



# FORM CE5: CONTROL EQUIPMENT INFORMATION FOR CATALYTIC OXIDATION

Please see instructions on reverse side.

Company Name: \_\_\_\_\_

**CONTROL EQUIPMENT DESCRIPTION**

1. Type of Control Equipment: \_\_\_\_\_
2. Control Equipment (CE) ID: \_\_\_\_\_
3. Emission Point (EP) ID: \_\_\_\_\_
4. Manufacturer: \_\_\_\_\_
5. Model: \_\_\_\_\_
6. Date of On-Site Installation: \_\_\_\_\_ 7. Date of Modification: \_\_\_\_\_
8. Is a Capture Hood Involved:  Yes  No 9. If yes, Capture Hood Efficiency (percentage): \_\_\_\_\_

**CONTROL EQUIPMENT PERFORMANCE MONITORING**

10. Describe how your facility will monitor the performance of this control equipment (check all that apply):
- Catalyst Material Coupon or Sample Testing
  - Catalyst Life Time
  - Residence Time
  - Catalyst Inlet Temperature
  - Minimum Operating Temperature
  - Predictive Emissions Monitoring System (PEMS) \_\_\_\_\_ (attach documentation)
  - Continuous Emissions Monitoring System (CEMS) \_\_\_\_\_ (attach documentation)
  - Other \_\_\_\_\_
11. Describe the range and monitoring frequency of your control device monitoring choice(s):

**DETAILED CONTROL EQUIPMENT SPECIFICATIONS**

12. Manufacturer's Data and Engineering Specifications Enclosed:  Yes  No  
**NOTE: If yes, skip #13-#18**
13. Catalyst Material: \_\_\_\_\_
14. Catalyst Life Time: \_\_\_\_\_
15. Residence Time (seconds): \_\_\_\_\_
16. Minimum Operating Temperature (°F): \_\_\_\_\_
17. Catalyst Inlet Temperature (°F): \_\_\_\_\_

18. Pollutant Control Efficiency	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	CO	Other( )

## Instructions for Form CE5: Control Equipment Information for Catalytic Oxidation

- If you have multiple pieces of control equipment that vent from one emission point, attach the appropriate form for each piece of control equipment or control measure.
- 

### Understanding CE5 Form Information: Each number provides an explanation for the corresponding field on the form.

**Company Name:** this is useful if application pages become separated.

#### Control Equipment Description:

1. **Type of Control Equipment:** Describe the type of catalytic oxidation equipment. This name will be used to describe the control equipment in the construction permit.
2. **Control Equipment (CE) ID:** Called the control equipment (CE) identification (ID). It can be any combination of letters or numbers up to 16 characters in length. The ID should match the ID for this control equipment used on previous construction permit applications and within this application. If also submitting an operating permit application, the ID used in this application should be consistent with those used in the operating permit application.
3. **Emission Point (EP) ID:** called the emission point (EP) identification (ID). It can be any combination of letters or numbers up to 16 characters in length. The ID should match the ID for this equipment used on other construction permit applications and within this application. If also submitting an operating permit application, the ID used in this application should be consistent with those used in the operating permit application.
4. **Manufacturer:** Provide the manufacturer of the control equipment (if known).
5. **Model:** Provide the model number of the control equipment (if known). If custom, provide engineering specifications as indicated in #13-#18.
6. **Date of On-Site Installation:** Provide the date when on-site installation of the control equipment began or will begin, including the month and year.
7. **Date of Modification:** Provide the month and year of the last modification. In the case of a proposed modification, provide the best estimate of the modification date.
  - For the purpose of this form, **Modification** means any physical change, or change in method of operation of any existing equipment or control equipment.
8. **Capture Hood:** Indicate whether there is a capture hood associated with the emission unit and control device. A **Capture Hood** catches air pollution at the emission unit and directs to the control device. It is used when the control equipment is not in a closed system with the emission unit.
9. **Capture Hood Efficiency:** If there is a capture hood, list the capture efficiency, if known. The capture hood efficiency can be obtained from the hood manufacturer or vendor.

#### Performance Monitoring:

10. **Monitoring Control Equipment:** Describe how your facility will monitor the performance of this control equipment. Additional monitoring may be required by the DNR to ensure compliance with requested permit limits. Examples of control equipment monitoring include measuring the minimum operation temperature; measuring the life of the catalyst; etc.
11. **Range and Monitoring Frequency:** Describe the range (e.g., temperature, etc.) and the frequency of each monitoring choice for this control device that was listed in #10. The range should provide for the normal operating range of the equipment and can be obtained from the manufacturer and vendor. The range could also be determined from stack testing. The applicant should provide an estimate of the frequency of parameter monitoring that they feel is reasonable.

Frequency can be as often as continuously or can be as little as annually depending on the type of equipment, the monitoring parameter chosen, and the importance of the control equipment to meet the emissions limits requested in the permit.

**Detailed Control Equipment Specifications:**

12. **Manufacturer's Data and Engineering Specifications:** Indicate whether supporting documentation, such as manufacturer's data or engineering specifications, is attached. The manufacturer's data should provide a general description of the control equipment and specific design specifications that would answer the remaining questions in this section of the form. If yes, attach as a separate sheet labeled "Form CE5-12A". If supporting documentation is not attached, the department may request specific design and operational specifications for the equipment. **If supporting documentation is included, skip #13 - 18.**

**Skip the following questions if Manufacturer's Data and Engineering Specifications are included in #12:**

13. **Catalyst Material:** Provide the material used as a catalyst.
14. **Catalyst Life Time:** Provide the catalyst life time (i.e. how long before the catalyst needs to be replaced or regenerated).
15. **Residence Time:** Provide the residence time of the oxidizer. This is calculated by dividing the internal volume of the oxidizer by the air flow through the oxidizer.
16. **Minimum Operating Temperature:** Provide the minimum operating temperature of the oxidizer.
17. **Catalyst Inlet Temperature:** Provide the temperature of the air stream at the inlet to the catalyst bed.
18. **Pollutant Control Efficiency:** For each pollutant controlled, indicate the overall efficiency of the control device, as designed. Include supporting documentation for the control efficiency of the control equipment. Attach this information as a separate sheet labeled "Form CE5-18A".