
PROPOSED AMENDED RULES 1147, 1100, & PROPOSED RULE 1147.1 WORKING GROUP MEETING #1

FEBRUARY 28, 2019

SCAQMD

DIAMOND BAR, CA

AGENDA

- Background
- Initial Concepts of PAR 1147, 1100 and PR 1147.1
- Approach for BARCT Determination
- Potential impacted Universe for PAR 1147 and PR 1147.1
- Facility Equipment Survey
- Other Rule 1147 Activities
- Next Steps

BACKGROUND - RECLAIM TRANSITION

- In March 2017, the SCAQMD adopted the 2016 AQMP
 - Control measure CMB-05 requires the RECLAIM program to transition to a command-and-control structure
 - Requires a 5 ton per day NO_x emission reduction to be achieved with Best Available Retrofit Control Technology (BARCT) as soon as feasible and no later than 2025
- In July 2017, Assembly Bill 617 was signed by the Governor
 - Requires expedited BARCT implementation for facilities in the state greenhouse gas cap and trade program by December 31, 2023

BACKGROUND – RULE DEVELOPMENT

Information Gathering



Initial Objective and Scope



Develop Rule Concepts



Develop Rule Language for Proposed Amended Rule

BACKGROUND – STAKEHOLDER INPUT

- ❑ Stakeholder input is a key element throughout the rule development process
- ❑ Staff encourages early input from all stakeholders – opportunities for input provided throughout the rulemaking process
- ❑ Goal is a proposal that all facilities can comply with and that meets the objectives of the proposed amended rule
- ❑ Staff encourages facilities to meet with staff to discuss any concerns – unique situations, clarification of provisions, etc.
 - Stakeholders with unique equipment are encouraged to schedule site visits with staff

BACKGROUND – RULE 1147 SERIES

Rule 1147 Series

Proposed
Amended Rule
1147

Proposed Rule
1147.1*

Proposed Rule
1147.2*

Proposed Rule
1147.3*

Miscellaneous
Combustion
Equipment

Large Miscellaneous
Combustion
Equipment*

Combustion
Equipment Associated
with Metal Working
Facilities*

Combustion
Equipment Associated
with Aggregate
Facilities*

*Rulemaking in progress, universe of impacted facilities to be determined at a later date

BACKGROUND – RULE 1147

- ❑ Affects a wide variety of gaseous and liquid fuel fired processes ranging from heated automotive spray booths to heavy manufacturing
- ❑ Incorporates two control measures of 2007 Air Quality Management Plan (AQMP):
 1. CMB-01: NOx Reductions from Non-RECLAIM Ovens, Dryers and Furnaces
 2. MCS-01: Facility Modernization
- ❑ Rule 1147 technology assessment for small and low emission sources was released in February 2017 and independently reviewed by a third party consultant

Adopted December 2008

Amended July 2017

Amended September
2011

Proposed
Amended
Rule 1147

BACKGROUND – RULE 1147

Applicability

- Miscellaneous combustion equipment with NO_x emissions that **require a District permit and are not affected by other District Regulation XI rules**
- No minimum or maximum equipment size

Emission Limits

- Emission limits vary dependent on equipment type, fuel type, and process temperature
- Units <325,000 BTU/hr are exempt from rule limits

BACKGROUND – RULE 1147 LIMITS (3% O₂, DRY)

Gaseous Fuel-Fired Equipment	Process Temperature		
	≤ 800° F	> 800 ° F < 1200° F	≥ 1200 ° F
Asphalt Manufacturing Operation	40 ppm		
Afterburner, Degassing Unit, Remediation Unit, Thermal Oxidizer, Catalytic Oxidizer or Vapor Incinerator	60 ppm		
Burn-off Furnace, Burnout Oven, Incinerator or Crematory with or without Integrated Afterburner	60 ppm		
Evaporator, Fryer, Heated Process Tank, or Parts Washer	60 ppm		
Metal Heat Treating, Metal Melting Furnace, Metal Pot, or Tar Pot	60 ppm		
Oven, Dehydrator, Dryer, Heater, Kiln, Calciner, Cooker, Roaster, Furnace, or Heated Storage Tank	30 ppm		60 ppm
Make-Up Air Heater or other Air Heater located outside of building with temperature controlled zone inside building	30 ppm		
Tenter Frame or Fabric or Carpet Dryer	30 ppm		
Other Unit or Process Temperature	30 ppm		60 ppm
Liquid Fuel-Fired Equipment			
All liquid fuel-fired Units	40 ppm		60 ppm

BACKGROUND – RECLAIM BARCT FOR MISC. COMBUSTION EQUIPMENT

- ❑ BARCT in the RECLAIM program is used to determine RTC allocations
- ❑ Current RECLAIM BARCT emission factors are outlined in Rule 2002
- ❑ RECLAIM BARCT can be more stringent than command and control limits
 - RECLAIM equipment is not required to meet RECLAIM BARCT as long as facility emissions are offset by RTC
- ❑ Staff will be conducting a more detailed BARCT assessment

BACKGROUND – RECLAIM BARCT FOR MISC. COMBUSTION EQUIPMENT

Equipment Type	BARCT Emission Factor		Command and Control Limit		
			≤ 800° F	> 800 ° F < 1200° F	≥ 1200 ° F
Asphalt Heater, Concrete	0.036 lb/mmbtu	30 ppm	40 ppm		
Delacquering Furnace	0.036 lb/mmbtu	30 ppm	60 ppm		
Iron/Steel Foundry	0.055 lb/mmbtu	45 ppm	60 ppm		
Metal Heat Treating Furnace	0.055 lb/mmbtu	45 ppm	60 ppm		
Metal Forging Furnace (Preheated Combustion Air)	0.055 lb/mmbtu	45 ppm	60 ppm		
Metal Melting Furnaces	0.055 lb/mmbtu	45 ppm	60 ppm		
Other Heater (24F-1)	0.036 lb/mmbtu	30 ppm	30 ppm	60 ppm	
Ovens, Kilns, Calciners, Dryers, Furnaces	0.036 lb/mmbtu	30 ppm	30 ppm	60 ppm	
Steel Hot Plate Furnace	0.055 lb/mmbtu	45 ppm	30 ppm	60 ppm	
Sec. Aluminum	0.055 lb/mmbtu	45 ppm	60 ppm		11
Sec. Lead	0.055 lb/mmbtu	45 ppm	60 ppm		

BACKGROUND – COMPARISON OF RECLAIM BARCT WITH RULE 1147 FOR MISC. COMBUSTION EQUIPMENT

- RECLAIM BARCT emission factors (in general) are lower or equal to current limits in Rule 1147
- Categories listed under RECLAIM BARCT do not match with categories of Rule 1147
- RECLAIM equipment which does not meet specific Rule 1147 categories will be subject to limits of the “Other Unit or Process Temperature” category

INITIAL CONCEPTS– PAR 1147/PR 1147.1

Rule 1147

- Previously amended in July 2017
- Regulates NOx equipment at various temperatures not regulated under other Regulation XI rules
- Proposing to include references to former RECLAIM facilities and make any changes that will help clarify existing rule implementation

Proposed Rule 1147.1

- To reduce nitrogen oxide emissions from large gaseous and liquid fuel fired combustion equipment
- Applies to units at RECLAIM and non-RECLAIM facilities

INITIAL CONCEPTS – PAR 1100

- Proposed Amended Rule 1100 will:
 - Include compliance schedule for facilities impacted by PAR 1147 and PR 1147.1
 - Coordinate implementation schedules for multiple rules
 - Reference emission limits in applicable BARCT rules
- Compliance schedule under consideration
 - Schedule staggered based on applicable landing rules, number of equipment, mass emissions or other applicable criteria

BARCT REQUIREMENTS

- ❑ California Health and Safety Code Section 40406 defines BARCT as
 - “...an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.”
- ❑ Health and Safety Code Section 40920.6:
 - Requires evaluation of BARCT prior to adopting rules or regulations



BARCT* ASSESSMENT

***BARCT analysis is conducted for each equipment category and fuel type**

Assessment of
SCAQMD
Regulatory
Requirements

Assessment of
Emission Limits
of Existing Units

Other
Regulatory
Requirements

Assessment of
Pollution
Control
Technologies

Technology Assessment

Initial BARCT
Emission Limit
and Other
Considerations

Cost
Effectiveness
Analysis

**BARCT
Emission
Limit**

BARCT ASSESSMENT APPROACH

- ❑ BARCT analysis includes a technology assessment
 - Equipment-specific
 - Fuel-specific
 - Application and usage of unit (capacity, types of uses, etc.)
- ❑ Cost effectiveness will consider
 - Incremental cost effectiveness
 - Stranded assets
 - Outliers
 - Recent installation to meet prior NO_x reduction commitments

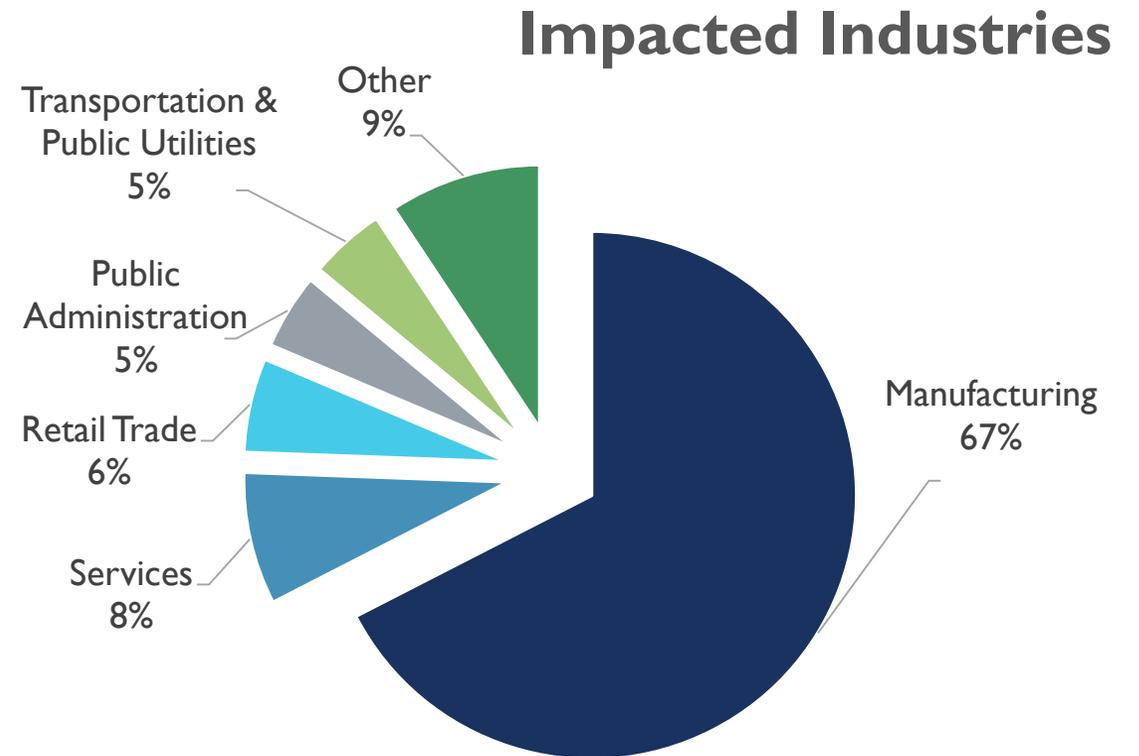
IMPACTED RECLAIM FACILITIES

□ Total impacted RECLAIM units: 373

- Located at 86 facilities

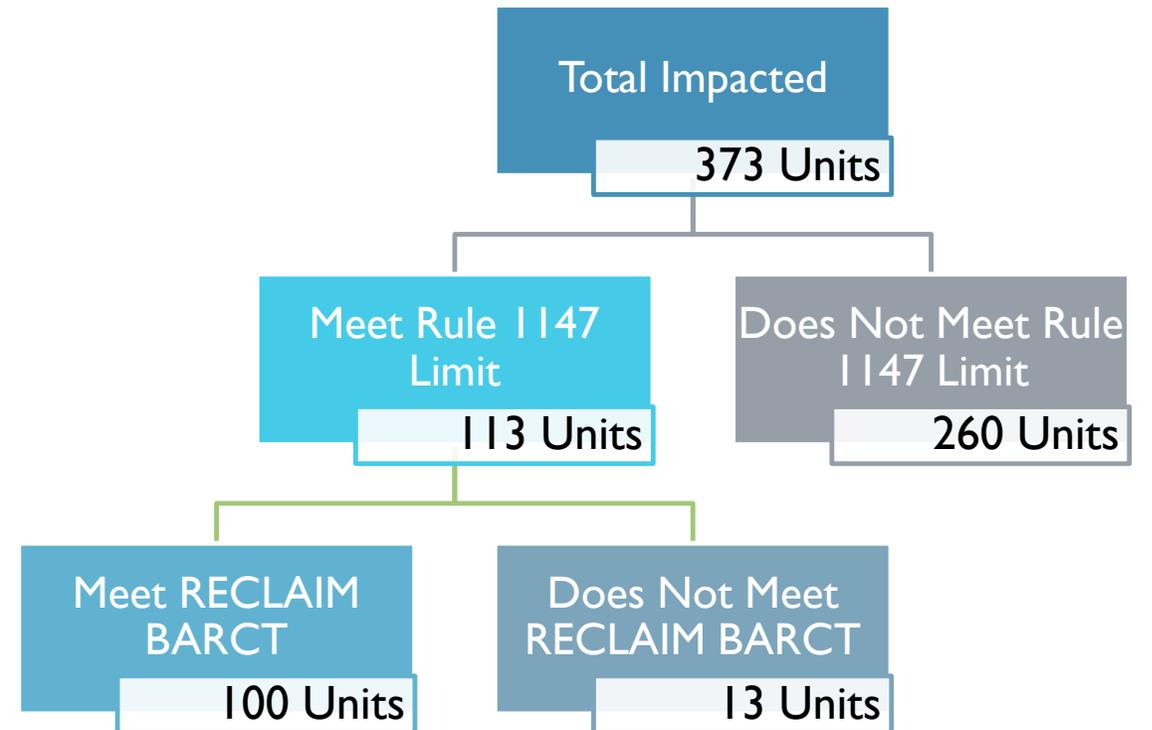
□ Top 5 Impacted industries:

1. Manufacturing (67%)
2. Service (8%)
3. Retail Trade (6%)
4. Public Administration (5%)
5. Public Transportation (5%)



IMPACTED RECLAIM EQUIPMENT

Size Range (MMBtu/hr)	# of Units
<2	106
2 to <5	96
5 to <40	166
40 to <100	4
100+	1
Total	373



FACILITY EQUIPMENT SURVEY

- ❑ Objective: To identify permit limits and annual usage for existing equipment located in SCAQMD
- ❑ Both physical and digital copies will be available for mail-in and email submissions
- ❑ Physical copies scheduled to be mailed out to both RECLAIM and non-RECLAIM facilities within one month
 - Digital version will be available on aqmd.gov for email submissions

June 2017 Survey - January 2019

Facility ID: _____ Company Name: _____ RECLAIM(Y/N): _____

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Permit or Application No.	How Input (S/D/MS/ES)	Annual Limit (lbs/yr or -/hour)	Fuel Type (e.g.)	Annual Fuel Usage (CY 2017, CY 2018)	burner (kW)	Unit Age (Year)	Control System (if applicable)
1							
2							
3							
4							
5							
6							

See for Step 1 for additional information

(9)	(10)
Source Test Results (if available)	Unit Description and Process
Date (MM/DD/YYYY)	NO _x Conc. (ppm @ 15% O ₂)
1	
2	
3	
4	
5	
6	

Additional Comments:

Instructions:

- Please provide data (1) - (8) for each piece of equipment
- Attach most recent source test data for each piece of equipment, if applicable

Please return survey to:
South Coast Air Quality Management District
Attn: Sharon Wang
2381 Copley Drive
Diamond Bar, California 91765-4178
Or via Email: smw@aqmd.gov

Prepared by: _____
Contact Phone: _____
Email: _____



OTHER RULE 1147 ACTIVITIES

- ❑ Certification of additional low-NOx burners for various applications
- ❑ Explore possible alternatives to biennial source testing demonstrations for low use (<1 LB/Day NOx) units over 35 years old
- ❑ Development of outreach materials:
 - Phase I: Compliance Pamphlets
 - Phase II: Guidance Document



RULE DEVELOPMENT SCHEDULE



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Proposed Amended Rules 1147, 1100 and Proposed Rule 1147.1

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