



**Utah Division of Air Quality
New Source Review Section**

**Form 3
Afterburners**

Company _____

Site/Source _____

Date _____

Equipment Information

| | |
|---|---|
| 1. Provide diagram of internal components: | 2. Manufacturer: _____ Model no.: _____ |
| 3. Combustion chamber dimensions: Length: _____ inches, Cross-sectional area: _____ square inches | 4. Burners per afterburner: _____ at _____ BTU/hr each |
| 5. Minimum operating temperature of combustion chamber: _____ °F | 6. Minimum retention time (seconds): |
| 7. Heat exchanger used: <input type="checkbox"/> No <input type="checkbox"/> Yes: Describe heat exchanger: | 8. Catalyst used: <input type="checkbox"/> No <input type="checkbox"/> Yes: Describe catalyst: |
| 9. Stack dimensions: Height _____ Diameter _____ | |

Waste Gases (At Maximum Continuous Production Rate)

| |
|--|
| 10. Chemical composition |
| 11. Afterburner exhaust temperature: _____ °F Flow rate: _____ scfm |

Auxiliary Fuel

| | |
|---|---|
| 12. Type: <input type="checkbox"/> Natural gas <input type="checkbox"/> Fuel oil <input type="checkbox"/> Used oil* <input type="checkbox"/> Coal <input type="checkbox"/> Diesel <input type="checkbox"/> Other: _____ | |
| 13. Maximum sulfur content: _____ % by Wt | 14. Fuel usage rate at maximum continuous production rate: |

Average Operation of Source

Maximum Operation of Source

| | |
|--|--|
| 15. Gas flow rate: _____ scfm | 17. Gas flow rate: _____ scfm |
| 16. Efficiency of afterburner: _____ % | 18. Efficiency of afterburner: _____ % |

Emissions Calculations (PTE)

| | |
|---|--|
| 19. Calculated emissions for this device | |
| PM ₁₀ _____ Lbs/hr _____ Tons/yr | PM _{2.5} _____ Lbs/hr _____ Tons/yr |
| NO _x _____ Lbs/hr _____ Tons/yr | SO _x _____ Lbs/hr _____ Tons/yr |
| CO _____ Lbs/hr _____ Tons/yr | VOC _____ Lbs/hr _____ Tons/yr |
| CO ₂ _____ Tons/yr | CH ₄ _____ Tons/yr |
| N ₂ O _____ Tons/yr | |
| HAPs _____ Lb s/hr (speciate) _____ Tons/yr (speciate) | |
| Submit calculations as an appendix. If other pollutants are emitted, include the emissions in the appendix. | |

Instructions - Form 3 Afterburners

- NOTE:
1. **Submit this form in conjunction with Form 1 and Form 2.**
 2. Call the Division of Air Quality (DAQ) at **(801) 536-4000** if you have problems or questions when completing this form. Ask for a New Source Review Section engineer. We will be glad to help!

* For used oil see #12 of the instructions below.

1. Supply an assembly drawing, dimensioned and to scale of the interior dimensions and features of the equipment.
2. Specify the manufacturer, model number and serial number of the equipment.
3. Specify the dimensions of the combustion chamber.
4. Indicate the number of burners per afterburner and the BTU/hr for each burner.
5. Indicate the minimum operating temperature for the combustion chamber.
6. Supply the minimum retention time in the combustion chamber.
7. Indicate whether or not a heat exchanger is used and describe that equipment.
8. Indicate whether or not a catalyst is used in the process and describe it.
9. Supply the stack dimensions.
10. Supply the chemical composition of the waste gases at maximum production rate.
11. Specify the exhaust temperature and flow rate of the waste gases enter the afterburner.
12. Indicate what type of fuel in addition to the waste gases that is used. Used oil is any oil that has been refined from crude oil, used, and, as a result is contaminated with impurities. The concentration/parameters of contaminants in any used oil fuel cannot exceed the following levels:

| | | | |
|----|---------------------|-------|-------------------|
| 1. | Arsenic | 5 | ppm by weight |
| 2. | Cadmium | 2 | ppm by weight |
| 3. | Chromium..... | 10 | ppm by weight |
| 4. | Lead | 100 | ppm by weight |
| 5. | Total halogens..... | 1,000 | ppm by weight |
| 6. | Sulfur..... | 0.5 | percent by weight |
| 7. | Flash Point | 100°F | |

13. Indicate the sulfur content of the fuel in percentage by weight.
14. Supply how much of this fuel will be used at maximum continuous production.
15. Indicate the average gas flow rate through the afterburner during average operation.
16. Indicate the average efficiency of the afterburner during average operation.
17. Indicate the maximum gas flow rate through the afterburner during maximum operation.
18. Indicate the maximum efficiency of the afterburner during maximum operation.
19. Supply calculations for all criteria pollutants and HAPs. Use Manufacturers' data or AP-42 to complete your calculations.