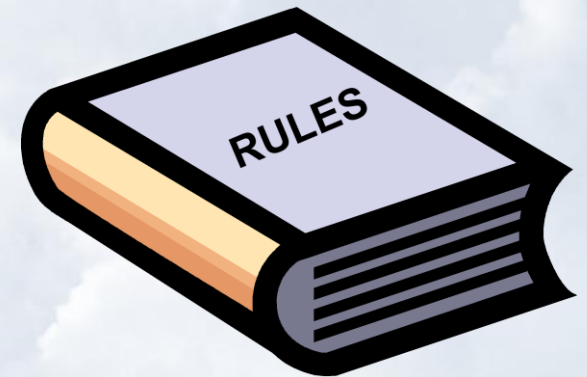


# Proposed Amended Rule 360

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

**Public Workshop  
Santa Barbara County  
Air Pollution Control District**



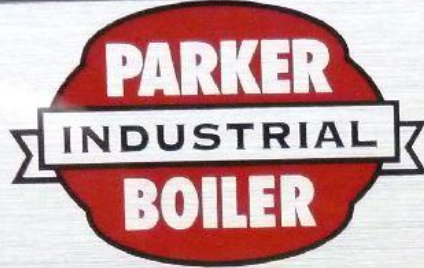
**Timothy Mitro  
Air Quality Engineer  
November 1, 2017**

# 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  
**INDUSTRIAL & COMMERCIAL GAS FIRED PACKAGED BOILER**  
CERTIFIED TO  
CAN/CGA STD 1-3.1 & UL STD 795

ETL LISTED US 87787

**PARKER INDUSTRIAL BOILER**

LOW NO<sub>x</sub> CERTIFIED TO SCAQMD RULE 1146.2

**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 MODEL NUMBER	1,995,000 MAXIMUM INPUT RATING, BTU/HR		
HOT WATER BOILER DESCRIPTION	997,500 MINIMUM INPUT RATING, BTU/HR		
965665 SALES ORDER NUMBER	NATURAL GAS TYPE OF FUEL		
125 SAFETY VALVE & TRIM MAX. PRESSURE, PSI CAUTION: DO NOT INCREASE PRESSURE OF SAFETY VALVE WITHOUT CONSULTING THE INSPECTION AUTHORITY FOR APPROVAL	2.2" GAS/ATR 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" CABINET SIDES AND REAR	48" CABINET TOP	6" DRAFT HOOD VENT CONNECTOR	12" BAROMETRIC DAMPER CHIMNEY CONNECTOR

MINIMUM CLEARANCES TO COMBUSTIBLE CONSTRUCTION

FOR INSTALLATION ON NONCOMBUSTIBLE FLOORS ONLY  
ALL OF THE INSTRUCTIONS MUST BE FOLLOWED EXACTLY

RL-EL-084

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
  - Many other Air Districts have lowered their NOx limits as well
- The District's 2016 Ozone Plan had a commitment to further reduce NOx emissions from these Rule 360 units.

# Proposed Changes

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- Lowering the NOx emission limit for natural gas units from 55 or 30 ppm down to 20 ppm.
- Adding exemptions for:
  - recreational vehicles,
  - manufactured homes,
  - hot water pressure washers, and
  - portable water heaters used for underwater diving activities.

# Proposed Changes

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- Definition of “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.
- 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

# Cost Effectiveness

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

- **Rule 360 Emission Inventory**

- Reduces NOx from 45 tpy to 24 tpy at full implementation
- Reductions will occur over the next 20 years.



# Rule Development Timeline

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- **11/1/2017:** Public Workshop
  - We are looking for written comments by 11/15/2017
- **December 2017:** Community Advisory Council (CAC)
  - Held at the Santa Ynez Valley Marriott in Buellton
- **March 2018:** Board Hearing

# Questions?

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