



## EXTERNAL COMBUSTION EQUIPMENT SUMMARY FORM-33

*(This form must be submitted for each equipment item)*

### GENERAL

1. MANUFACTURER \_\_\_\_\_ MODEL NO. \_\_\_\_\_
2. SERIAL NO. \_\_\_\_\_ OPERATOR ID \_\_\_\_\_
3. EQUIPMENT USED AS A CONTROL DEVICE?  YES  NO DATE OF INSTALLATION \_\_\_\_\_  
*(leave blank if not installed)*
4. EQUIPMENT TYPE *(Check one)*
- |  |  |
|--|--|
| <input type="checkbox"/> Steam Boiler<br><input type="checkbox"/> Steam Generator<br><input type="checkbox"/> Hot Water Boiler<br><input type="checkbox"/> Heater Treater<br><input type="checkbox"/> Process Heater<br><input type="checkbox"/> Incinerator<br>Class Type Waste _____ | <input type="checkbox"/> Afterburner<br><input type="checkbox"/> Dryer<br><input type="checkbox"/> Oven<br><input type="checkbox"/> Furnace<br><input type="checkbox"/> Kiln<br><input type="checkbox"/> Other <i>(Describe)</i> _____ |
|--|--|
- Material Dried, Baked, or Heated*
5. GENERAL INFORMATION REQUIRED: The following general information is required for processing the permit application:
- Site and plot plan, with dimensions, showing the location of the combustion unit.
  - General description of the business.
  - Description of the general purpose of the combustion unit and its associated production and/or process line.
  - New Source Review information. Submit information required by Section E of Rule 204 (Applications) if BACT, AQIA, Offsets or Health Risk Assessment is required.
6. SIC NUMBER \_\_\_\_\_
- Submit manufacturer's literature, catalog, or equivalent information for the combustion unit.*

### EQUIPMENT RATING

7. MAXIMUM HEAT INPUT \_\_\_\_\_ MMBtu/hr (report all Btu values in x.xxx format)
8. MAXIMUM ANNUAL HEAT INPUT<sup>(a)</sup> \_\_\_\_\_ MMBtu/year  
*(a) This value represents the maximum requested annual heat input to your equipment and will be listed as a not-to-exceed limit on your permit. (Note: 1 Therm = 100,000 Btu)*
9. BURNER MANUFACTURER \_\_\_\_\_ NO. OF BURNERS \_\_\_\_\_
- MODEL NO. \_\_\_\_\_ INPUT: Maximum \_\_\_\_\_ MMBtu/hr
- 
- |  |                               |
|--|-------------------------------|
| _____<br><i>Company Name</i>                               | _____<br><i>Facility Name</i> |
| _____<br><i>Person Completing This Form (please print)</i> | _____<br><i>Date</i>          |

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FUEL DATA

10. FUEL USED (Select all that apply)

- PUC Quality Natural Gas
- Oilfield Field Gas
- Propane - Commercial Grade
- Propane - HD5 Grade
- LPG - Commercial Grade
- Landfill Gas
- Diesel Fuel #2
- Residual Fuel Oil # \_\_\_\_\_
- Jet Fuel (Specify) \_\_\_\_\_
- Pathological Waste (Specify) \_\_\_\_\_
- Solid Waste (Specify) \_\_\_\_\_
- Other-Gaseous Fuel \_\_\_\_\_
- Other-Liquid Fuel \_\_\_\_\_
- Other-Solid Fuel \_\_\_\_\_

11. PRIMARY FUEL \_\_\_\_\_ (Fuel #1)

SECONDARY FUEL \_\_\_\_\_ (Fuel #2)

12. HIGHER HEATING VALUE (HHV) (Circle appropriate units)

Fuel #1 \_\_\_\_\_ (Btu/scf, Btu/gal, Btu/lb) Fuel #2 \_\_\_\_\_ (Btu/scf, Btu/gal, Btu/lb)

13. SULFUR CONTENT (Circle appropriate units)

Fuel #1 \_\_\_\_\_ (% by wt., ppmvd as S) Fuel #2 \_\_\_\_\_ (% by wt., ppmvd as S)

14. IS EQUIPMENT FIRED ON MORE THAN ONE FUEL?  YES  NO (If yes, fill in Section 15 below)

15. MULTIPLE FUELS

- Primary or Secondary Fuel Fired as Needed (Either fuel may be used to supply the total maximum heat input)
- Gas Is Primary Fuel. Non-Gaseous Fuel Used As a Backup During Times of Natural Gas Curtailment or Testing According to Section B.2 of Rule 342 (Annual cumulative allowance of 168 hours for curtailment and 24 hours for testing)
- Secondary Fuel Fired As An Alternative to the Primary Fuel, But Annual Maximum Heat Input for the Secondary Fuel Is Less than the Total Maximum Annual Heat Input as Listed in Section 8. Maximum Annual Heat Input of Secondary Fuel: \_\_\_\_\_ BTU/yr.
- Secondary Fuel Is Fired Simultaneously with the Primary Fuel (Describe) \_\_\_\_\_
- Other (Describe) \_\_\_\_\_

16. INCINERATORS

a. Maximum Hourly Design Charge Rate \_\_\_\_\_ lbs/hr Max Annual Input \_\_\_\_\_ tons/year

b. Residence Time \_\_\_\_\_ seconds Combustion Temperature \_\_\_\_\_ °F

c. Total Horizontal Inside Cross-Sectional Area \_\_\_\_\_ ft<sup>2</sup>

d. Does This Equipment Incinerate Medical Waste  YES  NO (If yes, please provide detailed information which addresses compliance with Rule 340)

e. Is the Equipment of the Multiple-Chamber Design  YES  NO (If no, please provide detailed information supporting an equivalent design per Rule 308)

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**EMISSION CALCULATIONS**

17. EMISSION FACTOR<sup>(a)</sup> (Contact APCD with any questions - If left blank, default APCD emission factors will be used)

POLLUTANT	FUEL #1			FUEL #2		
	FACTOR	UNITS <sup>(b)</sup>	BASIS CODE <sup>(c)</sup>	FACTOR	UNITS <sup>(b)</sup>	BASIS CODE <sup>(c)</sup>
NOx (as NO <sub>2</sub> )		lb/MMBtu			lb/MMBtu	
ROC		lb/MMBtu			lb/MMBtu	
CO		lb/MMBtu			lb/MMBtu	
SO <sub>x</sub> <sup>(d)</sup> (as SO <sub>2</sub> )		lb/MMBtu			lb/MMBtu	
PM		lb/MMBtu			lb/MMBtu	
PM <sub>10</sub>		lb/MMBtu			lb/MMBtu	

**NOTES:**

- (a) Emission factors are used to establish allowable emissions on your permit.
- (b) Units "lb/MMBtu" based on the higher heating value. Incinerator applications must state the units used (e.g., lb/ton).
- (c) Basis Codes:
  - 1 Site specific source tests, CEMS or PEMS data (*attach copy*)
  - 2 Specifications by manufacturer (*attach copy*)
  - 3 Material balance (*attach copy of calculations*)
  - 4 Taken from AP-42 (Compilation of Air Pollution Emission Factors, EPA, 5<sup>th</sup> Edition, Chapter 1)
  - 5 Taken from Literature other than AP-42 (*attach copy*)
- (d) SO<sub>2</sub> emission factors are based mass balance calculations:
  - for liquid Fuels: SO<sub>x</sub> EF (lb SO<sub>x</sub>/MMBtu) = [20,000] [wt % S] [density, lb/gal] / [HHV, Btu/gal]
  - for gases: SO<sub>x</sub> EF [lb SO<sub>x</sub>/MMBtu] = [0.169] [ppmv S] / [HHV, Btu/scf]
  - Ex: Low sulfur diesel #2 (0.05% S by wt) EF = 0.0504 lb SO<sub>x</sub>/MMBtu
  - Ex: PUC Quality Natural Gas (85 ppmvd S) EF = 0.0137 lb SO<sub>x</sub>/MMBtu

18. EMISSIONS (Contact APCD with any questions)

POLLUTANT	FUEL #1		FUEL #2	
	LB/DAY	TON/YEAR	LB/DAY	TON/YEAR
NO <sub>x</sub> (as NO <sub>2</sub> )				
ROC				
CO				
SO <sub>x</sub> (as SO <sub>2</sub> )				
PM				
PM <sub>10</sub>				

**NOTES:**

- (a) Emissions are calculated based on the emission factor used. For daily emissions, multiply the max firing rate times the emission factor and then times 24 (hr/day). For annual emissions, multiply the max annual heat input times the emission factor and then divide by 2000 (lb/ton).
- (b) Report all emissions to two (2) decimal places (x.xx)

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VENT/STACK DATA

- 19. a. INSIDE DIAMETER... inch STACK EXIT TEMPERATURE... °F
b. STACK HEIGHT (above grade) feet STACK HEIGHT (above the building) feet
c. MAXIMUM STACK GAS FLOW... dry scfm @ 3% O2

- 20. STACK SERVES [ ] This Equipment Only
[ ] Other Equipment Also (Submit type and rating of all of all other equipment exhausted through this vent/stack)

EMISSION CONTROL DEVICES

- 21. ARE EMISSION CONTROLS USED? [ ] YES [ ] NO (If yes, continue)

Table with columns MAKE and MODEL. Rows include: [ ] Low-NOx Burners, [ ] Exhaust-Gas Recirculation % Recirc, [ ] Staged Combustion, [ ] Ammonia/Urea Injection - SNCR, [ ] Selective Catalytic Reduction, [ ] Other.

(Describe) \_\_\_\_\_

Submit manufacturers' literature, catalog, or equivalent information for each control device.

PROCESS PARAMETER DEVICES

- 22. [ ] YES [ ] NO OXYGEN TRIM, TRIM SETTING... % O2
[ ] YES [ ] NO CONTINUOUS EMISSION MONITOR(S), POLLUTANTS MONITORED
[ ] OTHER (Describe)

- 23. IS FUEL USE MONITORED? [ ] YES [ ] NO (If yes, continue)
a. [ ] Dedicated Meter
[ ] Shared Meter, List of Equipment Items Sharing This Meter
[ ] YES [ ] NO For Gaseous Fuels: Is the fuel meter pressure corrected?
b. Type of Fuel Meter (type design, mfg and model no.)

Submit manufacturer's literature, catalog, or equivalent information for each monitoring/metering device.