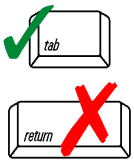
Massachusetts Department of Environmental Protection
Bureau of Air and Waste - Air Quality

BAW AQ Electrostatic Precipitator

Submit with Form CPA-FUEL and/or CPA-PROCESS whenever construction, substantial reconstruction or alteration of an Electrostatic Precipitator is proposed unless exempt per 310 CMR 7.02(2)(b).

Facility ID (if known)

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Inlet Operating Conditions

1. Complete the tables below with information on inlet gas flow(s).

Table 1a				
Emission Unit No(s). Being Controlled	**Average Inlet Gas Flow** (Actual Cubic Feet Per Minute)	**Moisture Content in the Inlet** (Pounds Per Minute)	**Inlet Temperature** (Degrees Fahrenheit (°F))	**Inlet Velocity** (Feet Per Second)

Table 1b					
Emission Unit No(s). Being Controlled	**Is the Gas Stream Pre-Cooled?**	**Is the Gas Stream Conditioned?**	**If Conditioned, Briefly Explain**	**Is the Gas Stream Pre-Cleaned?[1]**	**If Pre-Cleaned, Briefly Explain**
	☐ Yes ☐ No	☐ Yes ☐ No		☐ Yes ☐ No	
	☐ Yes ☐ No	☐ Yes ☐ No		☐ Yes ☐ No	
	☐ Yes ☐ No	☐ Yes ☐ No		☐ Yes ☐ No	
	☐ Yes ☐ No	☐ Yes ☐ No		☐ Yes ☐ No	

[1] You may be required to submit an additional supplemental form if you operate pre-cleaner equipment. Contact the appropriate MassDEP regional office for guidance.

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A. Inlet Operating Conditions (continued)

Table 1c			
Particle Size	**Particulate Concentration Before Control** (Grains Per Actual Cubic Foot)	**Particulate Emission Rate Before Control** (Pounds Per Hour)	**Total Weight Percent (%) Before Control**
≤ 2.5 Microns			
> 2.5 Microns & ≤10 Microns			
> 10 Microns			

B. Specifications

1. Manufacturer of Electrostatic Precipitator: _____ Company
2. Model Number (or Equivalent): _____ Number
3. Type of unit : ☐ Wet ☐ Dry – If Dry, Skip to 4
   a. Method of wash water introduction : ☐ Injected ☐ Sprayed
   b. Interval of wash water injection/spraying: ☐ Continuous ☐ Timed – Frequency: _____ Include Units
   c. Flow rate of wash water: _____ Gallons Per Minute
   d. Is the wash water re-circulated? ☐ Yes – Makeup Rate: _____ Gallons Per Minute ☐ No
4. Capacity of the Unit: _____ Actual Cubic Feet Per Minute at _____ Degrees Fahrenheit (°F)
5. Outlet temperature: _____ Degrees Fahrenheit (°F)
6. Pressure drop across the unit: _____ Inches of Water
7. Number of stages: ☐ Single Stage ☐ Two Stage
8. Residence time of gases in collection zone: _____ Seconds
9. Number of fields: _____ Number
10. Size of each field: _____ Include Units
11. Field efficiency: _____ Percent Each Field
12. Aspect ratio: _____ Number
13. Superficial velocity: _____ Feet Per Second

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B. Specifications (continued)

14. Does the unit use plates? ☐ Yes – Provide Dimensions Below ☐ No – Skip to 15
    a. Height of plate: _____ Feet
    b. Length of plate: _____ Feet
    c. Thickness of plate: _____ Feet
    d. Number of plates: _____ Number
    e. Spacing between plates: _____ Feet
15. Does the unit use tubes? ☐ Yes – Provide Dimensions Below ☐ No – Skip to 16
    a. Height of tube: _____ Feet
    b. Inside diameter of tube: _____ Feet
    c. Outside diameter of tube: _____ Feet
    d. Number of tubes: _____ Number
    e. Spacing between tubes: _____ Feet
16. Particulate resistivity: _____ Ohm-cm
17. Specific collecting area: _____ Square Feet Per 1,000 Actual Cubic Feet Per Minute at _____ °F
18. Describe the method used to clean the electrodes:

    _____

    _____

19. Describe the electrode cleaning cycle (including units):

    _____

    _____

20. Type of rapper used: _____ Description
21. Total time per cleaning sequence: _____ Seconds
22. Specific corona power: _____ Include Units
23. Type of insulators used: _____ Description

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C. Description of Power Requirements

1. Type of Unit: ☐ Single-Stage (Complete 2) ☐ Two-Stage (Complete 3)

2. Describe the power requirements of the single-stage unit:

a. Power applied: _____ Watts Per 1,000 Actual Cubic Feet Per Minute

b. Voltage applied: _____ Kilovolts

3. Describe the power requirements of the two-stage unit:

a. Power applied: _____ Watts Per 1,000 Actual Cubic Feet Per Minute

b. Ionizer voltage applied: _____ Kilovolts

c. Number of ionizer banks: _____ Number

d. Collector voltage: _____ Kilovolts

4. Describe the discharge electrode:

a. Length of wire used: _____ Include Units

b. Type of wire used: ☐ Weighted ☐ Rigid ☐ Electrode

c. Is the wire shrouded? ☐ Yes ☐ No

D. Emissions Data

1. Describe the particulate matter emissions after control by the proposed Electrostatic Precipitator:

a. Overall particulate matter concentration after control: _____ Grains Per Actual Cubic Foot

b. Overall particulate matter emission rate after control: _____ Pounds Per Hour

c. Overall particulate matter collection efficiency: _____ Weight Percent

D. Emissions Data (continued)

2. Explain how the above particulate matter emissions data were obtained. Attach appropriate calculations and documentation.

E. Drawing of Electrostatic Precipitator Control System

You must attach to this form a schematic drawing of the proposed Electrostatic Precipitator and any pre-cleaner. At a minimum, it must show the stack, sampling ports for emissions testing, and the location of each pressure and temperature indicator.

F. Monitoring, Record Keeping & Failure Notification

1. Describe the parameters that will be monitored as a surrogate for control device efficiency, and the frequency of monitoring. Continue on a separate attachment, if necessary.

2. Describe the monitoring methods and warning/alarm system that protect against operation when the unit is not meeting design efficiency (e.g. visual monitoring, audible alarm, flashing lights, time indicator, pressure indicator). Continue on a separate attachment, if necessary.

3. Describe the record keeping procedures to be used to verify monitoring and to identify the cause, duration and resolution of each failure. Continue on a separate attachment, if necessary.

4. Describe how failure of the Electrostatic Precipitator will be made known to the operator during normal operations (e.g. visual monitoring, audible alarm, flashing lights, time indicator, pressure indicator). Continue on a separate attachment, if necessary.

F. Monitoring, Record Keeping & Failure Notification (continued)

5. List and explain all operating and safety controls associated with this system, including interlock systems that prevent introduction of the air contaminant(s) stream until the Electrostatic Precipitator is operating properly. Continue on a separate attachment, if necessary.

6. Describe the Electrostatic Precipitator's emergency procedures during system upsets. Continue on a separate attachment, if necessary.

7. Describe features of the system design and operation that will allow for emissions testing using MassDEP-sanctioned test methods. Continue on a separate attachment, if necessary.

G. Standard Operating & Maintenance Procedures

Attach to this Form the standard operating and maintenance procedures for the proposed Electrostatic Precipitator, as well as a list of the spare parts inventory that you will maintain on site, as recommended by the equipment vendor(s).