

Southwest Clean Air Agency - Combustion Monitoring Worksheet

Facility Name: **Facility 123**

SWCAA ID: **123**

Date Performed: **8/30/2011**

Emission Unit ID: **Boiler #1**
 Boiler Manufacturer: **Cleaver Brooks**
 Boiler Model Number: **CB-xxxx**
 Boiler Serial Number: **B98-xxxx**
 Burner Manufacturer: **Power Flame**
 Burner Model Number: **PF-xxxx**
 Burner Serial Number: **1234567-89**

Boiler Tuning Company: **Boiler Tuning, Inc.**
 Analyst Name: **John Doe**
 Test Instrument Make: **Testo**
 Test Instrument Model: **350**

Fuel Type: **Natural gas**
 Design Firing Rate: **8.2** MMBtu/hr
 Tested Firing Rate: **7.9** MMBtu/hr

Time of Pre-Test Calibration: **12:47:00**
 Time of Post-Test Calibration: **13:52:21**

Permit No	NOx Limit (ppm)	CO Limit (ppm)	O ₂ Correction
10-xxxx	30	50	3

Quality Assurance Results	NO _x (ppm)	CO (ppm)	O ₂ (%)
Span Concentration	30.0	62.0	20.9
Pre-Test Span Reading	28.0	28.0	21.0
Post-Test Span Reading	28.0	28.0	20.9
Pre-Test Zero Reading	1.0	1.0	0.2
Post-Test Zero Reading	2.0	2.0	0.3

- The span gas concentration must not be less than 50% of the target/permitted pollutant concentration nor more than 200% of the target/permitted pollutant concentration. A lower concentration span gas may be used if it is more representative of measured concentrations.
- The analyzer response check is failed if the difference between the pre-test and post-test response checks is greater than 10% of the initial span value.
- No more than 12 hours may elapse between the pre-test and post-test analyzer response checks.
- Calibration and use of an NO₂ cell is required if significant quantities of NO₂ are expected (i.e. after specific catalysts, afterburners, etc.) and if no NO₂→NO converter is integral or used in conjunction with the combustion analyzer.
- Submit results to SWCAA within 15 days of monitoring.

Test Notes:

Boiler operating at near full fire on natural gas. No unusual operating circumstances. No adjustments were made to the boiler or burner during tuning. Corrected CO value exceeds permit limit.

Monitoring Results (Record at least once every 30 seconds for 5 minutes)

Sample	NO _x Reading (ppm)	CO Reading (ppm)	O ₂ Reading (%)
1	26	21	3.1
2	26	21	3.1
3	26	21	3.1
4	26	21	3.3
5	26	21	3.3
6	24	23	2.9
7	23	23	4.1
8	26	23	4.1
9	26	24	4.1
10	26	24	4.2
11	23	23	5.6
12	23	23	5.6
13	23	23	5.6
14	26	23	5.6
15	26	23	5.2
16	26	24	5.2
17	26	24	5.2
18	26	24	5.2
19	26	23	5.2
20	26	23	5.2
Test Average	25.3	22.8	4.4
Drift Corrected Values	26.9	49.7	4.2
Oxygen Corrected Value	28.9	53.4	

WARNINGS:

Measured CO Exceeds Permit Limit

Fuel-Factor (dscf/MMBtu) **8,710**
 Emissions (lb/MMBtu) **0.0351** **0.0395**

Questions? - Call the Southwest Clean Air Agency at 360-574-3058