

# Proposed Amended Rule 360

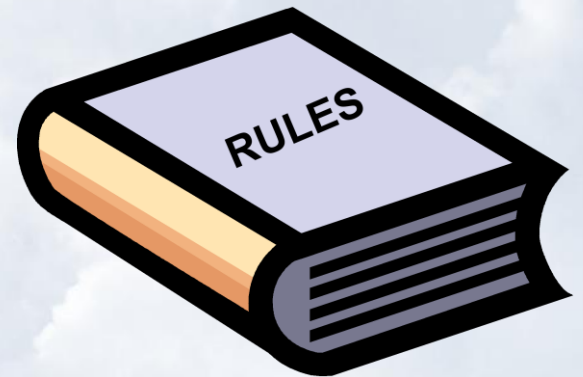
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## Boilers, Water Heaters, and Process Heaters (0.075 – 2 MMBtu/hr)

### Community Advisory Council

Santa Barbara County  
Air Pollution Control District

Timothy Mitro  
Air Quality Engineer  
January 11, 2018



# Presentation Overview

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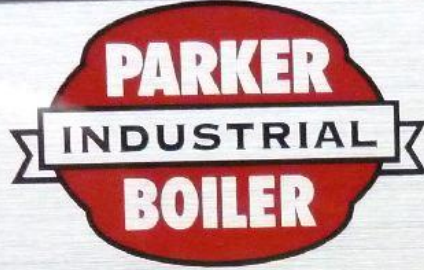
- Rule 360 Background
- Proposed Changes
- Emission Inventory & Cost Effectiveness
- Public Comments
- Questions, Discussion, and CAC Recommendation

# Rule 360 Background

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- Rule 360 was adopted in October 2002
- Applicable to units that have a heat input of 0.075 – 2 MMBtu/hr
- Estimated 1,885 units in the District
  - Located at restaurants, laundromats, office buildings, etc.
  - Most units are not permitted by the District. [Rule 202.G.1]
- “Point of Sale” rule
- Manufacturer certifies a model to meet a NO<sub>x</sub> emission limit
  - Most models already have South Coast AQMD certification
  - Alternatively, may request Santa Barbara APCD certification

# PARKER



# BOILER

	ETL LISTED <b>INDUSTRIAL &amp; COMMERCIAL GAS FIRED PACKAGED BOILER</b> CERTIFIED TO CAN/CGA STD 1-3.1 & UL STD 795		LOW NOx CERTIFIED TO SCAQMD RULE 1146.2
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PARKER BOILER CO.		
WIRING DIA. NO.:	200 GC6 965665	
ELECTRICAL SERVICE	VOLTS/HZ/PH	MAX. MOTOR LOAD
BOILER & BLOWER	460/60/3	1HP
NOTE: CONTROL CIRCUIT IS 115 VOLTS - 5 AMP OR LESS		

PARKER BOILER CO.			
5930 RANDINI BLVD.-LOS ANGELES, CA 90040 - (323) 727-9800			
T1995LR	1,995,000		
MODEL NUMBER	MAXIMUM INPUT RATING, BTU/HR		
HOT WATER BOILER	997,500		
DESCRIPTION	MINIMUM INPUT RATING, BTU/HR		
965665	NATURAL GAS		
SALES ORDER NUMBER	TYPE OF FUEL		
125	2.2" GAS/ATR		
SAFETY VALVE & TRIM MAX. PRESSURE, PSI CAUTION: DO NOT INCREASE PRESSURE OF SAFETY VALVE WITHOUT CONSULTING THE INSPECTION AUTHORITY FOR APPROVAL	MAX. GAS MANIFOLD PRESSURE, IN. W.C.		
	1-5 PSI		
	REQUIRED FUEL INLET SUPPLY PRESSURE		
5.2" W.C. GAS PRESSURE @ SKP SENSING POINT			
12"	48"	6"	12"
CABINET SIDES AND REAR	CABINET TOP	DRAFT HOOD VENT CONNECTOR	BAROMETRIC DAMPER CHIMNEY CONNECTOR
MINIMUM CLEARANCES TO COMBUSTIBLE CONSTRUCTION			
FOR INSTALLATION ON NONCOMBUSTIBLE FLOORS ONLY			
ALL OF THE INSTRUCTIONS MUST BE FOLLOWED EXACTLY			

R-LITE INDICATOR

L POWER ON

LEVEL SAFE

LEAST SAFE

# Recent History

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- Since 2002, there have been improvements in burner technologies that can reduce NOx emissions even further.
- SCAQMD revised their equivalent Rule 1146.2 in 2006.
  - Other California Air Districts have also lowered their NOx limits.
- The District's 2016 Ozone Plan had a commitment to further reduce NOx emissions from these Rule 360 units.

# 2016 Ozone Plan: Nonattainment-Transitional Implementation Schedule

Rule	Description	Adoption Schedule
360	<p><b>Boilers, Water Heaters, and Process Heaters (0.075 - 2 MMBtu/hr)</b></p> <p>Revisions to reduce the NOx limits to 20 ppmv at 3% oxygen for newly installed natural gas fired units.</p>	2018
361	<p><b>Boilers, Steam Generators, and Process Heaters (2 - 5 MMBtu/hr)</b></p> <p>Revisions to reduce the NOx limits to 9 or 12 ppmv at 3% oxygen for newly installed natural gas fired units. Higher limits for other fuels.</p>	2018
342	<p><b>Boilers, Steam Generators, and Process Heaters (5+ MMBtu/hr)</b></p> <p>Revisions to reduce the NOx limits to 9 or 15 ppmv at 3% oxygen for newly installed natural gas fired units. Higher limits for other fuels.</p>	2018
321	<p><b>Solvent Cleaning Machines and Solvent Cleaning</b></p> <p>Revisions to lower the general cleaning ROC limit from 50 grams per liter to 25 g/L.</p>	Contingency Measure
351	<p><b>Surface Coating of Wood Products</b></p> <p>Revisions to include solvent cleaning provisions at 25 g/L.</p>	Contingency Measure
354	<p><b>Graphic Arts</b></p> <p>Revisions to include solvent cleaning provisions at 25 – 100 g/L and additional requirements for Rotogravure, Flexographic, Lithographic, Letterpress, and Screen Printing operations. Existing facilities may have to be permitted to increase the enforceability of the rule.</p>	Contingency Measure

# Proposed Changes

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- Lowering the NOx emission limit for natural gas units from 55 or 30 ppm down to 20 ppm
- Definition of “Modification” or “Modify”
  - Replacing a burner or burners on a unit; or
  - Removing a unit from the site of its original installation and installing it at a different location. A unit that is reinstalled within the same stationary source is not modified.

# Proposed Changes

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- Adding exemptions for:
  - recreational vehicles,
  - manufactured homes,
  - hot water pressure washers, and
  - portable water heaters used for underwater diving activities.
- Clarifying that we accept the SCAQMD certifications
- Clarifying the applicable testing requirements



# Emission Limits

**Table 1: Emission Limits Effective 10/17/2003 Until 12/31/2018**

Type and Size of Unit	NO <sub>x</sub> Limit	CO Limit
<b>All units:</b> 75,000 – 400,000 Btu/hr	55 ppm	N/A
<b>All units:</b> >400,000 – 2,000,000 Btu/hr	30 ppm	400 ppm

**Table 2: Emission Limits Effective On or After 1/1/2019**

Type and Size of Unit	NO <sub>x</sub> Limit		CO Limit
	Natural Gas	All Other Fuels	
<b>Pool heaters:</b> 75,000 – 400,000 Btu/hr	55 ppm	55 ppm	N/A
<b>All units, except pool heaters:</b> 75,000 – 400,000 Btu/hr	20 ppm	55 ppm	N/A
<b>All units:</b> >400,000 – 2,000,000 Btu/hr	20 ppm	30 ppm	400 ppm

# Inventory & Cost-Effectiveness

- **Rule 360 Emission Inventory**
  - *Baseline Inventory:* 45 tpy NO<sub>x</sub>
  - *Emission Reductions:* 21 tpy NO<sub>x</sub> at full implementation
  - Reductions will occur over the next 20 years
- **Cost-Effectiveness**

Unit Size	Capital Cost	Incremental Cost	New Cost: Post-Revision	Cost Effectiveness
0.075 MMBtu/hr	\$1,500	\$100	\$1,600	\$2,800/ton
2 MMBtu/hr	\$18,000	\$3,000	\$21,000	\$11,300/ton

# Public Comments

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- **EPA Comments**

- 1) Please provide additional clarification in the staff report.

- **Industry Comments**

- 1) The definition of “modify” will require industry to pay a lot of permitting fees every time a burner needs to be changed out.

- 2) Add language in the rule that allows “field gas” as an allowable fuel for a certified unit.

- 3) The definition of “max heat input rating” requires additional clarification to differentiate between “gross” or “net” heat input.

# Next Steps

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- **Questions and Discussion**
- **CAC Consideration and Recommendation**
- **Bring the Rule Package to the District Board**