

# 2014 RACT SIP

*2014 Reasonably Available Control Technology (RACT)  
Demonstration for the 8-Hour Ozone State  
Implementation Plan (SIP)*

SJVUAPCD

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## Executive Summary

The San Joaquin Valley air basin (Valley) is designated as an extreme ozone nonattainment area for the 2008 8-hour ozone standard<sup>1</sup>. The Clean Air Act (CAA) requires areas that are classified as moderate or above for ozone nonattainment to adopt a reasonably available control technology (RACT) demonstration that verifies RACT levels of control are being implemented for sources subject to U.S. Environmental Protection Agency (EPA) Control Techniques Guidelines (CTG) and for “major sources”<sup>2</sup> of relevant ozone precursors. This *2014 Reasonably Available Control Technology Demonstration for the 8-Hour Ozone State Implementation Plan (2014 RACT SIP)* fulfills CAA requirements and demonstrates that all federal RACT requirements continue to be satisfied in the Valley.

This *2014 RACT SIP* demonstration report consists of the following chapters:

- An overview of EPA’s RACT SIP requirements. (See Chapter 1)
- Discussion of the negligible effect of VOC emission reductions to advance attainment of ozone NAAQS; verification that EPA CTGs, which regulate VOC sources, are being implemented in the Valley; and a discussion of the negative declarations previously submitted for the three EPA CTG categories that do not exist in the Valley. (See Chapter 2)
- A demonstration that all major sources in the Valley are covered by RACT rules. (See Chapter 3)
- A demonstration that the District’s NO<sub>x</sub> prohibitory rules satisfy RACT levels of stringency, applicability, and enforceability, based on comparisons to federal, state, and local regulations. (See Chapter 4)
- A discussion of additional sources of NO<sub>x</sub> in the Valley not covered by a specific District NO<sub>x</sub> prohibitory rule. (See Chapter 5)

The District’s *2009 RACT Demonstration for Ozone State Implementation Plans (2009 RACT SIP)* followed a similar outline as the one discussed above. In response to the *2009 RACT SIP* and related rule-amending projects, EPA has issued federal actions documenting their approval of District rules and concurrence that District rules implement RACT. Many District rules are more stringent than established RACT standards. Since RACT is a moving target that changes over time as new technologies become feasible and cost effective, Chapter 4 of this *2014 RACT SIP* focuses on changes in technologies or regulations since this previous RACT determination.

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<sup>1</sup> EPA (May 12, 2012). Air Quality Designations for the 2008 NAAQS. 77 FR 30088. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-05-21/pdf/2012-11618.pdf>

<sup>2</sup> Major sources for extreme ozone nonattainment areas are defined as sources which have the potential to emit either 10 tons per year (tpy) of NO<sub>x</sub> or 10 tpy of VOC.

In addition to the analyses conducted for this RACT demonstration, the District has begun preliminary analyses and research for the attainment plan for the 2008 8-hour ozone standard, which will be due to EPA no later than 2016. As part of that attainment plan, the District will reevaluate the control measures analyzed in this *2014 RACT SIP*, in addition to several other District regulations. While this *2014 RACT SIP* demonstration is targeted at ensuring that the District's regulations meet RACT levels of emission control, that attainment plan will also examine other emission reduction opportunities that exceed RACT standards.

## Chapter 1: Reasonably Available Control Technology and Federal EPA Requirements

EPA periodically reviews and establishes health-based air quality standards (also referred to as National Ambient Air Quality Standards, or NAAQS) for ozone, particulates, and other criteria air pollutants. To achieve these NAAQS, the San Joaquin Valley Air Pollution Control District (District) has adopted more than 500 rules and rule amendments since its formation in 1992. Stringent and innovative rules, such as those for combustion equipment, glass manufacturing, and agricultural burning, represent the nation's toughest air pollution emission controls and have greatly contributed to reduced ozone concentrations in the Valley.

Although air quality improvements evidence the success of the District's innovative and effective rules, the Valley still experiences unique and significant difficulties in achieving EPA's increasingly stringent federal air quality standards. The Valley's geography and meteorology exacerbate the formation and retention of high levels of air pollution. Surrounding mountains and consistently stagnant weather patterns prevent the dispersal of pollutants that accumulate within the Valley. The Valley has significant naturally occurring biogenic emissions. The California landscape also allows for air pollutant transport within the Valley, as well as between the Valley and other air basins. The Valley's low precipitation levels, high temperatures, and light winds are conducive to elevated ozone levels.

Due to these unique conditions, the Valley is designated as an extreme ozone nonattainment area for the 2008 8-hour ozone standard. Sections 182(b)(2) and (f)<sup>3</sup> of the CAA require areas that are classified as moderate or above for ozone nonattainment to implement RACT requirements for sources that are subject to EPA CTGs and for "major sources" of volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>), which are ozone precursors. These RACT requirements are intended to ensure that significant sources of emissions in nonattainment areas are controlled to a reasonable extent.

This chapter will discuss how EPA defines "RACT" and summarize the guidance EPA has issued for drafting this RACT demonstration.

### 1.1 RACT DEFINED

EPA defines RACT as the "*lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.*"<sup>4</sup> As illustrated by this definition, RACT allows for consideration of the economic impact of the potential emission controls. If a certain type of emission control or emission limitation is determined to be too costly in light of the amount of emission reductions it achieves, that control is not

<sup>3</sup> EPA. Clean Air Act (CAA) Section 182(b)(2) and (f). Retrieved from: <http://www.law.cornell.edu/uscode/text/42/7511a>

<sup>4</sup> EPA (September 17, 1979). 44 FR 53762.

considered RACT. Also, as economic factors vary within a state and between different states, a control technology or emission limitation approved as RACT in one location does not necessarily define RACT for another location.

RACT differs from more stringent levels of emission control, such as Best Available Control Technology (BACT) and Lowest Achievable Emission Rate (LAER). RACT is intended as the minimum level of control that all ozone nonattainment areas must achieve for existing sources, whereas BACT and LAER are required for new sources and existing sources undergoing modification. BACT and LAER are defined as follows:

- **BACT**: an emission limitation based on the maximum degree of pollutant reduction which the reviewing authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for the new source or modification.<sup>5</sup>
- **LAER**: the most stringent emissions limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable; or the most stringent emissions limit which is achieved in practice by such class or category of stationary sources.<sup>6</sup>

BACT and LAER requirements are reserved for new or modified facilities because more stringent and costly controls can be more easily implemented before a facility is built or during a modification, rather than after it has been fully constructed.

## 1.2 RACT SIP GUIDANCE FROM 2006 EPA REGION IX LETTER

To help California and its local air districts with their RACT SIP certifications, EPA Region IX sent a letter to the California Air Resources Board (ARB) and local air districts in 2006 discussing EPA Region IX's understanding of what might constitute an acceptable RACT SIP submittal.<sup>7</sup> The strategy included five main points:

- A description of efforts to identify all source categories within the District requiring RACT, including CTG sources (i.e., covered by an EPA Control Technique Guideline document) and major non-CTG sources.
- A submission of negative declarations where there are no facilities (major or minor) within the District subject to a CTG.
- A list of the state/local regulations that implement RACT for all categories subject to RACT, including the date EPA approved these regulations as fulfilling RACT.

<sup>5</sup> EPA. CAA Section 169(3), 40 CFR 51.166(b)(12). Retrieved from: <http://www.law.cornell.edu/uscode/text/42/7479>

<sup>6</sup> EPA. CAA Section 171(3), 40 CFR 51.165(a)(1)(xiii). Retrieved from: <http://www.law.cornell.edu/uscode/text/42/7501>

<sup>7</sup> EPA (March 9, 2006). Letter from Andrew Steckel, EPA Region IX to Kurt Karperos, ARB.

- A description of the basis for concluding that the regulations fulfill RACT. Documents useful in establishing RACT include CTGs, Alternative Control Techniques (ACT), Maximum Achievable Control Technology (MACT) standards, New Source Performance Standards (NSPS), California Suggested Control Measures (SCM), and RACT/Best Available Retrofit Control Technology (BARCT) determinations; regulations adopted in other air districts; and guidance and rules developed by other state and local agencies.
- If a district uses CAPCOA's September 2003 Potential All Feasible Measures (AFM) Report to help demonstrate RACT, the RACT SIP should certify that local regulations are equivalent to AFM, justify the assumption that the AFM fulfilled RACT in 2003, and include some sort of certification/demonstration that no additional controls have become more reasonably available since then.

The District's 2009 RACT SIP was largely organized pursuant to this guidance. As such, this 2014 RACT SIP contains much of the same content suggested for inclusion in this 2006 letter.

### **1.3 RACT SIP REQUIREMENTS FROM THE PROPOSED IMPLEMENTATION RULE FOR THE 2008 8-HOUR OZONE NAAQS**

EPA's Proposed Implementation Rule for the 2008 8-Hour Ozone NAAQS (Proposed Implementation Rule) provides guidance to air districts for what information should be presented in a RACT SIP demonstration to fully demonstrate that RACT levels of emission controls are being implemented. EPA has not yet finalized its implementation rule for the 2008 8-hour ozone NAAQS, and may not do so until after the RACT SIP deadline. Therefore, the District has followed the Proposed Implementation Rule in putting together this RACT SIP.

The Proposed Implementation Rule advises that RACT SIP demonstrations include the following content:

- Documentation verifying that existing regulations for CTG source categories are RACT and/or Negative Declarations that verify that there are no sources in the nonattainment area covered by a specific CTG.
- Documentation verifying that existing regulations for major sources are at least RACT.
- Documentation that the air district does not rely solely on previous RACT determinations and has considered the economic and technological feasibility of new potential control technologies or emission standards.
- Consideration of the following types of regulations and guidance documents in making RACT determinations: CTGs, Alternative Control Techniques (ACTs), BACT/LAER clearinghouse data, state implementation plans (SIPs) for other

nonattainment areas, the “Menu of Control Measures” for NO<sub>x</sub> and VOC, emission standards developed under CAA section 111(d), and New Source Review or Prevention of Significant Deterioration settlement agreements.

- Technically sound analyses verifying that VOC emission reductions do not advance attainment of ozone NAAQS if the air district chooses to not evaluate VOC prohibitory rules for RACT. (*Discussed further in Chapter 2*)

The Proposed Implementation Rule also specifies the following deadlines for the implementation of RACT rules and submission of a RACT SIP demonstration report to EPA:

- **Deadline for Implementation of RACT rules**: no later than January 1<sup>st</sup> of the fifth year after the effective date of a nonattainment designation. The District’s extreme ozone nonattainment designation was effective July 20, 2012; therefore, the deadline for implementation of RACT rules would be January 1, 2017.
- **Deadline for RACT SIP Submission**: there are two options for submittal of a RACT SIP demonstration report. The first option is to submit the RACT SIP within 2 years of the effective date of a nonattainment designation and the attainment demonstration plan within 4 years of the effective date of designation. The second option is to submit both the RACT SIP demonstration and attainment plan within 30 months of a nonattainment designation. The District has elected for the first option; the *2014 RACT SIP* is due to EPA on July 20, 2014.

#### 1.4 PUBLIC PROCESS

In keeping with the District’s philosophy of public accountability and guidance from the Proposed Implementation Rule, the results of this comprehensive analysis were posted for public review from May 12, 2014 through June 2, 2014. Public comments were incorporated into the analysis, as appropriate. In addition, the Draft *2014 RACT SIP* was discussed as part of the May 23, 2014 public workshop on the development of the upcoming *2016 Ozone Plan* and was presented to the District’s Citizens Advisory Committee on June 3, 2014.

The District posted the Proposed *2014 RACT SIP* prior to the District’s June 19, 2014 Governing Board public hearing for the adoption of the RACT demonstration. The report is subsequently being transmitted to ARB who will then submit the report to EPA by the July 20, 2014 deadline specified in the Proposed Implementation Rule.

## Chapter 2: VOC Evaluation

### 2.1 VOC IMPACTS ON OZONE CONCENTRATIONS IN THE VALLEY

Unlike previous implementation rules for ozone standards, the Proposed Implementation Rule noted that EPA is considering not requiring air districts to evaluate their VOC rules for RACT if it can be demonstrated that VOC emission reductions will not advance attainment. Research and modeling has consistently demonstrated that the Valley is a NO<sub>x</sub>-limited area, and reducing NO<sub>x</sub> emissions continues to be the most effective strategy for reducing Valley ozone. Previous ozone plans, most recently the *2013 Plan for the Revoked 1-Hour Ozone Standard (2013 Ozone Plan)*, have stressed this point and provided technically sound analyses and modeling results that demonstrate VOC emission reductions will not advance attainment of the 1-hour or 8-hour ozone standard.<sup>8,9,10</sup>

Ozone is a product of intricate atmospheric reactions involving VOCs, NO<sub>x</sub>, the hydroxyl radical (HO), other radicals, and sunlight. As such, ozone is not emitted directly but, rather, is formed through chemical interactions. The concentration of ambient ozone at any given location in the Valley is a function of the natural environment (geography and meteorology), ozone precursor emissions (e.g. NO<sub>x</sub> and VOCs), and atmospheric chemistry.

The ratio of VOC to NO<sub>x</sub> emissions (accounting for both anthropogenic as well as biogenic emissions) is especially important when planning emission reduction strategies to reduce ozone concentrations. A VOC to NO<sub>x</sub> ratio greater than 1 indicates that there are higher levels of VOC emissions than NO<sub>x</sub> emissions in a particular region. Furthermore, this indicates that VOC emission reductions are less effective in reducing ozone concentrations, while NO<sub>x</sub> emission reductions are more effective. This is known as a *NO<sub>x</sub> limited regime*. A *VOC limited regime*, on the other hand, occurs when the VOC to NO<sub>x</sub> ratio is below 1, indicating greater NO<sub>x</sub> emissions than VOC emissions. In this type of regime, VOC emission reductions are more effective than NO<sub>x</sub> emission reductions in reducing ozone concentrations.

The District, ARB, EPA, and private partners have invested millions of dollars into Study Agency field studies, analyses, and modeling over the last several decades to build a strong scientific foundation for the Valley's ozone attainment plans. This extensive research has been incorporated into the emissions modeling for the *2013 Ozone Plan* and past ozone SIPs. The results from these extensive analyses have consistently

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<sup>8</sup> SJVAPCD (April 30, 2007). Chapter 3: What is Needed to Demonstrate Attainment? from the 2007 Ozone Plan. Retrieved from:

[http://www.valleyair.org/Air\\_Quality\\_Plans/docs/AQ\\_Ozone\\_2007\\_Adopted/08%20Chapter%203%20April%202007.pdf](http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/08%20Chapter%203%20April%202007.pdf)

<sup>9</sup> SJVAPCD (September 19, 2013). Chapter 2: Scientific Foundation, Trends, and Modeling Results from the Revoked 1-Hour Ozone Standard. Retrieved from:

[http://www.valleyair.org/Air\\_Quality\\_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf](http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf)

<sup>10</sup> SJVAPCD (September 19, 2013). Appendix G: Weight of Evidence for the 2013 Plan from the Revoked 1-Hour Ozone Standard. P.33. Retrieved from:

[http://www.valleyair.org/Air\\_Quality\\_Plans/OzoneOneHourPlan2013/11AppendixGWeightofEvidence20130816.pdf](http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/11AppendixGWeightofEvidence20130816.pdf)

demonstrated that the Valley is a *NOx limited regime*, and thus VOC emission reductions have a minimal impact on reducing ozone concentrations, especially in projections of future year emissions.

The overwhelming presence of VOC emissions compared to NOx emissions in the Valley is largely due to biogenic VOC emissions from vegetation. Biogenic VOC emissions can overpower anthropogenic (emissions generated from human activities) VOC emissions, particularly during the Valley's summer ozone season that spans from May through October.

Table 1 presents the summer daily average anthropogenic VOC and NOx emissions from stationary, area, and mobile sources in the Valley for 2007 and 2013-2017. Table 2 presents the Valley-wide biogenic VOC emissions for 2007, categorized by the individual biogenic groups (e.g. isoprene, methylbutenol, etc.) and total biogenic VOC emissions. Biogenic emissions are not estimated for future years because future changes in climate and land use/land cover are highly uncertain; as such, biogenic VOC emissions were assumed to remain constant from 2007-2017 in the *2013 Ozone Plan*.<sup>11</sup>

**Table 1. Summer Average VOC and NOx Emissions from Anthropogenic Valley Sources in Tons per Day<sup>12</sup>**

Year	VOC Emissions	NOx Emissions
2007	457.3	484.9
2013	380.6	316.0
2014	371.8	297.2
2015	369.6	276.3
2016	368.0	259.2
2017	366.3	247.1

**Table 2. Valley-Wide Biogenic VOC Emissions for 2007 in Tons per Day<sup>13</sup>**

	Isoprene	Methylbutenol	Terpenes	Other VOC	Total VOC
May	436	251	159	276	1121
June	734	400	261	427	1821
July	941	495	341	522	2300
August	771	394	303	440	1908
September	336	182	160	220	899
October	43	63	60	88	255
<b>Summer Average</b>	--	--	--	--	<b>1384</b>

<sup>11</sup> SJVAPCD (September 19, 2013). *Appendix G: Weight of Evidence for the 2013 Plan for the Revoked 1-Hour Ozone Standard*. P.33. Retrieved from:

[http://www.valleyair.org/Air\\_Quality\\_Plans/OzoneOneHourPlan2013/11AppendixGWeightofEvidence20130816.pdf](http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/11AppendixGWeightofEvidence20130816.pdf)

<sup>12</sup> SJVAPCD (September 19, 2013). *Appendix B: Emission Inventory for the 2013 Plan for the Revoked 1-Hour Ozone Standard*. P.3-8. Retrieved from:

[http://www.valleyair.org/Air\\_Quality\\_Plans/OzoneOneHourPlan2013/06AppendixBEmissionInventory.pdf](http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/06AppendixBEmissionInventory.pdf)

<sup>13</sup> SJVAPCD (September 19, 2013). *Appendix B: Emission Inventory for the 2013 Plan for the Revoked 1-Hour Ozone Standard*. P.9. Retrieved from:

[http://www.valleyair.org/Air\\_Quality\\_Plans/OzoneOneHourPlan2013/06AppendixBEmissionInventory.pdf](http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/06AppendixBEmissionInventory.pdf)

Due to future regulatory control strategies that will continue to reduce anthropogenic VOC and NO<sub>x</sub> emissions, biogenic VOC emissions will outweigh anthropogenic VOC and NO<sub>x</sub> emissions even more so in the future. As illustrated by Tables 1 and 2, biogenic VOC emissions are expected to represent almost four times the amount of anthropogenic VOC emissions and almost six times the amount of anthropogenic NO<sub>x</sub> emissions in 2017. As a result, the ratio of VOC to NO<sub>x</sub> emissions will increase even further, causing the ozone life cycle to become even more unbalanced and making future ozone concentrations even less sensitive to reductions of VOC emissions in the Valley.

Additional modeling results and analyses from past ozone SIPs have further demonstrated that the Valley is a *NO<sub>x</sub> limited regime*. In the District's *2007 Ozone Plan* and related research and plan amendments, approved by EPA on March 1, 2012<sup>14</sup>, it was shown that additional VOC reductions had very limited benefits for reducing ozone long-term in Arvin, California (see Figure 1 below).<sup>15</sup> The numbers on the contour lines in Figure 1, also known as isopleths, represent the projected design value<sup>16</sup> based on the amount of NO<sub>x</sub> and VOC emissions in the region.

**Figure 1. Arvin Carrying Capacity 2023**

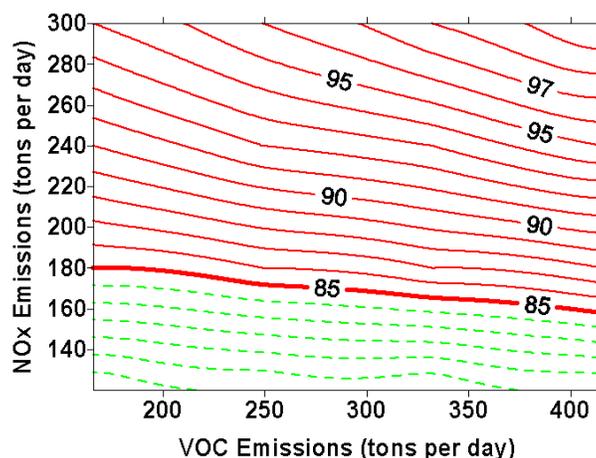


Figure 1 illustrates that a NO<sub>x</sub> emission reduction of 130 tpd (from 300 tpd to 170 tpd) and zero VOC emission reductions (emissions remaining at 400 tpd) would generate a projected design value of 85 parts per billion (ppb); however, a NO<sub>x</sub> emission reduction of 120 tpd (from 300 tpd to 180 tpd) and a VOC emission reduction of 150 tpd (from 400 tpd to 250 tpd) will also yield a projected design value of 85 ppb. This shows that future

<sup>14</sup> EPA (March 1, 2012). Approval of Air Quality Implementation Plans; California; San Joaquin Valley; Attainment Plan for 1997 8-Hour Ozone Standards. 77 FR 12652. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-03-01/pdf/2012-4674.pdf>

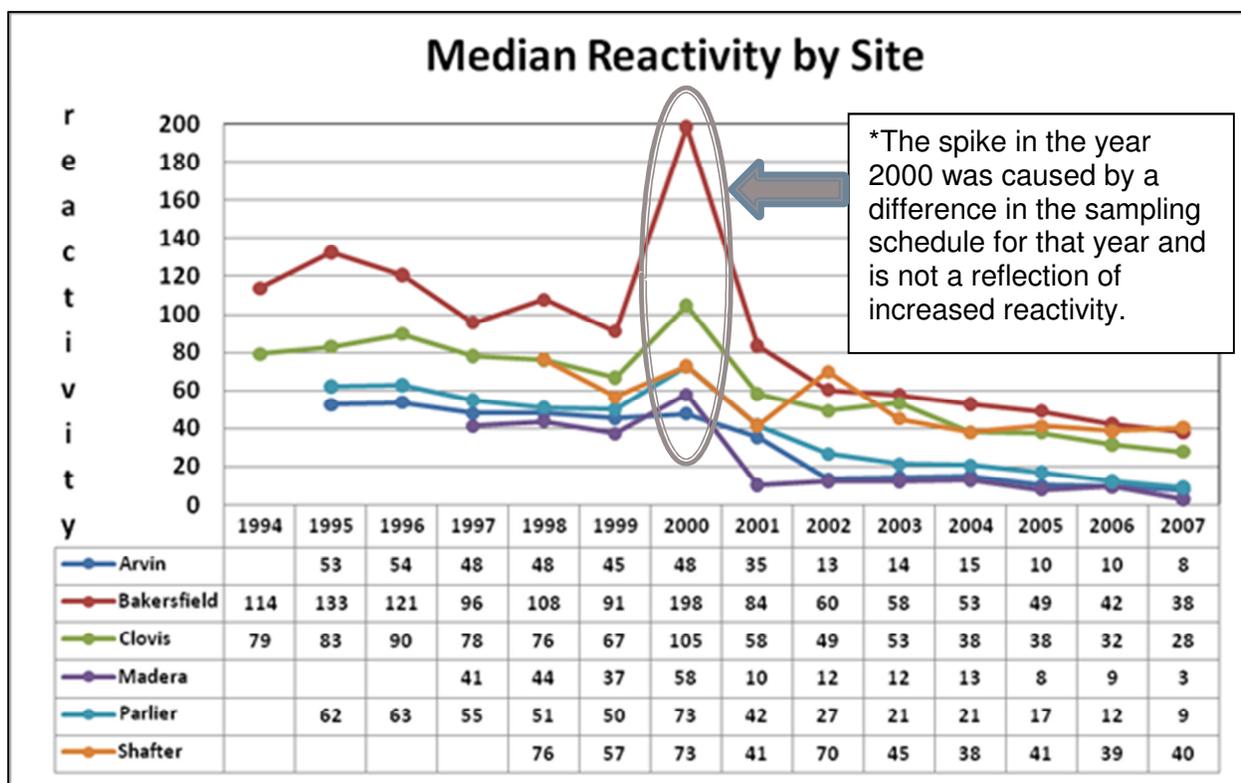
<sup>15</sup> SJVAPCD (April 30, 2007). Chapter 3: What is Needed to Demonstrate Attainment? from the 2007 Ozone Plan. P.12. Retrieved from: [http://www.valleyair.org/Air\\_Quality\\_Plans/docs/AQ\\_Ozone\\_2007\\_Adopted/08%20Chapter%203%20April%202007.pdf](http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/08%20Chapter%203%20April%202007.pdf)

<sup>16</sup> The design value is calculated according to EPA protocols to determine how close an area is to attainment of an ozone standard.

ozone concentrations in Arvin are much more sensitive to NOx emission reductions than to VOC emission reductions.

Studies of the Valley’s VOC reactivity trends also prove that Valley ozone concentrations are negligibly sensitive to VOC emission reductions. The *2013 Ozone Plan* included a discussion on a 2010 study that was conducted to analyze historical Photochemical Assessment Monitoring Station (PAMS) data recorded for the Valley for the 1994 through 2007 time frame.<sup>17</sup> Within this study, the Maximum Incremental Reactivity (MIR) scale was used to quantify the strength of the ozone forming potential for each VOC. Figure 2, taken from the study’s final report, shows the median reactivity trend among all compounds for each site over the 1994-2007 time period.

Figure 2. VOC Reactivity Trends by PAMS Site<sup>18</sup>



Overall, the trend in median VOC reactivity among all of the PAMS sites in the Valley is declining, meaning that over time, and as emissions reductions have occurred, more VOC is required than in the past to form an equal amount of ozone. Thus, extremely large VOC reductions would be needed to yield a small reduction in ozone.

<sup>17</sup> SJVAPCD (September 19, 2013). Chapter 2: Scientific Foundation, Trends, and Modeling Results from the Revoked 1-Hour Ozone Standard. P.13-14. Retrieved from: [http://www.valleyair.org/Air\\_Quality\\_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf](http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf)

<sup>18</sup> SJVAPCD (September 19, 2013). Chapter 2: Scientific Foundation, Trends, and Modeling Results from the Revoked 1-Hour Ozone Standard. P.14. Retrieved from: [http://www.valleyair.org/Air\\_Quality\\_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf](http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf)

## 2.2 DISTRICT VOC RULES AND EPA RACT APPROVAL DATES

Although the District's VOC rules<sup>19</sup> will not be evaluated as part of this 2014 RACT SIP, each regulation was evaluated in depth for the 2009 RACT SIP.<sup>20</sup> Each VOC rule has also been approved by EPA as meeting RACT levels of emission control within the last two years. Table 3 lists each of the District's VOC rules and their respective EPA RACT approval date.

**Table 3. District VOC Rules and EPA RACT Approval Dates**

Rule #	Rule Name	Adopted/ Last Amended	EPA RACT Approval Date	EPA RACT Approval Link
4401	Steam-Enhanced Crude Oil Production Wells	6/16/2011	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4402	Crude Oil Production Sumps	12/15/2011	10/22/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-10-22/pdf/2012-25810.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-10-22/pdf/2012-25810.pdf</a>
4404	Heavy Oil Test Station - Kern County	12/17/1992	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4407	In-Situ Combustion Well Vents	5/19/1994	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4408	Glycol Dehydration Systems	12/19/2002	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4409	Components at Light Crude Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities	4/20/2005	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4453	Refinery Vacuum Producing Devices or Systems	12/17/1992	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4454	Refinery Process Unit Turnaround	12/17/1992	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4455	Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants	4/20/2005	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>

<sup>19</sup> For the purposes of this demonstration, a VOC rule is a District regulation targeted solely at reducing VOC emissions. Rules that regulate NOx and VOC emissions will be evaluated as part of this 2014 RACT SIP.

<sup>20</sup> SJVAPCD (April 16, 2009). Chapter 4: Rule Analysis from the 2009 RACT SIP. Retrieved from: [http://www.valleyair.org/Air\\_Quality\\_Plans/docs/RACTSIP-2009.pdf](http://www.valleyair.org/Air_Quality_Plans/docs/RACTSIP-2009.pdf)

Rule #	Rule Name	Adopted/ Last Amended	EPA RACT Approval Date	EPA RACT Approval Link
4565	Biosolids, Animal Manure, and Poultry Litter Operations	3/15/2007	1/17/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-17/pdf/2012-582.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-17/pdf/2012-582.pdf</a>
4566	Organic Material Composting Operations	8/18/2011	11/29/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-11-29/pdf/2012-28827.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-11-29/pdf/2012-28827.pdf</a>
4570	Confined Animal Facilities	10/21/2010	1/17/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-17/pdf/2012-582.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-17/pdf/2012-582.pdf</a>
4603	Surface Coating of Metal Parts and Products, Plastic Parts and Products, and Pleasure Crafts	9/17/2009	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4604	Can and Coil Coating Operations	9/20/2007	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4605	Aerospace Assembly and Component Coating Operations	6/16/2011	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4606	Wood Products and Flat Wood Paneling Products Coating Operations	10/16/2008	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4607	Graphic Arts and Paper, Film, Foil, and Fabric Coatings	12/18/2008	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4610	Glass Coating Operations	4/17/2003	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4612	Motor Vehicle and Mobile Equipment Coating Operations	10/21/2010	2/13/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-02-13/pdf/2012-3172.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-02-13/pdf/2012-3172.pdf</a>
4621	Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants	12/20/2007	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4622	Gasoline Transfer into Motor Vehicle Fuel Tanks	12/20/2007	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4623	Storage of Organic Liquids	5/19/2005	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4624	Transfer of Organic Liquid	12/20/2007	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4625	Wastewater Separators	12/15/2011	10/22/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-10-22/pdf/2012-25810.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-10-22/pdf/2012-25810.pdf</a>

Rule #	Rule Name	Adopted/ Last Amended	EPA RACT Approval Date	EPA RACT Approval Link
4641	Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations	12/17/1992	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4642	Solid Waste Disposal Sites	4/16/1998	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4651	Soil Decontamination Operations	9/20/2007	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4653	Adhesives and Sealants	9/16/2010	2/13/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-02-13/pdf/2012-3172.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-02-13/pdf/2012-3172.pdf</a>
4661	Organic Solvents	9/20/2007	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4662	Organic Solvent Degreasing Operations	9/20/2007	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4663	Organic Solvent Cleaning, Storage, and Disposal	9/20/2007	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4672	Petroleum Solvent Dry Cleaning Operations	12/17/1992	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4682	Polystyrene, Polyethylene, and Polypropylene Products Manufacturing	12/15/2011	9/20/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-09-20/pdf/2012-21218.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-09-20/pdf/2012-21218.pdf</a>
4684	Polyester Resin Operations	8/18/2011	2/6/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-02-06/pdf/2012-2599.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-02-06/pdf/2012-2599.pdf</a>
4691	Vegetable Oil Processing Operations	12/17/1992	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4693	Bakery Ovens	5/16/2002	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>
4694	Wine Fermentation and Storage Tanks	12/15/2005	11/29/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-11-29/pdf/2012-28826.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-11-29/pdf/2012-28826.pdf</a>
4695	Brandy Aging and Wine Aging Operations	9/17/2009	1/10/2012	<a href="http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf">http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf</a>

## 2.3 DISTRICT IMPLEMENTATION OF EPA CTGS

CAA section 183(e)<sup>21</sup> directs EPA to list for regulation those categories of products that account for at least 80 percent of the VOC emissions, on a reactivity-adjusted basis, from consumer and commercial products in areas that violate the NAAQS for ozone. As a result, EPA promulgates CTGs to presumptively define national VOC RACT. Per the CAA and Proposed Implementation Rule, air districts are required to implement all EPA CTGs through local regulations and/or provide negative declarations that there are no sources in the nonattainment area covered by a specific CTG source category.

As part of the *2009 RACT SIP*, the District reviewed each CTG source category and matched it to the relevant District rule(s).<sup>22</sup> The District also provided documentation that negative declarations were previously submitted to EPA for the two EPA CTGs without applicable facilities in the Valley: *CTG for Shipbuilding and Ship Repair Operations and Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products*.<sup>23</sup> Since 2009, the District has adopted one additional negative declaration for EPA's *Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires*.

In December 2010, the District reviewed relevant District permits files, the emissions inventory database, SIC codes, telephone yellow pages, and the internet for sources of emissions from the manufacture of pneumatic rubber tires in the Valley. It was determined that there are no stationary sources or emitting facilities in the Valley related to this source category. The District also did not anticipate the presence of these sources in the future. The District concluded that there are no pneumatic rubber tire manufacturing operations in the Valley that would be subject to this CTG.

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<sup>21</sup> EPA. CAA Section 183(e). Retrieved from: <http://www.law.cornell.edu/uscode/text/42/7511b>

<sup>22</sup> SJVAPCD (April 16, 2009). Chapter 2: CTG Source Categories and Applicable District Rules from the 2009 RACT SIP. Retrieved from: [http://www.valleyair.org/Air\\_Quality\\_Plans/docs/RACTSIP-2009.pdf](http://www.valleyair.org/Air_Quality_Plans/docs/RACTSIP-2009.pdf)

<sup>23</sup> SJVAPCD (April 16, 2009). Chapter 2: CTG Source Categories and Applicable District Rules from the 2009 RACT SIP. Retrieved from: [http://www.valleyair.org/Air\\_Quality\\_Plans/docs/RACTSIP-2009.pdf](http://www.valleyair.org/Air_Quality_Plans/docs/RACTSIP-2009.pdf)

## Chapter 3: Major Sources and Applicable District Rules

Pursuant to CAA requirements<sup>24</sup>, the District evaluated rules that apply to major sources as a part of this RACT demonstration report. A major source is a stationary source that has the potential to emit at least ten tons per year of either NO<sub>x</sub> or VOC emissions. Per EPA guidance in the Proposed Implementation Rule, the District is not required to evaluate VOC regulations if VOC emission reductions are proven to not advance attainment. Table 4 identifies major sources of NO<sub>x</sub> in the Valley and applicable District rules.

To develop this list of major sources, the District's database of current Permits to Operate was queried to identify the facilities that have the potential to emit at least ten tons per year of NO<sub>x</sub>. Following that, the associated NO<sub>x</sub> rules were matched to each facility. Table 4 includes the following information for each facility:

- **Region:** identifies which Valley region (Central, South, or North)<sup>25</sup> each facility is located in. This column is denoted by "C" for the Central region, "S" for the Southern region, or "N" for the Northern region.
- **ID #:** the District's facility identification number for each permitted source
- **Facility Name:** the full name of each facility
- **Facility Description:** what type of operations or processes occur at each facility to generate emissions
- **Rule Numbers:** the remaining columns are denoted with an "X" to identify each District NO<sub>x</sub> prohibitory rule that applies to that specific facility

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<sup>24</sup> EPA. Clean Air Act (CAA) Section 182(b)(2) and (f). Retrieved from:  
<http://www.law.cornell.edu/uscode/text/42/7511a>

<sup>25</sup> Central region includes Fresno, Kings, and Madera counties; Southern region includes Kern and Tulare counties; and the Northern region includes Merced, San Joaquin, and Stanislaus counties.

Table 4. Major Sources of NOx and Applicable District Rules															
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703
C	14	FRESNO COGENERATION PARTNERS	COGENERATION		X									X	X
C	72	BAKER COMMODITIES, INC	RENDERING		X	X									
C	120	THE WINE GROUP INC	WINERY		X	X									
C	195	CALIF STATE PRISON - AVENAL	CORRECTIONAL INSTITUTION		X	X								X	X
C	214	CALIF STATE PRISON - CORCORAN	CORRECTIONAL INSTITUTION			X								X	
C	261	CERTAINTEED CORPORATION	FIBERGLASS MANUFACTURING OPERATION										X	X	
C	283	CHEMICAL WASTE MANAGEMENT, INC	WASTE DISPOSAL											X	
C	311	CHEVRON USA INC	OIL PRODUCTION		X	X								X	X
C	354	COALINGA COGENERATION CO	ELECTRIC AND OTHER SERVICES COMBINED											X	X
C	402	CALIFORNIA DAIRIES, INC.	MILK PROCESSING			X			X					X	
C	447	E & J GALLO WINERY	WINERY		X	X				X				X	
C	535	FRESNO/CLOVIS REGIONAL WWTP	WASTEWATER RECLAMATION FACILITY		X	X				X				X	X
C	581	GOLDEN STATE VINTNERS	WINERY											X	
C	598	GUARDIAN INDUSTRIES CORP	GLASS MANUFACTURING										X	X	
C	628	CBUS OPS DBA MISSION BELL WINERY	WINERY			X								X	
C	629	O'NEILL BEVERAGES CO LLC	WINERY			X								X	
C	651	CALMAT CO.	ASPHALT PAVING MIXTURES						X						
C	705	J R SIMPLOT COMPANY	FERTILIZER PRODUCTION		X	X								X	
C	722	KINGSBURG COGEN FACILITY	COGENERATION												X
C	799	MADERA POWER, LLC	POWER GENERATION		X							X		X	
C	801	SAINT-GOBAIN CONTAINERS, INC	GLASS MANUFACTURING		X								X	X	
C	825	COVANTA MENDOTA LP	POWER GENERATION		X							X		X	
C	904	PG & E CO -KETTLEMAN COMPRESSOR STATION	PUBLIC UTILITY											X	X
C	948	PPG INDUSTRIES	GLASS MANUFACTURING										X	X	

Table 4. Major Sources of NOx and Applicable District Rules																
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703	
C	954	PRISON INDUSTRY AUTHORITY--AVENAL	CORRECTIONAL INSTITUTION											X		
C	1077	SFPP, L.P.	PETROLEUM TRANSPORTATION											X		
C	1121	AERA ENERGY LLC	PETROLEUM PRODUCTION		X	X				X					X	
C	1234	SHELL PIPELINE COMPANY LP	PETROLEUM TRANSPORTATION		X	X								X		
C	1344	VIE-DEL WINERY #1	WINERY			X										
C	1353	THE WINE GROUP LLC DBA ALMADEN-MADERA	WINERY		X	X								X		
C	1555	J G BOSWELL COMPANY OIL MILL	AGRICULTURAL PRODUCTS PROCESSING		X	X										
C	1820	RIO BRAVO FRESNO	ELECTRICAL SERVICES COGENERATION		X							X				
C	2106	NAS LEMOORE	MILITARY BASE											X		
C	2872	CHEVRON USA, INC.	OIL AND GAS PRODUCTION											X		
C	3115	AMERICAN AVENUE LANDFILL	LANDFILL (EG SOURCE)		X							X	X	X		
C	3275	SAN JOAQUIN VALLEY CONCENTRATES	AGRICULTURAL PRODUCTS PROCESSING			X	X									
C	3775	CALIFORNIA POWER HOLDINGS LLC	POWER GENERATION											X		
C	3844	WELLHEAD POWER PANOCHÉ, LLC.	POWER GENERATION											X	X	
C	3929	GWF ENERGY LLC – HENRIETTA	POWER GENERATION											X	X	
C	4071	ALGONQUIN POWER SANGER LLC	POWER GENERATION			X								X	X	
C	4140	GWF ENERGY LLC	POWER GENERATION											X	X	
C	4261	PACIFIC ETHANOL MADERA LLC	INDUSTRIAL ORGANIC CHEMICALS			X								X		
C	4305	KINGS RIVER CONSERVATION DISTRICT	GOVERNMENT SERVICES												X	
C	4352	CSATF/CA SUBSTANCE ABUSE TREATMENT FACILITY	CORRECTIONAL FACILITY		X					X				X		
C	5166	HARRIS FARMS INC	AGRICULTURAL CROP PRODUCTION											X		
C	5169	MOUREN FAMILY FARMS, INC	AGRICULTURAL CROP PRODUCTION											X		
C	5208	RUANN DAIRY	DAIRY FARM											X		

Table 4. Major Sources of NOx and Applicable District Rules																
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703	
C	5370	LOVELACE & SONS FARMING	AGRICULTURAL CROP PRODUCTION											X		
C	6605	PEGASUS ORCHARDS	AGRICULTURAL CROP PRODUCTION											X		
C	6923	AMPERSAND CHOWCHILLA BIOMASS LLC	POWER GENERATION									X				
C	6927	MADDOX FARMS	AGRICULTURAL CROP PRODUCTION											X		
C	6982	WM BOLTHOUSE FARMS-SOUTH AVENAL	AGRICULTURAL CROP PRODUCTION											X		
C	7220	PANOCHÉ ENERGY CENTER LLC	POWER GENERATION											X	X	
C	7286	STARWOOD POWER-MIDWAY, LLC	POWER GENERATION												X	
C	7837	WM BOLTHOUSE FARMS INC - NORTH AVENAL	AGRICULTURAL CROP PRODUCTION											X		
N	199	CHEVRON USA PRODUCTS COMPANY	GASOLINE DISTRIBUTION											X		
N	238	INGREDION INCORPORATED	GRAIN MILLING AND PROCESSING - WET CORN MILLING			X			X						X	
N	257	DART CONTAINER CORPORATION	STYROFOAM CONTAINERS MANUFACTURING		X	X										
N	266	DELICATO VINEYARDS	WINERY			X								X		
N	285	DIAMOND FOODS INCORPORATED	AGRICULTURAL PRODUCTS PROCESSING - WALNUTS											X		
N	355	GENERAL MILLS OPERATIONS, INC	CEREAL MANUFACTURER		X	X								X	X	
N	583	NORTHERN CALIFORNIA POWER AGENCY	POWER GENERATION												X	
N	593	OWENS-BROCKWAY GLASS CONTAINER	GLASS CONTAINER MANUFACTURER										X	X		
N	608	PACIFIC GAS & ELECTRIC CO.	NATURAL GAS DISTRIBUTION											X		
N	645	DTE STOCKTON, LLC	POWER GENERATION FACILITY											X		
N	770	RIPON COGENERATION LLC	COGENERATION FACILITY												X	
N	811	STOCKTON RWCF	WASTEWATER TREATMENT FACILITY							X				X		
N	956	THE WINE GROUP, INC.	WINERY			X								X		

Table 4. Major Sources of NOx and Applicable District Rules															
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703
N	1026	THERMAL ENERGY DEV PARTNERSHIP LP	ELECTRICAL GENERATION FACILITY		X							X		X	
N	1027	SAN JOAQUIN COGEN, LLC	COGENERATION FACILITY											X	X
N	1237	E & J GALLO WINERY	WINERY		X	X									
N	1275	HILMAR CHEESE COMPANY	CHEESE PRODUCTION			X			X	X					
N	1276	INGOMAR PACKING COMPANY	PRODUCE PROCESSING PLANT		X	X								X	
N	1326	MORNING STAR PACKING COMPANY	AGRICULTURAL PRODUCTS PROCESSING		X	X								X	
N	1330	GREIF INDUSTRIAL PACKAGING & SERVS LLC	CAN COATING		X	X									
N	1399	LIBERTY PACKING CO - THE MORNING STAR CO	AGRICULTURAL PRODUCTS PROCESSING			X								X	
N	1646	QG, LLC	COMMERCIAL PRINTING						X					X	
N	1657	SENSIENT NATURAL INGREDIENTS LLC	DEHYDRATED VEGETABLE PROCESSING		X	X			X					X	
N	1662	GALLO GLASS COMPANY	GLASS MANUFACTURING PLANT			X							X	X	
N	1665	BRONCO WINE COMPANY	WINERY			X								X	
N	1787	OLAM	VEGETABLE PROCESSING AND DEHYDRATING		X	X			X					X	
N	1904	FOAM FABRICATORS, INC	PLASTICS, FOAM PRODUCTS MANUFACTURING		X	X									
N	1919	FRITO-LAY INC	POTATO CHIP AND SNACKFOOD MANUFACTURER		X	X									
N	1976	CONAGRA FOODS	FOOD PRODUCTS PROCESSING		X	X								X	
N	2052	MODESTO IRRIGATION DISTRICT	ELECTRIC POWER GENERATION												X
N	2073	COVANTA STANISLAUS, INC	MUNICIPAL SOLID WASTE COMBUSTOR		X							X		X	
N	2107	DARLING INTERNATIONAL, INC.	RENDERING		X	X									
N	2149	CALIFORNIA DAIRIES, INC.	MILK PROCESSING			X			X					X	
N	2246	TURLOCK IRRIGATION DISTRICT	POWER GENERATION FACILITY											X	X
N	2253	BALL METAL FOOD CONTAINER CORP.	CAN & COIL MANUFACTURING						X					X	

Table 4. Major Sources of NOx and Applicable District Rules																
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703	
N	2321	CBUS OPS INC (DBA WOODBRIDGE WINERY)	WINERY							X				X		
N	2369	BUCKEYE TERMINALS LLC	CLASS 1 ORGANIC LIQUID LOADING FACILITY											X		
N	2697	NORTHERN CALIFORNIA POWER	COGENERATION FACILITY			X								X	X	
N	3233	MODESTO IRRIGATION DISTRICT	POWER GENERATION FACILITY											X	X	
N	3299	TURLOCK IRRIGATION DISTRICT	POWER GENERATION FACILITY											X	X	
N	3309	G-3 ENTERPRISES, LABEL DIVISION	GRAPHIC ARTS FACILITY											X		
N	3386	E & J GALLO WINERY	WINERY		X	X								X		
N	3696	HIGHWAY 59 LANDFILL SITE	LANDFILL										X	X		
N	4065	BARBOSA CABINETS, INC.	MANUFACTURER OF WOODEN CABINETS											X		
N	4070	FOOTHILL SANITARY LANDFILL	LANDFILL										X			
N	4238	LODI GAS STORAGE LLC	NATURAL GAS TRANSMISSION							X				X		
N	4597	GWf ENERGY, LLC - TRACY PEAKER PROJECT	ELECTRIC POWER GENERATION			X								X	X	
N	4607	MERCED POWER, LLC	BIOMASS FIRED POWER PLANT									X		X		
N	4939	CBUS OPS DBA TURNER ROAD VINTNERS	WINERY											X		
N	4940	MODESTO IRRIGATION DISTRICT	POWER GENERATION FACILITY												X	
N	5526	RAINBOW FARMS	CHICKEN EGGS											X		
N	7172	WALNUT ENERGY CENTER AUTHORITY	POWER GENERATION FACILITY											X	X	
N	7365	PACIFIC ETHANOL STOCKTON LLC	ETHANOL PRODUCTION FACILITY		X	X								X		
N	7478	E & J GALLO WINERY - BRANDY	DISTILLED SPIRITS											X		
S	4	TEHACHAPI-CUMMINGS WATER DIST	WATER SUPPLY											X		
S	33	ALON BAKERSFIELD REFINING	PETROLEUM REFINERY		X	X				X				X		

Table 4. Major Sources of NOx and Applicable District Rules																
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703	
S	34	ALON BAKERSFIELD REFINING	PETROLEUM REFINERY		X	X				X				X		
S	36	SAN JOAQUIN REFINING COMPANY	PETROLEUM REFINING		X	X				X				X		
S	37	KERN OIL & REFINING CO.	PETROLEUM REFINING		X	X				X				X	X	
S	39	INERGY WEST COAST LLC	NATURAL GAS LIQUIDS PROCESSING											X	X	
S	40	CENTRAL RESOURCES INC	NATURAL GAS PRODUCTION							X				X		
S	44	TRICOR REFINING, LLC	PETROLEUM REFINERY		X	X	X							X		
S	55	CHEVRON USA INC LOST HILLS GP	NATURAL GAS PRODUCTION							X				X		
S	71	PLAINS LPG SERVICES LP	NATURAL GAS PRODUCTION		X	X								X		
S	73	OILDALE ENERGY LLC	ELECTRIC POWER GENERATION		X	X									X	
S	75	COVANTA DELANO INC	ELECTRIC SERVICES - POWER GENERATION		X							X		X		
S	77	SHELL PIPELINE COMPANY LP	PETROLEUM PIPELINES		X	X								X		
S	83	SHELL PIPELINE COMPANY LP	CRUDE PETROLEUM PIPELINE		X	X								X		
S	88	KERN RIVER COGENERATION CO	COGENERATION											X	X	
S	91	MT POSO COGENERATION COMPANY, LLC	COGENERATION		X							X		X		
S	172	LIVE OAK LIMITED	OIL & GAS PRODUCTION												X	
S	254	PLAINS PIPELINE LP	CRUDE PETROLEUM PIPELINES			X								X		
S	285	CRES INC DBA DINUBA ENERGY	ELECTRIC SERVICES - POWER GENERATION									X				
S	348	WEST KERN WATER DISTRICT	WATER DISTRICT											X		
S	349	WEST KERN WATER DISTRICT	WATER DISTRICT											X		
S	350	WEST KERN WATER DISTRICT	WATER DISTRICT											X		
S	353	WEST KERN WATER DISTRICT	WATER DISTRICT											X		
S	377	PARAMOUNT FARMS	TREE NUT PROCESSING FACILITY		X	X			X	X				X		
S	381	HECK CELLARS	WINERY			X								X		
S	382	OCCIDENTAL OF ELK HILLS INC	OIL AND NATURAL GAS PRODUCTION		X	X		X	X	X				X		

Table 4. Major Sources of NOx and Applicable District Rules																
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703	
S	511	SYCAMORE COGENERATION CO	COGENERATION											X	X	
S	525	LAND O' LAKES, INC.	MILK PROCESSING/DAIRY PRODUCTS MANUFACTURER		X	X			X					X		
S	548	TULARE CITY WASTEWATER PLANT	WASTEWATER TREATMENT			X				X				X		
S	637	JOSTENS INC	GRAPHICS ARTS PRINTING OPERATION											X		
S	723	CHALK CLIFF LIMITED	COGENERATION												X	
S	724	ALL AMERICAN OIL & GAS COMPANY	OIL & GAS PRODUCTION											X	X	
S	834	SIERRA POWER CORPORATION	ELECTRICAL SERVICES		X	X						X		X		
S	882	GOLDEN STATE VINTNERS/Franzia-MCFARLAND	WINE AND BRANDY			X										
S	883	RIO BRAVO POSO	ELECTRIC SERVICES									X		X		
S	892	PACTIV LLC	PLASTICS FOAM PRODUCTS											X		
S	984	VISALIA WASTEWATER TREATMENT	WASTEWATER TREATMENT				X			X				X		
S	1075	STYROTEK INC	PLASTICS FOAM PRODUCTS			X								X		
S	1114	SENECA RESOURCES	OIL AND NATURAL GAS PRODUCTION		X	X	X			X				X		
S	1118	HIGH SIERRA LIMITED	OIL AND NATURAL GAS PRODUCTION												X	
S	1119	DOUBLE C LIMITED	OIL AND NATURAL GAS PRODUCTION												X	
S	1120	KERN FRONT LIMITED	OIL AND NATURAL GAS PRODUCTION											X	X	
S	1127	CHEVRON USA INC	OIL AND NATURAL GAS PRODUCTION		X	X									X	
S	1128	CHEVRON USA INC	OIL AND NATURAL GAS PRODUCTION		X	X				X				X	X	
S	1129	CHEVRON USA INC	OIL AND NATURAL GAS PRODUCTION			X				X				X	X	
S	1131	CHEVRON USA INC	OIL AND NATURAL GAS PRODUCTION		X	X	X			X				X	X	
S	1135	AERA ENERGY LLC	CRUDE PETROLEUM AND NATURAL GAS PRODUCTION		X	X	X							X	X	

Table 4. Major Sources of NOx and Applicable District Rules															
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703
S	1141	CHEVRON USA INC	OIL AND NATURAL GAS PRODUCTION		X	X				X				X	
S	1199	PLAINS MARKETING LP	CRUDE PETROLEUM PIPELINE			X								X	
S	1203	SAPUTO CHEESE USA INC	CHEESE PRODUCTION		X	X			X					X	
S	1216	OCCIDENTAL OF ELK HILLS INC	OIL AND GAS PRODUCTION		X	X								X	
S	1234	TAFT PRODUCTION COMPANY	AGGREGATE/MINERAL PROCESSING		X	X			X						
S	1246	BERRY PETROLEUM COMPANY	OIL AND NATURAL GAS PRODUCTION		X	X				X				X	X
S	1250	BADGER CREEK LIMITED	GAS TURBINE ENGINE COGENERATION SYSTEM												X
S	1251	MCKITTRICK LIMITED	COGENERATION												X
S	1326	VINTAGE PRODUCTION CALIFORNIA LLC	OIL AND NATURAL GAS PRODUCTION		X	X				X					
S	1327	VINTAGE PRODUCTION CALIFORNIA LLC	OIL AND NATURAL GAS PRODUCTION		X	X				X				X	
S	1328	EXXON MOBIL CORPORATION	PETROLEUM AND NATURAL GAS PRODUCTION		X	X				X				X	
S	1346	CALIFORNIA DAIRIES, INC.	DRY, CONDENSED, EVAPORATED DAIRY PRODUCTS		X	X			X					X	X
S	1372	FREEMONT-MC MORAN OIL & GAS	OIL AND NATURAL GAS PRODUCTION		X	X	X			X					X
S	1385	DELTA TRADING L P	PETROLEUM PIPELINES			X								X	
S	1413	SHELL PIPELINE COMPANY LP	PIPELINE PUMP STATION		X	X									
S	1518	PHILLIPS 66 PIPELINE LLC	PETROLEUM PIPELINES											X	
S	1525	PHILLIPS 66 PIPELINE LLC	PIPELINE FACILITY											X	
S	1543	AERA ENERGY LLC	GAS PLANT							X				X	X
S	1547	AERA ENERGY LLC	CRUDE PETROLEUM AND NATURAL GAS		X	X	X			X				X	X
S	1703	MACPHERSON OIL COMPANY	OIL AND NATURAL GAS PRODUCTION		X	X				X				X	
S	1737	VINTAGE PRODUCTION CALIFORNIA LLC	CRUDE OIL AND NATURAL GAS PRODUCTION		X		X			X					
S	1738	VINTAGE PRODUCTION CALIFORNIA LLC	CRUDE OIL AND NATURAL GAS PRODUCTION							X				X	

Table 4. Major Sources of NOx and Applicable District Rules															
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703
S	1751	RIO BRAVO JASMIN	ELECTRIC SERVICES									X		X	
S	1792	SOUTHERN CALIF GAS CO	NATURAL GAS TRANSMISSION											X	X
S	2010	CHEVRON USA INC	OIL AND NATURAL GAS PRODUCTION		X	X								X	
S	2033	ELK CORPORATION OF TEXAS	ASPHALT FELTS AND COATINGS			X									
S	2049	BEAR MOUNTAIN LIMITED	OIL AND NATURAL GAS PRODUCTION											X	X
S	2076	FRITO-LAY, INC.	SNACK FOODS MANUFACTURING		X	X								X	X
S	2234	OCCIDENTAL OF ELK HILLS INC	NATURAL GAS PROCESSING		X	X			X	X				X	X
S	2265	BERRY PETROLEUM COMPANY	OIL & NATURAL GAS PRODUCTION												X
S	2273	BAKERSFIELD CITY WASTEWATER #2	SEWERAGE SYSTEMS				X			X				X	
S	2592	MID-SET COGENERATION COMPANY	OIL AND NATURAL GAS PRODUCTION											X	X
S	2622	TRC OPERATION COMPANY, INC.	CRUDE OIL AND NATURAL GAS PRODUCTION		X	X									
S	2890	MM TULARE ENERGY, LLC	POWER GENERATION											X	
S	3088	TRC CYPRESS GROUP LLC	CRUDE OIL AND NATURAL GAS PRODUCTION		X	X				X					
S	3103	BAKERSFIELD CITY WASTEWATER #3	SEWERAGE SYSTEMS					X		X				X	
S	3317	CHEVRON USA INC	NATURAL GAS TRANSMISSION & DISTRIBUTION											X	
S	3412	LA PALOMA GENERATING CO LLC	POWER PLANT		X	X								X	X
S	3461	BUILDING MATERIALS MFG. CORP. (DBA GAF)	FIBERGLASS MAT MANUFACTURING OPERATION						X					X	
S	3523	ELK HILLS POWER LLC	ELECTRIC POWER GENERATION											X	X
S	3585	BERRY PETROLEUM COMPANY	OIL AND GAS PRODUCTION			X				X					
S	3636	PASTORIA ENERGY FACILITY, LLC	POWER GENERATION											X	X

Table 4. Major Sources of NOx and Applicable District Rules															
Region	ID #	Facility Name	Facility Description	4103	4301	4306	4307	4308	4309	4311	4313	4352	4354	4702	4703
S	3720	CHINA GRADE SANITARY LANDFILL	SANITARY LANDFILL									X	X		
S	3746	SUNRISE POWER COMPANY	POWER GENERATION											X	X
S	3755	SENECA RESOURCES	OIL & GAS PRODUCTION		X	X				X					
S	4212	SOUTH KERN INDUSTRIAL CENTER LLC	CO-COMPOSTING											X	
S	4431	COUNTY LINE RANCH	AGRICULTURAL CROP PRODUCTION											X	
S	4692	BELLANAVE CORPORATION	DAIRY FARM											X	
S	4693	WEST KERN DAIRY	DAIRY FARM											X	
S	4803	MARTIN HEIN RANCH COMPANY - PA2	AGRICULTURAL CROP PRODUCTION											X	
S	4835	TRILOGY DAIRY LP	DAIRY FARMS											X	
S	5058	HILARIDES DAIRY	AGRICULTURAL CROP PRODUCTION, DAIRY							X				X	
S	5139	GOYENETCHE DAIRY	DAIRY FARM											X	
S	5265	MAPLE DAIRY	DAIRY OPERATION											X	
S	6331	WM. BOLTHOUSE FARMS INC	AGRICULTURAL CROP PRODUCTION											X	
S	7063	CALIFORNIA DAIRIES, INC	MILK PROCESSING/DAIRY PRODUCTS MANUFACTURER			X			X					X	
S	7589	MARTIN HEIN RANCH COMPANY PRE ALMONDS 8	AGRICULTURAL CROP PRODUCTION											X	
S	7858	ALL AMERICAN OIL & GAS INC.	OIL AND NATURAL GAS PRODUCTION		X	X									
S	8282	VINTAGE PRODUCTION CALIFORNIA LLC	OIL AND NATURAL GAS PRODUCTION											X	

## Chapter 4: NOx Rule Evaluations

This chapter summarizes the results of a literature review and evaluation of the District's stationary and area source regulations that control NOx emissions to ensure that all District NOx prohibitory rules satisfy RACT requirements. District staff in multiple departments with expertise in these various sectors contributed to this effort. The RACT evaluations in this chapter capture relevant background information and compare each District rule against federal rules, state regulations, and comparable rules from California's most technologically progressive air districts. The applicability, stringency, and enforceability of every District NOx rule was reviewed to ensure all rules meet or exceed federal RACT requirements.

**Table 5. District Rules Analyzed for this 2014 RACT SIP Demonstration**

Rule #	Rule Name	Adopted	Last Amended	Pollutant(s) Controlled
4103	Open Burning	6/18/1992	4/15/2010	NOx, VOC, SOx, PM
4301	Fuel Burning Equipment	5/21/1992	12/17/1992	NOx, Sox
4306	Boilers, Steam Generators, and Process Heaters—Phase 3	9/18/2003	10/16/2008	NOx, CO
4307	Boilers, Steam Generators, and Process Heaters—2.0 MMBtu/hr to 5.0 MMBtu/hr	12/15/2005	5/19/2011	NOx, SOx, PM, CO
4308	Boilers, Steam Generators, and Process Heaters—0.075 MMBtu/hr to less than 2.0 MMBtu/hr	10/20/2005	11/14/2013	NOx, CO
4309	Dryers, Dehydrators, and Ovens	12/15/2005	N/A	NOx, CO
4311	Flares	6/20/2002	6/18/2009	NOx, VOC, Sox
4313	Lime Kilns	3/27/2003	N/A	NOx
4352	Solid Fuel Fired Boilers, Steam Generators, and Process Heaters	9/14/1994	12/15/2011	NOx, CO
4354	Glass Melting Furnaces	9/14/1994	5/19/2011	NOx, VOC, SOx, PM, CO
4702	Internal Combustion Engines	8/21/2003	11/14/2013	NOx, VOC, SOx, CO
4703	Stationary Gas Turbines	8/18/1994	9/20/2007	NOx, CO

The following three NO<sub>x</sub> prohibitory rules, as established in the 2011 EPA Technical Support Document (TSD) for the *2009 RACT SIP*,<sup>26</sup> are not required to be evaluated for RACT under CAA Section 182 because there are no sources subject to these rules at major sources.

- Rule 4106 (Prescribed Burning and Hazard Reduction Burning)
- Rule 4902 (Residential Water Heaters)
- Rule 4905 (Natural Gas-Fired, Fan-Type Residential Central Furnaces)

#### 4.1 CHAPTER 4 ORGANIZATION AND EVALUATION

Each rule evaluation in this chapter includes a brief overview of the source category; a list of the applicable federal, state, and local regulations; a list of any new regulatory actions since the previous RACT approval, including an assessment of RACT for any new actions; and a conclusion regarding whether the rule satisfies RACT requirements. A detailed analysis will not be conducted for each rule if no changes have been made to the applicable federal, state, and local regulations since a detailed analysis was performed for the *2009 RACT SIP*, and that demonstration resulted in EPA concurrence that District rules meet or exceed RACT levels of control.

The sections below elaborate upon the information presented in each rule evaluation.

##### ***Source Category***

This section specifies what units or type of operations are affected by the rule, identifies the type(s) of emissions the rule controls, and, as necessary, provides additional pertinent details about the source category.

##### ***Applicable Regulations***

District rules are compared to federal, state, and local (meaning regulations at the air district level) air quality regulations to ensure that each rule continues to meet or exceed RACT requirements. This section lists any federal, state, and local regulations that apply to the particular source category. Applicable regulations include the following:

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<sup>26</sup> EPA (August 29, 2011). Technical Support Document for EPA's Evaluation of San Joaquin Valley Unified Air Pollution Control District, Reasonably Available Control Technology (RACT) Demonstration for Ozone State Implementation Plan (SIP) Adopted April 16, 2009. Retrieved from: <http://www.regulations.gov/#!documentDetail;D=EPA-R09-OAR-2011-0723-0006>

## Federal Regulations

Federal regulations include the following regulations and guidance documents:

- **CTG**: Control Techniques Guidelines<sup>27</sup>
- **ACT**: Alternative Control Techniques<sup>28</sup>
- **NSPS**: New Source Performance Standards<sup>29</sup>
- **NESHAP**: National Emission Standards for Hazardous Air Pollutants<sup>30</sup>
- **MACT**: Maximum Achievable Control Technology<sup>31</sup>

## State Regulations

Generally, state regulations are specific to mobile sources and consumer products. However, there are some California Health and Safety Code (CH&SC) requirements and ARB Airborne Toxic Control Measures (ATCM)<sup>32</sup> that apply to stationary and area sources. While most of the rules evaluated in this 2014 RACT SIP do not have a state regulation associated with their source category, any relevant state guidelines are listed within this section.

## Local Regulations

As agreed to by EPA staff for the 2009 RACT SIP, District rules are compared to analogous regulations adopted by California's most progressive air districts. As such, the regulations listed in this section include, but are not limited to, the following air districts:

- **SCAQMD**: South Coast Air Quality Management District
- **SMAQMD**: Sacramento Metropolitan Air Quality Management District
- **BAAQMD**: Bay Area Air Quality Management District
- **VCAPCD**: Ventura County Air Pollution Control District

## Regulatory Actions Since Previous RACT Approval

This section begins with a table summarizing any regulatory actions that have occurred since EPA previously approved the District rule as satisfying RACT requirements (refer to the sample Table 6 below). The first column provides the most recent year that EPA previously approved the rule as meeting RACT requirements. The second, third, and fourth columns identify if there have been new or amended federal, state, or local regulations adopted *after* the date of the previous EPA approved RACT determination.

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<sup>27</sup> EPA. Control Techniques Guidelines. Retrieved from: <http://www.epa.gov/groundlevelozone/SIPToolkit/ctgs.html>

<sup>28</sup> EPA. Alternative Control Techniques. Retrieved from: <http://www.epa.gov/groundlevelozone/SIPToolkit/ctgs.html>

<sup>29</sup> EPA. 40 CFR 60 – Standards of Performance for New Stationary Sources (NSPS). Retrieved from: <http://www.tceq.state.tx.us/permitting/air/rules/federal/60/60hmpg.html>

<sup>30</sup> EPA. 40 CFR 61 – National Emission Standards for Hazardous Air Pollutants (NESHAPs). Retrieved from: <http://www.tceq.state.tx.us/permitting/air/rules/federal/61/61hmpg.html>

<sup>31</sup> EPA. 40 CFR 63 – Maximum Achievable Control Technology (MACT). Retrieved from: <http://www.tceq.state.tx.us/permitting/air/rules/federal/63/63hmpg.html>

<sup>32</sup> California Air Resources Board (ARB). Airborne Toxic Control Measures (ATCMs). Retrieved from: <http://www.arb.ca.gov/toxics/atcm/atcm.htm>

Table 6. Sample Table for Regulatory Actions Since Previous RACT Approval

Year of Previous RACT Approval	Federal	State	Local
XXXX <sup>33</sup>	List of actions, if applicable	List of actions, if applicable	List of actions, if applicable

If new or amended regulations have been adopted after the previous RACT determination, then there is a potential for a new RACT standard. Potential new RACT standards are discussed in further detail and evaluated using the following key factors:

- **Technological Feasibility** – The technological feasibility analysis determines if a potential opportunity to reduce emissions is viable for existing facilities and operators in the Valley, given their current operating needs and restrictions. District analysis of technological feasibility includes a literature review of Best Available Control Technology (BACT) guidelines, District permits, and environmental and technological studies to identify potential opportunities and determine the technological feasibility of any identified potential opportunities. Since BACT requirements are typically the best available technology for a category of units, BACT is required for facilities that are proposing new installations or modifications to existing ones and may not necessarily be technologically feasible for retrofits in all existing facilities.
- **Cost Effectiveness** – The purpose of conducting a cost effectiveness analysis is to evaluate the economic reasonableness of an air pollution control measure or technology as it applies to operators in the Valley. A cost effectiveness analysis examines the added cost, in dollars per year, of the control technology or technique, divided by the emissions reductions achieved, in tons per year.

The evaluation of any potential new RACT standards draws from a literature review of recent staff reports for District rules; analyses from the *2009 RACT SIP*, *2012 PM2.5 Plan*, and *2013 Ozone Plan*; and applicable study data from the scientific community. These recent analyses are examined to determine if any potential new RACT standards identified have already been evaluated thoroughly for technological feasibility and cost effectiveness.

### ***Conclusion***

This section summarizes whether each District rule meets federal RACT standards.

<sup>33</sup> A citation and link to the Federal Register notice of the previous RACT approval is included as a footnote for each NOx prohibitory rule evaluation.

## **RULE 4103 OPEN BURNING**

### **Source Category**

This rule applies to open burning conducted in the Valley, with the exception of prescribed burning and hazard reduction burning as defined in Rule 4106 (Prescribed Burning and Hazard Reduction Burning). The purpose of this rule is to permit, regulate, and coordinate the use of open burning while minimizing smoke impacts on the public. Since open burning emissions are fugitive in nature, there are no major sources of emissions under this source category. However, in its effort to continually reduce NO<sub>x</sub> emissions and achieve attainment with federal NAAQS, the District has included Rule 4103 in the *2014 RACT SIP*.

Outside the scope of the *2009 RACT SIP* and *2014 RACT SIP*, the District is continually reevaluating this source category for potential and feasible opportunities to further reduce emissions. In 2010, the District evaluated each crop category identified in CH&SC Section 41855.5 to determine any technologically and economically feasible alternatives to open burning, and amended Rule 4103 to incorporate CH&SC requirements and to commit the District to review its determinations for any postponed crops and materials at least once every five years. When the District submitted the 2010 report and rule amendments to ARB, they provided a two year concurrence on the District's recommended postponements. As a result, the District reevaluated the availability of alternatives to open burning in May 2012 and found that the recommendations for postponement of certain crop categories are still valid and submitted a report of those findings to ARB, followed by additional support documentation in the form of a letter titled, "*Update on SJV Citrus Orchard Material Burning Restrictions.*" This analysis was in addition to the five-year commitment made by the District. Per requirements in Rule 4103, the District is committed to reevaluating this source category again in 2015.

### **Applicable Regulations**

#### **Federal Regulations**

There are no EPA CTG, ACT, NSPS, NESHAP, or MACT requirements for this source category.

#### **State Regulations**

- CH&SC Sections 41850-41866 (Agricultural Burning)

#### **Local Regulations**

##### **SCAQMD**

- Rule 444 (Open Burning)

##### **BAAQMD**

- Regulation 5 (Open Burning)

**SMAQMD**

- Rule 407 (Open Burning)
- Rule 501 (Agricultural Burning)

**VCAPCD**

- Rule 56 (Open Burning)

**Placer County Air Pollution Control District (PCAPCD)**

- Rule 302 (Agricultural Burning Smoke Management)

**Regulatory Actions Since Previous RACT Approval**

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>34</sup>	None	None	SCAQMD Rule 444 BAAQMD Regulation 5 PCAPCD Rule 302

**SCAQMD Rule 444** was amended on July 12, 2013 to include beach burning in the rule applicability. The amendments apply to sources that do not exist within District boundaries. District Rule 4103 is still as stringent as SCAQMD Rule 444.

**BAAQMD Regulation 5** was amended on June 19, 2013 to add new fee requirements. The amendments did not implement any requirements more stringent than the current requirements in District Rule 4103.

**PCAPCD Rule 302** was amended on February 9, 2012; however, the amendments were administrative in nature and did not implement any requirements more stringent than the current requirements in District Rule 4103.

**Conclusion**

District Rule 4103 is at least as stringent as other applicable air districts' rules. As previously mentioned, there are no major sources of emissions under this source category, and this rule will continue to be evaluated for potential enhancements as part of the upcoming attainment plan.

<sup>34</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

## RULE 4301 FUEL BURNING EQUIPMENT

### Source Category

This rule applies to any fuel burning equipment except air pollution control equipment which is listed as exempt in Section 4.0 of the rule. The purpose of this rule is to limit emissions of air contaminants from fuel burning equipment by specifying maximum emission rates for sulfur dioxide (SO<sub>x</sub>), NO<sub>x</sub>, and particulate matter (PM) (identified in the rule as combustion contaminant emissions).

### Applicable Regulations

#### Federal Regulations

Facilities subject to Rule 4301 are subject to various federal requirements, such as CTG, ACT, NSPS, NESHAP, and MACT requirements. However, several District rules, including Rules 4306, 4307, 4308, 4309, and 4352, have superseded Rule 4301 with more stringent NO<sub>x</sub> requirements for fuel burning equipment. The applicable federal regulations are listed within the individual rule evaluations within this chapter.

#### State Regulations

There are no state rules or regulations that apply to this source category.

#### Local Regulations

BAAQMD, SMAQMD, and VCAPCD do not have any rules similar to District Rule 4301.

#### SCAQMD

- Rule 474 (Fuel Burning Equipment—Oxides of Nitrogen)

### Regulatory Actions Since Previous RACT Approval

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>35</sup>	None	None	None

As previously mentioned, several District rules have superseded Rule 4301 with more stringent NO<sub>x</sub> requirements for fuel burning equipment. Comparisons of those District rules to any new federal, state, and local regulatory actions are discussed within the individual rule evaluations in this chapter.

### Conclusion

District Rule 4301 alone cannot be considered to fulfill RACT requirements for this source category. The NO<sub>x</sub> requirements of this rule have been superseded by the requirements of other District rules that satisfy RACT for fuel burning equipment since all units subject to Rule 4301 are subject to a more specific NO<sub>x</sub> rule discussed elsewhere in this RACT SIP analysis.

<sup>35</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

## **RULE 4306 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS — PHASE 3**

### **Source Category**

This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input greater than 5 million British thermal units per hour (MMBtu/hr). The purpose of Rule 4306 is to limit NO<sub>x</sub> and carbon monoxide (CO) emissions from units of this size range.

The most recent amendment of Rule 4306 in October 2008 was initially proposed to lower the NO<sub>x</sub> emission limit from 9 ppmv to 6 ppmv for units greater than 20 MMBtu/hr. It was determined that the proposed NO<sub>x</sub> emission limits could be accomplished by using selective catalytic reduction (SCR) or a combination of SCR and ultra-low NO<sub>x</sub> burners (ULNBs), thus making the lower limits technologically feasible. However, through the public workshop process and additional research, it was determined that most of the units subject to Rule 4306 have undergone several generations of NO<sub>x</sub> controls; consequently, certain applications of SCR may not be feasible due to cost effectiveness and/or technological infeasibility because of physical limitations. Therefore, the lower NO<sub>x</sub> limits were included in new Rule 4320 (Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr), which includes an option allowing for the payment of an annual emissions fee based on total actual emissions, rather than installation of additional (and significantly more costly) NO<sub>x</sub> controls. As a complementary rule to Rule 4306, Rule 4320 goes beyond RACT requirements. EPA approved Rule 4320 as a SIP-strengthening rule after they approved Rule 4306 as meeting RACT requirements. As such, Rule 4306 demonstrates RACT for this source category.

### **Applicable Regulations**

#### **Federal Regulations**

There are no EPA CTG requirements for this source category.

#### **ACT**

- EPA-453/R-93-034 (Alternative Control Techniques Document—NO<sub>x</sub> Emissions from Process Heaters)
- EPA –453/R-94-022 (Alternative Control Techniques Document—NO<sub>x</sub> Emissions from Industrial/Commercial/Institutional Boilers)
- EPA – 453/R-94-023 (Alternative Control Techniques Document—NO<sub>x</sub> Emissions from Utility Boilers)

#### **NSPS**

- 40 CFR 60 Subpart D (Standards of Performance for Fossil-Fuel Fired Steam Generators for Which Construction Is Commenced After August 17, 1971)
- 40 CFR 60 Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units)

- 40 CFR 60 Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units)

#### **NESHAP/MACT**

- 40 CFR 63 Subpart DDDDD (NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters)

### **State Regulations**

There are no state rules or regulations that apply to this source category.

### **Local Regulations**

#### **SCAQMD**

- Rule 1146 (Emissions of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters)

#### **BAAQMD**

- Regulation 9 Rule 7 (Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional and Commercial Boilers, Steam Generators and Process Heaters)
- Regulation 9 Rule 10 (Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries)

#### **SMAQMD**

- Rule 411 (NO<sub>x</sub> from Boilers, Process Heaters and Steam Generators)

#### **VCAPCD**

- Rule 74.15 (Boilers, Steam Generators and Process Heaters)

### **Regulatory Actions Since Previous RACT Approval**

<b>Year of Previous RACT Approval</b>	<b>Federal</b>	<b>State</b>	<b>Local</b>
2012 <sup>36</sup>	40 CFR 60 Subpart D 40 CFR 60 Subpart Db 40 CFR 60 Subpart Dc 40 CFR 63 Subpart DDDDD	None	BAAQMD Regulation 9 Rule 10

**40 CFR 60 Subparts D, Db, and Dc** were amended by EPA on February 16, 2012 to incorporate several technical clarifications and corrections to existing provisions in each of the subparts. The amendments did not modify any of the NO<sub>x</sub> emission standards contained within these regulations. Rule 4306 is still at least as stringent as these NSPS requirements.

<sup>36</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

**40 CFR 63 Subpart DDDDD** was recently amended on January 31, 2013. The amendments included new emission limits for PM, CO, and total selective metals (TSM); new subcategories of facilities; and alternative monitoring approaches for compliance with the PM limit. The amendments did not affect the NO<sub>x</sub> emission limits. District Rule 4306 is still at least as stringent as 40 CFR 63 Subpart DDDDD.

**BAAQMD Regulation 9 Rule 10** was recently amended on October 16, 2013. The amendments included adding a voluntary NO<sub>x</sub> standard for pre-1994 refinery heaters, a requirement for pre-1994 refinery heaters to use continuous emissions monitoring systems (CEMS), and a requirement for each refinery to submit a heater status report to be updated whenever a burner is changed or replaced. The voluntary NO<sub>x</sub> standard for pre-1994 heaters would allow applicable units to switch from the current average emission rate limit of 0.033 lb NO<sub>x</sub>/MMBtu to a daily total mass emission limit based on a representative 10 day sampling period during which the devices are in compliance. These amendments were administrative in nature and did not reduce emissions. District Rule 4306 is still as stringent as BAAQMD Regulation 9 Rule 10.

### **Conclusion**

District Rule 4306 is as stringent as the applicable federal regulations and other air districts' rules. Rule 4306 meets or exceeds RACT requirements for this source category.

**RULE 4307 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS – 2.0 MMBTU/HR TO 5.0 MMBTU/HR****Source Category**

This rule applies to any gaseous fuel or liquid fuel fired boiler, steam generator, or process heater with a total rated heat input of 2.0 million British thermal units per hour (MMBtu/hr) up to and including 5.0 MMBtu/hr. The purpose of this rule is to limit emissions of NO<sub>x</sub>, carbon monoxide (CO), oxides of sulfur (SO<sub>x</sub>), and particulate matter (PM) from these units.

**Applicable Regulations****Federal Regulations**

There are no EPA CTG or NSPS requirements for this source category.

**ACT**

- EPA – 453/R-93-034 (Alternative Control Techniques Document – NO<sub>x</sub> Emissions from Process Heaters)
- EPA – 453/R-94-022 (Alternative Control Techniques Document – NO<sub>x</sub> Emissions from Industrial/Commercial/Institutional Boilers)
- EPA – 453/R-94-023 (Alternative Control Techniques Document – NO<sub>x</sub> Emissions from Utility Boilers)

**NESHAP/MACT**

- 40 CFR 63 Subpart DDDDD (NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters)

**State Regulations**

There are no state rules or regulations that apply to this source category.

**Local Regulations****SCAQMD**

- Rule 1146.1 (Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters)

**BAAQMD**

- Regulation 9 Rule 7 (Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters)
- Regulation 9 Rule 10 (Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries)

**SMAQMD**

- Rule 411 (NO<sub>x</sub> from Boilers, Process Heaters and Steam Generators)

**VCAPCD**

- Rule 74.15.1 (Boilers, Steam Generators, and Process Heaters)

**Regulatory Actions Since Previous RACT Approval**

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>37</sup>	40 CFR 63 Subpart DDDDD	None	BAAQMD Regulation 9 Rule 10 VCAPCD Rule 74.15.1

**40 CFR 63 Subpart DDDDD** was recently amended on January 31, 2013. The amendments included new emission limits for PM, CO, and total selective metals (TSM); new subcategories of facilities; and alternative monitoring approaches for compliance with the PM limit. The amendments did not affect the NO<sub>x</sub> emission limits. District Rule 4307 is still at least as stringent as 40 CFR 63 Subpart DDDDD.

**BAAQMD Regulation 9 Rule 10** was amended on October 16, 2013. The amendments included adding a voluntary NO<sub>x</sub> standard for pre-1994 heaters, a requirement for pre-1994 heaters to use CEMS, and a requirement for each refinery to submit a heater status report to be updated whenever a burner is changed or replaced. The voluntary NO<sub>x</sub> standard would allow applicable units to switch from the current emission limit of 0.033 lb/MMBtu of NO<sub>x</sub> to a daily total mass emission limit based on a representative 10 day sampling period during which the devices were in compliance. These amendments were administrative in nature and did not reduce emissions. District Rule 4307 is still as stringent as BAAQMD Regulation 9 Rule 10.

**VCAPCD Rule 74.15.1** was amended on September 11, 2012 to lower the NO<sub>x</sub> emission limits for units with a rated heat input capacity between 1.0 and 2.0 MMBtu/hr, to increase the frequency of compliance testing for units with a rated heat input capacity between 2.0 and 5.0 MMBtu/hr, and to incorporate other administrative recordkeeping requirements. The lower NO<sub>x</sub> emission limits apply to units outside the size range of units subject to District Rule 4307 and rather apply to units subject to District Rule 4308. Those lower NO<sub>x</sub> emission limits have already been incorporated into Rule 4308. In addition, the more frequent compliance testing requirement and other administrative amendments are not emission reduction measures. District Rule 4307 is still as stringent as VCAPCD Rule 74.15.1.

**Conclusion**

District Rule 4307 is as stringent as the applicable federal regulations and other air districts' rules. Rule 4307 meets or exceeds RACT requirements for this source category.

<sup>37</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

**RULE 4308 BOILERS, STEAM GENERATORS, AND PROCESS HEATERS—0.075 MMBTU/HR TO LESS THAN 2.0 MMBTU/HR****Source Category**

This rule applies to any person who supplies, sells, offers for sale, installs, or solicits the installation of any boiler, steam generator, process heater, or water heater with a rated heat input capacity greater than or equal to 0.075 MMBtu/hr and less than 2.0 MMBtu/hr. The purpose of this rule is to limit NO<sub>x</sub> and carbon monoxide (CO) emissions from units within this source category.

**Applicable Regulations****Federal Regulations**

There are no EPA CTG, NSPS, NESHAP, or MACT requirements for boilers, steam generators, and process heaters of this size.

**ACT**

- EPA – 453/R-93-034 (Alternative Control Techniques Document—NO<sub>x</sub> Emissions from Process Heaters)
- EPA – 453/R-94-022 (Alternative Control Techniques Document—NO<sub>x</sub> Emissions from Industrial/Commercial/ Institutional Boilers)
- EPA – 453/R-94-023 (Alternative Control Techniques Document—NO<sub>x</sub> Emissions from Utility Boilers)

**State Regulations**

There are no state rules or regulations that apply to this source category.

**Local Regulations****SCAQMD**

- Rule 1146.2 (Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters)

**BAAQMD**

- Regulation 9 Rule 6 (Nitrogen Oxides Emissions from Natural Gas-Fired Boilers and Water Heaters)
- Regulation 9 Rule 7 (Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters)

**SMAQMD**

- Rule 411 (NO<sub>x</sub> from Boilers, Process Heaters and Steam Generators)
- Rule 414 (Water Heaters, Boilers and Process Heaters Rated less than 1,000,000 Btu Per Hour)

**VCAPCD**

- Rule 74.11.1 (Large Water Heaters and Small Boilers)
- Rule 74.15.1 (Boilers, Steam Generators, and Process Heaters)

**Regulatory Actions Since Previous RACT Approval**

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>38</sup>	None	None	VCAPCD Rule 74.11.1 VCAPCD Rule 74.15.1

**VCAPCD Rule 74.11.1** was amended on September 11, 2012 to implement a 20 ppmv NOx emission limit for all natural gas fired units with a rated heat input of 0.075-1.0 MMBtu/hr. District Rule 4308 was recently amended on November 14, 2013 to lower the NOx emission limit from 55 ppmv to 20 ppmv for natural gas fired instantaneous units with a rated heat input of 0.075-0.4 MMBtu/hr, and units 0.4-1.0 MMBtu/hr have been subject to a 20 ppmv NOx emission limit for several years. District Rule 4308 is at least as stringent as VCAPCD Rule 74.11.1.

**VCAPCD Rule 74.15.1** was also amended on September 11, 2012. The amendments incorporated a 20 ppmv NOx emission limit for natural gas fired units 1-2MMBtu/hr and other administrative recordkeeping requirements. Rule 4308 contains a 20 ppmv NOx emission limit for all natural gas fired units 1-2 MMBtu/hr so the amendments did not implement any requirements more stringent than the requirements in District Rule 4308.

**Conclusion**

District Rule 4308 is as stringent as the applicable federal regulations and other air districts' rules. Rule 4308 meets or exceeds RACT requirements for this source category.

<sup>38</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

**RULE 4309 DRYERS, DEHYDRATORS, AND OVENS****Source Category**

This rule applies to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input for the unit is 5.0 million British thermal units per hour (MMBtu/hr) or greater. The purpose of this rule is to limit emissions of NO<sub>x</sub> and CO from this source category.

**Applicable Regulations****Federal Regulations**

There are no EPA CTG, NSPS, NESHAP, or MACT requirements for this source category.

**ACT**

- EPA – 453/R-94-004 (Alternative Control Techniques Document – NO<sub>x</sub> Emissions from Cement Manufacturing)

**State Regulations**

There are no state rules or regulations that apply to this source category.

**Local Regulations**

BAAQMD, SMAQMD, and VCAPCD do not have an analogous rule to Rule 4309.

**SCAQMD**

- SCAQMD Rule 1147 (NO<sub>x</sub> Reductions from Miscellaneous Sources)

**Regulatory Actions Since Previous RACT Approval**

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>39</sup>	None	None	None

**Conclusion**

Since there have been no revisions to any federal, state, or local regulations since EPA last approved this rule as meeting RACT, District Rule 4309 is as stringent as the applicable regulations and therefore, Rule 4309 meets or exceeds RACT requirements for this source category.

<sup>39</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

## **RULE 4311 FLARES**

### **Source Category**

The purpose of this rule is to limit the emissions of VOC, NO<sub>x</sub>, and sulfur oxides (SO<sub>x</sub>) from the operation of flares.

### **Applicable Regulations**

#### **Federal Regulations**

There are no EPA CTG or ACT requirements for this source category.

#### **NSPS**

- 40 CFR 60.18 (General Control Device and Work Practice Requirements)
- 40 CFR 65.147 (Flares)
- 40 CFR 60 Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution)
- 40 CFR 60 Subpart Ja (Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007)

#### **NESHAP/MACT**

- 40 CFR 63 Subpart SS (National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process)

#### **State Regulations**

There are no state rules or regulations that apply to this source category.

#### **Local Regulations**

SMAQMD and VCAPCD do not have an analogous rule for this source category.

#### **SCAQMD**

- SCAQMD Rule 1118 (Control of Emissions from Refinery Flares)

#### **BAAQMD**

- Regulation 12 Rule 11 (Flare Monitoring at Petroleum Refineries)
- Regulation 12 Rule 12 (Flares at Petroleum Refineries)

#### **Santa Barbara Air Pollution Control District (SBAPCD)**

- Rule 359 (Flares and Thermal Oxidizers)

### Regulatory Actions Since Previous RACT Approval

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>40</sup>	40 CFR 60 Subpart Ja 40 CFR 60 Subpart OOOO	None	None

**40 CFR 60 Subpart Ja** was amended by EPA on September 12, 2012. Amendments clarified existing requirements and applicability, including what is and what is not considered a flare modification, clarification of secondary flares, and clarification of the records that must be maintained by the operator. EPA also added new requirements to Subpart Ja as part of these amendments, including flare related unit and process descriptions, assessments, and evaluations; analyses of causes and corrective actions for reportable flaring events; and sulfur limits for petroleum refineries.

Subpart Ja does not implement more stringent requirements than District Rule 4311. While there may be some minor differences in terminology or requirements making direct comparisons not possible, the same level of controls and emission reductions are achieved through District regulations as through this NSPS. Additionally, the District's Permit Services Department continuously evaluates NSPSs on a case-by-case basis to ensure the relevant flares comply with all federal requirements as they are promulgated.

Subpart Ja has one new exemption for continuous monitoring, which allows for fewer requirements than previously required in the NSPS, and therefore, is not more stringent than current rule language.

**40 CFR 60 Subpart OOOO** is a new NSPS requirement that was finalized by EPA on August 16, 2012. This NSPS may indirectly affect some Valley flares since there is a possibility that a flare is exempt from the majority of Rule 4311 and is used as a control device for a vapor controlled tank that is subject to Subpart OOOO.

Affected facilities under this subpart that may use flares as an approved control device include centrifugal compressors, storage vessels, and onshore natural gas processing plants. If the facility chooses to meet the control requirements, then the flare must be designed and operated in accordance with §60.18(b) and must conduct the compliance determination using Method 22 at 40 CFR part 60, appendix A-7, to determine visible emissions. §60.18(b) was last amended Dec. 22, 2008, which is after the last amendment for District Rule 4311 (June 18, 2009). Therefore, Subpart OOOO has no new requirements for flares after the Rule 4311 rule amendment.

### Conclusion

District Rule 4311 is as stringent as the applicable federal regulations and other air districts' rules. Rule 4311 meets or exceeds RACT requirements for this source category. The District has completed a further study report on flares in the Valley; this

<sup>40</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

comprehensive analysis includes evaluations of submitted flare minimization plans, annual reporting data, reportable flaring event data, and of the new federal requirements which are summarized above. The analysis concludes that operators are proactively taking actions to minimize flaring and no further regulatory action is recommended at this time. The further study is expected to be available for public review in the near future and sections from that study will be included in the control measure analysis portion of the upcoming ozone plan.

**RULE 4313 LIME KILNS****Source Category**

This rule applies to the operation of lime kilns. The purpose of this rule is to limit emissions of NO<sub>x</sub> from this source category.

**Applicable Regulations****Federal Regulations**

There are no EPA CTG or ACT requirements for this source category. There is an NSPS requirement (40 CFR 60 Subpart HH) and NESHAP/MACT requirement (40 CFR 63 Subpart AAAAA) for lime manufacturing plants; however, these federal regulations only contain particulate matter requirements. The purpose of this RACT analysis is to demonstrate that the District's rules meet or exceed RACT standards for NO<sub>x</sub> requirements, so these federal regulations are not applicable to this analysis.

**State Regulations**

There are no state rules or regulations that apply to this source category.

**Local Regulations**

SCAQMD, BAAQMD, SMAQMD, and VCAPCD do not have an analogous rule for this source category.

**Regulatory Actions Since Previous RACT Approval**

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>41</sup>	None	None	None

**Conclusion**

Since there have been no new federal, state, or local regulations adopted since EPA last approved this rule as meeting RACT, District Rule 4313 meets or exceeds RACT requirements for this source category.

<sup>41</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

## **RULE 4352 SOLID FUEL FIRED BOILERS, STEAM GENERATORS, AND PROCESS HEATERS**

### **Source Category**

This rule applies to any boiler, steam generator, or process heater fired on solid fuel. The purpose of this rule is to limit emissions of NO<sub>x</sub> and carbon monoxide (CO) from solid fuel fired boilers, steam generators, and process heaters.

### **Applicable Regulations**

#### **Federal Regulations**

There are no EPA CTG requirements for this source category.

#### **ACT**

- EPA – 453/R-94-022 (Alternative Control Techniques Document – NO<sub>x</sub> Emissions from Industrial/Commercial/Institutional Boilers)
- EPA – 453/R-94-023 (Alternative Control Techniques Document – NO<sub>x</sub> Emissions from Utility Boilers)

#### **NSPS**

- 40 CFR 60 Subpart Cb (Emission Guidelines and Compliance Times for Municipal Waste Combustors that are Constructed on or before December 19, 1995)
- 40 CFR 60 Subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators for which Construction is Commenced after August 17, 1971)
- 40 CFR 60 Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units)

#### **NESHAP/MACT**

- 40 CFR 63 Subpart DDDDD (NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters)

#### **State Regulations**

There are no state rules or regulations that apply to this source category.

#### **Local Regulations**

The regulations below apply to solid fuel fired boilers. However, there are currently no solid fuel fired units subject to the NO<sub>x</sub> emission limits in the following rules in other air districts:

#### **SCAQMD**

- Rule 1146 (Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters)

**BAAQMD**

- Regulation 9 Rule 7 (Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters)
- Regulation 9 Rule 11 (Nitrogen Oxides and Carbon Monoxide from Electric Power Generating Steam Boilers)

**SMAQMD**

- Rule 411 (NO<sub>x</sub> from Boilers, Process Heaters, and Steam Generators)

**Regulatory Actions Since Previous RACT Approval**

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>42</sup>	40 CFR 60 Subpart D 40 CFR 60 Subpart Db 40 CFR 63 Subpart DDDDD	None	None

**40 CFR 60 Subparts D and Db** were amended by EPA on February 16, 2012 to incorporate several technical clarifications and corrections to existing provisions in each of the subparts. The amendments did not modify any of the NO<sub>x</sub> emission standards contained within these regulations. Therefore, Rule 4352 is still at least as stringent as these NSPS requirements.

**40 CFR 63 Subpart DDDDD** was recently amended on January 31, 2013. The amendments included new emission limits for PM, CO, and total selective metals (TSM); new subcategories of facilities; and alternative monitoring approaches for compliance with the PM limit. The amendments did not affect the NO<sub>x</sub> emission limits. District Rule 4352 is still at least as stringent as 40 CFR 63 Subpart DDDDD.

**Conclusion**

District Rule 4352 meets or exceeds RACT requirements for this source category.

<sup>42</sup> EPA (November 6, 2012). Revisions to the California State Implementation Plan, San Joaquin Valley Unified Air Pollution Control District. 77 FR 66548. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-11-06/pdf/2012-26779.pdf>

## **RULE 4354 GLASS MELTING FURNACES**

### **Source Category**

This rule applies to any glass melting furnace. The purpose of this rule is to limit emissions of NO<sub>x</sub>, VOC, carbon monoxide (CO), oxides of sulfur (SO<sub>x</sub>), and particulate matter (PM) from units subject to this rule.

### **Applicable Regulations**

#### **Federal Regulations**

There are no EPA CTG requirements for this source category.

#### **ACT**

- EPA-453/R-94-037 (Alternative Control Techniques Document –NO<sub>x</sub> Emissions from Glass Manufacturing)

#### **NSPS**

- 40 CFR 60 Subpart CC (Standards of Performance for Glass Manufacturing Plants)
- 40 CFR 60 Subpart PPP (Standards of Performance for Wool Fiberglass Insulation Manufacturing Plants)

#### **NESHAP/MACT**

- 40 CFR 61 Subpart N (National Emission Standard for Inorganic Arsenic Emissions from Glass Manufacturing Plants)
- 40 CFR 63 Subpart NNN (NESHAP for Wool Fiberglass Manufacturing)
- 40 CFR 63 Subpart SSSSSS (NESHAP for Glass Manufacturing Area Sources)

#### **State Regulations**

There are no state rules or regulations that apply to this source category.

#### **Local Regulations**

SMAQMD and VCAPCD do not have analogous rules for this source category.

#### **SCAQMD**

- Rule 1117 (Emissions of Oxides of Nitrogen from Glass Melting Furnaces)

#### **BAAQMD**

- Regulation 9 Rule 12 (Nitrogen Oxides from Glass Melting Furnaces)

**Regulatory Actions Since Previous RACT Approval**

<b>Year of Previous RACT Approval</b>	<b>Federal</b>	<b>State</b>	<b>Local</b>
2013 <sup>43</sup>	None	None	None

**Conclusion**

Since there have been no revisions to any federal, state, or local regulations since EPA last approved this rule as meeting RACT, District Rule 4354 is as stringent as the applicable regulations and therefore, Rule 4354 meets or exceeds RACT requirements for this source category.

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<sup>43</sup> EPA (January 31, 2013). Revisions to the California State Implementation Plan, San Joaquin Valley Unified Air Pollution Control District. 78 FR 6740. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2013-01-31/pdf/2013-02015.pdf>

## **RULE 4702 INTERNAL COMBUSTION ENGINES**

### **Source Category**

This rule applies to any internal combustion engine rated at 25 brake horsepower or greater. The purpose of this rule is to limit emissions of NO<sub>x</sub>, VOC, carbon monoxide (CO), and sulfur oxides (SO<sub>x</sub>) from this source category.

### **Applicable Regulations**

#### **Federal Regulations**

There are no EPA CTG requirements for this source category. Rule 4702 is at least as stringent as the following applicable federal regulations:

#### **ACT**

- EPA – 453/R-93-032 (Alternative Control Techniques Document – NO<sub>x</sub> Emissions from Stationary Reciprocating Internal Combustion Engines)

#### **NSPS**

- 40 CFR 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines)
- 40 CFR 60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

#### **NESHAP/MACT**

- 40 CFR 63 Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines)

#### **State Regulations**

The following state regulations apply to sources covered under Rule 4702 (District enforced through permitting process):

- 17 CCR 93114 (ATCM to Reduce Particulate Emissions from Diesel-Fueled Engines—Standards for Nonvehicular Diesel Fuel)
- 17 CCR 93115 (ATCM for Stationary Compression Ignition Engines)

#### **Local Regulations**

#### **BAAQMD**

- Regulation 9 Rule 8 (Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines)

#### **SMAQMD**

- Rule 412 (Stationary Internal Combustion Engines Located at Major Stationary Sources of NO<sub>x</sub>)

**VCAPCD**

- Rule 74.9 (Stationary Internal Combustion Engines)

**SCAQMD**

- Rule 1110.2 (Emissions from Gaseous- and Liquid-Fueled Engines)

**Regulatory Actions Since Previous RACT Approval**

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>44</sup>	40 CFR 60 Subparts IIII and JJJJ 40 CFR 63 Subpart ZZZZ	None	SCAQMD Rule 1110.2

**40 CFR 60 Subpart IIII and Subpart JJJJ** were both amended on January 30, 2013. Amendments modified limits on the hours that stationary emergency engines may be used for emergency demand response and established fuel and reporting requirements for certain emergency engines. These amendments were administrative in nature and did not implement any requirements more stringent than the current requirements in District Rule 4702.

**40 CFR 63 Subpart ZZZZ** was amended on January 30, 2013 to replace the emission limits for existing spark ignition 4-stroke engines rated greater than 500 horsepower with requirements to install and annually test catalytic controls. Amendments also incorporated several administrative changes and other changes not applicable to sources subject to Rule 4702. These amendments were administrative in nature and did not implement any requirements more stringent than the current requirements in District Rule 4702.

**SCAQMD Rule 1110.2** has a NO<sub>x</sub> emission limit of 11 ppmv for most engine categories, which is lower than some of the NO<sub>x</sub> emission limits in Rule 4702. As discussed below, this limit is beyond RACT and is actually infeasible for certain categories.

- Lowering the NO<sub>x</sub> emission limit for waste gas engines: SCAQMD amended Rule 1110.2 in September 2012 to extend the compliance deadline for waste gas engines from 2012 to 2016. At this time, it is unclear whether a NO<sub>x</sub> emission limit of 11 ppmv is technologically feasible and cost effective for waste gas units because SCAQMD has not yet completed their Final Technology Assessment of control technologies for waste gas engines. The SCAQMD compliance deadline was extended to 2016 to allow for more time to finish the assessment. The District will review the results of this study upon SCAQMD's completion.
- Lowering the NO<sub>x</sub> emission limit for spark-ignited non-agricultural engines: as part of the August 2011 amendment of Rule 4702, the District analyzed the technological

<sup>44</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

and cost effectiveness of an 11 ppmv NO<sub>x</sub> emission limit for all engines in this category, but determined that this was infeasible for certain categories of engines. See pages 9 through 11 of the 2011 staff report for more detailed information: [http://www.valleyair.org/Board\\_meetings/GB/agenda\\_minutes/Agenda/2011/August/Agenda\\_Item\\_10\\_Aug\\_18\\_2011.pdf](http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2011/August/Agenda_Item_10_Aug_18_2011.pdf)

- Lowering the NO<sub>x</sub> emission limit for spark-ignited agricultural engines: the District evaluated the possibility of reducing the NO<sub>x</sub> emission limits for spark-ignited agricultural engines. The SCAQMD limit is beyond RACT for spark-ignited agricultural engines because it has not yet been proven as technologically feasible in agricultural settings, it is not cost effective, and could therefore potentially have devastating socioeconomic impacts on the Valley.

These engines have only recently been required to install emission control devices and comply with the current NO<sub>x</sub> limits in Rule 4702. As discussed in the 2011 *Final Staff Report for the Revised Proposed Amendments to Rule 4702*.<sup>45</sup> The District is still evaluating the effectiveness and implementation issues associated with the control systems currently in place for these engines. These systems have faced challenges due to the nature of agricultural engine installations, including remote locations, fluctuations in gas pressures, and unattended operations. While the technologies are capable of meeting the NO<sub>x</sub> emission limits currently in place for agricultural spark-ignited engines, it has not been determined yet if it is technologically feasible to reach lower limits with these controls for agricultural spark-ignited engines.

Additionally, the current NO<sub>x</sub> limits are appropriate for agricultural spark-ignited engines considering the potential economic impacts that more stringent NO<sub>x</sub> limits could create for Valley agriculture. Due to the economic downturn, rising regulatory costs, and the extreme drought experienced in the Valley, the agricultural industry is currently facing economic challenges. Unlike agricultural diesel engines, agricultural spark-ignited engines are not eligible for Moyer incentive funding which has helped reduce the economic impacts associated with compliance costs for diesel engines. Furthermore, agriculture's inability to pass the increased production costs on to consumers makes it difficult for agriculture to absorb the compliance costs associated with more stringent limits.

Another important consideration is that the NO<sub>x</sub> limits in place prevent agricultural operators from replacing agricultural spark-ignited engines with diesel engines. In light of the different requirements and related compliance costs for spark-ignited engines and diesel engines, the District was made aware during the 2005 amendment of Rule 4702 that operators would likely replace an agricultural spark-ignited engine with a diesel engine if the emission limits for spark-ignited engines

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<sup>45</sup> SJVUAPCD (August 18, 2011). Final Staff Report for the Revised Proposed Amendments to Rule 4702. Retrieved from: [http://www.valleyair.org/Board\\_meetings/GB/agenda\\_minutes/Agenda/2011/August/Agenda\\_Item\\_10\\_Aug\\_18\\_2011.pdf](http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2011/August/Agenda_Item_10_Aug_18_2011.pdf)

were too stringent.<sup>46</sup> To prevent, or minimize, these instances, the District made the requirements for spark-ignited engines and diesel engines as comparable as reasonable; as supported by the rule limits and compliance dates.

**Conclusion**

District Rule 4702 meets or exceeds RACT requirements for this source category.

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<sup>46</sup> SJVUAPCD (June 16, 2005). Board Item to Adopt the Revised Proposed Amendments to Rule 4702. Retrieved from: [http://www.valleyair.org/Board\\_meetings/GB/agenda\\_minutes/Agenda/2005/2005-June-16/Item-9/GB\\_Agenda\\_2005\\_June\\_16\\_Item-9.pdf](http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2005/2005-June-16/Item-9/GB_Agenda_2005_June_16_Item-9.pdf)

## **RULE 4703 STATIONARY GAS TURBINES**

### **Source Category**

This rule applies to all stationary gas turbine systems, which are subject to District permitting requirements, and with electrical generation ratings equal to or greater than 0.3 megawatt (MW) or a maximum heat input rating of more than 3.0 million British thermal units per hour (MMBtu/hr). The purpose of this rule is to limit NO<sub>x</sub> emissions from stationary gas turbine engines.

### **Regulatory Evaluation**

#### **Federal Regulations**

There are no EPA CTG requirements for this source category.

#### **ACT**

- EPA –435/R-93-007 (Alternative Control Techniques Document—NO<sub>x</sub> Emissions from Stationary Gas Turbines)

#### **NSPS**

- 40 CFR 60 Subpart GG (Standards of Performance for Stationary Gas Turbines)
- 40 CFR 60 Subpart KKKK (Standards of Performance for Stationary Combustion Turbines)

#### **NESHAP/MACT**

- 40 CFR 63 Subpart YYYY (NESHAP for Stationary Combustion Turbines)

#### **State Regulations**

There are no state rules or regulations that apply to this source category.

#### **Local Regulations**

#### **SCAQMD**

- Rule 1134 (Emissions of Oxides of Nitrogen from Stationary Gas Turbines)

#### **BAAQMD**

- Regulation 9 Rule 9 (Nitrogen Oxides from Stationary Gas Turbines)

#### **SMAQMD**

- Rule 413 (Stationary Gas Turbines)

#### **VCAPCD**

- Rule 74.23 (Stationary Gas Turbines)

**Regulatory Actions Since Previous RACT Approval**

Year of Previous RACT Approval	Federal	State	Local
2012 <sup>47</sup>	None	None	None

**Conclusion**

Since there have been no revisions to any federal, state, or local regulations since EPA last approved this rule as meeting RACT, District Rule 4703 is as stringent as the applicable regulations and therefore, Rule 4703 meets or exceeds RACT requirements for this source category.

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<sup>47</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

## Chapter 5: Additional Sources of NO<sub>x</sub> Emissions

This chapter examines two additional source categories that generate NO<sub>x</sub> emissions: bakery ovens and asphaltic concrete production. In the *2013 Ozone Plan*, the District committed to conducting further study measures for each source category so each category will be briefly discussed in this chapter.

### 5.1 RULE 4693 BAKERY OVENS

The requirements of Rule 4693 apply to bakery ovens operated at major source facilities, which emit VOCs during the baking of yeast-leavened products. The purpose of this rule is to limit VOC emissions from these sources.

Although Rule 4693 currently only regulates VOC emissions, the District made a commitment in the *2013 Ozone Plan* to conduct further study on implementing a BACT NO<sub>x</sub> emission limit of 30 ppmv @ 3% O<sub>2</sub> for these sources. This NO<sub>x</sub> standard can be achieved by utilizing a low-NO<sub>x</sub> burner in certain bakery ovens. The District has begun preliminary analyses for the *2016 Ozone Plan*, so this further study measure is currently ongoing as part of that effort.

The 30 ppmv NO<sub>x</sub> emission limit is currently a BACT requirement and exceeds RACT levels of NO<sub>x</sub> emission control. While this NO<sub>x</sub> standard will be important to consider in the regulatory control strategy analysis for the *2016 Ozone Plan*, its BACT level of stringency exceeds the scope of this *2014 RACT SIP* demonstration.

### 5.2 WARM MIX ASPHALT

Warm mix asphalt (WMA) shows potential for reducing emissions associated with the production of asphalt for paving projects, when compared to hot mix asphalt (HMA), because lower temperatures result in lower levels of emissions. The cost, unfamiliarity with potential implementation issues, and uncertainty in the exact percentages of potential emission reductions were identified as potential barriers to the technology's use in the Valley during the development of the *2012 PM<sub>2.5</sub> Plan*. As a result, the District committed to further evaluating the use of WMA as a replacement for HMA to potentially reduce criteria pollutant emissions, such as NO<sub>x</sub>.

The District is still in the process of evaluating the use of WMA through this further study measure and will incorporate the findings in the analysis for the *2016 Ozone Plan*.

## Attachment 1: Summary of Significant Comments and Responses

Two comment letters were received for the May 12, 2014 posting of the Draft *2014 RACT SIP*. One comment letter was submitted by the Association of Irrigated Residents (AIR) and the second comment letter was submitted by the Environmental Protection Agency (EPA).

- 1. COMMENT:** The *2014 RACT SIP* does not adequately address VOC emission sources. While EPA's Proposed Implementation Rule requested comment on not requiring air districts to evaluate their VOC rules for RACT if VOC emission reductions will not advance attainment, this approach is not final.

Regarding VOC rules, the District should evaluate previous EPA recommendations for District Rule 4402 (Crude Oil Production Sumps) and Rule 4653 (Adhesives and Sealants), evaluate a lower VOC limit for Rule 4624 (Transfer of Organic Liquid) that was implemented by BAAQMD, and discuss the District's Technology Advancement Program project related to Rule 4566 (Organic Material Composting Operations). (EPA)

**RESPONSE:** EPA's comment illustrates a serious defect in the current implementation of the CAA: that implementation rules are being finalized much too late in the process of SIP development, generating uncertainty about planning requirements and having the potential to negate work already completed. Currently, the RACT SIP is due in July 2014, and ultimately, EPA will be evaluating the District's *2014 RACT SIP* under the implementation rule they will finalize in the fall of 2014. The District commented in support of EPA's proposal to not require analysis of VOC measures in RACT demonstrations where additional VOC measures would have a negligible impact on reducing ozone concentrations. This proposal allows for a much better use of scarce resources and allows for better prioritization of public health benefits.

Nonetheless, all District VOC rules have been determined to meet or exceed EPA RACT requirements within the last two years. EPA's recommendations for Rules 4402 and 4653 were not RACT approval issues, as both rules were determined to meet RACT requirements and these were recommendations for further evaluation the next time these rules are amended. Similarly, the lower VOC limit related to Rule 4624 that was implemented by BAAQMD was discussed in the *2013 Ozone Plan* and determined to exceed RACT requirements. The District will evaluate each of these recommendations during the development of the *2016 Ozone Plan*. In addition, the composting techniques demonstrated in the District's Technology Advancement Program have not been proven to be commercially viable; as such, it would be premature to consider such techniques as demonstrating RACT.

2. **COMMENT:** The discussion for Rule 4103 (Open Burning) should cite the District's October 12, 2012 letter: *Update on SJV Citrus Orchard Material Burning Restrictions*. In addition, EPA anticipates that the District will reevaluate this source category for technologically and economically feasible burn alternatives in 2015. (EPA)

**RESPONSE:** The Rule 4103 discussion in Chapter 4 has been updated to include this citation to the District's 2012 letter, and clarify that the District will reevaluate this source category in 2015.

3. **COMMENT:** The *2014 RACT SIP* should discuss the results of the Rule 4311 (Flares) further study measure that the District committed to performing in the *2013 Ozone Plan*. The District should also reconsider EPA's recommendations listed in the 2011 RACT approval of Rule 4311. (EPA)

**RESPONSE:** The District's further study analysis of flaring activities in the Valley included comprehensive evaluations of submitted flare minimization plans, annual reporting data, reportable flaring event data, and of the new federal requirements. The analysis concludes that operators are proactively taking actions to minimize flaring and no further regulatory action is recommended at this time. The further study is expected to be available for public review in the near future. The Rule 4311 discussion in Chapter 4 of this *2014 RACT SIP* discusses the findings of the District's further study analysis of the new federal requirements. The opportunities evaluated as part of the further study measure exceed RACT requirements and will be included in the control measure analysis portion of the upcoming ozone plan.

In regards to EPA's previous recommendations, these recommendations were evaluated in the most recently-adopted attainment plan and determined to exceed RACT requirements, and are therefore not included in this *2014 RACT SIP*. However, the District intends to continue to reevaluate EPA suggestions from the 2011 RACT approval of Rule 4311 as the next ozone attainment plan progresses, and include a more detailed discussion of this analysis in the next ozone attainment plan.

4. **COMMENT:** In regards to Rule 4702 (Internal Combustion Engines), the District should explain why lower NO<sub>x</sub> emission limits are not feasible for agricultural spark-ignited engines since non-agricultural spark-ignited engines utilize the same emission controls, but are subject to lower NO<sub>x</sub> emission limits. (EPA)

**RESPONSE:** Rule 4702 has been approved by EPA as recently as 2012 as having demonstrated to meet RACT requirements.<sup>48</sup> Emissions from agricultural spark-ignited engines have been significantly reduced as a result of the emission requirements in the current rule.

Additionally, as discussed in the Rule 4702 discussion in Chapter 4 of this *2014 RACT SIP*, agricultural sources face unique challenges due to the nature of agricultural engine installations, including remote locations, fluctuations in gas pressures, and unattended operations. There are also significant potential economic impacts associated with implementing lower NOx emission limits because unlike diesel engines, agricultural spark-ignited engines are not eligible for Moyer incentive funding and the agricultural industry is unable to pass increased production costs along to consumers. In response to more stringent limits, operators would likely replace their spark-ignited engines with higher-polluting diesel engines. Therefore, lower NOx emission limits for agricultural spark-ignited engines exceed RACT levels of emission control. The District will continue evaluating this source category during the development of the next ozone plan. For additional information, reference Chapter 4 of this *2014 RACT SIP*.

5. **COMMENT:** This RACT analysis does not prove that VOC emission reductions will not advance attainment. The Arvin carrying capacity diagram proves that VOC reductions help advance attainment. VOC reductions may be more easily accomplished from an economic standpoint than NOx reductions. What are the relative ratios of NOx to VOC emissions on a county-by-county basis? (AIR)

**RESPONSE:** The carrying capacity diagram on page nine of the *2014 RACT SIP* illustrates that an 85 ppb design value could be achieved with a 130 tpd NOx reduction alone, or with a 120 tpd NOx reduction AND a 150 tpd VOC reduction. Essentially, 150 tpd of additional VOC reductions would replace just 10 tpd of NOx reductions. This is not cost-effective or feasible, and it illustrates the negligible effect of additional VOC reductions on reducing ozone concentrations. The relative ratio of anthropogenic NOx to VOC emissions by county is irrelevant due to precursor transport and the overwhelming contribution of biogenic VOC emissions.

6. **COMMENT:** District Rule 4311 (Flares) for oil production flares does not demonstrate RACT. Other air districts have limitations on flaring based on potential flaring or based on the amount of gas handled by the facility and do not allow flaring for economic reasons. Rule 4311 should have a provision that limits flaring other than the annual and daily limits which are allowed. The District

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<sup>48</sup> EPA (January 10, 2012). Partial Approval and Partial Disapproval of Air Quality Implementation Plans; California; San Joaquin Valley; Reasonably Available Control Technology for Ozone. 77 FR 1417. Retrieved from: <http://www.gpo.gov/fdsys/pkg/FR-2012-01-10/pdf/2012-139.pdf>

should quantify the amount of gas flared by each business in the Valley each year and compare this to the total gas handled by the respective business to prove that Rule 4311 satisfies RACT. (AIR)

**RESPONSE:** District Rule 4311 is not limited to oil production as the commenter states. The applicability of this rule is broader than any other flare rule in the state. In the *2014 RACT SIP*, the District has compared all flare rules in the state and nation to Rule 4311, and demonstrates that the District's rule is at least as stringent as all other existing rules. The District has also extensively reviewed reports and other documentation related to flaring activity in the Valley, and has not found any additional opportunities for reducing flaring activity given their extremely important role as safety and emissions control devices.

The commenter suggests that the District implement a requirement based on the amount of gas the facility handles, as in the Santa Barbara AQMD flare rule, yet also comments that economics should not be considered in allowing flaring. While Santa Barbara's rule includes a volume target, it clearly allows higher limits based on a number of conditions, including economic considerations. Santa Barbara Rule 359 (Flares and Thermal Oxidizers) Section 3.b states "*The target volume shall not exceed five percent of the average monthly gas handled/produced/treated at the source... However, a higher limit may be granted by the Control Officer, if the following condition is met: The owner or operator can demonstrate such a maximum volume limit to be infeasible based on safety, engineering or **cost constraints**...*"<sup>49</sup>

As discussed in this report, Rule 4311 demonstrates RACT and is at least as stringent as other existing rules. The District will continue to evaluate emission reductions opportunities from flares as the development of the upcoming ozone attainment plan progresses. The District has completed a further study analysis of flaring activities in the Valley. This further study effort included comprehensive evaluations of submitted flare minimization plans, annual reporting data, reportable flaring event data, and of the new federal requirements. The analysis concludes that operators are proactively taking actions to minimize flaring and no further regulatory action is recommended at this time. The further study is expected to be available for public review in the near future. The Rule 4311 discussion in Chapter 4 of this *2014 RACT SIP* discusses the findings of the District's further study analysis of new federal requirements. The additional remaining analyses from the further study efforts will be included in the control measure analysis portion of the upcoming ozone plan as appropriate.

7. **COMMENT:** The emissions fee in lieu of paying for costly NOx control equipment in District Rule 4320 (Advanced Emission Reduction Options for

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<sup>49</sup> Santa Barbara APCD. *Rule 359 (Flares and Thermal Oxidizers)*. 1994. Obtained on June 4, 2014 from <http://www.sbapcd.org/rules/download/rule359.pdf>.

Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr) does not demonstrate RACT. (AIR)

**RESPONSE:** Rule 4320 is not subject to EPA RACT requirements and requires extensive emissions control and reductions that are additional to Rule 4306, which demonstrates RACT for this source category. EPA approved Rule 4320 as a SIP-strengthening rule after they approved Rule 4306 as meeting RACT requirements. See page 33 of the *2014 RACT SIP* for additional information.

8. **COMMENT:** District Rule 4352 does not demonstrate RACT. The District should include a provision that requires biomass fuel to not be contaminated because clean biomass fuel would burn cleaner and would reduce pollution. (AIR)

**RESPONSE:** Rule 4352's NO<sub>x</sub> limit for biomass fuel is the same regardless of the quality of the biomass fuel burned in the units. Adding a provision to the rule that requires biomass fuel to not be contaminated would not reduce NO<sub>x</sub> emissions. With respect to health impacts, however, the District has evaluated the health risk from biomass facilities through its Air Toxics Hot Spots and permitting program, and has imposed permit limitations to ensure that fuel contamination does not pose significant risks to the public.

9. **COMMENT:** Why is District Rule 9510 (Indirect Source Review) not included in this RACT analysis? (AIR)

**RESPONSE:** Rule 9510 is a unique, first in the nation regulation that allows an air agency to control emissions from indirect sources. The rule reduces mobile source emissions directly related to new development projects and encourages beneficial changes in land development patterns and practices. The off-site mitigation option applies indirect source review fees to developers; said fees are used to fund District incentive programs to cost effectively reduce emissions. No other air district has an analogous rule. That said, EPA RACT requirements are not applicable to Rule 9510. Section 182 of the CAA requires ozone nonattainment areas to implement RACT for sources covered by an EPA CTG document and for any major sources.<sup>50</sup> There are no CTGs applicable to Rule 9510 and there are no major sources subject to Rule 9510, as the majority of emissions from this source category are from mobile sources.

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<sup>50</sup> Major sources for extreme ozone nonattainment areas are defined as stationary sources which have the potential to emit either 10 tons per year (tpy) of NO<sub>x</sub> or 10 tpy of VOC.