall be adopted by such State after reasonable notice and public hearing. The Administrator shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress (as defined in section 171 of this title), or any other applicable requirement of this chapter.

This SIP revision uses the analysis provided by EPA's "Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures" (herein after called the guidance document) to demonstrate that the removal of Georgia's Rule (zz) will not interfere with attainment, reasonable further progress or any other requirement of the Clean Air Act.

2.3 Removal Request

With the submissions of this Plan Revision, Georgia EPD is requesting the removal of Georgia Rule 391-3-1-.02(2)(zz), "Gasoline Dispensing Facilities – Stage II" from Georgia's SIP. This document was prepared using the analysis provided by Section 3 of the EPA's Guidance Document that the removal of Georgia Rule (zz) is consistent with section 110 (l) of the CAA.

Specifically, Georgia EPD will present calculations comparing VOC emissions with Stage II and ORVR controls in place to VOC emissions with only ORVR in place. Using methods described in EPA's Guidance Document, Georgia EPD will show that the emission control gain, identified in the guidance as the "increment" (or incremental benefits), of Stage II VRS controls decreases as ORVR controls are phased-in.

Once the incremental benefit has been evaluated, the increment is then used to show the impact on the area-wide VOC emission inventory and that removal of Stage II VRS controls will not interfere with attainment of the NAAQS or with further reasonable progress.

In addition, to further show that removal of Stage II VRS controls will not contribute to interference under 110(ℓ), EPD has separated the motor vehicle emissions budget and compared both the budget and the motor vehicle VOC emission inventory from the 2008 Atlanta Area Maintenance SIP with the projected VOC emissions from motor vehicle with and without Stage II VRS controls.

The State of Georgia is a NO_x limited area, which means that due to the over-abundance of biogenic VOC, the control of NO_x is the limiting factor in ozone formation. The sensitivity of ozone formation in the Atlanta area to reductions of NO_x and VOC emissions are described in Section 5 of this document. This document will demonstrate that the short-term incremental increase in emissions during the phase-out period will not contribute to interference under 110(ℓ). The result is a demonstration that the removal of Georgia Rule (zz) will not interfere with the attainment of the NAAQS or with reasonable further progress as defined by the CAA.

In the 2008 8-hour proposed ozone rule [78 FR 34184, June 6, 2013], EPA stated for marginal areas that, "When Congress amended the CAA in 1990, it anticipated that nonattainment areas with ozone concentrations close to the level of the NAAQS would likely come into attainment within 3 years of after designation without any additional local planning." Therefore as a part of the sensitivity demonstration, Georgia EPD included a sensitivity study conducted using part of the **S**outh**E**astern **M**odeling, **A**nalysis, and **P**lanning (SEMAP) project and information from a Georgia Tech analysis of the sensitivity of ozone concentrations in the Eastern U.S. to reductions in emissions of both NO_x and VOCs.

EPA's August 7, 2012, "Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures" states on page 4, "In evaluating whether a given SIP revision would interfere with attainment or maintenance, as required by section 110(ℓ), the EPA generally considers whether the SIP revision will allow for an increase in actual emissions into the air over what is allowed under the existing EPA-approved SIP. The EPA has not required that a state produce a new complete attainment demonstration for every SIP revision, provided that the status quo air quality is preserved." The removal of Rule (zz) will result in a relatively small increase in VOC emissions for a short period of time. The sensitivity study information in Section 4 will show that any increase in ozone levels are insignificant and short-lived and will show that the status quo air quality will be preserved.

EPA's August 7, 2012 guidance also states on page 5 states "[I]n 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." This document shows that complete removal of Stage II will result in a slight increase in VOC in 2014, declining to a smaller increase in 2015, and resulting in ever-increasing emission reduction starting in 2016. The sensitivity study in Section 4 will demonstrate that this small, temporary increase in VOC emissions will have no observable effect on current or future ozone levels and will not interfere with attainment or maintenance of the NAAQS.

Also, since VOC is not a precursor for particulate matter, there is no possibility that removal of the Georgia Rule (zz) will impact the ambient air quality standard for the $PM_{2.5}$ NAAQS in the Atlanta area or interfere with attainment or maintenance of the standard.

EPA's waiver of the statutory requirement for the implementation of Stage II Vapor Recovery, which is included in their determination that the use of ORVR is in widespread use throughout the on- road motor vehicle fleet, allows that the removal of Georgia Rule (zz) will not interfere with any applicable requirement of the CAA.

3.0 Emissions Calculations

This section includes calculations as described in EPA's Guidance Document for the analysis of the incremental benefit of maintaining Stage II VRS controls as ORVR technology is phased-in. These calculations show that regardless of the small yet temporary increase in emissions that could result from removing Stage II VRS controls, the incremental benefit of keeping Stage II VRS controls as ORVR controls are phased-in is an ever decreasing benefit, which eventually becomes a disbenefit.

Additionally, Section 110(ℓ) requires that a SIP revision does not interfere with any applicable requirement concerning attainment, and reasonable further progress (as defined in section 171). EPA states in the Guidance Document that there are circumstances under which a planned phase-out of Stage II would result in an area-wide VOC emissions increase, and yet may still be consistent with the conditions of Section 110(ℓ). This occurs when the phase-out of Stage II would result in a small increase in emissions that diminishes rapidly over time as ORVR is phased in, since the increase will not interfere with attainment or progress toward attainment, especially in areas that are NO_x limited for the formation of ozone. Because of this, the impact on the area-wide VOC inventory has been calculated and evaluated to show that it is consistent with Section 110 (ℓ).

The Atlanta 8-Hour Ozone Maintenance Plan for the 1997 8-hour Ozone NAAQS, submitted to EPA on October 10, 2009, lists 2008 as its attainment or baseline year. For the purposes of consistency and to show that removal of the Stage II VRS controls will not interfere with attainment or progress toward attainment, 2008 has been chosen as the baseline year for the purpose of the comparative analysis detailed in this section, while all analysis of the benefit of Stage II will be calculated for the current year to the future when a disbenefit is demonstrated. In addition, 2008 is also a year for which states are required to submit an inventory required by EPA's Air Emissions Reporting Requirement (AERR), which results in a comprehensive statewide inventory. The calculations are used to demonstrate emissions changes beginning in 2014, however, decommissioning cannot begin until May 1, 2014 and must be completed by April 30, 2016. There is no schedule for station decommissioning, only the requirement that the stations have the decommissioning completed by the deadline. The emission increase demonstrated for 2014 is larger than that which will actually occur because the calculations assume that all decommissioning activities occur in 2014.

3.1 Incremental Benefit

In EPA's Guidance Document, the overall Stage II – ORVR increment is defined as the annual area-wide emission control gain from Stage II installations at GDFs as ORVR technology phases in. The increment is quantified as the fractional reduction of VOC from refueling in a given nonattainment area over the ozone season for a given year for the 13 counties in the Atlanta area with Stage II controls. Because there are only a small number of non-ORVR equipped vehicles and that number continues to grow smaller, there is only a small level of future emissions reductions achievable from Stage II VRS controls, resulting in an eventual net increase in emissions of VOC over time when taking all factors into account. A more detailed analysis of the calculation of the incremental benefit can be found in Appendix A.

To calculate the increment, the emissions benefit of maintaining Stage II VRS controls is adjusted by taking into account the incompatibility of vacuum assisted Stage II VRS and ORVR. Because of this incompatibility, as more vehicles become equipped with ORVR, there is a benefit loss from

maintaining Stage II VRS controls due to incompatibility of the two control options. All calculations used in this analysis can be found in detail in Appendix A.

Table 3-1. Emissions Benefit of Maintaining Stage II VRS in Atlanta

Year (i)	Fraction of Gasoline Covered by Stage II VRS (Q_{SII})	Fraction of Gasoline Dispensed To ORVR Vehicles (Q_{ORVRi})	Control Efficiency Of Stage II VRS (NiuSII)	Emissions Benefit of Stage II VRS Controls (fractional reduction)
2012	0.9	0.777	0.62	0.124
2013	0.9	0.810	0.62	0.106
2014	0.9	0.840	0.62	0.089
2015	0.9	0.865	0.62	0.075
2016	0.9	0.886	0.62	0.064
2017	0.9	0.903	0.62	0.054

Note: All emissions values in this chart refer solely to on-road mobile source emissions.

Table 3-1 shows the maximum potential emissions benefit of Stage II VRS controls from 2012 to 2017 in the 13-county Atlanta area. These maximum potential emissions benefits were calculated by first removing the portion of ORVR equipped vehicles from consideration, so that incompatibility is not an issue in the calculation and since there is no derived benefit of Stage II with ORVR equipped vehicles. The fraction of gasoline dispensed to vehicles with only Stage II VRS (1-QORVRi) was multiplied by both the fraction of gasoline pumped to these vehicles from facilities equipped with Stage II VRS and the control efficiency of the Stage II VRS controls. Further information can be found in Appendix A.

As indicated above, the incremental benefit is based on the emissions benefit of the Stage II VRS controls, but it is adjusted based on the incompatibility of vacuum assisted Stage II VRS and ORVR. In order to calculate this incompatibility, the increase in the UST vent pipe emissions beyond what is considered normal emission losses must be determined. This increase is called the compatibility factor

Table 3-2. Compatibility Factor

Year (i)	Constant	Fraction of Annual Area-Wide Vehicle Miles Traveled by ORVR Equipped Vehicles (VMT_{ORVRi})	Compatibility Factor (CF_i)
2012	0.07645	0.800	0.061
2013	0.07645	0.834	0.064
2014	0.07645	0.863	0.066
2015	0.07645	0.888	0.068
2016	0.07645	0.909	0.069
2017	0.07645	0.925	0.071

Note: All emissions values in this chart refer solely to on-road mobile source emissions.

Table 3-2 shows the criteria used to determine the compatibility factor for each year under consideration. EPA's Guidance Document states that the compatibility factor is a function of the fraction of gasoline dispensed to ORVR vehicles, but that using the vehicle miles traveled by ORVR equipped vehicles is an acceptable substitute. The vehicle miles used in this calculation are multiplied by a constant term provided for the States by EPA in the Guidance Document. The resulting compatibility factor is then used to calculate the incompatibility of vacuum assist Stage II VRS with ORVR. More detailed calculations can be found in Appendix A.

Table 3-3. Incompatibility of Vacuum Assisted Stage II VRS and ORVR

Year (i)	Fraction of Gasoline Dispensed Through Vacuum Assist Stage II VRS (Q_{SIIva})	Compatibility Factor (CF_i)	Incompatibility
2012	0.95	0.061	0.058
2013	0.95	0.064	0.061
2014	0.95	0.066	0.063
2015	0.95	0.068	0.064
2016	0.95	0.069	0.066
2017	0.95	0.071	0.067

Note: All emissions values in this chart refer solely to on-road mobile source emissions.

As Table 3-3 shows the fraction of gasoline dispensed through vacuum assist Stage II VRS as 0.95. This number is an assigned value in EPA's Guidance Document that was based on the percentage of facilities in the 13-county Atlanta area with the vacuum assist controls in use. The compatibility factor is multiplied by this fraction in order to calculate the incompatibility between Stage II VRS controls and ORVR controls.

Table 3-4. Incremental Benefit of Stage II VRS Controls

Year	Emissions Benefit of Stage II VRS Controls (fractional reduction)	Incompatibility of ORVR and Vacuum Assisted Stage II VRS Controls	Increment (fraction)
2012	0.124	0.058	0.066
2013	0.106	0.061	0.045
2014	0.089	0.063	0.027
2015	0.075	0.064	0.011
2016	0.064	0.066	-0.002
2017	0.054	0.067	-0.013

Note: All emissions values in this chart refer solely to on-road mobile source emissions.
Positive values indicate a benefit while negative values indicate a benefit loss.

As shown in Table 3-4, by adjusting the emissions benefit of Stage II VRS controls to take into account the incompatibility of ORVR controls and vacuum assisted Stage II VRS controls, the increment continues to decrease for Stage II VRS controls as ORVR controls are phased-in and decreases until 2016, at which point there is a benefit loss from maintaining Stage II VRS controls. For more information on the calculation of incompatibility, see Appendix A.

3.2 Area-Wide VOC Inventory Impacts

Once the increment of maintaining Stage II VRS controls has been calculated, it is necessary to evaluate the impact on the area-wide VOC emission inventory. This is determined by multiplying projected future gasoline consumption for the Atlanta area with an emission factor for refueling losses and adjusting for the increment.

Table 3-5. The Atlanta Area Portion of National Gasoline Consumption

Year	Atlanta Area's Portion of Total National Gasoline Consumption	Total National Gasoline Consumption – May Through September (gallons)	Atlanta Area Consumption – May Through September 2010 (gallons)
2010	0.01677214	59,588,199,000	999,421,616

Note: All emissions values in this chart refer solely to on-road mobile source emissions.

Table 3-5 shows the Atlanta area's consumption of gasoline based on the year 2010 according to the FHWA Highway Statistics- monthly gasoline reported by states. More detailed explanations and calculations can be found in Appendix A.

Table 3-6. Projected Gasoline Consumption of the Atlanta Nonattainment Area

Year	Atlanta Area Consumption – May Through September 2010 (gallons)	Projected Ratio for Gasoline Consumption Growth	Projected Gasoline Consumption of the 13-county Atlanta Nonattainment Area (gallons/season)
2010	999,421,616	N/A	N/A
2012	999,421,616	1.0343	1,033,701,777
2013	999,421,616	1.0399	1,039,298,538
2014	999,421,616	1.0410	1,040,397,902
2015	999,421,616	1.0421	1,041,497,266
2016	999,421,616	1.0443	1,043,695,994
2017	999,421,616	1.0377	1,037,099,811

Note: All emissions values in this chart refer solely to on-road mobile source emissions.

By using a projected ratio for gasoline consumption from the Department of Energy's EIA Annual Outlook (AEO) – Liquid Fuels Supply and Disposition Reference case table, the gasoline consumption of the 13-county Atlanta area was projected for 2012 through 2017 as shown in Table 3-6. More detailed calculations can be found in Appendix A.

Table 3-7. Impact on the Area Wide VOC Inventory

Year	Increment	Uncontrolled Displacement (non-ORVR) Refueling Emission Factor (grams/gallon)	Projected Gasoline Consumption of the 13-county Atlanta Nonattainment Area (gallons/season)	Area –Wide VOC Inventory Reduction (tons per season)
2012	0.066	4.6	1,033,701,777	347.68
2013	0.045	4.6	1,039,298,538	239.51
2014	0.027	4.6	1,040,397,902	140.34
2015	0.011	4.6	1,041,497,266	57.23
2016	-0.002	4.6	1,043,695,994	-12.74
2017	-0.013	4.6	1,037,099,811	-68.65

Note: All emissions values in this chart refer solely to on-road mobile source emissions. Positive values indicate a benefit while negative values indicate a benefit loss.

Table 3-7 shows the tons of reduction in VOC emissions for each ozone season beginning in 2012 if Stage II VRS is maintained as ORVR is phased in. As ORVR is phased in, beginning in 2016, there is an increase in emissions from the incompatibility of the two control systems.

3.3 Motor Vehicle Emissions Comparisons

An additional method of showing the impact of maintaining Stage II VRS, as ORVR is phased in, is to compare motor vehicle emissions with and without Stage II in place to the motor vehicle emissions budget (MVEB).

Motor vehicle emissions budget values for 2006 with Stage II in place and projected emissions for 2016 with Stage II VRS in place were taken from the Atlanta Regional Commission's (ARC) Volume II: Plan 2040 Conformity Determination Report (CDR)'s transportation conformity demonstration. VOC emissions with Stage II VRS in place for the years 2008, 2010 and 2013 were modeled using MOVES, after which, the emissions for interim years were calculated using interpolation.

The motor vehicle VOC emissions with and without Stage II VRS controls in place were then compared to both the motor vehicle VOC emissions budget and the motor vehicle VOC emissions in the 2008 Maintenance SIP.

Table 3-8. Attainment Baseline VOC Emissions Inventory for Motor Vehicles Compared to Modeled VOC Emissions Inventory with Stage II VRS.

Year	Motor Vehicle Emissions Budget (tons per day)	2008 Maintenance Plan Motor Vehicle Baseline VOC Emissions Inventory (tons per day)	Motor Vehicle VOC Emissions Modeled in MOVES 2010 With Stage II VRS Controls In Place (tons per day)
2008	171.83	165.53	165.53
2012	171.83	165.53	127.33
2013	171.83	165.53	117.78
2014	171.83	165.53	108.23
2015	171.83	165.53	98.68
2016	171.83	165.53	89.13

Note: All emissions values in this chart refer solely to on-road mobile source emissions

Table 3-8 indicates that with Stage II VRS controls, the VOC emissions decrease between 2008 and 2016, and remain less than both the MVEB and the motor vehicle baseline emissions in the 2008 maintenance plan.

Table 3-9. Attainment Baseline VOC Emissions Inventory for Motor Vehicles Compared to Modeled VOC Emissions Inventory without Stage II VRS.

Year	Motor Vehicle Emissions Budget (tons per year)	VOC Baseline Emissions 2008 (tons per year)	VOC Emission Without Stage II (tons per day)
2008	171.83	165.53	N/A
2012	171.83	165.53	N/A
2013	171.83	165.53	N/A
2014	171.83	165.53	109.15
2015	171.83	165.53	99.05
2016	171.83	165.53	89.05

Note: All emissions values in this chart refer solely to on-road mobile source emissions

The analysis further continues by similarly evaluating the motor vehicle VOC emissions without emissions reductions attributable to Stage II VRS controls. As Table 3-3 indicates, a decrease in overall area-wide VOC emissions also occurs with only ORVR controls in place with VOC emissions remaining less than both the MVEB and the motor vehicle baseline emissions in the 2008

maintenance plan. See Appendix A further details.

Table 3-10. VOC Emissions Inventory with Stage II VRS Compared to VOC Emissions Inventory with only ORVR.

Year	VOC Baseline Emissions 2008 (tons per year)	VOC Emission With With Stage II VRS Controls In Place (tons per day)	VOC Emissions with Stage II VRS Removed (only ORVR) (tons per day)	**VOC Emission Difference Between Stage II VRS In Place and Removed Incremental Benefit (tons per day)**
2008	165.53	165.53	N/A	**N/A**
2012	165.53	127.33	N/A	N/A
2013	165.53	117.78	N/A	N/A
2014	165.53	108.23	109.15	**+0.92**
2015	165.53	98.68	99.05	**+0.37**
2016	165.53	89.13	89.05	**-0.085**

Note: All emissions values in this chart refer solely to on-road mobile source emissions.

By comparing VOC emissions with continued implementation of Stage II VRS and VOC Emissions with only ORVR controls in place to the 2008 baseline emissions inventory as shown in Table 3-10 above, the phase-out of Stage II would result in a small increase in emissions beginning in 2014 that diminishes rapidly over time as ORVR is phased in, but that increase will not interfere with attainment or progress toward attainment. By 2016, the removal of Stage II VRS requirements will result in a greater decrease in motor vehicle VOC emissions than the decrease attributable to maintaining Stage II VRS controls.

4.0 Decommissioning Provisions

Included in the removal of the rule is the process of decommissioning the Stage II VRS controls in such a way that it is done in a safe and environmentally appropriate manner. Not only will the owner/operator follow the decommissioning process as amended in Georgia Rule (zz), he will also perform testing and maintain records for two years after decommissioning of the Stage II VRS Controls.

All end points of tubes and piping will be disconnected or removed, and sealed. In particular, if the vapor recovery piping can be accessed easily at the tank, then it must be sealed to be vapor tight.

If the system has a vapor pump for each fueling position, then each vapor pump is to be disabled or removed. If the system has a centrally located vacuum pump, then that mechanism is to be removed and sealed.

All liquid-collection points will be emptied of liquid and any tubes leading to submersible pumps will be disconnected at the pump and sealed properly so that they are vapor tight. As an alternative, the tubes can be removed as long as the openings in the liquid-collection point are sealed to be vapor tight. A plug must be installed in the vacuum pump to seal the vacuum port and the liquid-collection point cap must create a vapor tight seal when placed on the liquid-collection point.

Once the station has followed the necessary steps for removing the Stage II VRS equipment it will then be necessary for the station to perform a pressure decay test and tie-tank test to insure that the system is vapor tight and that the storage tanks are still functional. Stations can begin decommissioning May 1, 2014.

U.S. EPA released a proposed rule on July 15, 2011 that would establish widespread use of onboard refueling vapor recovery (ORVR) as of June 30, 2013 and would allow areas requiring Stage II equipment at gasoline dispensing facilities to be decommissioned. A final rule was issued by EPA on May 16, 2012 that determined widespread use of ORVR as the effective date of the rulemaking, which was May 16, 2012. As a result of the proposed and final rule, Georgia EPD began receiving a number of requests from new gasoline dispensing facilities and those undergoing major modification to have the Stage II requirements waived or be exempt from the rule. The first of the letters were received in late 2011 and EPD continued to receive requests until the Stage II rule was amended. EPD took no action on these letters until the rule was amended. Most of the facilities that had requested the waiver/exemptions did not install the equipment. The costs to install Stage II are in the tens of thousands of dollars and would cost between $1,500 and $2,500 to remove. Most of the facilities would have had Stage II installed for 3 years or less before they would need to remove it. During these two years, the Stage II systems would provide very little to no emission reductions, but the costs would average well over $25,000 per facility for the installation and removal of the Stage II systems. Exempting new facilities and those undergoing major modification since December 31, 2011 covered most of the facilities that had requested the waiver/exemption.

There is no schedule for station decommissioning, only the requirement that all stations must have decommissioning completed by April 30, 2016. Emissions calculations performed in Section 3.0 of this document assume all decommissioning occurs in 2014. Although the Stage II rule allows for

decommissioning to begin May 1, 2014, many facilities will continue to operate, maintain, and test their Stage II systems until early 2016. EPD will continue to implement the Stage II rule through 2016.

These decommissioning procedures follow PEI/RP 300-09 recommended practices related to capping and sealing vapor recovery underground piping and vapor recovery dispenser piping, and the associated tests in recommended practices. EPD chose to deviate from the PEI recommended practices related to the hanging hardware on dispensers. EPD has chosen not to require that the hanging hardware be replaced since it will not result in any emission losses or present a safety hazard. The cost of replacing the hanging hardware can easily double or triple the cost of decommissioning a Stage II system if required.

Georgia Rule (zz) has been amended to include these requirements pertaining to the decommissioning of the Stage II VRS equipment and can be found in Appendix D.

5.0 NO_x and VOC Sensitivity

As stated in Section 1.0 above, 110(l) of the CAA requires that a SIP revision not interfere with any applicable requirement concerning attainment, and reasonable further progress (as defined in section 171 and 182 of the CAA). EPA has recently stated in its "*Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures*" that the removal of a VOC control could result in an area-wide VOC emissions increase, and yet may still be consistent with the conditions of Section 110(l), is "in areas where ozone formation is limited by the availability of NO_x emissions." In this situation, "a small (and ever-declining) increase in VOC emissions may have little or no effect on future ozone levels."

5.1 Sensitivity of Ozone in Atlanta to NO_x and VOC Emissions

Control of NO_x and VOC are generally considered the most important components of an ozone control strategy, and NO_x and VOC make up the largest controllable contribution to ambient ozone formation. However, the metro Atlanta nonattainment area has shown a greater sensitivity of elevated ozone to NO_x controls rather than VOC controls. This is due to the biogenic nature of VOC emissions in Georgia. Therefore, implemented control measures have focused on the control of NO_x emissions. The Atlanta nonattainment area is NO_x limited in such a way that changes in VOC emissions have little effect on ozone formation.

5.1.1 Sensitivity Modeling NO_x and VOC Emissions

As part of the **S**outh**E**astern **M**odeling, **A**nalysis, and **P**lanning (SEMAP) project, Georgia Tech performed an analysis of the sensitivity of ozone concentrations in the Eastern U.S. to reductions in emissions of both nitrogen oxides (NO_x) and volatile organic compounds (VOCs). This analysis was based off of the 2007 and 2018 SEMAP modeling which used CMAQ version 5.01 with updates to the vertical mixing coefficients and land-water interface. The entire "ozone season" was modeled (May 1 – September 30) using a 12-km modeling grid that covered the Eastern U.S. Details of the modeling platform set-up can be found in Appendix E.

5.1.2 Modeling Scenarios

Sensitivities were modeled relative to 2018 emissions to evaluate the impact of NO_x and VOC reductions on daily 8-hour maximum ozone concentrations. Each emission sensitivity run reduced the 2018 anthropogenic NO_x or VOC emissions (point, area, mobile, NONROAD, marine/aircraft/rail) within a specific geographic region by 30%.

Georgia EPD, performed a sensitivity study with the information provided by the SEMAP modeling project and the Georgia Tech analysis to examine the normalized sensitivities of NO_x and VOC emissions on 8-hour daily maximum ozone concentrations (part per trillion ozone/ton per day, ppt/TPD) at 10 ozone monitors in Atlanta. EPD used an 85 parts per billion (ppb) threshold to address the 1997 ozone NAAQS and a 75 parts per billion (ppb) threshold to address the 2008 ozone NAAQS. For further details on the modeling assumptions and approach used to calculate the normalized sensitivities of NO_x and VOC, please see Appendix B.

5.1.1 Modeling Results

Table 5-1. Normalized NO_x and VOC Sensitivity at 10 Atlanta Ozone Monitors

AIRS ID	Site Name	NO_x w/ 75 ppb threshold (ppt/TPD)	NOx w/ 85 ppb threshold (ppb/TPD)	VOC w/ 75 ppb threshold (ppb/TPD)	VOC w/ 85 ppb threshold (ppb/TPD)
13-067-0003	Kennesaw	-0.07427	-0.07972	-0.00453	-0.00485
13-077-0002	Newnan	-0.08090	-0.09576	-0.00176	-0.00156
13-085-0001	Dawsonville	-0.06219	-0.06219	-0.00702	-0.00070
13-089-0002	South DeKalb	-0.07714	-0.08744	-0.00580	-0.00685
13-097-0004	Douglasville	-0.07971	-0.08374	-0.00416	-0.00723
13-121-0055	Confederate Ave.	-0.06117	-0.06693	-0.00766	**-0.01058**
13-135-0002	Gwinnett	-0.07625	-0.09008	-0.00264	-0.00293
13-151-0002	McDonough	-0.08692	-0.09052	-0.00335	-0.00462
13-223-0003	Dallas /Yorkville	-0.06925	-0.06925	-0.00115	-0.00115
13-247-0001	Conyers	-0.08975	**-0.10019**	-0.00312	-0.00321

These results show that NO_x emission reductions are generally 10-20 times more effective than VOC emission reductions at reducing ozone concentrations. In order to look at the impact of removing NO_x or VOC controls on the 1997 and 2008 ozone NAAQS, the most conservative approach would be to use the highest normalized NO_x and VOC sensitivity value across the 10 Atlanta ozone monitors. The highest normalized NO_x sensitivity is 0.10019 ppb/TPD at the Conyers (13-247-0001) Site and the highest normalized VOC sensitivity is 0.01058 ppb/TPD at the Confederate Avenue, (13-121-0055) Site. (Note that both of these highest sensitivities are based on an 85 ppb threshold used to address the 1997 ozone NAAQS. Use of sensitivities based on the 2008 ozone NAAQS threshold of 75 ppb would result in lower normalized sensitivities and thus less of an impact on ambient ozone levels.)

Based on the most conservative approach, for every ton per day of VOC increased in the Atlanta area there is a corresponding increase of 0.01058ppb in ozone at the monitor; while for every ton per day of NO_x increased in the Atlanta area there is a corresponding increase of 0.10019ppb at the monitor.

The 2014 increase in VOC emission due to the removal of Stage II of 0.92 tons per day. Applying the sensitivity to VOC to 0.92 tons per day will result in a corresponding increase in the concentration of ozone in the Atlanta area of 0.00973 ppb, a very insignificant amount. This value will decrease for each year thereafter until 2016, as the ozone concentration begins to decrease due to the emissions benefit of removing Stage II controls.

6.0 Conclusion

In this SIP revision, Georgia EPD is requesting the removal of Georgia Rule 391-3-1-.02(2)(zz), "Gasoline Dispensing Facilities – Stage II" from Georgia's SIP.

Section 202(a)(6) of the CAA gives EPA discretionary authority to revise or waive the section 182(b)(3) Stage II requirement by rule after the Administrator determines that ORVR is in widespread use throughout the motor vehicle fleet. EPA also has broad discretion in how it defines widespread use and the manner in which any final determination is implemented.

On May 16, 2012, EPA published in the federal register its determination that the use of ORVR for capturing gasoline vapor when gasoline-powered vehicles are refueled is in widespread use throughout the highway motor vehicle fleet [77 FR 28772]. In that notice the Administrator also exercised her authority to waive the statutory requirement that Serious, Severe, and Extreme ozone nonattainment areas adopt and implement EPA programs requiring Stage II gasoline vapor recovery systems (VRS) at certain gasoline dispensing facilities (GDFs).

On August 7, 2012, EPA issued "Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures". Georgia EPD has followed that guidance to show that: 1) the emissions control gain (or incremental benefits) of Stage II VRS control decreases as ORVR controls are phased in; 2) removal of Stage II VRS controls will not interfere with attainment of the NAAQS or with further reasonable progress; 3) calculations of motor vehicle emissions without Stage II VRS show that emissions will be below the MVEB and the motor vehicle VOC baseline emission inventory from the 2008 Atlanta Maintenance SIP; 4) Atlanta's ozone sensitivity to NOx rather than to VOC emissions provides evidence that removal of Georgia Rule (zz) will not interfere with the attainment or reasonable further progress towards attainment of any NAAQS.

EPA can propose approval of a SIP revision seeking to discontinue an existing SIP-approved Stage II control program if Georgia's SIP revision meets the requirements of 110(ℓ).

Georgia EPD has demonstrated in this SIP revision that removal of Georgia Rule 391-3-1-.02(2)(zz), "Gasoline Dispensing Facilities – Stage II" from Georgia's SIP is consistent with section 110 (l) of the CAA and will not interfere with the attainment of the NAAQS and with reasonable further progress toward that attainment. Removal of Georgia Rule 391-3-1-.02(2)(zz), "Gasoline Dispensing Facilities – Stage II" from Georgia's SIP will result in VOC emission reductions beginning in 2016.

Georgia EPD has demonstrated in this SIP revision that the removal of Georgia Rule (zz) from the Georgia SIP is consistent with section 110 (l) of the CAA.

7.0 References

Atlanta Regional Commission's (ARC), Volume II: Plan 2040 Conformity Determination Report (CDR) (see Table 2)

CARB, Preliminary Draft Test Report, Total Hydrocarbon Emissions from Two Phase II Vacuum Assist Vapor Recovery Systems During Baseline Operations and Simulated Refueling of Onboard Refueling Vapor Recovery (ORVR) Equipped Vehicles, Project Number ST-98-XX, June 1999.

CARB, Uncontrolled Vapor Emission Factor at Gasoline Dispensing Facilities, January 5, 2000.

Department of Energy, EIA Annual Energy Outlook (AEO); "Liquid Fuels Supply and Distribution -Reference Case", http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2011&subject=0-AEO2011&table=11-AEO2011&region=0-0&cases=ref2011-d020911a .

State of Georgia, Rules for Air Quality Control, Chapter 391-3-1, Effective August 9, 2012.

USEPA, "Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures," Office of Air Quality Planning and Standards, EPA-457/B-12-001, August 7, 2012.

USEPA "Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements", 78 FR 34178 through 78 FR 34239, Proposed Rule, June 6, 2013.

1997 Atlanta 8-Hour Ozone Maintenance Plan, March 21, 2012, submitted to EPA on April 4, 2012.

USEPA, EPA Memorandum, "Calculating Stage II Vacuum Assist Stage II VRS and ORVR Excess Emissions," Glenn W. Passavant, May 2012.

USEPA, Technical Guidance-Stage II Vapor Recovery Systems for Control of Gasoline Refueling Emissions at Gasoline Dispensing Facilities Vol. 1," EPA-45-0/3-91-022a, November 1991