Utah Division of Air Quality  
New Source Review Section  
Form 8  
Electrostatic Precipitators

**Equipment Information**

1. Manufacturer: ________________________________  
   Model No: ________________________________  

2. Attach assembly drawing (front and top view) of the control device dimensions and to scale showing the design, size and shape. If device has bypasses, safety valves, etc, include in drawing and specify when such bypasses are to be used and under what conditions.

3. Type of particulate controlled:  

4. Particulate size: __________ microns  
   (mean geometric diameter)

**Gas Stream Characteristics**

5. Gas flow rate:  
   Design maximum: __________ acfm at _____ °F  
   Average expected: __________ acfm at _____ °F  

6. Gas stream temperature (°F):  
   Inlet ________ Outlet ________

7. Particulate grain loading:  
   Inlet: _______________________ grain/scf  
   Outlet: _______________________ grain/scf  

8. Pressure drop (in. H₂O):  

9. Water vapor content of effluent stream  
   (lb water/lb dry air):  

10. Fan requirements:  
    hp ______________ ft³/min __________

**Precipitator Characteristics**

11. Number of fields:  
12. Number of plates:  
13. Plate spacing:  
14. Number of discharge electrodes:

15. Spacing between electrodes and plates:  
16. Length of plates:  
17. Width of plates:  
18. Potential applied (KV/in):

19. Wires:  
   Length: __________  
   Diameter: __________

20. Can isolate chambers?  
   □ Yes  □ No

21. Number of chambers:  
22. Number of hoppers:

23. Discharge device:  
24. Volume of hoppers:  
25. Angle of hopper:  
26. Level detector device:  
   Type:  
   Number:

27. Cross-sectional area of precipitator (ft²):  
28. Cross-sectional of inlet duct (ft²):  
29. Precipitator volume (ft³):

30. Type:  
   □ Hot side  
   □ Cold side

31. Residence time in precipitator (sec):  
32. Type of collecting electrode:  
   □ Tubular  □ Plate
33. Plate cleaning system: □ Rapping
   □ Water spray washing
   □ Other ___________________________

34. Efficiency of electrical precipitator (%):

Stack

35. Height: ____________

36. Inside dimensions: ____________

37. Exhaust gas flow: ____________ acfm at ____________ °F

Monitoring Instrumentation

38. Type  Manufacturer  Model  Range  Units

   Section 1:
   Primary voltage  ____________  ____________  ____________  Volts
   Secondary voltage  ____________  ____________  ____________  Volts
   Primary current  ____________  ____________  ____________  Amperes
   Secondary current  ____________  ____________  ____________  Amperes

   Section 2:
   Primary voltage  ____________  ____________  ____________  Volts
   Secondary voltage  ____________  ____________  ____________  Volts
   Primary current  ____________  ____________  ____________  Amperes
   Secondary current  ____________  ____________  ____________  Amperes

   Section 3:
   Primary voltage  ____________  ____________  ____________  Volts
   Secondary voltage  ____________  ____________  ____________  Volts
   Primary current  ____________  ____________  ____________  Amperes
   Secondary current  ____________  ____________  ____________  Amperes

   Section 4:
   Primary voltage  ____________  ____________  ____________  Volts
   Secondary voltage  ____________  ____________  ____________  Volts
   Primary current  ____________  ____________  ____________  Amperes
   Secondary current  ____________  ____________  ____________  Amperes

Emissions Calculations (PTE)

23. 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
   HAPs ____________ Lbs/hr (speciate) ____________ Tons/yr (speciate)

Submit calculations as an appendix.
Instructions – Form 8 Electrostatic Precipitators

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 in filling out this form. Ask to speak with a New Source Review engineer. We will be glad to help!

1. Indicate the manufacturer and model number of the equipment. 
2. Supply an assembly drawing, dimensioned and to scale of the equipment. 
3. Identify the type of particulate that is controlled. 
4. Indicate the particle mean geometric diameter in microns. 
5. Indicate the gas stream flow rate at design maximum and average expected rates. 
6. Supply the ESP inlet and outlet temperatures of the gas stream. 
7. Indicate the gas stream particulate grain loading at inlet and outlet. 
8. Specify the pressure drop through the ESP. 
9. Indicate the vapor content of the outlet gas stream. 
10. Specify the fan requirement of the ESP. 
11. Specify the number of fields in the ESP. 
12. Specify the number of plates. 
13. Indicate the plate spacing within the ESP. 
14. Supply the number of discharge electrodes. 
15. Indicate the spacing between electrodes and plates. 
16. Specify the length of plates. 
17. Specify the width of plates. 
18. Specify what the kilovolt per inch of plate is. 
19. Specify the length and diameter of the wires. 
20. Indicate whether or not chambers can be isolated. 
21. Indicate the number of chambers. 
22. Specify the number of hoppers in the ESP. 
23. Specify what type of discharge device is used with the hoppers. 
24. Indicate what the volume of the hoppers is. 
25. Indicate what the angle of the side of the hopper is. 
26. Indicate the specifications of the level detector device. 
27. Supply the cross-sectional area of the precipitator in square feet. 
28. Indicate the area of the cross-sectional of the inlet duct in square feet. 
29. Specify the volume of the precipitator in cubic feet. 
30. Specify the type of ESP. 
31. Indicate the residence time of the gas stream in the precipitator. 
32. Specify the type of electrodes used in the ESP. 
33. Specify how the plates are cleaned. 
34. Supply the percentage of efficiency of the ESP. 
35. Specify the height of the stack. 
36. Specify the inside dimensions of the stack. 
37. Indicate the exhaust gas flow rate in actual cubic feet per minute and temperature. 
38. Supply the specifications of any monitoring instrumentation used in the process. 
39. Supply calculations for all criteria pollutants and HAPs. Use AP42 or Manufacturers data to complete your calculations.