United States
Environmental Protection
Agency

Office of Air Quality
Planning and Standards
Research Triangle Park, NC 27711

EPA-454/R-00-040c
September 2000

Air

EVALUATION OF PARTICULATE MATTER (PM) CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

Final Report

Volume 3—Appendices for RCA No. 1

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RCA #1 Appendix A

Process Operating Conditions

Run #1									Run #1 Avg
Time	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	
Parameters									
Steam Flow (klb/hr)	286.6	284.5	286.7	287.1	287.2	284.7	282.4	279.7	284.9
Steam Temp (deg F)	951	949	951	947	951	954	953	950	951
Coal Flow (lb/hr)	Not operational - PB								#DIV/0!
Boiler O2s (Avg)	3.1	3.1	3.0	2.8	2.8	3.0	3.1	3.4	3.0
west	3.2	3	2.5	2.5	2.8	2.7	3.1	3.4	2.9
central	2.2	2.1	2.2	2	1.6	2	2	2.5	2.1
east	3.9	4.1	4.2	4	4	4.4	4.3	4.4	4.2
East Undergrate Air Flow (lb/hr)	133414	134182	132674	133918	132789	133493	132571	132012	133131.6
West Undergrate Air Flow (lb/hr)	132444	131423	133173	132168	134332	131451	132297	131675	132370.4
Baghouse Inlet Temp (deg F)	184.5	187.4	183.8		186.9	183.1	182.8	186.2	185.0
Baghouse Outlet Temp (deg F)	179.5	177.9	177.9	179.6	180	179.2	179.3	179.6	179.1
Baghouse DP (in H2O)	8.2	8.4	8.5	8.7	7.5	8.5	8.5	7.6	8.2
ID Fan Suct. Press. (in H2O)	-19.2	-24.3	-24.3	-24.1	-24	-24.4	-24.2	-24	-23.6
Opacity	7.26								

Run #2								Run #2 Avg
Time	9:00	9:15	9:30	9:45	10:00	10:15	10:30	
Parameters								
Steam Flow (klb/hr)	281.2	287.8	291.5	289.9	265.8	299.3	290.7	286.6
Steam Temp (deg F)	951	952	949	949	954	942	947	949.1
Coal Flow (lb/hr)	Not operational - PB							#DIV/0!
Boiler O2s (Avg)	3.9	3.8	3.4	3.2	3.6	3.1	2.9	3.4
west	4.1	4.2	3.7	3.9	4.7	3.1	3.4	3.9
central	3.8	4	3.7	3.3	2.8	4.1	2.7	3.5
east	3.8	3.3	2.7	2.5	3.3	2.1	2.6	2.9
East Undergrate Air Flow (lb/hr)	130226	131293	137244	134576	128131	135402	133837	132958.4
West Undergrate Air Flow (lb/hr)	128453	130799	135398	132809	127895	133711	133232	131756.7
Baghouse Inlet Temp (deg F)	187.5	185.8	193.5	188.4	183.4	188.1	179	186.5
Baghouse Outlet Temp (deg F)	179.2	180.4	179.8	179.1	178.3	180.7	178.6	179.4
Baghouse DP (in H2O)	6.6	7.3	7.3	7.7	7.7	7.2	8	7.4
ID Fan Suct. Press. (in H2O)	-23	-23.9	-19.7	-23.9	-23.9	-23.3	-24.1	-23.1
Opacity	5.31							

Run #3									Run #3 Avg
Time	11:45	12:00	12:15	12:30	12:45	13:00	13:15	13:30	
Parameters									
Steam Flow (klb/hr)	281.5	287.8	292.2	288.7	288.2	275	289.9	290.3	286.7
Steam Temp (deg F)	935	950	948	949	950	958	948	952	948.8
Coal Flow (lb/hr)	not operational - PS								#DIV/0!
Boiler O2s (Avg)	2.3	2.5	2.3	2.1	2.4	3.2	3.1	2.7	2.6
west	2.6	3.2	2.8	2.9	3.2	4.2	3.8	3.4	3.3
central	2.7	2.1	2	1.2	1.4	2.1	2.6	2.2	2.0
east	1.7	2.3	2.1	2.3	2.6	3.3	2.8	2.6	2.5
East Undergrate Air Flow (lb/hr)	122058	132402	134168	134169	133021	128920	133361	134775	131609.3
West Undergrate Air Flow (lb/hr)	124662	131285	133552	132800	133081	129634	132209	132391	131201.8
Baghouse Inlet Temp (deg F)	184.5	184.8	185.7	191.6	196.1	179.4		185.2	186.8
Baghouse Outlet Temp (deg F)	179.4	180.9	179.7	181.1	181.3	185.3	187.1	184.9	182.5
Baghouse DP (in H2O)	6.9	8.4	9	8.5	8.2	7.8	7.9	8.1	8.1
ID Fan Suct. Press. (in H2O)	-21.9	-23.9	-24.5	-24.2	-24.1	-24	-23.8	-23.9	-23.8
Opacity	4.89								

Run #4								Run #4 Avg
Time	15:00	15:15	15:30	15:45	16:00	16:15	16:30	
Parameters								
Steam Flow (klb/hr)	284.3	297.8	293.1	296.1	296.2	285.9	285.2	291.2
Steam Temp (deg F)	950	952	949	949	951	955	950	950.9
Coal Flow (lb/hr)	not operational	30857	31765	29189	30000	29189	31765	30460.8
Boiler O2s (Avg)	2.2 PS	2.6	2.6	2.5	2.2	2.6	2.9	2.5
west	2.8	3.4	3.9	3.8	3.6	4.2	4.2	3.7
central	2.5	2.4	2.3	2.3	1.7	1.9	2.6	2.2
east	1.4	2	1.6	1.3	1.4	1.7	1.8	1.6
East Undergrate Air Flow (lb/hr)	132417	133878	133909	136028	135159	133181	132938	133930.0
West Undergrate Air Flow (lb/hr)	130757	135612	133597	133298	134768	134665	133134	133690.1
Baghouse Inlet Temp (deg F)	186.7	186.2	190.1	190.3	185.1	184.6	191.1	187.7
Baghouse Outlet Temp (deg F)	181.9	180	180.1	180.5	180.1	179.7	180.8	180.4
Baghouse DP (in H2O)	8	8.6	8	8.6	9.3	8.7	9	8.6
ID Fan Suct. Press. (in H2O)	-23.3	-24.3	-24.2	-24.1	-24.6	-24.3	-24.4	-24.2
Opacity	5.09							

Run #5								Run #5 Avg
Time	9:00	9:15	9:30	9:45	10:00	10:15	10:30	
Parameters								
Steam Flow (klb/hr)	284.3	276.9	279.6	276.5	283	279	279.2	279.8
Steam Temp (deg F)	953	945	947	953	950	950	947	949.3
Coal Flow (lb/hr)	31765	27000	28421	27692	29189	27692	27692	28493.0
Boiler O2s (Avg)	3.2	3.4	3.0	3.2	2.7	2.9	3.3	3.1
west	3.2	3.3	2.3	2.3	1.8	2.1	2.3	2.5
central	2.9	3.1	3	3.5	3.1	3	3.5	3.2
east	3.4	3.9	3.7	3.9	3.3	3.7	4.1	3.7
East Undergrate Air Flow (lb/hr)	129384	125093	125789	122369	124513	123816	125427	125198.7
West Undergrate Air Flow (lb/hr)	128539	125855	127309	126024	129768	128334	129095	127846.3
Baghouse Inlet Temp (deg F)	185.8	185.1	185.9	185.8	186.6	185.5	184.6	185.6
Baghouse Outlet Temp (deg F)	179.1	179.3	179.7	179.8	178.9	179.3	180.2	179.5
Baghouse DP (in H2O)	7.9	7.7	8	6.9	7.9	7.4	7.9	7.7
ID Fan Suct. Press. (in H2O)	-23.8	-22.1	-22.7	-20.7	-22.6	-22.5	-22.7	-22.4
Opacity	5.02							

Run #6									Run #6 Avg
Time	11:45	12:00	12:15	12:30	12:45	13:00	13:15	13:30	
Parameters									
Steam Flow (klb/hr)	264.2	286.3	285.4	286.9	298.3	289.6	288.8	284.3	285.5
Steam Temp (deg F)	954	952	956	948	952	951	950	949	951.5
Coal Flow (lb/hr)	27000	30000	30857	27692	31765	30000	29189	28421	29365.5
Boiler O2s (Avg)	3.4	2.1	2.2	2.5	2.1	2.0	1.9	2.1	2.3
west	3.1	0.8	1.6	2.1	1.8	1.9	0.9	1.1	1.7
central	3	2.8	2.2	2.3	1.8	1.1	1.5	2	2.1
east	4	2.6	2.8	3.1	2.6	3.1	3.3	3.3	3.1
East Undergrate Air Flow (lb/hr)	116788	124795	125829	130205	133508	128937	131553	129161	127597.0
West Undergrate Air Flow (lb/hr)	118701	130206	130659	126872	130720	132424	130607	129435	128703.0
Baghouse Inlet Temp (deg F)	186	187.6	185.3	184.8	185.4	187.6	185.5	185.9	186.0
Baghouse Outlet Temp (deg F)	180.6	180.1	180.4	179.6	180.9	185.5	187.9	186.5	182.7
Baghouse DP (in H2O)	6.4	7.8	8.3	8	8.4	9	8.7	9.2	8.2
ID Fan Suct. Press. (in H2O)	-13	-21.8	-22.9	-23	-24	-24.4	-24.3	-24.4	-22.2
Opacity	6.23								

Run #7									Run #7 Avg
Time	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	
Parameters									
Steam Flow (klb/hr)	281.1	282.5	284.6	276.9	278.6	286.6	295.9	296.4	285.3
Steam Temp (deg F)	952	950	948	949	950	946	952	952	949.9
Coal Flow (lb/hr)	28421	29189	27692	28421	25116	29189	30000	29189	28402.1
Boiler O2s (Avg)	2.6	3.0	2.8	2.6	2.5	2.6	2.0	1.6	2.5
west	3.1	4	3.6	3.4	3	2.8	2	1.9	3.0
central	2.1	2.4	2.6	2.2	2.2	2.4	1.9	1.3	2.1
east	2.6	2.6	2.1	2.2	2.3	Not operational			2.4
East Undergrate Air Flow (lb/hr)	128815	125177	127676	126491	126222	125781	132490	133389	128255.1
West Undergrate Air Flow (lb/hr)	127385	129006	128675	126006	128724	131327	130494	129730	128918.4
Baghouse Inlet Temp (deg F)	186.3	184.7	185	197.5	185.8	188.9	191	185.7	188.1
Baghouse Outlet Temp (deg F)	190.4	186	182.7	181	180.8	181.1	212.6	210.3	190.6
Baghouse DP (in H2O)	8.1	8.5	8.2	11.6	8	8.7	11.2	8.7	9.1
ID Fan Suct. Press. (in H2O)	-23.6	-24.1	-23.9	-23.6	-23	-23.2	-23.1	-23.2	-23.5
Opacity	4.75								

Run #8									Run #8 Avg
Time	9:15	9:30	9:45	10:00	10:15	10:30	10:45	11:00	
Parameters									
Steam Flow (klb/hr)	259.4	278.4	276.8	280.9	289.5	291.6	285.6	277.2	279.9
Steam Temp (deg F)	955	950	953	952	950	948	950	952	951.3
Coal Flow (lb/hr)	26341	26341	26341	27000	29189	28421	26341	27692	27208.3
Boiler O2s (Avg)	3.3	3.4	3.0	2.8	2.4	2.7	2.8	3.3	3.0
west	3.7	3.6	3.9	3.9	3.6	3.9	3.3	3.5	3.7
central	3	3.8	3.2	3.1	3.1	3.2	2.7	3.1	3.2
east	3.1	2.8	1.9	1.4	0.6	0.9	2.5	3.2	2.1
East Undergrate Air Flow (lb/hr)	124708	130334	129408	130757	134506	134890	133297	129407	130913.4
West Undergrate Air Flow (lb/hr)	128083	130606	128837	130460	134742	133728	134213	131008	131459.6
Baghouse Inlet Temp (deg F)	181.4	185.3	184.7	186.8	185.3	184.6	185.6	184.2	184.7
Baghouse Outlet Temp (deg F)	180.4	180.3	179.4	179.4	180.4	180	180.1	180.3	180.0
Baghouse DP (in H2O)	7.3	7.4	6.7	7.2	10.3	8	8.1	9.2	8.0
ID Fan Suct. Press. (in H2O)	-22.7	-22.7	-22.5	-22.6	-23.5	-24	-24.1	-23.5	-23.2
Opacity	4.05								

Run #9									Run #9 Avg
Time	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00	
Parameters									
Steam Flow (klb/hr)	273.6	264	269.8	275.7	242.9	268.4	271.7	274.5	267.6
Steam Temp (deg F)	951	947	951	951	963	952	948	949	951.5
Coal Flow (lb/hr)	27000	25116	27000	27000	25116	26341	26341	27000	26364.3
Boiler O2s (Avg)	2.9	3.6	3.1	2.6	3.3	3.0	2.6	2.7	3.0
west	1.8	2.2	1.5	1.1	2.4	1.3	1.6	1.9	1.7
central	3.4	4.3	3.8	3.4	3	4.5	2.3	2.5	3.4
east	3.6	4.3	3.9	3.3	4.6	3.2	3.9	3.6	3.8
East Undergrate Air Flow (lb/hr)	128153	121843	122758	130285	118317	120261	127522	130207	124918.3
West Undergrate Air Flow (lb/hr)	128920	125088	126890	128929	121983	123196	129870	129638	126814.3
Baghouse Inlet Temp (deg F)	182.5	180.9	185.4	185.7	184.8	185.3	185.3	185	184.4
Baghouse Outlet Temp (deg F)	180	180.3	181	184.2	184.9	183	181.2	180.6	181.9
Baghouse DP (in H2O)	8.1	6.8	7.7	8	7.5	6.3	7.6	7.5	7.4
ID Fan Suct. Press. (in H2O)	-23.1	-21.3	-21.9	-22.8	-22.3	-19.9	-22.4	-15.3	-21.1
Opacity	5.01								

Run #10								Run #10 Avg
Time	15:30	15:45	16:00	16:15	16:30	16:45	17:00	
Parameters								
Steam Flow (klb/hr)	282.8	285.6	288.1	278.7	275.8	284.6	273.8	281.3
Steam Temp (deg F)	954	951	944	940	953	963	944	949.9
Coal Flow (lb/hr)	27000	29189	26341	27692	27692	29189	27000	27729.0
Boiler O2s (Avg)	2.1	1.7	1.8	2.0	2.0	1.8	2.6	2.0
west	2.2	2	2	1.9	2.2	1.3	2.4	2.0
central	2.2	1.6	2	1.8	1.9	2.4	2.6	2.1
east	1.8	1.5	1.4	2.2	2	1.8	2.9	1.9
East Undergrate Air Flow (lb/hr)	132572	129697	134266	133808	131665	134338	128839	132169.3
West Undergrate Air Flow (lb/hr)	130805	134161	132847	132718	131423	133633	129268	132122.1
Baghouse Inlet Temp (deg F)	185.4	185.2	185.2	184.6	186.5	184.3	184.8	185.1
Baghouse Outlet Temp (deg F)	180.4	180.5	180.7	179.3	180.5	180.6	179.6	180.2
Baghouse DP (in H2O)	8.3	8	8.6	8.3	8.6	8.9	8.3	8.4
ID Fan Suct. Press. (in H2O)	-23.2	-23.3	-24.3	-24.1	-24	-24.2	-23.9	-23.9
Opacity	5.82							

Run #11									Run #11 Avg
Time	10:30	10:45	11:00	11:15	11:30	11:45	12:00	12:15	
Parameters									
Steam Flow (klb/hr)	263.1	274.4	275.4	271.5	274.1	263.7	276.7	274.3	271.7
Steam Temp (deg F)	958	956	951	952	951	949	947	950	951.8
Coal Flow (lb/hr)	25116	25116	26341	25714	26341	26341	25116	26341	25803.3
Boiler O2s (Avg)	4.2	4.2	3.7	3.8	4.0	3.9	3.7	3.8	3.9
west	4.2	4.2	3.5	3.9	4.1	4.1	3.7	4	4.0
central	4.8	5.1	4.4	4.2	4.5	4.2	4.7	4.3	4.5
east	3.7	3.3	3.1	3.2	3.3	3.5	2.8	3	3.2
East Undergrate Air Flow (lb/hr)	132196	138425	136945	136495	135669	134149	137295	138669	136230.4
West Undergrate Air Flow (lb/hr)	132253	136794	137143	135492	133891	132568	137703	139324	135646.0
Baghouse Inlet Temp (deg F)	186.3	184.3	184.1	185.5	186.6	185.4	184.8	183.9	185.1
Baghouse Outlet Temp (deg F)	191.7	183.2	180.1	179.2	179.1	178.2	177.4	176.9	180.7
Baghouse DP (in H2O)	7.5	7.6	7.6	8.2	7.4	7.4	7.6	7.6	7.6
ID Fan Suct. Press. (in H2O)	-22.3	-23.8	-23.9	-24.2	-23.9	-24	-23.9	-24	-23.8
Opacity	3.81								

Run #12								Run #12 Avg
Time	13:30	13:45	14:00	14:15	14:30	14:45	15:00	
Parameters								
Steam Flow (klb/hr)	284.2	285.6	250.7	276.6	285.1	285.6	282.1	278.6
Steam Temp (deg F)	954	952	946	946	948	949	951	949.4
Coal Flow (lb/hr)	26341	26341	24545	27000	29189	26341	26341	26585.4
Boiler O2s (Avg)	3.0	3.2	4.3	4.3	3.8	3.6	3.9	3.7
west	2.7	3.5	5.2	5	4.7	4.6	5	4.4
central	3.5	3.5	3.9	4.8	4	3.9	4.5	4.0
east	2.9	2.7	3.8	3	2.6	2.3	2.2	2.8
East Undergrate Air Flow (lb/hr)	140296	141421	131914	138136	140224	143070	141450	139501.6
West Undergrate Air Flow (lb/hr)	139249	141265	131472	138326	138789	142880	142277	139179.7
Baghouse Inlet Temp (deg F)	186.4	184.7	184	184.3	184.8	184.7	185.5	184.9
Baghouse Outlet Temp (deg F)	177.8	177.2	176.2	177.5	176.6	176.9	177.6	177.1
Baghouse DP (in H2O)	7.4	7	7.6	7.5	7.1	7.2	7.5	7.3
ID Fan Suct. Press. (in H2O)	-24.1	-23.7	-24.1	-24	-23.8	-24.1	-24	-24.0
Opacity	3.80							

RCA #1 Appendix B

Computer Results for M17 Tests

FILE NAME - 1A
RUN # - 1 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/26/99 Time: 1544-1733
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:24:29

Initial Meter Volume (Cubic Feet)=	747.342
Final Meter Volume (Cubic Feet)=	805.889
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.005
Net Meter Volume (Cubic Feet)=	59.659
Gas Volume (Dry Standard Cubic Feet)=	56.843
Barometric Pressure (in Hg)=	29.73
Static Pressure (Inches H20)=	-26.34
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	201.6
Percent Water=	14.3
Average Meter Temperature (F)=	92
Average Delta H (in H20)=	1.38
Average Delta P (in H20)=	1.676
Average Stack Temperature (F)=	184
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.77
Average Square Root of Delta P (in H20)=	1.1924
% Isokinetic=	101.2
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.185
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,611
Flow Rate (Actual, Cubic ft/min)=	120,450
Flow rate (Standard, Wet, Cubic ft/min)=	91,718
Flow Rate (Standard, Dry, Cubic ft/min)=	78,590

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0723		
Particulate Loading, Dry Std. (gr/scf)=	0.0196	0.0163	0.0157
Particulate Loading, Actual (gr/cu ft)=	0.0128		
Emission Rate (lb/hr)=	13.19		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 1A
RUN # - 1 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/26/99 Time: 1544-1733
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:24:29

Initial Meter Volume (Cubic Meters)=	21.162
Final Meter Volume (Cubic Meters)=	22.820
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.689
Gas Volume (Dry Standard Cubic Meters)=	1.610
Barometric Pressure (mm Hg)=	755
Static Pressure (mm H20)=	-669
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	201.6
Percent Water=	14.3
Average Meter Temperature (C)=	34
Average Delta H (mm H20)=	35.0
Average Delta P (mm H20)=	42.6
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.77
Average Square Root of Delta P (mm H20)=	6.0093
% Isokinetic=	101.2
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.70
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,405
Flow rate (Actual, Cubic m/min)=	3,411
Flow rate (Standard, Wet, Cubic m/min)=	2,597
Flow rate (Standard, Dry, Cubic m/min)=	2,225

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0723		
Particulate Loading, Dry Std. (mg/cu m)=	44.9	37.4	35.9
Particulate Loading, Actual (mg/cu m)=	29.3		
Emission Rate (kg/hr)=	5.99		

No Back Half Analysis

FILE NAME - 1A
RUN # - 1 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/26/99 Time: 1544-1733
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.400	2.00	185	90	90
2	2.300	1.90	185	89	90
3	2.100	1.70	184	90	89
4	0.650	0.53	183	91	89
5	0.030	0.02	182	91	89
6	2.700	2.20	182	90	89
7	2.100	1.70	183	92	89
8	2.200	1.80	184	93	90
9	0.860	0.71	184	95	90
10	0.060	0.04	184	95	90
11	2.800	2.30	184	92	90
12	2.900	2.40	185	95	90
13	2.700	2.20	185	97	91
14	1.700	1.40	185	98	91
15	0.200	0.16	185	98	91
16	2.700	2.20	185	95	92
17	2.500	2.10	185	97	91
18	2.300	1.90	184	98	91
19	1.100	0.91	185	98	91
20	0.230	0.19	185	97	92
21	2.500	2.10	185	93	91
22	2.300	1.90	184	95	91
23	1.800	1.50	184	96	91
24	0.710	0.59	183	97	90
25	0.060	0.04	183	95	90

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3971	3.3372	0.0000	0.0599

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7749	3.7625	24.7	0.0124
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 1B
RUN # - 1 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/26/99 Time: 1546-1735
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:24:42

Initial Meter Volume (Cubic Feet)=	26.766
Final Meter Volume (Cubic Feet)=	86.131
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	60.730
Gas Volume (Dry Standard Cubic Feet)=	57.707
Barometric Pressure (in Hg)=	29.73
Static Pressure (Inches H20)=	-26.34
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	204.5
Percent Water=	14.3
Average Meter Temperature (F)=	94
Average Delta H (in H20)=	1.44
Average Delta P (in H20)=	1.678
Average Stack Temperature (F)=	185
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.77
Average Square Root of Delta P (in H20)=	1.1910
% Isokinetic=	104.1
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.184
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,608
Flow Rate (Actual, Cubic ft/min)=	120,392
Flow rate (Standard, Wet, Cubic ft/min)=	91,554
Flow Rate (Standard, Dry, Cubic ft/min)=	78,458

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0674		
Particulate Loading, Dry Std. (gr/scf)=	0.0180	0.0150	0.0144
Particulate Loading, Actual (gr/cu ft)=	0.0117		
Emission Rate (lb/hr)=	12.09		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 1B
RUN # - 1 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/26/99 Time: 1546-1735
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	0.758
Final Meter Volume (Cubic Meters)=	2.439
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.720
Gas Volume (Dry Standard Cubic Meters)=	1.634
Barometric Pressure (mm Hg)=	755
Static Pressure (mm H20)=	-669
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	204.5
Percent Water=	14.3
Average Meter Temperature (C)=	34
Average Delta H (mm H20)=	36.7
Average Delta P (mm H20)=	42.6
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.77
Average Square Root of Delta P (mm H20)=	6.0026
% Isokinetic=	104.1
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.67
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,405
Flow rate (Actual, Cubic m/min)=	3,409
Flow rate (Standard, Wet, Cubic m/min)=	2,593
Flow rate (Standard, Dry, Cubic m/min)=	2,222

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0674		
Particulate Loading, Dry Std. (mg/cu m)=	41.2	34.4	33.0
Particulate Loading, Actual (mg/cu m)=	26.9		
Emission Rate (kg/hr)=	5.49		

No Back Half Analysis

FILE NAME - 1B
RUN # - 1 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/26/99 Time: 1546-1735
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:24:42

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.900	2.50	185	90	90
2	2.700	2.30	185	90	90
3	2.200	1.90	184	90	89
4	1.000	0.85	183	91	90
5	0.220	0.18	183	91	90
6	2.600	2.20	185	92	90
7	2.200	1.90	185	92	90
8	2.000	1.70	185	93	91
9	0.850	0.73	184	95	91
10	0.060	0.05	185	95	92
11	2.400	2.10	185	94	92
12	2.100	1.80	185	95	92
13	1.900	1.60	185	96	93
14	0.660	0.57	185	98	94
15	0.030	0.02	185	98	94
16	2.300	2.00	186	96	94
17	2.400	2.10	186	97	94
18	2.300	2.00	186	98	95
19	0.830	0.71	186	99	95
20	0.030	0.02	186	99	95
21	2.600	2.20	185	97	95
22	2.800	2.40	185	97	95
23	2.600	2.30	185	98	95
24	2.100	1.80	185	98	95
25	0.180	0.15	185	99	95

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3709	3.3160	0.0000	0.0549

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.4608	3.4483	31.8	0.0125
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 2A
RUN # - 2 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 0852-1041
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:24:54

Initial Meter Volume (Cubic Feet)=	806.932
Final Meter Volume (Cubic Feet)=	870.949
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.004
Net Meter Volume (Cubic Feet)=	65.233
Gas Volume (Dry Standard Cubic Feet)=	62.598
Barometric Pressure (in Hg)=	29.77
Static Pressure (Inches H20)=	-26.81
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	217.9
Percent Water=	14.1
Average Meter Temperature (F)=	89
Average Delta H (in H20)=	1.59
Average Delta P (in H20)=	1.708
Average Stack Temperature (F)=	185
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.80
Average Square Root of Delta P (in H20)=	1.2166
% Isokinetic=	101.3
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.192
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,705
Flow Rate (Actual, Cubic ft/min)=	122,912
Flow rate (Standard, Wet, Cubic ft/min)=	93,477
Flow Rate (Standard, Dry, Cubic ft/min)=	80,310

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0052		
Particulate Loading, Dry Std. (gr/scf)=	0.0013	0.0011	0.0010
Particulate Loading, Actual (gr/cu ft)=	0.0008		
Emission Rate (lb/hr)=	0.88		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 2A
RUN # - 2 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 0852-1041
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:24:54

Initial Meter Volume (Cubic Meters)=	22.849
Final Meter Volume (Cubic Meters)=	24.662
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.847
Gas Volume (Dry Standard Cubic Meters)=	1.773
Barometric Pressure (mm Hg)=	756
Static Pressure (mm H20)=	-681
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	217.9
Percent Water=	14.1
Average Meter Temperature (C)=	32
Average Delta H (mm H20)=	40.4
Average Delta P (mm H20)=	43.4
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.80
Average Square Root of Delta P (mm H20)=	6.1314
% Isokinetic=	101.3
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.88
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,434
Flow rate (Actual, Cubic m/min)=	3,480
Flow rate (Standard, Wet, Cubic m/min)=	2,647
Flow rate (Standard, Dry, Cubic m/min)=	2,274

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0052		
Particulate Loading, Dry Std. (mg/cu m)=	2.9	2.4	2.3
Particulate Loading, Actual (mg/cu m)=	1.9		
Emission Rate (kg/hr)=	0.40		

No Back Half Analysis

FILE NAME - 2A
RUN # - 2 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 0852-1041
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:24:55

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.300	2.10	186	79	79
2	2.100	1.90	185	79	79
3	2.000	1.80	184	81	79
4	0.780	0.72	184	83	80
5	0.030	0.02	184	84	80
6	2.700	2.50	186	83	81
7	2.600	2.40	186	86	81
8	2.300	2.10	186	90	82
9	0.830	0.77	185	91	83
10	0.180	0.16	184	91	84
11	2.700	2.50	185	89	85
12	2.800	2.60	185	92	85
13	2.700	2.50	185	95	86
14	1.700	1.60	186	97	87
15	0.290	0.27	186	99	88
16	2.600	2.40	185	95	89
17	2.500	2.40	185	97	89
18	2.200	2.10	185	100	90
19	1.400	1.30	186	101	91
20	0.350	0.33	185	101	91
21	2.400	2.30	185	98	92
22	2.400	2.30	184	100	92
23	2.100	2.00	184	101	93
24	0.680	0.64	185	103	93
25	0.060	0.05	185	102	94

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3405	3.3364	0.0000	0.0041

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7217	3.7206	23.3	0.0011
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 2B
RUN # - 2 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 0854-1043
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:25:09

Initial Meter Volume (Cubic Feet)=	97.177
Final Meter Volume (Cubic Feet)=	161.472
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.004
Net Meter Volume (Cubic Feet)=	65.774
Gas Volume (Dry Standard Cubic Feet)=	63.643
Barometric Pressure (in Hg)=	29.77
Static Pressure (Inches H20)=	-26.81
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	223.4
Percent Water=	14.2
Average Meter Temperature (F)=	85
Average Delta H (in H20)=	1.68
Average Delta P (in H20)=	1.716
Average Stack Temperature (F)=	185
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.78
Average Square Root of Delta P (in H20)=	1.2237
% Isokinetic=	101.4
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.193
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,735
Flow Rate (Actual, Cubic ft/min)=	123,690
Flow rate (Standard, Wet, Cubic ft/min)=	94,027
Flow Rate (Standard, Dry, Cubic ft/min)=	80,687

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0052		
Particulate Loading, Dry Std. (gr/scf)=	0.0013	0.0010	0.0010
Particulate Loading, Actual (gr/cu ft)=	0.0008		
Emission Rate (lb/hr)=	0.87		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 2B
RUN # - 2 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 0854-1043
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:25:09

Initial Meter Volume (Cubic Meters)=	2.752
Final Meter Volume (Cubic Meters)=	4.572
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.862
Gas Volume (Dry Standard Cubic Meters)=	1.802
Barometric Pressure (mm Hg)=	756
Static Pressure (mm H20)=	-681
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	223.4
Percent Water=	14.2
Average Meter Temperature (C)=	29
Average Delta H (mm H20)=	42.8
Average Delta P (mm H20)=	43.6
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.78
Average Square Root of Delta P (mm H20)=	6.1675
% Isokinetic=	101.4
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.90
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,443
Flow rate (Actual, Cubic m/min)=	3,502
Flow rate (Standard, Wet, Cubic m/min)=	2,663
Flow rate (Standard, Dry, Cubic m/min)=	2,285

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0052		
Particulate Loading, Dry Std. (mg/cu m)=	2.9	2.4	2.3
Particulate Loading, Actual (mg/cu m)=	1.9		
Emission Rate (kg/hr)=	0.40		

No Back Half Analysis

FILE NAME - 2B
RUN # - 2 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 0854-1043
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:25:09

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.500	2.40	187	78	78
2	2.700	2.60	185	79	78
3	2.400	2.30	185	80	79
4	1.500	1.50	184	80	79
5	0.220	0.21	185	82	79
6	2.600	2.50	186	81	80
7	2.200	2.10	186	83	80
8	2.100	2.00	186	84	81
9	0.800	0.78	185	85	81
10	0.090	0.08	185	86	82
11	2.500	2.40	186	84	82
12	2.200	2.20	185	85	83
13	2.000	2.00	185	88	83
14	0.690	0.67	185	89	84
15	0.060	0.05	185	89	84
16	2.500	2.50	185	88	85
17	2.200	2.20	184	88	85
18	2.000	2.00	186	90	86
19	1.100	1.10	187	91	87
20	0.130	0.12	185	91	87
21	2.900	2.90	184	90	88
22	2.900	2.90	184	91	88
23	2.400	2.40	186	93	89
24	1.800	1.80	187	94	89
25	0.420	0.41	185	94	89

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2663	3.2615	0.0000	0.0048

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7100	3.7096	24.6	0.0004
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 3A
RUN # - 3 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 1144-1333
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:25:34

Initial Meter Volume (Cubic Feet)=	871.572
Final Meter Volume (Cubic Feet)=	937.364
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.002
Net Meter Volume (Cubic Feet)=	67.042
Gas Volume (Dry Standard Cubic Feet)=	63.997
Barometric Pressure (in Hg)=	29.80
Static Pressure (Inches H20)=	-26.61
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	225.9
Percent Water=	14.3
Average Meter Temperature (F)=	93
Average Delta H (in H20)=	1.67
Average Delta P (in H20)=	1.661
Average Stack Temperature (F)=	188
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.78
Average Square Root of Delta P (in H20)=	1.1947
% Isokinetic=	101.5
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.196
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,628
Flow Rate (Actual, Cubic ft/min)=	120,918
Flow rate (Standard, Wet, Cubic ft/min)=	91,704
Flow Rate (Standard, Dry, Cubic ft/min)=	78,631

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0069		
Particulate Loading, Dry Std. (gr/scf)=	0.0017	0.0014	0.0013
Particulate Loading, Actual (gr/cu ft)=	0.0011		
Emission Rate (lb/hr)=	1.12		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 3A
RUN # - 3 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 1144-1333
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	24.679
Final Meter Volume (Cubic Meters)=	26.542
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.898
Gas Volume (Dry Standard Cubic Meters)=	1.812
Barometric Pressure (mm Hg)=	757
Static Pressure (mm H20)=	-676
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	225.9
Percent Water=	14.3
Average Meter Temperature (C)=	34
Average Delta H (mm H20)=	42.5
Average Delta P (mm H20)=	42.2
Average Stack Temperature (C)=	87
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.78
Average Square Root of Delta P (mm H20)=	6.0212
% Isokinetic=	101.5
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.98
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,411
Flow rate (Actual, Cubic m/min)=	3,424
Flow rate (Standard, Wet, Cubic m/min)=	2,597
Flow rate (Standard, Dry, Cubic m/min)=	2,227

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0069		
Particulate Loading, Dry Std. (mg/cu m)=	3.8	3.2	3.0
Particulate Loading, Actual (mg/cu m)=	2.5		
Emission Rate (kg/hr)=	0.51		

No Back Half Analysis

FILE NAME - 3A
RUN # - 3 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 1144-1333
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.100	2.10	187	88	88
2	2.000	2.00	185	87	88
3	1.700	1.70	185	90	87
4	0.650	0.66	185	92	88
5	0.030	0.03	185	92	88
6	2.500	2.50	186	89	88
7	2.400	2.40	186	93	88
8	2.300	2.40	185	96	89
9	0.730	0.74	185	97	89
10	0.080	0.08	183	95	89
11	2.700	2.70	188	92	89
12	2.600	2.70	186	95	90
13	2.700	2.80	185	97	90
14	1.300	1.30	185	100	90
15	0.320	0.32	187	99	91
16	2.700	2.70	189	94	91
17	2.500	2.50	189	98	91
18	2.400	2.40	191	100	91
19	1.500	1.50	193	101	92
20	0.180	0.18	193	101	92
21	2.500	2.50	193	96	92
22	2.300	2.30	193	99	93
23	2.300	2.30	192	101	93
24	0.930	0.95	191	102	93
25	0.110	0.11	190	101	93

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2386	3.2319	0.0000	0.0067

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.6896	3.6894	19.5	0.0002
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml) = 0.0000
Impinger Blank (mg/ml) = 0.0000

FILE NAME - 3B
RUN # - 3 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 1146-1335
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Feet)=	165.670
Final Meter Volume (Cubic Feet)=	231.600
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.001
Net Meter Volume (Cubic Feet)=	67.446
Gas Volume (Dry Standard Cubic Feet)=	64.283
Barometric Pressure (in Hg)=	29.80
Static Pressure (Inches H20)=	-26.61
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	237.2
Percent Water=	14.8
Average Meter Temperature (F)=	94
Average Delta H (in H20)=	1.75
Average Delta P (in H20)=	1.673
Average Stack Temperature (F)=	189
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.71
Average Square Root of Delta P (in H20)=	1.2010
% Isokinetic=	102.0
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.196
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,661
Flow Rate (Actual, Cubic ft/min)=	121,761
Flow rate (Standard, Wet, Cubic ft/min)=	92,247
Flow Rate (Standard, Dry, Cubic ft/min)=	78,588

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0074		
Particulate Loading, Dry Std. (gr/scf)=	0.0018	0.0015	0.0014
Particulate Loading, Actual (gr/cu ft)=	0.0011		
Emission Rate (lb/hr)=	1.19		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 3B
RUN # - 3 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 1146-1335
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	4.691
Final Meter Volume (Cubic Meters)=	6.558
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0000
Net Meter Volume (Cubic Meters)=	1.910
Gas Volume (Dry Standard Cubic Meters)=	1.820
Barometric Pressure (mm Hg)=	757
Static Pressure (mm H20)=	-676
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	237.2
Percent Water=	14.8
Average Meter Temperature (C)=	34
Average Delta H (mm H20)=	44.4
Average Delta P (mm H20)=	42.5
Average Stack Temperature (C)=	87
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.71
Average Square Root of Delta P (mm H20)=	6.0528
% Isokinetic=	102.0
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.98
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,421
Flow rate (Actual, Cubic m/min)=	3,448
Flow rate (Standard, Wet, Cubic m/min)=	2,612
Flow rate (Standard, Dry, Cubic m/min)=	2,225

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0074		
Particulate Loading, Dry Std. (mg/cu m)=	4.1	3.4	3.3
Particulate Loading, Actual (mg/cu m)=	2.6		
Emission Rate (kg/hr)=	0.54		

No Back Half Analysis

FILE NAME - 3B
RUN # - 3 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 1146-1335
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:25:46

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.400	2.50	188	88	88
2	2.400	2.50	185	88	87
3	2.000	2.10	186	89	88
4	1.800	1.90	186	90	88
5	0.380	0.39	186	92	89
6	2.500	2.60	186	92	89
7	2.300	2.40	187	93	89
8	1.800	1.90	186	94	90
9	0.930	0.98	184	95	91
10	0.100	0.10	185	96	91
11	2.400	2.50	187	94	92
12	2.500	2.60	185	95	92
13	2.000	2.10	185	96	92
14	0.670	0.71	186	98	93
15	0.040	0.04	187	98	93
16	2.500	2.60	189	96	93
17	2.600	2.70	191	96	94
18	1.700	1.80	193	99	94
19	0.870	0.91	195	100	95
20	0.030	0.03	195	100	95
21	2.600	2.70	194	98	96
22	2.500	2.60	193	99	96
23	2.600	2.70	192	100	96
24	2.000	2.10	192	102	97
25	0.200	0.21	191	103	97

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2645	3.2584	0.0000	0.0061

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7280	3.7267	33.2	0.0013
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 4A
RUN # - 4 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time:1448-1637
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:25:57

Initial Meter Volume (Cubic Feet)=	938.313
Final Meter Volume (Cubic Feet)=	1002.221
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	65.122
Gas Volume (Dry Standard Cubic Feet)=	61.655
Barometric Pressure (in Hg)=	29.76
Static Pressure (Inches H20)=	-27.18
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.1
Moisture Collected (ml)=	219.0
Percent Water=	14.3
Average Meter Temperature (F)=	97
Average Delta H (in H20)=	1.57
Average Delta P (in H20)=	1.649
Average Stack Temperature (F)=	185
Dry Molecular Weight=	30.58
Wet Molecular Weight=	28.78
Average Square Root of Delta P (in H20)=	1.1990
% Isokinetic=	101.6
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.192
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,643
Flow Rate (Actual, Cubic ft/min)=	121,295
Flow rate (Standard, Wet, Cubic ft/min)=	92,061
Flow Rate (Standard, Dry, Cubic ft/min)=	78,866

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0069		
Particulate Loading, Dry Std. (gr/scf)=	0.0017	0.0014	0.0014
Particulate Loading, Actual (gr/cu ft)=	0.0011		
Emission Rate (lb/hr)=	1.16		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 4A
RUN # - 4 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time:1448-1637
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:25:57

Initial Meter Volume (Cubic Meters)=	26.569
Final Meter Volume (Cubic Meters)=	28.379
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.844
Gas Volume (Dry Standard Cubic Meters)=	1.746
Barometric Pressure (mm Hg)=	756
Static Pressure (mm H20)=	-690
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.1
Moisture Collected (ml)=	219.0
Percent Water=	14.3
Average Meter Temperature (C)=	36
Average Delta H (mm H20)=	39.8
Average Delta P (mm H20)=	41.9
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.58
Wet Molecular Weight=	28.78
Average Square Root of Delta P (mm H20)=	6.0428
% Isokinetic=	101.6
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.88
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,415
Flow rate (Actual, Cubic m/min)=	3,435
Flow rate (Standard, Wet, Cubic m/min)=	2,607
Flow rate (Standard, Dry, Cubic m/min)=	2,233

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0069		
Particulate Loading, Dry Std. (mg/cu m)=	4.0	3.3	3.1
Particulate Loading, Actual (mg/cu m)=	2.6		
Emission Rate (kg/hr)=	0.53		

No Back Half Analysis

FILE NAME - 4A
RUN # - 4 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time:1448-1637
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:25:58

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.500	2.30	186	92	92
2	2.100	2.00	186	92	91
3	1.800	1.70	188	94	92
4	0.640	0.60	186	95	92
5	0.060	0.05	184	95	92
6	2.400	2.30	186	93	92
7	2.300	2.20	186	96	92
8	2.000	1.90	186	98	93
9	0.850	0.80	185	100	93
10	0.120	0.11	185	99	93
11	2.600	2.50	185	95	94
12	2.700	2.60	184	99	94
13	2.400	2.30	186	102	94
14	1.200	1.10	186	102	95
15	0.420	0.39	185	101	95
16	2.600	2.50	185	99	95
17	2.700	2.60	186	101	95
18	2.000	1.90	186	103	95
19	1.800	1.70	185	104	96
20	0.280	0.26	185	104	96
21	2.400	2.30	185	100	96
22	2.300	2.20	185	102	96
23	2.200	2.10	185	104	97
24	0.760	0.72	186	105	97
25	0.090	0.08	185	103	97

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2673	3.2612	0.0000	0.0061

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.4127	3.4119	27.3	0.0008
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 4B
RUN # - 4 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 1450-1639
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:26:10

Initial Meter Volume (Cubic Feet)=	239.145
Final Meter Volume (Cubic Feet)=	304.547
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.004
Net Meter Volume (Cubic Feet)=	66.906
Gas Volume (Dry Standard Cubic Feet)=	63.218
Barometric Pressure (in Hg)=	29.76
Static Pressure (Inches H20)=	-27.18
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.1
Moisture Collected (ml)=	232.3
Percent Water=	14.8
Average Meter Temperature (F)=	98
Average Delta H (in H20)=	1.68
Average Delta P (in H20)=	1.683
Average Stack Temperature (F)=	186
Dry Molecular Weight=	30.58
Wet Molecular Weight=	28.73
Average Square Root of Delta P (in H20)=	1.2163
% Isokinetic=	102.1
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.193
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,716
Flow Rate (Actual, Cubic ft/min)=	123,203
Flow rate (Standard, Wet, Cubic ft/min)=	93,434
Flow Rate (Standard, Dry, Cubic ft/min)=	79,649

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0072		
Particulate Loading, Dry Std. (gr/scf)=	0.0018	0.0015	0.0014
Particulate Loading, Actual (gr/cu ft)=	0.0011		
Emission Rate (lb/hr)=	1.20		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 4B
RUN # - 4 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 1450-1639
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:26:10

Initial Meter Volume (Cubic Meters)=	6.772
Final Meter Volume (Cubic Meters)=	8.624
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.895
Gas Volume (Dry Standard Cubic Meters)=	1.790
Barometric Pressure (mm Hg)=	756
Static Pressure (mm H20)=	-690
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.1
Moisture Collected (ml)=	232.3
Percent Water=	14.8
Average Meter Temperature (C)=	37
Average Delta H (mm H20)=	42.7
Average Delta P (mm H20)=	42.8
Average Stack Temperature (C)=	86
Dry Molecular Weight=	30.58
Wet Molecular Weight=	28.73
Average Square Root of Delta P (mm H20)=	6.1297
% Isokinetic=	102.1
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.90
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,437
Flow rate (Actual, Cubic m/min)=	3,489
Flow rate (Standard, Wet, Cubic m/min)=	2,646
Flow rate (Standard, Dry, Cubic m/min)=	2,255

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0072		
Particulate Loading, Dry Std. (mg/cu m)=	4.0	3.4	3.2
Particulate Loading, Actual (mg/cu m)=	2.6		
Emission Rate (kg/hr)=	0.54		

No Back Half Analysis

FILE NAME - 4B
RUN # - 4 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/27/99 Time: 1450-1639
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:26:10

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.700	2.70	186	93	93
2	2.600	2.60	187	93	93
3	2.400	2.40	189	94	93
4	0.920	0.91	185	95	93
5	0.400	0.39	185	95	93
6	2.600	2.60	186	96	94
7	2.100	2.10	186	96	94
8	2.000	2.00	186	98	95
9	0.820	0.81	187	99	95
10	0.180	0.18	185	99	95
11	2.300	2.30	185	98	96
12	2.200	2.20	185	99	96
13	2.100	2.10	186	100	96
14	0.680	0.68	186	101	97
15	0.060	0.06	185	101	97
16	2.600	2.60	186	100	97
17	2.100	2.10	186	101	98
18	2.300	2.30	187	102	98
19	1.300	1.30	186	103	99
20	0.120	0.12	186	104	99
21	2.700	2.70	186	102	99
22	2.800	2.80	185	102	99
23	1.900	1.90	186	104	100
24	1.900	1.90	187	105	100
25	0.300	0.30	186	105	101

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2534	3.2467	0.0000	0.0067

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5387	3.5382	26.6	0.0005
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 5A
RUN # - 5 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 0850-1039
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:34:24

Initial Meter Volume (Cubic Feet)=	3.620
Final Meter Volume (Cubic Feet)=	58.910
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.002
Net Meter Volume (Cubic Feet)=	56.341
Gas Volume (Dry Standard Cubic Feet)=	54.330
Barometric Pressure (in Hg)=	29.83
Static Pressure (Inches H20)=	-23.07
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	189.1
Percent Water=	14.1
Average Meter Temperature (F)=	87
Average Delta H (in H20)=	1.20
Average Delta P (in H20)=	1.533
Average Stack Temperature (F)=	185
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.80
Average Square Root of Delta P (in H20)=	1.1504
% Isokinetic=	99.5
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.185
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,422
Flow Rate (Actual, Cubic ft/min)=	115,530
Flow rate (Standard, Wet, Cubic ft/min)=	88,916
Flow Rate (Standard, Dry, Cubic ft/min)=	76,393

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0224		
Particulate Loading, Dry Std. (gr/scf)=	0.0063	0.0053	0.0051
Particulate Loading, Actual (gr/cu ft)=	0.0042		
Emission Rate (lb/hr)=	4.16		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 5A
RUN # - 5 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 0850-1039
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:34:24

Initial Meter Volume (Cubic Meters)=	0.103
Final Meter Volume (Cubic Meters)=	1.668
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.595
Gas Volume (Dry Standard Cubic Meters)=	1.538
Barometric Pressure (mm Hg)=	758
Static Pressure (mm H20)=	-586
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	189.1
Percent Water=	14.1
Average Meter Temperature (C)=	31
Average Delta H (mm H20)=	30.4
Average Delta P (mm H20)=	38.9
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.80
Average Square Root of Delta P (mm H20)=	5.7976
% Isokinetic=	99.5
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.70
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,348
Flow rate (Actual, Cubic m/min)=	3,271
Flow rate (Standard, Wet, Cubic m/min)=	2,518
Flow rate (Standard, Dry, Cubic m/min)=	2,163

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0224		
Particulate Loading, Dry Std. (mg/cu m)=	14.6	12.1	11.6
Particulate Loading, Actual (mg/cu m)=	9.6		
Emission Rate (kg/hr)=	1.89		

No Back Half Analysis

FILE NAME - 5A
RUN # - 5 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 0850-1039
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.300	1.80	185	80	80
2	2.100	1.60	186	80	80
3	1.800	1.40	185	82	80
4	0.750	0.58	185	83	80
5	0.030	0.02	184	83	81
6	2.300	1.80	185	82	81
7	2.100	1.60	185	85	81
8	2.200	1.70	186	87	82
9	0.660	0.51	185	89	82
10	0.060	0.04	185	88	83
11	2.500	2.00	185	86	84
12	2.300	1.80	185	89	84
13	1.800	1.40	186	92	85
14	1.700	1.30	185	93	86
15	0.310	0.24	185	94	86
16	2.400	1.90	185	91	87
17	2.200	1.70	185	93	87
18	2.200	1.70	185	95	87
19	1.400	1.10	185	96	88
20	0.150	0.11	184	97	88
21	2.300	1.80	185	92	89
22	2.100	1.70	186	95	90
23	1.800	1.40	186	96	90
24	0.750	0.59	185	98	90
25	0.120	0.09	184	97	90

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2232	3.2048	0.0000	0.0184

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.6924	3.6884	31.5	0.0040
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 5B
RUN # - 5 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 0852-1041
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Feet)=	305.126
Final Meter Volume (Cubic Feet)=	360.649
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	56.800
Gas Volume (Dry Standard Cubic Feet)=	54.766
Barometric Pressure (in Hg)=	29.83
Static Pressure (Inches H20)=	-23.07
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	185.3
Percent Water=	13.7
Average Meter Temperature (F)=	87
Average Delta H (in H20)=	1.27
Average Delta P (in H20)=	1.608
Average Stack Temperature (F)=	186
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.84
Average Square Root of Delta P (in H20)=	1.1729
% Isokinetic=	99.2
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.184
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,507
Flow Rate (Actual, Cubic ft/min)=	117,749
Flow rate (Standard, Wet, Cubic ft/min)=	90,557
Flow Rate (Standard, Dry, Cubic ft/min)=	78,109

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0232		
Particulate Loading, Dry Std. (gr/scf)=	0.0065	0.0054	0.0052
Particulate Loading, Actual (gr/cu ft)=	0.0043		
Emission Rate (lb/hr)=	4.37		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 5B
RUN # - 5 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 0852-1041
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	8.640
Final Meter Volume (Cubic Meters)=	10.212
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.608
Gas Volume (Dry Standard Cubic Meters)=	1.551
Barometric Pressure (mm Hg)=	758
Static Pressure (mm H20)=	-586
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	185.3
Percent Water=	13.7
Average Meter Temperature (C)=	31
Average Delta H (mm H20)=	32.3
Average Delta P (mm H20)=	40.9
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.84
Average Square Root of Delta P (mm H20)=	5.9111
% Isokinetic=	99.2
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.67
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,374
Flow rate (Actual, Cubic m/min)=	3,334
Flow rate (Standard, Wet, Cubic m/min)=	2,564
Flow rate (Standard, Dry, Cubic m/min)=	2,212

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0232		
Particulate Loading, Dry Std. (mg/cu m)=	15.0	12.5	12.0
Particulate Loading, Actual (mg/cu m)=	9.9		
Emission Rate (kg/hr)=	1.98		

No Back Half Analysis

FILE NAME - 5B
RUN # - 5 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 0852-1041
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.600	2.00	186	80	79
2	2.600	2.00	187	80	79
3	2.100	1.70	185	81	80
4	1.600	1.30	185	82	80
5	0.330	0.26	185	83	81
6	2.200	1.70	186	83	81
7	2.100	1.60	186	84	82
8	2.100	1.70	186	86	83
9	0.800	0.63	186	87	83
10	0.060	0.04	184	88	84
11	2.400	1.90	185	87	85
12	2.100	1.70	186	88	85
13	1.800	1.40	186	90	86
14	0.640	0.51	186	91	87
15	0.030	0.02	184	91	87
16	2.300	1.80	185	91	88
17	2.300	1.80	186	92	89
18	2.200	1.80	186	93	89
19	0.760	0.60	186	94	90
20	0.050	0.04	185	95	91
21	2.500	2.00	185	93	91
22	2.300	1.80	186	94	91
23	2.400	1.90	186	96	92
24	1.800	1.50	186	97	93
25	0.140	0.11	185	98	93

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2806	3.2600	0.0000	0.0206

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7242	3.7216	32.9	0.0026
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 6A
RUN # - 6 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1141-1330
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Feet)=	62.904
Final Meter Volume (Cubic Feet)=	119.529
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.006
Net Meter Volume (Cubic Feet)=	57.701
Gas Volume (Dry Standard Cubic Feet)=	54.726
Barometric Pressure (in Hg)=	29.84
Static Pressure (Inches H20)=	-25.86
Percent Oxygen=	4.1
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	185.5
Percent Water=	13.8
Average Meter Temperature (F)=	97
Average Delta H (in H20)=	1.25
Average Delta P (in H20)=	1.542
Average Stack Temperature (F)=	188
Dry Molecular Weight=	30.60
Wet Molecular Weight=	28.86
Average Square Root of Delta P (in H20)=	1.1479
% Isokinetic=	99.7
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.186
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,433
Flow Rate (Actual, Cubic ft/min)=	115,808
Flow rate (Standard, Wet, Cubic ft/min)=	88,134
Flow Rate (Standard, Dry, Cubic ft/min)=	76,001

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0195		
Particulate Loading, Dry Std. (gr/scf)=	0.0055	0.0045	0.0043
Particulate Loading, Actual (gr/cu ft)=	0.0036		
Emission Rate (lb/hr)=	3.57		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 6A
RUN # - 6 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1141-1330
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	1.781
Final Meter Volume (Cubic Meters)=	3.385
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0002
Net Meter Volume (Cubic Meters)=	1.634
Gas Volume (Dry Standard Cubic Meters)=	1.550
Barometric Pressure (mm Hg)=	758
Static Pressure (mm H20)=	-657
Percent Oxygen=	4.1
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	185.5
Percent Water=	13.8
Average Meter Temperature (C)=	36
Average Delta H (mm H20)=	31.7
Average Delta P (mm H20)=	39.2
Average Stack Temperature (C)=	87
Dry Molecular Weight=	30.60
Wet Molecular Weight=	28.86
Average Square Root of Delta P (mm H20)=	5.7854
% Isokinetic=	99.7
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.72
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,351
Flow rate (Actual, Cubic m/min)=	3,279
Flow rate (Standard, Wet, Cubic m/min)=	2,496
Flow rate (Standard, Dry, Cubic m/min)=	2,152

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0195		
Particulate Loading, Dry Std. (mg/cu m)=	12.6	10.4	9.9
Particulate Loading, Actual (mg/cu m)=	8.3		
Emission Rate (kg/hr)=	1.62		

No Back Half Analysis

FILE NAME - 6A
RUN # - 6 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1141-1330
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.100	1.70	184	90	90
2	1.900	1.50	186	90	90
3	1.600	1.30	185	93	90
4	0.620	0.50	185	95	91
5	0.030	0.02	185	95	91
6	2.400	1.90	185	93	92
7	2.300	1.90	186	96	92
8	1.600	1.30	185	98	92
9	0.700	0.57	186	99	93
10	0.050	0.04	185	99	93
11	2.500	2.00	185	96	94
12	2.300	1.90	185	99	94
13	2.400	2.00	186	102	95
14	1.800	1.50	186	103	95
15	0.160	0.13	186	103	96
16	2.400	2.00	188	99	96
17	2.500	2.00	189	101	96
18	2.300	1.90	190	103	96
19	1.500	1.20	191	104	96
20	0.200	0.16	192	104	97
21	2.400	1.90	195	100	97
22	2.000	1.60	195	103	98
23	1.900	1.50	193	103	98
24	0.790	0.64	192	105	98
25	0.100	0.08	191	104	98

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2906	3.2721	0.0000	0.0185

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.3262	3.3252	29.4	0.0010
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 6B
RUN # - 6 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1143-1332
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:34:59

Initial Meter Volume (Cubic Feet)=	361.081
Final Meter Volume (Cubic Feet)=	417.537
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	57.754
Gas Volume (Dry Standard Cubic Feet)=	54.693
Barometric Pressure (in Hg)=	29.84
Static Pressure (Inches H20)=	-25.86
Percent Oxygen=	4.1
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	187.3
Percent Water=	13.9
Average Meter Temperature (F)=	98
Average Delta H (in H20)=	1.28
Average Delta P (in H20)=	1.584
Average Stack Temperature (F)=	188
Dry Molecular Weight=	30.60
Wet Molecular Weight=	28.85
Average Square Root of Delta P (in H20)=	1.1727
% Isokinetic=	99.8
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.184
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,532
Flow Rate (Actual, Cubic ft/min)=	118,386
Flow rate (Standard, Wet, Cubic ft/min)=	90,024
Flow Rate (Standard, Dry, Cubic ft/min)=	77,520

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0197		
Particulate Loading, Dry Std. (gr/scf)=	0.0055	0.0046	0.0044
Particulate Loading, Actual (gr/cu ft)=	0.0036		
Emission Rate (lb/hr)=	3.69		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 6B
RUN # - 6 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1143-1332
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	10.224
Final Meter Volume (Cubic Meters)=	11.823
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.635
Gas Volume (Dry Standard Cubic Meters)=	1.549
Barometric Pressure (mm Hg)=	758
Static Pressure (mm H20)=	-657
Percent Oxygen=	4.1
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	187.3
Percent Water=	13.9
Average Meter Temperature (C)=	36
Average Delta H (mm H20)=	32.6
Average Delta P (mm H20)=	40.2
Average Stack Temperature (C)=	87
Dry Molecular Weight=	30.60
Wet Molecular Weight=	28.85
Average Square Root of Delta P (mm H20)=	5.9102
% Isokinetic=	99.8
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.67
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,381
Flow rate (Actual, Cubic m/min)=	3,352
Flow rate (Standard, Wet, Cubic m/min)=	2,549
Flow rate (Standard, Dry, Cubic m/min)=	2,195

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0197		
Particulate Loading, Dry Std. (mg/cu m)=	12.7	10.5	10.0
Particulate Loading, Actual (mg/cu m)=	8.3		
Emission Rate (kg/hr)=	1.67		

No Back Half Analysis

FILE NAME - 6B
RUN # - 6 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1143-1332
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:34:59

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.300	1.80	185	91	91
2	2.200	1.80	187	92	91
3	2.000	1.60	186	92	92
4	1.100	0.88	186	94	92
5	0.270	0.21	185	95	92
6	2.400	1.90	186	95	93
7	2.300	1.90	186	96	93
8	1.700	1.40	186	97	94
9	0.850	0.68	186	98	94
10	0.140	0.11	185	99	95
11	2.500	2.00	185	98	96
12	2.200	1.80	186	99	96
13	1.800	1.50	186	100	96
14	0.650	0.52	186	101	97
15	0.040	0.03	186	101	97
16	2.200	1.80	188	100	98
17	2.300	1.90	189	101	98
18	2.200	1.80	191	102	99
19	0.820	0.66	193	103	99
20	0.090	0.07	193	103	99
21	2.400	1.90	194	102	100
22	2.800	2.30	195	103	100
23	2.500	2.00	194	104	100
24	1.600	1.30	193	105	101
25	0.250	0.20	192	105	101

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2922	3.2752	0.0000	0.0170

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.3625	3.3598	27.6	0.0027
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 7A
RUN # - 7 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1500-1649
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:09

Initial Meter Volume (Cubic Feet)=	126.947
Final Meter Volume (Cubic Feet)=	183.848
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.001
Net Meter Volume (Cubic Feet)=	57.982
Gas Volume (Dry Standard Cubic Feet)=	54.528
Barometric Pressure (in Hg)=	29.82
Static Pressure (Inches H20)=	-25.20
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	183.2
Percent Water=	13.7
Average Meter Temperature (F)=	101
Average Delta H (in H20)=	1.26
Average Delta P (in H20)=	1.570
Average Stack Temperature (F)=	195
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.85
Average Square Root of Delta P (in H20)=	1.1629
% Isokinetic=	99.5
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.185
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,515
Flow Rate (Actual, Cubic ft/min)=	117,955
Flow rate (Standard, Wet, Cubic ft/min)=	88,840
Flow Rate (Standard, Dry, Cubic ft/min)=	76,702

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0272		
Particulate Loading, Dry Std. (gr/scf)=	0.0077	0.0064	0.0061
Particulate Loading, Actual (gr/cu ft)=	0.0050		
Emission Rate (lb/hr)=	5.05		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 7A
RUN # - 7 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1500-1649
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:09

Initial Meter Volume (Cubic Meters)=	3.595
Final Meter Volume (Cubic Meters)=	5.206
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0000
Net Meter Volume (Cubic Meters)=	1.642
Gas Volume (Dry Standard Cubic Meters)=	1.544
Barometric Pressure (mm Hg)=	757
Static Pressure (mm H20)=	-640
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	183.2
Percent Water=	13.7
Average Meter Temperature (C)=	38
Average Delta H (mm H20)=	31.9
Average Delta P (mm H20)=	39.9
Average Stack Temperature (C)=	91
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.85
Average Square Root of Delta P (mm H20)=	5.8610
% Isokinetic=	99.5
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.70
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,376
Flow rate (Actual, Cubic m/min)=	3,340
Flow rate (Standard, Wet, Cubic m/min)=	2,516
Flow rate (Standard, Dry, Cubic m/min)=	2,172

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0272		
Particulate Loading, Dry Std. (mg/cu m)=	17.6	14.7	14.1
Particulate Loading, Actual (mg/cu m)=	11.5		
Emission Rate (kg/hr)=	2.29		

No Back Half Analysis

FILE NAME - 7A
RUN # - 7 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1500-1649
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:09

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.300	1.80	194	96	96
2	2.100	1.70	192	96	96
3	2.100	1.70	191	98	96
4	0.670	0.53	190	99	96
5	0.030	0.02	189	100	97
6	2.600	2.10	189	98	97
7	2.200	1.80	188	100	97
8	1.700	1.40	188	102	97
9	1.000	0.80	187	104	98
10	0.080	0.06	186	103	98
11	2.500	2.00	186	100	98
12	2.600	2.10	188	104	98
13	1.800	1.50	187	106	99
14	1.700	1.40	187	106	99
15	0.300	0.24	186	107	99
16	2.500	2.00	187	103	100
17	2.300	1.90	187	106	100
18	2.000	1.60	187	108	100
19	1.100	0.88	187	108	101
20	0.200	0.16	190	108	101
21	2.500	1.90	220	104	101
22	2.300	1.80	227	106	102
23	1.700	1.30	234	108	101
24	0.930	0.71	221	108	101
25	0.050	0.03	214	107	101

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2779	3.2560	0.0000	0.0219

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5617	3.5564	25.9	0.0053
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 7B
RUN # - 7 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1502-1651
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:22

Initial Meter Volume (Cubic Feet)=	418.120
Final Meter Volume (Cubic Feet)=	475.502
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	58.702
Gas Volume (Dry Standard Cubic Feet)=	55.086
Barometric Pressure (in Hg)=	29.82
Static Pressure (Inches H20)=	-25.20
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	190.9
Percent Water=	14.0
Average Meter Temperature (F)=	102
Average Delta H (in H20)=	1.31
Average Delta P (in H20)=	1.634
Average Stack Temperature (F)=	197
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.80
Average Square Root of Delta P (in H20)=	1.1899
% Isokinetic=	99.8
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.184
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,629
Flow Rate (Actual, Cubic ft/min)=	120,936
Flow rate (Standard, Wet, Cubic ft/min)=	90,863
Flow Rate (Standard, Dry, Cubic ft/min)=	78,113

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0269		
Particulate Loading, Dry Std. (gr/scf)=	0.0075	0.0063	0.0060
Particulate Loading, Actual (gr/cu ft)=	0.0049		
Emission Rate (lb/hr)=	5.03		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 7B
RUN # - 7 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1502-1651
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	11.839
Final Meter Volume (Cubic Meters)=	13.464
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.662
Gas Volume (Dry Standard Cubic Meters)=	1.560
Barometric Pressure (mm Hg)=	757
Static Pressure (mm H20)=	-640
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	190.9
Percent Water=	14.0
Average Meter Temperature (C)=	39
Average Delta H (mm H20)=	33.2
Average Delta P (mm H20)=	41.5
Average Stack Temperature (C)=	92
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.80
Average Square Root of Delta P (mm H20)=	5.9970
% Isokinetic=	99.8
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.67
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,411
Flow rate (Actual, Cubic m/min)=	3,425
Flow rate (Standard, Wet, Cubic m/min)=	2,573
Flow rate (Standard, Dry, Cubic m/min)=	2,212

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0269		
Particulate Loading, Dry Std. (mg/cu m)=	17.2	14.4	13.8
Particulate Loading, Actual (mg/cu m)=	11.1		
Emission Rate (kg/hr)=	2.29		

No Back Half Analysis

FILE NAME - 7B
RUN # - 7 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/28/99 Time: 1502-1651
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.700	2.20	195	97	97
2	2.600	2.10	193	97	97
3	2.500	2.00	191	98	97
4	1.300	1.00	192	99	98
5	0.200	0.16	189	100	98
6	2.400	1.90	189	100	98
7	2.200	1.80	188	101	98
8	2.200	1.80	188	102	99
9	0.820	0.66	187	103	99
10	0.100	0.08	186	103	100
11	2.200	1.80	187	103	100
12	2.100	1.70	188	103	101
13	1.700	1.40	188	105	101
14	0.680	0.55	187	106	102
15	0.030	0.02	186	106	102
16	2.400	2.00	187	105	102
17	1.900	1.60	187	105	103
18	2.000	1.60	187	106	103
19	0.850	0.69	187	107	104
20	0.160	0.12	212	108	104
21	2.600	2.00	227	106	104
22	2.700	2.10	235	107	104
23	2.500	1.90	233	108	104
24	1.700	1.30	219	109	105
25	0.300	0.23	214	109	105

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2692	3.2491	0.0000	0.0201

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5414	3.5346	34.7	0.0068
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 8A
RUN # - 8 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 0914-1103
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:35

Initial Meter Volume (Cubic Feet)=	184.338
Final Meter Volume (Cubic Feet)=	242.223
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	58.985
Gas Volume (Dry Standard Cubic Feet)=	56.259
Barometric Pressure (in Hg)=	29.80
Static Pressure (Inches H20)=	-25.67
Percent Oxygen=	4.0
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	191.4
Percent Water=	13.8
Average Meter Temperature (F)=	93
Average Delta H (in H20)=	1.31
Average Delta P (in H20)=	1.608
Average Stack Temperature (F)=	185
Dry Molecular Weight=	30.59
Wet Molecular Weight=	28.85
Average Square Root of Delta P (in H20)=	1.1767
% Isokinetic=	99.9
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.186
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,537
Flow Rate (Actual, Cubic ft/min)=	118,533
Flow rate (Standard, Wet, Cubic ft/min)=	90,499
Flow Rate (Standard, Dry, Cubic ft/min)=	78,000

Particulate Loading - Front Half

Particulate Weight (g)=	0.0535	Corr. to 7% O2 & 12% CO2	
Particulate Loading, Dry Std. (gr/scf)=	0.0146	0.0121	0.0116
Particulate Loading, Actual (gr/cu ft)=	0.0096		
Emission Rate (lb/hr)=	9.79		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 8A
RUN # - 8 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 0914-1103
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	5.220
Final Meter Volume (Cubic Meters)=	6.859
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.670
Gas Volume (Dry Standard Cubic Meters)=	1.593
Barometric Pressure (mm Hg)=	757
Static Pressure (mm H20)=	-652
Percent Oxygen=	4.0
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	191.4
Percent Water=	13.8
Average Meter Temperature (C)=	34
Average Delta H (mm H20)=	33.2
Average Delta P (mm H20)=	40.8
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.59
Wet Molecular Weight=	28.85
Average Square Root of Delta P (mm H20)=	5.9301
% Isokinetic=	99.9
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.72
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,383
Flow rate (Actual, Cubic m/min)=	3,356
Flow rate (Standard, Wet, Cubic m/min)=	2,563
Flow rate (Standard, Dry, Cubic m/min)=	2,209

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0535		
Particulate Loading, Dry Std. (mg/cu m)=	33.6	27.7	26.5
Particulate Loading, Actual (mg/cu m)=	22.1		
Emission Rate (kg/hr)=	4.44		

No Back Half Analysis

FILE NAME - 8A
RUN # - 8 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 0914-1103
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.400	1.90	185	82	82
2	2.200	1.80	185	83	83
3	1.800	1.40	185	84	83
4	0.700	0.56	185	86	84
5	0.030	0.02	185	87	84
6	2.300	1.80	185	86	84
7	2.000	1.60	184	89	85
8	2.100	1.70	185	92	86
9	0.880	0.71	185	95	87
10	0.070	0.06	185	95	88
11	2.600	2.10	185	92	89
12	2.400	2.00	185	95	89
13	2.500	2.00	185	98	90
14	1.700	1.40	186	100	91
15	0.270	0.22	186	101	92
16	2.500	2.00	186	98	93
17	2.400	2.00	186	100	93
18	2.300	1.90	185	102	94
19	1.300	1.10	185	103	95
20	0.220	0.18	185	104	95
21	2.500	2.10	185	101	96
22	2.200	1.80	186	104	97
23	2.000	1.60	186	105	97
24	0.750	0.62	185	106	98
25	0.080	0.06	184	105	98

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3081	3.2652	0.0000	0.0429

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7388	3.7282	32.7	0.0106
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 8B
RUN # - 8 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 0916-1105
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:44

Initial Meter Volume (Cubic Feet)=	475.944
Final Meter Volume (Cubic Feet)=	532.800
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.004
Net Meter Volume (Cubic Feet)=	58.164
Gas Volume (Dry Standard Cubic Feet)=	55.829
Barometric Pressure (in Hg)=	29.80
Static Pressure (Inches H20)=	-25.67
Percent Oxygen=	4.0
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	188.6
Percent Water=	13.7
Average Meter Temperature (F)=	89
Average Delta H (in H20)=	1.32
Average Delta P (in H20)=	1.655
Average Stack Temperature (F)=	186
Dry Molecular Weight=	30.59
Wet Molecular Weight=	28.86
Average Square Root of Delta P (in H20)=	1.1939
% Isokinetic=	99.8
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.184
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,605
Flow Rate (Actual, Cubic ft/min)=	120,300
Flow rate (Standard, Wet, Cubic ft/min)=	91,774
Flow Rate (Standard, Dry, Cubic ft/min)=	79,176

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0532		
Particulate Loading, Dry Std. (gr/scf)=	0.0147	0.0121	0.0116
Particulate Loading, Actual (gr/cu ft)=	0.0097		
Emission Rate (lb/hr)=	9.96		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 8B
RUN # - 8 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 0916-1105
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:44

Initial Meter Volume (Cubic Meters)=	13.477
Final Meter Volume (Cubic Meters)=	15.087
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.647
Gas Volume (Dry Standard Cubic Meters)=	1.581
Barometric Pressure (mm Hg)=	757
Static Pressure (mm H20)=	-652
Percent Oxygen=	4.0
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	188.6
Percent Water=	13.7
Average Meter Temperature (C)=	32
Average Delta H (mm H20)=	33.5
Average Delta P (mm H20)=	42.0
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.59
Wet Molecular Weight=	28.86
Average Square Root of Delta P (mm H20)=	6.0172
% Isokinetic=	99.8
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.67
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,404
Flow rate (Actual, Cubic m/min)=	3,407
Flow rate (Standard, Wet, Cubic m/min)=	2,599
Flow rate (Standard, Dry, Cubic m/min)=	2,242

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0532		
Particulate Loading, Dry Std. (mg/cu m)=	33.7	27.7	26.6
Particulate Loading, Actual (mg/cu m)=	22.1		
Emission Rate (kg/hr)=	4.52		

No Back Half Analysis

FILE NAME - 8B
RUN # - 8 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 0916-1105
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:44

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.700	2.10	185	82	82
2	2.500	2.00	186	83	82
3	2.200	1.70	185	83	82
4	1.000	0.79	185	84	83
5	0.280	0.22	185	85	83
6	2.500	2.00	185	86	84
7	2.400	1.90	185	86	84
8	1.800	1.40	186	88	85
9	0.900	0.71	186	89	86
10	0.070	0.05	186	90	86
11	2.400	1.90	186	90	87
12	2.000	1.60	185	90	87
13	1.800	1.40	185	92	88
14	0.700	0.56	186	93	89
15	0.050	0.04	186	94	90
16	2.300	1.80	186	93	90
17	2.400	1.90	187	93	90
18	2.300	1.90	186	95	91
19	0.980	0.78	186	96	91
20	0.110	0.08	185	97	92
21	2.700	2.20	186	95	92
22	2.800	2.30	186	96	92
23	2.600	2.10	186	97	93
24	1.700	1.40	186	99	94
25	0.180	0.14	186	99	94

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3184	3.2746	0.0000	0.0438

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5284	3.5190	39.7	0.0094
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 9A
RUN # - 9 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1205-1257/1311-1403
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:54

Initial Meter Volume (Cubic Feet)=	246.290
Final Meter Volume (Cubic Feet)=	302.649
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	57.430
Gas Volume (Dry Standard Cubic Feet)=	54.356
Barometric Pressure (in Hg)=	29.81
Static Pressure (Inches H20)=	-25.16
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	186.1
Percent Water=	13.9
Average Meter Temperature (F)=	97
Average Delta H (in H20)=	1.24
Average Delta P (in H20)=	1.546
Average Stack Temperature (F)=	186
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.82
Average Square Root of Delta P (in H20)=	1.1518
% Isokinetic=	99.7
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.185
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,444
Flow Rate (Actual, Cubic ft/min)=	116,110
Flow rate (Standard, Wet, Cubic ft/min)=	88,624
Flow Rate (Standard, Dry, Cubic ft/min)=	76,317

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0566		
Particulate Loading, Dry Std. (gr/scf)=	0.0160	0.0134	0.0128
Particulate Loading, Actual (gr/cu ft)=	0.0105		
Emission Rate (lb/hr)=	10.49		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 9A
RUN # - 9 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1205-1257/1311-1403
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:35:54

Initial Meter Volume (Cubic Meters)=	6.974
Final Meter Volume (Cubic Meters)=	8.570
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.626
Gas Volume (Dry Standard Cubic Meters)=	1.539
Barometric Pressure (mm Hg)=	757
Static Pressure (mm H20)=	-639
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	186.1
Percent Water=	13.9
Average Meter Temperature (C)=	36
Average Delta H (mm H20)=	31.4
Average Delta P (mm H20)=	39.3
Average Stack Temperature (C)=	86
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.82
Average Square Root of Delta P (mm H20)=	5.8051
% Isokinetic=	99.7
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.70
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,355
Flow rate (Actual, Cubic m/min)=	3,288
Flow rate (Standard, Wet, Cubic m/min)=	2,510
Flow rate (Standard, Dry, Cubic m/min)=	2,161

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0566		
Particulate Loading, Dry Std. (mg/cu m)=	36.8	30.6	29.4
Particulate Loading, Actual (mg/cu m)=	24.2		
Emission Rate (kg/hr)=	4.76		

No Back Half Analysis

FILE NAME - 9A
RUN # - 9 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1205-1257/1311-1403
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.300	1.80	185	93	93
2	2.200	1.80	185	93	93
3	1.900	1.50	185	95	93
4	0.680	0.54	185	97	93
5	0.030	0.02	184	98	93
6	2.400	1.90	185	95	93
7	1.800	1.40	185	97	94
8	1.900	1.50	186	99	94
9	0.750	0.60	186	100	94
10	0.070	0.05	185	100	94
11	2.500	2.00	185	97	95
12	2.600	2.10	188	101	95
13	2.300	1.80	190	97	95
14	1.700	1.40	190	98	96
15	0.280	0.22	188	100	96
16	2.200	1.80	189	98	96
17	2.100	1.70	188	101	96
18	2.100	1.70	188	103	96
19	1.300	1.00	187	103	96
20	0.150	0.12	186	104	97
21	2.300	1.80	187	100	97
22	2.100	1.70	187	103	98
23	2.200	1.80	186	104	97
24	0.730	0.58	186	105	97
25	0.070	0.05	185	104	98

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3137	3.2720	0.0000	0.0417

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.8462	3.8313	49.7	0.0149
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 9B
RUN # - 9 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1207-1259/1313-1405
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:36:05

Initial Meter Volume (Cubic Feet)=	533.261
Final Meter Volume (Cubic Feet)=	587.713
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.001
Net Meter Volume (Cubic Feet)=	55.704
Gas Volume (Dry Standard Cubic Feet)=	52.617
Barometric Pressure (in Hg)=	29.81
Static Pressure (Inches H20)=	-25.16
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	176.8
Percent Water=	13.7
Average Meter Temperature (F)=	98
Average Delta H (in H20)=	1.21
Average Delta P (in H20)=	1.495
Average Stack Temperature (F)=	187
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.85
Average Square Root of Delta P (in H20)=	1.1260
% Isokinetic=	99.6
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.184
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,345
Flow Rate (Actual, Cubic ft/min)=	113,501
Flow rate (Standard, Wet, Cubic ft/min)=	86,563
Flow Rate (Standard, Dry, Cubic ft/min)=	74,735

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0542		
Particulate Loading, Dry Std. (gr/scf)=	0.0159	0.0132	0.0127
Particulate Loading, Actual (gr/cu ft)=	0.0104		
Emission Rate (lb/hr)=	10.16		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 9B
RUN # - 9 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1207-1259/1313-1405
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 09:36:05

Initial Meter Volume (Cubic Meters)=	15.100
Final Meter Volume (Cubic Meters)=	16.642
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0000
Net Meter Volume (Cubic Meters)=	1.577
Gas Volume (Dry Standard Cubic Meters)=	1.490
Barometric Pressure (mm Hg)=	757
Static Pressure (mm H20)=	-639
Percent Oxygen=	4.2
Percent Carbon Dioxide=	15.0
Moisture Collected (ml)=	176.8
Percent Water=	13.7
Average Meter Temperature (C)=	37
Average Delta H (mm H20)=	30.7
Average Delta P (mm H20)=	38.0
Average Stack Temperature (C)=	86
Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.85
Average Square Root of Delta P (mm H20)=	5.6751
% Isokinetic=	99.6
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.67
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,324
Flow rate (Actual, Cubic m/min)=	3,214
Flow rate (Standard, Wet, Cubic m/min)=	2,451
Flow rate (Standard, Dry, Cubic m/min)=	2,116

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0542		
Particulate Loading, Dry Std. (mg/cu m)=	36.4	30.3	29.1
Particulate Loading, Actual (mg/cu m)=	23.9		
Emission Rate (kg/hr)=	4.61		

No Back Half Analysis

FILE NAME - 9B
RUN # - 9 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1207-1259/1313-1405
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
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Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.500	2.00	185	93	93
2	2.500	2.00	185	93	93
3	2.100	1.70	186	95	93
4	1.300	1.00	185	96	94
5	0.230	0.18	186	97	94
6	2.200	1.80	185	97	95
7	2.000	1.60	186	98	95
8	1.700	1.40	186	99	96
9	0.820	0.66	186	100	96
10	0.030	0.02	186	101	97
11	2.100	1.70	186	99	97
12	1.900	1.50	188	100	97
13	2.000	1.60	190	99	97
14	0.580	0.46	190	99	97
15	0.030	0.02	188	100	98
16	2.100	1.70	189	99	98
17	2.100	1.70	189	100	98
18	1.500	1.20	188	101	99
19	0.660	0.53	188	103	99
20	0.030	0.02	187	103	100
21	2.400	2.00	187	102	100
22	2.300	1.90	187	102	100
23	2.400	2.00	187	104	100
24	1.700	1.40	187	105	100
25	0.190	0.15	187	106	101

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2874	3.2452	0.0000	0.0422

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.8362	3.8242	36.7	0.0120
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 10A
RUN # - 10 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1523-1712
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:21

Initial Meter Volume (Cubic Feet)=	310.178
Final Meter Volume (Cubic Feet)=	369.039
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.002
Net Meter Volume (Cubic Feet)=	59.979
Gas Volume (Dry Standard Cubic Feet)=	56.428
Barometric Pressure (in Hg)=	29.74
Static Pressure (Inches H20)=	-26.81
Percent Oxygen=	4.0
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	197.9
Percent Water=	14.2
Average Meter Temperature (F)=	99
Average Delta H (in H20)=	1.34
Average Delta P (in H20)=	1.627
Average Stack Temperature (F)=	185
Dry Molecular Weight=	30.59
Wet Molecular Weight=	28.81
Average Square Root of Delta P (in H20)=	1.1813
% Isokinetic=	100.4
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.186
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,571
Flow Rate (Actual, Cubic ft/min)=	119,405
Flow rate (Standard, Wet, Cubic ft/min)=	90,695
Flow Rate (Standard, Dry, Cubic ft/min)=	77,837

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0636		
Particulate Loading, Dry Std. (gr/scf)=	0.0174	0.0143	0.0137
Particulate Loading, Actual (gr/cu ft)=	0.0113		
Emission Rate (lb/hr)=	11.58		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 10A
RUN # - 10 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1523-1712
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:21

Initial Meter Volume (Cubic Meters)=	8.783
Final Meter Volume (Cubic Meters)=	10.450
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.698
Gas Volume (Dry Standard Cubic Meters)=	1.598
Barometric Pressure (mm Hg)=	755
Static Pressure (mm H20)=	-681
Percent Oxygen=	4.0
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	197.9
Percent Water=	14.2
Average Meter Temperature (C)=	37
Average Delta H (mm H20)=	34.2
Average Delta P (mm H20)=	41.3
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.59
Wet Molecular Weight=	28.81
Average Square Root of Delta P (mm H20)=	5.9536
% Isokinetic=	100.4
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.72
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,393
Flow rate (Actual, Cubic m/min)=	3,381
Flow rate (Standard, Wet, Cubic m/min)=	2,568
Flow rate (Standard, Dry, Cubic m/min)=	2,204

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0636		
Particulate Loading, Dry Std. (mg/cu m)=	39.8	32.8	31.4
Particulate Loading, Actual (mg/cu m)=	25.9		
Emission Rate (kg/hr)=	5.26		

No Back Half Analysis

FILE NAME - 10A
RUN # - 10 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1523-1712
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:21

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.200	1.80	185	95	95
2	2.100	1.70	185	95	95
3	1.700	1.40	185	97	95
4	0.670	0.54	186	98	95
5	0.030	0.02	185	99	95
6	2.400	2.00	186	97	95
7	2.400	2.00	186	100	96
8	2.300	1.90	185	102	96
9	0.750	0.61	185	103	96
10	0.100	0.08	185	103	97
11	2.600	2.10	185	99	97
12	2.500	2.10	186	103	97
13	2.700	2.20	184	104	97
14	1.200	0.99	184	105	98
15	0.230	0.18	186	105	98
16	2.500	2.10	185	101	98
17	2.400	2.00	186	103	98
18	2.400	2.00	186	105	98
19	1.400	1.20	185	106	98
20	0.160	0.13	185	105	98
21	2.500	2.10	185	101	99
22	2.300	1.90	186	105	99
23	2.200	1.80	184	106	99
24	0.820	0.68	184	106	99
25	0.120	0.09	185	104	99

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3245	3.2630	0.0000	0.0615

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.6955	3.6934	28.2	0.0021
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 10B
RUN # - 10 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1525-1714
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:31

Initial Meter Volume (Cubic Feet)=	588.177
Final Meter Volume (Cubic Feet)=	645.266
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.008
Net Meter Volume (Cubic Feet)=	58.402
Gas Volume (Dry Standard Cubic Feet)=	54.794
Barometric Pressure (in Hg)=	29.74
Static Pressure (Inches H20)=	-26.81
Percent Oxygen=	4.0
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	200.0
Percent Water=	14.7
Average Meter Temperature (F)=	101
Average Delta H (in H20)=	1.30
Average Delta P (in H20)=	1.602
Average Stack Temperature (F)=	186
Dry Molecular Weight=	30.59
Wet Molecular Weight=	28.74
Average Square Root of Delta P (in H20)=	1.1732
% Isokinetic=	100.8
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.184
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,546
Flow Rate (Actual, Cubic ft/min)=	118,776
Flow rate (Standard, Wet, Cubic ft/min)=	90,117
Flow Rate (Standard, Dry, Cubic ft/min)=	76,897

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0655		
Particulate Loading, Dry Std. (gr/scf)=	0.0184	0.0152	0.0145
Particulate Loading, Actual (gr/cu ft)=	0.0119		
Emission Rate (lb/hr)=	12.13		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 10B
RUN # - 10 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1525-1714
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:32

Initial Meter Volume (Cubic Meters)=	16.655
Final Meter Volume (Cubic Meters)=	18.271
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0002
Net Meter Volume (Cubic Meters)=	1.654
Gas Volume (Dry Standard Cubic Meters)=	1.552
Barometric Pressure (mm Hg)=	755
Static Pressure (mm H20)=	-681
Percent Oxygen=	4.0
Percent Carbon Dioxide=	15.2
Moisture Collected (ml)=	200.0
Percent Water=	14.7
Average Meter Temperature (C)=	38
Average Delta H (mm H20)=	33.1
Average Delta P (mm H20)=	40.7
Average Stack Temperature (C)=	85
Dry Molecular Weight=	30.59
Wet Molecular Weight=	28.74
Average Square Root of Delta P (mm H20)=	5.9126
% Isokinetic=	100.8
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.67
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,386
Flow rate (Actual, Cubic m/min)=	3,363
Flow rate (Standard, Wet, Cubic m/min)=	2,552
Flow rate (Standard, Dry, Cubic m/min)=	2,177

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0655		
Particulate Loading, Dry Std. (mg/cu m)=	42.2	34.8	33.3
Particulate Loading, Actual (mg/cu m)=	27.3		
Emission Rate (kg/hr)=	5.51		

No Back Half Analysis

FILE NAME - 10B
RUN # - 10 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/29/99 Time: 1525-1714
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:32

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.400	1.90	185	97	97
2	2.400	1.90	186	97	97
3	2.000	1.60	186	97	97
4	1.700	1.40	185	98	97
5	0.320	0.26	185	99	97
6	2.500	2.00	187	100	98
7	2.300	1.90	186	100	98
8	1.700	1.40	186	101	98
9	0.900	0.73	186	102	99
10	0.100	0.08	187	103	99
11	2.300	1.90	187	101	99
12	2.300	1.90	185	102	100
13	2.000	1.60	184	103	100
14	0.660	0.54	185	104	100
15	0.030	0.02	186	104	101
16	2.400	2.00	186	103	101
17	2.500	2.00	186	103	101
18	1.600	1.30	186	105	101
19	0.720	0.58	187	105	102
20	0.030	0.02	186	105	102
21	2.500	2.00	186	104	102
22	2.400	2.00	186	104	102
23	2.400	2.00	185	105	102
24	1.700	1.40	186	106	102
25	0.200	0.16	187	106	102

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3285	3.2722	0.0000	0.0563

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.6167	3.6075	25.1	0.0092
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 11A
RUN # - 11 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1030-1219
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:41

Initial Meter Volume (Cubic Feet)=	369.528
Final Meter Volume (Cubic Feet)=	427.519
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.001
Net Meter Volume (Cubic Feet)=	59.093
Gas Volume (Dry Standard Cubic Feet)=	57.280
Barometric Pressure (in Hg)=	29.69
Static Pressure (Inches H20)=	-26.64
Percent Oxygen=	4.8
Percent Carbon Dioxide=	14.0
Moisture Collected (ml)=	163.8
Percent Water=	11.9
Average Meter Temperature (F)=	82
Average Delta H (in H20)=	1.32
Average Delta P (in H20)=	1.699
Average Stack Temperature (F)=	186
Dry Molecular Weight=	30.43
Wet Molecular Weight=	28.96
Average Square Root of Delta P (in H20)=	1.2144
% Isokinetic=	97.9
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.185
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,693
Flow Rate (Actual, Cubic ft/min)=	122,600
Flow rate (Standard, Wet, Cubic ft/min)=	92,875
Flow Rate (Standard, Dry, Cubic ft/min)=	81,850

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0304		
Particulate Loading, Dry Std. (gr/scf)=	0.0082	0.0071	0.0070
Particulate Loading, Actual (gr/cu ft)=	0.0055		
Emission Rate (lb/hr)=	5.73		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 11A
RUN # - 11 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1030-1219
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:41

Initial Meter Volume (Cubic Meters)=	10.464
Final Meter Volume (Cubic Meters)=	12.106
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0000
Net Meter Volume (Cubic Meters)=	1.673
Gas Volume (Dry Standard Cubic Meters)=	1.622
Barometric Pressure (mm Hg)=	754
Static Pressure (mm H20)=	-677
Percent Oxygen=	4.8
Percent Carbon Dioxide=	14.0
Moisture Collected (ml)=	163.8
Percent Water=	11.9
Average Meter Temperature (C)=	28
Average Delta H (mm H20)=	33.6
Average Delta P (mm H20)=	43.1
Average Stack Temperature (C)=	86
Dry Molecular Weight=	30.43
Wet Molecular Weight=	28.96
Average Square Root of Delta P (mm H20)=	6.1206
% Isokinetic=	97.9
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.70
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,430
Flow rate (Actual, Cubic m/min)=	3,472
Flow rate (Standard, Wet, Cubic m/min)=	2,630
Flow rate (Standard, Dry, Cubic m/min)=	2,318

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0304		
Particulate Loading, Dry Std. (mg/cu m)=	18.7	16.2	16.1
Particulate Loading, Actual (mg/cu m)=	12.5		
Emission Rate (kg/hr)=	2.60		

No Back Half Analysis

FILE NAME - 11A
RUN # - 11 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1030-1219
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:41

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.300	1.70	195	73	73
2	2.200	1.70	192	73	73
3	1.700	1.30	190	74	73
4	0.850	0.65	188	76	73
5	0.030	0.02	188	77	73
6	2.600	2.00	188	76	75
7	2.300	1.80	186	79	75
8	2.200	1.70	186	82	76
9	0.800	0.62	185	84	77
10	0.140	0.10	185	84	77
11	2.600	2.00	185	82	78
12	2.800	2.20	191	85	79
13	2.400	1.90	188	88	79
14	1.900	1.50	186	89	80
15	0.170	0.13	183	90	81
16	2.700	2.10	184	86	82
17	2.600	2.10	183	89	82
18	2.400	1.90	184	91	83
19	1.700	1.30	184	92	83
20	0.240	0.19	183	93	84
21	2.500	2.00	184	89	84
22	2.400	1.90	183	91	85
23	1.700	1.30	183	93	85
24	1.100	0.87	184	94	85
25	0.140	0.11	182	93	86

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2918	3.2670	0.0000	0.0248

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.6521	3.6465	25.7	0.0056
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 11B
RUN # - 11 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1032-1221
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:51

Initial Meter Volume (Cubic Feet)=	645.745
Final Meter Volume (Cubic Feet)=	701.460
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.002
Net Meter Volume (Cubic Feet)=	56.996
Gas Volume (Dry Standard Cubic Feet)=	55.629
Barometric Pressure (in Hg)=	29.69
Static Pressure (Inches H20)=	-26.64
Percent Oxygen=	4.8
Percent Carbon Dioxide=	14.0
Moisture Collected (ml)=	162.0
Percent Water=	12.1
Average Meter Temperature (F)=	78
Average Delta H (in H20)=	1.29
Average Delta P (in H20)=	1.652
Average Stack Temperature (F)=	186
Dry Molecular Weight=	30.43
Wet Molecular Weight=	28.93
Average Square Root of Delta P (in H20)=	1.1929
% Isokinetic=	98.1
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.184
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,613
Flow Rate (Actual, Cubic ft/min)=	120,511
Flow rate (Standard, Wet, Cubic ft/min)=	91,230
Flow Rate (Standard, Dry, Cubic ft/min)=	80,226

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0318		
Particulate Loading, Dry Std. (gr/scf)=	0.0088	0.0076	0.0075
Particulate Loading, Actual (gr/cu ft)=	0.0059		
Emission Rate (lb/hr)=	6.05		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 11B
RUN # - 11 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1032-1221
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:51

Initial Meter Volume (Cubic Meters)=	18.285
Final Meter Volume (Cubic Meters)=	19.863
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.614
Gas Volume (Dry Standard Cubic Meters)=	1.575
Barometric Pressure (mm Hg)=	754
Static Pressure (mm H20)=	-677
Percent Oxygen=	4.8
Percent Carbon Dioxide=	14.0
Moisture Collected (ml)=	162.0
Percent Water=	12.1
Average Meter Temperature (C)=	26
Average Delta H (mm H20)=	32.8
Average Delta P (mm H20)=	42.0
Average Stack Temperature (C)=	86
Dry Molecular Weight=	30.43
Wet Molecular Weight=	28.93
Average Square Root of Delta P (mm H20)=	6.0118
% Isokinetic=	98.1
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.67
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,406
Flow rate (Actual, Cubic m/min)=	3,412
Flow rate (Standard, Wet, Cubic m/min)=	2,583
Flow rate (Standard, Dry, Cubic m/min)=	2,272

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0318		
Particulate Loading, Dry Std. (mg/cu m)=	20.2	17.4	17.3
Particulate Loading, Actual (mg/cu m)=	13.4		
Emission Rate (kg/hr)=	2.75		

No Back Half Analysis

FILE NAME - 11B
RUN # - 11 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1032-1221
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:01:51

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.700	2.10	195	73	73
2	2.500	1.90	193	73	72
3	2.300	1.80	190	73	72
4	1.300	1.00	189	74	73
5	0.360	0.27	189	75	73
6	2.300	1.80	187	76	74
7	2.100	1.60	186	76	74
8	2.000	1.60	186	77	74
9	0.680	0.53	186	79	75
10	0.050	0.03	186	79	76
11	2.400	1.90	186	79	76
12	2.100	1.60	190	79	76
13	1.900	1.50	187	81	77
14	0.690	0.54	186	82	78
15	0.030	0.02	184	83	78
16	2.500	2.00	185	81	79
17	2.200	1.70	184	81	79
18	2.400	1.90	185	83	79
19	0.770	0.60	184	84	79
20	0.080	0.06	184	84	80
21	2.700	2.10	184	83	80
22	2.600	2.10	184	83	80
23	2.400	1.90	185	85	81
24	1.900	1.50	183	86	81
25	0.330	0.26	183	86	82

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2736	3.2474	0.0000	0.0262

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.3993	3.3937	28.4	0.0056
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 12A
RUN # - 12 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1322-1511
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:02:01

Initial Meter Volume (Cubic Feet)=	428.035
Final Meter Volume (Cubic Feet)=	486.587
Meter Factor=	1.019
Final Leak Rate (cu ft/min)=	0.002
Net Meter Volume (Cubic Feet)=	59.664
Gas Volume (Dry Standard Cubic Feet)=	58.371
Barometric Pressure (in Hg)=	29.72
Static Pressure (Inches H20)=	-26.61
Percent Oxygen=	5.1
Percent Carbon Dioxide=	14.3
Moisture Collected (ml)=	178.0
Percent Water=	12.6
Average Meter Temperature (F)=	78
Average Delta H (in H20)=	1.37
Average Delta P (in H20)=	1.722
Average Stack Temperature (F)=	182
Dry Molecular Weight=	30.49
Wet Molecular Weight=	28.92
Average Square Root of Delta P (in H20)=	1.2198
% Isokinetic=	98.7
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.186
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,699
Flow Rate (Actual, Cubic ft/min)=	122,771
Flow rate (Standard, Wet, Cubic ft/min)=	93,675
Flow Rate (Standard, Dry, Cubic ft/min)=	81,911

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0469		
Particulate Loading, Dry Std. (gr/scf)=	0.0124	0.0109	0.0104
Particulate Loading, Actual (gr/cu ft)=	0.0083		
Emission Rate (lb/hr)=	8.69		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 12A
RUN # - 12 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1322-1511
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:02:01

Initial Meter Volume (Cubic Meters)=	12.120
Final Meter Volume (Cubic Meters)=	13.778
Meter Factor=	1.019
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.689
Gas Volume (Dry Standard Cubic Meters)=	1.653
Barometric Pressure (mm Hg)=	755
Static Pressure (mm H20)=	-676
Percent Oxygen=	5.1
Percent Carbon Dioxide=	14.3
Moisture Collected (ml)=	178.0
Percent Water=	12.6
Average Meter Temperature (C)=	25
Average Delta H (mm H20)=	34.8
Average Delta P (mm H20)=	43.7
Average Stack Temperature (C)=	83
Dry Molecular Weight=	30.49
Wet Molecular Weight=	28.92
Average Square Root of Delta P (mm H20)=	6.1477
% Isokinetic=	98.7
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.72
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,432
Flow rate (Actual, Cubic m/min)=	3,476
Flow rate (Standard, Wet, Cubic m/min)=	2,653
Flow rate (Standard, Dry, Cubic m/min)=	2,319

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0469		
Particulate Loading, Dry Std. (mg/cu m)=	28.4	25.0	23.8
Particulate Loading, Actual (mg/cu m)=	18.9		
Emission Rate (kg/hr)=	3.94		

No Back Half Analysis

FILE NAME - 12A
RUN # - 12 - Method 17 Train A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1322-1511
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:02:01

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.400	1.90	182	75	75
2	2.100	1.70	182	74	75
3	2.100	1.70	183	76	75
4	0.700	0.55	182	78	74
5	0.030	0.02	181	78	75
6	2.600	2.10	182	76	74
7	2.700	2.10	182	78	75
8	1.700	1.40	182	81	75
9	0.880	0.70	182	81	75
10	0.100	0.07	181	81	75
11	2.600	2.10	182	78	75
12	2.800	2.20	183	80	75
13	2.800	2.20	183	82	75
14	1.700	1.40	182	83	75
15	0.300	0.23	181	83	76
16	2.700	2.10	182	79	76
17	2.800	2.20	183	81	76
18	2.400	1.90	183	83	76
19	1.200	0.95	183	83	76
20	0.290	0.23	181	83	76
21	2.600	2.10	182	79	77
22	2.500	2.00	183	81	76
23	2.000	1.60	183	83	77
24	0.950	0.75	182	82	76
25	0.110	0.08	181	81	76

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3028	3.2674	0.0000	0.0354

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.8363	3.8248	20.3	0.0115
IMPINGERS	0.0000	0.0000	0.0	0.0000

Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

FILE NAME - 12B
RUN # - 12 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1324-1513
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:02:11

Initial Meter Volume (Cubic Feet)=	705.358
Final Meter Volume (Cubic Feet)=	763.179
Meter Factor=	1.023
Final Leak Rate (cu ft/min)=	0.001
Net Meter Volume (Cubic Feet)=	59.151
Gas Volume (Dry Standard Cubic Feet)=	57.516
Barometric Pressure (in Hg)=	29.72
Static Pressure (Inches H20)=	-26.61
Percent Oxygen=	5.1
Percent Carbon Dioxide=	14.3
Moisture Collected (ml)=	171.1
Percent Water=	12.3
Average Meter Temperature (F)=	81
Average Delta H (in H20)=	1.37
Average Delta P (in H20)=	1.745
Average Stack Temperature (F)=	183
Dry Molecular Weight=	30.49
Wet Molecular Weight=	28.96
Average Square Root of Delta P (in H20)=	1.2291
% Isokinetic=	98.4
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (Inches)=	0.184
Stack Axis #1 (Inches)=	66.0
Stack Axis #2 (Inches)=	57.0
Rectangular Stack	
Stack Area (Square Feet)=	26.13
Stack Velocity (Actual, Feet/min)=	4,736
Flow Rate (Actual, Cubic ft/min)=	123,727
Flow rate (Standard, Wet, Cubic ft/min)=	94,258
Flow Rate (Standard, Dry, Cubic ft/min)=	82,674

Particulate Loading - Front Half

		Corr. to 7% O2	& 12% CO2
Particulate Weight (g)=	0.0470		
Particulate Loading, Dry Std. (gr/scf)=	0.0126	0.0111	0.0106
Particulate Loading, Actual (gr/cu ft)=	0.0084		
Emission Rate (lb/hr)=	8.92		

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - 12B
RUN # - 12 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1324-1513
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:02:11

Initial Meter Volume (Cubic Meters)=	19.973
Final Meter Volume (Cubic Meters)=	21.610
Meter Factor=	1.023
Final Leak Rate (cu m/min)=	0.0000
Net Meter Volume (Cubic Meters)=	1.675
Gas Volume (Dry Standard Cubic Meters)=	1.629
Barometric Pressure (mm Hg)=	755
Static Pressure (mm H20)=	-676
Percent Oxygen=	5.1
Percent Carbon Dioxide=	14.3
Moisture Collected (ml)=	171.1
Percent Water=	12.3
Average Meter Temperature (C)=	27
Average Delta H (mm H20)=	34.9
Average Delta P (mm H20)=	44.3
Average Stack Temperature (C)=	84
Dry Molecular Weight=	30.49
Wet Molecular Weight=	28.96
Average Square Root of Delta P (mm H20)=	6.1943
% Isokinetic=	98.4
Pitot Coefficient=	0.84
Sampling Time (Minutes)=	100.0
Nozzle Diameter (mm)=	4.67
Stack Axis #1 (Meters)=	1.676
Stack Axis #2 (Meters)=	1.448
Rectangular Stack	
Stack Area (Square Meters)=	2.427
Stack Velocity (Actual, m/min)=	1,444
Flow rate (Actual, Cubic m/min)=	3,504
Flow rate (Standard, Wet, Cubic m/min)=	2,669
Flow rate (Standard, Dry, Cubic m/min)=	2,341

Particulate Loading - Front Half

Particulate Weight (g)=	0.0470	Corr. to 7% O2 & 12% CO2	
Particulate Loading, Dry Std. (mg/cu m)=	28.9	25.4	24.2
Particulate Loading, Actual (mg/cu m)=	19.3		
Emission Rate (kg/hr)=	4.05		

No Back Half Analysis

FILE NAME - 12B
RUN # - 12 - Method 17 Train B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 08/30/99 Time: 1324-1513
PROJECT # - 104951.1.016.05.01

PROG.=VER 06/27/89
09-02-1999 10:02:11

Point #	Delta P (in. H20)	Delta H (in. H20)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.700	2.10	183	78	77
2	2.500	2.00	183	77	77
3	2.500	2.00	184	78	77
4	1.300	1.00	183	79	77
5	0.300	0.23	182	79	78
6	2.600	2.00	183	80	78
7	2.500	2.00	184	80	78
8	1.800	1.40	183	81	78
9	0.900	0.71	182	82	79
10	0.150	0.11	182	83	79
11	2.600	2.10	184	82	79
12	2.400	1.90	183	82	79
13	2.000	1.60	183	83	80
14	0.780	0.61	183	84	80
15	0.030	0.02	182	84	80
16	2.600	2.10	183	83	81
17	2.200	1.70	184	83	81
18	2.200	1.70	184	84	81
19	0.950	0.75	183	85	81
20	0.100	0.07	182	85	82
21	2.800	2.20	184	84	82
22	2.900	2.30	184	84	81
23	2.800	2.20	184	86	82
24	1.800	1.40	183	86	82
25	0.220	0.17	183	87	82

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3329	3.2968	0.0000	0.0361

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.4576	3.4467	24.3	0.0109
IMPINGERS	0.0000	0.0000	0.0	0.0000

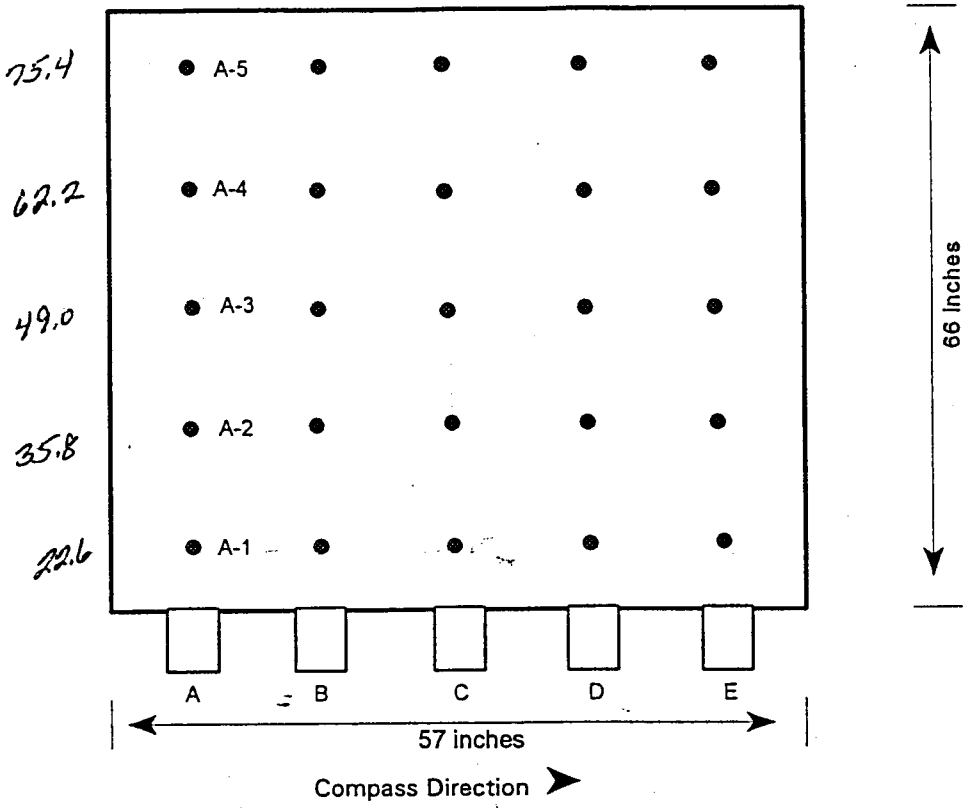
Probe Rinse Blank (mg/ml)= 0.0000
Impinger Blank (mg/ml)= 0.0000

RCA #1 Appendix C

M17 Field Sampling Data Sheets

40 CFR 60, APPENDIX A, METHOD 1 - LOCATION OF TRAVERSE POINTS IN A RECTANGULAR DUCT

MRI Project No. 4702.02.04.09
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct
Date: 7-8-99
For Run Numbers: All



Flow is away from observer and is downward

Inside of far wall to outside of port (Distance A):	82.0	inches
Inside of near wall to outside of port (Distance B):	16.0	inches
Traverse distance (A - B):	66.0	inches
Internal duct dimension normal to traverses:	57.0	inches
Equivalent diameter:	61.17	inches
Cross-sectional area of duct:	26.125	square feet
Number of test ports:	5	
Distance between port centers:	11.4	inches
Distance of nearest flow disturbance upstream from ports:	82	inches
Distance of nearest flow disturbance downstream from ports:	128	inches
Number of test points per traverse (i.e., per port):	5	
Distance between test points on a traverse:	13.2	inches

Dimensions obtained by/from: direct measurements and blueprints

Data recorded by: [signature]

COMMENTS:

PB
8/28/99

DUCTRECT.WPD October 14, 1998 (rev. DUCTREC1.WPD July 2, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 1 Date 8-26-99

Project No. 104951.1.016.05.01

Client U.S. EPA EMC

Source Cogentrix Unit 2A

Sampling Location Baghouse Outlet

Operator Grithe

Record data every 4 minutes

Barometer No. Y 2101

Barometric Pressure 29.76 in Hg

Elevation to Meter Boxes 34 ft

Meter Box P_{bar} 29.73 in Hg

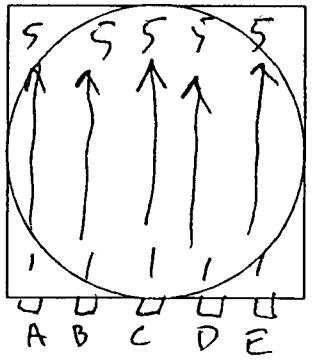
Elevation to Sampling Loc. 34 ft

Sampling Location P_{bar} 29.73 in Hg

Static Pressure DG ~~25~~ -26.34 in H_2O

Train A	Train B
Train A No. M17-A	Train B No. M17-B
Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Nozzle No. N-M17-5 Tip Dia. .185 in	Nozzle No. N-M17-6 Tip Dia. .184 in
Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Stack Thermocouple No. 3158 A	Stack Thermocouple No. 3158 B
Filter Holder No. 1	Filter Holder No. 2
Filter Assembly No. F-1	Filter Assembly No. F-2
Impinger Box No. A-1	Impinger Box No. B-1
Umbilical/Impinger Hookup U/H 1	Umbilical/Impinger Hookup U/H 2
Umbilical No. N 50-4	Umbilical No. N 50-1
Meter Box No. N-10	Meter Box No. N-11
DGM Correction (Y) DG ~~1.011~~ 1.019	DGM Correction (Y) DG ~~0.988~~ 1.023
Orifice Meter ΔH@ DG ~~1.840~~ 1.832	Orifice Meter ΔH@ DG ~~1.960~~ 1.901

Assumed Moisture 14.0 % Assumed $\%CO_2$ 14.7 $\%O_2$ 5.0



Traverse Point Layout

	Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1518	1740									1520	1744								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1533	1737								
Vacuum, in Hg	15	14								
Leak Rate, cfm	.007	.005								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1535	1742								
Vacuum, in Hg	15	15								
Leak Rate, cfm	.004	.003								
Final Meter Volume		~~86.131~~								
Initial Meter Volume		~~26.766~~								
Non-sample Volume		~~59.365~~								

Not a Leak check

Remarks and Notes: List any other equipment requiring calibration below.

	TRAIN A	TRAIN B
Meter Volume at Start of Run	747.342	26.766
Meter Volume at End of Run	806.889	86.131
Total Leak Check Volume	0	0
Adjusted Final Volume	~~59.365~~ DG 58.547	~~59.365~~ Data Irrelevant.

YB 8/28/99

Run No. 1 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-26-99 Project No. 104951.1.016.05.01 Operator Griffin

Sampling Data for Method 17 Train A No. M17-A

	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 747.342 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
Initial		0	1544										
	C-5	4	1548	750.37	750.37	2.4	1.97	2.0	185	90	90	10	55
	4	8	1552	753.33	753.27	2.3	1.89	1.9	185	89	90	9	54
	3	12	1556	756.17	756.05	2.1	1.73	1.7	184	90	89	9	54
	2	16	1600	757.74	757.75	0.65	0.53	0.53	183	91	89	6	54
	1	20	1604	758.08	758.11	0.03	0.02	0.02	182	91	89	4	56
1606	D-5	24	1608	761.30	761.19	2.7	2.23	2.2	182	90	89	10	61
	4	28	1612	764.14	764.00	2.1	1.73	1.7	183	92	89	9	51
	3	32	1616	767.05	766.78	2.2	1.82	1.8	184	93	90	10	52
	2	36	1622	768.87	768.77	0.86	0.71	0.71	184	95	90	8	54
	1	40	1626	769.36	769.40	0.06	0.04	0.04	184	95	90	5	55
1628	E-5	44	1632	772.64	772.54	2.8	2.31	2.3	184	92	90	12	61
	4	48	1636	775.98	775.79	2.9	2.40	2.4	185	95	90	13	52
	3	52	1640	779.22	779.00	2.7	2.24	2.2	185	97	91	13	53
	2	56	1644	781.79	781.68	1.7	1.41	1.4	185	98	91	11	55
	1	60	1648	782.67	782.72	0.20	0.16	0.16	185	98	91	6	60
1651	A-5	64	1655	785.90	785.87	2.7	2.23	2.2	185	95	92	13	62
	4	68	1659	789.02	788.98	2.5	2.07	2.1	185	97	91	14	55
	3	72	1703	792.01	791.98	2.3	1.91	1.9	184	98	91	14	56
	2	76	1707	794.07	794.15	1.1	0.91	0.91	185	98	91	10	58
	1	80	1711	795.02	795.04	0.23	0.19	0.19	185	97	92	6	61
1713	B-5	84	1717	798.12	798.13	2.5	2.06	2.10	185	93	91	11	64
	4	88	1721	801.11	801.08	2.3	1.90	1.9	184	95	91	11	57
	3	92	1725	803.75	803.80	1.8	1.49	1.5	184	96	91	11	57
	2	96	1729	805.41	805.46	0.71	0.59	0.59	183	97	90	8	59
	1	100	1733	805.89	805.889	0.06	0.04	0.04	183	95	90	5	60

Sampling Data for Method 17 Train B No. M17-B

		0	1546	26.766									
	A-5	4	1550	30.14	30.13	2.9	2.48	2.5	185	90	90	10	56
	4	8	1554	33.79	33.36	2.7	2.31	2.3	185	90	90	9	53
	3	12	1558	36.32	36.33	2.2	1.88	1.9	184	90	89	9	52
	2	16	1602	38.31	38.34	1.0	0.85	0.85	183	91	90	7	51
	1	20	1606	39.24	39.29	0.22	0.18	0.18	183	91	90	5	53
1608	B-5	24	1610	42.43	42.40	2.6	2.22	2.2	185	92	90	10	58
	4	28	1614	45.38	45.28	2.2	1.88	1.9	185	92	90	9	50
	3	32	1620	48.18	48.07	2.0	1.71	1.7	185	93	91	9	49
	2	36	1624	50.02	50.03	0.85	0.73	0.73	184	95	91	8	52
	1	40	1628	50.51	50.34	0.06	0.05	0.05	185	95	92	5	60
1630	C-5	44	1634	53.59	53.57	2.4	2.06	2.1	185	94	92	11	59
	4	48	1638	56.48	56.42	2.1	1.80	1.8	185	95	92	11	50
	* 3	52	1642	59.23	59.21	1.9	1.63	1.6	185	96	93	10	50
	2	56	1646	60.85	60.02	0.66	0.57	0.57	185	98	94	8	52
	1	60	1650	61.20	61.31	.03	0.02	0.02	185	98	94	5	53
1653	D-5	64	1657	64.23	64.35	2.3	1.98	2.0	186	96	94	12	62
	4	68	1701	67.32	67.41	2.4	2.07	2.1	186	97	94	12	50
	3	72	1705	70.35	70.40	2.3	1.98	2.0	186	98	95	12	52
	2	76	1709	72.18	72.28	0.83	0.71	0.71	186	99	95	9	54
	1	80	1713	72.53	72.63	0.03	0.02	0.02	186	99	95	5	61
1715	E-5	84	1719	75.75	75.75	2.6	2.24	2.2	185	97	95	13	61
	4	88	1723	79.10	79.13	2.8	2.42	2.4	185	97	95	15	51
	3	92	1727	82.33	82.38	2.6	2.25	2.3	185	98	95	15	53
	2	96	1731	85.23	85.21	2.1	1.81	1.8	185	98	95	13	56
	1	100	1735	86.08	86.131	0.18	0.15	0.15	185	99	95	6	60

Remarks and Notes:

* Total pressure taken @ Point C-3 = -25.0" H_2O ΔP = 1.9" H_2O

-26.34

PS 8/26/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 1 Date 8-26-99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single-Point~~) Operator [illegible]
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. N-10 Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N-10 M3B Flow Meter No. 6800
Desired Sampling Rate 200 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time ~~195~~ 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1544	3.0	✓				
1545	3.0		✓			
1555	3.0				✓	
1604	3.0			✓		Port Change
1606	3.0	✓				
1607	3.0		✓			
1617	3.0				✓	
1626	3.0			✓		Port Change
1628	3.0	✓				
1629	3.0		✓			
1639	3.0				✓	
1648	3.0			✓		Port Change
1651	3.0	✓				
1652	3.0		✓			
1702	3.0				✓	
1711	3.0			✓		Port Change
1713	3.0	✓				
1714	3.0		✓			
1724	3.0				✓	
1733	3.0			✓		Port Change

M3BSAMP.WPD June 18, 1998

Y.S. 8/28/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 1 Date 08-26-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1745

Sample Type (Bag, ~~Grab~~) Bag

Analyst U. Sherman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	15.0
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	4.2
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2	>4%	0.3% v/v	O_2	≥15%	0.2% v/v	CO	0.3% v/v
	≤4%	0.2% v/v		<15%	0.3% v/v		

Remarks and Notes:

YB
8/28/99

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 1 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1
Set-up person(s): J. Surman Date: 08-26-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-26-99 1430

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-5	M17-6
Filter Assembly and Holder*		Filter Assembly No.	1	2
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	1	2
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS)	100-200 mLs ASTM Type I Water		647.0	668.2
U-Connector (A)				
2nd Impinger (GBS)	100-200 mLs ASTM Type I Water		644.0	650.7
U-Connector (B)				
3rd Impinger (Mod-GBS)	Empty		495.4	464.8
U-Connector (C)				
4th Impinger (Mod-GBS)	~200 g indicating silica gel		711.2	702.0
U-Connector (D)				
5th Impinger (Mod-GBS)	" "		724.8	680.6
Impinger Outlet Connector		Connector I.D. No.	UH-1	UH-2

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PB
8/28/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 1 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-26-99 1800
Sample recovery person(s): J. Surman Date: 08-26-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	865.7	585.9	499.3	731.9+731.2	827.5	668.8	469.9	718.6+686.0
Initial Wt.	647.0	644.0	495.4	1436.0	668.2	650.7	464.8	1382.6
Net Wt.	218.7	-48.1	3.9	27.1	159.3	18.1	5.1	22.0
Total Condensate Collected:				201.6				204.5
Description and/or color:	clear	clear	clear	10%+95%	clear	clear	clear	10%+95%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	1102	1104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	1101	1103
Components Rinsed*:	nozzle, filter holder front	

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

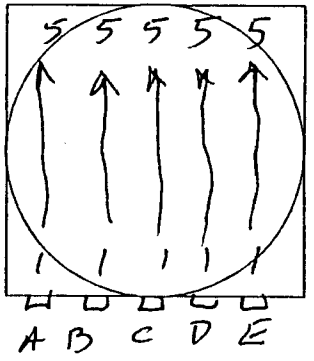
PS
8/28/99

M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 2 Date 8-27-99
Project No. 104951.1.016.05.01
Client U.S. EPA EMC
Source Cogentrix Unit 2A
Sampling Location Baghouse Outlet
Operator Gupta
Record data every 4 minutes
Barometer No. 72101
Barometric Pressure 29.80 in Hg
Elevation to Meter Boxes 34 ft
Meter Box P_{bar} 29.77 in Hg
Elevation to Sampling Loc. 34 ft
Sampling Location P_{bar} 29.77 in Hg

Train A	Train B
Train A No. M17-A	Train B No. M17-B
Probe No. A, Length: 10 ft	Probe No. B, Length: 10 ft
Nozzle No. M17-1, Tip Dia. .192 in	Nozzle No. M17-2, Tip Dia. .193 in
Pitot Tube No. A, C_p 0.84	Pitot Tube No. B, C_p 0.84
Stack Thermocouple No. 3158 A	Stack Thermocouple No. 3158 B
Filter Holder No. 3	Filter Holder No. 4
Filter Assembly No. F3	Filter Assembly No. F-4
Impinger Box No. A2	Impinger Box No. B2
Umbilical/Impinger Hookup UH30	Umbilical/Impinger Hookup UH32
Umbilical No. U50-4	Umbilical No. U50-1
Meter Box No. N-10	Meter Box No. N-11
DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901



Traverse Point Layout

Static Pressure ~~-25~~ -26.8" in H_2O Assumed Moisture 13.0 % Assumed $\%CO_2$ 14.5 $\%O_2$ 5.0

	Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0840	1049									0844	1053								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0838	1045								
Vacuum, in Hg	15	12								
Leak Rate, cfm	.007	.004								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0842	1050								
Vacuum, in Hg	15	14								
Leak Rate, cfm	.002	.004								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

PB
8/28/99

	TRAIN A	TRAIN B
Meter Volume at Start of Run	806.932	97.177
Meter Volume at End of Run	870.949	161.472
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 2 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-27-99 Project No. 104951.1.016.05.01 Operator Griffin

Sampling Data for Method 17 Train A No. M17-A

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 806.932 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
		0	0852										
	C-5	4	0856	810.06	809.92	2.3	2.10	2.1	186	79	79	11	63
	4	8	0900	813.06	812.99	2.1	1.92	1.9	185	79	79	10	58
	3	12	0904	815.99	815.91	2.0	1.84	1.8	184	81	79	10	53
	2	16	0908	817.82	817.80	0.78	0.72	0.72	184	83	80	7	51
	1	20	0912	818.18	818.15	0.03	0.02	0.02	184	84	80	5	53
0914	D-5	24	0918	821.60	821.56	2.7	2.48	2.5	186	83	81	12	56
	4	28	0922	824.95	824.88	2.6	2.40	2.4	186	86	81	11	50
	3	32	0926	828.13	828.02	2.3	2.13	2.1	186	90	82	11	49
	2	36	0930	830.04	830.00	0.83	0.77	0.77	185	91	83	7	50
	1	40	0934	830.93	830.86	0.18	0.16	0.16	184	91	84	6	53
0936	E-5	44	0940	834.31	834.26	2.7	2.51	2.5	185	89	85	12	51
	4	48	0944	837.89	837.73	2.8	2.61	2.6	185	92	85	12	50
	3	52	0948	841.36	841.22	2.7	2.53	2.5	185	95	86	12	51
	2	56	0952	844.12	844.08	1.7	1.59	1.6	186	97	87	10	53
	1	60	0956	845.26	845.27	0.29	0.27	0.27	186	99	88	6	57
0959	A-5	64	1000	848.67	848.62	2.6	2.44	2.4	185	95	89	11	60
	4	68	1007	852.03	852.01	2.5	2.35	2.4	185	97	89	11	54
	3	72	1011	855.18	855.16	2.2	2.07	2.1	185	100	90	11	54
	2	76	1015	857.70	857.67	1.4	1.32	1.3	186	101	91	9	54
	1	80	1019	858.56	858.97	0.35	0.33	0.33	185	101	91	6	57
1021	B-5	84	1025	862.26	862.27	2.4	2.26	2.3	185	98	92	11	62
	4	88	1029	865.56	865.57	2.4	2.27	2.3	184	100	92	12	55
	3	92	1033	868.66	868.62	2.1	1.99	2.0	184	101	93	11	55
	2	96	1037	870.43	870.43	0.68	0.64	0.64	185	103	93	7	56
	1	100	1041	870.95	870.949	0.06	0.05	0.05	185	102	94	5	59

Sampling Data for Method 17 Train B No. M17-B

		0	0854	97.177									
	A-5	4	0858	100.45	100.41	2.5	2.41	2.4	187	78	78	13	65
	4	8	0902	103.87	103.87	2.7	2.61	2.6	185	79	78	15	49
	3	12	0906	107.09	107.15	2.4	2.32	2.3	185	80	79	14	49
	2	16	0910	109.65	109.65	1.5	1.45	1.5	184	80	79	11	49
	1	20	0914	110.62	110.63	0.22	0.21	0.21	185	82	79	7	50
0916	B-5	24	0920	113.99	114.03	2.6	2.52	2.5	186	81	80	15	54
	4	28	0924	117.08	117.17	2.2	2.13	2.1	186	83	80	13	47
	3	32	0928	120.11	120.18	2.1	2.04	2.0	186	84	81	13	49
	2	36	0932	121.99	122.04	0.80	0.78	0.78	185	85	81	8	52
	1	40	0936	122.62	122.65	0.09	0.08	0.08	185	86	82	6	53
0938	C-5	44	0942	125.93	126.03	2.5	2.43	2.4	186	84	82	14	59
	4	48	0946	129.04	129.26	2.2	2.15	2.2	185	85	83	14	49
	3	52	0950	132.02	132.13	2.0	1.96	2.0	185	88	83	12	51
	2	56	0954	133.77	133.87	0.69	0.67	0.67	185	89	84	8	52
	1	60	0958	134.29	134.36	0.06	0.05	0.05	185	89	84	6	58
1001	D-5	64	1005	137.62	137.80	2.5	2.45	2.5	185	88	85	15	58
	4	68	1009	140.75	141.03	2.2	2.16	2.2	184	88	85	13	51
	3	72	1013	143.74	143.98	2.0	1.96	2.0	186	90	86	13	53
	2	76	1017	145.96	146.09	1.1	1.08	1.1	187	91	87	10	55
	1	80	1021	146.72	146.71	0.13	0.12	0.12	185	91	87	4	57
1023	E-5	84	1027	150.33	150.41	2.9	2.86	2.9	184	90	88	16	60
	4	88	1031	153.95	154.13	2.9	2.86	2.9	184	91	88	16	57
	3	92	1035	157.24	157.47	2.4	2.37	2.4	186	93	89	15	55
	2	96	1039	160.09	160.05	1.8	1.77	1.8	187	94	89	12	57
	1	100	1043	161.47	161.472	0.42	0.41	0.41	185	94	89	8	60

Remarks and Notes:

Total pressure @ pt C-3 = -25.4" H_2O ΔP = 2.0"

P.B
8/28/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 2 Date 8-27-99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single-Point~~) Operator Griffin
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. N-10 Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N-10 M3B Flow Meter No. 6800
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
0852	3.0	✓				
0853	3.0		✓			
0903	3.0				✓	
0912	3.0			✓		Port Change
0914	3.0	✓				
0915	3.0		✓			
0925	3.0				✓	
0934	3.0			✓		Port Change
0936	3.0	✓				
0937	3.0		✓			
0947	3.0				✓	
0956	3.0			✓		Port Change
0959	3.0	✓				
1000	3.0		✓			
1010	3.0				✓	
1019	3.0			✓		Port Change
1021	3.0	✓				
1022	3.0		✓			
1032	3.0				✓	
1041	3.0			✓		Port Change

M3BSAMP.WPD June 18, 1998

YB 8/28/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 2 Date 08-27-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1180

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	15.0
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	4.2
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v; ≤4% 0.2% v/v

O_2 ≥15% 0.2% v/v; <15% 0.3% v/v

CO 0.3% v/v

Remarks and Notes:

PB 8/28/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 2 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2
Set-up person(s): J. Surman Date: 08-26-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-27-99 0810

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	~~M3~~ M17-1	M17-2
Filter Assembly and Holder*		Filter Assembly No.	3	4
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	3	4
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS)	100-200 mLs ASTM Type I Water		681.9	673.0
U-Connector (A)				
2nd Impinger (GBS)	100-200 mLs ASTM Type I Water		658.3	698.6
U-Connector (B)				
3rd Impinger (Mod-GBS)	Empty		542.2	467.4
U-Connector (C)				
4th Impinger (Mod-GBS)	~200 g indicating silica gel		690.7	657.6
U-Connector (D)				
5th Impinger (Mod-GBS)	" "		791.2	677.0
Impinger Outlet Connector		Connector I.D. No.	UH-30	UH-32

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PB
8/28/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 2 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-27-99 1120
Sample recovery person(s): J. Surman Date: 08-27-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	873.6	665.7	543.7	7655+7943	865.5	706.7	469.6	671.9+683.3
Initial Wt.	681.9	658.3	542.2	1481.9	673.0	698.6	467.4	1334.6
Net Wt.	191.7	7.4	1.5	17.9	192.5	8.1	2.2	20.6
Total Condensate Collected:				217.9				223.4
Description and/or color:	clear	clear	clear	40%+95%	clear	clear	clear	50%+80%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	2 102	2 104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	2 101	2 103

Components Rinsed*: nozzle, filter holder front

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

PS
8/28/99

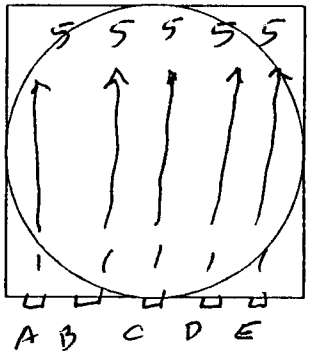
M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 3 Date 8-27-99
Project No. 104951.1.016.05.01
Client U.S. EPA EMC
Source Cogentrix Unit 2A
Sampling Location Baghouse Outlet
Operator Griffin
Record data every 4 minutes
Barometer No. 72101
Barometric Pressure 29.83 in Hg
Elevation to Meter Boxes 34 ft
Meter Box P_{bar} 29.80 in Hg
Elevation to Sampling Loc. 34 ft
Sampling Location P_{bar} 29.80 in Hg
Static Pressure ~~[illegible]~~ -26.61 in H_2O

Train A	Train B
Train A No. M17-A	Train B No. M17-B
Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Nozzle No. M17-7 Tip Dia. 0.196 in	Nozzle No. M17-11 Tip Dia. 0.196 in
Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Stack Thermocouple No. 3158-A	Stack Thermocouple No. 3158 B
Filter Holder No. 5	Filter Holder No. 6
Filter Assembly No. F-5	Filter Assembly No. F-6
Impinger Box No. A-1	Impinger Box No. B-1
Umbilical/Impinger Hookup UH1	Umbilical/Impinger Hookup UH2
Umbilical No. U50-4	Umbilical No. U50-1
Meter Box No. N-10	Meter Box No. N-11
DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901

Assumed Moisture 13.0 % Assumed $\%CO_2$ 14.5 $\%O_2$ 5.0



Traverse Point Layout

	Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1128	1341									1130	1343								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1127	1337								
Vacuum, in Hg	15	10								
Leak Rate, cfm	.003	.002								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1129	1339								
Vacuum, in Hg	15	10.5								
Leak Rate, cfm	.002	.001								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

	TRAIN A	TRAIN B
Meter Volume at Start of Run	871.572	165.670
Meter Volume at End of Run	937.364	231.600
Total Leak Check Volume		
Adjusted Final Volume		

JS
8/28/99

Run No. 3 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-27-99 Project No. 104951.1.016.05.01 Operator Griffin

Sampling Data for Method 17 Train A No. M17-A

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 871.572 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
		0	1144										
	C-5	4	1148	874.74	874.70	2.1	2.1	2.1	187	88	88	8	64
	4	8	1152	877.83	877.84	2.0	2.02	2.0	185	87	88	8	54
	3	12	1156	880.69	880.69	1.7	1.72	1.7	185	90	87	8	51
	2	16	1200	882.46	882.46	0.65	0.66	0.66	185	92	88	6	51
	1	20	1204	882.84	882.81	0.03	0.03	0.03	185	92	88	4	52
1206	D-5	24	1210	886.30	886.25	2.5	2.53	2.5	186	89	88	9	60
	4	28	1214	889.70	889.65	2.4	2.44	2.4	186	93	88	9	51
	3	32	1218	893.05	893.02	2.3	2.35	2.4	185	96	89	9	51
	2	36	1222	894.94	894.96	0.73	0.74	0.74	185	97	89	6	52
	1	40	1226	895.56	895.56	0.08	0.08	0.08	183	95	89	4	55
1228	E-5	44	1232	899.16	899.11	2.7	2.73	2.7	188	92	89	9	58
	4	48	1236	902.72	902.61	2.6	2.65	2.7	186	95	90	9	54
	3	52	1240	906.35	906.15	2.7	2.76	2.8	185	97	90	9	54
	2	56	1244	908.88	908.79	1.3	1.33	1.3	185	100	90	7	56
	1	60	1248	910.13	910.12	0.32	0.32	0.32	187	99	91	5	57
1251	A-5	64	1255	913.75	913.67	2.7	2.74	2.7	189	94	91	10	59
	4	68	1259	917.24	917.07	2.5	2.54	2.5	189	98	91	9	56
	3	72	1303	920.66	920.44	2.4	2.44	2.4	191	100	91	9	57
	2	76	1307	923.36	923.27	1.5	1.52	1.5	193	101	92	8	59
	1	80	1311	924.30	924.29	0.18	0.18	0.18	193	101	92	5	60
1313	B-5	84	1317	927.78	927.75	2.5	2.53	2.5	193	96	92	9	66
	4	88	1321	931.12	931.05	2.3	2.33	2.3	193	99	93	9	59
	3	92	1325	934.48	934.32	2.3	2.34	2.3	192	101	93	9	60
	2	96	1329	936.62	936.59	0.93	0.95	0.95	191	102	93	7	61
	1	100	1333	937.35	937.34	0.11	0.11	0.11	190	101	93	5	65

Sampling Data for Method 17 Train B No. M17-B

		0	1146	165.670									
	A-5	4	1150	169.04	169.09	2.4	2.50	2.5	188	88	88	10	62
	4	8	1154	172.41	172.53	2.4	2.51	2.5	185	88	87	10	48
	3	12	1158	175.50	175.57	2.0	2.09	2.1	186	89	88	9	48
	2	16	1202	178.42	178.50	1.8	1.88	1.9	186	90	88	8	48
	1	20	1206	179.77	179.81	0.38	0.39	0.39	186	92	89	5	48
1208	B-5	24	1212	183.23	183.31	2.5	2.62	2.6	186	92	89	10	54
	4	28	1216	186.55	186.62	2.3	2.41	2.4	187	93	89	9	46
	3	32	1220	189.50	189.66	1.8	1.89	1.9	186	94	90	8	48
	2	36	1224	191.62	191.66	0.93	0.98	0.98	184	95	91	7	50
	1	40	1228	192.32	192.32	0.10	0.10	0.10	185	96	91	5	50
1230	C-5	44	1234	195.72	195.74	2.4	2.53	2.5	187	94	92	10	57
	4	48	1238	199.20	199.19	2.5	2.64	2.6	185	95	92	10	48
	3	52	1242	202.72	202.37	2.0	2.11	2.1	185	96	92	9	49
	2	56	1246	204.12	204.14	0.67	0.71	0.71	186	98	93	6	51
	1	60	1250	204.57	204.57	0.04	0.04	0.04	187	98	93	4	52
1253	D-5	64	1257	208.04	208.03	2.5	2.63	2.6	189	96	93	10	57
	4	68	1301	211.59	211.57	2.6	2.73	2.7	191	96	94	10	49
	3	72	1305	214.45	214.55	1.7	1.78	1.8	193	99	94	8	50
	2	76	1309	216.51	216.57	0.87	0.91	0.91	195	100	95	7	52
	1	80	1313	216.89	216.99	0.03	0.03	0.03	195	100	95	4	53
1315	E-5	84	1319	220.44	220.56	2.6	2.73	2.7	194	98	96	10.5	56
	4	88	1323	223.92	223.99	2.5	2.63	2.6	193	99	96	10	52
	3	92	1327	227.48	227.42	2.6	2.74	2.7	192	100	96	10	53
	2	96	1331	230.61	230.63	2.0	2.11	2.1	192	102	97	9	55
	1	100	1335	231.60	231.600	0.20	0.21	0.21	191	103	97	5	55

Remarks and Notes:

Total pressure @ pt C-3 = -25.2 ΔP = 2.0

PB 8/28/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 3 Date 8-27-99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single-Point~~) Operator Griffin
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. N-10 Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N-10 M3B Flow Meter No. 6860
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1144	3.0	✓				
1145	3.0		✓			
1155	3.0				✓	
1204	3.0			✓		Port Change
1206	3.0	✓				
1207	3.0		✓			
1217	3.0				✓	
1226	3.0			✓		Port Change
1228	3.0	✓				
1229	3.0		✓			
1238	3.0				✓	
1248	3.0			✓		Port Change
1251	3.0	✓				
1252	3.0		✓			
1302	3.0				✓	
1311	3.0			✓		Port Change
1313	3.0	✓				
1314	3.0		✓			
1324	3.0				✓	
1333	3.0			✓		End of Run

M3BSAMP.WPD June 18, 1998

PB 8/08/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 3 Date 08-27-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1415

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	15.0
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	4.2
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v O_2 ≥15% 0.2% v/v CO 0.3% v/v

≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

PB 8/28/99

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 3 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1
Set-up person(s): J. Surman Date: 08-26-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-27-98 1120

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-3	M17-11
Filter Assembly and Holder*		Filter Assembly No.	5	6
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	5	6
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS)	100-200 mLs ASTM Type I Water		645.9	646.4
U-Connector (A)				
2nd Impinger (GBS)	100-200 mLs ASTM Type I Water		595.9	668.8
U-Connector (B)				
3rd Impinger (Mod-GBS)	Empty		499.3	464.9
U-Connector (C)				
4th Impinger (Mod-GBS)	~200 g indicating silica gel		685.4	700.9
U-Connector (D)				
5th Impinger (Mod-GBS)	" "		698.8	676.7
Impinger Outlet Connector		Connector I.D. No.	UH-1	UH-2

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PS
8/28/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 3 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-27-99 1410
Sample recovery person(s): J. Surman Date: 08-27-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	829.9	615.7	501.1	701.1+703.4	848.2	628.4	473.1	712.5+682.7
Initial Wt.	645.9	595.9	499.3	1384.2	646.4	668.8	469.9	1377.6
Net Wt.	184.0	19.8	1.8	20.3	201.8	9.6	3.2	22.6
Total Condensate Collected:				~~Blue~~ 225.9				~~10% + 95%~~ 237.2
Description and/or color:	clear	clear	clear	5% + 95%	clear	clear	clear	10% + 95%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	3102	3104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	3101	3103
Components Rinsed*:	nozzle, filter holder front	

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

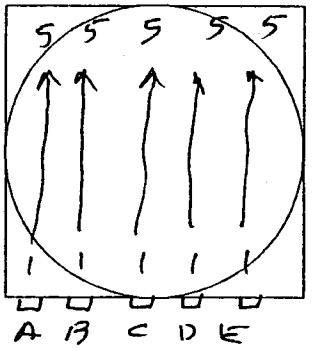
PS
8/28/99

M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 4 Date 8-27-99	Train A No. M17-A	Train B No. M17-B
Project No. 104951.1.016.05.01	Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Client U.S. EPA EMC	Nozzle No. M17-7 Tip Dia. 0.192 in	Nozzle No. M17-8 Tip Dia. 0.193 in
Source Cogentrix Unit 2A	Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Sampling Location Baghouse Outlet	Stack Thermocouple No. 3158A	Stack Thermocouple No. 3158B
Operator [illegible]	Filter Holder No. 7	Filter Holder No. 8
Record data every 4 minutes	Filter Assembly No. F-7	Filter Assembly No. F-8
Barometer No. 72101	Impinger Box No. A-2	Impinger Box No. B2
Barometric Pressure 29.79 in Hg	Umbilical/Impinger Hookup UH30	Umbilical/Impinger Hookup UH32
Elevation to Meter Boxes 34 ft	Umbilical No. N50-4	Umbilical No. N50-1
Meter Box P_{bar} 29.76 in Hg	Meter Box No. N-10	Meter Box No. N-11
Elevation to Sampling Loc. 34 ft	DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Sampling Location P_{bar} 29.76 in Hg	Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901

Static Pressure ~~25~~ -27.18 in H_2O Assumed Moisture 13.0 % Assumed $\%CO_2$ 14.5 $\%O_2$ 5.0



Traverse Point Layout

	Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1436	1645									1438	1646								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1435	1641								
Vacuum, in Hg	15	12								
Leak Rate, cfm	.006	.003								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1437	1643								
Vacuum, in Hg	15	16								
Leak Rate, cfm	.003	.004								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

JB 8/28/99

	TRAIN A	TRAIN B
Meter Volume at Start of Run	938.313	239.145
Meter Volume at End of Run	1002.221	304.547
Total Leak Check Volume	0	0
Adjusted Final Volume	~~63.908~~	~~65.402~~

Run No. 4 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-27-99 Project No. 104951.1.016.05.01 Operator [illegible]

Sampling Data for Method 17 Train A No. M17-A

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 938.313 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
		0	1448										
	C-5	4	1452	941.66	941.57	2.5	2.34	2.3	186	92	92	11	64
	4	8	1456	944.72	944.69	2.1	1.96	2.0	186	92	91	10	53
	3	12	1500	947.56	947.56	1.8	1.68	1.7	188	94	92	10	52
	2	16	1504	949.25	949.28	0.64	0.60	0.60	186	95	92	7	53
	1	20	1508	949.78	949.77	0.06	0.05	0.05	184	95	92	5	56
1510	D-5	24	1514	953.05	953.11	2.4	2.25	2.3	186	93	92	11	60
	4	28	1518	956.27	956.32	2.3	2.16	2.2	186	96	92	11	50
	3	32	1522	959.28	959.31	2.0	1.88	1.9	186	98	93	10	51
	2	36	1526	961.25	961.27	0.85	0.80	0.80	185	100	93	7	52
	1	40	1530	961.99	961.98	0.12	0.11	0.11	185	99	93	6	57
1532	E-5	44	1536	965.42	965.38	2.6	2.45	2.5	185	95	94	12	58
	4	48	1540	968.93	968.86	2.7	2.56	2.6	184	99	94	12	53
	3	52	1544	972.24	972.22	2.4	2.27	2.3	186	102	94	11	53
	2	56	1548	974.58	974.58	1.2	1.13	1.1	186	102	95	8	54
	1	60	1552	975.97	975.95	0.42	0.39	0.39	185	101	95	7	59
1555	A-5	64	1559	979.42	979.39	2.6	2.46	2.5	185	99	95	12	61
	4	68	1603	982.93	982.82	2.7	2.56	2.6	186	101	95	12	55
	3	72	1607	985.96	985.90	2.0	1.90	1.9	186	103	95	11	55
	2	76	1611	988.84	988.73	1.8	1.71	1.7	185	104	96	10	57
	1	80	1615	989.98	989.98	0.28	0.26	0.26	185	104	96	6	60
1617	B-5	84	1621	993.29	993.28	2.4	2.28	2.3	185	100	96	12	63
	4	88	1625	996.54	996.59	2.3	2.19	2.2	185	102	96	12	57
	3	92	1629	999.73	999.74	2.2	2.10	2.1	185	104	97	11	58
	2	96	1633	1001.60	1001.61	0.76	0.72	0.72	186	105	97	8	59
	1	100	1637	1002.25	1002.221	0.09	0.08	0.08	185	103	97	6	65

Sampling Data for Method 17 Train B No. M17-B

		0	1450	239.145									
	A-5	4	1454	242.65	242.66	2.7	2.67	2.7	186	93	93	15	65
	4	8	1458	246.09	246.17	2.6	2.57	2.6	187	93	93	15	46
	3	12	1502	249.38	249.55	2.4	2.37	2.4	189	94	93	14	46
	2	16	1506	251.44	251.61	0.92	0.91	0.91	185	95	93	9	46
	1	20	1510	252.79	252.79	0.40	0.39	0.39	185	95	93	6	49
1512	B-5	24	1516	256.24	256.39	2.6	2.59	2.6	186	96	94	15	55
	4	28	1520	259.34	259.54	2.1	2.09	2.1	186	96	94	13	45
	3	32	1524	262.38	262.48	2.0	1.99	2.0	186	98	95	12	45
	2	36	1528	264.32	264.40	0.82	0.81	0.81	187	99	95	9	48
	1	40	1532	265.23	265.33	0.18	0.18	0.18	185	99	95	6	51
1534	C-5	44	1538	268.49	268.61	2.3	2.30	2.3	185	98	96	13	55
	4	48	1542	271.68	271.84	2.2	2.20	2.2	185	99	96	13	46
	3	52	1546	274.80	274.92	2.1	2.10	2.1	186	100	96	13	46
	2	56	1550	276.58	276.76	0.68	0.68	0.68	186	101	97	8	48
	1	60	1554	277.11	277.18	0.06	0.06	0.06	185	101	97	6	50
1557	D-5	64	1601	280.58	280.68	2.6	2.60	2.6	186	100	97	15	66
	4	68	1605	283.71	283.84	2.1	2.10	2.1	186	101	98	13	50
	3	72	1609	286.98	287.05	2.3	2.30	2.3	187	102	98	13	48
	2	76	1613	289.45	289.65	1.3	1.30	1.3	186	103	99	11	49
	1	80	1617	290.20	290.24	0.12	0.12	0.12	186	104	99	6	51
1619	E-5	84	1623	293.75	293.80	2.7	2.71	2.7	186	102	99	15	59
	4	88	1627	297.37	297.43	2.8	2.82	2.8	185	102	99	16	49
	3	92	1631	300.36	300.59	1.9	1.91	1.9	186	104	100	14	49
	2	96	1635	303.35	303.42	1.9	1.91	1.9	187	105	100	14	51
	1	100	1639	304.54	304.547	0.30	0.30	0.30	186	105	101	7	52

Remarks and Notes:

Total pressure from pt C3 = -25.7 ΔP = 2.1

PG 8/28/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 4 Date 8-27-99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single-Point~~) Operator Griffin
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. N10 Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N10 M3B Flow Meter No. 6800
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1448	3.0	✓				
1449	3.0		✓			
1459	3.0				✓	
1508	3.0			✓		Port Change
1510	3.0	✓				
1511	3.0		✓			
1521	3.0				✓	
1530	3.0			✓		Port Change
1532	3.0	✓				
1533	3.0		✓			
1543	3.0				✓	
1552	3.0			✓		Port Change
1555	3.0	✓				
1557	3.0		✓			
1606	3.0				✓	
1615	3.0			✓		Port Change
1617	3.0	✓				
1618	3.0		✓			
1628	3.0				✓	
1637	3.0			✓		End of Run

M3BSAMP.WPD June 18, 1998

DB 8/28/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 4 Date 08-27-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1710

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Syrman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.1 2 15.1 3	15.1	1 15.1 2 15.1 3	15.1	1 15.1 2 15.1 3	15.1	15.1
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.3 2 19.3 3	4.2	1 19.3 2 19.3 3	4.2	1 19.3 2 19.3 3	4.2	4.2
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v O_2 ≥15% 0.2% v/v CO 0.3% v/v

≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

JB
8/28/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 4 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2
Set-up person(s): J. Surman Date: 08-27-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-27-99 1415

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-7	M17-8
Filter Assembly and Holder*		Filter Assembly No.	7	8
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	7	8
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
		Initial Weights (grams)		
1st Impinger (Mod-GBS)	100-200 mLs ASTM Type I Water		682.6	~~865.5~~ 660.0
U-Connector (A)				
2nd Impinger (GBS)	100-200 mLs ASTM Type I Water		665.7	706.7
U-Connector (B)				
3rd Impinger (Mod-GBS)	Empty		543.7	469.6
U-Connector (C)				
4th Impinger (Mod-GBS)	~200 g indicating silica gel		696.9	685.3
U-Connector (D)				
5th Impinger (Mod-GBS)	" "		794.3	705.7
Impinger Outlet Connector		Connector I.D. No.	UH-30	UH-32

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PS
8/28/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 4 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-27-99 1710
Sample recovery person(s): J. Surman Date: 08-27-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	853.0	695.0	545.4	713.1+779.7	863.9	715.2	470.2	701.4+708.9
Initial Wt.	682.6	665.7	543.7	1491.2	660.0	706.7	469.6	1391.0
Net Wt.	170.4	29.3	1.7	17.6	203.9	8.5	0.6	19.3
Total Condensate Collected:				219.0				232.3
Description and/or color:	clear	clear	clear	40% at 95%	clear	clear	clear	20% & 95%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	4102	4104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	4101	4103
Components Rinsed*:	nozzle, filter holder front	

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

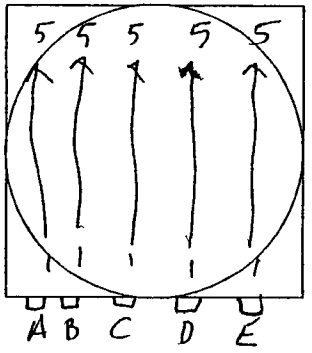
JG
8/28/99

M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 5 Date 8-28-99
Project No. 104951.1.016.05.01
Client U.S. EPA EMC
Source Cogentrix Unit 2A
Sampling Location Baghouse Outlet
Operator Griffin
Record data every 4 minutes
Barometer No. 42101
Barometric Pressure 29.86 in Hg
Elevation to Meter Boxes 34 ft
Meter Box P_{bar} 29.83 in Hg
Elevation to Sampling Loc. 34 ft
Sampling Location P_{bar} 29.83 in Hg

Train A	Train B
Train A No. M17-A	Train B No. M17-B
Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Nozzle No. M17-5 Tip Dia. 0.185 in	Nozzle No. M17-6 Tip Dia. 0.184 in
Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Stack Thermocouple No. 3158 A	Stack Thermocouple No. 3158 B
Filter Holder No. 1	Filter Holder No. 2
Filter Assembly No. F-9	Filter Assembly No. F-10
Impinger Box No. A-1	Impinger Box No. B-1
Umbilical/Impinger Hookup UH1	Umbilical/Impinger Hookup UH2
Umbilical No. N50-4	Umbilical No. N50-1
Meter Box No. ~~D6 1.019~~ N-10	Meter Box No. N-11
DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901



Traverse Point Layout

Static Pressure ~~-26~~ -23.07 in H_2O Assumed Moisture 14.0 % Assumed $\%CO_2$ 15.1 $\%O_2$ 4.2

	Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0833	1044									0836	1049								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0832	1043								
Vacuum, in Hg	15	10								
Leak Rate, cfm	.003	.002								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0835	1046								
Vacuum, in Hg	15	10								
Leak Rate, cfm	.004	.003								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

	TRAIN A	TRAIN B
Meter Volume at Start of Run	3.620	305.126
Meter Volume at End of Run	58.910	360.649
Total Leak Check Volume	0	0
Adjusted Final Volume		

T.B
8/28/99

M17DPG1.WPD July 2, 1999

Run No. 5 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-28-99 Project No. 104951.1.016.05.01 Operator Griffin

Sampling Data for Method 17 Train A No. M17-A

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 3.620 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
		0	0850										
	C-5	4	0854	6.50	6.86	2.3	1.78	1.8	185	80	80	10	58
	4	8	0858	9.25	9.62	2.1	1.62	1.6	186	80	80	9	46
	3	12	0902	11.80	11.87	1.8	1.40	1.4	185	82	80	8	47
	2	16	0906	13.45	13.48	0.75	0.58	0.58	185	83	80	6	48
	1	20	0910	13.78	13.76	0.03	0.02	0.02	184	83	81	4	48
0912	D-5	24	0916	16.66	16.69	2.3	1.79	1.8	185	82	81	9	55
	4	28	0920	19.43	19.41	2.1	1.63	1.6	185	85	81	8	46
	3	32	0924	22.27	22.15	2.2	1.71	1.7	186	87	82	8	46
	2	36	0928	23.82	23.81	0.66	0.51	0.51	185	89	82	6	47
	1	40	0932	24.29	24.25	0.06	0.04	0.04	185	88	83	4	50
0934	E-5	44	0938	27.32	27.24	2.5	1.95	2.0	185	86	84	9	55
	4	48	0942	30.24	30.20	2.3	1.80	1.8	185	89	84	9	47
	3	52	0946	32.82	32.84	1.8	1.41	1.4	186	92	85	8	47
	2	56	0950	35.34	35.32	1.7	1.34	1.3	185	93	86	8	48
	1	60	0954	36.42	36.43	0.31	0.24	0.24	185	94	86	5	48
0957	A-5	64	1001	39.41	39.41	2.4	1.89	1.9	185	91	87	9	52
	4	68	1005	42.27	42.27	2.2	1.73	1.7	185	93	87	9	48
	3	72	1009	45.15	45.06	2.2	1.74	1.7	185	95	87	9	48
	2	76	1013	47.44	47.47	1.4	1.11	1.1	185	96	88	8	49
	1	80	1017	48.19	48.19	0.15	0.11	0.11	184	97	88	5	49
1019	B-5	84	1023	51.13	51.02	2.3	1.82	1.8	185	92	89	9	57
	4	88	1027	53.94	53.78	2.1	1.66	1.7	186	95	90	9	50
	3	92	1031	56.55	56.39	1.8	1.42	1.4	186	96	90	9	49
	2	96	1035	58.23	58.16	0.75	0.59	0.59	185	98	90	7	51
	1	100	1039	58.91	58.910	0.12	0.09	0.09	184	97	90	5	52

Sampling Data for Method 17 Train B No. M17-B

		0	0852	305.126									
	A-5	4	0856	308.14	308.26	2.6	2.03	2.0	186	80	79	10	54
	4	8	0900	311.15	311.42	2.6	2.03	2.0	187	80	79	10	45
	3	12	0904	313.86	314.09	2.1	1.65	1.7	185	81	80	8	45
	2	16	0908	316.23	316.28	1.6	1.25	1.3	185	82	80	7	46
	1	20	0912	317.31	317.27	0.33	0.26	0.26	185	83	81	4	46
0914	B-5	24	0918	320.09	320.00	2.2	1.73	1.7	186	83	81	8	53
	4	28	0922	322.81	322.78	2.1	1.65	1.6	186	84	82	8	44
	3	32	0926	325.54	325.52	2.1	1.66	1.7	186	86	83	8	44
	2	36	0930	327.23	327.25	0.80	0.63	0.63	186	87	83	6	46
	1	40	0934	327.69	327.69	0.06	0.04	0.04	184	88	84	4	47
0936	C-5	44	0940	330.62	330.63	2.4	1.90	1.9	185	87	85	9	55
	4	48	0944	333.36	333.42	2.1	1.66	1.7	186	88	85	8	45
	3	52	0948	335.91	335.91	1.8	1.43	1.4	186	90	86	8	46
	2	56	0952	337.43	337.46	0.64	0.51	0.51	186	91	87	6	48
	1	60	0956	337.76	337.75	0.03	0.02	0.02	184	91	87	4	49
0959	D-5	64	1003	340.64	340.61	2.3	1.83	1.8	185	91	88	9	58
	4	68	1007	343.53	343.42	2.3	1.83	1.8	186	92	89	9	46
	3	72	1011	346.36	346.22	2.2	1.75	1.8	186	93	89	9	47
	2	76	1015	348.03	348.03	0.76	0.60	0.60	186	94	90	7	48
	1	80	1019	348.46	348.45	0.05	0.04	0.04	185	95	91	4	49
1021	E-5	84	1023	351.48	351.46	2.5	2.00	2.0	185	93	91	10	57
	4	88	1029	354.38	354.37	2.3	1.84	1.8	186	94	91	10	49
	3	92	1033	357.35	357.30	2.4	1.93	1.9	186	96	92	10	48
	2	96	1037	359.93	359.99	1.8	1.45	1.5	186	97	93	10	50
	1	100	1041	360.65	360.649	0.14	0.11	0.11	185	98	93	5	52

Remarks and Notes:

Total Pressure @ pt C3 = -21.8

$\Delta P = 1.8$

RG 8/28/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 5 Date 8-28-99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single-Point~~) Operator Griffin
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. N10 Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N10 M3B Flow Meter No. 6800
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
0850	3.0	✓				
0851	3.0		✓			
0901	3.0				✓	
0910	3.0			✓		Port Change
0912	3.0	✓				
0913	3.0		✓			
0923	3.0				✓	
0932	3.0			✓		Port Chang
0934	3.0	✓				
0935	3.0		✓			
0945	3.0				✓	
0954	3.0			✓		Port Chang
0957	3.0	✓				
0958	3.0		✓			
1008	3.0				✓	
1017	3.0			✓		Port Change
1019	3.0	✓				
1020	3.0		✓			
1030	3.0				✓	
1039	3.0			✓		End of Run

M3BSAMP.WPD June 18, 1998

PB 8/28/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 5 Date 08-28-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1115

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	15.0
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	4.2
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v O_2 ≥15% 0.2% v/v CO 0.3% v/v

≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

P.S. 8/28/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 5 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1
Set-up person(s): J. Surman Date: 08-27-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-28-99 0815

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-5	M17-6
Filter Assembly and Holder*		Filter Assembly No.	9	10
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	1	2
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS)	100-200 mLs ASTM Type I Water		660.1	643.1
U-Connector (A)				
2nd Impinger (GBS)	100-200 mLs ASTM Type I Water		615.7	639.4
U-Connector (B)				
3rd Impinger (Mod-GBS)	Empty		501.1	466.6
U-Connector (C)				
4th Impinger (Mod-GBS)	~200 g indicating silica gel		670.3	700.0
U-Connector (D)				
5th Impinger (Mod-GBS)	" "		692.1	676.0
Impinger Outlet Connector		Connector I.D. No.	UH-1	UH-2

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

JB
8/28/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 5 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-28-99 1115
Sample recovery person(s): J. Surman Date: 08-28-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	828.8	619.3	502.0	682.1+696.2	791.4	659.7	462.3	722.6+679.4
Initial Wt.	660.1	615.7	501.1	1362.4	643.1	639.4	466.6	1376.0
Net Wt.	168.7	3.6	0.9	15.9	148.3	20.3	0.7	16.0
Total Condensate Collected:				189.1				185.3
Description and/or color:	clear	clear	clear	5%+90%	clear	clear	clear	5%+90%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	5102	5104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	5101	5103

Components Rinsed*: nozzle, filter holder front

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

PS
8/28/99

M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 6 Date 8-28-99

Project No. 104951.1.016.05.01

Client U.S. EPA EMC

Source Cogentrix Unit 2A

Sampling Location Baghouse Outlet

Operator Gaffin

Record data every 4 minutes

Barometer No. Y2101

Barometric Pressure 29.87 in Hg

Elevation to Meter Boxes 34 ft

Meter Box P_{bar} 29.84 in Hg

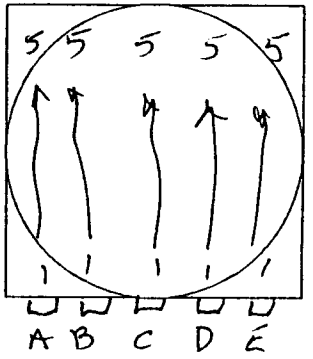
Elevation to Sampling Loc. 34 ft

Sampling Location P_{bar} 29.84 in Hg

Static Pressure ~~-24~~ -25.86 in H_2O

Train A	Train B
Train A No. M17-A	Train B No. M17-B
Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Nozzle No. M17-12 Tip Dia. 0.186 in	Nozzle No. M17-13 Tip Dia. .184 in
Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Stack Thermocouple No. 3158 A	Stack Thermocouple No. 3158 B
Filter Holder No. 3	Filter Holder No. 4
Filter Assembly No. F-11	Filter Assembly No. F-12
Impinger Box No. A2	Impinger Box No. B-2
Umbilical/Impinger Hookup UH 30	Umbilical/Impinger Hookup UH 32
Umbilical No. N50-4	Umbilical No. N50-1
Meter Box No. N10	Meter Box No. N11
DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901

Assumed Moisture 14 % Assumed $\%CO_2$ 15 $\%O_2$ 4



Traverse Point Layout

Train A Pitot Tube Pressure Measurement System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1128	1336								
Pass or Fail		pass								

Train B Pitot Tube Pressure Measurement System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1131	1340								
Pass or Fail		pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1127	1335								
Vacuum, in Hg	~~.006~~ 15	12								
Leak Rate, cfm	.006	.006								

Final Meter Volume				
Initial Meter Volume				
Leak Check Volume				

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1129	1338								
Vacuum, in Hg	15	17.5								
Leak Rate, cfm	.005	.003								

Final Meter Volume				
Initial Meter Volume				
Non-sample Volume				

Remarks and Notes: List any other equipment requiring calibration below.

	TRAIN A	TRAIN B
Meter Volume at Start of Run	62.904	361.081
Meter Volume at End of Run	119.529	417.537
Total Leak Check Volume	0	0
Adjusted Final Volume		

PB
8/28/99

Run No. 6 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-28-99 Project No. 104951.1.016.05.01 Operator Goff

Sampling Data for Method 17 Train A No. M17-A

	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 62.904 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
Initial time		0	1141										
	C-5	4	1145	65.74	65.66	2.1	1.69	1.7	184	90	90	10	60
	4	8	1149	68.43	68.43	1.9	1.53	1.5	186	90	90	9	55
	3	12	1153	70.91	70.95	1.6	1.29	1.3	185	93	90	9	52
	2	16	1157	72.46	72.44	0.62	0.50	0.50	185	95	91	6	53
	1	20	1201	72.80	72.77	0.03	0.02	0.02	185	95	91	4	57
1203	D-5	24	1207	75.84	75.80	2.4	1.94	1.9	185	93	92	11	60
	4	28	1211	78.92	78.82	2.3	1.86	1.9	186	96	92	11	51
	3	32	1215	81.32	81.35	1.6	1.30	1.3	185	98	92	9	51
	2	36	1219	82.97	82.92	0.70	0.57	0.57	186	99	93	7	54
	1	40	1223	83.41	83.40	0.05	0.04	0.04	185	99	93	5	58
1225	E-5	44	1229	86.53	86.52	2.5	2.03	2.0	185	96	94	12	61
	4	48	1233	89.53	89.52	2.3	1.88	1.9	185	99	94	11	53
	3	52	1237	92.60	92.52	2.4	1.96	2.0	186	102	95	12	52
	2	56	1241	95.27	95.25	1.8	1.47	1.5	186	103	95	10	54
	1	60	1245	96.06	96.06	0.16	0.13	0.13	186	103	96	6	57
1248	A-5	64	1254	99.12	99.16	2.4	1.95	2.0	188	99	96	12	62
	4	68	1256	102.25	102.25	2.5	2.03	2.0	189	101	96	12	55
	3	72	1300	105.26	105.25	2.3	1.87	1.9	190	103	96	12	56
	2	76	1304	107.68	107.74	1.5	1.22	1.2	191	104	96	10	57
	1	80	1308	108.57	108.57	0.20	0.16	0.16	192	104	97	6	60
1310	B-5	84	1314	111.62	111.52	2.4	1.93	1.9	195	100	97	12	63
	4	88	1318	114.42	114.28	2.0	1.62	1.6	195	103	98	12	58
	3	92	1322	117.14	117.01	1.9	1.54	1.5	193	103	98	12	59
	2	96	1326	118.91	118.86	0.79	0.64	0.64	192	105	98	9	61
	1	100	1330	119.54	119.529	0.10	0.08	0.08	191	104	98	6	65

Sampling Data for Method 17 Train B No. M17-B

		0	1143	361.081									
	A-5	4	1147	363.98	364.01	2.3	1.84	1.8	185	91	91	13	63
	4	8	1151	366.81	366.92	2.2	1.75	1.8	187	92	91	12	48
	3	12	1155	369.51	369.62	2.0	1.60	1.6	186	92	92	11	47
	2	16	1159	371.52	371.53	1.1	0.88	0.88	186	94	92	9	47
	1	20	1203	372.51	372.50	0.27	0.21	0.21	185	95	92	6	47
1205	B-5	24	1209	375.48	375.49	2.4	1.93	1.9	186	95	93	13	53
	4	28	1213	378.39	378.46	2.3	1.85	1.9	186	96	93	13	45
	3	32	1217	380.90	381.09	1.7	1.37	1.4	186	97	94	12	45
	2	36	1221	382.68	382.79	0.85	0.68	0.68	186	98	94	9	46
	1	40	1225	383.40	383.40	0.14	0.11	0.11	185	99	95	6	48
1227	C-5	44	1231	386.45	386.41	2.5	2.02	2.0	185	98	96	13	57
	4	48	1235	389.31	389.31	2.2	1.78	1.8	186	99	96	13	45
	3	52	1239	391.90	392.01	1.8	1.45	1.5	186	100	96	12	46
	2	56	1243	393.46	393.52	0.65	0.52	0.52	186	101	97	8	47
	1	60	1247	393.85	393.92	0.04	0.03	0.03	186	101	97	5	50
1250	D-5	64	1254	396.71	396.82	2.2	1.77	1.8	188	100	98	14	57
	4	68	1258	399.65	399.76	2.3	1.85	1.9	189	101	98	14	46
	3	72	1302	402.51	402.60	2.2	1.77	1.8	191	102	99	14	47
	2	76	1306	404.26	404.29	0.82	0.66	0.66	193	103	99	10	47
	1	80	1310	404.84	404.93	0.09	0.07	0.07	193	103	99	6	57
1312	E-5	84	1316	407.83	407.88	2.4	1.93	1.9	194	102	100	15	57
	4	88	1320	411.06	411.15	2.8	2.25	2.3	195	103	100	17.5	48
	3	92	1324	414.12	414.25	2.5	2.01	2.0	194	104	100	16	49
	2	96	1328	416.57	416.66	1.6	1.29	1.3	193	105	101	13	50
	1	100	1332	417.54	417.537	0.25	0.20	0.20	192	105	101	7	55

Remarks and Notes:

Total pressure @ Pt C-3 = −24.8 ΔP = 1.5

PS 8/28/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 6 Date 8-28-99 Client/Source U.S. EPA EMC / Cogentrix

Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct

Sample Type (Multi-Point, ~~Single-Point~~) Operator Griffin

Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA

Method 5 Meter Box No. N10 Method 3B Train No. NA

M3B Pump Type Diaphram M3B Flow Meter Type Rotameter

M3B Pump No. N10 M3B Flow Meter No. 6800

Desired Sampling Rate 300 cc/min

Leak Check Before Sampling 0 After Sampling 0

Total Sampling Time 95 min Average Flow Meter Reading 3.0

Flow Rate, cc/min: Average 300 Highest 300 Lowest 300

Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1141	3.0	✓				
1142	3.0		✓			
1152	3.0				✓	
1201	3.0			✓		Port Change
1203	3.0	✓				
1204	3.0		✓			
1214	3.0				✓	
1223	3.0			✓		Port Change
1225	3.0	✓				
1226	3.0		✓			
1236	3.0				✓	
1245	3.0			✓		Port Change
1248	3.0	✓				
1249	3.0		✓			
1259	3.0				✓	
1308	3.0			✓		Port Change
1310	3.0	✓				
1311	3.0		✓			
1312	3.0				✓	
1320	3.0			✓		End of Run

M3BSAMP.WPD June 18, 1998

RG 8/28/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 6 Date 08-28-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1430

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.2 2 15.2 3	15.2	1 15.2 2 15.2 3	15.2	1 15.2 2 15.2 3	15.2	15.2
O_2 (Net is actual reading minus actual CO_2 reading)	1 18.3 2 18.3 3	4.1	1 18.3 2 18.3 3	4.1	1 18.3 2 18.3 3	4.1	4.1
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v; ≤4% 0.2% v/v

O_2 ≥15% 0.2% v/v; <15% 0.3% v/v

CO 0.3% v/v

Remarks and Notes:

JS
8/28/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 6 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2
Set-up person(s): J. Surman Date: 08-28-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-28-99 1000

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-12	M17-13
Filter Assembly and Holder*		Filter Assembly No.	11	12
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	3	4
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS)	100-200 mLs ASTM Type I Water		658.3	~~653.7~~ 654.0
U-Connector (A)				
2nd Impinger (GBS)	100-200 mLs ASTM Type I Water		659.9	704.4
U-Connector (B)				
3rd Impinger (Mod-GBS)	Empty		542.9	468.2
U-Connector (C)				
4th Impinger (Mod-GBS)	~200 g indicating silica gel		664.8	680.4
U-Connector (D)				
5th Impinger (Mod-GBS)	" "		795.7	708.9
Impinger Outlet Connector		Connector I.D. No.	UH-30	UH-32

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PS
8/28/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 6 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-28-99 1400
Sample recovery person(s): J. Surman Date: 08-28-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	821.1	665.6	544.9	625.5 + 800.0	819.7	711.3	468.6	693.6 + 710.0
Initial Wt.	658.3	659.9	542.9	1460.5	654.0	704.4	468.2	1389.3
Net Wt.	162.8	5.7	2.0	15.0	165.7	6.9	0.4	14.3
Total Condensate Collected:				185.5				187.3
Description and/or color:	clear	clear	clear	5% + 90%	clear	clear	clear	5% + 95%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	6 102	6 104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	6 101	6 103

Components Rinsed*: nozzle, filter holder front

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

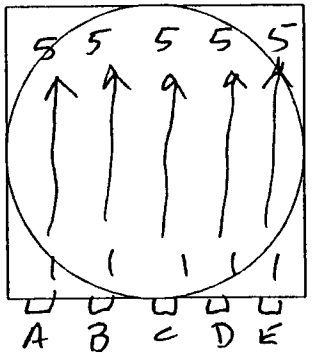
PB
8/28/99

M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 7 Date 8-28-99
Project No. 104951.1.016.05.01
Client U.S. EPA EMC
Source Cogentrix Unit 2A
Sampling Location Baghouse Outlet
Operator Griffin
Record data every 4 minutes
Barometer No. 42101
Barometric Pressure 29.89 in Hg
Elevation to Meter Boxes 34 ft
Meter Box P_{bar} 29.82 in Hg
Elevation to Sampling Loc. 34 ft
Sampling Location P_{bar} 29.82 in Hg
Static Pressure ~~26~~ -25.20 in H_2O

Train A	Train B
Train A No. M17-A	Train B No. M17-B
Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Nozzle No. M17-5 Tip Dia. 0.185 in	Nozzle No. M17-6 Tip Dia. 0.184 in
Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Stack Thermocouple No. 3158 A	Stack Thermocouple No. 3158 B
Filter Holder No. 5	Filter Holder No. 6
Filter Assembly No. F-13	Filter Assembly No. F14
Impinger Box No. A-1	Impinger Box No. B-1
Umbilical/Impinger Hookup UH1	Umbilical/Impinger Hookup UH2
Umbilical No. N50-4	Umbilical No. N50-1
Meter Box No. N10	Meter Box No. N11
DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901



Traverse Point Layout

Assumed Moisture 14 % Assumed %CO_2 15 %O_2 4

Train A Pitot Tube Pressure Measurement System Leak Checks																					
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	PASS	1696									PASS	1659										
Pass or Fail		pass										pass										

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1425	1655								
Vacuum, in Hg	≤ 15" Hg	10								
Leak Rate, cfm	.005	.001								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1427	1655								
Vacuum, in Hg	≤ 15" Hg.	11								
Leak Rate, cfm	.002	.003								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

PB
9/1/99

	TRAIN A	TRAIN B
Meter Volume at Start of Run	126.977	418.120
Meter Volume at End of Run	183.848	475.502
Total Leak Check Volume	0	0
Adjusted Final Volume		

M17DPG1.WPD July 2, 1999

Run No. 7 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-28-99 Project No. 104951.1.016.05.01 Operator Griffin

Sampling Data for Method 17 Train A No. M17-A

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 126.947 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
		0 1500	~~1447~~										
	C-5	4 1504	~~1451~~	129.89	129.91	2.3	1.81	1.8	194	96	96	8	53
	4	8 1508	~~1455~~	132.71	132.71	2.1	1.66	1.7	192	96	96	7	49
	3	12 1512	~~1459~~	135.54	135.46	2.1	1.66	1.7	191	98	96	7	47
1522	2	16 1516	~~1503~~	137.13	137.13	0.67	0.53	0.53	190	99	96	5	47
	1	20 1520	~~1507~~	137.47	137.47	0.03	0.02	0.02	189	100	97	4	50
~~1509~~	D-5	24	1526	140.63	140.56	2.6	2.07	2.1	189	98	97	8	59
	4	28	1530	143.53	143.47	2.2	1.75	1.8	188	100	97	8	48
	3	32	1534	146.09	146.06	1.7	1.36	1.4	188	102	97	7	48
	2	36	1538	148.06	148.05	1.0	0.80	0.80	187	104	98	6	49
	1	40	1542	148.62	148.61	0.08	0.06	0.06	186	103	98	4	53
1544	E-5	44	1548	151.72	151.63	2.5	2.00	2.0	186	100	98	8	63
	4	48	1552	154.90	154.63	2.6	2.08	2.1	188	104	98	8	50
	3	52	1556	157.55	157.41	1.8	1.45	1.5	187	106	99	8	51
	2	56	1600	160.12	160.00	1.7	1.37	1.4	187	106	99	8	52
	1	60	1604	161.21	161.22	0.30	0.24	0.24	186	107	99	5	56
1607	A-5	64	1611	164.33	164.27	2.5	2.01	2.0	187	103	100	9	58
	4	68	1615	167.32	167.24	2.3	1.85	1.9	187	106	100	9	52
	3	72	1619	170.12	170.00	2.0	1.61	1.6	187	108	100	9	52
	2	76	1623	172.20	172.20	1.1	0.88	0.88	187	108	101	7	52
	1	80	1627	173.09	173.08	0.20	0.16	0.16	190	108	101	5	55
1629	B-5	84	1633	176.13	176.08	2.5	1.91	1.9	220	104	101	9.5	61
	4	88	1637	179.05	179.04	2.3	1.75	1.8	227	106	102	10	52
	3	92	1641	181.54	181.56	1.7	1.28	1.3	234	108	101	8	54
	2	96	1645	183.41	183.41	0.93	0.71	0.71	221	108	101	7	55
	1	100	1649	183.84	183.848	0.05	0.03	0.03	214	107	101	5	57

Sampling Data for Method 17 Train B No. M17-B

		0 1502	~~1449~~	418.120									
	A-5	4 1506	~~1453~~	421.27	421.33	2.7	2.15	2.2	195	97	97	9	57
	4	8 1510	~~1457~~	424.36	424.47	2.6	2.07	2.1	193	97	97	9	46
	3	12 1514	~~1501~~	427.40	427.50	2.5	2.00	2.0	191	98	97	9	46
	2	16 1518	~~1505~~	429.60	429.64	1.3	1.04	1.0	192	99	98	7	47
1524	1	20 1522	~~1509~~	430.46	430.46	0.20	0.16	0.16	189	100	98	5	47
~~1511~~	B-5	24	1528	433.45	433.41	2.4	1.93	1.9	189	100	98	8	57
	4	28	1532	436.32	436.34	2.2	1.78	1.8	188	101	98	8	48
	3	32	1536	439.19	439.22	2.2	1.78	1.8	188	102	99	8	49
	2	36	1540	440.95	440.99	0.82	0.66	0.66	187	103	99	6	50
	1	40	1544	441.57	441.56	0.10	0.08	0.08	186	103	100	4	51
1546	C-5	44	1550	444.45	444.45	2.2	1.79	1.8	187	103	100	8	55
	4	48	1554	447.26	447.32	2.1	1.70	1.7	188	103	101	8	49
	3	52	1558	449.80	449.94	1.7	1.38	1.4	188	105	101	8	50
	2	56	1602	451.41	451.49	0.68	0.55	0.55	187	106	102	6	50
	1	60	1606	451.75	451.85	0.03	0.02	0.02	186	106	102	4	52
1609	D-5	64	1613	454.77	454.89	2.4	1.94	2.0	187	105	102	10	59
	4	68	1617	457.46	457.61	1.9	1.55	1.6	189	105	103	9	49
	3	72	1621	460.22	460.26	2.0	1.63	1.6	187	106	103	9	50
	2	76	1625	462.03	462.07	0.85	0.69	0.69	187	107	104	7	51
	1	80	1629	462.80	462.80	0.16	0.12	0.12	212	108	104	5	52
1631	E-5	84	1635	465.85	465.72	2.6	2.00	2.0	227	106	104	10	62
	4	88	1639	468.96	468.84	2.7	2.06	2.1	235	107	104	11	50
	3	92	1643	471.95	471.95	2.5	1.91	1.9	233	108	104	11	51
	2	96	1647	474.45	474.50	1.7	1.33	1.3	219	109	105	10	52
	1	100	1651	475.50	475.502	0.30	0.23	0.23	214	109	105	6	54

Remarks and Notes:

Total Pressure = -24.0 @ Pt C-3 ΔP = 1.7

PB 9/1/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 7 Date 8-28-99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single-Point~~) Operator Griffin
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. N10 Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N10 M3B Flow Meter No. 6800
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1500	3.0	✓				
1501	3.0		✓			
1511	3.0				✓	
1520	3.0			✓		Port Change
1522	3.0	✓				
1523	3.0		✓			
1533	3.0				✓	
1542	3.0			✓		Port Change
1544	3.0	✓				
1545	3.0		✓			
1555	3.0				✓	
1604	3.0			✓		Port Change
1607	3.0	✓				
1608	3.0		✓			
1618	3.0				✓	
1627	3.0			✓		Port Change
1629	3.0	✓				
1630	3.0		✓			
1640	3.0				✓	
1649	3.0			✓		End of Run

M3BSAMP.WPD June 18, 1998

PB
9/1/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 2 Date 08-28-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1730

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete NO Change in 4 Minutes

Pipettes NO Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete NO Change in 4 Minutes

Pipettes NO Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	15.0
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	4.2
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2	>4%	0.3% v/v	O_2	≥15%	0.2% v/v	CO	0.3% v/v
	≤4%	0.2% v/v		<15%	0.3% v/v		

Remarks and Notes:

JS
9/1/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 7 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1
Set-up person(s): J. Surman Date: 08-28-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-28-99 1400

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-5	M17-6
Filter Assembly and Holder*		Filter Assembly No.	13	14
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	5	6
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS)	100-200 mLs ASTM Type I Water		659.0	639.4
U-Connector (A)				
2nd Impinger (GBS)	100-200 mLs ASTM Type I Water		619.3	659.7
U-Connector (B)				
3rd Impinger (Mod-GBS)	Empty		496.4	467.3
U-Connector (C)				
4th Impinger (Mod-GBS)	~200 g indicating silica gel		683.4	701.1
U-Connector (D)				
5th Impinger (Mod-GBS)	" "		694.6	670.5
Impinger Outlet Connector		Connector I.D. No.	UH-1	UH-2

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PB
9/1/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 7 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-28-99 1725
Sample recovery person(s): J. Surman Date: 08-28-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	760.6	685.1	496.9	696.4+696.9	796.0	677.7	468.0	715.0+672.2
Initial Wt.	659.0	619.3	496.4	1378.0	639.4	659.7	467.3	1371.6
Net Wt.	101.6	65.8	0.5	15.3	156.6	18.0	0.7	15.6
Total Condensate Collected:				183.2				190.9
Description and/or color:	clear	clear	clear	5%+95%	clear	clear	clear	5%+95%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	7102	7104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	7101	7103
Components Rinsed*:	nozzle, filter holder front	

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

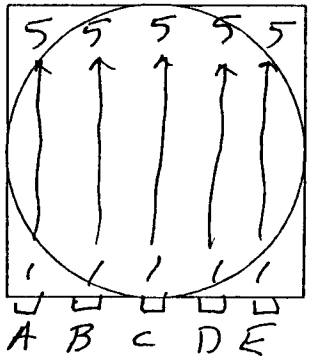
PB
9/1/99

M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 8 Date 8-29-99
Project No. 104951.1.016.05.01
Client U.S. EPA EMC
Source Cogentrix Unit 2A
Sampling Location Baghouse Outlet
Operator Griffin
Record data every 4 minutes
Barometer No. 72101
Barometric Pressure 29.83 in Hg
Elevation to Meter Boxes 34 ft
Meter Box P_{bar} 29.80 in Hg
Elevation to Sampling Loc. 34 ft
Sampling Location P_{bar} 29.80 in Hg

Train A	Train B
Train A No. M17-A	Train B No. M17-B
Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Nozzle No. M17-12 Tip Dia. 0.186 in	Nozzle No. M17-13 Tip Dia. 0.184 in
Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Stack Thermocouple No. 3158 A	Stack Thermocouple No. 3158 B
Filter Holder No. 7	Filter Holder No. 8
Filter Assembly No. F-15	Filter Assembly No. F16
Impinger Box No. A2	Impinger Box No. B2
Umbilical/Impinger Hookup UH-30	Umbilical/Impinger Hookup UH-32
Umbilical No. N50-4	Umbilical No. N50-1
Meter Box No. N10	Meter Box No. N11
DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901



Traverse Point Layout

Static Pressure -25.67 in H_2O Assumed Moisture 14.0 % Assumed $\%CO_2$ 15 $\%O_2$ 4

	Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0850	1109									0841	1113								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0848	1107								
Vacuum, in Hg	15	12								
Leak Rate, cfm	.006	.003								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0852	1111								
Vacuum, in Hg	15	19.5								
Leak Rate, cfm	.003	.004								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

PB
9/1/99

	TRAIN A	TRAIN B
Meter Volume at Start of Run	184.338	415.944
Meter Volume at End of Run	242.223	532.800
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 8 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-29-99 Project No. 104951.1.016.05.01 Operator Griffin

Sampling Data for Method 17 Train A No. M17-A

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 184.338 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
		0	0914										
	C-5	4	0918	187.33	187.31	2.4	1.91	1.9	185	82	82	10	64
	4	8	0922	190.20	190.23	2.2	1.75	1.8	185	83	83	10	52
	3	12	0926	192.79	192.78	1.8	1.44	1.4	185	84	83	9	51
	2	16	0930	194.42	194.42	0.70	0.56	0.56	185	86	84	7	53
	1	20	0934	194.75	194.72	0.03	0.02	0.02	185	87	84	5	57
0936	D-5	24	0940	197.70	197.62	2.3	1.84	1.8	185	86	84	10	62
	4	28	0944	200.45	200.40	2.0	1.61	1.6	184	89	85	9	52
	3	32	0948	203.28	203.16	2.1	1.69	1.7	185	92	86	10	54
	2	36	0952	205.13	205.13	0.88	0.71	0.71	185	95	87	7	54
	1	40	0956	205.65	205.65	0.07	0.06	0.06	185	95	88	5	58
0958	E 5	44	1002	208.81	208.75	2.6	2.10	2.1	185	92	89	11	63
	4	48	1006	211.85	211.79	2.4	1.95	2.0	185	95	89	11	54
	3	52	1010	214.97	214.80	2.5	2.03	2.0	185	98	90	11	54
	2	56	1014	217.55	217.44	1.7	1.38	1.4	186	100	91	10	54
	1	60	1018	218.58	218.63	0.27	0.22	0.22	186	101	92	6	58
1021	A 5	64	1025	221.70	221.65	2.5	2.04	2.0	186	98	93	11	62
	4	68	1029	224.77	224.65	2.4	1.96	2.0	186	100	93	11	56
	3	72	1033	227.78	227.63	2.3	1.89	1.9	185	102	94	11	56
	2	76	1037	230.05	230.03	1.3	1.07	1.1	185	103	95	10	57
	1	80	1041	230.99	230.98	0.22	0.18	0.18	185	104	95	6	61
1043	B 5	84	1047	234.13	234.06	2.5	2.05	2.1	185	101	96	12	66
	4	88	1051	237.09	237.03	2.2	1.81	1.8	186	104	97	12	60
	3	92	1055	239.91	239.81	2.0	1.64	1.6	186	105	97	11	61
	2	96	1059	241.64	241.65	0.75	0.62	0.62	185	106	98	8	63
	1	100	1103	242.21	242.223	0.08	0.06	0.06	184	105	98	6	66

Sampling Data for Method 17 Train B No. M17-B

		0	0916	475.944									
	A-5	4	0920	479.04	478.95	2.7	2.13	2.1	185	82	82	11	59
	4	8	0924	482.01	482.03	2.5	1.97	2.0	186	83	82	11	46
	3	12	0928	484.80	484.87	2.2	1.73	1.7	185	83	82	11	44
	2	16	0932	486.69	486.79	1.0	0.79	0.79	185	84	83	8	45
	1	20	0936	487.69	487.67	0.28	0.22	0.22	185	85	83	6	47
0938	B 5	24	0942	490.68	490.72	2.5	1.98	2.0	185	86	84	12	57
	4	28	0946	493.61	493.68	2.4	1.90	1.9	185	86	84	12	45
	3	32	0950	496.15	496.28	1.8	1.43	1.4	186	88	85	11	46
	2	36	0954	497.96	498.06	0.90	0.71	0.71	186	89	86	8	47
	1	40	0958	498.46	498.45	0.07	0.05	0.05	186	90	86	6	49
1000	C 5	44	1004	501.41	501.36	2.4	1.91	1.9	186	90	87	12	60
	4	48	1008	504.10	504.11	2.0	1.59	1.6	185	90	87	11	46
	3	52	1012	506.66	506.66	1.8	1.44	1.4	185	92	88	11	47
	2	56	1016	508.26	508.25	0.70	0.56	0.56	186	93	89	8	47
	1	60	1020	508.69	508.68	0.05	0.04	0.04	186	94	90	6	50
1023	D 5	64	1027	511.59	511.58	2.3	1.84	1.8	186	93	90	12	58
	4	68	1031	514.55	514.51	2.4	1.92	1.9	187	93	90	12.5	47
	3	72	1035	517.46	517.38	2.3	1.85	1.9	186	95	91	12.5	47
	2	76	1039	519.36	519.42	0.98	0.78	0.78	186	96	91	10	48
	1	80	1043	520.00	519.93	0.11	0.08	0.08	185	97	92	6	51
1045	E 5	84	1049	523.15	523.12	2.7	2.17	2.2	186	95	92	14.5	56
	4	88	1053	526.36	526.33	2.8	2.25	2.3	186	96	92	15.5	48
	3	92	1057	529.47	529.50	2.6	2.10	2.1	186	97	93	15	48
	2	96	1101	531.99	532.08	1.7	1.37	1.4	186	99	94	13	50
	1	100	1105	532.80	532.800	0.18	0.14	0.14	186	99	94	6	51

Remarks and Notes:

Total Pressure = -24.4 @ pt C3 ΔP=1.8

PB
9/1/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 8 Date 8-29-99 Client/Source USEPA EMC Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Stack Outlet
Sample Type (Multi-Point, Single-Point) Operator [illegible]
Flow Control Device (Valve, Critical Orifice) Bag Type Tedlar Sample No. _____
Method 5 Meter Box No. N/C Method 3B Train No. N/A
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N/C M3B Flow Meter No. 6800
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 30
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
0914	3.0	✓				
0915	3.0		✓			
0925	3.0				✓	
0934	3.0			✓		Port Change
0936	3.0	✓				
0937	3.0		✓			
0947	3.0				✓	
0956	3.0			✓		Port Change
0958	3.0	✓				
0959	3.0		✓			
1009	3.0				✓	
1018	3.0			✓		Port Change
1021	3.0	✓				
1022	3.0		✓			
1032	3.0				✓	
1041	3.0			✓		Port Change
1043	3.0	✓				
1044	3.0		✓			
1054	3.0				✓	
1103	3.0			✓		End of Run

PB 9/1/99

M3BSAMP.WPD June 18, 1998

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 8 Date 08-29-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1130

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.2 2 15.2 3	15.2	1 15.2 2 15.2 3	15.2	1 15.2 2 15.2 3	15.2	15.2
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.2 2 19.2 3	4.0	1 19.2 2 19.2 3	4.0	1 19.2 2 19.2 3	4.0	4.0
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v O_2 ≥15% 0.2% v/v CO 0.3% v/v

≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

JS
9/1/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 8 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2
Set-up person(s): J. Surman Date: 08-28-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-29-99 0815

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-12	M17-13
Filter Assembly and Holder*		Filter Assembly No.	15	16
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	7	8
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS) U-Connector (A)	100-200 mLs ASTM Type I Water		690.1	639.4
2nd Impinger (GBS) U-Connector (B)	100-200 mLs ASTM Type I Water		641.9	674.1
3rd Impinger (Mod-GBS) U-Connector (C)	Empty		543.1	468.6
4th Impinger (Mod-GBS) U-Connector (D)	~200 g indicating silica gel		675.0	684.9
5th Impinger (Mod-GBS)	" "		750.4	704.0
Impinger Outlet Connector		Connector I.D. No.	UH-30	UH-32

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PB
9/1/94

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 8 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-29-99
Sample recovery person(s): J. Surman Date: 08-29-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	856.8	647.4	544.8	689.3+753.6	804.7	678.4	470.1	698.9+702.5
Initial Wt.	690.1	641.9	543.1	1425.4	639.4	674.1	468.6	1388.9
Net Wt.	166.7	5.5	1.7	17.5	165.3	4.3	1.5	17.5
Total Condensate Collected:				191.4				188.6
Description and/or color:	clear	clear	clear	5%+90%	clear	clear	clear	30%+95%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	8102	8104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	8101	8103
Components Rinsed*:	nozzle, filter holder front	

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

PB
9/1/99

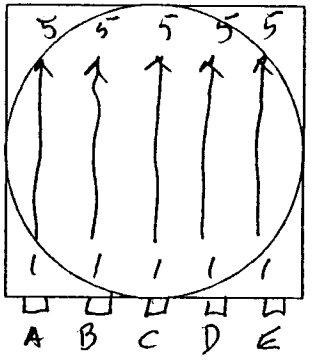
M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 9 Date 8-29-99
Project No. 104951.1.016.05.01
Client U.S. EPA EMC
Source Cogentrix Unit 2A
Sampling Location Baghouse Outlet
Operator Griffin
Record data every 4 minutes
Barometer No. 42101
Barometric Pressure 29.84 in Hg
Elevation to Meter Boxes 34 ft
Meter Box P_{bar} 29.81 in Hg
Elevation to Sampling Loc. 34 ft
Sampling Location P_{bar} 29.81 in Hg
Static Pressure -25.16 in H_2O

Train A	Train B
Train A No. M17-A	Train B No. M17-B
Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Nozzle No. M17-5 Tip Dia. 0.185 in	Nozzle No. M17-6 Tip Dia. 0.184 in
Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Stack Thermocouple No. 3158 A	Stack Thermocouple No. 3158 B
Filter Holder No. 1	Filter Holder No. 2
Filter Assembly No. F-17	Filter Assembly No. F18
Impinger Box No. A-1	Impinger Box No. B-1
Umbilical/Impinger Hookup UH 1	Umbilical/Impinger Hookup UH 2
Umbilical No. N50-4	Umbilical No. N50-1
Meter Box No. N10	Meter Box No. N11
DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901

Assumed Moisture 14 % Assumed $\%CO_2$ 15 $\%O_2$ 4



Traverse Point Layout

Train A Pitot Tube Pressure Measurement System Leak Checks											Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1152	1412									1155	1416								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1151	1410								
Vacuum, in Hg	15	11								
Leak Rate, cfm	.002	.003								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1153	1414								
Vacuum, in Hg	~~1153~~ 15	11								
Leak Rate, cfm	.003	.001								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

PB 9/1/99

	TRAIN A	TRAIN B
Meter Volume at Start of Run	246.290	533.261
Meter Volume at End of Run	302.649	587.713
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 9 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-29-99 Project No. 104951.1.016.05.01 Operator Griffin

Sampling Data for Method 17 Train A No. M17-A

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 246.290 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
		0	1205										
	C-5	4	1209	249.24	249.26	2.3	1.83	1.8	185	93	93	8	65
	4	8	1213	252.13	252.16	2.2	1.75	1.8	185	93	93	8	51
	3	12	1217	254.82	254.88	1.9	1.51	1.5	185	95	93	8	50
	2	16	1221	256.43	256.44	0.68	0.54	0.54	185	97	93	6	51
	1	20	1225	256.77	256.82	0.03	0.02	0.02	184	98	93	4	52
1227	D-5	24	1231	259.80	259.78	2.4	1.91	1.9	185	95	93	8	64
	4	28	1235	262.42	262.40	1.8	1.44	1.4	185	97	94	8	49
	3	32	1239	265.12	265.00	1.9	1.52	1.5	186	99	94	8	50
	2	36	1243	266.82	266.77	0.75	0.60	0.60	186	100	94	6	50
	1	40	1247	267.34	267.347	0.07	0.05	0.05	185	100	94	4	51
1249 Initial	E-5	44	1253	270.43	270.37	2.5	2.00	2.0	185	97	95	9	62
	4	48	1257	273.60	273.43	2.6	2.08	2.1	188	101	95	10	50
	3	52 1311	~~1301~~ 09	276.55	276.33	2.3	1.82	1.8	190	97	95	10	52
	2	56 1315	~~1305~~ 13	279.10	279.12	1.7	1.35	1.4	190	98	96	9	50
	1	60 1319	~~1309~~ 16	280.14	280.14	0.28	0.22	0.22	188	100	96	5	51
1321	A-5	64	1325	283.04	283.13	2.2	1.75	1.8	189	98	96	10	52
	4	68	1329	285.88	285.98	2.1	1.68	1.7	188	101	96	10	50
	3	72	1333	288.73	288.77	2.1	1.68	1.7	188	103	96	10	52
	2	76	1337	290.98	291.02	1.3	1.04	1.0	187	103	96	8	53
	1	80	1341	291.74	291.74	0.15	0.12	0.12	186	104	97	5	60
1343	B-5	84	1347	294.72	294.61	2.3	1.84	1.8	187	100	97	10	64
	4	88	1351	297.58	297.37	2.1	1.69	1.7	187	103	98	10	55
	3	92	1355	300.50	300.25	2.2	1.77	1.8	186	104	97	11	55
	2	96	1359	302.19	302.10	0.73	0.58	0.58	186	105	97	7	55
	1	100	1403	302.71	302.649	0.07	0.05	0.05	185	104	98	5	58

Sampling Data for Method 17 Train B No. M17-B

		0	1207	533.261									
	A-5	4	1211	536.30	536.37	2.5	2.01	2.0	185	93	93	9	60
	4	8	1215	539.33	539.48	2.5	2.01	2.0	185	93	93	9	50
	3	12	1219	542.11	542.24	2.1	1.69	1.7	186	95	93	8	47
	2	16	1223	544.31	544.40	1.3	1.05	1.0	185	96	94	7	48
	1	20	1227	545.23	545.24	0.23	0.18	0.18	186	97	94	4	47
1229	B-5	24	1233	548.10	548.14	2.2	1.78	1.8	185	97	95	8	56
	4	28	1237	550.83	550.83	2.0	1.62	1.6	186	98	95	8	47
	3	32	1241	553.35	553.41	1.7	1.37	1.4	186	99	96	8	47
	2	36	1245	555.10	555.16	0.82	0.66	0.66	186	100	96	6	47
	1	40	1249	555.43	555.94	0.03	0.02	0.02	186	101	97	4	48
1251 Initial	C-5	44	1255	558.24	558.38	2.1	1.70	1.7	186	99	97	9	53
	4	48	1259	560.90	561.06	1.9	1.53	1.5	188	100	97	8	49
	3	52 1313	~~1303~~ 07	563.63	563.75	2.0	1.61	1.6	190	99	97	9	59
	2	56 1317	~~1307~~ 11	565.10	565.21	0.58	0.46	0.46	190	99	97	6	50
	1	60 1321	~~1311~~ 15	565.44	565.53	0.03	0.02	0.02	188	100	98	4	52
1323	D-5	64	1327	568.24	568.29	2.1	1.69	1.7	189	99	98	9	58
	4	68	1331	571.04	571.04	2.1	1.70	1.7	189	100	98	9	50
	3	72	1335	573.41	573.52	1.5	1.21	1.2	188	101	99	9	50
	2	76	1339	574.99	575.03	0.66	0.53	0.53	188	103	99	7	50
	1	80	1343	575.33	575.37	0.03	0.02	0.02	187	103	100	4	53
1345	E-5	84	1349	578.34	578.42	2.4	1.95	2.0	187	102	100	11	60
	4	88	1353	581.29	581.41	2.3	1.87	1.9	187	102	100	11	51
	3	92	1357	584.30	584.38	2.4	1.96	2.0	187	104	100	11	52
	2	96	1401	586.85	586.97	1.7	1.38	1.4	187	105	100	10	53
	1	100	1405	587.70	587.713	0.19	0.15	0.15	187	106	101		53

Remarks and Notes:

Shut down @ 1257 Train A Restart @ 1311
1259 Train B Restart @ 1313

Total Pressure @ Pt. C-3 = -24.1 ΔP = 1.5

Computer problem
at 12:59 - shutdown
PB 9/1/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 9 Date 8-29-99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single-Point~~) Operator Griffin
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. N10 Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N10 M3B Flow Meter No. 6800
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1205	3.0	✓				
1206	3.0		✓			
1216	3.0				✓	
1225	3.0			✓		Bot Change
1227	3.0	✓				
1228	3.0		✓			
1238	3.0				✓	
1247	3.0			✓		Bot Change
1249	3.0	✓				
1250	3.0		✓	✓		Shut down @ 1257 Restart @ 1311
1311	3.0				✓	
1319	3.0			✓		Bot Change
1321	3.0	✓				
1322	3.0		✓			
1332	3.0				✓	
1341	3.0			✓		Bot Change
1343	3.0	✓				
1344	3.0		✓			
1354	3.0				✓	
1403	3.0			✓		End of Run

M3BSAMP.WPD June 18, 1998

JB 9/1/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 9 Date 08-29-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1450

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	1 15.0 2 15.0 3	15.0	15.0
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	1 19.2 2 19.2 3	4.2	4.2
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v; ≤4% 0.2% v/v

O_2 ≥15% 0.2% v/v; <15% 0.3% v/v

CO 0.3% v/v

Remarks and Notes:

PB 9/1/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 9 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1
Set-up person(s): J. Surman Date: 08-29-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-29-99 1100

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-5	M17-6
Filter Assembly and Holder*		Filter Assembly No.	17	18
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	1	2
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS)	100-200 mLs ASTM Type I Water		629.9	662.0
U-Connector (A)				
2nd Impinger (GBS)	100-200 mLs ASTM Type I Water		648.6	628.1
U-Connector (B)				
3rd Impinger (Mod-GBS)	Empty		495.8	465.2
U-Connector (C)				
4th Impinger (Mod-GBS)	~200 g indicating silica gel		688.4	726.9
U-Connector (D)				
5th Impinger (Mod-GBS)	" "		696.9	672.2
Impinger Outlet Connector		Connector I.D. No.	UH-1	UH-2

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PB
9/1/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 9 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-29-99 1440
Sample recovery person(s): J. Surman Date: 08-29-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	793.5	654.8	496.8	701.3+692.3	815.1	634.3	467.3	740.5+674.0
Initial Wt.	629.9	648.6	495.8	1385.3	662.0	628.1	465.2	1399.1
Net Wt.	163.6	6.2	1.0	15.3	153.1	6.2	2.1	15.4
Total Condensate Collected:				186.1				176.8
Description and/or color:	clear	clear	clear	30% & 85%	clear	clear	clear	30% & 90%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	9 102	9 104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	9 101	9 103
Components Rinsed*:	nozzle, filter holder front	

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

PB
9/1/99

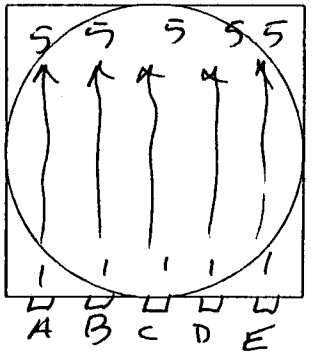
M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 10 Date 8-29-99
Project No. 104951.1.016.05.01
Client U.S. EPA EMC
Source Cogentrix Unit 2A
Sampling Location Baghouse Outlet
Operator Griffin
Record data every 4 minutes
Barometer No. 42101
Barometric Pressure 29.77 in Hg
Elevation to Meter Boxes 34 ft
Meter Box P_{bar} 29.74 in Hg
Elevation to Sampling Loc. 34 ft
Sampling Location P_{bar} 29.74 in Hg
Static Pressure ~~25~~ -26.81 in H_2O

Train A	Train B
Train A No. M17-A	Train B No. M17-B
Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Nozzle No. M17 12 Tip Dia. 0.186 in	Nozzle No. M17-13 Tip Dia. 0.184 in
Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Stack Thermocouple No. 3158 A	Stack Thermocouple No. 3158 B
Filter Holder No. 3	Filter Holder No. 4
Filter Assembly No. F-19	Filter Assembly No. F20
Impinger Box No. A 2	Impinger Box No. B 2
Umbilical/Impinger Hookup UH30	Umbilical/Impinger Hookup UH 32
Umbilical No. N50-4	Umbilical No. N50-1
Meter Box No. N 10	Meter Box No. N 11
DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901

Assumed Moisture 14 % Assumed %CO_2 15 %O_2 4



Traverse Point Layout

	Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1503	1719									1509	1723								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1505	1717								
Vacuum, in Hg	15	13								
Leak Rate, cfm	.005	.002								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1507	1721								
Vacuum, in Hg	15	16								
Leak Rate, cfm	.002	.008								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

PS
9/1/99

	TRAIN A	TRAIN B
Meter Volume at Start of Run	310.178	588.177
Meter Volume at End of Run	369.039	645.266
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 10 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-29-99 Project No. 104951.1.016.05.01 Operator Griff

Sampling Data for Method 17 Train A No. M17-A

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 310.178 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
		0	1523										
	C-5	4	1527	313.11	313.08	2.2	1.79	1.8	185	95	95	9	59
	4	8	1531	315.98	315.98	2.1	1.71	1.7	185	95	95	9	58
	3	12	1535	318.56	318.59	1.7	1.39	1.4	185	97	95	8	54
	2	16	1539	320.18	320.17	0.67	0.54	0.54	186	98	95	7	56
	1	20	1543	320.93	320.91	0.03	0.02	0.02	185	99	95	5	60
1545	D-5	24	1549	323.60	323.60	2.4	1.96	2.0	186	97	95	10	62
	4	28	1553	326.68	326.61	2.4	1.96	2.0	186	100	96	10	56
	3	32	1557	329.70	329.55	2.3	1.89	1.9	185	102	96	10	55
	2	36	1601	331.42	331.32	0.75	0.61	0.61	185	103	96	7	57
	1	40	1605	332.06	332.02	0.10	0.08	0.08	185	103	97	5	62
1607	E-5	44	1611	335.26	335.10	2.6	2.13	2.1	185	99	97	11	64
	4	48	1615	338.42	338.11	2.5	2.05	2.1	186	103	97	11	59
	3	52	1619	341.70	341.34	2.7	2.23	2.2	184	104	97	12	58
	2	56	1623	343.90	343.77	1.2	0.99	0.99	184	105	98	10	58
	1	60	1627	344.85	344.85	0.23	0.18	0.18	186	105	98	7	61
1630	A-5	64	1634	348.01	347.96	2.5	2.05	2.1	185	101	98	12	66
	4	68	1638	351.10	351.03	2.4	1.97	2.0	186	103	98	13	60
	3	72	1642	354.20	354.06	2.4	1.98	2.0	186	105	98	13	62
	2	76	1646	356.57	356.52	1.4	1.15	1.2	185	106	98	11	57
	1	80	1650	357.37	357.35	0.16	0.13	0.13	185	105	98	6	58
1652	B-5	84	1656	360.52	360.43	2.5	2.06	2.1	185	101	99	13	60
	4	88	1700	363.56	363.51	2.3	1.90	1.9	186	105	99	13	55
	3	92	1704	366.54	366.49	2.2	1.82	1.8	184	106	99	13	57
	2	96	1708	368.35	368.41	0.82	0.68	0.68	184	106	99	9	57
	1	100	1712	369.05	369.039	0.12	0.09	0.09	185	104	99	5	58

Sampling Data for Method 17 Train B No. M17-B

		0	1525	588.177									
	A-5	4	1529	591.17	591.20	2.4	1.94	1.9	185	97	97	12	63
	4	8	1533	594.17	594.25	2.4	1.94	1.9	186	97	97	12	48
	3	12	1537	596.91	596.99	2.0	1.62	1.6	186	97	97	11	47
	2	16	1541	599.43	599.53	1.7	1.38	1.4	185	98	97	10	48
	1	20	1544	600.53	600.53	0.32	0.26	0.26	185	99	97	7	49
1547	B-5	24	1551	603.59	603.54	2.5	2.03	2.0	187	100	98	12	58
	4	28	1555	606.54	606.52	2.3	1.87	1.9	186	100	98	12	47
	3	32	1559	609.07	609.15	1.7	1.39	1.4	186	101	98	11	48
	2	36	1603	610.91	610.92	0.90	0.73	0.73	186	102	99	9	49
	1	40	1607	611.53	611.53	0.10	0.08	0.08	187	103	99	6	50
1609	C-5	44	1613	614.48	614.51	2.3	1.87	1.9	187	101	99	13	59
	4	48	1617	617.43	617.49	2.3	1.88	1.9	185	102	100	13	49
	3	52	1621	620.19	620.27	2.0	1.63	1.6	184	103	100	13	49
	2	56	1625	621.78	621.87	0.66	0.54	0.54	185	104	100	9	50
	1	60	1629	622.12	622.12	0.03	0.02	0.02	186	104	101	6	53
1632	D-5	64	1636	625.14	625.18	2.4	1.96	2.0	186	103	101	15	56
	4	68	1640	628.22	628.25	2.5	2.04	2.0	186	103	101	15	50
	3	72	1644	630.70	630.78	1.6	1.31	1.3	186	105	101	12	50
	2	76	1648	632.36	632.48	0.72	0.58	0.58	187	105	102	10	53
	1	80	1652	632.69	632.67	0.03	0.02	0.02	186	105	102	5	54
1654	E-5	84	1658	635.78	635.75	2.5	2.04	2.0	186	104	102	15	61
	4	88	1702	638.81	638.76	2.4	1.96	2.0	186	104	102	15	51
	3	92	1706	641.85	641.78	2.4	1.97	2.0	185	105	102	16	52
	2	96	1710	644.40	644.41	1.7	1.39	1.4	186	106	102	14	53
	1	100	1714	645.27	645.266	0.20	0.16	0.16	187	106	102	7	54

Remarks and Notes:

Total Pressure @ Pt C-3 -25.4 ΔP = 2.0

JB 9/1/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 10 Date 8/29/99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single-Point~~) Operator [illegible]
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. NK Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N/O M3B Flow Meter No. 6800
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1523	3.0	✓				
1524	3.0	DG	✓			
1534	3.0				✓	
1543	3.0			✓		Port Change
1545	3.0	✓				
1546	3.0		✓			
1556	3.0				✓	
1605	3.0			✓		Port Change
1607	3.0	✓				
1608	3.0		✓			
1618	3.0				✓	
1627	3.0			✓		Port Change
1630	3.0	✓				
1631	3.0		✓			
1641	3.0				✓	
1650	3.0			✓		Port Change
1652	3.0	✓				
1653	3.0		✓			
1703	3.0				✓	
1712	3.0			✓		End of Run

M3BSAMP.WPD June 18, 1998

PB 9/1/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 10 Date 08-29-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1745

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 15.2 2 15.2 3	15.2	1 15.2 2 15.2 3	15.2	1 15.2 2 15.2 3	15.2	15.2
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.2 2 19.2 3	4.0	1 19.2 2 19.2 3	4.0	1 19.2 2 19.2 3	4.0	4.0
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v O_2 ≥15% 0.2% v/v CO 0.3% v/v

≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

JS
9/1/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 10 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2
Set-up person(s): J. Surman Date: 08-29-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-29-99 1350

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-12	M17-13
Filter Assembly and Holder*		Filter Assembly No.	19	20
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	3	4
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS) U-Connector (A)	100-200 mLs ASTM Type I Water		682.8	626.8
2nd Impinger (GBS) U-Connector (B)	100-200 mLs ASTM Type I Water		647.4	628.4
3rd Impinger (Mod-GBS) U-Connector (C)	Empty		543.1	467.7
4th Impinger (Mod-GBS) U-Connector (D)	~200 g indicating silica gel		680.0	677.1
5th Impinger (Mod-GBS)	" "		753.6	707.5
Impinger Outlet Connector		Connector I.D. No.	UH-30	UH-32

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PB
9/1/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 10 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-29-99 1745
Sample recovery person(s): J. Surman Date: 08-29-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	853.2	655.7	545.2	695.6+755.1	799.3	686.5	469.5	692.7+709.5
Initial Wt.	682.8	647.4	543.1	1433.6	626.8	678.4	467.7	1384.6
Net Wt.	170.4	8.3	2.1	17.1	172.5	8.1	1.8	17.6
Total Condensate Collected:				197.9				200.0
Description and/or color:	clear	clear	clear	25%+90%	clear	clear	clear	20%+95%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	10102	10104
PM Description/color:	black	black
TRAIN RINSES:		
Sample Number:	10 101	10103
Components Rinsed*:	nozzle, filter holder front	

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

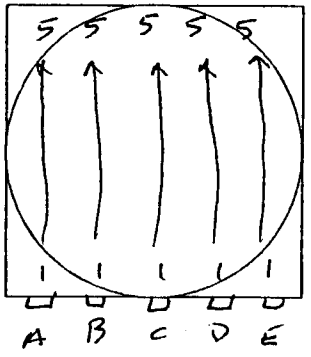
PB
9/1/99

M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 11 Date 8-30-99	Train A No. M17-A	Train B No. M17-B
Project No. 104951.1.016.05.01	Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Client U.S. EPA EMC	Nozzle No. M17-5 Tip Dia. 0.185 in	Nozzle No. M17-6 Tip Dia. 0.184 in
Source Cogentrix Unit 2A	Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Sampling Location Baghouse Outlet	Stack Thermocouple No. 3158 A	Stack Thermocouple No. 3158 B
Operator Griffin	Filter Holder No. 5	Filter Holder No. 6
Record data every 4 minutes	Filter Assembly No. F21	Filter Assembly No. F-22
Barometer No. 42101	Impinger Box No. A-1	Impinger Box No. B-1
Barometric Pressure 29.72 in Hg	Umbilical/Impinger Hookup ~~N50-4~~ 4H1	Umbilical/Impinger Hookup 4H2
Elevation to Meter Boxes 34 ft	Umbilical No. N50-4	Umbilical No. N50-1
Meter Box P_{bar} 29.69 in Hg	Meter Box No. N10	Meter Box No. N11
Elevation to Sampling Loc. 34 ft	DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Sampling Location P_{bar} 29.69 in Hg	Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901

Static Pressure ~~-25~~ -26.64 in H_2O Assumed Moisture 14 % Assumed $\%CO_2$ 19 $\%O_2$ 4



Traverse Point Layout

	Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0852	1224									0848	1230								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0854	1224								
Vacuum, in Hg	15	9								
Leak Rate, cfm	.002	.001								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0850	1228								
Vacuum, in Hg	15	10								
Leak Rate, cfm	.004	.002								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

PG
9/1/99

	TRAIN A	TRAIN B
Meter Volume at Start of Run	369.528	645.745
Meter Volume at End of Run	427.519	701.465
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 11 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-30-99 Project No. 104951.1.016.05.01 Operator Griffin

Sampling Data for Method 17 Train A No. M17-A

	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 369.528 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
Initial Time		0	1030										
	C-5	4	1034	372.36	372.32	2.3	1.73	1.7	195	73	73	8	46
	4	8	1038	375.13	375.12	2.2	1.67	1.7	192	73	73	8	45
	3	12	1042	377.58	377.63	1.7	1.29	1.3	190	74	73	7	45
	2	16	1046	379.31	379.33	0.85	0.65	0.65	188	76	73	6	46
	1	20	1050	379.64	379.64	0.03	0.02	0.02	188	77	73	4	49
1052	D-5	24	1056	382.68	382.65	2.6	1.99	2.0	188	76	75	8	57
	4	28	1100	385.55	385.52	2.3	1.77	1.8	186	79	75	8	49
	3	32	1104	388.37	388.31	2.2	1.70	1.7	186	82	76	8	48
	2	36	1108	390.08	390.08	0.80	0.62	0.62	185	84	77	6	49
	1	40	1112	390.79	390.72	0.14	0.10	0.10	185	84	77	4	52
1114	E-5	44	1118	393.86	393.74	2.6	2.02	2.0	185	82	78	8	56
	4	48	1122	397.05	396.90	2.8	2.16	2.2	191	85	79	9	51
	3	52	1126	400.01	399.93	2.4	1.87	1.9	188	88	79	9	49
	2	56	1130	402.66	402.65	1.9	1.48	1.5	186	89	80	8	50
	1	60	1134	403.45	403.39	0.17	0.13	0.13	183	90	81	5	52
1137	A-5	64	1141	406.61	406.48	2.7	2.11	2.1	184	86	82	9	58
	4	68	1145	409.72	409.64	2.6	2.05	2.1	183	89	82	9	52
	3	72	1149	412.71	412.63	2.4	1.89	1.9	184	91	83	9	51
	2	76	1153	415.23	415.20	1.7	1.34	1.3	184	92	83	8	53
	1	80	1157	416.18	416.15	0.24	0.19	0.19	183	93	84	5	54
1159	B-5	84	1203	419.23	419.22	2.5	1.97	2.0	184	89	84	9	60
	4	88	1207	422.23	422.20	2.4	1.90	1.9	183	91	85	9	54
	3	92	1211	424.76	424.77	1.7	1.34	1.3	183	93	85	8	53
	2	96	1215	426.80	426.78	1.1	0.87	0.87	184	94	85	7	55
	1	100	1219	427.52	427.519	0.14	0.11	0.11	182	93	86	5	56

Sampling Data for Method 17 Train B No. M17-B

		0	1032	645.745									
	A-5	4	1036	648.77	648.87	2.1	2.06	2.1	195	73	73	10	57
	4	8	1040	651.68	651.83	2.5	1.91	1.9	193	73	72	9	43
	3	12	1044	654.47	654.64	2.3	1.77	1.8	190	73	72	8	43
	2	16	1048	656.58	656.70	1.3	1.00	1.0	189	74	73	7	43
	1	20	1052	657.69	657.69	0.36	0.27	0.27	189	75	73	5	45
1054	B-5	24	1058	660.91	660.53	2.3	1.78	1.8	187	76	74	8	51
	4	28	1102	663.20	663.28	2.1	1.63	1.6	186	76	74	8	44
	3	32	1106	665.83	665.91	2.0	1.55	1.6	186	77	74	8	44
	2	36	1110	667.37	667.39	0.68	0.53	0.53	186	79	75	6	45
	1	40	1114	667.79	667.71	0.05	0.03	0.03	186	79	76	4	46
1116	C-5	44	1120	670.68	670.66	2.4	1.87	1.9	186	79	76	9	52
	4	48	1124	673.38	673.41	2.1	1.63	1.6	190	79	76	9	45
	3	52	1128	675.96	676.04	1.9	1.48	1.5	187	81	77	8	45
	2	56	1132	677.52	677.58	0.69	0.54	0.54	186	82	78	6	46
	1	60	1136	677.84	677.86	0.03	0.02	0.02	184	83	78	4	47
1139	D-5	64	1143	680.81	680.89	2.5	1.96	2.0	185	81	79	10	54
	4	68	1147	683.60	683.68	2.2	1.73	1.7	184	81	79	9	46
	3	72	1151	686.51	686.58	2.4	1.89	1.9	185	83	79	10	45
	2	76	1155	688.17	688.19	0.77	0.60	0.60	184	84	79	6	46
	1	80	1159	688.70	688.69	0.08	0.06	0.06	184	84	80	4	47
1201	E-5	84	1205	691.80	691.77	2.7	2.13	2.1	184	83	80	10	54
	4	88	1209	694.84	694.83	2.6	2.05	2.1	184	83	80	10	46
	3	92	1213	697.76	697.83	2.4	1.89	1.9	185	85	81	10	46
	2	96	1217	700.37	700.40	1.9	1.50	1.5	183	86	81	9	47
	1	100	1221	701.46	701.465	0.33	0.26	0.26	183	86	82	5	47

Remarks and Notes:

Total Pressure = ~~-24.6~~ EE DG
-25.3

JB
9/1/99

M17DPG2.WPD July 2, 1999 @ Pt C-3
$\Delta P = 1.9$

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 11 Date 8-30-99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single Point~~) Operator Griffin
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. N10 Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N10 M3B Flow Meter No. 6800
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1030	3.0	✓				
1031	3.0		✓			
1041	3.0				✓	
1050	3.0			✓		Port Change
1052	3.0	✓				
1053	3.0		✓			
1103	3.0				✓	
1112	3.0			✓		Port Change
1114	3.0	✓				
1115	3.0		✓			
1125	3.0				✓	
1134	3.0			✓		Port Change
1137	3.0	✓				
1138	3.0		✓			
1148	3.0				✓	
1159 ~~1158~~ DG	3.0			✓		Port Change
1200	3.0	✓				
1201	3.0		✓			
1211	3.0				✓	
1219 ~~1220~~ DG	3.0			✓		End of Run

M3BSAMP.WPD June 18, 1998

JB 9/1/99

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 11 Date 08-30-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1255

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 14.0 2 14.0 3	14.0	1 14.0 2 14.0 3	14.0	1 14.0 2 14.0 3	14.0	14.0
O_2 (Net is actual reading minus actual CO_2 reading)	1 18.8 2 18.8 3	4.8	1 18.8 2 18.8 3	4.8	1 18.8 2 18.8 3	4.8	4.8
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v; ≤4% 0.2% v/v

O_2 ≥15% 0.2% v/v; <15% 0.3% v/v

CO 0.3% v/v

Remarks and Notes:

PB
9/1/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 11 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1
Set-up person(s): J. Surman Date: 08-29-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-30-99 0830

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-5	M17-6
Filter Assembly and Holder*		Filter Assembly No.	21	22
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	5	6
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS) U-Connector (A)	100-200 mLs ASTM Type I Water		647.0	655.3
2nd Impinger (GBS) U-Connector (B)	100-200 mLs ASTM Type I Water		654.8	637.3
3rd Impinger (Mod-GBS) U-Connector (C)	Empty		495.8	465.4
4th Impinger (Mod-GBS) U-Connector (D)	~200 g indicating silica gel		686.5	714.5
5th Impinger (Mod-GBS)	" "		704.8	672.9
Impinger Outlet Connector		Connector I.D. No.	UH-1	UH-2

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PS
9/1/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 11 Sampling Train A No. M17-A Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-30-99 ~~0830~~ 1245
Sample recovery person(s): J. Surman Date: 08-30-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	787.9	659.7	499.4	698.9+700.9	801.8	636.9	465.3	726.4+674.0
Initial Wt.	647.0	654.8	495.8	1391.4	655.3	634.3	465.4	1387.4
Net Wt.	140.9	4.9	3.6	14.4	146.5	2.6	-0.1	13.0
Total Condensate Collected:				163.8				162.0
Description and/or color:	clear	clear	clear	10%+90%	clear	clear	clear	15%+95%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	11102	11104
PM Description/color:	grayish black	grayish black
TRAIN RINSES:		
Sample Number:	11101	11103

Components Rinsed*: nozzle, filter holder front

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

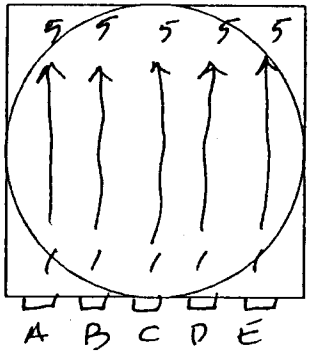
PB
9/1/99

M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

FIELD SAMPLING DATA FOR METHOD 17 TRAINS

Run No. 12 Date 8-30-99	Train A No. M17-A	Train B No. M17-B
Project No. 104951.1.016.05.01	Probe No. A Length: 10 ft	Probe No. B Length: 10 ft
Client U.S. EPA EMC	Nozzle No. M17-12 Tip Dia. 0.186 in	Nozzle No. M17-13 Tip Dia. 0.184 in
Source Cogentrix Unit 2A	Pitot Tube No. A C_p 0.84	Pitot Tube No. B C_p 0.84
Sampling Location Baghouse Outlet	Stack Thermocouple No. 3158-A	Stack Thermocouple No. 3158-B
Operator Griffin	Filter Holder No. 7	Filter Holder No. 8
Record data every 4 minutes	Filter Assembly No. F23	Filter Assembly No. F24
Barometer No. 72101	Impinger Box No. A-2	Impinger Box No. B-2
Barometric Pressure 29.75 in Hg	Umbilical/Impinger Hookup UH30	Umbilical/Impinger Hookup UH32
Elevation to Meter Boxes 34 ft	Umbilical No. N50-4	Umbilical No. N50-1
Meter Box P_{bar} 29.72 in Hg	Meter Box No. N10	Meter Box No. N11
Elevation to Sampling Loc. 34 ft	DGM Correction (Y) 1.019	DGM Correction (Y) 1.023
Sampling Location P_{bar} 29.72 in Hg	Orifice Meter ΔH@ 1.832	Orifice Meter ΔH@ 1.901

Static Pressure ~~-25~~ -26.61 in H_2O Assumed Moisture 14 % Assumed $\%CO_2$ 15 $\%O_2$ 4



Traverse Point Layout

	Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1310	1317									1312	1321								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1306	1315								
Vacuum, in Hg	15	12								
Leak Rate, cfm	.002	.002								
Final Meter Volume										
Initial Meter Volume										
Leak Check Volume										

Train B Sampling System Leak Checks

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1308	1319								
Vacuum, in Hg	15	15								
Leak Rate, cfm	.001	.001								
Final Meter Volume										
Initial Meter Volume										
Non-sample Volume										

Remarks and Notes: List any other equipment requiring calibration below.

PS
9/1/99

	TRAIN A	TRAIN B
Meter Volume at Start of Run	428.035	705.358
Meter Volume at End of Run	486.587	763.179
Total Leak Check Volume	0	0
Adjusted Final Volume	58.552	57.821

Run No. 12 Sampling Location Unit 2A Baghouse Outlet Duct page 2 of 2

Date 8-30-99 Project No. 104951.1.016.05.01 Operator Griffith

Sampling Data for Method 17 Train A No. M17-A

	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V_m), ft^3 Initial 428.035 Desired	Actual	Velocity Head (Δp), in. H_2O	Orifice Pressure Differential (ΔH), in. H_2O Desired	Actual	Stack Temp. (t_s), °F	Dry Gas Meter Temperature (t_m), °F Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
Initial Time		0	1322										
	C-5	4	1326	431.00	431.01	2.4	1.89	1.9	182	75	75	10	57
	4	8	1330	433.76	433.85	2.1	1.66	1.7	182	74	75	9	48
	3	12	1334	436.54	436.60	2.1	1.66	1.7	183	76	75	9	47
	2	16	1338	438.14	438.13	0.70	0.55	0.55	182	78	74	7	49
	1	20	1342	438.47	438.47	0.03	0.02	0.02	181	78	75	5	50
1344	D-5	24	1348	441.55	441.53	2.6	2.05	2.1	182	76	74	10	55
	4	28	1352	444.70	444.57	2.7	2.14	2.1	182	78	75	10	46
	3	32	1356	447.21	447.16	1.7	1.35	1.4	182	81	75	9	46
	2	36	1400	449.01	449.01	0.88	0.70	0.70	182	81	75	7	47
	1	40	1404	449.62	449.55	0.10	0.07	0.07	181	81	75	5	50
1406	E-5	44	1410	452.71	452.67	2.6	2.06	2.1	182	78	75	10	53
	4	48	1414	455.93	455.90	2.8	2.22	2.2	183	80	75	11	47
	3	52	1418	459.14	459.06	2.8	2.22	2.2	183	82	75	11	46
	2	56	1422	461.65	461.64	1.7	1.35	1.4	182	83	75	9	47
	1	60	1426	462.71	462.66	0.30	0.23	0.23	181	83	76	6	49
1429	A-5	64	1433	465.87	465.74	2.7	2.14	2.1	182	79	76	11	54
	4	68	1437	469.08	469.00	2.8	2.22	2.2	183	81	76	12	48
	3	72	1441	472.07	472.00	2.4	1.91	1.9	183	83	76	11	48
	2	76	1445	474.18	474.19	1.2	0.95	0.95	183	83	76	9	50
	1	80	1449	475.22	475.18	0.29	0.23	0.23	181	83	76	6	52
1451	B-5	84	1455	478.32	478.27	2.6	2.06	2.1	182	79	77	12	53
	4	88	1459	481.36	481.28	2.5	1.98	2.0	183	81	76	12	50
	3	92	1503	484.09	484.03	2.0	1.59	1.6	183	83	77	11	51
	2	96	1507	485.96	485.96	0.95	0.75	0.75	182	82	76	8	52
	1	100	1511	486.60	486.587	0.11	0.08	0.08	181	81	76	5	54

Sampling Data for Method 17 Train B No. M17-B

		0	1324	705.358									
	A-5	4	1328	708.43	708.48	2.7	2.12	2.1	183	78	77	12	56
	4	8	1332	711.39	711.54	2.5	1.96	2.0	183	77	77	12	46
	3	12	1336	714.34	714.45	2.5	1.96	2.0	184	78	77	12	44
	2	16	1340	716.48	716.49	1.3	1.02	1.0	183	79	77	9	44
	1	20	1344	717.51	717.45	0.30	0.23	0.23	182	79	78	6	45
1346	B-5	24	1350	720.53	720.45	2.6	2.04	2.0	183	80	78	12	51
	4	28	1354	723.50	723.41	2.5	1.96	2.0	184	80	78	12	44
	3	32	1358	726.01	726.04	1.8	1.41	1.4	183	81	78	11	43
	2	36	1402	727.80	727.80	0.90	0.71	0.71	182	82	79	8	44
	1	40	1406	728.53	728.43	0.15	0.11	0.11	182	83	79	6	45
1408	C-5	44	1412	731.56	731.54	2.6	2.05	2.1	184	82	79	13	52
	4	48	1416	734.48	734.52	2.4	1.89	1.9	183	82	79	12	45
	3	52	1420	737.14	737.23	2.0	1.58	1.6	183	83	80	11	45
	2	56	1424	738.81	738.81	0.78	0.61	0.61	183	84	80	8	46
	1	60	1428	739.14	739.14	0.03	0.02	0.02	182	84	80	6	48
1431	D-5	64	1435	742.18	742.20	2.6	2.06	2.1	183	83	81	13	55
	4	68	1439	744.97	745.04	2.2	1.74	1.7	184	83	81	12	48
	3	72	1443	747.77	747.79	2.2	1.74	1.7	184	84	81	12	48
	2	76	1447	749.61	749.65	0.95	0.75	0.75	183	85	81	9	48
	1	80	1451	750.21	750.21	0.10	0.07	0.07	182	85	82	6	49
1453	E-5	84	1457	753.37	753.40	2.8	2.21	2.2	184	84	82	14	53
	4	88	1501	756.59	756.64	2.9	2.29	2.3	184	84	81	15	48
	3	92	1505	759.75	759.82	2.8	2.22	2.2	184	86	82	15	49
	2	96	1509	762.29	762.32	1.8	1.43	1.4	183	86	82	12	50
	1	100	1513	763.18	763.179	0.22	0.17	0.17	183	87	82	7	51

Remarks and Notes:

Total Pressure = -25.2 @ Pt C-3, ΔP = 2.0

PB 9/1/99

M17DPG2.WPD July 2, 1999

40 *CFR* 60, APPENDIX A, METHOD 3B
INTEGRATED GAS SAMPLING DATA

Run No. 12 Date 8.30.99 Client/Source U.S. EPA EMC / Cogentrix
Project No. 104951.1.016.05.01 Sampling Location Unit 2A Baghouse Outlet Duct
Sample Type (Multi-Point, ~~Single-Point~~) Operator Grifth
Flow Control Device (Valve, ~~Critical Orifice~~) Bag Type Mylar Sample No. NA
Method 5 Meter Box No. N10 Method 3B Train No. NA
M3B Pump Type Diaphram M3B Flow Meter Type Rotameter
M3B Pump No. N10 M3B Flow Meter No. 6800
Desired Sampling Rate 300 cc/min
Leak Check Before Sampling 0 After Sampling 0
Total Sampling Time 95 min Average Flow Meter Reading 3.0
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1322	3.0	✓				
1323	3.0		✓			
1333	3.0				✓	
1342	3.0			✓		Port Change
1344	3.0	✓				
1345	3.0		✓			
1355	3.0				✓	
1404	3.0			✓		Port Change
1406	3.0	✓				
1407	3.0		✓			
1417	3.0				✓	
1426	3.0			✓		Port Change
1429	3.0	✓				
1430	3.0		✓			
1440	3.0				✓	
1449	3.0			✓		Port Change
1451	3.0	✓				
1452	3.0		✓			
1502	3.0				✓	
1511	3.0			✓		End of Run

PS
9/1/99

M3BSAMP.WPD June 18, 1998

40 *CFR* 60, APPENDIX A, METHOD 3B, GAS ANALYSIS BY ORSAT

Run No. 12 Date 08-30-99

Project No. 104951.1.016.05.01 Sample No. NA - Train A

Sampling Location Unit 2A Baghouse Outlet Duct

Analysis Start Time 1410

Sample Type (Bag, ~~Grab~~) Bag

Analyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 Minutes

Pipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete NO Change in 4 Minutes

Pipettes NO Change in 4 Minutes

Analysis	1		2		3		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO_2	1 14.3 2 14.3 3	14.3	1 14.3 2 14.3 3	14.3	1 14.3 2 14.3 3	14.3	14.3
O_2 (Net is actual reading minus actual CO_2 reading)	1 19.4 2 19.4 3	5.1	1 19.4 2 19.4 3	5.1	1 19.4 2 19.4 3	5.1	5.1
CO (Net is actual reading minus actual O_2 reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO_2 >4% 0.3% v/v; ≤4% 0.2% v/v

O_2 ≥15% 0.2% v/v; <15% 0.3% v/v

CO 0.3% v/v

Remarks and Notes:

PB
9/1/99

M3BANAL.WPD May 28, 1999

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY TRAIN SET-UP DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 12 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2
Set-up person(s): J. Surman Date: 08-30-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 08-30-99 1150

TRAIN COMPONENT	REAGENT	LOADING DATA	TRAIN A	TRAIN B
			TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*		Nozzle I.D. No.	M17-12	M17-13
Filter Assembly and Holder*		Filter Assembly No.	23	24
Filter Type:	Whatman 934-AH			
Probe (316 SS)		Filter Holder No.	7	8
Sample Transfer/Vacuum Line				
Male 1st Impinger Inlet Blank-Off				
			Initial Weights (grams)	
1st Impinger (Mod-GBS)	100-200 mLs ASTM Type I Water		666.2	639.4
U-Connector (A)				
2nd Impinger (GBS)	100-200 mLs ASTM Type I Water		655.7	686.5
U-Connector (B)				
3rd Impinger (Mod-GBS)	Empty		543.4	467.6
U-Connector (C)				
4th Impinger (Mod-GBS)	~200 g indicating silica gel		672.1	762.2
U-Connector (D)				
5th Impinger (Mod-GBS)	" "		667.1	690.2
Impinger Outlet Connector		Connector I.D. No.	UH-30	UH-32

* Before and after sampling: Nozzle inlet opening and filter assembly holder outlet opening covered with Teflon® tape, and entire filter assembly holder with filter assembly and nozzle wrapped in aluminum foil and placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

Comments:

PS
9/1/99

M17DSUP.WPD May 13, 1999 (rev. M17DSUP2.WPD July 29, 1999)

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD LABORATORY SAMPLE RECOVERY DATA FOR TWO TRAINS

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 12 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. B-2

Transfer for Recovery:
Relinquished By D. Griffin Received By J. Surman Date/Time 08-30-99 1555
Sample recovery person(s): J. Surman Date: 08-30-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th & 5th	1st	2nd	3rd	4th & 5th
Final Wt.	826.8	657.9	543.8	684.4+669.6	791.4	688.8	468.8	775.0+693.0
Initial Wt.	666.2	655.7	543.4	1339.2	639.4	686.5	467.6	1452.4
Net Wt.	160.6	2.2	0.4	14.8	152.0	2.3	1.2	15.6
Total Condensate Collected:				178.0				171.1
Description and/or color:	clear	clear	clear	15% + 95%	clear	clear	clear	10% + 95%
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	12102	12104
PM Description/color:	greyish black	greyish black
TRAIN RINSES:		
Sample Number:	12101	12103
Components Rinsed*:	nozzle, filter holder front	

* Acetone rinses with brushing 3 times or more until perceivably clean.

COMMENTS: Acetone rinses are transferred directly to tared Teflon® beaker liners for analysis.

PB
9/1/99

M17DRCV.WPD May 13, 1999 (rev. M17DRCV2.WPD July 29, 1999)

RCA #1 Appendix D

M17 Field Laboratory Particulate Weight Data

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman
Analyst: [signature]
Beaker Liner Size and Type: 250-mL Teflon®
Acetone Lot No. BO 363
Sample Treatment: Acetone samples evaporated at ambient temperature and pressure in an enclosure with HEPA-filtered air; then, desiccated and weighed to a constant weight.
Weight Unit: grams

Run No. 1A Beaker No. 1 Sample No. 1101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	123.8	3.7749	08-28-99	0800
Beaker + Liner Tare Wt.	104.3	3.7749	08-28-99	1615
Sample + Rinses Wt.	19.5			
Acetone Wt./0.79 = mLs Acetone:	24.7			

Beaker Liner + Residue Gross Weight used for data entry: 3.7749
Beaker Liner Tare Weight from Tare Weight Data: 3.7625
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 24.7 mLs

Comments:

Run No. 1B Beaker No. 2 Sample No. 1103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	132.9	3.4607	08-28-99	0800
Beaker + Liner Tare Wt.	107.8	3.4608	08-28-99	1615
Sample + Rinses Wt.	25.1			
Acetone Wt./0.79 = mLs Acetone:	31.8			

Beaker Liner + Residue Gross Weight used for data entry: 3.4608
Beaker Liner Tare Weight from Tare Weight Data: 3.4483
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 31.8 mLs

Comments:

Run No. 2A Beaker No. 3 Sample No. 2101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	133.7	3.7217	08-28-99	0800
Beaker + Liner Tare Wt.	115.3	3.7217	08-28-99	1615
Sample + Rinses Wt.	18.4			
Acetone Wt./0.79 = mLs Acetone:	23.3			

Beaker Liner + Residue Gross Weight used for data entry: 3.7217
Beaker Liner Tare Weight from Tare Weight Data: 3.7206
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 23.3 mLs

Comments:

NOTE: Control liner and reagent blank weight data and balance check data are documented on other forms.

PB
9/1/99

M5IPMRIX.WPD June 5, 1998 (rev. M17PMRI2.WPD July 29, 1999)

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman
Analyst: J Surman
Beaker Liner Size and Type: 250-mL Teflon®
Acetone Lot No. BO 363
Sample Treatment: Acetone samples evaporated at ambient temperature and pressure in an enclosure with HEPA-filtered air; then, desiccated and weighed to a constant weight.
Weight Unit: grams

Run No. 2B Beaker No. 4 Sample No. 2103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	122.6	3.7100	08-28-99	0800
Beaker + Liner Tare Wt.	103.2	3.7100	08-28-99	1615
Sample + Rinses Wt.	19.4			
Acetone Wt./0.79 = mLs Acetone:	24.6			

Beaker Liner + Residue Gross Weight used for data entry: 3.7100
Beaker Liner Tare Weight from Tare Weight Data: 3.7096
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 24.6 mLs

Comments:

Run No. 3A Beaker No. 5 Sample No. 3101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	128.0	3.6896	08-28-99	0800
Beaker + Liner Tare Wt.	112.6	3.6896	08-28-99	1615
Sample + Rinses Wt.	15.4			
Acetone Wt./0.79 = mLs Acetone:	19.5			

Beaker Liner + Residue Gross Weight used for data entry: 3.6896
Beaker Liner Tare Weight from Tare Weight Data: 3.6894
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 19.5 mLs

Comments:

Run No. 3B Beaker No. 6 Sample No. 3103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	144.4	3.7280	08-28-99	0800
Beaker + Liner Tare Wt.	118.2	3.7280	08-28-99	1615
Sample + Rinses Wt.	26.2			
Acetone Wt./0.79 = mLs Acetone:	33.2			

Beaker Liner + Residue Gross Weight used for data entry: 3.7280
Beaker Liner Tare Weight from Tare Weight Data: 3.7267
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 33.2 mLs

Comments:

NOTE: Control liner and reagent blank weight data and balance check data are documented on other forms.

PB
9/1/99

M5IPMRIX.WPD June 5, 1998 (rev. M17PMRI2.WPD July 29, 1999)

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Beaker Liner Size and Type: 250-mL Teflon®
Acetone Lot No. BO 363
Sample Treatment: Acetone samples evaporated at ambient temperature and pressure in an enclosure with HEPA-filtered air; then, desiccated and weighed to a constant weight.
Weight Unit: grams

Run No. 4B Beaker No. 7 Sample No. 4101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	114.3	3.4127	08-29-99	0800
Beaker + Liner Tare Wt.	92.7	3.4127	08-29-99	1615
Sample + Rinses Wt.	21.6			
Acetone Wt./0.79 = mLs Acetone:	27.3			

Beaker Liner + Residue Gross Weight used for data entry: 3.4127
Beaker Liner Tare Weight from Tare Weight Data: 3.4119
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 27.3 mLs

Comments:

Run No. 4B Beaker No. 8 Sample No. 4103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	126.1	3.5387	08-29-99	0800
Beaker + Liner Tare Wt.	105.1	3.5387	08-29-99	1615
Sample + Rinses Wt.	21.0			
Acetone Wt./0.79 = mLs Acetone:	26.6			

Beaker Liner + Residue Gross Weight used for data entry: 3.5387
Beaker Liner Tare Weight from Tare Weight Data: 3.5382
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = ~~27.3~~ 26.6 mLs

Comments:

Run No. 5A Beaker No. 9 Sample No. 5101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	138.7	3.6924	08-29-99	0800
Beaker + Liner Tare Wt.	113.8	3.6924	08-29-99	1615
Sample + Rinses Wt.	24.9			
Acetone Wt./0.79 = mLs Acetone:	31.5			

Beaker Liner + Residue Gross Weight used for data entry: 3.6924
Beaker Liner Tare Weight from Tare Weight Data: 3.6884
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 31.5 mLs

Comments:

NOTE: Control liner and reagent blank weight data and balance check data are documented on other forms.

PB
9/1/99

M5IPMRIX.WPD June 5, 1998 (rev. M17PMRI2.WPD July 29, 1999)

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman
Analyst: [signature]
Beaker Liner Size and Type: 250-mL Teflon®
Acetone Lot No. BO 363
Sample Treatment: Acetone samples evaporated at ambient temperature and pressure in an enclosure with HEPA-filtered air; then, desiccated and weighed to a constant weight.
Weight Unit: grams

Run No. 5B Beaker No. 10 Sample No. 5103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	130.5	3.7242	08-29-99	0800
Beaker + Liner Tare Wt.	104.5	3.7242	08-29-99	1615
Sample + Rinses Wt.	26.0			
Acetone Wt./0.79 = mLs Acetone:	32.9			

Beaker Liner + Residue Gross Weight used for data entry: 3.7242
Beaker Liner Tare Weight from Tare Weight Data: 3.7216
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 32.9 mLs

Comments:

Run No. 6A Beaker No. 11 Sample No. 6101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	117.0	3.3262	08-29-99	0800
Beaker + Liner Tare Wt.	93.8	3.3262	08-29-99	1615
Sample + Rinses Wt.	23.2			
Acetone Wt./0.79 = mLs Acetone:	29.4			

Beaker Liner + Residue Gross Weight used for data entry: 3.3262
Beaker Liner Tare Weight from Tare Weight Data: 3.3252
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 29.4 mLs

Comments:

Run No. 6B Beaker No. 12 Sample No. 6103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	117.6	3.3624	08-29-99	0800
Beaker + Liner Tare Wt.	95.8	3.3625	08-29-99	1615
Sample + Rinses Wt.	21.8			
Acetone Wt./0.79 = mLs Acetone:	27.6			

Beaker Liner + Residue Gross Weight used for data entry: 3.3625
Beaker Liner Tare Weight from Tare Weight Data: 3.3598
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 27.6 mLs

Comments:

NOTE: Control liner and reagent blank weight data and balance check data are documented on other forms.

PB 9/1/99

M5IPMRIX.WPD June 5, 1998 (rev. M17PMRI2.WPD July 29, 1999)

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Beaker Liner Size and Type: 250-mL Teflon®
Acetone Lot No. BO 363
Sample Treatment: Acetone samples evaporated at ambient temperature and pressure in an enclosure with HEPA-filtered air; then, desiccated and weighed to a constant weight.
Weight Unit: grams

Run No. 7A Beaker No. 13 Sample No. 7101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	136.3	3.5617	08-30-99	0815
Beaker + Liner Tare Wt.	115.8	3.5617	08-30-99	1445
Sample + Rinses Wt.	20.5			
Acetone Wt./0.79 = mLs Acetone:	25.9			

Beaker Liner + Residue Gross Weight used for data entry: 3.5617
Beaker Liner Tare Weight from Tare Weight Data: 3.5564
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 25.9 mLs

Comments: Some flecks of rusted metal on filter

Run No. 7B Beaker No. 14 Sample No. 7103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	143.7	3.5414	08-30-99	0815
Beaker + Liner Tare Wt.	116.3	3.5414	08-30-99	1445
Sample + Rinses Wt.	27.4			
Acetone Wt./0.79 = mLs Acetone:	34.7			

Beaker Liner + Residue Gross Weight used for data entry: 3.5414
Beaker Liner Tare Weight from Tare Weight Data: 3.5346
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 34.7 mLs

Comments:

Run No. 8A Beaker No. 15 Sample No. 8101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	130.4	3.7388	08-30-99	0815
Beaker + Liner Tare Wt.	104.6	3.7387	08-30-99	1445
Sample + Rinses Wt.	25.8			
Acetone Wt./0.79 = mLs Acetone:	32.7			

Beaker Liner + Residue Gross Weight used for data entry: 3.7388
Beaker Liner Tare Weight from Tare Weight Data: 3.7282
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 32.7 mLs

Comments:

NOTE: Control liner and reagent blank weight data and balance check data are documented on other forms.

PG 9/1/99

M5IPMRIX.WPD June 5, 1998 (rev. M17PMRI2.WPD July 29, 1999)

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Beaker Liner Size and Type: 250-mL Teflon®
Acetone Lot No. BO 363
Sample Treatment: Acetone samples evaporated at ambient temperature and pressure in an enclosure with HEPA-filtered air; then, desiccated and weighed to a constant weight.
Weight Unit: grams

Run No. 8B Beaker No. 16 Sample No. 8103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	119.0	3.5284	08-30-99	0815
Beaker + Liner Tare Wt.	87.6	3.5284	08-30-99	1445
Sample + Rinses Wt.	31.4			
Acetone Wt./0.79 = mLs Acetone:	39.7			

Beaker Liner + Residue Gross Weight used for data entry: 3.5284
Beaker Liner Tare Weight from Tare Weight Data: 3.5190
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 39.7 mLs

Comments:

Run No. 9A Beaker No. 17 Sample No. 9101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	149.0	3.8462	08-30-99	0815
Beaker + Liner Tare Wt.	109.7	3.8462	08-30-99	1445
Sample + Rinses Wt.	39.3			
Acetone Wt./0.79 = mLs Acetone:	49.7			

Beaker Liner + Residue Gross Weight used for data entry: 3.8462
Beaker Liner Tare Weight from Tare Weight Data: 3.8313
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 49.7 mLs

Comments:

Run No. 9B Beaker No. 18 Sample No. 9103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	145.3	3.8362	08-30-99	0815
Beaker + Liner Tare Wt.	116.3	3.8362	08-30-99	1445
Sample + Rinses Wt.	29.0			
Acetone Wt./0.79 = mLs Acetone:	36.7			

Beaker Liner + Residue Gross Weight used for data entry: 3.8362
Beaker Liner Tare Weight from Tare Weight Data: 3.8242
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 36.7 mLs

Comments:

NOTE: Control liner and reagent blank weight data and balance check data are documented on other forms.

JB
9/1/99

M5IPMRIX.WPD June 5, 1998 (rev. M17PMRI2.WPD July 29, 1999)

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman
Analyst: [signature]
Beaker Liner Size and Type: 250-mL Teflon®
Acetone Lot No. BO 363
Sample Treatment: Acetone samples evaporated at ambient temperature and pressure in an enclosure with HEPA-filtered air; then, desiccated and weighed to a constant weight.
Weight Unit: grams

Run No. 10A Beaker No. 19 Sample No. 10101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	130.3	3.6955	08-30-99	0815
Beaker + Liner Tare Wt.	108.0	3.6955	08-30-99	1445
Sample + Rinses Wt.	22.3			
Acetone Wt./0.79 = mLs Acetone:	28.2			

Beaker Liner + Residue Gross Weight used for data entry: 3.6955
Beaker Liner Tare Weight from Tare Weight Data: 3.6934
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 28.2 mLs

Comments:

Run No. 10B Beaker No. 20 Sample No. 10103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	109.7	3.6167	08-30-99	0815
Beaker + Liner Tare Wt.	89.9	3.6167	08-30-99	1445
Sample + Rinses Wt.	19.8			
Acetone Wt./0.79 = mLs Acetone:	25.1			

Beaker Liner + Residue Gross Weight used for data entry: 3.6167
Beaker Liner Tare Weight from Tare Weight Data: 3.6075
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 25.1 mLs

Comments:

Run No. 11A Beaker No. 21 Sample No. 11101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	137.5	3.6521	08-31-99	0800
Beaker + Liner Tare Wt.	117.2			
Sample + Rinses Wt.	20.3			
Acetone Wt./0.79 = mLs Acetone:	25.7			

Beaker Liner + Residue Gross Weight used for data entry: 3.6521
Beaker Liner Tare Weight from Tare Weight Data: 3.6465
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 25.7 mLs

Comments:

NOTE: Control liner and reagent blank weight data and balance check data are documented on other forms.

PB
9/1/99

M5IPMRIX.WPD June 5, 1998 (rev. M17PMRI2.WPD July 29, 1999)

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman
Analyst: [signature]
Beaker Liner Size and Type: 250-mL Teflon®
Acetone Lot No. BO 363
Sample Treatment: Acetone samples evaporated at ambient temperature and pressure in an enclosure with HEPA-filtered air; then, desiccated and weighed to a constant weight.
Weight Unit: grams

Run No. 11B Beaker No. 22 Sample No. 11103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	112.6		3.3993	08-31-99	0800
Beaker + Liner Tare Wt.	90.2				
Sample + Rinses Wt.	22.4				
Acetone Wt./0.79 = mLs Acetone:	28.4				

Beaker Liner + Residue Gross Weight used for data entry: 3.3993
Beaker Liner Tare Weight from Tare Weight Data: 3.3937
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 28.4 mLs

Comments:

Run No. 12A Beaker No. 23 Sample No. 12101

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	120.3		3.8363	08-31-99	0800
Beaker + Liner Tare Wt.	104.3				
Sample + Rinses Wt.	16.0				
Acetone Wt./0.79 = mLs Acetone:	20.3				

Beaker Liner + Residue Gross Weight used for data entry: 3.8363
Beaker Liner Tare Weight from Tare Weight Data: 3.8248
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 20.3 mLs

Comments:

Run No. 12B Beaker No. 24 Sample No. 12103

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	126.5		3.4576	08-31-99	0800
Beaker + Liner Tare Wt.	107.3				
Sample + Rinses Wt.	19.2				
Acetone Wt./0.79 = mLs Acetone:	24.3				

Beaker Liner + Residue Gross Weight used for data entry: 3.4576
Beaker Liner Tare Weight from Tare Weight Data: 3.4467
Acetone Blank for data entry = 0 mg/mL
Volume for data entry = 24.3 mLs

Comments:

NOTE: Control liner and reagent blank weight data and balance check data are documented on other forms.

PB
9/1/99

M5IPMRIX.WPD June 5, 1998 (rev. M17PMRI2.WPD July 29, 1999)

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter
Filter Lot No. 29439A
Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support
Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate and weigh to a constant weight.
Weight Unit: grams

Run No. 1A Assembly No. 1 Sample No. 1102

Gross Wt.	Date	Time	Comments:
3.3971	08-28-99	0800	
3.3971	08-28-99	1615	

Assembly Gross Weight used for data entry: 3.3971
Assembly Tare Weight from Tare Weight Data: 3.3372

Run No. 1B Assembly No. 2 Sample No. 1104

Gross Wt.	Date	Time	Comments:
3.3708	08-28-99	0800	
3.3709	08-28-99	1615	

Assembly Gross Weight used for data entry: 3.3709
Assembly Tare Weight from Tare Weight Data: 3.3160

Run No. 2A Assembly No. 3 Sample No. 2102

Gross Wt.	Date	Time	Comments:
3.3405	08-28-99	0800	
3.3405	08-28-99	1615	

Assembly Gross Weight used for data entry: 3.3405
Assembly Tare Weight from Tare Weight Data: 3.3364

NOTE: Control and blank assembly weight data and balance check data are documented on other forms.

PS
9/1/99

M5IPMFIX.WPD June 5, 1998 (rev. M17PMFI2.WPD July 29, 1999)

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter
Filter Lot No. 29439A
Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support
Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate and weigh to a constant weight.
Weight Unit: grams

Run No. 2B Assembly No. 4 Sample No. 2104

Gross Wt.	Date	Time	Comments:
3.2663	08-28-99	0800	
3.2663	08-28-99	1615	

Assembly Gross Weight used for data entry: 3.2663
Assembly Tare Weight from Tare Weight Data: 3.2615

Run No. 3A Assembly No. 5 Sample No. 3102

Gross Wt.	Date	Time	Comments:
3.2386	08-28-99	0800	
3.2386	08-28-99	1615	

Assembly Gross Weight used for data entry: 3.2386
Assembly Tare Weight from Tare Weight Data: 3.2319

Run No. 3B Assembly No. 6 Sample No. 3104

Gross Wt.	Date	Time	Comments:
3.2645	08-28-99	0800	
3.2645	08-28-99	1615	

Assembly Gross Weight used for data entry: 3.2645
Assembly Tare Weight from Tare Weight Data: 3.2584

NOTE: Control and blank assembly weight data and balance check data are documented on other forms.

PB
9/1/99

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter
Filter Lot No. 29439A
Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support
Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate and weigh to a constant weight.
Weight Unit: grams

Run No. 4A Assembly No. 7 Sample No. 4102

Gross Wt.	Date	Time	Comments:
3.2673	08-29-99	0800	
3.2673	08-29-99	1615	

Assembly Gross Weight used for data entry: 3.2673
Assembly Tare Weight from Tare Weight Data: 3.2612

Run No. 4B Assembly No. 8 Sample No. 4104

Gross Wt.	Date	Time	Comments:
3.2534	08-29-99	0800	
3.2534	08-29-99	1615	

Assembly Gross Weight used for data entry: 3.2534
Assembly Tare Weight from Tare Weight Data: 3.2467

Run No. 5A Assembly No. 9 Sample No. 5102

Gross Wt.	Date	Time	Comments:
3.2232	08-29-99	0800	
3.2232	08-29-99	1615	

Assembly Gross Weight used for data entry: 3.2232
Assembly Tare Weight from Tare Weight Data: 3.2048

NOTE: Control and blank assembly weight data and balance check data are documented on other forms.

PJS
9/1/99

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter
Filter Lot No. 29439A
Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support
Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate and weigh to a constant weight.
Weight Unit: grams

Run No. 5B Assembly No. 10 Sample No. 5104

Gross Wt.	Date	Time	Comments:
3.2806	08-29-99	0800	
3.2806	08-29-99	1615	

Assembly Gross Weight used for data entry: 3.2806
Assembly Tare Weight from Tare Weight Data: 3.2600

Run No. 6A Assembly No. 11 Sample No. 6102

Gross Wt.	Date	Time	Comments:
3.2906	08-29-99	0800	
3.2906	08-29-99	1615	

Assembly Gross Weight used for data entry: 3.2906
Assembly Tare Weight from Tare Weight Data: 3.2721

Run No. 6B Assembly No. 12 Sample No. 6104

Gross Wt.	Date	Time	Comments:
3.2921	08-29-99	0800	
3.2922	08-29-99	1615	

Assembly Gross Weight used for data entry: 3.2922
Assembly Tare Weight from Tare Weight Data: 3.2752

NOTE: Control and blank assembly weight data and balance check data are documented on other forms.

PB
9/1/99

M5IPMFIX.WPD June 5, 1998 (rev. M17PMFI2.WPD July 29, 1999)

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter
Filter Lot No. 29439A
Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support
Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate and weigh to a constant weight.
Weight Unit: grams

Run No. 7A Assembly No. 13 Sample No. 7102

Gross Wt.	Date	Time	Comments:
3.2779	08-30-99	0815	
3.2779	08-30-99	1445	

Assembly Gross Weight used for data entry: 3.2779
Assembly Tare Weight from Tare Weight Data: 3.2560

Run No. 7B Assembly No. 14 Sample No. 7104

Gross Wt.	Date	Time	Comments:
3.2692	08-30-99	0815	
3.2692	08-30-99	1445	

Assembly Gross Weight used for data entry: 3.2692
Assembly Tare Weight from Tare Weight Data: 3.2491

Run No. 8A Assembly No. 15 Sample No. 8102

Gross Wt.	Date	Time	Comments:
3.3081	08-30-99	0815	
3.3081	08-30-99	1445	

Assembly Gross Weight used for data entry: 3.3081
Assembly Tare Weight from Tare Weight Data: 3.2652

NOTE: Control and blank assembly weight data and balance check data are documented on other forms.

JS
9/1/99

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter
Filter Lot No. 29439A
Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support
Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate and weigh to a constant weight.
Weight Unit: grams

Run No. 8B Assembly No. 16 Sample No. 8104

Gross Wt.	Date	Time	Comments:
3.3184	08-30-99	0815	
3.3184	08-30-99	1445	

Assembly Gross Weight used for data entry: 3.3184
Assembly Tare Weight from Tare Weight Data: 3.2746

Run No. 9A Assembly No. 17 Sample No. 9102

Gross Wt.	Date	Time	Comments:
3.3137	08-30-99	0815	
3.3137	08-30-99	1445	

Assembly Gross Weight used for data entry: 3.3137
Assembly Tare Weight from Tare Weight Data: 3.2720

Run No. 9B Assembly No. 18 Sample No. 9104

Gross Wt.	Date	Time	Comments:
3.2874	08-30-99	0815	
3.2873	08-30-99	1445	

Assembly Gross Weight used for data entry: 3.2874
Assembly Tare Weight from Tare Weight Data: 3.2452

NOTE: Control and blank assembly weight data and balance check data are documented on other forms.

PB
9/1/99

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter
Filter Lot No. 29439A
Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support
Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate and weigh to a constant weight.
Weight Unit: grams

Run No. 10A Assembly No. 19 Sample No. 10102

Gross Wt.	Date	Time	Comments:
3.3244	08-30-99	0815	
3.3245	08-30-99	1445	

Assembly Gross Weight used for data entry: 3.3245
Assembly Tare Weight from Tare Weight Data: 3.2630

Run No. 10B Assembly No. 20 Sample No. 10104

Gross Wt.	Date	Time	Comments:
3.3285	08-30-99	0815	
3.3285	08-30-99	1445	

Assembly Gross Weight used for data entry: 3.3285
Assembly Tare Weight from Tare Weight Data: 3.2722

Run No. 11A Assembly No. 21 Sample No. 11102

Gross Wt.	Date	Time	Comments:
3.2918	08-31-99	0800	

Assembly Gross Weight used for data entry: 3.2918
Assembly Tare Weight from Tare Weight Data: 3.2670

NOTE: Control and blank assembly weight data and balance check data are documented on other forms.

PB
9/1/99

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter
Filter Lot No. 29439A
Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support
Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate and weigh to a constant weight.
Weight Unit: grams

Run No. 11B Assembly No. 22 Sample No. 11104

Gross Wt.	Date	Time	Comments:
3.2736	08-31-99	0800	

Assembly Gross Weight used for data entry: 3.2736
Assembly Tare Weight from Tare Weight Data: 3.2474

Run No. 12A Assembly No. 23 Sample No. 12102

Gross Wt.	Date	Time	Comments:
3.3028	08-31-99	0800	

Assembly Gross Weight used for data entry: 3.3028
Assembly Tare Weight from Tare Weight Data: 3.2674

Run No. 12B Assembly No. 24 Sample No. 12104

Gross Wt.	Date	Time	Comments:
3.3329	08-31-99	0800	

Assembly Gross Weight used for data entry: 3.3329
Assembly Tare Weight from Tare Weight Data: 3.2968

NOTE: Control and blank assembly weight data and balance check data are documented on other forms.

P.B
9/1/99

PARTICULATE MATTER CONTROLS ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman
Balance: AND ER-120A, MRI #12007
Weight Unit: grams

Analyst: J Surman

Control Filter Assembly Weights & Balance Checks:

Assembly No. 29
Original Tare Wt.: 3.4043
NIST Weight: 1 gram

Assembly No. 30
Original Tare Wt.: 3.3434
NIST Weight: 1 gram

Current Wt.	Date	Time	Balance Reading before weighing	Current Wt.	Date	Time	Balance Reading
3.4042	08-28-99	0800	1.0000	3.3434	08-28-99	0800	—
3.4043	08-28-99	1615	1.0000	3.3434	08-28-99	1615	—
3.4043	08-29-99	0800	1.0000	3.3434	08-29-99	0800	—
3.4043	08-29-99	1615	1.0000	3.3434	08-29-99	1615	—
3.4042	08-30-99	0815	1.0000	3.3434	08-30-99	0815	—
3.4043	08-30-99	1445	1.0000	3.3434	08-30-99	1445	—
3.4043	08-31-99	0800	1.0000	3.3434	08-31-99	0800	—

Comments:

Control Beaker Liner Weights & Balance Checks:

Beaker No. 29
Original Tare Wt.: 3.5710
NIST Weight: 1 gram

Beaker No. 30
Original Tare Wt.: 3.7237
NIST Weight: 1 gram

Current Wt.	Date	Time	Balance Reading after weighing	Current Wt.	Date	Time	Balance Reading
3.5711	08-28-99	0800	1.0000	3.7237	08-28-99	0800	—
3.5710	08-28-99	1615	1.0000	3.7237	08-28-99	1615	—
3.5709	08-29-99	0800	1.0000	3.7237	08-29-99	0800	—
3.5710	08-29-99	1615	1.0000	3.7237	08-29-99	1615	—
3.5710	08-30-99	0815	1.0000	3.7236	08-30-99	0815	—
3.5710	08-30-99	1445	1.0000	3.7237	08-30-99	1445	—
3.5710	08-31-99	0800	1.0000	3.7237	08-30-99	0800	—

Comments:

Controls are filter assemblies and beaker liners selected from the original prepared lots that are used for sampling and analysis. They are processed along with the assemblies and liners containing samples during analysis, i.e., they are heated, desiccated, and weighed along with the assemblies and liners containing samples. The results are not used for correcting analytical data, but are useful in monitoring changes between original tare weights and weights obtained during analysis of samples. Significant changes could indicate problems in maintaining relatively constant environmental conditions in the laboratory, processing procedures not replicating those used when tare weights were obtained, instrumentation calibration drift, and desiccant deterioration.

Each time filter assemblies or beaker liners are weighed, the balance is checked for accuracy by weighing NIST certified weights approximating the weights of the assemblies or liners.

YB
9/1/90

PARTICULATE MATTER REAGENT BLANK ANALYSIS DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman Analyst: [signature]
Beaker Liner Size and Type: 250-mL Teflon®
Acetone Lot No. BO 363
Sample Treatment: Acetone samples evaporated at ambient temperature and pressure in an enclosure with HEPA-filtered air; then, desiccated and weighed to a constant weight.
Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter
Filter Lot No. 29439A
Assembly Components: filter, aluminum foil gasket, 316 stainless steel filter support
Filter Assembly Treatment: Heated at 105 °C for 3 hours, desiccated and weighed to a constant weight.
Weight Unit: grams

Acetone Blank Determination: For Run No.(s) ALL Beaker No. 28 Sample No. 1105

Acetone Reagent Blank Sample Volume		Beaker Liner + Sample Residue Weights		
		Gross Wt.	Date	Time
Beaker + Liner + Acetone Sample Wt.	190.2	3.6515	08-28-99	0800
Beaker + Liner Tare Wt.	100.8	3.6515	08-28-99	1615
Acetone Sample Wt.	89.4			
A. - - - - Acetone Wt./0.79 = mLs Acetone:	113.2			

Beaker Liner + Residue Gross Weight used for blank determination: 3.6515
Beaker Liner Tare Weight from Tare Weight Data: 3.6515
B. - Net Weight of Residue in beaker liner: 0
Acetone Blank (B x 1000/A) for data entry: 0 mg/mL

Comments:

Filter Assembly Blank Determination: For Run No.(s) ALL Assembly No. 28 Sample No. 1107

Gross Wt.	Date	Time
3.3165	08-28-99	0800
3.3165	08-28-99	1615

Comments:

A. - - - - - - - - - - - - - - Assembly Gross Weight used for blank determination: 3.3165
B. - - - - - - - - - - - - - - - - - - - Assembly Tare Weight from Tare Weight Data: 3.3165
Net Assembly Weight Difference (A - B) for data entry: 0
[retain minus sign if value is negative]

NOTE: Control liner and filter assembly weights and balance check data are documented on another form.

PB
9/1/99

M5IPMBLX.WPD June 5, 1998 (rev. M17PMBL2.WPD July 29, 1999)

BEAKER LINER TARE WEIGHT DATA

MRI Project No. 104951.1.016.05.01

Sampling Team Leader: Jim Surman

Analyst: JSurman

Beaker Liner Size and Type: 250-mL Teflon®

Beaker Liner Treatment: Wash to clean, rinse with DI water, dry at 105 °C, insert into glass beakers previously cleaned in the same manner, desiccate for 24 hours, and weigh to a constant.

Weight Unit: grams

Date:	08-26-99	08-27-99	
Time Started:	1435	0815	

Balance Check before beaker liners are weighed:

Balance Used: AND ER-120A, MRI #12007

Weight Value:	1g	1g	
Balance Reads:	1.0000	1.0000	

Beaker Liner in Beaker I.D. No.	First Weighing	Second Weighing	Third Weighing	Average Weight or Weight to be Used as the Tare
1	3.7625	3.7625		3.7625
2	3.4483	3.4483		3.4483
3	3.7206	3.7206		3.7206
4	3.7096	3.7096		3.7096
5	3.6895	3.6894		3.6894
6	3.7267	3.7267		3.7267
7	3.4119	3.4119		3.4119
8	3.5382	3.5382		3.5382
9	3.6884	3.6884		3.6884
10	3.7216	3.7216		3.7216
11	3.3253	3.3252		3.3252
12	3.3598	3.3598		3.3598
13	3.5565	3.5564		3.5564
14	3.5347	3.5346		3.5346
15	3.7283	3.7282		3.7282
16	3.5190	3.5190		3.5190
17	3.8313	3.8313		3.8313
18	3.8243	3.8242		3.8242
19	3.6934	3.6934		3.6934
20	3.6075	3.6075		3.6075

Balance Check after beaker liners are weighed:

Balance Reads:	—	—	

COMMENTS:

PB
9/1/99

M5IBEAKX.WPD June 4, 1998 (rev. M17BEAK2.WPD July 29, 1999)

BEAKER LINER TARE WEIGHT DATA

MRI Project No. 104951.1.016.05.01

Sampling Team Leader: Jim Surman

Analyst: [signature]

Beaker Liner Size and Type: 250-mL Teflon®

Beaker Liner Treatment: Wash to clean, rinse with DI water, dry at 105 °C, insert into glass beakers previously cleaned in the same manner, desiccate for 24 hours, and weigh to a constant.

Weight Unit: grams

Date:	08-26-99	08-27-99	
Time Started:	1435	0815	

Balance Check before beaker liners are weighed:

Balance Used:	AND ER-120A, MRI #12007		
Weight Value:	1g	1g	
Balance Reads:			

Beaker Liner in Beaker I.D. No.	First Weighing	Second Weighing	Third Weighing	Average Weight or Weight to be Used as the Tare
21	3.6465	3.6465		3.6465
22	3.3937	3.3937		3.3937
23	3.8248	3.8248		3.8248
24	3.4467	3.4467		3.4467
25	3.8598	3.8598		3.8598
26	3.6010	3.6009		3.6009
27	3.6306	3.6306		3.6306
28	3.6515	3.6515		3.6515
29	3.5710	3.5710		3.5710
30	3.7237	3.7237		3.7237

Balance Check after beaker liners are weighed:

Balance Reads:	1.0000	1.0000	

COMMENTS:

PS
9/1/99

M5IBEAKX.WPD June 4, 1998 (rev. M17BEAK2.WPD July 29, 1999)

FILTER ASSEMBLY TARE WEIGHT DATA

MRI Project No. 104951.1.016.05.01

Sampling Team Leader: Jim Surman Analyst: Griffin

Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter

Filter Lot No. 29439A / 25460

Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support

Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate, and weigh to a constant weight.

Weight Unit: grams

Date:	8-4-99	8-5-99	
Time Started:	1315	1030	

Balance Check before filter assembies are weighed:

Balance Used:	Mettler AE200 10586		
Weight Value:	3.0000	3.0000	
Balance Reads:	3.0000	3.0000	

Assembly No.	First Weighing	Second Weighing	Third Weighing	Average Weight or Weight to be Used as the Tare
1	3.3372	3.3372		3.3372
2	3.3160	3.3160		3.3160
3	3.3364	3.3365		3.3364
4	3.2615	3.2616		3.2615
5	3.2319	3.2319		3.2319
6	3.2584	3.2585		3.2584
7	3.2611	3.2613		3.2612
8	3.2467	3.2468		3.2467
9	3.2047	3.2049		3.2048
10	3.2600	3.2600		3.2600
11	3.2721	3.2722		3.2721
12	3.2751	3.2754		3.2752
13	3.2560	3.2560		3.2560
14	3.2491	3.2492		3.2491
15	3.2652	3.2652		3.2652
16	3.2746	3.2746		3.2746
17	3.2720	3.2720		3.2720
18	3.2453	3.2452		3.2453
19	3.2631	3.2630		3.2630
20	3.2723	3.2722		3.2723

Balance Check after filter assemblies are weighed:

Balance Reads:	2.9999	3.0000	

COMMENTS:

PS
9/1/99

FILTER ASSEMBLY TARE WEIGHT DATA

MRI Project No. 104951.1.016.05.01

Sampling Team Leader: Jim Surman Analyst: Griffin

Filter Size and Type: 47mm diameter, Whatman 934-AH glass fiber filter

Filter Lot No. 29439A

Assembly Components: filter, aluminum foil gasket, and 316 stainless steel filter support

Filter Assembly Treatment: Heat at 105 °C for 3 hours, desiccate, and weigh to a constant weight.

Weight Unit: grams

Date:	8-4-99	8-5-99	
Time Started:	1315	1030	

Balance Check before filter assembies are weighed:

Balance Used:	Mettler AE 200 10586		
Weight Value:	3.0000	3.0000	
Balance Reads:	3.0000	3.0000	

Assembly No.	First Weighing	Second Weighing	Third Weighing	Average Weight or Weight to be Used as the Tare
21	3.2671	3.2669		3.2670
22	3.2474	3.2475		3.2478 4/1
23	3.2675	3.2674		3.2678 4/1
24	3.2968	3.2968		3.2968
25	3.3477	3.3477		3.3477
26	3.2902	3.2901		3.2907 1/1
27	3.3415	3.3414		3.3418 4/1
28	3.3165	3.3165		3.3165
29	3.4044	3.4043		3.4044 3/1
30	3.3435	3.3434		3.3438 4/1
31	3.3752	3.3750		3.3751
32	3.3060	3.3059		3.3059 1/1
33	3.3124	3.3123		3.3124 3/1
34	3.3858	3.3857		3.3858 2/1
35	3.3505	3.3504		3.3508 4/1
36	3.3009	3.3008		3.3009 8/1
37	3.4134	3.4133		3.4134 3/1
38	3.3573	3.3573		3.3573
39	3.3220	3.3219		3.3220 1/1
40	3.2822	3.2821		3.2827 1/1

Balance Check after filter assemblies are weighed:

Balance Reads:	2.9999	3.0000	

COMMENTS:

PS
9/1/99

40 *CFR* 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD REAGENT BLANK PREPARATION DATA

MRI Project No. 104951.1.016.05.01
Client/Source: U.S. EPA OAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Blank(s) Prepared By: [signature] Date: 08-26-99

Weights below are in grams.

Reagent Blank Description	Sample Number	Bottle Tare Weight	Bottle Gross Weight	Net Sample Weight
Acetone for particulate matter Volume needed: 100 mLs Lot Number: BO 363	/105	NA	—	—
Filter Assembly for particulate matter Type: Whatman 934-AH Filter Assembly Number: 28 Filter Lot Number: 29439A	/107			

NOTE: Lots may be identified above by a manufacturer's lot number or by the date of reagent preparation. If different lots of a particular reagent are used, indicate the applicable test and/or run number(s) and sampling location(s) where the train(s) loaded and/or recovered with that reagent are used (i.e., list each reagent blank sample number with the applicable test and/or run number(s) and sampling location(s) below).

Sample Number(s)	For Test and/or Run Number(s)	For Sampling Location(s)

COMMENTS: Acetone blank transferred directly to tared Teflon beaker liner for analysis

PB
8/28/99

M17DBLK.WPD May 13, 1999 (rev. M17DBLK2.WPD July 29, 1999)

RCA #1 Appendix E

M17 Post-Test Calibration Sheets

ON SITE MERCURY BAROMETER READING CORRECTION AND ANEROID BAROMETER CALIBRATION CHECK AT TEST LOCATION

Mercury Barometer Description: Princo Model 453, S/N W13559
Mercury Barometer Location: Plant Control Room

Distance Of Barometer From Test Site: 0.00 miles
Altitude Of Barometer Above Sea Level: 124.0 feet
Latitude (north): 36 degrees, 0.00 minutes

Facility: Cogentrix of Rocky Mount, North Carolina

Test Site And Sampling Location: Unit 2A Baghouse Outlet Duct

MRI Project No. 104951.1.016.05.01
Date: 08/31/99
Time: 1051

Readings Obtained By: J. Surman

Observed Barometer Reading: 30.13 in. Hg

Mercury Column Temperature: 73 °F

Correction For Temperature: -0.12 in. Hg

Reading Corrected For Temperature: 30.01 in. Hg

Correction For Gravity: -0.03 in. Hg

Temperature Corrected Reading Corrected For Gravity: 29.98 in. Hg

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Aneroid Barometer I.D. No.: Y-2101

Reading Before Adjustment: 29.97 in. Hg

Calibration Check Result: within 0.1 in. Hg

Reading After Adjustment: NA in. Hg

Remarks:

BAROMETR.WK4 10/19/98 (rev. BARO4951.WK4 08/31/99 10:58 AM)

METHOD 5 METERING CONSOLE CALIBRATION
CRITICAL ORIFICE BRACKETING DATA

MRI Project No.	104951.1.016.05.0	Critical Orifice Being Evaluated	
Date:	08/31/99	Critical Orifice No.	**D19**
Operator:	D. Neal	Critical Orifices Used For Bracketing	
Metering Console No.	N11	First Orifice	
Dry Gas Meter Factor (Y):	1.010	Critical Orifice No.	**D16**
Orifice Used for the Calibration:	D19	Coefficient (K'):	0.44410
Ambient Temperature Meter No.	Y-0815	Second Orifice	
		Critical Orifice No.	**D24**
		Coefficient (K'):	0.65490

Note: Critical orifice coefficients are in English units.

	First Orifice	Second Orifice
CALIBRATION GAS VOLUME DATA		
Initial Dry Gas Meter Gas Volume, ft.³	809.102	815.202
Final Dry Gas Meter Gas Volume, ft.³	814.898	823.799
Net Dry Gas Meter Gas Volume (Vm), ft.³	5.796	8.597
CALIBRATION CONDITIONS DATA		
Dry Gas Meter Temperature, °F:		
Initial Inlet Temperature, °F	78.0	81.0
Final Inlet Temperature, °F	80.0	82.0
Initial Outlet Temperature, °F	75.0	77.0
Final Outlet Temperature, °F	76.0	78.0
Average Dry Gas Meter Temperature (tm), °F	77.3	79.5
Time, seconds	600	600
Orifice Meter Delta-H, inches w.c.	1.100	2.450
Barometric Pressure, in. Hg	29.95	29.95
Critical Orifice Inlet (Ambient) Temperature, °F:		
Initial Ambient Temperature, °F	71.4	72.2
Final Ambient Temperature, °F	72.2	72.2
Average Critical Orifice Inlet Temperature (tamb), °F	71.8	72.2
Pump Vacuum, in. Hg	18	18
COMPUTED CALIBRATION RESULTS		
Critical Orifice Gas Volume (Vcr (std)), std. ft.³	5.770	8.505
Dry Gas Meter Gas Volume (Vm (std)), std. ft.³	5.717	8.472
Factor (Y) Obtained With Bracketing Orifice	1.009	1.004
CRITICAL ORIFICE ACCEPTABILITY		
Criterion: All Ys Must Be Within 2% Of All Other Ys		
Larger % Difference Between Dry Gas Meter Factor (Y) And Factor (Y) Obtained With The Bracketing Orifice	0.08%	0.61%
Larger % Difference Between Factors (Ys) Obtained With Bracketing Orifices	0.53%	
Acceptability Result	**All Orifices Are Acceptable**	

Remarks:

CRORBRKT.WK4 10/24/96 (rev. 4951BRKT.WK4 08/31/99 10:31 AM)

METHOD 5 METERING CONSOLE CALIBRATION WITH CRITICAL ORIFICE

MRI Project No.	104951.1.016.05.01	Metering Console No.	**N10**
Date:	8/31/99	Previous Dry Gas Meter Factor (Y):	1.019
Operator:	D. Neal	Calibrated Critical Orifice No.	D19
		Critical Orifice Coefficient in English Units (K'):	0.51210
		Ambient Temperature Meter No.	Y-0815

	Run 1	Run 2	Run 3
CALIBRATION GAS VOLUME DATA			
Initial Dry Gas Meter Gas Volume, ft.³	494.699	501.362	508.022
Final Dry Gas Meter Gas Volume, ft.³	501.362	508.022	514.681
Net Dry Gas Meter Gas Volume (Vm), ft.³	6.663	6.660	6.659
CALIBRATION CONDITIONS DATA			
Dry Gas Meter Temperature, °F:			
Initial Inlet Temperature, °F	72.0	74.0	77.0
Final Inlet Temperature, °F	73.0	76.0	78.0
Initial Outlet Temperature, °F	70.0	71.0	72.0
Final Outlet Temperature, °F	71.0	71.0	72.0
Average Dry Gas Meter Temperature (tm), °F	71.5	73.0	74.8
Time, seconds	600	600	600
Orifice Meter Delta-H, inches w.c.	1.450	1.450	1.450
Barometric Pressure, in. Hg	29.95	29.95	29.95
Critical Orifice Inlet (Ambient) Temperature, °F:			
Initial Ambient Temperature, °F	67.2	68.6	68.8
Final Ambient Temperature, °F	68.0	68.4	69.2
Avg. Critical Orifice Inlet Temperature (tamb), °F	67.6	68.5	69.0
Pump Vacuum, in. Hg	18	18	18
COMPUTED CALIBRATION RESULTS			
Critical Orifice Gas Volume (Vcr (std)), std. ft.³	6.679	6.674	6.671
Dry Gas Meter Gas Volume (Vm (std)), std. ft.³	6.649	6.627	6.605
Dry Gas Meter Calibration Factor (Y)	1.005	1.007	1.010
Orifice Meter Delta-H@	1.831	1.829	1.825
AVERAGE CALIBRATION RESULTS			
Average Dry Gas Meter Calibration Factor (Y)	**1.007**		
Average Orifice Meter Delta-H@	**1.828**		
CALIBRATION RESULTS COMPARISON			
Criterion: Y Must Be Within 2% Of Average Y			
Percent Difference Of Y From Average Y	0.26%	0.02%	0.28%
Tolerance Result	**PASS**	**PASS**	**PASS**
COMPARISON WITH PRETEST RESULTS			
Criterion: Y Must Be Within 5% Of Previous Y			
% Difference Of Average Y From Previous Y	1.16%		
Tolerance Result	**PASS**		

Y = 1.007170458786064

Remarks:

CRORCALB.WK4 10/24/96 (rev. 4951016.WK4 08/31/99 10:21 AM)

CONSOLE CALIBRATION WORKSHEET

Job No. 104951.1.016.05.01 Console No. N10

Date 8-31-99 Orifice No. D19

Performed By D. Nesol K Factor 0.5171

Barometer 29.95 in. Hg. Previous Y 1.019

NOTE: Prior to running calibration, connect mercury manometer to sample orifice. Turn on pump and bring mercury manometer up to 18.0 in. Hg. Record mercury manometer and console vacuum gauge readings below. Insert critical orifice into console sample orifice. Set console vacuum gauge at 18.0 in. Hg. +/- the console vacuum gauge correction factor calculated below.

Mercury manometer readings: N/A + N/A = 18.0 In. Hg.

Console vacuum gauge reading: - — In. Hg.

Console vacuum gauge correction factor: ~~18.0~~ In. Hg.
18.0 DN 8-31-99 EE

	RUN #1	RUN #2	RUN #3
DGM Initial Volume: Initial:	494.699	501.362	508.022
Final:	501.362	508.022	514.681
DGM Inlet Temperature: Initial:	72	74	77
Final:	73	76	78
DGM Outlet Temperature: Initial:	70	71	72
Final:	71	71	72
Time of run (In Seconds):	600	600	600
Orifice Delta H (in. H_2O):	1.45	1.45	1.45
Room Temperature: Initial:	67.2	68.6	68.8
Final:	68.0	68.4	69.2
Pump Vacuum (in. Hg):	18.0	18.0	18.0

M5 CONSOLE POST TEST CHECKLIST

Job No. 104951.1.016.05.04 Date 8-31-99

Console No. N10 Performed By D. Nesic

Place a check (in black ink) in the space provided after the required checks are performed.

1. ✓ Perform positive leak check of Delta H manometer. (See back of this sheet.)
2. ✓ Leak check Delta P manometer.
3. N/A Clean pump.
4. ✓ Clean muffler jar(s).
5. ✓ Inspect/refill oiler jar.
6. ✓ Calibrate DGM thermocouples:

		Reference Thermometer* °F	DGM Thermocouple °F
Note: Reading must be Within +/-5.4°F	DGM Inlet:	69.4	69
	DGM Outlet:	69.2	69

7. ✓ Digital clock/timer in place and functional.
8. ✓ Vacuum check. (Leak check at 25 in. Hg. vacuum. Leak rate should be zero.)
9. ✓ Check indicator lights.
10. ✓ Check thermocouple switched.
11. ✓ Check fan.
12. ✓ Check pump heater.
13. ✓ Check heat controllers.
14. ✓ Check Orsat pump and rotameter.

If any of the above items were replaced or repaired, please document that information below:

* Reference Thermometer: ASTM 63F Serial Number: 4441

Procedure for positive leak check Delta H manometer:

1. Pump must not be run prior to this test. Pump needs to be cool in order to get an accurate reading.
2. Pump pressure and vacuum lines must be connected to console.
3. Null switch on console must be in the down position so solenoid valve is open to the sampling stream as it is during testing.
4. Plug meter exhaust and clamp off bottom tube from exhaust which goes to the Orsat pump.
5. Plug sample orifice.
6. Close main flow control valve.
7. Open fine control valve.
8. Disconnect right side Delta H manometer tube on front of console.
9. Blow into tubing until manometer reads 5 to 7 inches of water, and clamp off.
   There should be no change in manometer reading.
10. Make certain you remove plug and clamp from meter exhaust immediately after this test to avoid damage to the meter pump when pump is started up!

METHOD 5 METERING CONSOLE CALIBRATION WITH CRITICAL ORIFICE

MRI Project No.	104951.1.016.05.01	Metering Console No.	**N11**
Date:	8/31/99	Previous Dry Gas Meter Factor (Y):	1.023
Operator:	D. Neal	Calibrated Critical Orifice No.	D19
		Critical Orifice Coefficient in English Units (K'):	0.51210
		Ambient Temperature Meter No.	Y-0815

	Run 1	Run 2	Run 3
CALIBRATION GAS VOLUME DATA			
Initial Dry Gas Meter Gas Volume, ft.³	788.802	795.416	802.042
Final Dry Gas Meter Gas Volume, ft.³	795.416	802.042	808.703
Net Dry Gas Meter Gas Volume (Vm), ft.³	6.614	6.626	6.661
CALIBRATION CONDITIONS DATA			
Dry Gas Meter Temperature, °F:			
Initial Inlet Temperature, °F	72.0	74.0	77.0
Final Inlet Temperature, °F	74.0	76.0	78.0
Initial Outlet Temperature, °F	71.0	72.0	73.0
Final Outlet Temperature, °F	72.0	73.0	74.0
Average Dry Gas Meter Temperature (tm), °F	72.3	73.8	75.5
Time, seconds	600	600	600
Orifice Meter Delta-H, inches w.c.	1.500	1.500	1.500
Barometric Pressure, in. Hg	29.95	29.95	29.95
Critical Orifice Inlet (Ambient) Temperature, °F:			
Initial Ambient Temperature, °F	70.0	71.2	71.6
Final Ambient Temperature, °F	70.8	71.0	71.6
Avg. Critical Orifice Inlet Temperature (tamb), °F	70.4	71.1	71.6
Pump Vacuum, in. Hg	18	18	18
COMPUTED CALIBRATION RESULTS			
Critical Orifice Gas Volume (Vcr (std)), std. ft.³	6.662	6.657	6.654
Dry Gas Meter Gas Volume (Vm (std)), std. ft.³	6.592	6.585	6.598
Dry Gas Meter Calibration Factor (Y)	1.011	1.011	1.008
Orifice Meter Delta-H@	1.902	1.899	1.895
AVERAGE CALIBRATION RESULTS			
Average Dry Gas Meter Calibration Factor (Y)	**1.010**		
Average Orifice Meter Delta-H@	**1.898**		
CALIBRATION RESULTS COMPARISON			
Criterion: Y Must Be Within 2% Of Average Y			
Percent Difference Of Y From Average Y	0.06%	0.09%	0.15%
Tolerance Result	**PASS**	**PASS**	**PASS**
COMPARISON WITH PRETEST RESULTS			
Criterion: Y Must Be Within 5% Of Previous Y			
% Difference Of Average Y From Previous Y	1.27%		
Tolerance Result	**PASS**		

Y = 1.010024834051550

Remarks:

CRORCALB.WK4 10/24/96 (rev. 4951016.WK4 08/31/99 10:40 AM)

CONSOLE CALIBRATION WORKSHEET

Job No. 104951.1.016.05.01 Console No. N11

Date 8-31-99 Orifice No. D19

Performed By D. Neal K Factor 0.5121

Barometer 29.95 in. Hg. Previous Y 1.023

NOTE: Prior to running calibration, connect mercury manometer to sample orifice. Turn on pump and bring mercury manometer up to 18.0 in. Hg. Record mercury manometer and console vacuum gauge readings below. Insert critical orifice into console sample orifice. Set console vacuum gauge at 18.0 in. Hg. +/- the console vacuum gauge correction factor calculated below.

Mercury manometer readings: N/A + N/A = 18.0 In. Hg.

Console vacuum gauge reading: - — In. Hg.

Console vacuum gauge correction factor: 18.0 In. Hg.

	RUN #1	RUN #2	RUN #3
DGM Initial Volume: Initial:	788.802	795.416	802.042
Final:	795.416	802.042	808.703
DGM Inlet Temperature: Initial:	72	74	77
Final:	74	76	78
DGM Outlet Temperature: Initial:	71	72	73
Final:	72	73	74
Time of run (In Seconds):	600	600	600
Orifice Delta H (in. H_2O):	1.50	1.50	1.50
Room Temperature: Initial:	70.0	71.2	71.6
Final:	70.8	71.0	71.6
Pump Vacuum (in. Hg):	18.0	18.0	18.0

CONSOLE BRACKETING WORKSHEET

Job No. 104951.1.016.05.01 Console No. N11

Date 8-31-99 Bracketing Orifice No.1 D16

Performed By D. Neal K Factor 0.4441

Calibration Orifice No. D19 Bracketing Orifice No.2 D24

New Y Factor 1.010 K Factor 0.6549

Barometer 29.95 in. Hg.

NOTE: Prior to running calibration, connect mercury manometer to sample orifice. Turn on pump and bring mercury manometer up to 18.0 in. Hg. Record mercury manometer and console vacuum gauge readings below. Insert critical orifice into console sample orifice. Set console vacuum gauge at 18.0 in. Hg. +/- the console vacuum gauge correction factor calculated below.

Mercury manometer readings: N/A + N/A = 18.0 in. Hg.

Console vacuum gauge reading: - — in. Hg.

Console vacuum gauge correction factor: 18.0 in. Hg.

	RUN #1	RUN #2
DGM Initial Volume: Initial:	809.102	815.202
Final:	814.898	823.799
DGM Inlet Temperature: Initial:	78	81
Final:	80	82
DGM Outlet Temperature: Initial:	75	77
Final:	76	78
Time of run (In Seconds):	600	600
Orifice Delta H(in. H_2O):	1.10	2.45
Room Temperature: Initial:	71.4	72.2
Final:	72.2	72.2
Pump Vacuum (in. Hg):	18.0	18.0

M5 CONSOLE POST TEST CHECKLIST

Job No. 104951.1.016.05.01 Date 8-31-99

Console No. N/1 Performed By D. Neal

Place a check (in black ink) in the space provided after the required checks are performed.

1. ✓ Perform positive leak check of Delta H manometer. (See back of this sheet.)
2. ✓ Leak check Delta P manometer.
3. N/A Clean pump.
4. ✓ Clean muffler jar(s).
5. ✓ Inspect/refill oiler jar.
6. ✓ Calibrate DGM thermocouples:

		Reference Thermometer* °F	DGM Thermocouple °F
Note: Reading must be Within +/-5.4°F	DGM Inlet:	69.5	69
	DGM Outlet:	69.4	69

7. ✓ Digital clock/timer in place and functional.
8. ✓ Vacuum check. (Leak check at 25 in. Hg. vacuum. Leak rate should be zero.)
9. ✓ Check indicator lights.
10. ✓ Check thermocouple switched.
11. ✓ Check fan.
12. ✓ Check pump heater.
13. ✓ Check heat controllers.
14. ✓ Check Orsat pump and rotameter.

If any of the above items were replaced or repaired, please document that information below:

* Reference Thermometer: ASTM 63F Serial Number: 4441

Procedure for positive leak check Delta H manometer:

1. Pump must not be run prior to this test. Pump needs to be cool in order to get an accurate reading.
2. Pump pressure and vacuum lines must be connected to console.
3. Null switch on console must be in the down position so solenoid valve is open to the sampling stream as it is during testing.
4. Plug meter exhaust and clamp off bottom tube from exhaust which goes to the Orsat pump.
5. Plug sample orifice.
6. Close main flow control valve.
7. Open fine control valve.
8. Disconnect right side Delta H manometer tube on front of console.
9. Blow into tubing until manometer reads 5 to 7 inches of water, and clamp off.
   There should be no change in manometer reading.
10. Make certain you remove plug and clamp from meter exhaust immediately after this test to avoid damage to the meter pump when pump is started up!

GOOSENECK THERMOCOUPLE CALIBRATION DATA FORM

Job No. 104951.1.016.05.01 Pyrometer No. N10

Date 6-31-99 Reference Thermometer ASTM 63F

Performed By D. Neal Serial Number 4441

Calibration Method: Direct comparison of gooseneck thermocouple with reference thermometer in ambient air.

Goose-neck T.C. No.	Leak Check & Check Valve Pass/No-pass	Ref. Thermometer Temperature (°F)	Pyrometer Temp. (°F)	Temp. Difference +/- 2 °F
UH-1	Pass	70.0	69	-1.0
UH-30	Pass	69.9	69	-0.9

GOOSENECK THERMOCOUPLE CALIBRATION DATA FORM

Job No. 104951.1.016.05.01 Pyrometer No. N11

Date 8-31-99 Reference Thermometer ASTM 63F

Performed By D. NEAL Serial Number 4491

Calibration Method: Direct comparison of gooseneck thermocouple with reference thermometer in ambient air.

Goose-neck T.C. No.	Leak Check & Check Valve Pass/No-pass	Ref. Thermometer Temperature (°F)	Pyrometer Temp. (°F)	Temp. Difference +/- 2 °F
UH-2	PASS	70.1	71	-0.9
UH-32	PASS	70.0	70	0

STACK THERMOCOUPLE CALIBRATION DATA FORM

Job No. 104951.1.016.05.01 Stack Thermocouple No. 3158A

Date 8-31-99 Probe No. A

Performed By D. Neoc Pyrometer No. N10

Avg. Stack Temp.(°F) 185

Reference Instrument: Hart Scientific Model No. 9100A, Serial No. 84414 Dry-well, HDRC Handheld Block A. This instrument is calibrated in accordance with ITS-90 and ANSI/NCSL Z540-1.

Reference Instrument Temp. (°F)	Pyrometer Temp. (°F)	Temp. Difference (°F)	Temp. Difference (%)
(65.5°C) 149.9	148	1.9	0.312
(93.2°C) 199.8	201	-1.2	-0.182
(121.1°C) 250.0	250	0	0

$$\frac{(\text{ref. Temp., F} + 460) - (\text{pyro. Temp., F} + 460)}{(\text{ref. Temp., F} + 460)} \times 100 \leq 1.5\%$$

STACK THERMOCOUPLE CALIBRATION DATA FORM

Job No. 104951.1.016.05.01 Stack Thermocouple No. 3158B

Date 8-31-99 Probe No. 8

Performed By D. Neal Pyrometer No. N11

Avg. Stack Temp.(°F) 185

Reference Instrument: Hart Scientific Model No. 9100A, Serial No. 84414 Dry-well, HDRC Handheld Block A. This instrument is calibrated in accordance with ITS-90 and ANSI/NCSL Z540-1.

Reference Instrument Temp. (°F)	Pyrometer Temp. (°F)	Temp. Difference (°F)	Temp. Difference (%)
(65.6°C) 150.1	149	1.1	0.180
(93.1°C) 199.6	201	-1.4	-0.212
(121.0°C) 249.8	251	-1.2	-0.169

$$\frac{(\text{ref. Temp., F} + 460) - (\text{pyro. Temp., F} + 460)}{(\text{ref. Temp., F} + 460)} \times 100 \leq 1.5\%$$

Type S Pitot Tube Inspection Data Form

Pitot Tube #: A Date: 8-31-99 Performed By: D. Griffin

Probe #: A Job #: 104951-1-016-05-01

Pitot tube assembly level? ✓ Yes _____ No

Pitot tube openings damaged? _____ Yes (explain below) ✓ No

α_1 = 0 ° (<10 °), α_2 = 0 ° (<10 °)

β_1 = 2 ° (<5 °), β_2 = 1 ° (<5 °)

γ = 0 °, θ = 1 °, A = 0.75 (in)

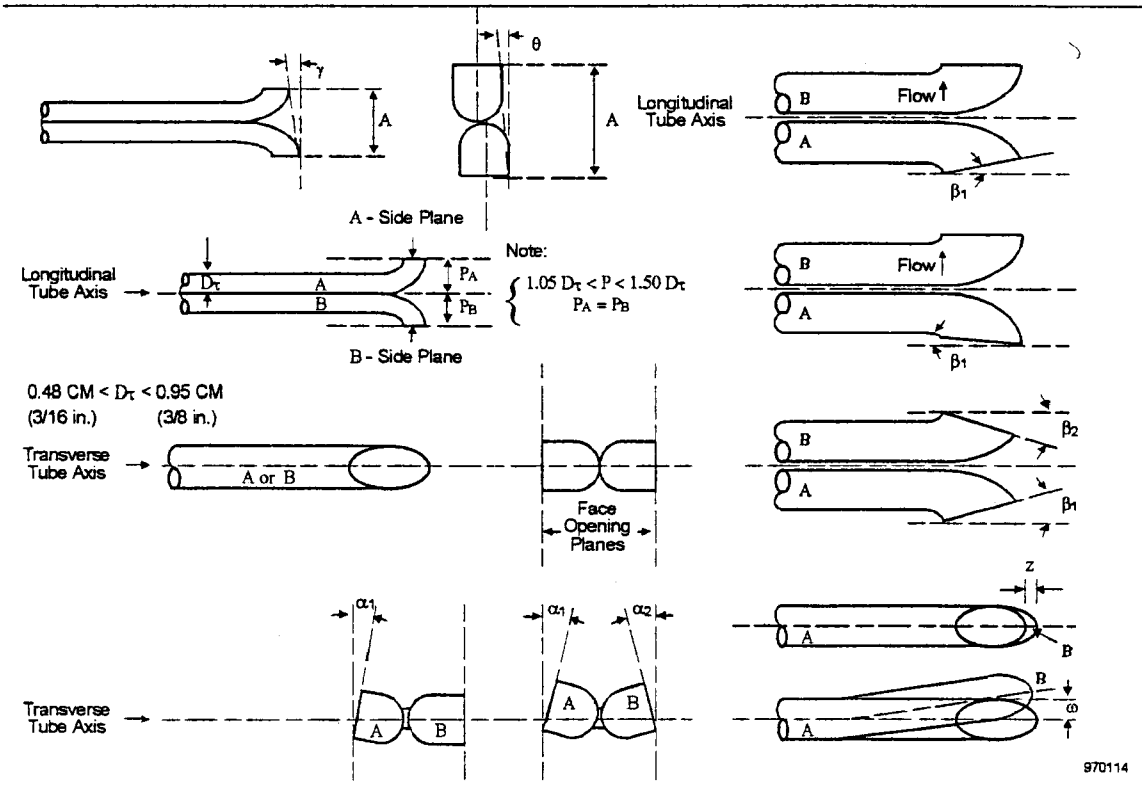
z = A sin γ 0 (in); (< 0.125 in)

ω = A sin θ 0.013 (in); (< 0.03125 in)

P_A = 0.375 (in), P_B = 0.375 (in), D_τ = 0.250 (in)

Calibration required? _____ Yes ✓ No

Comments: _____



Type S Pitot Tube Inspection Data Form

Pitot Tube #: B Date: 8-31-99 Performed By: D. Griffin

Probe #: B Job #: 104951-1-016-05-01

Pitot tube assembly level? ✓ Yes _____ No

Pitot tube openings damaged? _____ Yes (explain below) ✓ No

α_1 = 0 ° (<10 °), α_2 = 0 ° (<10 °)

β_1 = 0 ° (<5 °), β_2 = 1 ° (<5 °)

γ = 0 °, θ = 1 °, A = 0.75 (in)

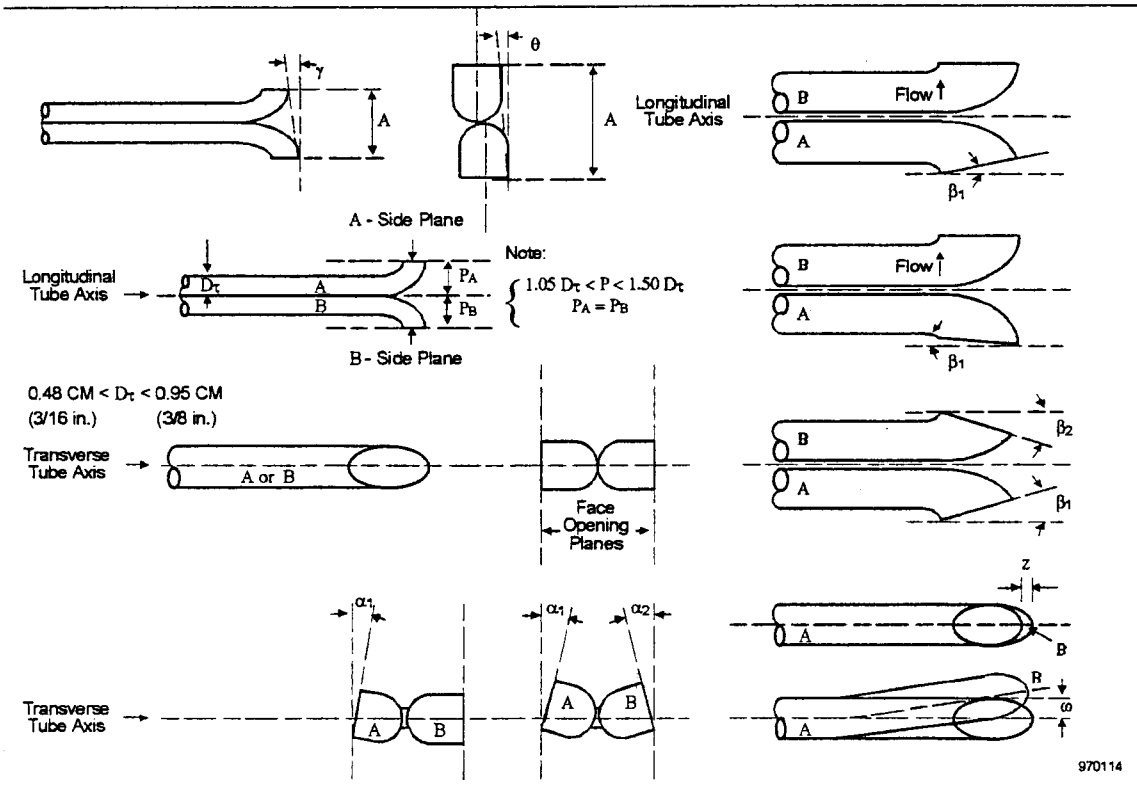
z = A sin γ 0 (in); (< 0.125 in)

ω = A sin θ 0.013 (in); (< 0.03125 in)

P_A = 0.375 (in), P_B = 0.375 (in), D_τ = 0.250 (in)

Calibration required? _____ Yes ✓ No

Comments: _____



RCA #1 Appendix F

PM CEMS Data for Each Run

RCA #1 Testing - Run 1: High PM concentration

8/26/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	Temp. deg C
15:44	17.86	25.75		14.89	86
15:45	15.20	24.01		14.89	86
15:46	12.69	30.67		14.77	86
15:47	12.30	30.58		14.77	86
15:48	13.05	29.95		14.77	86
15:49	13.38	23.74		14.83	85
15:50	14.00	24.82		14.93	84
15:51	14.63	25.66		14.93	84
15:52	13.68	24.25		14.93	84
15:53	14.48	24.88		15.17	84
15:54	14.88	25.90		15.17	84
15:55	14.38	25.66	13.68	14.93	84
15:56	13.95	23.71	13.68	15.05	84
15:57	14.07	25.45	13.68	15.17	84
15:58	14.80	27.73	13.68	15.17	84
15:59	12.38	35.11	13.68	15.17	84
16:00	12.66	40.03	13.68	15.17	84
16:01	14.43	39.82	13.68	15.17	84
16:02	14.51	29.74	13.68	15.17	84
16:03	16.95	27.10	13.68	15.17	84
16:04	18.45	27.58	13.68	15.05	84
16:05	16.82	27.34	13.68	15.17	84
16:06	12.21	28.15	13.68	14.93	84
16:07	12.78	30.22	13.96	14.93	84
16:08	13.62	33.22	14.81	14.93	84
16:09	13.24	24.85	14.81	14.93	84
16:10	14.32	26.44	14.80	15.05	84
16:11	14.87	26.26	14.80	15.17	84
16:12	14.51	26.71	14.80	14.93	84
16:13	15.40	26.71	14.81	14.93	84
16:14	15.62	27.67	14.80	15.05	84
16:15	15.70	28.15	14.80	14.93	84
16:16	14.65	24.46	14.80	14.57	84
16:17	14.94	26.08	14.80	14.93	84
16:18	15.62	27.82	14.80	15.05	84
16:19	14.20	33.79	14.80	15.05	84
16:20	12.39	43.12	14.74	15.05	84
16:21	14.33	39.91	14.56	14.93	84
16:22	15.09	36.64	14.56	14.93	84
16:23	17.10	27.73	14.56	14.93	84
16:24	19.03	28.06	14.56	14.93	84
16:25	19.31	31.12	14.56	15.05	84
16:26	13.88	29.62	14.56	14.95	85
16:27	13.11	34.27	14.56	14.93	84
16:28	14.09	36.13	14.56	15.00	86
16:29	13.71	30.61	14.56	14.89	86
16:30	14.90	27.19	14.56	15.01	86
16:31	15.64	28.60	14.56	14.89	86
16:32	15.88	29.92	14.56	14.89	86

16:33	15.84	26.59	14.56	14.97	85
16:34	16.57	29.44	14.96	15.09	85
16:35	16.99	30.19	14.96	15.14	86
16:36	15.70	27.64	14.96	14.59	85
16:37	15.25	27.79	14.96	14.81	84
16:38	15.96	29.02	14.96	14.69	84
16:39	14.72	31.69	14.96	14.69	84
16:40	13.27	40.84	14.96	14.57	84
16:41	14.09	41.71	14.96	14.81	84
16:42	14.60	41.23	14.96	14.81	84
16:43	15.39	25.33	14.96	14.71	85
16:44	18.40	28.54	14.96	14.65	86
16:45	19.56	30.22	14.96	14.65	86
16:46	13.54	28.54	14.96	14.65	86
16:47	12.97	32.44	15.02	14.77	86
16:48	13.38	33.52	15.04	14.77	86
16:49	13.52	30.37	15.04	14.65	86
16:50	14.15	25.66	15.04	14.77	86
16:51	14.80	24.88	15.04	14.65	86
16:52	15.30	26.05	15.04	14.77	86
16:53	14.40	26.59	15.04	14.53	86
16:54	15.45	26.53	15.04	14.65	86
16:55	15.62	27.37	15.04	14.65	86
16:56	14.88	25.69	15.04	14.40	86
16:57	14.58	25.36	15.04	14.40	86
16:58	15.30	26.65	15.04	14.47	85
16:59	14.56	27.79	15.04	14.48	85
17:00	12.65	36.10	14.40	14.44	84
17:01	14.02	38.41	13.76	14.51	86
17:02	13.48	37.33	13.76	14.53	86
17:03	14.96	25.30	13.76	14.65	86
17:04	17.48	26.59	13.76	14.53	86
17:05	17.76	28.00	13.76	14.53	86
17:06	15.59	24.64	13.76	14.53	86
17:07	12.09	30.34	13.76	14.53	86
17:08	13.25	31.63	13.76	14.53	86
17:09	13.20	30.19	13.76	14.40	86
17:10	14.31	26.29	13.76	14.53	86
17:11	14.94	27.07	13.76	14.39	86
17:12	15.48	26.47	13.76	14.44	84
17:13	14.63	25.60	14.12	14.08	84
17:14	15.32	26.62	15.21	14.44	84
17:15	15.24	26.98	15.21	14.44	84
17:16	15.21	25.93	15.21	14.08	84
17:17	14.58	24.40	15.21	14.20	84
17:18	14.53	25.39	15.21	14.32	84
17:19	15.22	26.53	15.21	14.32	84
17:20	12.47	31.96	15.21	14.20	84
17:21	12.71	36.22	15.21	14.20	84
17:22	13.27	34.81	15.21	14.20	84
17:23	12.92	25.33	15.21	14.20	84
17:24	16.97	23.89	15.21	14.20	84

17:25	17.78	25.21	15.21	14.20	84	
17:26	16.50	24.46	15.21	14.08	84	
17:27	11.49	25.45	13.13	14.08	84	
17:28	11.75	27.22	13.13	14.08	84	
17:29	12.12	28.84	13.13	13.96	84	
17:30	12.99	21.25	13.13	14.08	84	
17:31	13.38	22.81	13.13	14.20	84	
17:32	14.37	23.50	13.13	14.20	84	
17:33	13.35	22.87	13.13	14.08	84	
17:34	13.88	23.38	13.13	14.20	84	
17:35	14.09	24.79	13.13	14.08	84	
17:36			13.13			
17:37			13.13			
17:38			13.13			
17:39			13.13			
17:40			12.70			
17:41			12.56			
17:42			12.56			
17:43			12.56			
17:44			12.56			
17:45			12.56			
17:46			12.56			
17:47			12.56			
17:48			12.56			
17:49			12.56			
17:50			12.56			
17:51			12.56			
17:52			12.56			

Average	14.66	28.77	14.20	14.69	84.71	184
Minimum	11.49	21.25	12.56	13.96	84.00	
Maximum	19.56	43.12	15.21	15.17	86.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 1

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	29.31	44.9	14.3
Train B	26.87	41.2	14.3
Average	28.09	43.05	14.3

RCA #1 Testing - Run 2: Low PM concentration

8/27/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	g/acm H2O Vdc	Temp. deg C
8:52	6.31	5.65		14.16		86
8:53	6.37	5.57		14.16		86
8:54	6.29	5.93		14.04		86
8:55	6.03	4.95		14.16		86
8:56	6.16	5.34		14.16		86
8:57	6.12	4.99		14.16		86
8:58	6.16	5.29		14.28		86
8:59	6.26	5.52		14.16		86
9:00	6.27	5.54		14.12		85
9:01	6.26	5.73		13.72		84
9:02	6.22	5.61		13.84		84
9:03	6.25	5.54	5.22	13.84		84
9:04	6.31	5.69	5.22	13.84		84
9:05	6.23	6.36	5.22	13.84		84
9:06	6.23	6.76	5.22	13.84		84
9:07	6.22	6.66	5.22	13.84		84
9:08	6.40	5.73	5.22	13.84		84
9:09	6.53	5.45	5.22	13.96		84
9:10	6.57	5.43	5.22	14.08		84
9:11	6.78	6.10	5.22	14.08		84
9:12	6.39	6.78	5.22	14.08		84
9:13	6.37	6.77	5.22	14.20		84
9:14	6.38	7.42	5.22	13.90		86
9:15	6.38	5.96	5.14	14.12		85
9:16	6.43	5.96	5.05	14.04		86
9:17	6.48	6.05	5.05	14.04		86
9:18	6.24	6.14	5.05	13.91		86
9:19	6.22	5.62	5.05	14.16		86
9:20	6.31	5.60	5.05	14.28		86
9:21	6.29	5.98	5.05	14.16		86
9:22	6.20	5.57	5.05	14.40		86
9:23	6.32	5.69	5.05	14.53		86
9:24	6.27	5.84	5.05	14.53		86
9:25	6.23	6.43	5.05	14.40		86
9:26	6.34	7.89	5.05	14.28		86
9:27	6.27	6.99	5.05	14.24		85
9:28	6.32	6.25	5.00	14.23		85
9:29	6.53	5.51	4.82	14.20		84
9:30	7.09	5.75	4.82	14.20		84
9:31	6.77	6.00	4.82	14.20		84
9:32	6.55	6.66	4.82	14.20		84
9:33	6.29	6.81	4.82	14.32		84
9:34	7.20	8.03	4.82	14.08		84
9:35	6.30	5.90	4.82	14.44		84
9:36	6.41	6.18	4.82	14.32		84
9:37	6.47	6.13	4.82	14.57		84
9:38	6.34	6.38	4.82	14.57		84
9:39	6.32	5.61	4.82	14.69		84
9:40	6.31	5.73	4.82	14.57		84

9:41	6.45	6.77	4.90	14.44	84
9:42	6.26	6.01	5.14	13.96	84
9:43	6.30	5.69	5.14	14.32	84
9:44	6.28	5.77	5.14	14.32	84
9:45	6.34	6.14	5.14	14.20	84
9:46	6.27	7.19	5.14	14.20	84
9:47	6.20	7.04	5.14	14.32	84
9:48	6.34	6.76	5.14	14.44	84
9:49	6.47	5.50	5.14	14.32	84
9:50	6.59	5.55	5.14	14.57	84
9:51	7.05	5.89	5.14	14.44	84
9:52	6.45	6.80	5.14	14.39	86
9:53	6.35	7.04	5.14	14.04	86
9:54	6.49	7.19	5.14	13.79	86
9:55	6.34	7.14	4.82	13.62	85
9:56	6.74	6.30	4.82	13.96	84
9:57	6.42	6.00	4.82	13.96	84
9:58	6.38	6.60	4.82	13.84	84
9:59	6.23	5.43	4.82	13.72	84
10:00	6.23	5.41	4.82	13.59	84
10:01	6.25	5.44	4.82	13.47	84
10:02	6.16	5.51	4.82	13.11	84
10:03	6.18	5.40	4.82	13.59	84
10:04	6.16	5.43	4.82	14.08	84
10:05	6.21	5.66	4.82	14.20	84
10:06	6.15	6.00	4.82	14.32	84
10:07	6.13	6.11	4.82	14.69	84
10:08	6.37	6.21	4.82	14.93	84
10:09	6.28	5.17	4.82	14.97	85
10:10	6.47	5.35	4.82	15.01	86
10:11	6.53	5.47	4.82	14.89	86
10:12	6.64	6.45	4.82	14.89	86
10:13	6.35	6.71	4.82	14.77	86
10:14	6.53	7.14	4.82	14.65	86
10:15	6.32	7.07	4.82	14.40	86
10:16	6.45	6.16	4.82	14.65	86
10:17	6.53	6.15	4.82	14.65	86
10:18	6.62	6.15	4.82	14.59	85
10:19	6.23	6.05	4.82	14.32	84
10:20	6.29	5.63	4.82	14.69	84
10:21	6.35	5.64	5.02	14.57	84
10:22	6.27	5.65	5.22	14.44	84
10:23	6.20	5.59	5.22	14.57	84
10:24	6.21	5.66	5.22	14.69	84
10:25	6.55	5.86	5.22	14.81	84
10:26	6.15	6.94	5.22	14.69	84
10:27	6.25	7.42	5.22	14.57	84
10:28	6.24	7.16	5.22	14.44	84
10:29	6.67	6.01	5.22	14.44	84
10:30	6.55	5.54	5.22	14.32	84
10:31	6.64	5.64	5.22	14.32	84
10:32	6.86	6.32	5.22	14.32	84

10:33	6.38	7.07	5.22	14.48	85	
10:34	6.40	6.95	5.18	14.53	86	
10:35	6.27	7.35	5.05	14.40	86	
10:36	6.36	6.01	5.05	14.65	86	
10:37	6.41	6.08	5.05	14.65	86	
10:38	6.45	6.12	5.05	14.65	86	
10:39	6.32	6.23	5.05	14.53	86	
10:40	6.27	5.75	5.05	14.65	86	
10:41	6.28	5.82	5.05	14.53	86	
10:42	6.82	6.71	5.05	14.16	86	
10:43	6.38	5.71	5.05	14.10	85	
10:44			5.05			
10:45			5.05			
10:46			5.05			
10:47			5.05			
10:48			5.22			
10:49			5.22			
10:50			5.22			
10:51			5.22			
10:52			5.22			
10:53			5.22			
10:54			5.22			
10:55			5.22			
10:56			5.22			
10:57			5.22			
10:58			5.22			
10:59			5.22			
11:00			5.22			
Average	6.38	6.11	5.04	14.28	84.79	185
Minimum	6.03	4.95	4.82	13.11	84.00	
Maximum	7.20	8.03	5.22	15.01	86.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 2

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	1.92	2.9	14.09
Train B	1.87	2.9	14.19
Average	1.895	2.9	14.14

RCA #1 Testing - Run 3: Low PM concentration

8/27/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	g/acm H2O Vdc	Temp. deg C
11:44	6.36	6.05		14.77		86
11:45	6.46	6.12		14.77		86
11:46	6.49	6.23		14.77		86
11:47	6.21	7.67		14.65		86
11:48	6.35	8.07		14.65		86
11:49	6.33	7.78		14.65		86
11:50	6.38	7.27		14.65		86
11:51	6.54	5.78		14.40		86
11:52	6.65	6.01		14.40		86
11:53	7.08	6.34		14.40		86
11:54	6.46	7.53	5.22	14.28		86
11:55	6.38	6.99	5.22	14.40		86
11:56	6.52	7.59	5.22	14.40		86
11:57	6.44	7.64	5.22	14.28		86
11:58	7.30	7.12	5.22	14.28		86
11:59	6.49	6.53	5.22	14.28		86
12:00	6.46	7.17	5.22	14.16		86
12:01	6.36	6.12	5.22	14.28		86
12:02	6.52	6.37	5.22	14.40		86
12:03	6.53	6.42	5.22	14.53		86
12:04	6.52	6.57	5.22	14.04		86
12:05	6.43	6.40	5.22	14.40		86
12:06	6.51	6.62	5.22	14.40		86
12:07	6.50	6.94	5.09	14.53		86
12:08	6.26	8.31	5.05	14.40		86
12:09	6.38	8.35	5.05	14.53		86
12:10	6.41	8.23	5.05	14.53		86
12:11	6.61	6.01	5.05	14.53		86
12:12	6.84	6.26	5.05	14.65		86
12:13	7.05	6.90	5.05	14.77		86
12:14	6.78	7.30	5.05	14.65		86
12:15	6.54	7.78	5.05	14.65		86
12:16	6.65	7.91	5.05	14.65		86
12:17	6.50	7.90	5.05	14.44		84
12:18	6.44	6.69	5.05	14.81		84
12:19	6.56	6.71	5.05	14.69		84
12:20	6.64	6.81	5.10	14.69		84
12:21	6.33	6.70	5.14	14.44		84
12:22	6.38	6.07	5.14	14.44		84
12:23	6.43	6.17	5.14	14.44		84
12:24	6.48	6.61	5.14	13.96		84
12:25	6.41	6.43	5.14	14.12		85
12:26	6.54	6.40	5.14	14.04		86
12:27	6.44	6.39	5.14	14.40		86
12:28	6.24	8.77	5.14	14.53		86
12:29	6.27	7.94	5.14	14.53		86
12:30	6.28	7.80	5.14	14.65		86
12:31	6.48	6.28	5.14	14.65		86
12:32	6.65	5.91	5.14	14.77		86

12:33	6.73	6.00	5.12	14.77	86
12:34	6.66	6.37	5.05	14.63	86
12:35	6.33	7.24	5.05	14.44	84
12:36	6.26	7.21	5.05	14.44	84
12:37	6.35	7.79	5.05	14.32	84
12:38	6.34	6.18	5.05	14.44	84
12:39	6.50	6.39	5.05	14.44	84
12:40	6.52	6.48	5.05	14.32	84
12:41	6.25	6.37	5.06	14.24	85
12:42	6.27	5.88	5.05	14.28	86
12:43	7.13	6.41	5.05	14.28	86
12:44	6.35	6.28	5.05	14.04	86
12:45	6.19	5.69	5.05	14.16	86
12:46	6.20	5.95	5.05	14.16	86
12:47	6.24	5.90	5.05	14.28	86
12:48	6.16	6.80	5.05	14.28	86
12:49	6.20	7.49	5.05	14.16	86
12:50	6.17	7.16	5.05	14.28	86
12:51	6.24	6.36	5.05	14.28	86
12:52	6.47	5.52	5.05	13.91	86
12:53	6.61	5.56	5.05	13.55	86
12:54	6.58	5.95	5.05	13.30	86
12:55	6.16	6.48	5.05	13.30	86
12:56	6.24	6.72	5.05	13.50	88
12:57	6.45	7.71	5.05	13.38	88
12:58	6.34	6.43	5.06	13.50	88
12:59	6.42	6.24	5.05	13.50	88
13:00	6.37	6.13	5.24	13.62	88
13:01	6.30	6.26	5.30	13.50	88
13:02	6.19	5.61	5.30	13.65	89
13:03	6.23	5.74	5.30	13.82	90
13:04	6.26	5.72	5.30	13.82	90
13:05	6.21	5.66	5.30	13.33	90
13:08	6.22	5.66	5.30	13.33	90
13:09	6.11	6.74	5.30	13.82	90
13:10	6.22	6.82	5.30	13.82	90
13:11	6.17	6.88	5.30	13.95	90
13:12	6.38	5.33	5.30	13.95	90
13:13	6.42	5.44	4.98	13.95	90
13:14	6.56	5.84	4.66	13.82	90
13:15	6.28	6.69	4.66	13.95	90
13:15	6.27	6.66	4.66	13.95	90
13:16	6.29	6.89	4.66	13.95	90
13:16	6.28	6.95	4.66	13.95	90
13:17	6.34	7.17	4.66	13.95	90
13:18	6.13	6.16	4.66	14.03	89
13:20	6.27	5.91	4.66	14.24	88
13:20	6.28	5.93	4.66	14.24	88
13:21	6.32	6.21	4.66	14.24	88
13:22	6.30	6.12	4.66	14.24	88
13:25	6.22	5.88	4.66	13.99	88
13:26	6.18	5.65	4.90	14.24	88

13:27	6.14	5.67	5.14	14.12	88	
13:28	6.57	6.83	5.14	14.24	88	
13:29	6.13	7.00	5.14	14.24	88	
13:30	6.09	6.91	5.14	14.36	88	
13:31	6.19	6.91	5.14	14.36	88	
13:32	6.34	5.47	5.14	14.48	88	
13:33	6.48	5.55	5.14	14.36	88	
13:34	6.55	5.62	5.14	14.48	88	
13:35			5.14			
13:36			5.14			
13:37			5.14			
13:38			5.14			
13:39			5.12			
13:40			5.05			
13:41			5.05			
13:42			5.05			
13:43			5.06			
13:44			5.05			
13:45			5.05			
13:46			5.06			
13:47			5.05			
13:48			5.05			
13:49			5.05			
13:50			5.05			
13:51			5.05			

Average	6.41	6.59	5.07	14.24	86.70	188
Minimum	6.09	5.33	4.66	13.30	84.00	
Maximum	7.30	8.77	5.30	14.81	90.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 3

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	2.47	3.8	14.26
Train B	2.62	4.1	14.81
Average	2.545	3.95	14.535

RCA #1 Testing - Run 4: Low PM concentration

8/27/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	g/acm H2O Vdc	Temp. deg C
14:48	6.16	5.70		14.53		86
14:49	6.19	5.72		14.53		86
14:50	6.26	6.07		14.40		86
14:51	6.11	5.70		14.28		86
14:52	6.11	5.75		14.53		86
14:53	6.22	5.88		15.62		86
14:54	6.10	6.95		16.97		86
14:55	6.16	7.34		16.97		86
14:56	6.18	7.15		16.97		86
14:57	6.39	6.98		18.19		86
14:58	6.21	5.33		18.19		86
14:59	6.57	5.75	4.82	17.70		86
15:00	6.56	5.81	4.82	16.23		86
15:01	6.75	6.54	4.82	16.11		86
15:02	6.28	6.89	4.82	14.77		86
15:03	6.25	6.97	4.82	14.61		85
15:04	6.17	7.36	4.82	14.32		84
15:05	6.28	6.32	4.82	14.44		84
15:06	6.46	6.49	4.82	14.57		84
15:07	6.53	6.35	4.82	14.57		84
15:08	6.12	5.92	4.82	14.44		84
15:09	6.20	5.82	4.82	14.57		84
15:10	6.24	6.04	4.82	14.57		84
15:11	6.23	5.94	4.82	14.44		84
15:12	6.12	5.89	4.52	14.69		84
15:13	6.22	5.99	4.42	14.77		86
15:14	6.44	6.26	4.42	14.77		86
15:15	6.18	8.26	4.42	14.65		86
15:16	6.17	7.71	4.42	14.53		86
15:17	6.29	7.29	4.42	14.65		86
15:18	6.60	6.11	4.42	14.77		86
15:19	6.52	5.87	4.42	14.65		86
15:20	6.66	5.91	4.42	14.65		86
15:21	7.02	6.67	4.42	14.65		86
15:22	6.43	7.62	4.42	14.53		86
15:23	6.52	7.66	4.42	14.53		86
15:24	6.22	8.03	4.42	14.40		86
15:25	6.34	6.47	4.74	14.65		86
15:26	6.36	6.65	5.05	14.65		86
15:27	6.51	6.62	5.05	14.77		86
15:28	6.34	6.48	5.05	14.65		86
15:29	6.35	6.09	5.05	14.77		86
15:30	7.20	7.02	5.05	14.77		86
15:31	6.39	6.29	5.05	14.59		85
15:32	6.19	6.12	5.05	14.69		84
15:33	6.22	6.18	5.05	14.69		84
15:34	6.31	6.21	5.05	14.69		84
15:35	6.17	7.35	5.05	14.69		84
15:36	6.20	8.11	5.05	14.69		84

15:37	6.45	8.08	5.05	14.57	84
15:38	6.34	7.12	5.01	14.57	84
15:39	6.63	6.15	4.90	14.57	84
15:40	6.78	6.06	4.90	14.61	85
15:41	6.81	7.15	4.90	14.65	86
15:42	6.30	7.22	4.90	14.65	86
15:43	6.38	7.46	4.90	14.65	86
15:44	7.70	8.38	4.90	14.65	86
15:45	6.62	7.08	4.90	14.65	86
15:46	6.44	6.65	4.90	14.77	86
15:47	6.57	6.67	4.90	14.77	86
15:48	6.42	7.22	4.90	14.65	86
15:49	6.35	6.19	4.90	14.89	86
15:50	6.42	6.26	4.90	14.65	86
15:51	6.42	6.35	4.90	14.65	86
15:52	6.41	6.78	4.66	14.16	86
15:53	6.33	6.48	4.66	14.51	86
15:54	6.35	6.58	4.66	14.61	85
15:55	6.39	7.64	4.66	14.65	86
15:56	6.48	8.40	4.66	14.53	86
15:57	6.27	8.43	4.66	14.53	86
15:58	6.26	8.07	4.66	14.53	86
15:59	6.54	6.08	4.66	14.53	86
16:00	6.85	6.41	4.66	14.53	86
16:01	6.88	6.29	4.66	14.53	86
16:02	6.48	8.51	4.66	14.40	86
16:03	6.38	7.72	4.66	14.40	86
16:04	6.32	7.74	4.66	14.53	86
16:05	7.32	6.99	5.46	14.53	86
16:06	6.45	6.82	5.46	14.53	86
16:07	6.39	6.46	5.46	14.53	86
16:08	6.50	7.30	5.46	14.40	86
16:09	6.22	5.82	5.46	14.53	86
16:10	6.27	6.10	5.45	14.28	86
16:11	6.34	6.16	5.45	14.40	86
16:12	6.30	6.43	5.45	14.04	86
16:13	6.18	6.11	5.45	14.24	85
16:14	6.21	6.16	5.45	14.32	84
16:15	6.44	7.64	5.45	14.20	84
16:16	6.12	7.78	5.45	14.32	84
16:17	6.24	7.77	5.45	14.44	84
16:18	6.17	7.72	5.10	14.44	84
16:19	6.36	5.96	4.98	14.32	84
16:20	6.57	5.89	4.98	14.32	84
16:21	6.65	6.02	4.98	14.32	84
16:22	6.53	7.47	4.98	14.20	84
16:23	6.30	7.37	4.98	14.10	85
16:24	6.21	7.30	4.98	14.16	86
16:25	7.08	7.29	4.98	14.16	86
16:26	6.36	6.54	4.98	14.16	86
16:27	6.45	6.46	4.98	14.28	86
16:28	6.52	6.61	4.98	14.16	86

16:29	6.29	6.59	4.98	14.28	86	
16:30	6.53	6.87	4.98	14.40	86	
16:31	6.38	6.16	5.34	14.40	86	
16:32	6.29	6.34	5.70	14.04	86	
16:33	6.22	6.09	5.70	14.04	86	
16:34	6.25	6.13	5.70	14.16	86	
16:35	6.27	6.23	5.70	14.27	86	
16:36	6.23	7.81	5.70	14.23	85	
16:37	6.13	7.91	5.70	14.20	84	
16:38	6.21	7.91	5.70	14.20	84	
16:39			5.70			
16:40			5.70			
16:41			5.70			
16:42			5.70			
16:43			5.70			
16:44			5.50			
16:45			4.90			
16:46			4.90			
16:47			4.90			
16:48			4.90			
16:49			4.90			
16:50			4.90			
16:51			4.90			
16:52			4.90			
16:53			4.90			
16:54			4.90			
16:55			4.90			
16:56			4.90			
16:57			4.90			
Average	6.40	6.75	4.99	14.69	85.43	186
Minimum	6.10	5.33	4.42	14.04	84.00	
Maximum	7.70	8.51	5.70	18.19	86.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 4

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	2.57	4	14.33
Train B	2.6	4	14.75
Average	2.585	4	14.54

RCA #1 Testing - Run 5: Medium PM concentration

8/28/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	Temp. degC
8:50	8.69	10.67		16.48	86
8:51	8.55	10.74		16.84	86
8:52	7.85	15.01		16.48	86
8:53	8.27	15.52		17.45	86
8:54	8.65	15.27		17.45	86
8:55	8.93	11.71		16.84	86
8:56	9.79	10.98		15.26	86
8:57	10.35	11.68		15.26	86
8:58	9.39	12.70		14.40	86
8:59	8.65	14.47		14.40	86
9:00	8.41	14.59	7.93	14.28	86
9:01	11.06	15.52	7.93	14.04	86
9:02	8.58	11.15	7.93	13.79	86
9:03	8.65	10.88	7.93	13.47	84
9:04	8.62	11.17	7.93	13.35	84
9:05	8.38	11.61	7.93	13.35	84
9:06	8.39	10.62	7.93	13.72	84
9:07	8.60	10.76	7.93	13.96	84
9:08	8.81	11.95	7.93	14.02	86
9:09	8.45	10.41	7.93	14.14	86
9:10	8.53	10.93	7.93	14.08	84
9:11	8.72	11.13	7.93	13.96	84
9:12	8.03	14.42	7.93	13.72	84
9:13	7.87	15.41	7.30	13.72	84
9:14	8.54	14.94	7.30	13.96	84
9:15	8.42	12.45	7.30	14.04	86
9:16	9.60	11.05	7.30	14.04	86
9:17	9.99	11.19	7.30	13.91	86
9:18	9.70	13.25	7.30	14.04	86
9:19	8.10	12.58	7.30	14.16	86
9:20	8.05	13.16	7.30	14.04	86
9:21	9.83	14.86	7.30	14.04	86
9:22	8.24	10.62	7.30	13.91	86
9:23	8.61	11.23	7.30	14.16	86
9:24	8.96	11.55	7.30	14.04	86
9:25	8.88	12.30	7.30	13.91	86
9:26	8.74	10.78	7.60	14.16	86
9:27	8.72	11.04	7.70	13.91	86
9:28	8.71	10.98	7.70	13.91	86
9:29	8.57	11.05	7.70	13.67	86
9:30	8.40	10.70	7.70	13.78	86
9:31	8.69	10.99	7.70	13.74	85
9:32	8.14	12.52	7.70	13.23	84
9:33	7.83	14.63	7.70	12.87	84
9:34	7.97	14.39	7.70	12.87	84
9:35	8.05	13.44	7.70	13.11	84
9:36	8.67	8.95	7.70	13.23	84
9:37	9.13	9.96	7.70	13.47	84
9:38	9.59	9.53	7.70	13.47	84

9:39	7.39	10.57	7.21	13.59	84
9:40	7.67	11.02	7.05	13.72	84
9:41	7.61	11.81	7.05	14.04	86
9:42	8.45	9.99	7.05	13.91	86
9:43	7.89	9.11	7.05	14.04	86
9:44	8.04	9.74	7.05	14.04	86
9:45	8.20	10.68	7.05	14.04	86
9:46	7.50	8.30	7.05	13.91	86
9:47	8.24	9.45	7.05	14.04	86
9:48	8.23	10.14	7.05	14.28	86
9:49	8.28	10.32	7.05	14.28	86
9:50	8.36	10.00	7.05	13.91	86
9:51	8.27	10.04	7.05	14.08	84
9:52	8.39	10.46	6.62	14.08	84
9:53	8.05	11.86	6.18	14.08	84
9:54	7.98	15.37	6.18	13.84	84
9:55	7.96	15.18	6.18	13.96	84
9:56	8.49	15.30	6.18	13.96	84
9:57	9.28	10.34	6.18	13.84	84
9:58	9.75	10.96	6.18	13.84	84
9:59	10.02	11.16	6.18	13.96	84
10:00	7.87	13.69	6.18	13.84	84
10:01	8.04	13.20	6.18	13.72	84
10:02	8.28	13.30	6.18	13.51	85
10:03	7.78	10.64	6.18	13.30	86
10:04	8.27	10.98	6.18	13.51	85
10:05	8.36	10.73	6.50	13.78	86
10:06	8.89	11.81	7.45	13.79	86
10:07	8.12	9.51	7.45	13.91	86
10:08	8.36	10.23	7.45	14.04	86
10:09	8.54	10.61	7.45	13.91	86
10:10	8.35	9.98	7.45	13.55	86
10:11	8.27	10.31	7.45	13.66	86
10:12	8.42	10.35	7.45	13.72	84
10:13	8.13	11.48	7.45	13.72	84
10:14	7.57	13.58	7.45	13.59	84
10:15	7.98	13.90	7.45	13.72	84
10:16	8.12	14.35	7.45	13.59	84
10:17	8.51	9.84	7.45	13.47	84
10:18	9.46	9.93	7.45	13.59	84
10:19	9.41	10.52	7.45	13.59	84
10:20	8.37	12.35	7.45	13.72	84
10:21	7.68	12.38	7.45	13.72	84
10:22	7.90	12.51	7.45	13.79	86
10:23	7.54	11.30	7.45	13.67	86
10:24	8.28	10.63	7.45	13.91	86
10:25	8.33	10.96	7.45	14.04	86
10:26	8.89	11.14	7.45	14.04	86
10:27	8.57	10.79	7.45	13.79	86
10:28	8.43	10.25	7.45	13.67	86
10:29	8.53	10.46	7.45	13.43	86
10:30	8.42	10.54	7.45	13.43	86

10:31	8.26	9.91	7.45	13.55	86	
10:32	8.35	10.36	7.70	13.67	86	
10:33	8.25	10.62	7.78	13.67	86	
10:34	7.60	14.33	7.78	13.67	86	
10:35	7.73	14.91	7.78	13.66	86	
10:36	8.20	14.76	7.78	13.59	84	
10:37	8.40	11.14	7.78	13.72	84	
10:38	9.57	9.96	7.78	13.72	84	
10:39	9.79	10.77	7.78	13.96	84	
10:40	8.77	12.50	7.78	13.96	84	
10:41			7.78			
10:42			7.78			
10:43			7.78			
10:44			7.78			
10:45			7.34			
10:46			6.90			
10:47			6.90			
10:48			6.90			
10:49			6.90			
10:50			6.90			
10:51			6.90			
10:52			6.90			
10:53			6.90			
10:54			6.90			
10:55			6.90			
10:56			6.90			
10:57			6.90			
Average	8.51	11.72	7.30	14.00	85.16	185
Minimum	7.39	8.30	6.18	12.87	84.00	
Maximum	11.06	15.52	7.93	17.45	86.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 5

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	9.62	14.6	14.1
Train B	9.92	15	13.7
Average	9.77	14.8	13.9

RCA #1 Testing - Run 6: Medium PM concentration

8/28/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	Temp. deg C
11:41	7.01	9.51		13.47	84
11:42	7.29	10.33		13.78	86
11:43	7.36	10.51		13.91	86
11:44	7.17	9.10		14.04	86
11:45	7.52	9.01		14.28	86
11:46	7.77	9.29		14.40	86
11:47	8.09	9.86		14.40	86
11:48	7.34	7.96		14.28	86
11:49	7.47	8.35		14.28	86
11:50	7.67	8.69		14.40	86
11:51	7.86	9.19	6.72	14.40	86
11:52	8.54	10.95	6.42	14.53	86
11:53	8.55	11.30	6.42	14.65	86
11:54	8.68	12.07	6.42	14.28	86
11:55	8.25	10.89	6.42	14.28	86
11:56	8.37	11.56	6.42	14.16	86
11:57	8.78	11.84	6.42	14.16	86
11:58	7.92	13.90	6.42	14.04	86
11:59	7.82	17.48	6.42	14.04	86
12:00	8.29	16.39	6.42	14.04	86
12:01	8.34	12.86	6.42	13.91	86
12:02	9.49	10.87	6.42	13.79	86
12:03	9.82	11.53	6.42	13.67	86
12:04	9.30	11.81	7.02	13.59	84
12:05	7.70	11.98	7.62	13.63	85
12:06	8.03	13.02	7.62	13.67	86
12:07	8.84	14.35	7.62	13.55	86
12:08	7.64	10.47	7.62	13.79	86
12:09	8.06	10.85	7.62	13.79	86
12:10	8.20	10.88	7.62	13.79	86
12:11	8.03	10.90	7.62	13.79	86
12:12	8.41	10.27	7.62	14.04	86
12:13	8.44	10.69	7.62	14.04	86
12:14	8.52	11.10	7.62	14.16	86
12:15	8.36	10.80	7.62	13.79	86
12:16	8.30	10.59	7.62	14.16	86
12:17	8.20	11.25	7.34	14.04	86
12:18	7.91	12.46	6.50	14.04	86
12:19	7.48	15.85	6.50	13.79	86
12:20	7.86	15.46	6.50	13.79	86
12:21	8.26	13.54	6.50	13.91	86
12:22	8.87	10.07	6.50	14.04	86
12:23	9.13	10.71	6.50	13.91	86
12:24	9.52	11.17	6.50	14.04	86
12:25	7.62	11.34	6.50	13.91	86
12:26	7.47	12.38	6.50	13.79	86
12:27	7.71	12.18	6.50	13.91	86
12:28	8.45	11.00	6.50	13.91	86
12:29	7.94	10.48	6.50	14.16	86

12:30	8.28	10.73	6.50	14.28	86
12:31	8.15	11.90	7.22	14.16	86
12:32	8.09	9.62	7.22	14.28	86
12:33	8.29	10.30	7.22	14.40	86
12:34	8.42	10.62	7.22	14.28	86
12:35	7.97	10.42	7.22	13.79	86
12:36	7.97	10.29	7.22	14.04	86
12:37	8.09	10.41	7.22	14.04	86
12:38	8.16	11.46	7.22	14.04	86
12:39	7.41	14.66	7.22	13.91	86
12:40	7.60	15.05	7.22	14.04	86
12:41	7.87	15.08	7.22	14.04	86
12:42	8.47	9.64	7.22	14.04	86
12:43	9.21	10.65	7.22	13.91	86
12:44	9.65	10.88	7.22	14.04	86
12:45	8.19	12.10	7.22	13.91	86
12:46	7.71	12.53	7.22	14.04	86
12:47	7.78	13.37	7.22	13.91	86
12:48	9.16	12.42	7.22	13.79	86
12:49	8.09	11.22	7.22	13.79	86
12:50	8.26	11.21	7.22	13.79	86
12:51	8.53	11.05	7.22	13.67	86
12:52	8.07	10.66	7.22	13.43	86
12:53	8.33	10.42	7.22	13.61	88
12:54	8.30	10.64	7.22	13.75	88
12:55	8.32	10.71	7.22	13.26	88
12:56	8.17	10.31	7.22	13.38	88
12:57	8.18	10.79	6.74	13.50	88
12:58	8.49	11.26	6.25	13.62	88
12:59	7.86	14.60	6.25	13.50	88
13:00	8.12	15.92	6.25	13.62	88
13:01	8.18	16.09	6.25	13.75	88
13:02	8.51	11.85	6.25	13.62	88
13:03	9.59	10.85	6.25	13.62	88
13:04	10.14	11.28	6.25	13.62	88
13:05	9.23	12.75	6.25	13.62	88
13:06	8.11	13.87	6.25	13.54	89
13:07	8.06	14.21	6.25	13.58	90
13:08	9.37	14.30	6.25	13.58	90
13:09	8.31	11.81	6.25	13.45	90
13:10	8.48	11.83	6.55	13.45	90
13:11	8.92	11.95	7.45	13.21	90
13:12	8.67	11.99	7.45	13.45	90
13:13	8.84	11.79	7.45	13.58	90
13:14	8.91	12.14	7.45	13.58	90
13:15	9.05	12.75	7.45	13.33	90
13:16	8.63	11.36	7.45	13.58	90
13:17	8.84	11.53	7.45	13.45	90
13:18	9.03	12.10	7.45	13.58	90
13:19	8.36	15.23	7.45	13.58	90
13:20	8.24	18.00	7.45	13.70	90
13:21	8.55	18.06	7.45	13.70	90

13:22	8.29	14.45	7.45	13.82	90	
13:23	9.61	11.68	7.45	13.68	90	
13:24	9.81	11.91	7.05	13.62	88	
13:25	9.61	13.15	7.05	13.75	88	
13:26	8.03	12.95	7.05	13.62	88	
13:27	8.05	13.44	7.05	13.62	88	
13:28	9.41	15.35	7.05	13.62	88	
13:29	7.89	11.35	7.05	13.62	88	
13:30	8.30	11.24	7.05	13.62	88	
13:31	8.46	11.59	7.05	13.62	88	
13:32			7.05			
13:33			7.05			
13:34			7.05			
13:35			7.05			
13:36			7.05			
13:37			7.18			
13:38			7.22			
13:39			7.22			
13:40			7.22			
13:41			7.22			
13:42			7.22			
13:43			7.22			
13:44			7.22			
13:45			7.22			
13:46			7.22			
13:47			7.22			
13:48			7.22			
13:49			7.22			
Average	8.35	11.92	6.99	13.85	86.97	189
Minimum	7.01	7.96	6.25	13.21	84.00	
Maximum	10.14	18.06	7.62	14.65	90.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 6

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	8.25	12.6	13.8
Train B	8.33	12.7	13.9
Average	8.29	12.65	13.85

RCA #1 Testing - Run 7: Mid PM concentration

8/28/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	Temp. deg C
15:00	7.29	11.42		13.86	91
15:01	7.47	13.97		13.82	90
15:02	7.39	14.05		13.82	90
15:03	7.63	12.92		13.95	90
15:04	8.25	9.20		13.82	90
15:05	8.76	9.70		13.82	90
15:06	9.07	10.11		13.78	89
15:07	7.26	10.67		13.75	88
15:08	7.21	10.65		13.75	88
15:09	7.31	10.72		13.87	88
15:10	7.11	9.57	6.90	13.87	88
15:11	7.52	9.52	6.90	13.87	88
15:12	7.65	9.52	6.90	13.87	88
15:13	8.01	10.26	6.90	13.87	88
15:14	7.40	8.48	6.90	14.12	88
15:15	7.52	8.80	6.90	13.99	88
15:16	7.49	9.09	6.90	13.75	88
15:17	7.59	8.81	6.90	13.75	88
15:18	7.35	9.28	6.90	13.87	88
15:19	7.45	9.36	6.90	13.99	88
15:20	7.36	10.15	6.90	13.85	88
15:21	7.00	12.64	6.90	13.91	86
15:22	7.38	13.17	6.90	13.79	86
15:23	7.45	13.07	6.73	14.04	86
15:24	7.97	9.03	6.73	14.04	86
15:25	8.67	9.48	6.73	14.04	86
15:26	8.94	9.70	6.73	14.16	86
15:27	7.75	10.86	6.73	14.16	86
15:28	7.32	10.92	6.73	14.04	86
15:29	7.60	11.36	6.73	14.16	86
15:30	7.12	10.39	6.73	14.16	86
15:31	7.55	9.64	6.73	14.16	86
15:32	7.70	9.63	6.73	14.16	86
15:33	7.92	10.07	6.73	14.16	86
15:34	7.91	9.23	6.73	14.16	86
15:35	7.61	9.25	6.73	14.28	86
15:36	7.63	9.35	6.67	14.28	86
15:37	7.75	9.58	6.65	14.16	86
15:38	7.49	9.26	6.65	14.16	86
15:39	7.56	9.81	6.65	14.16	86
15:40	7.80	10.20	6.65	14.28	86
15:41	6.96	13.32	6.65	14.16	86
15:42	7.25	14.11	6.65	13.79	86
15:43	7.36	13.68	6.65	13.91	86
15:44	7.84	10.91	6.65	13.79	86
15:45	8.48	9.62	6.65	13.91	86
15:46	8.94	10.15	6.65	14.04	86
15:47	8.24	11.93	6.65	14.16	86
15:48	7.62	11.72	6.65	14.16	86

15:49	7.48	11.77	7.09	14.16	86
15:50	7.55	12.17	7.53	14.16	86
15:51	7.52	10.36	7.53	14.16	86
15:52	7.84	10.65	7.53	14.04	86
15:53	8.06	10.48	7.53	14.16	86
15:54	8.26	10.40	7.53	14.04	86
15:55	7.91	10.00	7.53	14.16	86
15:56	7.98	10.24	7.53	14.16	86
15:57	8.43	11.09	7.53	14.04	86
15:58	7.92	9.93	7.53	13.79	86
15:59	7.98	10.67	7.53	13.79	86
16:00	8.03	10.83	7.53	13.79	86
16:01	7.47	12.97	7.53	13.67	86
16:02	7.23	15.01	7.38	12.94	86
16:03	7.40	14.15	7.22	13.55	86
16:04	7.35	12.50	7.22	13.79	86
16:05	8.58	9.82	7.22	13.91	86
16:06	8.90	10.23	7.22	14.16	86
16:07	8.59	11.82	7.22	14.40	86
16:08	7.24	10.91	7.22	14.40	86
16:09	7.31	11.65	7.22	14.28	86
16:10	7.62	11.90	7.22	14.16	86
16:11	7.17	9.62	7.22	14.04	86
16:12	7.48	10.04	7.22	14.16	86
16:13	7.73	10.41	7.22	14.16	86
16:14	8.32	10.55	7.22	14.16	86
16:15	7.80	9.60	7.08	14.28	86
16:16	7.99	10.34	6.65	14.40	86
16:17	8.25	11.07	6.65	14.40	86
16:18	8.33	10.72	6.65	14.16	86
16:19	7.76	9.90	6.65	14.04	86
16:20	7.85	10.38	6.65	13.79	86
16:21	7.07	10.77	6.65	11.96	86
16:22	6.84	11.56	6.65	11.00	87
16:23	7.09	12.07	6.65	11.08	89
16:24	7.37	12.02	6.65	11.19	93
16:25	7.91	8.65	6.65	11.40	96
16:26	8.72	9.74	6.65	11.59	98
16:27	8.95	10.31	6.65	11.40	100
16:28	7.38	12.65	6.65	11.32	101
16:29	7.59	12.05	6.25	11.22	102
16:30	7.71	12.83	6.25	11.14	104
16:31	7.24	10.25	6.25	10.78	105
16:32	7.50	9.12	6.25	10.31	106
16:33	7.84	9.76	6.25	10.61	108
16:34	8.88	10.50	6.25	10.90	109
16:35	7.30	8.88	6.25	10.55	110
16:36	7.86	9.80	6.25	10.94	110
16:37	8.38	10.96	6.25	12.11	110
16:38	8.67	10.45	6.25	12.11	110
16:39	8.07	10.55	6.25	12.31	108
16:40	7.94	10.42	6.25	12.40	107

16:41	7.97	10.77	6.25	12.50	106	
16:42	7.08	12.96	6.38	12.31	104	
16:43	7.50	13.44	6.42	12.69	104	
16:44	7.62	14.05	6.42	12.77	103	
16:45	7.94	9.86	6.42	12.50	102	
16:46	8.69	9.87	6.42	13.13	102	
16:47	8.93	10.30	6.42	13.70	100	
16:48	7.72	10.80	6.42	13.79	99	
16:49	7.47	11.43	6.42	14.00	98	
16:50	7.47	11.61	6.42	14.05	96	
16:51			6.42			
16:52			6.42			
16:53			6.42			
16:54			6.42			
16:55			7.02			
16:56			7.62			
16:57			7.62			
16:58			7.62			
16:59			7.62			
17:00			7.62			
17:01			7.62			
17:02			7.62			
17:03			7.62			
17:04			7.62			
17:05			7.62			
17:06			7.62			
17:07			7.62			
Average	7.77	10.80	6.88	13.45	90.77	195
Minimum	6.84	8.48	6.25	10.31	86.00	
Maximum	9.07	15.01	7.62	14.40	110.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 7

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	11.45	17.6	13.7
Train B	11.14	17.2	14
Average	11.295	17.4	13.85

RCA #1 Testing - Run 8: Mid-high PM concentration

8/29/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	Temp. deg C
9:14	9.14	16.55		14.04	86
9:15	8.83	13.56		13.91	86
9:16	9.46	13.07		14.04	86
9:17	9.58	13.14		14.04	86
9:18	10.24	13.44		13.91	86
9:19	8.80	10.51		13.79	86
9:20	8.67	10.57		13.91	86
9:21	8.92	10.93		14.16	86
9:22	9.34	10.95		14.28	86
9:23	9.55	12.79		14.40	86
9:24	10.24	14.37	9.30	14.40	86
9:25	10.63	14.98	9.30	14.40	86
9:26	10.11	13.78	9.30	14.04	86
9:27	10.48	14.75	9.30	14.16	86
9:28	10.19	15.42	9.30	14.16	86
9:29	10.19	16.00	9.30	14.28	86
9:30	9.40	19.51	9.30	14.28	86
9:31	10.29	21.46	9.30	14.28	86
9:32	10.35	21.49	9.30	14.28	86
9:33	10.47	15.19	9.30	14.40	86
9:34	12.91	15.23	9.30	14.40	86
9:35	12.69	15.80	9.30	14.40	86
9:36	10.36	15.91	9.46	14.36	85
9:37	9.18	17.42	9.61	14.20	84
9:38	9.25	17.87	9.61	14.32	84
9:39	8.98	17.25	9.61	14.08	84
9:40	9.85	14.65	9.61	14.20	84
9:41	10.20	14.97	9.61	14.20	84
9:42	10.32	14.73	9.61	14.20	84
9:43	9.81	13.29	9.61	14.08	84
9:44	10.03	14.31	9.61	14.20	84
9:45	10.10	15.06	9.61	14.28	86
9:46	10.30	14.78	9.61	14.04	86
9:47	10.19	13.67	9.61	14.04	86
9:48	10.04	14.99	9.61	14.04	86
9:49	10.33	15.28	9.53	14.04	86
9:50	10.01	17.38	9.30	14.16	86
9:51	9.20	20.89	9.30	14.16	86
9:52	9.46	20.65	9.30	14.04	86
9:53	9.82	16.51	9.30	14.16	86
9:54	12.09	14.31	9.30	14.28	86
9:55	12.34	14.87	9.30	14.28	86
9:56	11.19	14.88	9.30	14.28	86
9:57	8.95	15.67	9.30	14.40	86
9:58	9.21	16.93	9.30	14.40	86
9:59	9.26	17.16	9.30	14.28	86
10:00	9.72	13.74	9.30	14.40	86
10:01	10.17	14.36	9.30	14.47	85
10:02	10.15	13.98	9.30	14.32	84

10:03	9.96	13.07	9.69	14.32	84
10:04	10.13	13.51	9.69	14.44	84
10:05	9.94	14.30	9.69	14.32	84
10:06	10.36	15.02	9.69	14.35	85
10:07	10.19	13.78	9.69	14.04	86
10:08	10.27	15.08	9.69	14.40	86
10:09	10.54	15.91	9.69	14.40	86
10:10	9.77	16.75	9.69	14.40	86
10:11	9.58	22.57	9.69	14.40	86
10:12	9.74	22.99	9.69	14.40	86
10:13	9.83	20.92	9.69	14.53	86
10:14	12.11	15.64	9.69	14.53	86
10:15	13.19	16.34	9.69	14.28	86
10:16	13.40	16.94	9.10	13.91	86
10:17	9.38	15.46	8.90	13.91	86
10:18	9.55	17.85	8.90	14.04	86
10:19	9.25	18.46	8.90	14.16	86
10:20	10.20	16.03	8.90	14.16	86
10:21	10.14	15.19	8.90	14.40	86
10:22	10.42	16.01	8.90	14.53	86
10:23	10.80	16.43	8.90	14.28	86
10:24	10.53	14.85	8.90	14.53	86
10:25	11.06	16.66	8.90	14.53	86
10:26	11.37	17.54	8.90	14.53	86
10:27	10.58	16.13	8.90	14.16	86
10:28	10.74	16.41	8.90	14.16	86
10:29	11.13	16.66	9.38	14.28	86
10:30	10.53	18.13	9.85	14.40	86
10:31	9.61	23.44	9.85	14.28	86
10:32	10.34	24.22	9.85	14.40	86
10:33	10.57	24.25	9.85	14.53	86
10:34	11.71	14.54	9.85	14.53	86
10:35	13.20	17.01	9.85	14.53	86
10:36	13.53	17.14	9.85	14.53	86
10:37	10.38	16.44	9.85	14.40	86
10:38	9.73	18.57	9.85	14.40	86
10:39	10.12	18.55	9.85	14.28	86
10:40	10.21	18.04	9.85	14.16	86
10:41	10.58	16.19	9.85	14.10	85
10:42	10.60	15.88	10.11	14.08	84
10:43	11.33	16.07	10.89	14.08	84
10:44	10.43	15.35	10.89	13.90	86
10:45	10.79	15.76	10.89	14.16	86
10:46	11.04	16.06	10.89	14.04	86
10:47	10.83	15.44	10.89	13.67	86
10:48	10.67	15.19	10.89	13.91	86
10:49	10.57	15.63	10.89	14.04	86
10:50	10.75	16.36	10.89	14.16	86
10:51	9.13	20.50	10.89	14.04	86
10:52	9.44	22.39	10.89	14.16	86
10:53	9.77	21.28	10.89	14.16	86
10:54	10.83	14.78	10.89	14.16	86

10:55	12.80	15.73	10.89	14.28	86	
10:56	13.01	15.48	10.17	14.28	86	
10:57	11.08	14.28	10.17	14.28	86	
10:58	9.23	17.71	10.17	14.28	86	
10:59	9.35	17.43	10.17	14.28	86	
11:00	10.02	17.80	10.17	14.16	86	
11:01	9.79	14.85	10.17	14.16	86	
11:02	10.27	14.96	10.17	14.04	86	
11:03	10.40	15.04	10.17	14.04	86	
11:04	9.83	14.09	10.17	14.04	86	
11:05			10.17			
11:06			10.17			
11:07			10.17			
11:08			10.17			
11:09			9.75			
11:10			9.61			
11:11			9.61			
11:12			9.61			
11:13			9.61			
11:14			9.61			
11:15			9.61			
11:16			9.61			
11:17			9.61			
11:18			9.61			
11:19			9.61			
11:20			9.61			
11:21			9.61			

Average	10.34	16.22	9.71	14.23	85.71	186
Minimum	8.67	10.51	8.90	13.67	84.00	
Maximum	13.53	24.25	10.89	14.53	86.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 8

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	22.1	33.6	13.8
Train B	22.14	33.7	13.7
Average	22.12	33.65	13.75

RCA Testing - Run 9: Mid-high PM concentration

8/29/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	Temp. deg C
12:05	10.83	18.13		14.16	86
12:06	9.96	19.62		14.16	86
12:07	10.35	20.14		14.28	86
12:08	9.58	18.73		14.16	86
12:09	10.97	17.56		14.28	86
12:10	11.22	17.68		14.28	86
12:11	11.52	17.38		14.28	86
12:12	11.52	16.30		14.28	86
12:13	11.29	17.42		14.28	86
12:14	11.50	18.12		14.28	86
12:15	11.40	17.40	10.65	13.79	86
12:16	11.05	16.30	10.41	13.43	86
12:17	11.34	16.65	10.41	13.43	86
12:18	11.20	17.05	10.41	13.67	86
12:19	9.08	20.95	10.41	13.79	86
12:20	10.33	22.42	10.41	14.16	86
12:21	10.66	24.58	10.41	14.28	86
12:22	11.11	17.00	10.41	14.53	86
12:23	13.03	16.03	10.41	14.40	86
12:24	13.61	16.32	10.41	14.16	86
12:25	11.53	16.35	10.41	13.91	86
12:26	9.66	18.67	10.41	14.04	86
12:27	9.99	19.81	10.41	13.91	86
12:28	9.84	18.76	10.89	14.04	86
12:29	10.08	16.01	11.36	14.28	86
12:30	10.71	16.98	11.36	14.28	86
12:31	11.06	16.65	11.36	14.28	86
12:32	11.54	16.19	11.36	14.28	86
12:33	10.61	14.10	11.36	14.28	86
12:34	11.71	17.77	11.36	14.40	86
12:35	11.95	18.65	11.36	14.40	86
12:36	11.59	19.02	11.36	14.28	86
12:37	11.84	17.58	11.36	14.28	86
12:38	11.96	18.55	11.36	14.28	86
12:39	11.44	18.75	11.36	14.28	86
12:40	10.22	23.38	11.36	14.28	86
12:41	10.29	27.49	11.05	14.16	86
12:42	11.17	27.40	10.09	14.16	86
12:43	11.49	22.54	10.09	14.04	86
12:44	12.89	17.10	10.09	14.04	86
12:45	13.75	18.38	10.09	14.04	86
12:46	14.18	19.96	10.09	14.28	86
12:47	10.21	18.79	10.09	14.28	86
12:48	10.37	21.91	10.09	14.28	86
12:49	11.42	23.62	10.09	14.16	86
12:50	10.44	17.89	10.09	13.91	86
12:51	11.41	18.21	10.09	14.04	86
12:52	11.60	18.58	10.09	13.91	86
12:53	11.70	18.67	10.09	13.79	86

12:54	11.67	17.43	10.09	13.79	86
12:55	12.01	19.06	11.36	13.91	86
12:56	12.15	19.42	11.36	13.67	86
12:57	12.08	17.79	11.36	13.50	88
12:58	12.35	18.24	11.36	13.75	88
13:11	10.49	16.73	11.36	13.13	88
13:12	10.98	16.83	11.36	13.26	88
13:13	11.19	17.45	11.36	13.50	88
13:14	10.01	14.62	11.36	13.38	88
13:15	10.75	15.72	11.36	13.38	88
13:16	10.97	16.24	11.36	13.26	88
13:17	10.19	14.68	11.36	12.76	88
13:18	9.89	14.24	11.36	13.01	88
13:19	10.02	14.94	11.36	13.38	88
13:20	10.39	15.28		13.67	86
13:21	9.36	18.40	11.01	13.79	86
13:22	10.05	18.83	10.33	14.04	86
13:23	9.57	19.00	10.33	14.04	86
13:24	10.19	14.56	10.33	14.16	86
13:25	12.32	14.27	10.33	14.16	86
13:26	13.25	15.18	10.33	14.28	86
13:27	12.23	15.36	10.33	14.28	86
13:28	9.90	17.71	10.33	14.28	86
13:29	9.86	19.87	10.33	14.40	86
13:30	10.65	21.40	10.33	14.28	86
13:31	10.18	15.60	10.33	14.28	86
13:32	10.68	15.61	10.33	14.28	86
13:33	11.12	16.85	10.33	14.16	86
13:34	10.83	16.54	10.41	14.04	86
13:35	11.02	16.58	10.49	14.16	86
13:36	11.32	17.46	10.49	14.16	86
13:37	11.80	18.72	10.49	14.16	86
13:38	11.16	16.87	10.49	13.91	86
13:39	11.67	17.74	10.49	13.91	86
13:40	11.83	19.48	10.49	13.91	86
13:41	11.76	21.07	10.49	14.04	86
13:42	10.72	26.95	10.49	13.91	86
13:43	10.84	27.46	10.49	13.91	86
13:44	12.02	27.49	10.49	13.79	86
13:45	12.13	16.91	10.49	14.04	86
13:46	14.20	18.59	10.49	13.91	86
13:47	14.72	18.88	10.57	14.04	86
13:48	10.20	18.91	10.81	14.04	86
13:49	10.49	20.50	10.81	14.04	86
13:50	10.64	21.34	10.81	13.91	86
13:51	9.81	19.72	10.81	13.79	86
13:52	10.72	17.56	10.81	14.04	86
13:53	11.25	17.88	10.81	14.04	86
13:54	11.76	19.00	10.81	14.04	86
13:55	11.35	16.23	10.81	13.91	86
13:56	11.84	17.84	10.81	14.04	86
13:57	12.18	18.49	10.81	14.04	86

13:58	11.13	16.98	10.81	13.79	86	
13:59	11.54	17.46	10.81	13.91	86	
14:00	11.62	18.23	10.81	14.04	86	
14:01	11.79	19.63	10.81	14.04	86	
14:02	10.27	24.31	10.81	14.04	86	
14:03	10.12	26.32	10.81	14.04	86	
14:04	10.50	26.14	10.81	14.04	86	
14:05	12.31	16.55	10.81	14.16	86	
14:06	14.17	18.18	10.81	14.16	86	
14:07	14.43	17.90	10.81	14.16	86	
14:08			10.81			
14:09			10.81			
14:10			10.81			
14:11			10.81			
14:12			10.81			
14:13			10.81			

Average	11.23	18.60	10.71	14.01	86.20	187
Minimum	9.08	14.10	10.09	12.76	86.00	
Maximum	14.72	27.49	11.36	14.53	88.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 9

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	24.17	36.8	13.9
Train B	23.93	36.4	13.7
Average	24.05	36.6	13.8

RCA #1 Testing - Run 10: Mid-high PM concentration

8/29/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	Temp. deg C
15:23	10.58	16.44		13.91	86
15:24	10.78	16.82		14.10	85
15:25	11.41	17.91		14.16	86
15:26	10.74	19.51		14.16	86
15:27	9.60	27.40		14.16	86
15:28	10.27	26.62		14.16	86
15:29	10.49	23.14		14.16	86
15:30	13.15	16.45		14.04	86
15:31	13.61	18.17		14.16	86
15:32	14.15	18.32		14.16	86
15:33	9.52	18.04	10.69	14.04	86
15:34	9.96	21.04	11.36	14.04	86
15:35	10.54	21.55	11.36	14.04	86
15:36	11.04	17.78	11.36	14.04	86
15:37	10.51	17.80	11.36	14.16	86
15:38	11.15	18.28	11.36	14.16	86
15:39	10.90	18.38	11.36	14.04	86
15:40	11.15	16.04	11.36	14.04	86
15:41	11.30	17.42	11.36	14.16	86
15:42	11.69	18.02	11.36	14.16	86
15:43	11.20	17.28	11.36	13.79	86
15:44	11.62	17.75	11.36	14.04	86
15:45	11.37	17.87	11.36	13.91	86
15:46	11.37	19.63	11.28	14.04	86
15:47	10.18	25.93	11.05	14.04	86
15:48	9.83	26.17	11.05	14.16	86
15:49	11.36	25.51	11.05	14.16	86
15:50	12.55	16.04	11.05	14.16	86
15:51	14.66	18.94	11.05	14.28	86
15:52	14.35	19.11	11.05	14.40	86
15:53	10.93	18.70	11.05	14.40	86
15:54	10.11	21.67	11.05	14.40	86
15:55	10.69	22.36	11.05	14.28	86
15:56	11.82	20.68	11.05	14.28	86
15:57	10.91	18.72	11.05	14.16	86
15:58	11.58	19.20	11.05	14.16	86
15:59	12.24	19.48	11.05	14.16	86
16:00	11.56	18.05	11.36	14.04	86
16:01	12.39	19.84	11.36	14.16	86
16:02	12.64	20.74	11.36	14.40	86
16:03	12.48	19.96	11.36	14.16	86
16:04	12.48	19.90	11.36	14.40	86
16:05	12.83	20.77	11.36	14.40	86
16:06	12.94	22.09	11.36	14.40	86
16:07	10.34	31.09	11.36	14.40	86
16:08	10.66	32.26	11.36	14.40	86
16:09	11.30	32.26	11.36	14.16	86
16:10	12.60	21.28	11.36	14.04	86
16:11	14.72	20.80	11.36	14.04	86

16:12	14.96	21.79	11.36	14.16	86
16:13	13.35	20.05	12.26	14.27	86
16:14	10.49	23.56	12.56	14.44	84
16:15	11.08	25.69	12.56	14.44	84
16:16	12.66	25.66	12.56	14.44	84
16:17	12.02	21.13	12.56	14.44	84
16:18	12.42	21.88	12.56	14.44	84
16:19	12.76	21.10	12.56	14.44	84
16:20	12.49	20.80	12.56	14.20	84
16:21	13.38	22.09	12.56	14.20	84
16:22	13.41	22.21	12.56	14.27	86
16:23	13.05	22.69	12.56	13.91	86
16:24	12.64	20.08	12.56	13.91	86
16:25	13.01	21.58	12.56	13.91	86
16:26	13.55	22.12	12.56	13.91	86
16:27	10.48	27.76	12.56	13.91	86
16:28	10.89	31.48	12.56	13.79	86
16:29	12.55	31.27	12.56	14.16	86
16:30	11.72	24.52	12.56	14.16	86
16:31	14.96	21.16	12.56	14.16	86
16:32	16.08	21.97	12.56	14.28	86
16:33	15.15	21.22	12.56	14.16	86
16:34	10.24	21.43	12.56	14.16	86
16:35	10.53	23.20	12.56	14.16	86
16:36	11.87	24.70	12.56	14.16	86
16:36	10.44	22.51	12.56	14.16	86
16:38	11.79	19.90	12.56	14.16	86
16:38	11.52	19.54	12.56	14.16	86
16:39	12.89	19.93	12.01	14.28	86
16:40	11.57	18.88	11.45	14.40	86
16:41	12.07	18.91	11.45	14.53	86
16:41	12.22	19.12	11.45	14.53	86
16:42	12.92	21.49	11.45	14.65	86
16:43	13.09	22.48	11.45	14.40	86
16:44	12.35	19.84	11.45	14.40	86
16:45	12.91	21.67	11.45	14.40	86
16:45	12.91	21.49	11.45	14.40	86
16:46	12.98	22.30	11.45	14.28	86
16:47	11.16	27.88	11.45	14.04	86
16:48	11.21	32.14	11.45	13.67	86
16:49	10.60	33.70	11.45	13.67	86
16:50	12.27	23.89	11.45	13.79	86
16:51	15.26	21.19	11.45	13.91	86
16:52	15.12	21.94	11.49	14.16	86
16:53	14.23	21.76	11.61	14.28	86
16:54	10.07	22.27	11.61	14.28	86
16:55	10.91	23.65	11.61	14.28	86
16:56	11.52	24.70	11.61	14.28	86
16:57	10.94	18.97	11.61	14.28	86
16:58	11.69	19.19	11.61	14.28	86
16:59	12.14	19.21	11.61	14.24	85
17:00	11.49	18.76	11.61	14.08	84

17:01	11.47	17.33	11.61	14.08	84	
17:02	11.65	18.10	11.61	14.08	84	
17:03	11.91	18.61	11.61	14.08	84	
17:04	10.96	16.79	11.61	13.84	84	
17:05	11.01	17.81	11.61	14.08	84	
17:06	11.63	18.74	11.61	14.20	84	
17:07	10.80	20.80	11.61	14.28	86	
17:08	9.96	27.55	11.61	14.28	86	
17:09	10.93	26.98	11.61	14.28	86	
17:10	11.12	24.25	11.61	14.28	86	
17:11	13.14	17.00	11.61	14.16	86	
17:12	13.81	18.16	11.61	14.16	86	
17:13	14.66	17.79	11.61	14.16	86	
11:22			11.61			
11:23			11.61			
11:24			11.61			
11:25			11.61			
11:26			11.61			
11:27			11.42			
11:28			11.36			
11:29			11.36			
11:30			11.36			
11:31			11.36			
11:32			11.36			
11:33			11.36			
11:34			11.36			
11:35			11.36			
			11.36			
			11.36			
			11.36			
			11.36			
Average	11.92	21.53	11.65	14.18	85.72	186
Minimum	9.52	16.04	10.69	13.67	84.00	
Maximum	16.08	33.70	12.56	14.65	86.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 10

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	25.94	39.8	14.2
Train B	27.3	42.2	14.7
Average	26.62	41	14.45

RCA #1 Testing - Run 11: Mid PM concentration

8/30/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	Temp. deg C
10:30	9.19	12.74		12.16	92
10:31	8.68	11.37		12.16	92
10:32	9.23	12.16		12.15	92
10:33	9.22	12.44		11.97	90
10:34	8.74	11.77		11.48	90
10:35	8.82	12.11		11.72	90
10:36	8.84	12.99		11.85	90
10:37	8.72	13.56		11.71	90
10:38	8.46	15.91		11.78	88
10:39	9.39	14.52		11.91	88
10:40	9.03	15.35	7.78	11.91	88
10:41	9.46	10.82	7.62	12.03	88
10:42	10.71	11.40	7.62	12.03	88
10:43	11.03	11.68	7.62	12.27	88
10:44	9.05	11.48	7.62	12.27	88
10:45	8.74	13.37	7.62	12.40	88
10:46	8.72	14.26	7.62	12.40	88
10:47	9.42	13.44	7.62	12.40	88
10:48	9.06	11.85	7.62	12.52	88
10:49	9.63	12.20	7.62	12.64	88
10:50	9.61	12.20	7.62	12.47	87
10:51	8.96	11.74	7.62	12.45	86
10:52	9.40	12.53	7.62	12.45	86
10:53	9.55	12.75	7.62	12.57	86
10:54	9.02	12.29	7.62	12.21	86
10:55	9.03	12.82	7.62	12.21	86
10:56	9.33	13.12	7.62	12.21	86
10:57	9.23	13.73	7.62	12.21	86
10:58	8.12	16.53	7.62	12.21	86
10:59	8.65	18.29	7.62	12.21	86
11:00	9.34	17.12	7.62	12.21	86
11:01	9.53	12.66	7.62	12.33	86
11:02	11.06	12.05	7.62	12.21	86
11:03	11.39	12.70	7.62	12.33	86
11:04	9.75	12.13	7.62	12.21	86
11:05	8.73	14.45	7.62	12.21	86
11:06	8.58	14.33	7.72	12.33	86
11:07	9.77	14.69	8.02	12.21	86
11:08	8.92	11.61	8.02	12.21	86
11:09	9.18	11.88	8.02	12.21	86
11:10	9.46	11.97	8.02	12.21	86
11:11	8.90	11.76	8.02	12.08	86
11:12	9.16	11.98	8.02	12.08	86
11:13	9.19	11.89	8.02	12.26	84
11:14	9.35	12.15	8.02	12.17	85
11:15	8.90	11.47	8.02	12.26	84
11:16	8.40	10.72	8.02	11.29	84
11:17	9.30	12.43	8.02	11.22	86
11:18	8.31	14.30	8.02	11.98	87

11:19	8.35	17.38	8.02	11.91	88
11:20	9.16	16.99	7.30	12.03	88
11:21	8.99	13.91	7.30	12.15	88
11:22	11.01	12.20	7.30	12.10	87
11:23	10.88	12.86	7.30	12.21	86
11:24	10.28	12.35	7.30	12.21	86
11:25	8.30	12.58	7.30	11.96	86
11:26	8.64	14.13	7.30	12.33	86
11:27	9.12	14.69	7.30	12.33	86
11:28	8.57	10.86	7.30	12.33	86
11:29	8.94	11.34	7.30	12.45	86
11:30	9.16	11.41	7.30	12.38	84
11:31	8.71	11.46	7.30	12.26	84
11:32	8.91	10.84	7.30	12.26	84
11:33	8.83	11.65	8.33	12.26	84
11:34	8.97	11.80	8.33	12.14	84
11:35	8.42	11.20	8.33	12.02	84
11:36	8.64	11.80	8.33	12.26	84
11:37	8.72	12.27	8.33	12.26	84
11:38	8.35	12.85	8.33	12.14	84
11:39	7.99	16.42	8.33	11.90	84
11:40	8.28	16.03	8.33	12.02	84
11:41	8.86	14.87	8.33	12.02	84
11:42	9.96	11.02	8.33	12.02	84
11:43	10.72	11.37	8.33	12.14	84
11:44	11.07	12.14	8.33	12.02	84
11:45	7.95	11.90	8.33	12.02	84
11:46	8.33	13.10	7.62	12.02	84
11:47	8.41	13.57	7.38	11.77	84
11:48	8.34	11.20	7.38	11.65	84
11:49	8.76	11.05	7.38	11.65	84
11:50	8.95	11.32	7.38	11.77	84
11:51	8.90	11.28	7.38	11.77	84
11:52	7.98	9.65	7.38	12.02	84
11:53	8.80	11.12	7.38	12.50	84
11:54	8.99	11.41	7.38	12.62	84
11:55	8.84	11.14	7.38	12.50	84
11:56	8.45	10.93	7.38	12.62	84
11:57	8.90	11.84	7.38	12.50	84
11:58	8.83	11.75	7.38	12.38	84
11:59	8.40	13.72	7.22	12.14	84
12:00	8.47	16.07	7.05	12.26	84
12:01	8.78	15.60	7.05	12.14	84
12:02	8.93	12.25	7.05	12.26	84
12:03	10.36	11.27	7.05	12.26	84
12:04	10.87	11.51	7.05	12.38	84
12:05	9.60	12.10	7.05	12.38	84
12:06	8.47	12.79	7.05	12.38	84
12:07	8.50	13.38	7.05	12.26	84
12:08	8.36	13.75	7.05	11.90	84
12:09	8.60	11.00	7.05	12.38	84
12:10	8.77	10.97	7.05	12.50	84

12:11	9.22	11.36	7.05	12.50	84	
12:12	8.69	10.27	7.21	12.38	84	
12:13	8.77	10.73	7.70	12.38	84	
12:14	8.79	11.19	7.70	12.50	84	
12:15	9.01	11.53	7.70	12.38	84	
12:16	8.60	10.45	7.70	12.02	84	
12:17	8.78	11.22	7.70	12.38	84	
12:18	8.83	11.52	7.70	12.38	84	
12:19	8.36	11.94	7.70	12.02	84	
12:20	8.76	15.28	7.70	11.90	84	
12:21			7.70			
12:22			7.70			
12:23			7.70			
12:24			7.70			
12:25			7.70			
12:26			7.13			
12:27			7.13			
12:28			7.13			
12:29			7.13			
12:30			7.13			
12:31			7.13			
12:32			7.13			
12:33			7.13			
12:34			7.13			
12:35			7.13			
12:36			7.13			
12:37			7.13			
12:38			7.13			
Average	9.07	12.62	7.57	12.17	85.66	186
Minimum	7.95	9.65	7.05	11.22	84.00	
Maximum	11.39	18.29	8.33	12.64	92.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 11

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	12.5	18.7	11.9
Train B	13.44	20.2	12.1
Average	12.97	19.45	12

RCA #1 Testing - Run 12: Mid-high PM concentration

8/30/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	Temp. deg C
13:22	9.74	21.19		12.50	84
13:23	10.55	14.76		12.50	84
13:24	12.85	15.32		12.50	84
13:26	11.06	14.52		12.62	84
13:27	9.42	17.27		12.62	84
13:28	9.43	17.94		12.62	84
13:30	10.15	13.93		12.74	84
13:31	10.64	14.64		12.74	84
13:32	10.94	14.80	9.30	12.74	84
13:33	10.02	13.87	9.30	12.62	84
13:34	10.48	14.80	9.30	12.74	84
13:35	10.52	14.88	9.30	12.87	84
13:36	10.63	15.35	9.30	12.62	84
13:37	10.17	13.48	9.30	12.62	84
13:38	10.49	14.51	9.30	12.62	84
13:39	10.31	14.98	9.30	12.50	84
13:40	10.22	16.42	9.30	12.50	84
13:41	9.69	20.29	9.30	12.50	84
13:42	9.95	19.81	9.30	12.50	84
13:43	9.83	15.82	9.30	12.50	84
13:44	12.39	14.64	9.30	12.50	84
13:45	12.31	14.23	8.18	12.62	84
13:46	11.36	14.79	8.18	12.62	84
13:47	9.40	14.77	8.18	12.62	84
13:48	9.83	16.16	8.18	12.74	84
13:49	9.69	16.61	8.18	12.62	84
13:50	9.29	12.46	8.18	12.62	84
13:51	9.93	13.41	8.18	12.74	84
13:52	10.03	13.02	8.18	12.74	84
13:53	9.72	12.76	8.18	12.74	84
13:54	9.64	12.43	8.18	12.62	84
13:55	9.81	13.29	8.18	12.62	84
13:56	10.12	13.72	8.18	12.26	84
13:57	9.72	12.52	8.18	11.53	84
13:58	10.02	13.23	8.23	11.77	84
13:59	9.68	13.52	8.25	12.02	84
14:00	9.66	13.95	8.25	11.90	84
14:01	9.20	17.15	8.25	11.90	84
14:02	9.50	17.60	8.25	12.02	84
14:03	8.94	18.30	8.25	12.14	84
14:04	10.55	11.71	8.25	12.14	84
14:05	11.92	13.31	8.25	12.50	84
14:06	12.44	13.95	8.25	12.62	84
14:07	10.08	13.17	8.25	12.74	84
14:08	9.75	15.63	8.25	12.74	84
14:09	9.55	15.65	8.25	12.74	84
14:10	9.27	13.60	8.25	12.50	84
14:11	9.86	12.57	8.81	12.50	84
14:12	10.13	12.86	9.37	12.62	84

14:13	10.43	13.13	9.37	12.62	84
14:14	9.02	11.62	9.37	12.38	84
14:15	9.36	10.88	9.37	12.38	84
14:16	9.67	11.77	9.37	12.62	84
14:17	9.74	13.68	9.37	12.74	84
14:18	10.17	13.80	9.37	12.74	84
14:19	9.65	12.80	9.37	12.50	84
14:20	9.90	13.39	9.37	12.74	84
14:21	9.91	13.70	9.37	12.74	84
14:22	10.32	14.14	9.37	12.74	84
14:23	8.97	16.42	9.37	12.74	84
14:24	9.91	18.27	9.05	12.62	84
14:25	9.51	18.75	8.10	12.62	84
14:26	9.89	13.10	8.10	12.50	84
14:27	11.83	13.21	8.10	12.62	84
14:28	12.42	13.69	8.10	12.62	84
14:29	10.63	12.83	8.10	12.62	84
14:30	9.35	15.33	8.10	12.62	84
14:31	9.29	15.81	8.10	12.62	84
14:32	9.12	15.15	8.10	12.50	84
14:33	10.05	12.70	8.10	12.74	84
14:34	10.50	12.39	8.10	12.74	84
14:35	10.32	13.32	8.10	12.74	84
14:36	9.97	12.15	8.10	12.62	84
14:37	9.95	13.54	8.10	12.74	84
14:38	10.06	13.96	8.33	12.74	84
14:39	10.52	14.18	8.33	12.74	84
14:40	9.93	12.64	8.33	12.50	84
14:41	9.89	13.53	8.33	12.62	84
14:42	9.96	13.72	8.33	12.62	84
14:43	9.53	14.85	8.33	12.62	84
14:44	9.41	19.30	8.33	12.50	84
14:45	9.54	19.35	8.33	12.62	84
14:46	9.53	15.59	8.33	12.50	84
14:47	11.99	13.73	8.33	12.62	84
14:48	12.13	14.40	8.33	12.50	84
14:49	11.49	14.40	8.33	12.50	84
14:50	9.25	14.66	8.33	12.38	84
14:51	9.50	15.61	8.27	12.38	84
14:52	9.99	15.97	8.25	12.38	84
14:53	9.51	12.71	8.25	12.26	84
14:54	10.15	13.06	8.25	12.50	84
14:55	10.43	13.73	8.25	12.50	84
14:56	10.32	12.82	8.25	12.38	84
14:57	9.64	11.42	8.25	12.38	84
14:58	10.02	13.92	8.25	12.38	84
14:59	10.19	14.16	8.25	12.38	84
15:00	10.20	13.98	8.25	12.14	84
15:01	10.05	13.00	8.25	12.14	84
15:02	10.06	13.57	8.25	12.38	84
15:03	10.41	14.24	8.25	12.38	84
15:04	9.73	16.00	8.14	12.26	84

15:05	9.96	19.32	8.02	12.26	84	
15:06	9.37	19.03	8.02	12.26	84	
15:07	9.97	15.17	8.02	12.14	84	
15:08	12.30	13.75	8.02	12.14	84	
15:09	12.59	14.09	8.02	12.14	84	
15:10	11.68	13.53	8.02	12.26	84	
15:11	9.43	15.16	8.02	12.38	84	
15:12	9.35	16.45	8.02	12.38	84	
15:13			8.02			
15:14			8.02			
15:15			8.02			
15:16			8.02			
15:17			8.04			
15:18			8.10			
15:19			8.10			
15:20			8.10			
15:21			8.10			
15:22			8.10			
15:23			8.10			
15:24			8.10			
15:25			8.10			
15:26			8.10			
15:27			8.10			
15:28			8.10			
15:29			8.10			
15:30			8.10			

Average	10.17	14.59	8.42	12.50	84.00	183
Minimum	8.94	10.88	8.02	11.53	84.00	
Maximum	12.85	21.19	9.37	12.87	84.00	
	ESC P5B	**DR 300-40**	**F904K**	**Moisture**	**Temp**	

Run 12

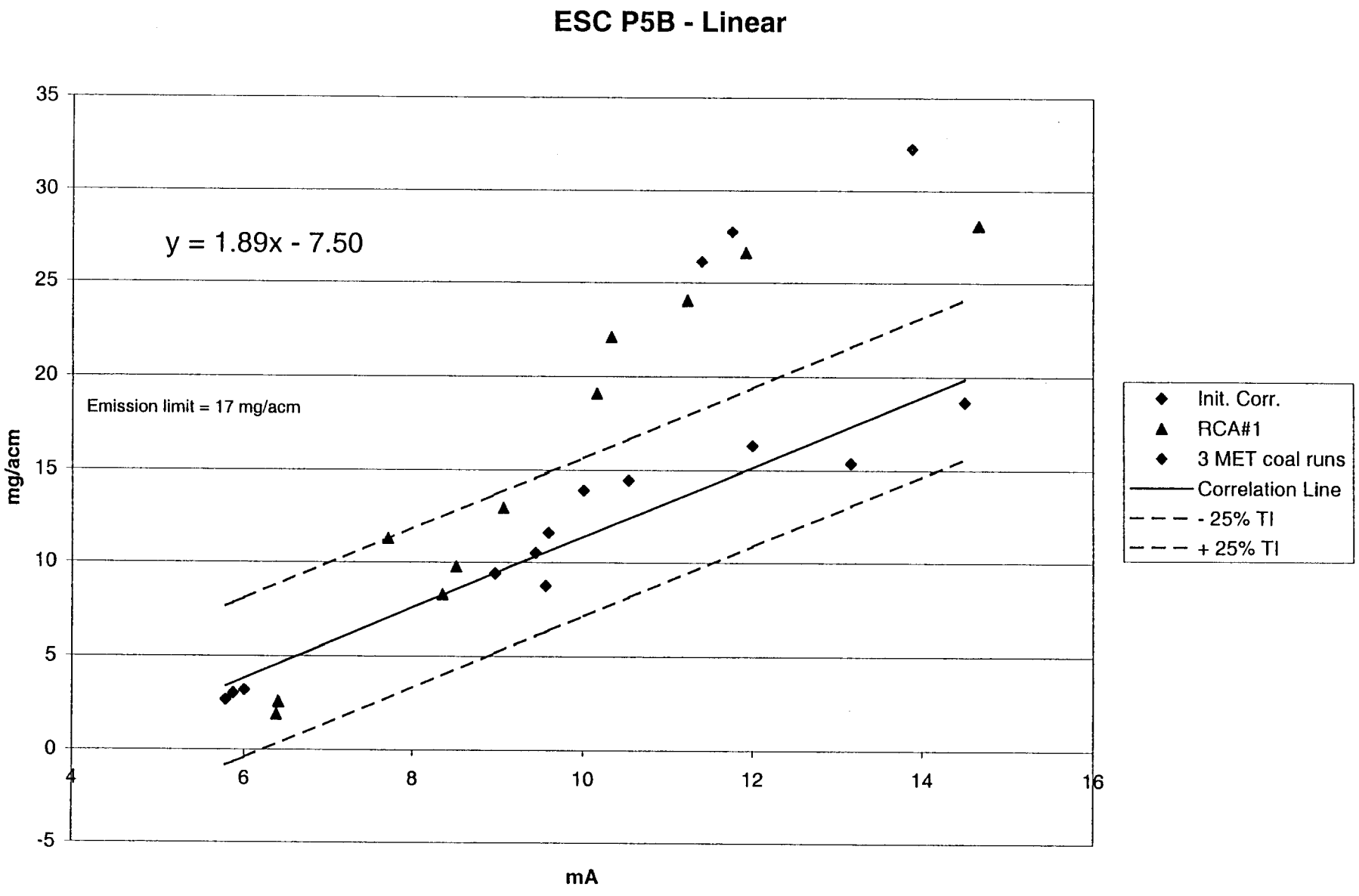
M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	18.92	28.4	12.6
Train B	19.28	28.9	12.3
Average	19.1	28.65	12.45

RCA #1 Appendix G

Statistical Analysis Data and Graphs for PM CEMS

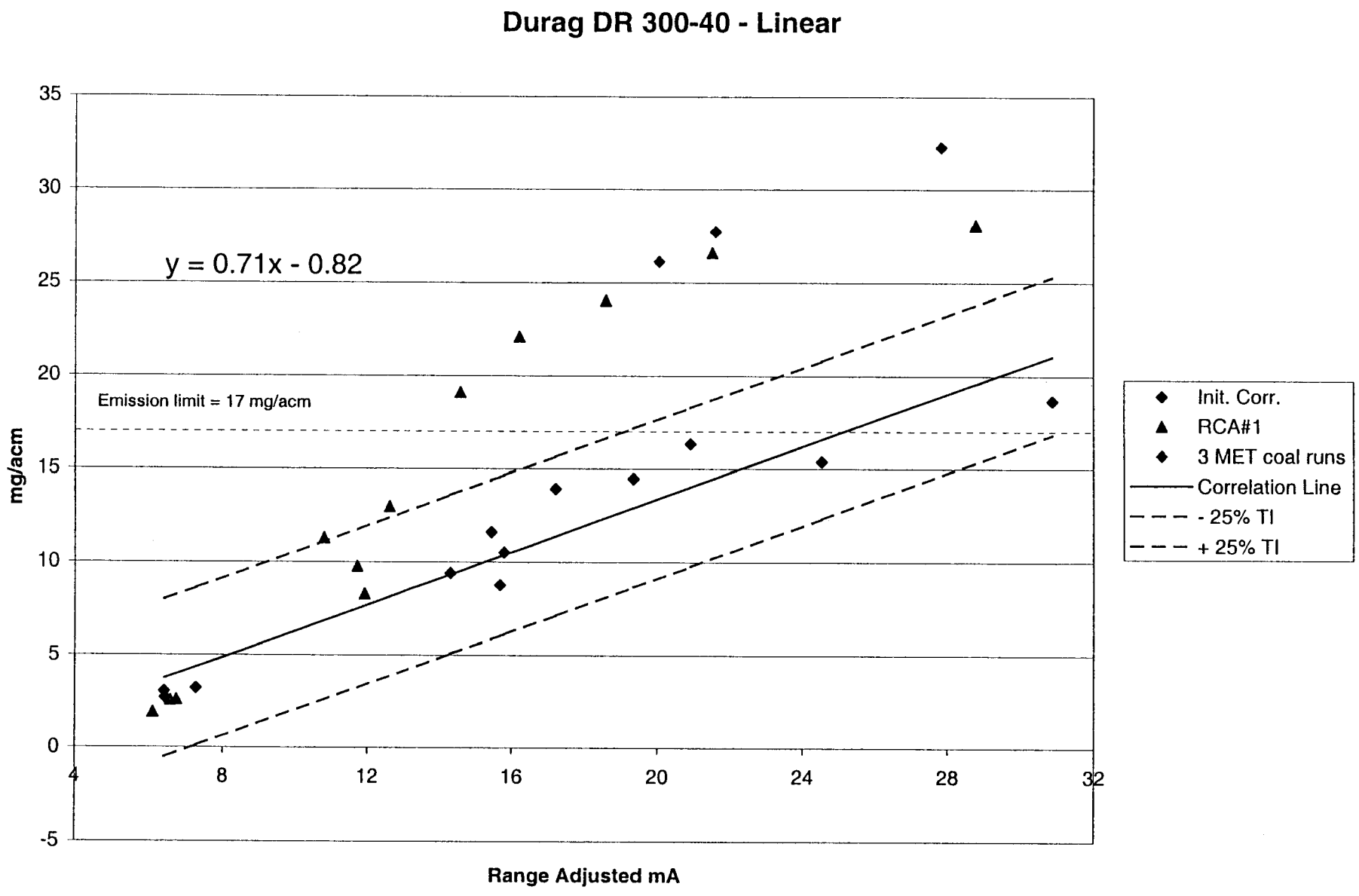
RCA #1 Appendix G1

Statistical Data and Graphs from Initial Correlation (Linear) and RCA #1 Test Results


ESC P5B - Linear
y = 1.89x - 7.50
Emission limit = 17 mg/acm
mg/acm
mA
35
30
25
20
15
10
5
0
-5
4
6
8
10
12
14
16
Init. Corr.
RCA#1
3 MET coal runs
Correlation Line
- 25% TI
+ 25% TI

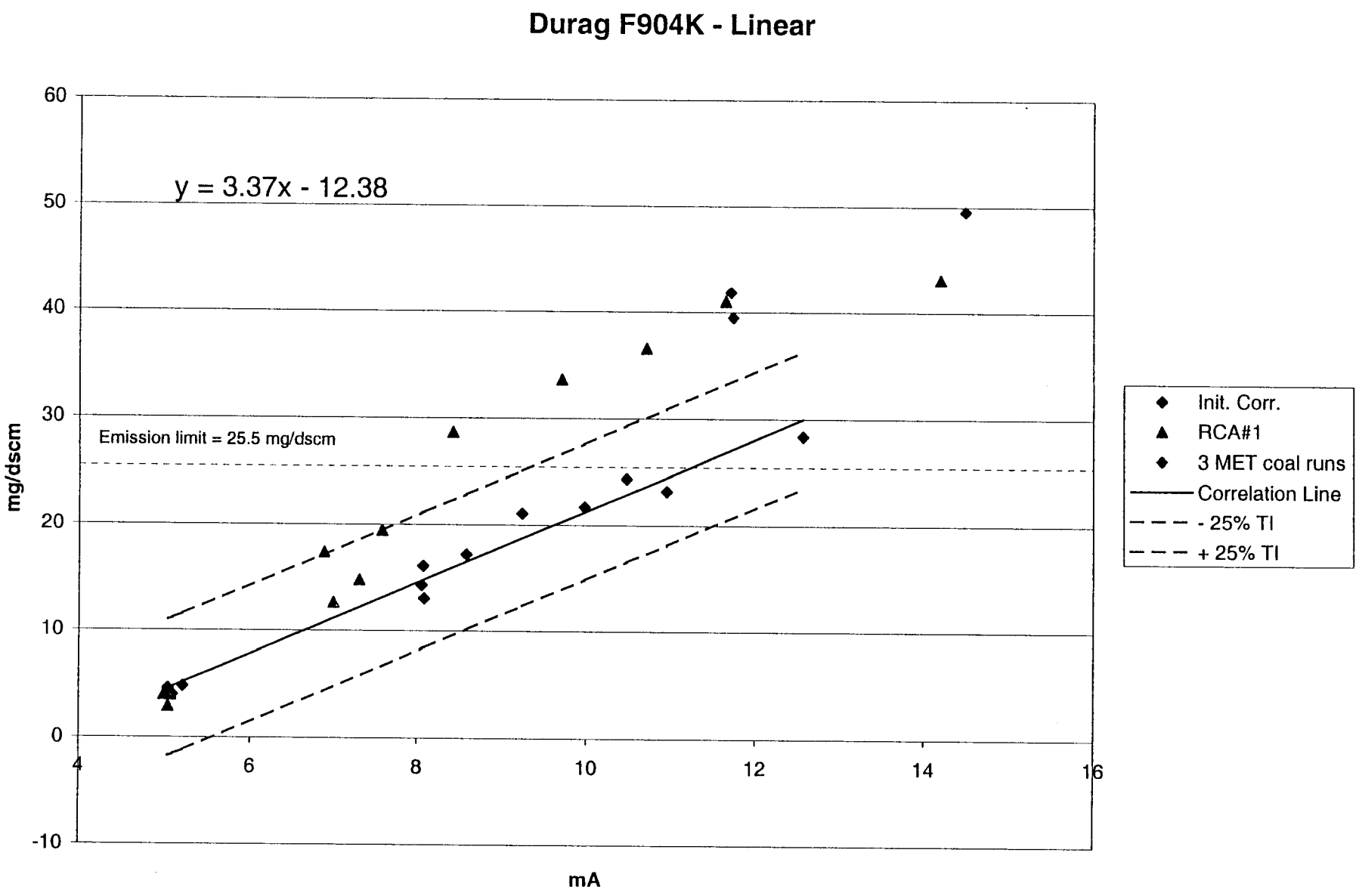
ESC Light Scatter - linear

Run	x (mA)	y (mg/acm)	ylin
17	5.78	2.68	3.4106
16	5.87	3.02	3.5805
18	6	3.2	3.8260
21	8.97	9.42	9.4340
20	9.45	10.52	10.3403
23	9.57	8.755	10.5669
13	9.6	11.61	10.6236
14	10.01	13.92	11.3978
15	10.54	14.46	12.3985
19	12	16.33	15.1553
22	13.16	15.385	17.3457
24	14.5	18.655	19.8759
1	14.66	28.09	
2	6.38	1.9	
3	6.41	2.54	
4	6.4	2.59	
5	8.51	9.77	
6	8.35	8.29	
7	7.7	11.295	
8	10.34	22.12	
9	11.23	24.05	
10	11.92	26.62	
11	9.07	12.97	
12	10.17	19.1	


Durag DR 300-40 - Linear
y = 0.71x - 0.82
Emission limit = 17 mg/acm
mg/acm
Range Adjusted mA
35
30
25
20
15
10
5
0
-5
4
8
12
16
20
24
28
32
Init. Corr.
RCA#1
3 MET coal runs
Correlation Line
- 25% TI
+ 25% TI

Durag light scatter - linear

Run	x (mA)	y (mg/acm)	ylin
16	6.42	3.02	3.7340
17	6.44	2.68	3.7482
18	7.28	3.2	4.3437
21	14.32	9.42	9.3348
13	15.45	11.61	10.1359
23	15.68	8.755	10.2990
20	15.8	10.52	10.3841
14	17.22	13.92	11.3908
15	19.36	14.46	12.9080
19	20.93	16.33	14.0210
22	24.54	15.385	16.5804
24	30.88	18.655	21.0752
1	28.77	28.09	
2	6.11	1.9	
3	6.59	2.54	
4	6.75	2.59	
5	11.72	9.77	
6	11.92	8.29	
7	10.8	11.295	
8	16.22	22.12	
9	18.6	24.05	
10	21.53	26.62	
11	12.62	12.97	
12	14.59	19.1	


Durag F904K - Linear
y = 3.37x - 12.38
Emission limit = 25.5 mg/dscm
mg/dscm
mA
60
50
40
30
20
10
0
-10
4
6
8
10
12
14
16
Init. Corr.
RCA#1
3 MET coal runs
Correlation Line
- 25% TI
+ 25% TI

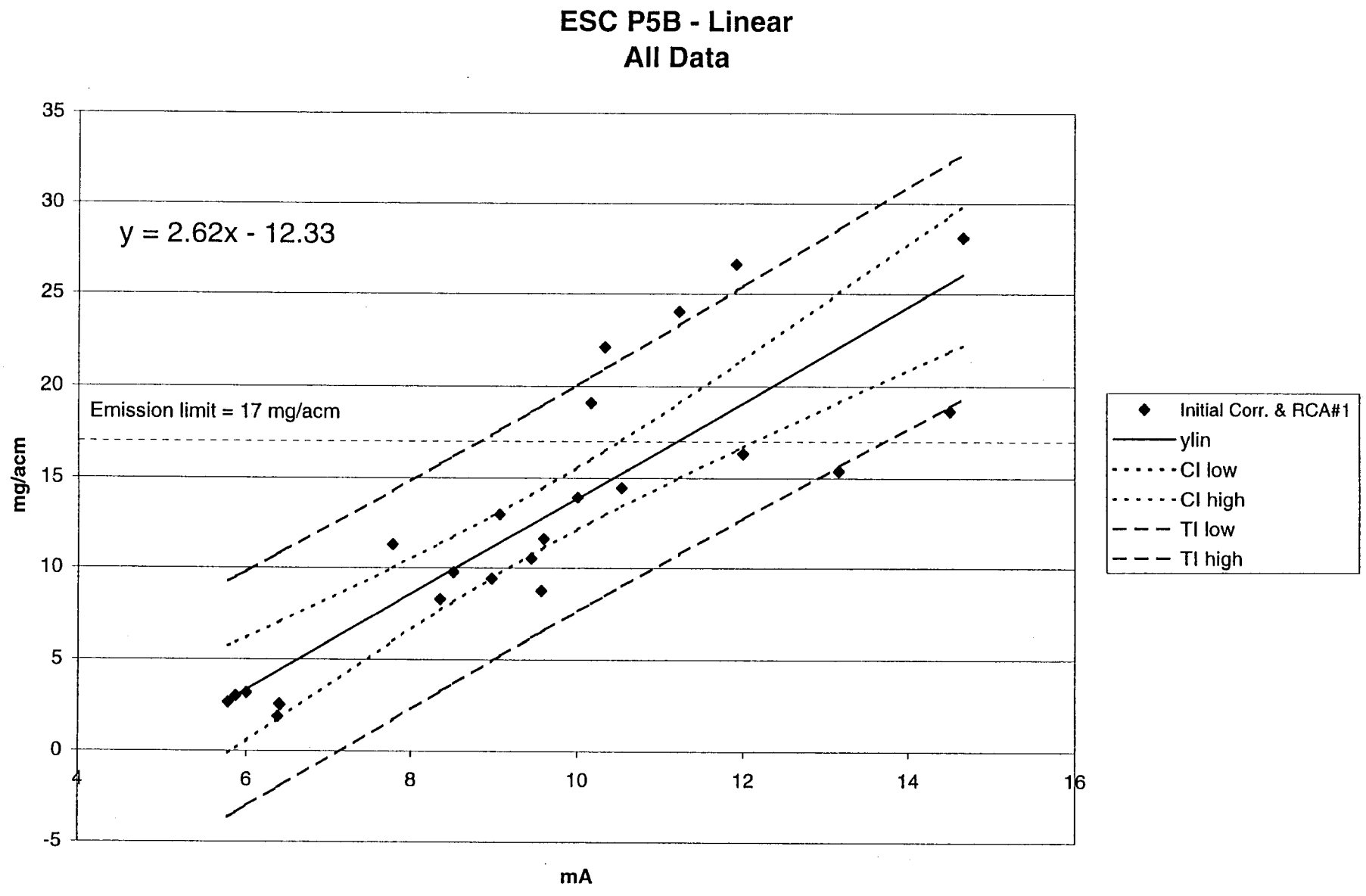
Durag Beta Gauge - linear

Run	x (mA)	y (mg/dscm)	ylin
16	5.04	4.6	4.6021
17	5.09	4	4.7706
18	5.21	4.8	5.1749
21	8.05	14.3	14.7441
20	8.07	16.1	14.8115
23	8.08	13.05	14.8452
13	8.58	17.2	16.5299
14	9.24	21.1	18.7537
15	9.98	21.75	21.2471
19	10.48	24.4	22.9318
22	10.95	23.25	24.5154
24	12.57	28.35	29.9739
1	14.2	43.05	
2	5.04	2.9	
3	5.07	3.95	
4	4.99	4	
5	7.3	14.8	
6	6.99	12.65	
7	6.88	17.4	
8	9.71	33.65	
9	10.71	36.6	
10	11.65	41	
11	7.57	19.45	
12	8.42	28.65	

RCA #1 Appendix G2

Statistical Analysis Data and Graphs for PM CEMS Using Combined Data from Initial Correlation Tests and RCA #1 Tests

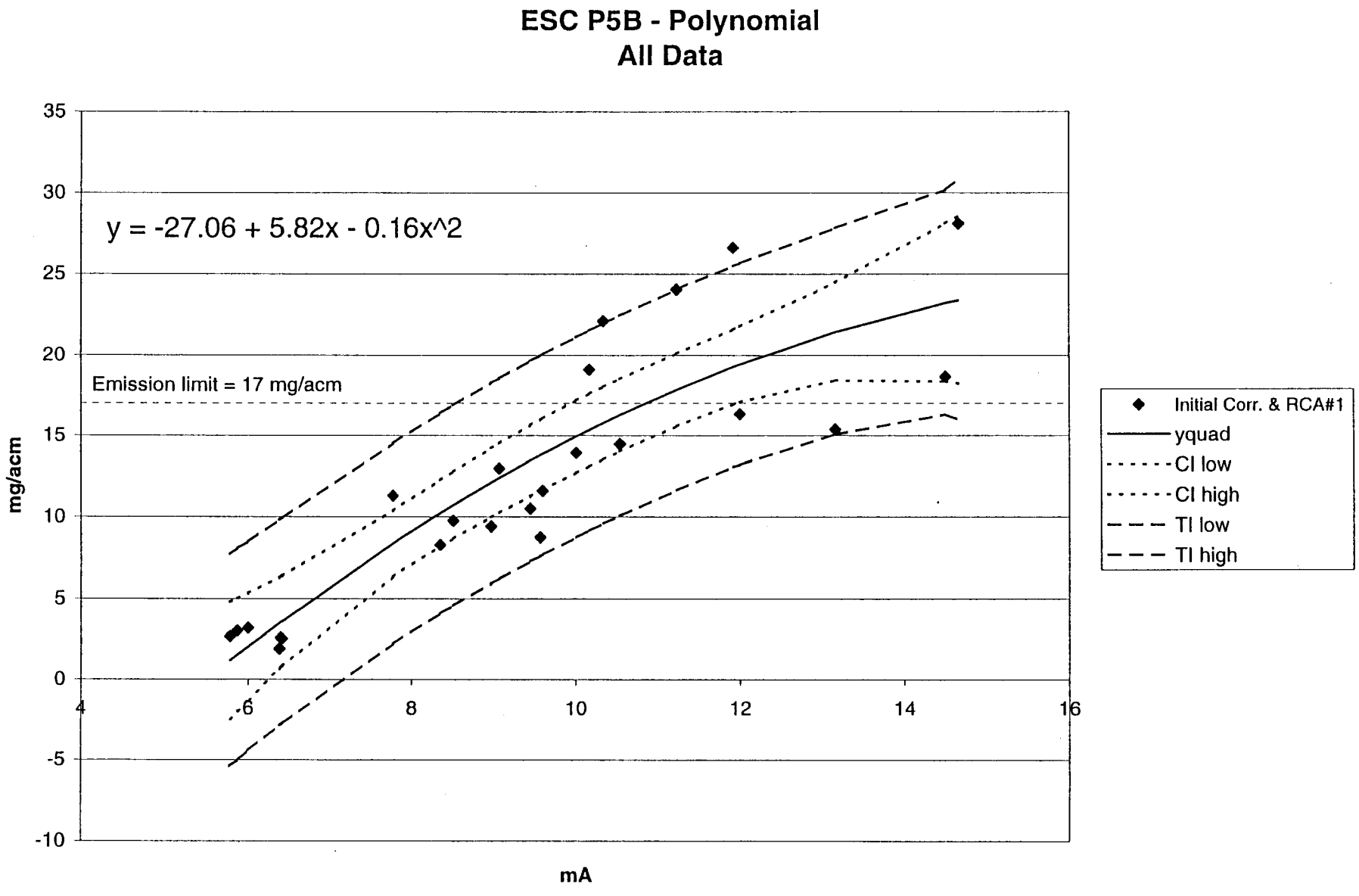
Note: In all statistical tables, Run Numbers 13-24 are from initial correlation tests while Run Numbers 1-12 are from the RCA tests.


ESC P5B - Linear
All Data
y = 2.62x - 12.33
Emission limit = 17 mg/acm
mg/acm
mA
35
30
25
20
15
10
5
0
-5
4
6
8
10
12
14
16
Initial Corr. & RCA#1
ylin
CI low
CI high
TI low
TI high

ESC P5B - Linear

Run	x (mA)	y (mg/acm) Initial Corr. & RCA#1	ylin	(x-xbar)^2	(y-ybar)^2	(x-xbar)(y-ybar)	CI low	CI high	CI %	nprime	un'	kt	TI low	TI high	TI %
17	5.78	2.68	2.7976	13.4261	94.2234	35.5676	-0.1323	5.7275	17.2347	7.8451	1.223	1.6327	-3.6627	9.2579	38.0016
16	5.87	3.025	3.0331	12.7747	87.6447	33.4609	0.1515	5.9148	16.9509	8.1100	1.223	1.6327	-3.4272	9.4934	38.0016
18	6	3.195	3.3733	11.8623	84.4906	31.6583	0.5606	6.1860	16.5453	8.5125	1.214	1.6207	-3.0394	9.7861	37.7220
2	6.38	1.895	4.3678	9.3891	110.0794	32.1489	1.7511	6.9845	15.3921	9.8358	1.208	1.6127	-2.0132	10.7489	37.5355
4	6.4	2.585	4.4201	9.2670	96.0768	29.8385	1.8136	7.0267	15.3329	9.9119	1.208	1.6127	-1.9609	10.8012	37.5355
3	6.41	2.545	4.4463	9.2062	96.8625	29.8619	1.8447	7.0479	15.3034	9.9502	1.208	1.6127	-1.9347	10.8274	37.5355
7	7.77	11.295	8.0055	2.8028	1.1922	1.8280	6.0024	10.0086	11.7828	16.7845	1.185	1.5820	1.7460	14.2651	36.8209
6	8.35	8.29	9.5234	1.1972	16.7844	4.4827	7.7010	11.3458	10.7202	20.2768	1.179	1.5740	3.2955	15.7512	36.6344
5	8.51	9.77	9.9421	0.8727	6.8480	2.4446	8.1584	11.7258	10.4924	21.1669	1.178	1.5726	3.7195	16.1647	36.6034
21	8.97	9.415	11.1460	0.2248	8.8320	1.4092	9.4422	12.8497	10.0221	23.2000	1.175	1.5686	4.9392	17.3527	36.5102
11	9.07	12.97	11.4077	0.1400	0.3400	-0.2182	9.7147	13.1007	9.9589	23.4955	1.175	1.5686	5.2009	17.6144	36.5102
20	9.45	10.52	12.4021	0.0000	3.4852	-0.0109	10.7270	14.0773	9.8537	23.9999	1.174	1.5673	6.2007	18.6036	36.4791
23	9.57	8.755	12.7162	0.0158	13.1905	-0.4570	11.0390	14.3933	9.8656	23.9419	1.174	1.5673	6.5147	18.9176	36.4791
13	9.6	11.61	12.7947	0.0243	0.6035	-0.1211	11.1165	14.4729	9.8720	23.9109	1.174	1.5673	6.5933	18.9961	36.4791
14	10.01	13.92	13.8677	0.3202	2.3505	0.8675	12.1519	15.5834	10.0927	22.8766	1.175	1.5686	7.6610	20.0744	36.5102
12	10.17	19.1	14.2864	0.5268	45.0660	4.8726	12.5449	16.0279	10.2440	22.2057	1.177	1.5713	8.0691	20.5037	36.5723
8	10.34	22.12	14.7313	0.8025	94.7337	8.7193	12.9561	16.5065	10.4425	21.3697	1.178	1.5726	8.5087	20.9539	36.6034
15	10.54	14.465	15.2547	1.2009	4.3186	2.2773	13.4319	17.0776	10.7228	20.2672	1.179	1.5740	9.0269	21.4826	36.6344
9	11.23	24.05	17.0605	3.1892	136.0285	20.8284	15.0163	19.1046	12.0245	16.1166	1.187	1.5846	10.7904	23.3306	36.8830
10	11.92	26.62	18.8662	6.1298	202.5818	35.2388	16.5330	21.1995	13.7251	12.3701	1.199	1.6007	12.5327	25.1997	37.2559
19	12	16.33	19.0756	6.5323	15.5482	10.0780	16.7055	21.4457	13.9418	11.9886	1.199	1.6007	12.7421	25.4091	37.2559
22	13.16	15.385	22.1114	13.8074	8.9888	11.1405	19.1536	25.0692	17.3987	7.6979	1.223	1.6327	15.6511	28.5717	38.0016
24	14.5	18.655	25.6182	25.5615	39.2894	31.6906	21.9024	29.3340	21.8576	4.8775	1.266	1.6901	18.9308	32.3056	39.3378
1	14.66	28.09	26.0370	27.2049	246.5881	81.9049	22.2272	29.8467	22.4105	4.6399	1.266	1.6901	19.3495	32.7244	39.3378
	11.2069		*17*	*3.1071874*			*14.9645*	*19.0355*	*11.9736*	*16.2539*	1.187	*1.5846*	*10.7299*	*23.2701*	*36.8830*
sum	226.66	297.285													

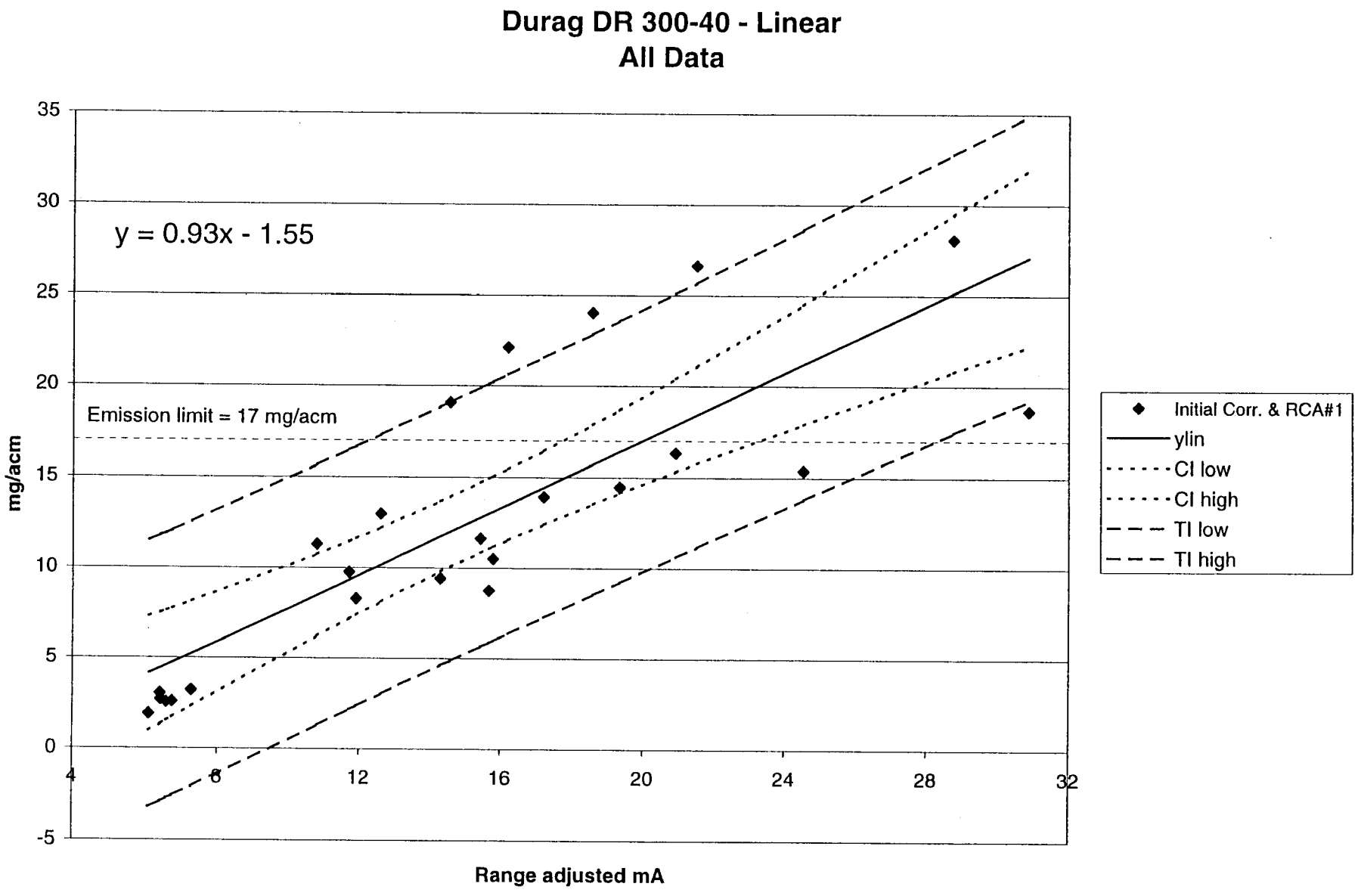
N	24	Sxx	156.4784	SL	3.956794
xbar	9.4442	Syy	1416.1470		
ybar	12.3869	Sxy	409.5113		
		f	22		
a	2.6170	tf	2.074		
b	-12.3290	vf	1.335		
R	0.86993	EL	17		


ESC P5B - Polynomial
All Data
y = -27.06 + 5.82x - 0.16x^2
Emission limit = 17 mg/acm
mg/acm
mA
35
30
25
20
15
10
5
0
-5
-10
4
6
8
10
12
14
16
Initial Corr. & RCA#1
yquad
CI low
CI high
TI low
TI high

ESC P5B - Polynomial

Run	x (mA)	y (mg/acm) Initial Corr. & RCAf	yquad	X2	X3	X4	XY	X2Y	(yhat-y)2	delta	CI low	CI high	CI %	n'	un'	kt	TI low	TI high	TI %	y-ybar2
17	5.78	2.68	1.1646	33.4084	193.1006	1116.121	15.4904	89.53451	2.2964	0.2058	-2.4635	4.7927	21.3418	4.8583	1.266	1.7040	-5.3868	7.7160	38.5379	94.2234
16	5.87	3.025	1.5184	34.4569	202.262	1187.278	17.75675	104.2321	2.2698	0.1907	-1.9741	5.0109	20.5439	5.2430	1.266	1.7040	-5.0330	8.0698	38.5379	87.6447
18	6	3.195	2.0248	36	216	1296	19.17	115.02	1.3694	0.1709	-1.2813	5.3309	19.4476	5.8508	1.247	1.6785	-4.4283	8.4779	37.9595	84.4906
2	6.38	1.895	3.4736	40.7044	259.6941	1656.848	12.0901	77.13484	2.4920	0.1252	0.6444	6.3028	16.6425	7.9893	1.223	1.6462	-2.8553	9.8025	37.2289	110.0794
4	6.4	2.585	3.5486	40.96	262.144	1677.722	16.544	105.8816	0.9285	0.1232	0.7415	6.3556	16.5121	8.1160	1.223	1.6462	-2.7804	9.8775	37.2289	96.0768
3	6.41	2.545	3.5860	41.0881	263.3747	1688.232	16.31345	104.5692	1.0837	0.1223	0.7899	6.3821	16.4475	8.1798	1.223	1.6462	-2.7429	9.9149	37.2289	96.8625
7	7.77	11.295	8.3741	60.3729	469.0974	3644.887	87.76215	681.9119	8.5315	0.0636	6.3578	10.3904	11.8606	15.7302	1.187	1.5977	2.2315	14.5167	36.1330	1.1922
6	8.35	8.29	10.2336	69.7225	582.1829	4861.227	69.2215	577.9995	3.7776	0.0641	8.2083	12.2589	11.9136	15.5905	1.187	1.5977	4.0910	16.3762	36.1330	16.7844
5	8.51	9.77	10.7274	72.4201	616.2951	5244.671	83.1427	707.5444	0.9166	0.0654	8.6828	12.7719	12.0267	15.2987	1.189	1.6004	4.5744	16.8803	36.1939	6.8480
21	8.97	9.415	12.1007	80.4609	721.7343	6473.956	84.45255	757.5394	7.2128	0.0699	9.9866	14.2148	12.4359	14.3082	1.192	1.6044	5.9322	18.2692	36.2853	8.8320
11	9.07	12.97	12.3901	82.2649	746.1426	6767.514	117.6379	1066.976	0.3363	0.0709	10.2604	14.5199	12.5280	14.0989	1.192	1.6044	6.2216	18.5586	36.2853	0.3400
20	9.45	10.52	13.4605	89.3025	843.9086	7974.937	99.414	939.4623	8.6465	0.0746	11.2765	15.6444	12.8468	13.4077	1.195	1.6085	7.2765	19.6445	36.3766	3.4852
23	9.57	8.755	13.7888	91.5849	876.4675	8387.794	83.78535	801.8258	25.3388	0.0756	11.5903	15.9872	12.9320	13.2316	1.195	1.6085	7.6047	19.9728	36.3766	13.1905
13	9.6	11.61	13.8701	92.16	884.736	8493.466	111.456	1069.978	5.1081	0.0758	11.6683	16.0719	12.9519	13.1911	1.195	1.6085	7.6861	20.0541	36.3766	0.6035
14	10.01	13.92	14.9525	100.2001	1003.003	10040.06	139.3392	1394.785	1.0660	0.0783	12.7148	17.1901	13.1626	12.7721	1.195	1.6085	8.7685	21.1365	36.3766	2.3505
12	10.17	19.1	15.3601	103.4289	1051.872	10697.54	194.247	1975.492	13.9870	0.0789	13.1137	17.6065	13.2141	12.6726	1.195	1.6085	9.1761	21.5441	36.3766	45.0660
8	10.34	22.12	15.7840	106.9156	1105.507	11430.95	228.7208	2364.973	40.1443	0.0794	13.5312	18.0369	13.2521	12.6001	1.195	1.6085	9.6000	21.9681	36.3766	94.7337
15	10.54	14.465	16.2708	111.0916	1170.905	12341.34	152.4611	1606.94	3.2610	0.0797	14.0135	18.5282	13.2787	12.5496	1.195	1.6085	10.0868	22.4549	36.3766	4.3186
9	11.23	24.05	17.8506	126.1129	1416.248	15904.46	270.0815	3033.015	38.4319	0.0804	15.5832	20.1181	13.3380	12.4384	1.199	1.6139	11.6459	24.0554	36.4983	136.0285
10	11.92	26.62	19.2760	142.0864	1693.67	20188.55	317.3104	3782.34	53.9341	0.0858	16.9339	21.6181	13.7769	11.6585	1.199	1.6139	13.0713	25.4807	36.4983	202.5818
19	12	16.33	19.4313	144	1728	20736	195.96	2351.52	9.6180	0.0871	17.0708	21.7918	13.8853	11.4771	1.203	1.6192	13.2059	25.6567	36.6201	15.5482
22	13.16	15.385	21.4494	173.1856	2279.122	29993.25	202.4666	2664.46	36.7765	0.1428	18.4276	24.4711	17.7752	7.0035	1.233	1.6596	15.0687	27.8300	37.5333	8.9888
24	14.5	18.655	23.2372	210.25	3048.625	44205.06	270.4975	3922.214	20.9968	0.3716	18.3622	28.1122	28.6765	2.6909	1.340	1.8036	16.3028	30.1716	40.7905	39.2894
1	14.66	28.09	23.4118	214.9156	3150.663	46188.72	411.7994	6036.979	21.8858	0.4181	18.2412	28.5823	30.4150	2.3920	1.433	1.9288	15.9961	30.8274	43.6214	246.5881
llmit	*10.85*		*16.9999*	*117.7246*	*1277.324*	*13859.09*				*0.0799*	*14.7392*	*19.2606*	*13.2982*	*12.5129*	1.195	*1.6085*	*10.8159*	*23.1840*	*36.3766*	

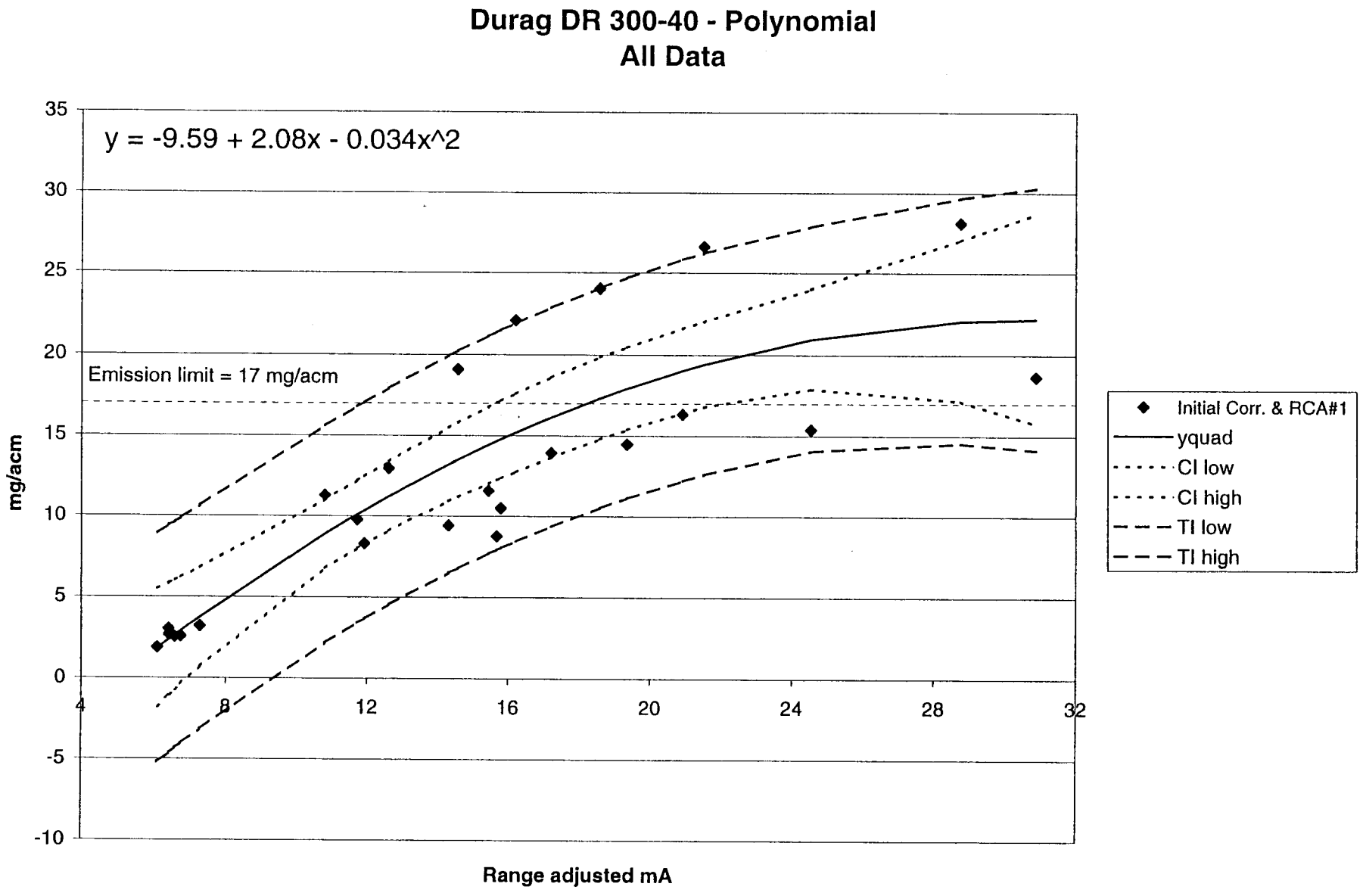
N	24								
S1	226.66	f	21	c0	6.9891	sy	7.84676		
S2	2297.0932			c1	-1.4473				
S3	24784.7554	sq	3.844658	c2	0.0702	r	0.87174		
S4	282196.577			c3	0.3080				
S5	297.285	vf	1.346	c4	-0.0153				
S6	3217.12035	tf	2.08	c5	0.0008				
S7	36332.328			D	4857274				
DETA	4857273.8								
b0	-27.06								
b1	5.821								
b2	-0.162	EL	17						
ybar	12.386875								


Durag DR 300-40 - Linear
All Data
y = 0.93x - 1.55
Emission limit = 17 mg/acm
mg/acm
Range adjusted mA
35
30
25
20
15
10
5
0
-5
4
8
12
16
20
24
28
32
Initial Corr. & RCA#1
ylin
CI low
CI high
TI low
TI high

Durag DR 300-40 - Linear

Run	x (mA)	y (mg/acm) ıitial Corr. & RCAI	ylin	(x-xbar)^2	(y-ybar)^2	(x-xbar)(y-ybar)	CI low	CI high	CI %	nprime	un'	kt	TI low	TI high	TI %
2	6.11	1.895	4.1205	79.4327	110.0794	93.5088	0.9591	7.2820	18.5967	8.8758	1.214	1.6207	-3.2395	11.4806	43.2943
16	6.42	3.025	4.4081	74.0030	87.6447	80.5355	1.3155	7.5007	18.1918	9.2753	1.214	1.6207	-2.9520	11.7681	43.2943
17	6.44	2.680	4.4266	73.6593	94.2234	83.3093	1.3384	7.5148	18.1658	9.3018	1.214	1.6207	-2.9334	11.7866	43.2943
3	6.59	2.545	4.5657	71.1071	96.8625	82.9916	1.5105	7.6210	17.9721	9.5035	1.208	1.6127	-2.7579	11.8894	43.0803
4	6.75	2.585	4.7141	68.4343	96.0768	81.0860	1.6938	7.7345	17.7669	9.7243	1.208	1.6127	-2.6095	12.0378	43.0803
18	7.28	3.195	5.2057	59.9463	84.4906	71.1681	2.2989	8.1125	17.0989	10.4988	1.208	1.6127	-2.1179	12.5294	43.0803
7	10.8	11.295	8.4705	17.8295	1.1922	4.6104	6.2100	10.7310	13.2973	17.3601	1.185	1.5820	1.2863	15.6547	42.2601
5	11.72	9.770	9.3238	10.9065	6.8480	8.6422	7.1881	11.4595	12.5628	19.4495	1.181	1.5766	2.1638	16.4838	42.1174
6	11.92	8.290	9.5093	9.6255	16.7844	12.7106	7.3975	11.6211	12.4221	19.8925	1.179	1.5740	2.3615	16.6571	42.0461
11	12.62	12.970	10.1586	5.7720	0.3400	-1.4010	8.1204	12.1967	11.9890	21.3557	1.178	1.5726	3.0168	17.3003	42.0104
21	14.32	9.415	11.7353	0.4935	8.8320	2.0877	9.8026	13.6680	11.3690	23.7486	1.174	1.5673	4.6178	18.8528	41.8678
12	14.59	19.100	11.9857	0.1871	45.0660	-2.9034	10.0593	13.9122	11.3319	23.9041	1.174	1.5673	4.8682	19.1033	41.8678
13	15.45	11.610	12.7834	0.1828	0.6035	-0.3321	10.8570	14.7097	11.3314	23.9063	1.174	1.5673	5.6659	19.9009	41.8678
23	15.68	8.755	12.9967	0.4323	13.1905	-2.3880	11.0652	14.9282	11.3616	23.7795	1.174	1.5673	5.8792	20.1142	41.8678
20	15.8	10.520	13.1080	0.6045	3.4852	-1.4515	11.1730	15.0430	11.3823	23.6928	1.174	1.5673	5.9905	20.2255	41.8678
8	16.22	22.120	13.4976	1.4340	94.7337	11.6554	11.5456	15.4495	11.4819	23.2837	1.175	1.5686	6.3740	20.6211	41.9035
14	17.22	13.920	14.4251	4.8290	2.3505	3.3690	12.4054	16.4448	11.8806	21.7472	1.177	1.5713	7.2893	21.5608	41.9748
9	18.6	24.050	15.7050	12.7985	136.0285	41.7248	13.5345	17.8755	12.7677	18.8301	1.181	1.5766	8.5450	22.8650	42.1174
15	19.36	14.465	16.4099	18.8139	4.3186	9.0139	14.1322	18.6876	13.3985	17.0989	1.185	1.5820	9.2257	23.5941	42.2601
19	20.93	16.330	17.8661	34.8986	15.5482	23.2940	15.3237	20.4084	14.9549	13.7249	1.192	1.5913	10.6394	25.0927	42.5097
10	21.53	26.620	18.4226	42.3476	202.5818	92.6221	15.7666	21.0785	15.6233	12.5757	1.195	1.5953	11.1777	25.6674	42.6167
22	24.54	15.385	21.2144	90.5828	8.9888	28.5347	17.9160	24.5127	19.4018	8.1544	1.223	1.6327	13.7998	28.6290	43.6153
1	28.77	28.090	25.1377	188.9938	246.5881	215.8787	20.8154	29.4600	25.4252	4.7484	1.266	1.6901	17.4624	32.8130	45.1487
24	30.88	18.655	27.0947	251.4603	39.2894	99.3968	22.2331	31.9563	28.5977	3.7533	1.295	1.7288	19.2436	34.9458	46.1830
limit	*19.996*		*17*	*24.7379*			*14.6214*	*19.3786*	*13.9919*	*15.6793*	*1.187*	*1.5846*	*9.8037*	*24.1963*	*42.3314*
sum	360.54	297.285													

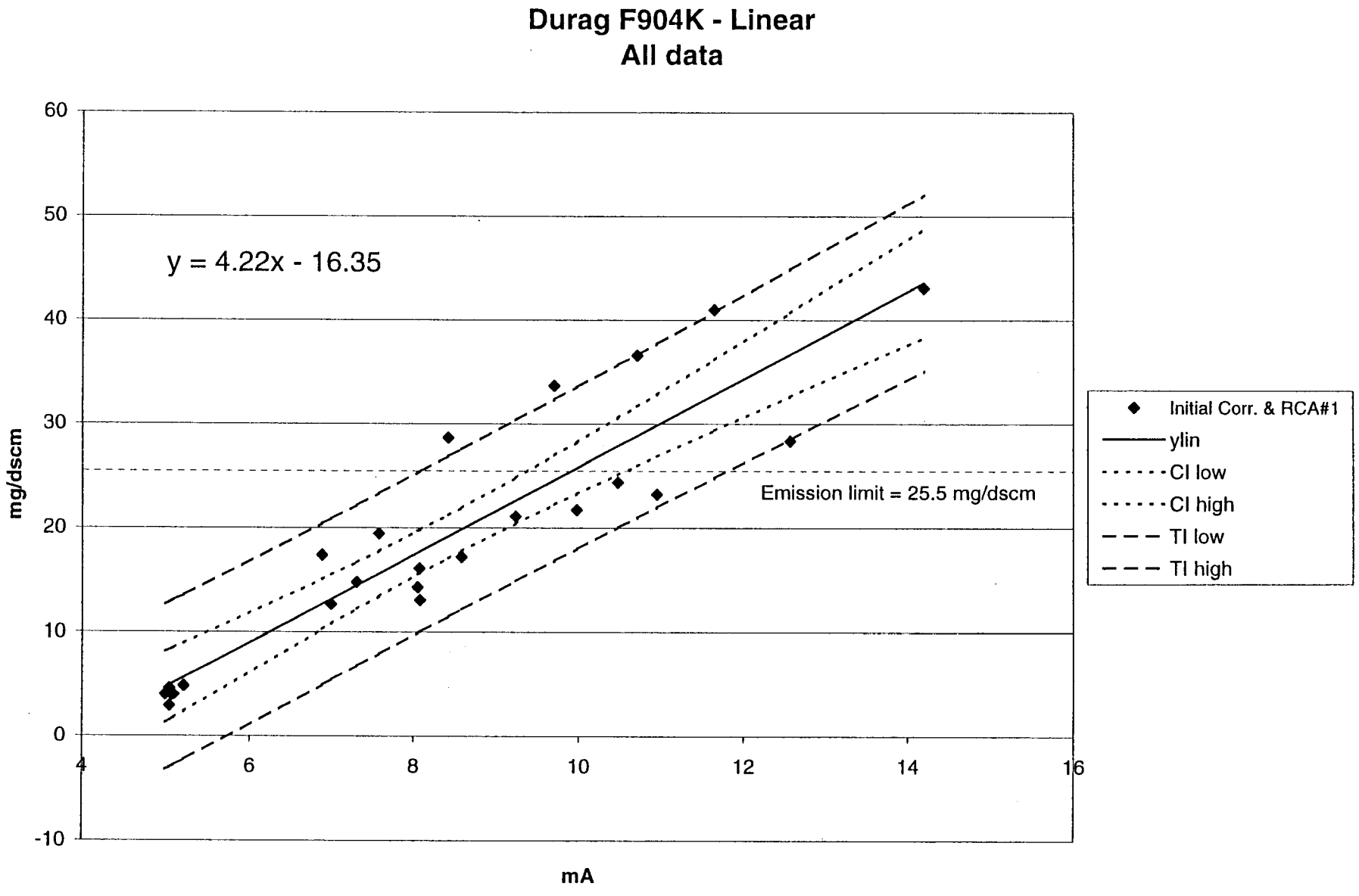
N	24	Sxx	1118.7747	SL	4.541294
xbar	15.0225	Syy	1416.147		
ybar	12.38688	Sxy	1037.6637		
		f	22		
a	0.9275	tf	2.074		
b	-1.5465	vf	1.335		
R	0.824387	EL	17		


Durag DR 300-40 - Polynomial
All Data
y = -9.59 + 2.08x - 0.034x^2
Emission limit = 17 mg/acm
mg/acm
Range adjusted mA
35
30
25
20
15
10
5
0
-5
-10
4
8
12
16
20
24
28
32
Initial Corr. & RCA#1
yquad
CI low
CI high
TI low
TI high

Durag DR 300-40 - Polynomial

Run	x (mA)	y (mg/acm) Initial Corr. & RCA#1	yquad	X2	X3	X4	XY	X2Y	(yhat-y)2	delta	CI low	CI high	CI %	n'	un'	kt	TI low	TI high	TI %	y-ybar2
2	6.11	1.895	1.8421	37.3321	228.0991	1393.6857	11.5785	70.7443	0.0028	0.1743	-1.8012	5.4854	21.4311	5.7358	1.247	1.6785	-5.1990	8.8831	41.4178	110.0794
16	6.42	3.025	2.3544	41.2164	264.6093	1698.7916	19.4205	124.6796	0.4497	0.1579	-1.1131	5.8218	20.3967	6.3322	1.247	1.6785	-4.6866	9.3954	41.4178	87.6447
17	6.44	2.680	2.3872	41.4736	267.0900	1720.0595	17.2592	111.1492	0.0857	0.1569	-1.0692	5.8436	20.3319	6.3726	1.247	1.6785	-4.6538	9.4282	41.4178	94.2234
3	6.59	2.545	2.6326	43.4281	286.1912	1885.9999	16.7716	110.5245	0.0077	0.1496	-0.7426	6.0077	19.8537	6.6833	1.233	1.6596	-4.3294	9.5945	40.9528	96.8625
4	6.75	2.585	2.8926	45.5625	307.5469	2075.9414	17.4488	117.7791	0.0946	0.1423	-0.3984	6.1836	19.3587	7.0295	1.233	1.6596	-4.0694	9.8546	40.9528	96.0768
18	7.28	3.195	3.7415	52.9984	385.8284	2808.8304	23.2596	169.3299	0.2986	0.1207	0.7098	6.7731	17.8333	8.2835	1.223	1.6462	-3.1640	10.6470	40.6207	84.4906
7	10.8	11.295	8.8956	116.6400	1259.7120	13604.8896	121.9860	1317.4488	5.7570	0.0598	6.7628	11.0285	12.5461	16.7363	1.185	1.5950	2.2047	15.5866	39.3585	1.1922
5	11.72	9.770	10.1041	137.3584	1609.8404	18867.3301	114.5044	1341.9916	0.1116	0.0586	7.9910	12.2172	12.4300	17.0505	1.185	1.5950	3.4132	16.7951	39.3585	6.8480
6	11.92	8.290	10.3592	142.0864	1693.6699	20188.5451	98.8168	1177.8963	4.2816	0.0589	8.2425	12.4760	12.4515	16.9916	1.185	1.5950	3.6683	17.0502	39.3585	16.7844
11	12.62	12.970	11.2307	159.2644	2009.9167	25365.1491	163.6814	2065.6593	3.0251	0.0605	9.0848	13.3766	12.6229	16.5334	1.185	1.5950	4.5398	17.9217	39.3585	0.3400
21	14.32	9.415	13.2088	205.0624	2936.4936	42050.5879	134.8228	1930.6625	14.3927	0.0679	10.9351	15.4825	13.3747	14.7269	1.189	1.6004	6.4952	19.9223	39.4914	8.8320
12	14.59	19.100	13.5049	212.8681	3105.7456	45312.8280	278.6690	4065.7807	31.3053	0.0693	11.2087	15.8011	13.5070	14.4398	1.192	1.6044	6.7744	20.2354	39.5910	45.0660
13	15.45	11.610	14.4151	238.7025	3687.9536	56978.8835	179.3745	2771.3360	7.8684	0.0735	12.0501	16.7800	13.9114	13.6125	1.192	1.6044	7.6846	21.1455	39.5910	0.6035
23	15.68	8.755	14.6500	245.8624	3855.1224	60448.3197	137.2784	2152.5253	34.7508	0.0745	12.2680	17.0320	14.0119	13.4178	1.195	1.6085	7.9026	21.3974	39.6907	13.1905
20	15.8	10.520	14.7711	249.6400	3944.3120	62320.1296	166.2160	2626.2128	18.0720	0.0751	12.3805	17.1618	14.0627	13.3210	1.195	1.6085	8.0237	21.5185	39.6907	3.4852
8	16.22	22.120	15.1874	263.0884	4267.2938	69215.5062	358.7864	5819.5154	48.0609	0.0769	12.7681	17.6067	14.2309	13.0080	1.195	1.6085	8.4400	21.9348	39.6907	94.7337
14	17.22	13.920	16.1304	296.5284	5106.2190	87929.0920	239.7024	4127.6753	4.8857	0.0805	13.6542	18.6065	14.5656	12.4171	1.199	1.6139	9.3604	22.9004	39.8235	2.3505
9	18.6	24.050	17.3202	345.9600	6434.8560	119688.3216	447.3300	8320.3380	45.2902	0.0841	14.7898	19.8506	14.8848	11.8903	1.199	1.6139	10.5502	24.0902	39.8235	136.0285
15	19.36	14.465	17.9203	374.8096	7256.3139	140482.2363	280.0424	5421.6209	11.9389	0.0856	15.3676	20.4729	15.0155	11.6841	1.199	1.6139	11.1503	24.6903	39.8235	4.3186
19	20.93	16.330	19.0357	438.0649	9168.6984	191900.8566	341.7869	7153.5998	7.3211	0.0891	16.4310	21.6405	15.3219	11.2215	1.203	1.6192	12.2432	25.8283	39.9564	15.5482
10	21.53	26.620	19.4179	463.5409	9980.0356	214870.1660	573.1286	12339.4588	51.8709	0.0913	16.7816	22.0541	15.5076	10.9544	1.203	1.6192	12.6253	26.2104	39.9564	202.5818
22	24.54	15.385	20.9660	602.2116	14778.2727	362658.8112	377.5479	9265.0255	31.1476	0.1234	17.9013	24.0307	18.0275	8.1060	1.223	1.6462	14.0605	27.8715	40.6207	8.9888
1	28.77	28.090	22.1023	827.7129	23813.3001	685108.6448	808.1493	23250.4554	35.8527	0.3201	17.1659	27.0386	29.0374	3.1244	1.340	1.8036	14.5361	29.6684	44.5067	246.5881
24	30.88	18.655	22.2151	953.5744	29446.3775	909304.1363	576.0664	17788.9304	12.6742	0.5493	15.7481	28.6821	38.0412	1.8204	1.433	1.9288	14.1238	30.3063	47.5956	39.2894
limit	*18.214*		*17.0000*	*331.7325*	*6042.0192*	*110046.4743*				*0.0833*	*14.4824*	*19.5176*	*14.8092*	*12.0120*	*1.199*	*1.6139*	*10.2300*	*23.7700*	*39.8235*	

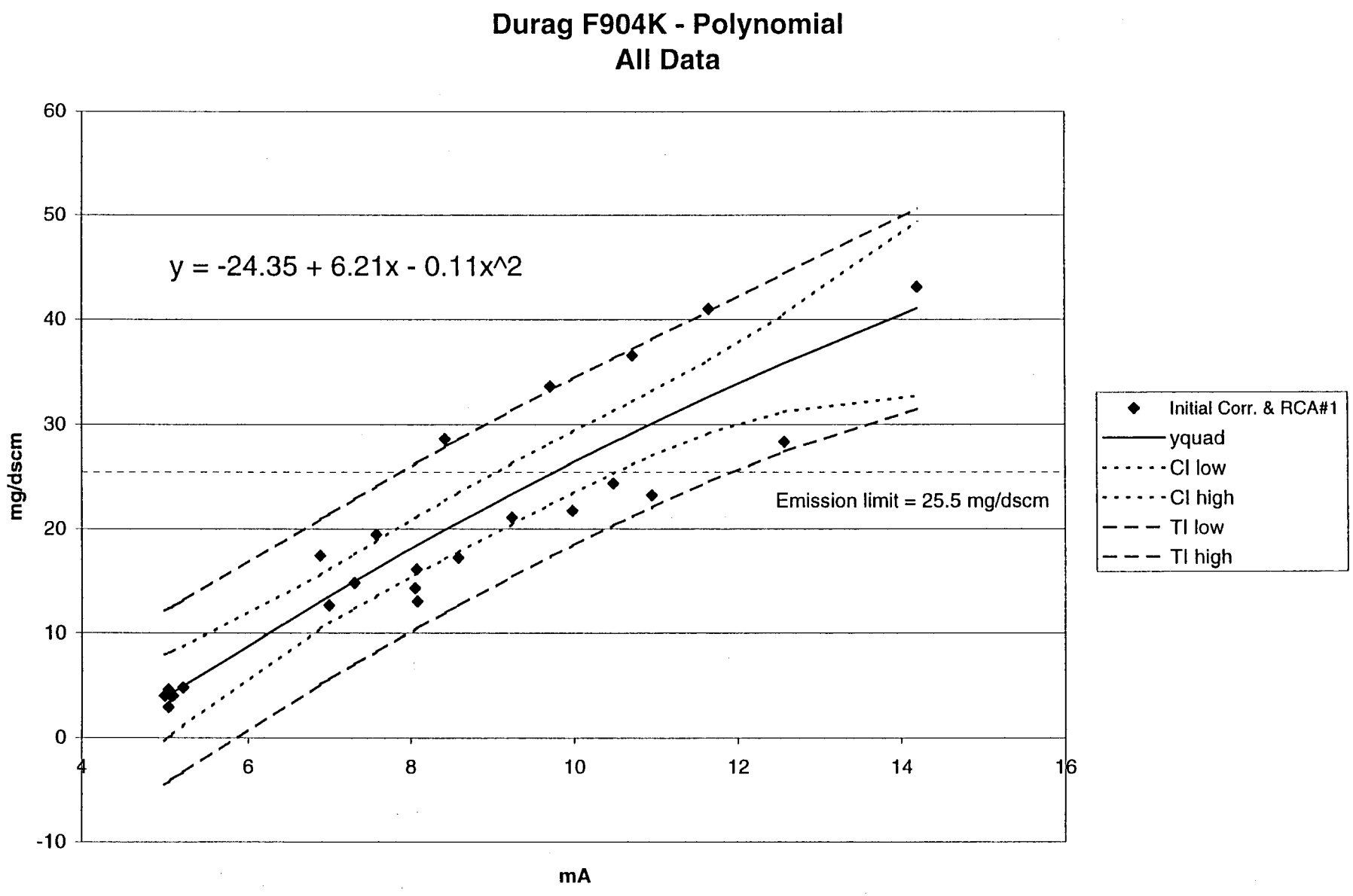
N	24.000						
S1	360.540	f 21	c0	1.0114045	sy	7.846758
S2	6534.987		c1	-0.123313		
S3	136093.498	sq 4.1949	c2	0.00324187	r	0.845101
S4	3137877.742		c3	0.01661578		
S5	297.285	vf 1.346	c4	-0.0004638		
S6	5503.628	tf 2.08	c5	1.3684E-05		
S7	113640.339		D	1962171830		
DETA	1962171830.191					
b0	-9.587					
b1	2.078					
b2	-0.034	EL= 17				
ybar	12.387					


Durag F904K - Linear
All data
y = 4.22x - 16.35
Emission limit = 25.5 mg/dscm
mg/dscm
mA
60
50
40
30
20
10
0
-10
4
6
8
10
12
14
16
Initial Corr. & RCA#1
ylin
CI low
CI high
TI low
TI high

Durag F904K - Linear

Run	x (mA)	y (mg/dscm) Initial Corr. & RCA#1	ylin	(x-xbar)^2	(y-ybar)^2	(x-xbar)(y-ybar)	CI low	CI high	CI %	nprime	un'	kt	TI low	TI high	TI %
4	4.99	4	4.7065	11.1417	218.7934	49.3734	1.2786	8.1345	13.4429	8.8263	1.214	1.6207	-3.2516	12.6647	31.2085
2	5.04	2.9	4.9175	10.8104	252.5451	52.2505	1.5220	8.3131	13.3159	8.9954	1.214	1.6207	-3.0406	12.8757	31.2085
16	5.04	4.6	4.9175	10.8104	201.4034	46.6610	1.5220	8.3131	13.3159	8.9954	1.214	1.6207	-3.0406	12.8757	31.2085
3	5.07	3.95	5.0441	10.6140	220.2751	48.3529	1.6679	8.4204	13.2401	9.0987	1.214	1.6207	-2.9140	13.0023	31.2085
17	5.09	4	5.1285	10.4841	218.7934	47.8942	1.7651	8.4919	13.1897	9.1684	1.214	1.6207	-2.8296	13.0867	31.2085
18	5.21	4.8	5.6349	9.7214	195.7667	43.6249	2.3480	8.9218	12.8898	9.6000	1.208	1.6127	-2.2839	13.5537	31.0543
7	6.88	17.4	12.6818	2.0965	1.9367	2.0150	10.2903	15.0734	9.3785	18.1340	1.183	1.5793	4.9269	20.4368	30.4116
6	6.99	12.65	13.1460	1.7900	37.7201	8.2170	10.7976	15.4944	9.2095	18.8059	1.181	1.5766	5.4042	20.8879	30.3602
5	7.3	14.8	14.4541	1.0566	15.9334	4.1031	12.2123	16.6960	8.7917	20.6357	1.178	1.5726	6.7320	22.1763	30.2831
11	7.57	19.45	15.5935	0.5744	0.4334	-0.4990	13.4245	17.7625	8.5058	22.0460	1.177	1.5713	7.8778	23.3091	30.2573
21	8.05	14.3	17.6189	0.0772	20.1751	1.2483	15.5278	19.7101	8.2007	23.7173	1.174	1.5673	9.9230	25.3149	30.1802
20	8.07	16.1	17.7033	0.0665	7.2451	0.6942	15.6139	19.7928	8.1940	23.7562	1.174	1.5673	10.0074	25.3993	30.1802
23	8.08	13.05	17.7455	0.0615	32.9667	1.4235	15.6569	19.8342	8.1908	23.7745	1.174	1.5673	10.0496	25.4415	30.1802
12	8.42	28.65	19.1802	0.0085	97.1867	0.9078	17.1001	21.2604	8.1576	23.9686	1.174	1.5673	11.4843	26.8762	30.1802
13	8.58	17.2	19.8554	0.0635	2.5334	-0.4012	17.7664	21.9444	8.1921	23.7670	1.174	1.5673	12.1594	27.5513	30.1802
14	9.24	21.1	22.6404	0.8319	5.3284	2.1054	20.4322	24.8486	8.6596	21.2698	1.178	1.5726	14.9182	30.3626	30.2831
8	9.71	33.65	24.6237	1.9102	220.7701	20.5355	22.2583	26.9891	9.2761	18.5366	1.181	1.5766	16.8818	32.3655	30.3602
15	9.98	21.75	25.7630	2.7294	8.7517	4.8874	23.2848	28.2412	9.7184	16.8878	1.185	1.5820	17.9950	33.5311	30.4630
19	10.48	24.4	27.8729	4.6315	31.4534	12.0696	25.1508	30.5950	10.6748	13.9972	1.192	1.5913	20.0589	35.6868	30.6430
9	10.71	36.6	28.8434	5.6743	317.1367	42.4209	25.9965	31.6904	11.1645	12.7963	1.195	1.5953	21.0098	36.6770	30.7201
22	10.95	23.25	29.8562	6.8753	19.8767	11.6901	26.8719	32.8404	11.7031	11.6457	1.199	1.6007	21.9963	37.7160	30.8229
10	11.65	41	32.8100	11.0362	493.2101	73.7779	29.3923	36.2276	13.4026	8.8794	1.214	1.6207	24.8518	40.7681	31.2085
24	12.57	28.35	36.6921	17.9953	91.3617	40.5472	32.6522	40.7320	15.8427	6.3548	1.247	1.6647	28.5176	44.8666	32.0568
1	14.2	43.05	43.5703	34.4814	588.4667	142.4470	38.3440	48.7965	20.4951	3.7972	1.295	1.7288	35.0811	52.0594	33.2908
	9.91767		*25.5*	*2.5273*			*23.0491*	*27.9509*	*9.6112*	*17.2667*	*1.185*	*1.5820*	*17.7319*	*33.2681*	*30.4630*
sum	199.87	451													

N	24	Sxx	155.5422	SL	4.910359
xbar	8.32792	Syy	3300.0633		
ybar	18.7917	Sxy	656.34658		
		f	22		
a	4.21973	tf	2.074		
b	-16.3499	vf	1.335		
R	0.91611	EL	25.5		


Durag F904K - Polynomial
All Data
y = -24.35 + 6.21x - 0.11x^2
Emission limit = 25.5 mg/dscm
mg/dscm
mA
60
50
40
30
20
10
0
-10
4
6
8
10
12
14
16
Initial Corr. & RCA#1
yquad
CI low
CI high
TI low
TI high

Durag F904K - Polynomial

Run	x (mA)	y (mg/dscm) Initial Corr. & RCA#1	yquad	X2	X3	X4	XY	X2Y	(yhat-y)2	delta	CI low	CI high	CI %	n'	un'	kt	TI low	TI high	TI %	y-ybar2
4	4.99	4	3.8162	24.9001	124.2515	620.0150	19.9600	99.6004	0.0338	0.1621	-0.3282	7.9606	16.2524	6.1680	1.247	1.6785	-4.4895	12.1219	32.5714	218.7934
2	5.04	2.9	4.0700	25.4016	128.0241	645.2413	14.6160	73.6646	1.3689	0.1554	0.0123	8.1276	15.9124	6.4344	1.247	1.6785	-4.2357	12.3757	32.5714	252.5451
16	5.04	4.6	4.0700	25.4016	128.0241	645.2413	23.1840	116.8474	0.2809	0.1554	0.0123	8.1276	15.9124	6.4344	1.247	1.6785	-4.2357	12.3757	32.5714	201.4034
3	5.07	3.95	4.2220	25.7049	130.3238	660.7419	20.0265	101.5344	0.0740	0.1515	0.2153	8.2287	15.7126	6.5990	1.233	1.6596	-3.9905	12.4345	32.2057	220.2751
17	5.09	4	4.3232	25.9081	131.8722	671.2296	20.3600	103.6324	0.1045	0.1490	0.3500	8.2965	15.5813	6.7107	1.233	1.6596	-3.8892	12.5357	32.2057	218.7934
18	5.21	4.8	4.9287	27.1441	141.4208	736.8022	25.0080	130.2917	0.0166	0.1349	1.1486	8.7089	14.8241	7.4138	1.233	1.6596	-3.2837	13.1412	32.2057	195.7667
7	6.88	17.4	13.0179	47.3344	325.6607	2240.5454	119.7120	823.6186	19.2026	0.0621	10.4529	15.5829	10.0587	16.1025	1.187	1.5977	5.1118	20.9240	31.0042	1.9367
6	6.99	12.65	13.5287	48.8601	341.5321	2387.3094	88.4235	618.0803	0.7721	0.0622	10.9618	16.0955	10.0661	16.0787	1.187	1.5977	5.6226	21.4347	31.0042	37.7201
5	7.3	14.8	14.9534	53.2900	389.0170	2839.8241	108.0400	788.6920	0.0235	0.0638	12.3533	17.5534	10.1962	15.6712	1.187	1.5977	7.0473	22.8594	31.0042	15.9334
11	7.57	19.45	16.1766	57.3049	433.7981	3283.8516	147.2365	1114.5803	10.7154	0.0663	13.5263	18.8269	10.3934	15.0821	1.189	1.6004	8.2572	24.0960	31.0565	0.4334
21	8.05	14.3	18.3106	64.8025	521.6601	4199.3640	115.1150	926.6758	16.0846	0.0716	15.5559	21.0652	10.8027	13.9609	1.192	1.6044	10.3712	26.2499	31.1348	20.1751
20	8.07	16.1	18.3984	65.1249	525.5579	4241.2526	129.9270	1048.5109	5.2824	0.0718	15.6394	21.1573	10.8193	13.9180	1.192	1.6044	10.4590	26.3377	31.1348	7.2451
23	8.08	13.05	18.4422	65.2864	527.5141	4262.3140	105.4440	851.9875	29.0760	0.0720	15.6812	21.2033	10.8276	13.8967	1.192	1.6044	10.5028	26.3816	31.1348	32.9667
12	8.42	28.65	19.9201	70.8964	596.9477	5026.2995	241.2330	2031.1819	76.2118	0.0754	17.0931	22.7470	11.0861	13.2562	1.195	1.6085	11.9607	27.8794	31.2132	97.1867
13	8.58	17.2	20.6065	73.6164	631.6287	5419.3743	147.5760	1266.2021	11.6042	0.0768	17.7536	23.4594	11.1878	13.0164	1.195	1.6085	12.6471	28.5659	31.2132	2.5334
14	9.24	21.1	23.3770	85.3776	788.8890	7289.3346	194.9640	1801.4674	5.1849	0.0804	20.4579	26.2962	11.4477	12.4319	1.199	1.6139	15.3910	31.3630	31.3177	5.3284
8	9.71	33.65	25.2901	94.2841	915.4986	8889.4915	326.7415	3172.6600	69.8877	0.0813	22.3553	28.2250	11.5092	12.2995	1.199	1.6139	17.3041	33.2761	31.3177	220.7701
15	9.98	21.75	26.3666	99.6004	994.0120	9920.2397	217.0650	2166.3087	21.3129	0.0817	23.4254	29.3077	11.5339	12.2468	1.199	1.6139	18.3806	34.3526	31.3177	8.7517
19	10.48	24.4	28.3166	109.8304	1151.0226	12062.7168	255.7120	2679.8618	15.3401	0.0836	25.3411	31.2922	11.6687	11.9656	1.199	1.6139	20.3306	36.3027	31.3177	31.4534
9	10.71	36.6	29.1947	114.7041	1228.4809	13157.0306	391.9860	4198.1701	54.8378	0.0858	26.1807	32.2088	11.8197	11.6617	1.199	1.6139	21.2087	37.1808	31.3177	317.1367
22	10.95	23.25	30.0983	119.9025	1312.9324	14376.6095	254.5875	2787.7331	46.8993	0.0895	27.0194	33.1772	12.0741	11.1756	1.203	1.6192	22.0857	38.1110	31.4222	19.8767
10	11.65	41	32.6595	135.7225	1581.1671	18420.5970	477.6500	5564.6225	69.5640	0.1140	29.1841	36.1349	13.6292	8.7708	1.214	1.6340	24.5736	40.7454	31.7095	493.2101
24	12.57	28.35	35.8576	158.0049	1986.1216	24965.5484	356.3595	4479.4389	56.3639	0.2003	31.2516	40.4636	18.0628	4.9935	1.266	1.7040	27.4253	44.2899	33.0677	91.3617
1	14.2	43.05	41.0551	201.6400	2863.2880	40658.6896	611.3100	8680.6020	3.9795	0.6530	32.7377	49.3726	32.6175	1.5314	1.433	1.9288	31.5106	50.5997	37.4297	588.4667
limit	*9.7624*		*25.5002*	*95.3038*	*930.3909*	*9082.8175*				*0.0814*	*22.5643*	*28.4361*	*11.5134*	*12.2904*	*1.199*	*1.6139*	*17.5142*	*33.4862*	*31.3177*	

N	24						
S1	199.87	f	21	c0	4.4290	sy	11.9784
S2	1820.0429			c1	-1.0327		
S3	17898.6451	sq	4.9484	c2	0.0556	r	0.9107
S4	187619.6638			c3	0.2497		
S5	451	vf	1.346	c4	-0.0138		
S6	4412.237	tf	2.08	c5	0.0008		
S7	45625.9645			D	4767289.4878		
DETA	4767289.488						
b0	-24.35						
b1	6.207						
b2	-0.113	EL	25.5				
ybar	18.7917						

Tests for best regression fit **Ff (24) = 4.325**

Durag F904K
Polynomial vs. Linear

Ff BG	0.66299	less than Ff(24), so linear is better

Durag DR 300-40
Polynomial vs. Linear

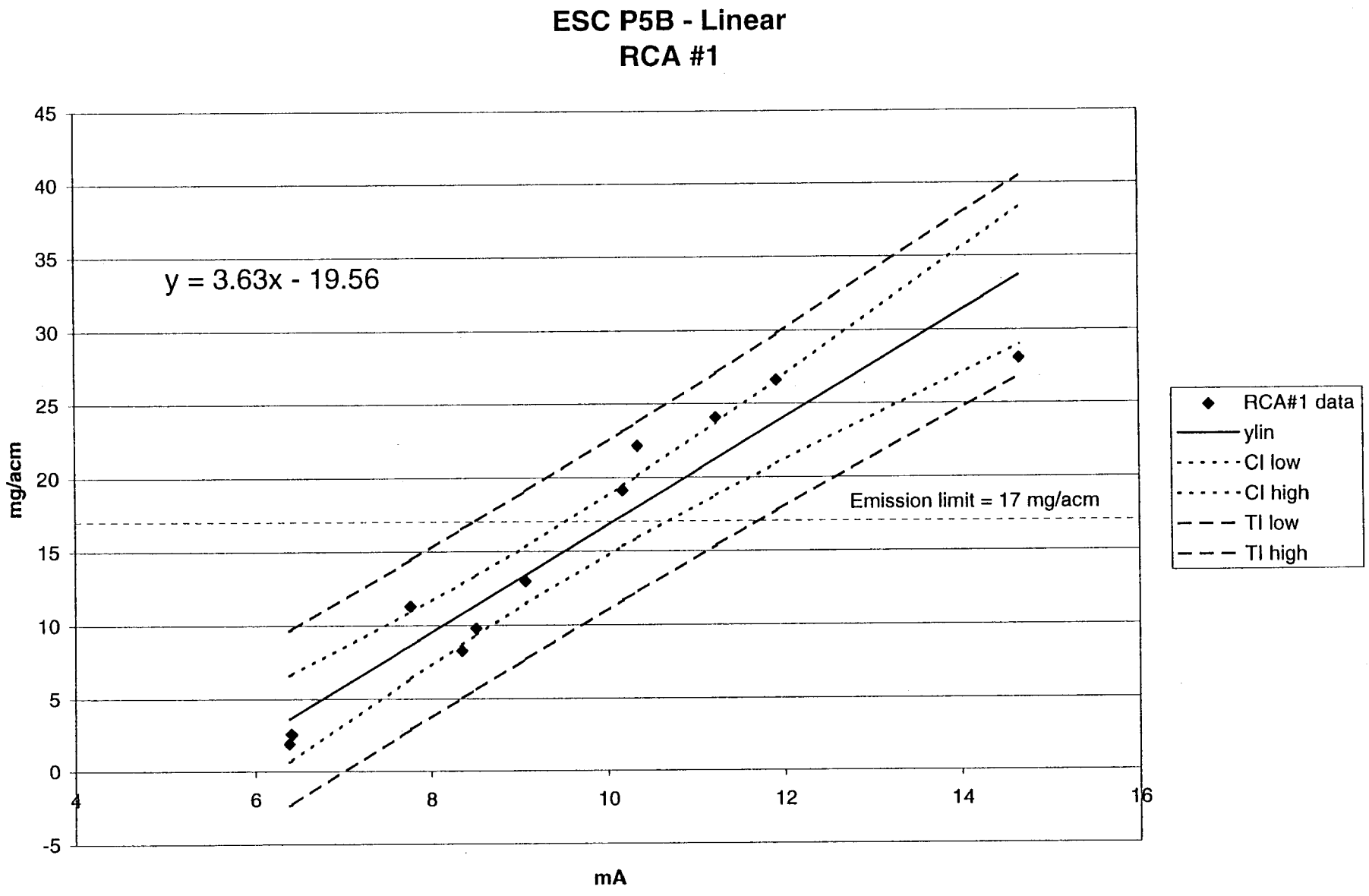
Ff DLS	4.782955	greater than Ff(24), so polynomial is better

ESC P5B
Polynomial vs. Linear

Ff ELS	2.302051	less than Ff(24), so linear is better

RCA No. 1 Appendix G3

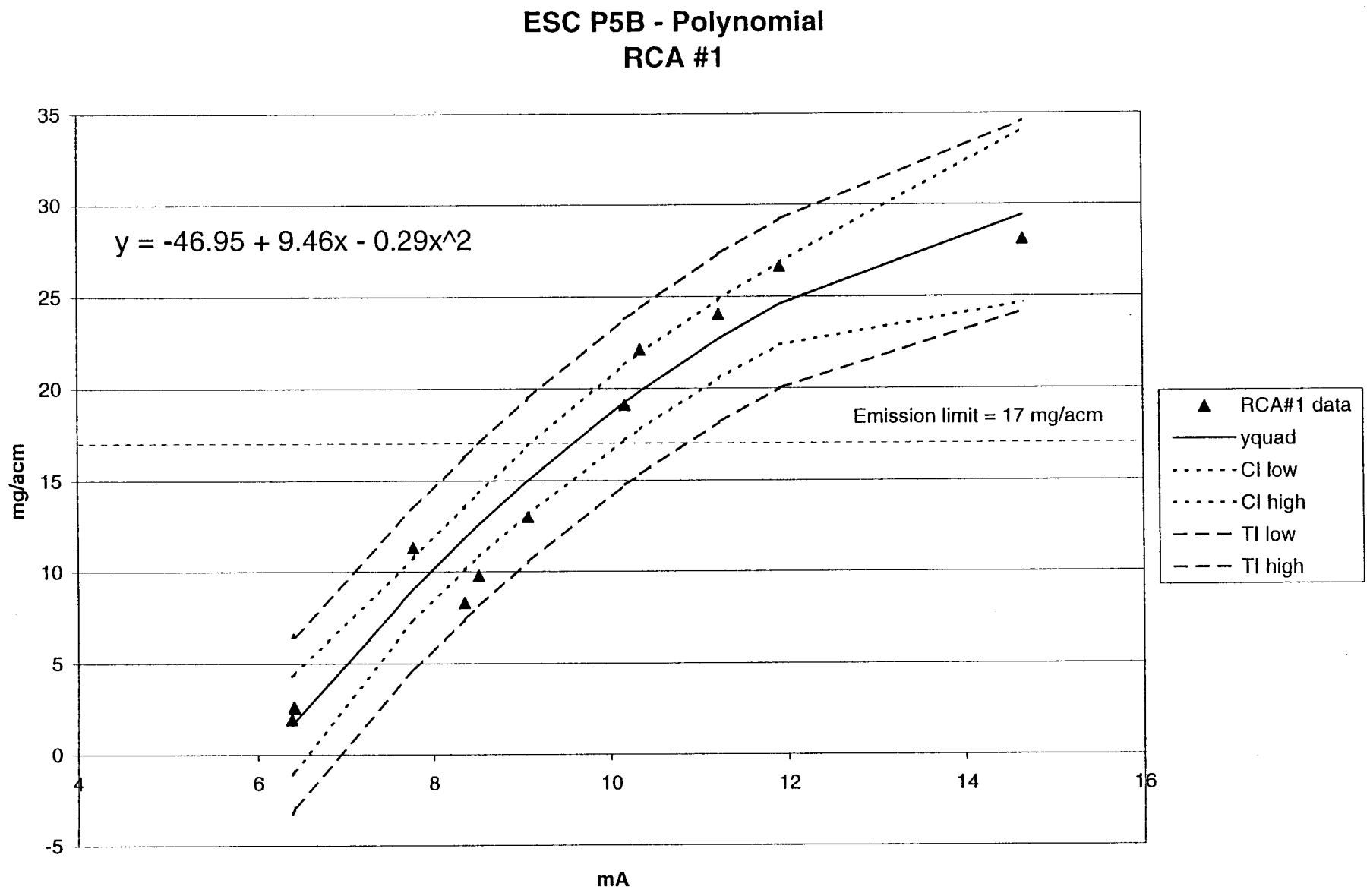
Statistical Analysis Data and Graphs for PM CEMS Using Data only from RCA #1 Tests


ESC P5B - Linear
RCA #1
y = 3.63x - 19.56
Emission limit = 17 mg/acm
mg/acm
mA
45
40
35
30
25
20
15
10
5
0
-5
4
6
8
10
12
14
16
RCA#1 data
ylin
CI low
CI high
TI low
TI high

ESC P5B - Linear

Run	x (mA)	y (mg/acm) RCA#1 data	ylin	(x-xbar)^2	(y-ybar)^2	(x-xbar)(y-ybar)	CI low	CI high	CI %	nprime	un'	kt	TI low	TI high	TI %
2	6.38	1.895	3.6201	8.3377	149.2266	35.2732	0.6362	6.6041	17.5526	4.9543	1.266	2.0167	-2.3919	9.6321	35.3646
4	6.4	2.585	3.6928	8.2226	132.8448	33.0503	0.7210	6.6646	17.4813	4.9948	1.266	2.0167	-2.3192	9.7048	35.3646
3	6.41	2.545	3.7291	8.1653	133.7685	33.0494	0.7633	6.6949	17.4458	5.0152	1.266	2.0167	-2.2829	9.7411	35.3646
7	7.77	11.295	8.6702	2.2425	7.9289	4.2167	6.4158	10.9246	13.2610	8.6799	1.214	1.9339	2.9052	14.4352	33.9120
6	8.35	8.29	10.7774	0.8418	33.8821	5.3406	8.7271	12.8278	12.0608	10.4933	1.208	1.9243	5.0409	16.5140	33.7444
5	8.51	9.77	11.3587	0.5738	18.8428	3.2882	9.3498	13.3677	11.8173	10.9302	1.203	1.9164	5.6459	17.0715	33.6047
11	9.07	12.97	13.3933	0.0390	1.3015	0.2253	11.4696	15.3170	11.3157	11.9207	1.199	1.9100	7.6995	19.0871	33.4930
12	10.17	19.1	17.3897	0.8145	24.8918	4.5027	15.3436	19.4359	12.0363	10.5362	1.203	1.9164	11.6769	23.1026	33.6047
8	10.34	22.12	18.0074	1.1503	64.1468	8.5898	15.9104	20.1044	12.3352	10.0318	1.208	1.9243	12.2708	23.7439	33.7444
9	11.23	24.05	21.2409	3.8514	98.7870	19.5056	18.7729	23.7089	14.5176	7.2423	1.233	1.9642	15.3856	27.0962	34.4427
10	11.92	26.62	23.7478	7.0358	156.4793	33.1806	20.9039	26.5916	16.7287	5.4544	1.266	2.0167	17.7358	29.7597	35.3646
1	14.66	28.09	33.7026	29.0791	195.4171	75.3827	29.0219	38.3833	27.5336	2.0134	1.433	2.2828	26.8976	40.5076	40.0296
limit	*10.0627*		*17*	*0.6323813*			*14.9819*	*19.0181*	*11.8710*	*10.8317*	1.203	*1.9164*	*11.2872*	*22.7128*	*33.6047*
sum	111.21	169.33													

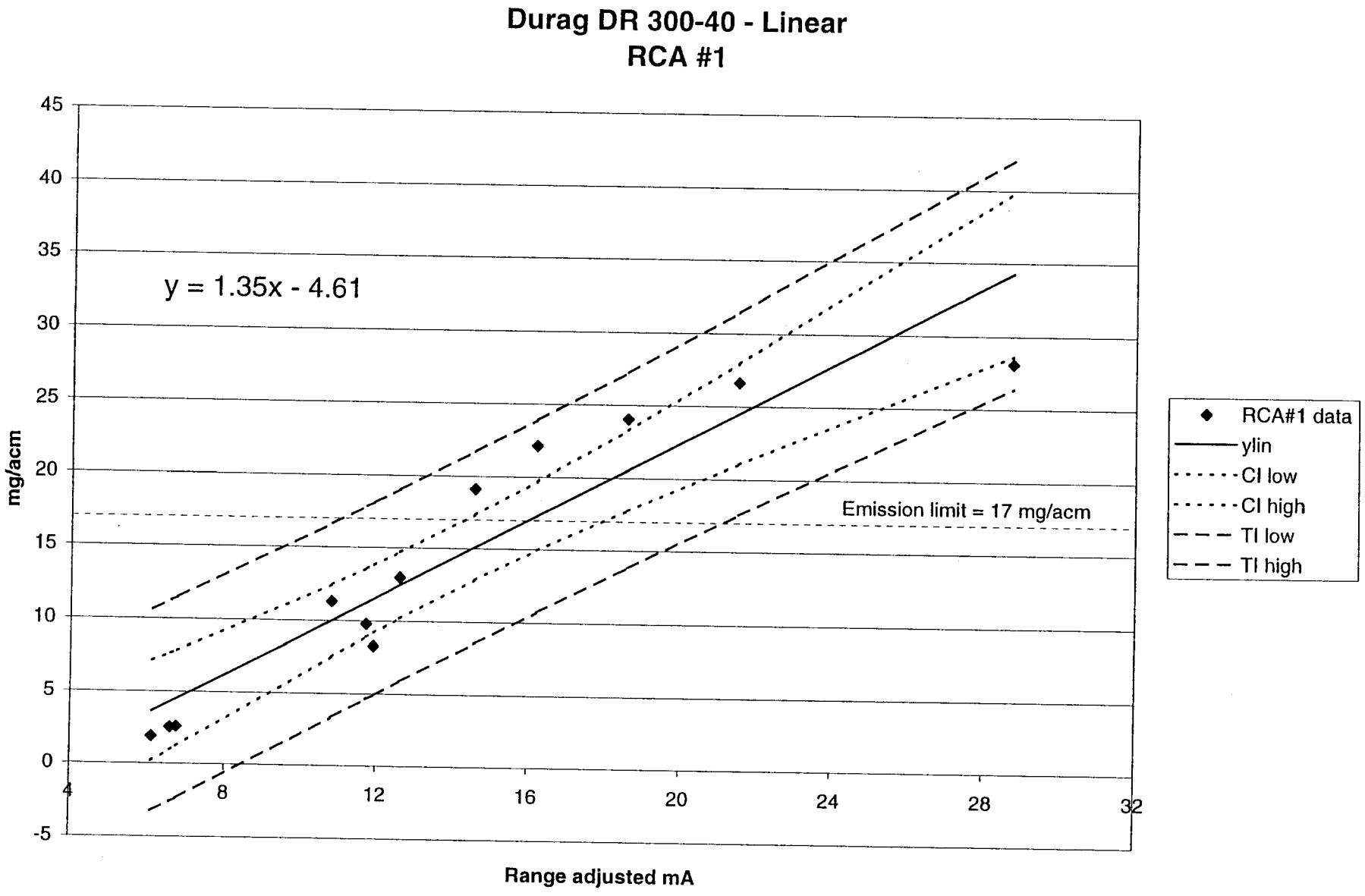
N	12	Sxx	70.3536	SL	2.98104
xbar	9.2675	Syy	1017.5172		
ybar	14.1108	Sxy	255.6051		
		f	10		
a	3.6331	tf	2.228		
b	-19.5594	vf	1.593		
R	0.955334	EL	17		


ESC P5B - Polynomial
RCA #1
y = -46.95 + 9.46x - 0.29x^2
Emission limit = 17 mg/acm
mg/acm
mA
35
30
25
20
15
10
5
0
-5
4
6
8
10
12
14
16
RCA#1 data
yquad
CI low
CI high
TI low
TI high

ESC P5B - Polynomial

Run	x (mA)	y (mg/acm) RCA#1 data	yquad	X2	X3	X4	XY	X2Y	(yhat-y)2	delta	CI low	CI high	CI %	n'	un'	kt	TI low	TI high	TI %	y-ybar2
2	6.38	1.895	1.5995	40.7044	259.6941	1656.848	12.0901	77.13484	0.0873	0.2919	-1.0877	4.2867	15.8069	3.4261	1.340	2.2043	-3.2475	6.4465	28.5119	149.2266
4	6.4	2.585	1.7146	40.96	262.144	1677.722	16.544	105.8816	0.7576	0.2865	-0.9477	4.3769	15.6606	3.4904	1.340	2.2043	-3.1324	6.5616	28.5119	132.8448
3	6.41	2.545	1.7720	41.0881	263.3747	1688.232	16.31345	104.5692	0.5975	0.2839	-0.8780	4.4220	15.5882	3.5229	1.295	2.1303	-2.9122	6.4563	27.5544	133.7685
7	7.77	11.295	9.0446	60.3729	469.0974	3644.887	87.76215	681.9119	5.0643	0.1183	7.3338	10.7553	10.0633	8.4532	1.223	2.0118	4.6208	13.4684	26.0224	7.9289
6	8.35	8.29	11.8198	69.7225	582.1829	4861.227	69.2215	577.9995	12.4593	0.1193	10.1021	13.5374	10.1039	8.3853	1.223	2.0118	7.3960	16.2436	26.0224	33.8821
5	8.51	9.77	12.5510	72.4201	616.2951	5244.671	83.1427	707.5444	7.7339	0.1228	10.8078	14.2942	10.2544	8.1410	1.223	2.0118	8.1272	16.9748	26.0224	18.8428
11	9.07	12.97	14.9933	82.2649	746.1426	6767.514	117.6379	1066.976	4.0939	0.1403	13.1300	16.8567	10.9608	7.1255	1.233	2.0283	10.5334	19.4533	26.2352	1.3015
12	10.17	19.1	19.2612	103.4289	1051.872	10697.54	194.247	1975.492	0.0260	0.1721	17.1975	21.3248	12.1391	5.8093	1.247	2.0513	14.7506	23.7718	26.5331	24.8918
8	10.34	22.12	19.8581	106.9156	1105.507	11430.95	228.7208	2364.973	5.1161	0.1752	17.7761	21.9401	12.2470	5.7073	1.247	2.0513	15.3475	24.3688	26.5331	64.1468
9	11.23	24.05	22.7097	126.1129	1416.248	15904.46	270.0815	3033.015	1.7963	0.1857	20.5666	24.8528	12.6066	5.3864	1.266	2.0826	18.1304	27.2891	26.9373	98.7870
10	11.92	26.62	24.6043	142.0864	1693.67	20188.55	317.3104	3782.34	4.0630	0.1995	22.3826	26.8260	13.0689	5.0121	1.266	2.0826	20.0250	29.1837	26.9373	156.4793
1	14.66	28.09	29.4018	214.9156	3150.663	46188.72	411.7994	6036.979	1.7209	0.9045	24.6714	34.1323	27.8264	1.1056	1.433	2.3573	24.2184	34.5853	30.4907	195.4171
limit	*9.5648*		*17.0001*	*91.48609*	*875.0494*	*8369.704*				*0.1567*	*15.0308*	*18.9693*	*11.5838*	*6.3796*	*1.247*	*2.0513*	*12.4895*	*21.5107*	*26.5331*	

N	12								
S1	111.21	f	9	c0	17.8491	sy	9.61777		
S2	1100.9923			c1	-3.6514				
S3	11616.8905	sq	2.198893	c2	0.1752	r	0.97351		
S4	129951.307			c3	0.7630				
S5	169.33	vf	1.645	c4	-0.0373				
S6	1824.8709	tf	2.262	c5	0.0019				
S7	20514.8167			D	455106.4				
DETA	455106.36								
b0	-46.95								
b1	9.460								
b2	-0.290	EL	17						
ybar	14.1108333								

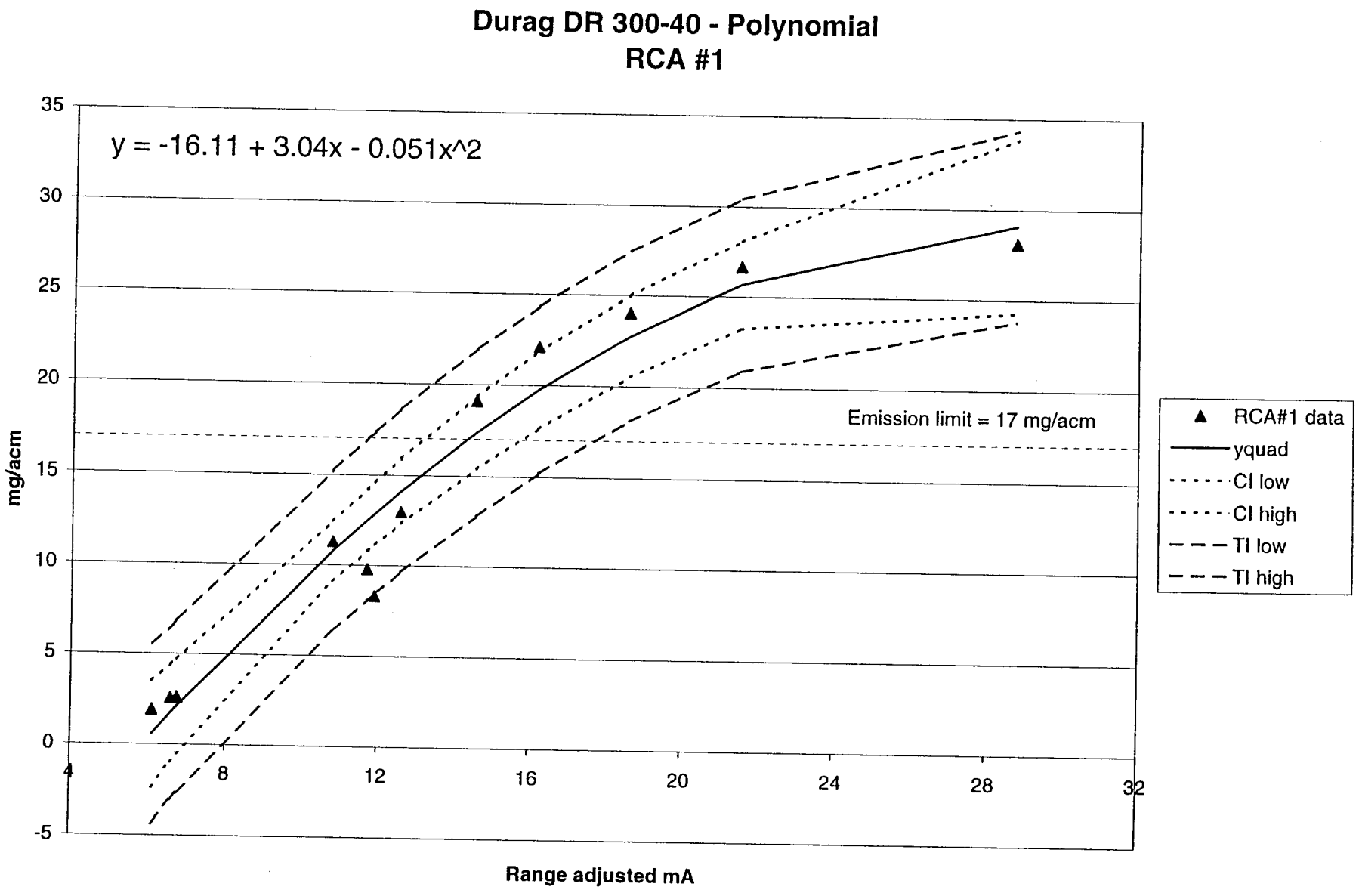

Durag DR 300-40 - Linear
RCA #1
y = 1.35x - 4.61
Emission limit = 17 mg/acm
mg/acm
Range adjusted mA
45
40
35
30
25
20
15
10
5
0
-5
4
8
12
16
20
24
28
32
RCA#1 data
ylin
CI low
CI high
TI low
TI high

Durag DR 300-40 - Linear

Run	x (mA)	y (mg/acm) RCA#1 data	ylin	(x-xbar)^2	(y-ybar)^2	(x-xbar)(y-ybar)	CI low	CI high	CI %	nprime	un'	kt	TI low	TI high	TI %
2	6.11	1.895	3.6504	59.9334	149.2266	94.5709	0.1773	7.1235	20.4300	4.8770	1.266	2.0167	-3.2922	10.5931	40.8391
3	6.59	2.545	4.2990	52.7318	133.7685	83.9872	0.9520	7.6459	19.6879	5.2515	1.266	2.0167	-2.6437	11.2416	40.8391
4	6.75	2.585	4.5152	50.4337	132.8448	81.8526	1.2095	7.8208	19.4451	5.3835	1.266	2.0167	-2.4275	11.4578	40.8391
7	10.8	11.295	9.9875	9.3127	7.9289	8.5930	7.5349	12.4400	14.4266	9.7804	1.208	1.9243	3.3629	16.6121	38.9682
5	11.72	9.77	11.2306	4.5440	18.8428	9.2532	8.8971	13.5640	13.7264	10.8037	1.203	1.9164	4.6334	17.8277	38.8069
6	11.92	8.29	11.5008	3.7313	33.8821	11.2439	9.1882	13.8134	13.6035	10.9998	1.203	1.9164	4.9036	18.0980	38.8069
11	12.62	12.97	12.4466	1.5170	1.3015	1.4051	10.1920	14.7013	13.2628	11.5722	1.199	1.9100	5.8714	19.0219	38.6778
12	14.59	19.1	15.1085	0.5451	24.8918	3.6837	12.8797	17.3372	13.1104	11.8427	1.199	1.9100	8.5332	21.6837	38.6778
8	16.22	22.12	17.3109	5.6090	64.1468	18.9684	14.9503	19.6715	13.8858	10.5570	1.203	1.9164	10.7137	23.9081	38.8069
9	18.6	24.05	20.5267	22.5467	98.7870	47.1945	17.7706	23.2828	16.2122	7.7447	1.223	1.9482	13.8199	27.2336	39.4520
10	21.53	26.62	24.4857	58.9568	156.4793	96.0496	21.0294	27.9419	20.3309	4.9246	1.266	2.0167	17.5430	31.4283	40.8391
1	28.77	28.09	34.2683	222.5567	195.4171	208.5459	28.6566	39.8799	33.0097	1.8681	1.433	2.2828	26.4098	42.1267	46.2263
limit	*15.990*		*17*	*4.5721*			*14.6658*	*19.3342*	*13.7306*	*10.7970*	*1.203*	*1.9164*	*10.4028*	*23.5972*	*38.8069*
sum	166.22	169.33													

N	12	Sxx	492.41817
xbar	13.85167	Syy	1017.5172
ybar	14.11083	Sxy	665.34793
		f	10
a	1.351185	tf	2.228
b	-4.60533	vf	1.593
R	0.939963	EL	17

SL 3.442516


Durag DR 300-40 - Polynomial
RCA #1
y = -16.11 + 3.04x - 0.051x^2
Emission limit = 17 mg/acm
mg/acm
Range adjusted mA
35
30
25
20
15
10
5
0
-5
4
8
12
16
20
24
28
32
RCA#1 data
yquad
CI low
CI high
TI low
TI high

Durag DR 300-40 - Polynomial

Run	x (mA)	y (mg/acm) RCA#1 data	yquad	X2	X3	X4	XY	X2Y	(yhat-y)2	delta	CI low	CI high	CI %	n'	un'	kt	TI low	TI high	TI %	y-ybar2
2	6.11	1.895	0.5635	37.3321	228.0991	1393.6857	11.5785	70.7443	1.7729	0.3345	-2.3578	3.4847	17.1838	2.9899	1.340	2.2043	-4.3588	5.4858	28.9550	149.2266
3	6.59	2.545	1.7115	43.4281	286.1912	1885.9999	16.7716	110.5245	0.6947	0.2813	-0.9678	4.3908	15.7604	3.5543	1.295	2.1303	-3.0455	6.4685	27.9826	133.7685
4	6.75	2.585	2.0889	45.5625	307.5469	2075.9414	17.4488	117.7791	0.2461	0.2657	-0.5148	4.6926	15.3159	3.7636	1.295	2.1303	-2.6681	6.8460	27.9826	132.8448
7	10.8	11.295	10.7718	116.6400	1259.7120	13604.8896	121.9860	1317.4488	0.2737	0.1106	9.0919	12.4516	9.8815	9.0416	1.214	1.9970	6.3123	15.2313	26.2323	7.9289
5	11.72	9.77	12.5106	137.3584	1609.8404	18867.3301	114.5044	1341.9916	7.5109	0.1148	10.7990	14.2222	10.0680	8.7097	1.214	1.9970	8.0511	16.9701	26.2323	18.8428
6	11.92	8.29	12.8772	142.0864	1693.6699	20188.5451	98.8168	1177.8963	21.0421	0.1166	11.1521	14.6023	10.1477	8.5734	1.214	1.9970	8.4177	17.3367	26.2323	33.8821
11	12.62	12.97	14.1279	159.2644	2009.9167	25365.1491	163.6814	2065.6593	1.3408	0.1248	12.3435	15.9124	10.4969	8.0124	1.223	2.0118	9.6354	18.6205	26.4268	1.3015
12	14.59	19.1	17.3793	212.8681	3105.7456	45312.8280	278.6690	4065.7807	2.9609	0.1545	15.3940	19.3645	11.6781	6.4736	1.247	2.0513	12.7985	21.9600	26.9454	24.8918
8	16.22	22.12	19.7697	263.0884	4267.2938	69215.5062	358.7864	5819.5154	5.5241	0.1768	17.6456	21.8938	12.4947	5.6551	1.247	2.0513	15.1890	24.3504	26.9454	64.1468
9	18.6	24.05	22.7724	345.9600	6434.8560	119688.3216	447.3300	8320.3380	1.6323	0.1976	20.5270	25.0178	13.2085	5.0604	1.266	2.0826	18.1219	27.4229	27.3559	98.7870
10	21.53	26.62	25.6742	463.5409	9980.0356	214870.1660	573.1286	12339.4588	0.8945	0.2222	23.2929	28.0555	14.0076	4.4995	1.295	2.1303	20.9172	30.4313	27.9826	156.4793
1	28.77	28.09	29.0830	827.7129	23813.3001	685108.6448	808.1493	23250.4554	0.9861	0.9005	24.2898	33.8762	28.1953	1.1105	1.433	2.3573	23.8191	34.3470	30.9645	195.4171
llmit	*14.348*		*17.0005*	*205.8512*	*2953.4526*	*42374.7041*				*0.1507*	*15.0393*	*18.9616*	*11.5363*	*6.6337*	*1.233*	*2.0283*	*12.4712*	*21.5297*	*26.6429*	

N	12
S1	166.22
S2	2794.8422
S3	54996.2074
S4	1217577.01
S5	169.33
S6	3010.85065
S7	59997.592
DETA	166708630
b0	-16.11
b1	3.040
b2	-0.051
ybar	14.1108333

f 9

sq 2.2331

vf 1.645

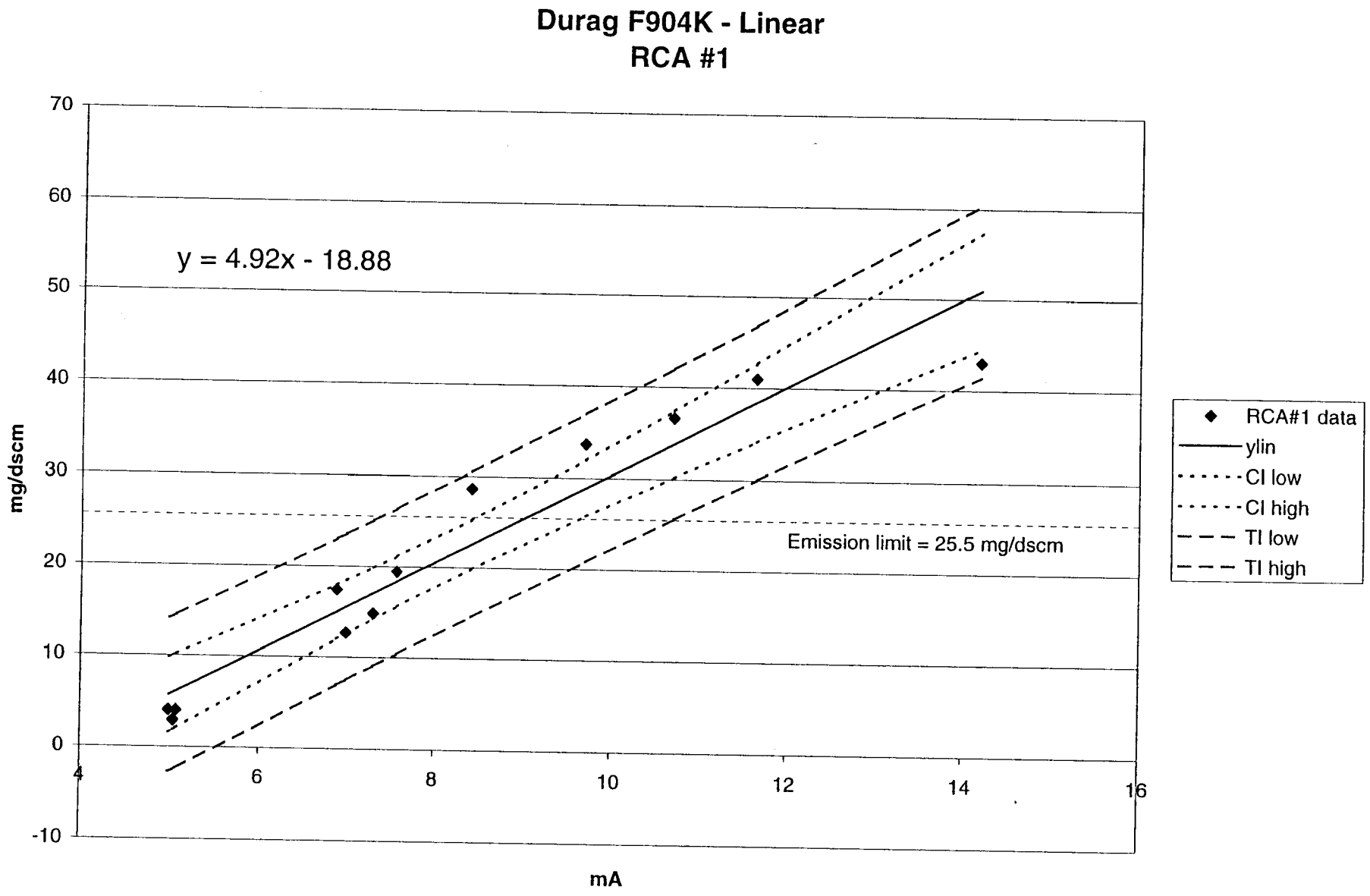
tf 2.262

EL= 17

c0	2.26954523
c1	-0.2920061
c2	0.00797995
c3	0.04078842
c4	-0.0011721
c5	3.5445E-05
D	166708630

sy 9.617773

r 0.972673


Durag F904K - Linear
RCA #1
y = 4.92x - 18.88
Emission limit = 25.5 mg/dscm
mg/dscm
mA
70
60
50
40
30
20
10
0
-10
4
6
8
10
12
14
16
RCA#1 data
ylin
CI low
CI high
TI low
TI high

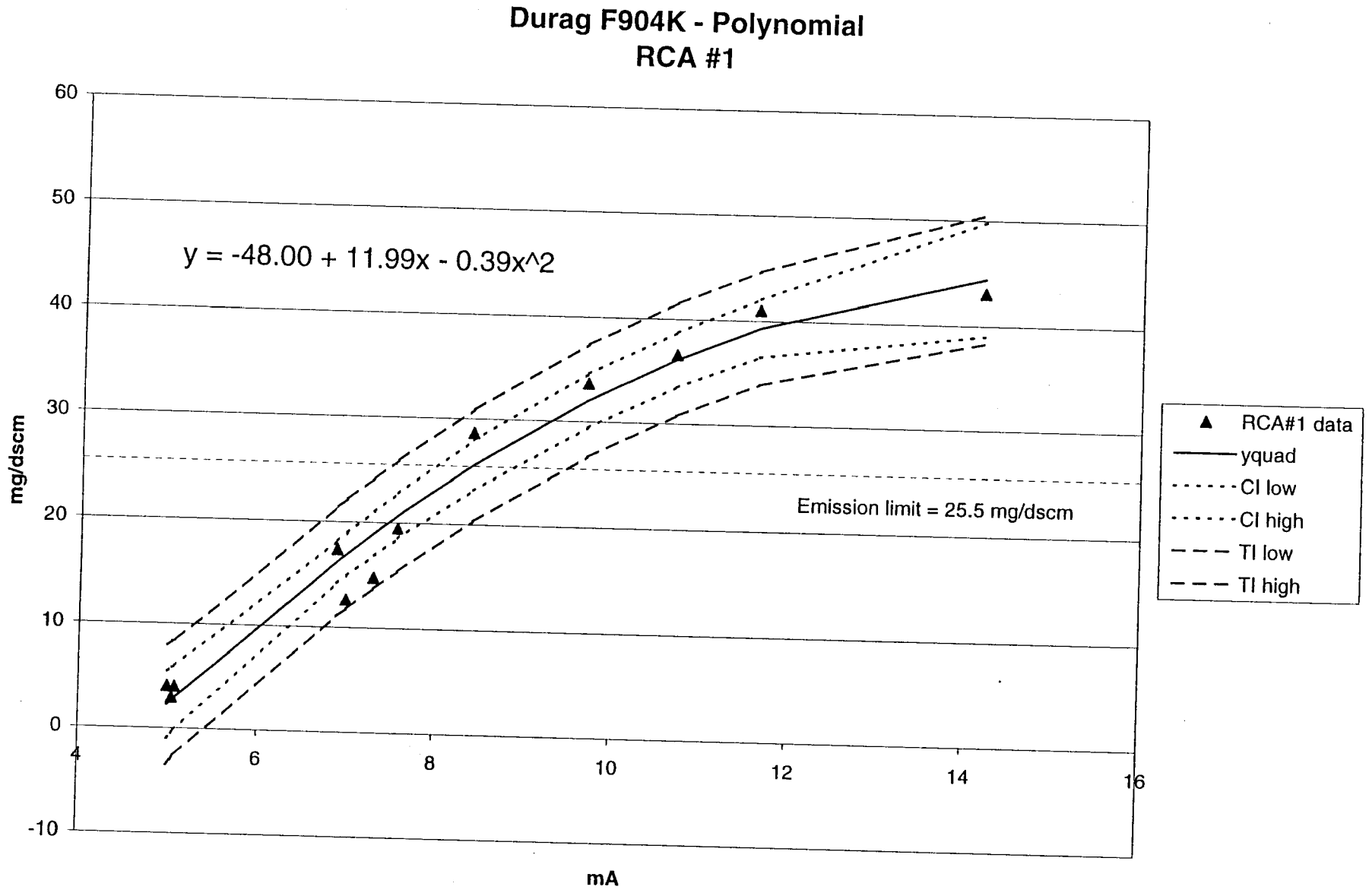
Durag F904K - Linear

Run	x (mA)	y (mg/dscm) RCA#1 data	ylin	(x-xbar)^2	(y-ybar)^2	(x-xbar)(y-ybar)	CI low	CI high	CI %	nprime	un'	kt	TI low	TI high	TI %
4	4.99	4	5.6670	10.3738	306.5417	56.3914	1.5415	9.7926	16.1788	5.0686	1.266	2.0167	-2.7404	14.0745	32.9703
2	5.04	2.9	5.9130	10.0542	346.2701	59.0039	1.8242	10.0017	16.0342	5.1604	1.266	2.0167	-2.4945	14.3204	32.9703
3	5.07	3.95	6.0605	9.8648	308.2951	55.1478	1.9938	10.1272	15.9479	5.2164	1.266	2.0167	-2.3469	14.4679	32.9703
7	6.88	17.4	14.9628	1.7711	16.8784	5.4675	11.9849	17.9406	11.6779	9.7286	1.208	1.9243	6.9405	22.9850	31.4598
6	6.99	12.65	15.5038	1.4904	78.4701	10.8145	12.5710	18.4367	11.5014	10.0294	1.208	1.9243	7.4816	23.5261	31.4598
5	7.3	14.8	17.0285	0.8296	45.0017	6.1102	14.2044	19.8526	11.0748	10.8170	1.203	1.9164	9.0395	25.0176	31.3296
11	7.57	19.45	18.3565	0.4107	4.2367	1.3190	15.6036	21.1093	10.7956	11.3837	1.203	1.9164	10.3674	26.3455	31.3296
12	8.42	28.65	22.5371	0.0438	51.0034	1.4938	19.8481	25.2261	10.5450	11.9312	1.199	1.9100	14.5746	30.4996	31.2254
8	9.71	33.65	28.8818	2.2475	147.4201	18.2024	25.8291	31.9345	11.9715	9.2573	1.214	1.9339	20.8197	36.9439	31.6161
9	10.71	36.6	33.8002	6.2458	227.7584	37.7166	30.1796	37.4207	14.1982	6.5813	1.233	1.9642	25.6119	41.9885	32.1109
10	11.65	41	38.4235	11.8279	379.9251	67.0351	34.1341	42.7128	16.8210	4.6889	1.266	2.0167	30.0160	46.8309	32.9703
1	14.2	43.05	50.9654	35.8701	464.0434	129.0166	44.5479	57.3828	25.1664	2.0948	1.433	2.2828	41.4489	60.4818	37.3195
limit	*9.02241*		*25.5*	*0.6587*			*22.7048*	*28.2952*	*10.9617*	*11.0413*	*1.203*	*1.9164*	*17.5110*	*33.4890*	*31.3296*
sum	98.53	258.1													

N	12
xbar	8.21083
ybar	21.5083
a	4.91838
b	-18.8757
R	0.96273

Sxx	91.029692
Syy	2375.8442
Sxy	447.71892
f	10
tf	2.228
vf	1.593
EL	25.5

SL 4.168824


Durag F904K - Polynomial
RCA #1
y = -48.00 + 11.99x - 0.39x^2
Emission limit = 25.5 mg/dscm
mg/dscm
mA
60
50
40
30
20
10
0
-10
4
6
8
10
12
14
16
RCA#1 data
yquad
CI low
CI high
TI low
TI high

Durag F904K - Polynomial

Run	x (mA)	y (mg/dscm) RCA#1 data	yquad	X2	X3	X4	XY	X2Y	(yhat-y)2	delta	CI low	CI high	CI %	n'	un'	kt	TI low	TI high	TI %	y-ybar2
4	4.99	4	2.2274	24.9001	124.2515	620.0150	19.9600	99.6004	3.1421	0.3013	-0.9788	5.4336	12.5733	3.3192	1.340	2.2043	-3.4648	7.9196	22.7689	306.5417
2	5.04	2.9	2.6334	25.4016	128.0241	645.2413	14.6160	73.6646	0.0711	0.2883	-0.5031	5.7698	12.2998	3.4684	1.340	2.2043	-3.0589	8.3256	22.7689	346.2701
3	5.07	3.95	2.8760	25.7049	130.3238	660.7419	20.0265	101.5344	1.1534	0.2808	-0.2195	5.9715	12.1392	3.5608	1.295	2.1303	-2.6250	8.3771	22.0043	308.2951
7	6.88	17.4	16.2310	47.3344	325.6607	2240.5454	119.7120	823.6186	1.3666	0.1169	14.2336	18.2283	7.8328	8.5525	1.214	1.9970	11.0740	21.3880	20.6280	16.8784
6	6.99	12.65	16.9611	48.8601	341.5321	2387.3094	88.4235	618.0803	18.5853	0.1184	14.9514	18.9707	7.8811	8.4480	1.223	2.0118	11.7658	22.1563	20.7809	78.4701
5	7.3	14.8	18.9683	53.2900	389.0170	2839.8241	108.0400	788.6920	17.3750	0.1255	16.8989	21.0378	8.1156	7.9668	1.223	2.0118	13.7731	24.1636	20.7809	45.0017
11	7.57	19.45	20.6562	57.3049	433.7981	3283.8516	147.2365	1114.5803	1.4548	0.1343	18.5153	22.7970	8.3955	7.4445	1.233	2.0283	15.4185	25.8939	20.9508	4.2367
12	8.42	28.65	25.6021	70.8964	596.9477	5026.2995	241.2330	2031.1819	9.2895	0.1664	23.2195	27.9848	9.3437	6.0102	1.247	2.0513	20.3050	30.8993	21.1887	51.0034
8	9.71	33.65	32.0427	94.2841	915.4986	8889.4915	326.7415	3172.6600	2.5835	0.1958	29.4577	34.6276	10.1371	5.1063	1.266	2.0826	26.6648	37.4206	21.5115	147.4201
9	10.71	36.6	36.1513	114.7041	1228.4809	13157.0306	391.9860	4198.1701	0.2013	0.2005	33.5356	38.7671	10.2578	4.9867	1.266	2.0826	30.7734	41.5292	21.5115	227.7584
10	11.65	41	39.3094	135.7225	1581.1671	18420.5970	477.6500	5564.6225	2.8580	0.2202	36.5686	42.0503	10.7483	4.5420	1.266	2.0826	33.9316	44.6873	21.5115	379.9251
1	14.2	43.05	44.4411	201.6400	2863.2880	40658.6896	611.3100	8680.6020	1.9352	0.8515	39.0510	49.8312	21.1377	1.1744	1.433	2.3573	38.3538	50.5284	24.3491	464.0434
limit	*8.4016*		*25.5007*	*70.5860*	*593.0322*	*4982.3894*				*0.1657*	*23.1228*	*27.8787*	*9.3253*	*6.0340*	*1.247*	*2.0513*	*20.2035*	*30.7979*	*21.1887*	

N	12
S1	98.53
S2	900.0431
S3	9057.9896
S4	98829.6368
S5	258.1
S6	2566.935
S7	27267.0069
DETA	833950.6757
b0	-48.00
b1	11.992
b2	-0.386
ybar	21.5083

l	9
sq	2.5823
vl	1.645
tl	2.262
EL	25.5

c0	8.2784
c1	-1.9007
c2	0.0988
c3	0.4507
c4	-0.0240
c5	0.0013
D	833950.6757

sy 14.6965

r 0.9844

Tests for best regression fit **Ff (12) = 5.12**

Durag F904K
Polynomial vs. Linear

Ff BG 17.06177 greater than Ff(12), so polynomial is better

Durag DR 300-40
Polynomial vs. Linear

Ff DLS 14.76566 greater than Ff(12), so polynomial is better

ESC P5B
Polynomial vs. Linear

Ff ELS 9.379223 greater than Ff(12), so polynomial is better

TECHNICAL REPORT DATA

(Please read Instructions on reverse before completing)

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15. SUPPLEMENTARY NOTES

16. ABSTRACT

'his final report describes an extended field demonstration of three particulate matter (PM) continuous mission monitoring systems (CEMS) at a coal-fired boiler equipped with a lime slurry scrubber and aghouse for air pollution control. The primary objectives of the field study were to: (1) demonstrate whether ıe PM CEMS could provide reliable and accurate data over an extended period, (2) evaluate the PM CEMS ɔr durability, data availability, and setup/maintenance requirements, and (3) determine whether the PM 'EMS satisfy all the requirements of draft PS-11 and the quality assurance (QA) criteria specified in draft rocedure 2, or determine if changes are needed in the requirements of PS-11 and/or Procedure 2. This ɜport presents the results of the study involving two different PM CEMS technologies (light scatter and beta auge) at the coal-fired boiler. The report consists of five separate volumes.

KEY WORDS AND DOCUMENT ANALYSIS

DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
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