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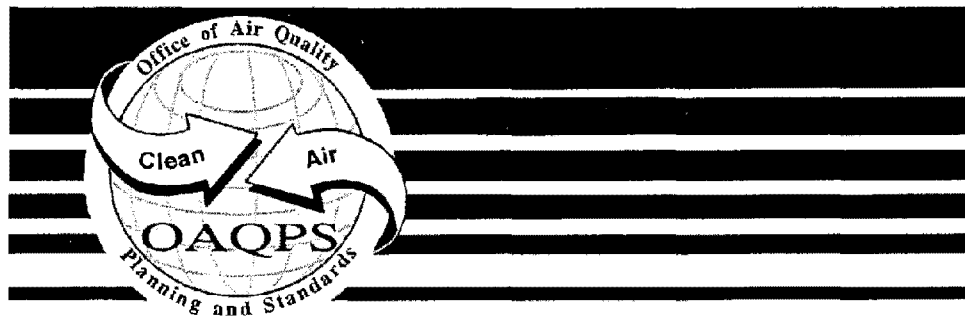
Air



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

Final Report

Volume 2—Appendices for Initial Correlation Tests



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ICal Appendix A

Process Operating Conditions

Run #10										Run #10 Avg Run #10 Low Run #10 High		
Time	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45				
Parameters												
Steam Flow (klb/hr)	283.2	271.1	276.5	277.4	277.5	278	264.7	273.2	275.2	264.7	283.2	
Steam Temp (deg F)	963	970	959	946	949	951	933	935	951	933	970	
Coal Flow (lb/hr)	27000	26341	32727	30000	29189	27692	24545	24545	27755	24545	32727	
Boiler O2s (Avg)	2.9	2.9	3.4	3.6	3.6	3.8	4.0	3.8	3.5	2.9	4.0	
west	3.6	3.4	3.7	3.8	4.1	3.7	3.9	3.5	3.7	3.4	4.1	
central	3.7	3.7	3.8	4.1	3.9	4.3	3.7	4.1	3.9	3.7	4.3	
east	1.4	1.6	2.7	2.8	2.9	3.5	4.5	3.9	2.9	1.4	4.5	
East Undergrate Air Flow (lb/hr)	132380	127088	130964	127390	127437	129086	126703	128362	128676.3	126703	132380	
West Undergrate Air Flow (lb/hr)	133370	129776	132113	131200	133623	129873	128137	128125	130777.1	128125	133623	
Baghouse Inlet Temp (deg F)	188.3	192.1	188.4	183.3	185	187.3	184.9	185.2	186.8	183.3	192.1	
Baghouse Outlet Temp (deg F)	185.7	189.7	189.6	188.4	189.2	188.2	187.1	184.5	187.8	184.5	189.7	
Baghouse DP (in H2O)	6.8	7.3	7.2	6.6	7.1	6.6	7.2	6.7	6.9	6.6	7.3	
ID Fan Suct. Press. (in H2O)	-24.1	-23.9	-24	-23.1	-23.4	-22.6	-16.4	-22.8	-22.5	-16.4	-24.1	
Opacity	4.79											
Run #11										Run #11 Avg Run #11 Low Run #11 High		
Time	12:00	12:15	12:30	12:45	13:00	13:15	13:30					
Parameters												
Steam Flow (klb/hr)	266.2	284.3	278.4	282	250.4	281.7	277.2		274.3	250.4	284.3	
Steam Temp (deg F)	945	945	942	942	932	935	952		941.9	932	952	
Coal Flow (lb/hr)	25714	27692	25714	27000	20377	24545	29189		25747.3	20377	29189	
Boiler O2s (Avg)	4.5	4.2	3.7	3.7	5.0	3.8	3.6		4.1	3.6	5	
west	4.3	3.8	3.3	3.3	5.5	3.6	3.3		3.9	3.3	5.5	
central	5.3	5.4	4.3	4.4	4.7	4.7	4.8		4.8	4.3	5.4	
east	4	3.3	3.6	3.5	4.8	3	2.6		3.5	2.6	4.8	
East Undergrate Air Flow (lb/hr)	132675	132431	132288	132573	115976	133128	131603		130096.3	115976	133128	
West Undergrate Air Flow (lb/hr)	133330	131660	133324	132610	115410	133154	132039		130218.1	115410	133330	
Baghouse Inlet Temp (deg F)	188.4	182.3	185.6	182.6	188.1	184.1	185.2		185.2	182.3	188.4	
Baghouse Outlet Temp (deg F)	185.5	185.5	185.4	186.5	182.9	181.8	184.3		184.6	181.8	186.5	
Baghouse DP (in H2O)	7	7.1	6.9	7.3	5.5	7.1	6.8		6.8	5.5	7.3	
ID Fan Suct. Press. (in H2O)	-24	-24.1	-24.3	-24.1	-19.9	-23.2	-23.1		-23.2	-19.9	-24.3	
Opacity	4.56											

Run #14									Run #14 Avg Run #14 Low Run #14 High		
Time	12:15	12:30	12:45	13:00	13:15	13:30	13:45	14:00			
Parameters											
Steam Flow (klb/hr)	275.6	274.5	277.7	279.5	284.5	281.2	285.8	291.5	281.3	274.5	291.5
Steam Temp (deg F)	957	950	953	947	946	956	949	956	951.8	946	957
Coal Flow (lb/hr)	27000	27000	34839	27000	27692	28421	28421	29189	28695.3	27000	34839
Boiler O2s (Avg)	3.1	3.2	3.0	3.0	2.8	3.0	2.6	2.3	2.9	2.3	3.2
west	3.3	3.7	3.8	3.9	3.4	3.6	3.5	2.8	3.5	2.8	3.9
central	3.5	3.8	3.7	3.7	3.7	3.4	3.1	3.2	3.5	3.1	3.8
east	2.5	2.1	1.5	1.5	1.4	2	1.3	1	1.7	1	2.5
East Undergrate Air Flow (lb/hr)	129500	127550	130375	131702	133631	134088	136027	137215	132511.0	127550	137215
West Undergrate Air Flow (lb/hr)	130341	129564	129997	130779	134053	132940	132574	135173	131927.6	129564	135173
Baghouse Inlet Temp (deg F)	184.3	184.2	184.6	183.9	184.4	180.7	185.9	183.1	183.9	180.7	185.9
Baghouse Outlet Temp (deg F)	185.7	184.6	184.3	184.3	186.5	188.7	190.7	190.5	186.9	184.3	190.7
Baghouse DP (in H2O)	5.7	6.7	6.1	5.8	7.6	6.9	7.3	6.8	6.6	5.7	7.6
ID Fan Suct. Press. (in H2O)	-22.5	-22.4	-22.6	-22.6	-24	-16.9	-24.1	-24	-22.4	-16.9	-24.1
Opacity	4.51										
Run #15									Run #15 Avg Run #15 Low Run #15 High		
Time	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30			
Parameters											
Steam Flow (klb/hr)	280.5	279.4	280.2	283.7	285.5	284.2	287.2	285.8	283.3	279.4	287.2
Steam Temp (deg F)	949	952	951	948	948	954	951	955	951.0	948	955
Coal Flow (lb/hr)	27000	24545	24545	27000	24000	27000	27000	25714	25850.5	24000	27000
Boiler O2s (Avg)	3.0	2.8	3.0	2.6	2.7	2.4	2.7	2.7	2.7	2.4	3.0
west	3.7	3.2	3.7	3.4	2.4	2.1	3.4	3	3.1	2.1	3.7
central	3.6	3.6	3.4	2.8	3.5	3.3	3.2	3.3	3.3	2.8	3.6
east	1.6	1.5	2	1.6	2.2	1.9	1.6	1.8	1.8	1.5	2.2
East Undergrate Air Flow (lb/hr)	133514	133199	132974	135467	134134	135871	134064	135890	134389.1	132974	135890
West Undergrate Air Flow (lb/hr)	132252	133234	132027	132902	133192	132718	133622	135092	133129.9	132027	135092
Baghouse Inlet Temp (deg F)	184.3	184.4	184.4	184.8	186.4	184.2	183.9	184.9	184.7	183.9	186.4
Baghouse Outlet Temp (deg F)	180.7	180.8	182.2	179.8	181.5	180.5	180.6	181.3	180.9	179.8	182.2
Baghouse DP (in H2O)	7.1	6.1	6.7	6.8	6.9	7.4	6.8	7.3	6.9	6.1	7.4
ID Fan Suct. Press. (in H2O)	-23.9	-23.4	-23.4	-24.1	-23.9	-24.1	-23.9	-24.3	-23.9	-23.4	-24.3
Opacity	5.27										

Run #16									Run #16 Avg Run #16 Low Run #16 High		
Time	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45			
Parameters											
Steam Flow (klb/hr)	266.2	276.7	287	284.2	287.4	281.5	287.6	282.8	281.7	266.2	287.6
Steam Temp (deg F)	942	953	958	957	955	937	950	951	950.4	937	958
Coal Flow (lb/hr)	26341	28421	36000	28421	36000	26341	28421	29189	29891.8	26341	36000
Boiler O2s (Avg)	3.9	3.4	2.8	3.0	3.0	3.2	3.1	3.5	3.2	2.8	3.9
west	3.5	2.8	2	2.7	3.1	3.4	3.4	4.3	3.2	2	4.3
central	4.2	4.7	4	3.9	3.8	3.7	3.7	4	4.0	3.7	4.7
east	4	2.6	2.4	2.3	2	2.4	2.2	2.2	2.5	2	4
East Undergrate Air Flow (lb/hr)	124225	133948	135580	136456	137647	136632	136796	135747	134628.9	124225	137647
West Undergrate Air Flow (lb/hr)	129757	132197	135959	134408	136618	133927	135847	134180	134111.6	129757	136618
Baghouse Inlet Temp (deg F)	185.4	185.2	186	184.1	184.9	182.7	175.4	181.1	183.1	175.4	186
Baghouse Outlet Temp (deg F)	178	178.9	179.8	181.1	178.4	180.2	180.4	181.2	179.8	178	181.2
Baghouse DP (in H2O)	6.6	6.8	6.9	6.9	6.2	6.9	6.8	6.4	6.7	6.2	6.9
ID Fan Suct. Press. (in H2O)	-24.1	-23.5	-24	-24.1	-23.9	-23.8	-24.2	-24.2	-24.0	-23.5	-24.2
Opacity	3.71										
Run #17									Run #17 Avg Run #17 Low Run #17 High		
Time	12:30	12:45	13:00	13:15	13:30	13:45	14:00				
Parameters											
Steam Flow (klb/hr)	271.4	277.2	282.4	275.7	286.9	281.9	283.5	279.9	271.4	286.9	
Steam Temp (deg F)	950	953	953	957	954	952	953	953.1	950	957	
Coal Flow (lb/hr)	24545	27692	27000	26341	26341	28421	27692	26861.7	24545	28421	
Boiler O2s (Avg)	3.7	3.7	3.5	3.9	3.5	3.5	3.3	3.6	3.3	3.9	
west	3.9	4	3.5	4.6	3.5	3.4	3.2	3.7	3.2	4.6	
central	4.2	4.1	3.8	4	4.3	4.1	3.7	4.0	3.7	4.3	
east	3.1	3.1	3.1	3.2	2.6	2.9	3.1	3.0	2.6	3.2	
East Undergrate Air Flow (lb/hr)	130145	134460	136585	134045	138127	135336	134772	134781.4	130145	138127	
West Undergrate Air Flow (lb/hr)	129989	134130	135309	131982	135555	132755	133821	133363.0	129989	135555	
Baghouse Inlet Temp (deg F)	183	182.6	187.5	185.2	185.7	193.2	185.7	186.1	182.6	193.2	
Baghouse Outlet Temp (deg F)	179.8	180.2	180.3	180.4	179.5	177.2	182.9	180.0	177.2	182.9	
Baghouse DP (in H2O)	6.7	9.5	6.3	6.6	7.2	7.2	6.9	7.2	6.3	9.5	
ID Fan Suct. Press. (in H2O)	-22.4	-22.6	-23.7	-23.2	-24.1	-23.7	-24	-23.4	-22.4	-24.1	
Opacity	3.54										

Run #18									Run #18 Avg Run #18 Low Run #18 High		
Time	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30			
Parameters											
Steam Flow (klb/hr)	281.9	286.6	285.5	282.9	285.3	282.8	284.5	282.8	284.0	281.9	286.6
Steam Temp (deg F)	954	957	950	942	950	944	958	950	950.6	942	958
Coal Flow (lb/hr)	27692	29189	27692	28421	28421	28421	29189	29189	28526.8	27692	29189
Boiler O2s (Avg)	3.5	3.0	2.9	3.9	4.1	4.2	4.1	4.2	3.7	2.9	4.2
west	3	1.8	1.4						2.1	1.4	3
central	3.8	4.1	3.5	3.4	4.4	3.8	4.3	4.4	4.0	3.4	4.4
east	3.7	3.2	3.9	4.4	3.8	4.6	3.9	4	3.9	3.2	4.6
East Undergrate Air Flow (lb/hr)	133593	135786	134048	134609	134081	133778	134199	131876	133996.3	131876	135786
West Undergrate Air Flow (lb/hr)	133711	134098	135737	134841	134383	132152	132461	133174	133819.6	132152	135737
Baghouse Inlet Temp (deg F)	183.6	178.2	185.6	185.9	183.3	185.4	180.9	182.4	183.2	178.2	185.9
Baghouse Outlet Temp (deg F)	180.5	179.9	181.4	181.5	180.2	181.2	180.2	179.5	180.6	179.5	181.5
Baghouse DP (in H2O)	7	7.4	7.6	8.1	7	7.7	7.9	6.7	7.4	6.7	8.1
ID Fan Suct. Press. (in H2O)		-24.1	-24.4	-19.6	-24.3	-24.4	-23.3	-23.1	-23.3	-19.6	-24.4
Opacity	3.92										
Run #19									Run #19 Avg Run #19 Low Run #19 High		
Time	9:30	9:45	10:00	10:15	10:30	10:45	11:00	11:15			
Parameters											
Steam Flow (klb/hr)	282.7	281.4	285.4	282.2	286.3	284.1	277.2	271.7	281.4	271.7	286.3
Steam Temp (deg F)	956	957	954	949	951	952	951	944	951.8	944	957
Coal Flow (lb/hr)	28421	29189	29189	28421	28421	30857	27000	24545	28255.4	24545	30857
Boiler O2s (Avg)	2.7	2.9	2.9	3.1	3.0	3.0	3.2	3.6	3.1	2.7	3.6
west	2.9	3.4	3.2	3.8	3.6	3.5	4.1	4.6	3.6	2.9	4.6
central	3.4	3.4	4	3.9	4	3.8	4.1	4.1	3.8	3.4	4.1
east	1.9	2	1.5	1.6	1.3	1.7	1.4	2.1	1.7	1.3	2.1
East Undergrate Air Flow (lb/hr)	134378	134700	134628	134833	135626	137442	133744	133474	134853.1	133474	137442
West Undergrate Air Flow (lb/hr)	135298	135296	135190	136399	135618	134252	133401	131819	134659.1	131819	136399
Baghouse Inlet Temp (deg F)	186.5	185.3	184.4	185.6	182.8	185.2	185.2	186.6	185.2	182.8	186.6
Baghouse Outlet Temp (deg F)	179.5	179.2	180	180.1	179.6	180.6	179.1	179.1	179.7	179.1	180.6
Baghouse DP (in H2O)	5.9	6.8	5.9	6.8	6.1	6.6	6.2	5.7	6.3	5.7	6.8
ID Fan Suct. Press. (in H2O)	-22.6	-23.6	-22.5		-22.8	-23.6	-23.1	-22.5	-23.0	-22.5	-23.6
Opacity	4.01										

Run #20									Run #20 Avg Run #20 Low Run #20 High		
Time	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45			
Parameters											
Steam Flow (klb/hr)	273.6	282.8	287.4	281.7	284.2	277.6	289.4	268.7	280.7	268.7	289.4
Steam Temp (deg F)	957	955	948	947	954	954	949	949	951.6	947	957
Coal Flow (lb/hr)	27000	30857	27692	26341	28421	25116	28421	26341	27523.6	25116	30857
Boiler O2s (Avg)	3.5	4.4	4.2	4.3	4.4	4.6	4.2	4.5	4.2	3.5	4.6
west	4.7	4.8	4.4	4.9	4.3	5.1	4.3	4.9	4.7	4.3	5.1
central	4.5	3.9	3.9	3.7	4.4	4.1	4.1	4.1	4.1	3.7	4.5
east	1.2								1.2	1.2	1.2
East Undergrate Air Flow (lb/hr)	133318	136164	135401	136065	135013	131920	136971	127137	133998.6	127137	136971
West Undergrate Air Flow (lb/hr)	131886	136248	136334	135929	134453	133549	135607	128450	134057.0	128450	136334
Baghouse Inlet Temp (deg F)	184.8	184.7	185.4	185.2	185.5	184.8	184.7	184.6	185.0	184.6	185.5
Baghouse Outlet Temp (deg F)	180.3	180.4	179.2	180.4	181.4	179.4	180.5	180.1	180.2	179.2	181.4
Baghouse DP (in H2O)	7.1	7.3	7	6.4	7.2	6.8	6.7	6.9	6.9	6.4	7.3
ID Fan Suct. Press. (in H2O)	-23.3	-24	-23.9	-23.9	-23.8	-23	-23.6	-22.1	-23.5	-22.1	-24
Opacity	4.22										

Run #21								Run #21 Avg Run #21 Low Run #21 High		
Time	16:30	16:45	17:00	17:15	17:30	17:45	18:00			
Parameters										
Steam Flow (klb/hr)	285.8	280.3	282.8	281.1	278.1	282.6	276.4	281.0	276.4	285.8
Steam Temp (deg F)	949	950	956	950	943	949	956	950.4	943	956
Coal Flow (lb/hr)	27000	27000	29189	27692	27000	27000	25714	27227.9	25714	29189
Boiler O2s (Avg)	3.0	3.1	3.1	3.4	3.4	3.5	3.2	3.3	3.0	3.5
west	3.1	3	2.6	3.3	3.2	3.2	3.4	3.1	2.6	3.4
central	3.2	3.3	3.9	3.6	4	3.1	3.4	3.5	3.1	4
east	2.8	3.1	2.7	3.3	3.1	4.3	2.9	3.2	2.7	4.3
East Undergrate Air Flow (lb/hr)	134503	134756	133526	135845	133040	131675	131575	133560.0	131575	135845
West Undergrate Air Flow (lb/hr)	135914	133840	133958	134608	133694	130955	128824	133113.3	128824	135914
Baghouse Inlet Temp (deg F)	185.3	186.2	184.7	184.8	179.1	183.1	182.9	183.7	179.1	186.2
Baghouse Outlet Temp (deg F)	178.8	180.7	180.6	181	180.8	178.8	180.8	180.2	178.8	181
Baghouse DP (in H2O)	6.7	6.8	6.7	6.7	6.6	6.9	6.5	6.7	6.5	6.9
ID Fan Suct. Press. (in H2O)	-23.9	-23.6	-23.5	-24	-24.2	-24.1	-23.5	-23.8	-23.5	-24.2
Opacity	4.14									

Run #22									Run #22 Avg Run #22 Low Run #22 High		
Time	9:00	9:15	9:30	9:45	10:00	10:15	10:30	10:45			
Parameters											
Steam Flow (klb/hr)	285.8	287	291.4	294.1	282.6	279.9	280.9	275	284.6	275	294.1
Steam Temp (deg F)	949	956	946	947	950	946	950	954	949.8	946	956
Coal Flow (lb/hr)	28421	27000	29189	30000		25714	27692	28341	27765.3	25714	30000
Boiler O2s (Avg)	3.3	3.2	3.0	3.0	3.1	3.5	3.4	3.4	3.2	3.0	3.5
west	3.7	3.6	3.3	3.1	3.8	3.9	3.8	4.5	3.7	3.1	4.5
central	4	4	3.6	3.1	3.1	3.9	3.9	3.6	3.7	3.1	4
east	2.2	1.9	2.2	2.7	2.3	2.8	2.5	2.2	2.4	1.9	2.8
East Undergrate Air Flow (lb/hr)	137924	137726	139686	138921	138256	135016	134176	133695	136925.0	133695	139686
West Undergrate Air Flow (lb/hr)	136574	136021	140126	138528	135816	134295	133902	133948	136150.0	133902	140126
Baghouse Inlet Temp (deg F)	185.4	185.2	184.7	185.3	183.1	184.7	185	184.8	184.8	183.1	185.4
Baghouse Outlet Temp (deg F)	179.5	178.4	178.7	179.7	179.7	179.3	178.7	180.1	179.3	178.4	180.1
Baghouse DP (in H2O)	6.7	7.1	7.1	7	6.5	6.4	6.1	7.2	6.8	6.1	7.2
ID Fan Suct. Press. (in H2O)	-23.8	-24.2	-24.4	-24.2	-23.7	-23.1	-23.1	-23.8	-23.8	-23.1	-24.4
Opacity	4.25										
Run #23									Run #23 Avg Run #23 Low Run #23 High		
Time	12:00	12:15	12:30	12:45	13:00	13:15	13:30				
Parameters											
Steam Flow (klb/hr)	269.4	263.5	266.9	269.2	268.2	271.8	268.1		268.2	263.5	271.8
Steam Temp (deg F)	952	947	954	950	952	951	947		950.4	947	954
Coal Flow (lb/hr)	27000	24545	27692	27692	23478	24545	25714		25809.4	23478	27692
Boiler O2s (Avg)	3.7	4.0	3.6	3.4	3.2	3.3	3.4		3.5	3.2	4.0
west	4.5	4.7	4.1	4	4	4.1	4.2		4.2	4	4.7
central	5	4.7	4.9	4.3	4.2	4.3	4.3		4.5	4.2	5
east	1.5	2.5	1.9	1.9	1.5	1.5	1.8		1.8	1.5	2.5
East Undergrate Air Flow (lb/hr)	130233	121390	128572	128353	129835	130124	130686		128456.1	121390	130686
West Undergrate Air Flow (lb/hr)	130408	125469	129336	127528	127609	129356	129955		128523.0	125469	130408
Baghouse Inlet Temp (deg F)	185.3	184.4	219.4	184.1	183.4	185.2	185.5		189.6	183.4	219.4
Baghouse Outlet Temp (deg F)	179.2	179.6	180.2	179.6	180	179.4	179.5		179.6	179.2	180.2
Baghouse DP (in H2O)	6.9	6.5	6.8	6	5.8	6.3	5.6		6.3	5.6	6.9
ID Fan Suct. Press. (in H2O)	-22.8	-22.3	-22.5	-21.6	-21.8	-18.4	-21.9		-21.6	-18.4	-22.8
Opacity	4.11										

Run #24									Run #24 Avg Run #24 Low Run #24 High		
Time	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00			
Parameters											
Steam Flow (klb/hr)	281.3	278.6	283.8	282.8	281.8	276.6	280.2	280.8	280.7	276.6	283.8
Steam Temp (deg F)	955	949	953	945	953	951	946	947	949.9	945	955
Coal Flow (lb/hr)	27692	27000	30000	25116	27692	26341	14026	15882	24218.6	14026	30000
Boiler O2s (Avg)	2.7	3.1	3.0	2.9	3.3	3.3	3.0	2.6	3.0	2.6	3.3
west	2.6	2.9	2.5	2.3	2.7	1.9	1.3	1.4	2.2	1.3	2.9
central	3.5	4.3	4.6	4	3.8	4.4	4.6	3.8	4.1	3.5	4.6
east	2.1	2.2	2	2.5	3.3	3.6	3.1	2.5	2.7	2	3.6
East Undergrate Air Flow (lb/hr)	130766	129071	130724	129406	130319	129327	129680	130238	129941.4	129071	130766
West Undergrate Air Flow (lb/hr)	130833	130871	129900	129089	128860	130675	129477	131060	130108.1	128860	131060
Baghouse Inlet Temp (deg F)	186.2	188	185.6	185.9	186.4	185.4	186	185.3	186.1	185.3	188
Baghouse Outlet Temp (deg F)	179	180.5	179.7	180.8	179.8	179.9	177.8	180.9	179.8	177.8	180.9
Baghouse DP (in H2O)	6.6	7.3	7.5	7.3	7.1	6.1	7.7	7.4	7.1	6.1	7.7
ID Fan Suct. Press. (in H2O)	-23.5	-23.5	-23.2	-23.2	-23.6	-23.3	-23.4	-23.1	-23.4	-23.1	-23.6
Opacity	5.39										

ICal Appendix B

Computer Results for M17 Tests

FILE NAME - R10A
 RUN # - 10 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 0855-1044
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:06:51

Initial Meter Volume (Cubic Feet)=	758.680
Final Meter Volume (Cubic Feet)=	819.283
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.005
Net Meter Volume (Cubic Feet)=	61.270
Gas Volume (Dry Standard Cubic Feet)=	59.258

Barometric Pressure (in Hg)=	30.04
Static Pressure (Inches H2O)=	-24.71

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	184.0
Percent Water=	12.8

Average Meter Temperature (F)=	90
Average Delta H (in H2O)=	1.45
Average Delta P (in H2O)=	1.690
Average Stack Temperature (F)=	194

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.94

Average Square Root of Delta P (in H2O)=	1.2170
% Isokinetic=	100.7

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)=	4,692
Flow Rate (Actual, Cubic ft/min)=	122,566
Flow rate (Standard, Wet, Cubic ft/min)=	93,352
Flow Rate (Standard, Dry, Cubic ft/min)=	81,441

Particulate Loading - Front Half

Particulate Weight (g)=	0.0648	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0168	0.0147 0.0138
Particulate Loading, Actual (gr/cu ft)=	0.0112	
Emission Rate (lb/hr)=	11.75	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R10A
 RUN # - 10 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 0855-1044
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:06:51

Initial Meter Volume (Cubic Meters)= 21.483
 Final Meter Volume (Cubic Meters)= 23.199
 Meter Factor= 1.011
 Final Leak Rate (cu m/min)= 0.0001
 Net Meter Volume (Cubic Meters)= 1.735
 Gas Volume (Dry Standard Cubic Meters)= 1.678

Barometric Pressure (mm Hg)= 763
 Static Pressure (mm H2O)= -628

Percent Oxygen= 5.0
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 184.0
 Percent Water= 12.8

Average Meter Temperature (C)= 32
 Average Delta H (mm H2O)= 36.8
 Average Delta P (mm H2O)= 42.9
 Average Stack Temperature (C)= 90

Dry Molecular Weight= 30.54
 Wet Molecular Weight= 28.94

Average Square Root of Delta P (mm H2O)= 6.1334
 % Isokinetic= 100.7

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)= 1,430
 Flow rate (Actual, Cubic m/min)= 3,471
 Flow rate (Standard, Wet, Cubic m/min)= 2,643
 Flow rate (Standard, Dry, Cubic m/min)= 2,306

Particulate Loading - Front Half

Particulate Weight (g)= 0.0648
 Particulate Loading, Dry Std. (mg/cu m)= 38.6
 Particulate Loading, Actual (mg/cu m)= 25.7
 Emission Rate (kg/hr)= 5.34

Corr. to 7% O2 & 12% CO2
 33.8 31.7

No Back Half Analysis

FILE NAME - R10A
 RUN # - 10 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 0855-1044
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:06:51

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)	
1	2.400	2.00	190	78	77
2	2.100	1.80	191	77	78
3	1.900	1.60	193	79	78
4	0.730	0.61	194	81	78
5	0.040	0.03	196	82	79
6	2.300	1.90	193	81	80
7	2.400	2.00	193	85	81
8	2.300	2.00	195	88	82
9	0.880	0.74	195	90	83
10	0.180	0.15	196	91	84
11	2.700	2.30	194	90	85
12	2.800	2.40	195	93	86
13	2.400	2.10	195	96	87
14	2.000	1.70	195	98	88
15	0.260	0.22	194	98	89
16	2.600	2.20	194	97	90
17	2.400	2.10	195	98	91
18	2.400	2.10	195	100	92
19	1.700	1.50	194	102	92
20	0.350	0.30	194	103	93
21	2.400	2.10	194	101	94
22	2.200	1.90	194	102	95
23	1.700	1.50	194	104	95
24	1.000	0.87	193	104	96
25	0.100	0.08	192	104	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	3.3785	3.3214	0.0000	0.0571

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5778	3.5701	25.4	0.0077
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R10B
 RUN # - 10 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 0857-1046
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:07:43

Initial Meter Volume (Cubic Feet)=	995.405
Final Meter Volume (Cubic Feet)=	1055.943
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.002
Net Meter Volume (Cubic Feet)=	59.812
Gas Volume (Dry Standard Cubic Feet)=	58.369

Barometric Pressure (in Hg)=	30.04
Static Pressure (Inches H2O)=	-24.71

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	188.8
Percent Water=	13.2

Average Meter Temperature (F)=	85
Average Delta H (in H2O)=	1.49
Average Delta P (in H2O)=	1.724
Average Stack Temperature (F)=	195

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.88

Average Square Root of Delta P (in H2O)=	1.2282
% Isokinetic=	101.0

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)=	4,742
Flow Rate (Actual, Cubic ft/min)=	123,885
Flow rate (Standard, Wet, Cubic ft/min)=	94,259
Flow Rate (Standard, Dry, Cubic ft/min)=	81,797

Particulate Loading - Front Half

Particulate Weight (g)=	0.0667	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0176	0.0154 0.0145
Particulate Loading, Actual (gr/cu ft)=	0.0116	
Emission Rate (lb/hr)=	12.34	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R10B
 RUN # - 10 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 0857-1046
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:07:43

Initial Meter Volume (Cubic Meters)=	28.186
Final Meter Volume (Cubic Meters)=	29.900
Meter Factor=	0.988
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.694
Gas Volume (Dry Standard Cubic Meters)=	1.653

Barometric Pressure (mm Hg)=	763
Static Pressure (mm H2O)=	-628

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	188.8
Percent Water=	13.2

Average Meter Temperature (C)=	29
Average Delta H (mm H2O)=	37.8
Average Delta P (mm H2O)=	43.8
Average Stack Temperature (C)=	90

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.88

Average Square Root of Delta P (mm H2O)=	6.1900
% Isokinetic=	101.0

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)=	1,445
Flow rate (Actual, Cubic m/min)=	3,508
Flow rate (Standard, Wet, Cubic m/min)=	2,669
Flow rate (Standard, Dry, Cubic m/min)=	2,316

Particulate Loading - Front Half

Particulate Weight (g)=	0.0667	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	40.4	35.3 33.2
Particulate Loading, Actual (mg/cu m)=	26.6	
Emission Rate (kg/hr)=	5.60	

No Back Half Analysis

FILE NAME - R10B
 RUN # - 10 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 0857-1046
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:07:43

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.700	2.30	191	77 77
2	2.600	2.20	193	78 78
3	2.400	2.10	194	79 78
4	1.400	1.20	196	79 78
5	0.620	0.52	196	80 78
6	2.500	2.10	196	81 78
7	2.500	2.10	195	82 79
8	2.200	1.90	195	84 80
9	0.600	0.51	196	85 80
10	0.120	0.10	196	86 81
11	2.500	2.20	194	86 82
12	2.200	1.90	195	86 82
13	1.800	1.60	195	88 83
14	0.710	0.61	196	89 84
15	0.060	0.05	195	89 84
16	2.700	2.30	195	89 85
17	2.200	1.90	195	89 85
18	2.400	2.10	195	91 86
19	0.680	0.59	194	92 87
20	0.120	0.10	195	93 88
21	2.900	2.50	195	93 88
22	2.900	2.50	194	92 88
23	2.000	1.80	194	94 89
24	1.900	1.70	193	95 89
25	0.390	0.34	192	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	3.3692	3.3149	0.0000	0.0543

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7590	3.7466	37.6	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 - R11A
 RUN # - 11 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1147-1336
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:11:03

Initial Meter Volume (Cubic Feet)=	819.525
Final Meter Volume (Cubic Feet)=	879.100
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.007
Net Meter Volume (Cubic Feet)=	60.230
Gas Volume (Dry Standard Cubic Feet)=	57.170

Barometric Pressure (in Hg)=	30.06
Static Pressure (Inches H2O)=	-26.45

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.5
Moisture Collected (ml)=	176.2
Percent Water=	12.7

Average Meter Temperature (F)=	101
Average Delta H (in H2O)=	1.40
Average Delta P (in H2O)=	1.642
Average Stack Temperature (F)=	191

Dry Molecular Weight=	30.52
Wet Molecular Weight=	28.93

Average Square Root of Delta P (in H2O)=	1.1964
% Isokinetic=	100.9

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)=	4,609
Flow Rate (Actual, Cubic ft/min)=	120,415
Flow rate (Standard, Wet, Cubic ft/min)=	91,840
Flow Rate (Standard, Dry, Cubic ft/min)=	80,198

Particulate Loading - Front Half

Particulate Weight (g)=	0.0687	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0185	0.0162 0.0153
Particulate Loading, Actual (gr/cu ft)=	0.0123	
Emission Rate (lb/hr)=	12.72	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R11A
 RUN # - 11 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1147-1336
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:11:03

Initial Meter Volume (Cubic Meters)=	23.206
Final Meter Volume (Cubic Meters)=	24.893
Meter Factor=	1.011
Final Leak Rate (cu m/min)=	0.0002
Net Meter Volume (Cubic Meters)=	1.705
Gas Volume (Dry Standard Cubic Meters)=	1.619

Barometric Pressure (mm Hg)=	764
Static Pressure (mm H2O)=	-672

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.5
Moisture Collected (ml)=	176.2
Percent Water=	12.7

Average Meter Temperature (C)=	38
Average Delta H (mm H2O)=	35.6
Average Delta P (mm H2O)=	41.7
Average Stack Temperature (C)=	88

Dry Molecular Weight=	30.52
Wet Molecular Weight=	28.93

Average Square Root of Delta P (mm H2O)=	6.0295
% Isokinetic=	100.9

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)=	3,410
Flow rate (Standard, Wet, Cubic m/min)=	2,601
Flow rate (Standard, Dry, Cubic m/min)=	2,271

Particulate Loading - Front Half

Particulate Weight (g)=	0.0687	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	42.4	37.1 35.1
Particulate Loading, Actual (mg/cu m)=	28.3	
Emission Rate (kg/hr)=	5.77	

No Back Half Analysis

FILE NAME - R11A
 RUN # - 11 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1147-1336
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:11:03

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.400	2.00	190	93 93
2	2.100	1.80	190	92 93
3	1.800	1.50	191	94 93
4	0.630	0.52	191	96 93
5	0.050	0.04	190	96 93
6	2.600	2.20	188	96 94
7	2.500	2.10	192	98 94
8	2.000	1.70	192	101 95
9	1.000	0.84	193	103 95
10	0.300	0.25	191	103 96
11	2.700	2.30	192	102 96
12	2.700	2.30	193	103 97
13	2.800	2.40	194	106 97
14	1.200	1.00	192	108 98
15	0.330	0.28	192	107 99
16	2.600	2.20	192	105 99
17	2.300	2.00	190	106 100
18	1.700	1.50	188	108 100
19	1.500	1.30	187	109 101
20	0.250	0.21	187	110 101
21	2.400	2.10	187	108 102
22	2.200	1.90	190	109 102
23	2.200	1.90	191	111 103
24	0.720	0.61	191	112 103
25	0.060	0.05	189	111 104

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3457	3.2909	0.0000	0.0548

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.8842	3.8703	50.6	0.0139
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R11B
 RUN # - 11 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1149-1338
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:11:51

Initial Meter Volume (Cubic Feet)= 56.158
 Final Meter Volume (Cubic Feet)= 118.876
 Meter Factor= 0.988
 Final Leak Rate (cu ft/min)= 0.003
 Net Meter Volume (Cubic Feet)= 61.965
 Gas Volume (Dry Standard Cubic Feet)= 59.526

Barometric Pressure (in Hg)= 30.06
 Static Pressure (Inches H2O)= -26.45

Percent Oxygen= 5.0
 Percent Carbon Dioxide= 14.5
 Moisture Collected (ml)= 188.6
 Percent Water= 13.0

Average Meter Temperature (F)= 94
 Average Delta H (in H2O)= 1.56
 Average Delta P (in H2O)= 1.738
 Average Stack Temperature (F)= 191

Dry Molecular Weight= 30.52
 Wet Molecular Weight= 28.89

Average Square Root of Delta P (in H2O)= 1.2311
 % Isokinetic= 101.3

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)= 4,748
 Flow Rate (Actual, Cubic ft/min)= 124,032
 Flow rate (Standard, Wet, Cubic ft/min)= 94,547
 Flow Rate (Standard, Dry, Cubic ft/min)= 82,270

Particulate Loading - Front Half

Particulate Weight (g)= 0.0694
 Particulate Loading, Dry Std. (gr/scf)= 0.0180
 Particulate Loading, Actual (gr/cu ft)= 0.0119
 Emission Rate (lb/hr)= 12.66

Corr. to 7% O2 & 12% CO2
 0.0157 0.0149

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R11B
 RUN # - 11 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1149-1338
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:11:51

Initial Meter Volume (Cubic Meters)= 1.590
 Final Meter Volume (Cubic Meters)= 3.366
 Meter Factor= 0.988
 Final Leak Rate (cu m/min)= 0.0001
 Net Meter Volume (Cubic Meters)= 1.755
 Gas Volume (Dry Standard Cubic Meters)= 1.686

Barometric Pressure (mm Hg)= 764
 Static Pressure (mm H2O)= -672

Percent Oxygen= 5.0
 Percent Carbon Dioxide= 14.5
 Moisture Collected (ml)= 188.6
 Percent Water= 13.0

Average Meter Temperature (C)= 35
 Average Delta H (mm H2O)= 39.7
 Average Delta P (mm H2O)= 44.2
 Average Stack Temperature (C)= 88

Dry Molecular Weight= 30.52
 Wet Molecular Weight= 28.89

Average Square Root of Delta P (mm H2O)= 6.2048
 % Isokinetic= 101.3

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)= 1,447
 Flow rate (Actual, Cubic m/min)= 3,512
 Flow rate (Standard, Wet, Cubic m/min)= 2,677
 Flow rate (Standard, Dry, Cubic m/min)= 2,330

Particulate Loading - Front Half

Particulate Weight (g)= 0.0694
 Particulate Loading, Dry Std. (mg/cu m)= 41.2
 Particulate Loading, Actual (mg/cu m)= 27.3
 Emission Rate (kg/hr)= 5.75

Corr. to 7% O2 & 12% CO2
 36.0 34.1

No Back Half Analysis

FILE NAME - R11B
 RUN # - 11 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1149-1338
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:11:51

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.800	2.50	190	89 89
2	2.700	2.40	191	89 89
3	2.500	2.20	191	90 89
4	1.800	1.60	191	91 89
5	0.370	0.33	191	92 89
6	2.700	2.40	191	93 90
7	2.700	2.40	192	93 90
8	1.800	1.60	192	94 91
9	1.100	0.99	192	95 91
10	0.180	0.16	191	96 91
11	2.600	2.30	193	95 92
12	2.200	2.00	193	95 92
13	2.200	2.00	194	97 92
14	0.650	0.58	192	98 93
15	0.040	0.03	192	98 93
16	2.500	2.30	192	97 94
17	2.300	2.10	189	97 94
18	1.500	1.40	188	98 94
19	0.700	0.64	187	99 94
20	0.100	0.09	188	99 95
21	2.800	2.60	190	99 96
22	2.900	2.60	191	99 96
23	2.100	1.90	191	100 96
24	1.900	1.70	191	100 96
25	0.320	0.29	189	101 96

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.4128	3.3564	0.0000	0.0564

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.6627	3.6497	45.4	0.0130
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R12A
 RUN # - 12 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1439-1628
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:12:39

Initial Meter Volume (Cubic Feet)= 879.722
 Final Meter Volume (Cubic Feet)= 941.693
 Meter Factor= 1.011
 Final Leak Rate (cu ft/min)= 0.013
 Net Meter Volume (Cubic Feet)= 62.653
 Gas Volume (Dry Standard Cubic Feet)= 58.894

Barometric Pressure (in Hg)= 30.02
 Static Pressure (Inches H2O)= -26.68

Percent Oxygen= 4.5
 Percent Carbon Dioxide= 14.8
 Moisture Collected (ml)= 206.0
 Percent Water= 14.1

Average Meter Temperature (F)= 105
 Average Delta H (in H2O)= 1.48
 Average Delta P (in H2O)= 1.676
 Average Stack Temperature (F)= 190

Dry Molecular Weight= 30.55
 Wet Molecular Weight= 28.77

Average Square Root of Delta P (in H2O)= 1.2083
 % Isokinetic= 102.1

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)= 4,669
 Flow Rate (Actual, Cubic ft/min)= 121,987
 Flow rate (Standard, Wet, Cubic ft/min)= 92,982
 Flow Rate (Standard, Dry, Cubic ft/min)= 79,830

Particulate Loading - Front Half

Particulate Weight (g)=	0.0810	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0212	0.0180 0.0172
Particulate Loading, Actual (gr/cu ft)=	0.0139	
Emission Rate (lb/hr)=	14.49	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R12A
 RUN # - 12 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1439-1628
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:12:39

Initial Meter Volume (Cubic Meters)=	24.910
Final Meter Volume (Cubic Meters)=	26.665
Meter Factor=	1.011
Final Leak Rate (cu m/min)=	0.0004
Net Meter Volume (Cubic Meters)=	1.774
Gas Volume (Dry Standard Cubic Meters)=	1.668

Barometric Pressure (mm Hg)=	763
Static Pressure (mm H2O)=	-678

Percent Oxygen=	4.5
Percent Carbon Dioxide=	14.8
Moisture Collected (ml)=	206.0
Percent Water=	14.1

Average Meter Temperature (C)=	41
Average Delta H (mm H2O)=	37.7
Average Delta P (mm H2O)=	42.6
Average Stack Temperature (C)=	88

Dry Molecular Weight=	30.55
Wet Molecular Weight=	28.77

Average Square Root of Delta P (mm H2O)=	6.0895
% Isokinetic=	102.1

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)=	1,423
Flow rate (Actual, Cubic m/min)=	3,454
Flow rate (Standard, Wet, Cubic m/min)=	2,633
Flow rate (Standard, Dry, Cubic m/min)=	2,261

Particulate Loading - Front Half

Particulate Weight (g)=	0.0810
Particulate Loading, Dry Std. (mg/cu m)=	48.6
Particulate Loading, Actual (mg/cu m)=	31.8
Emission Rate (kg/hr)=	6.58

Corr. to 7% O2 & 12% CO2
41.2 39.4

No Back Half Analysis

FILE NAME - R12A
 RUN # - 12 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1439-1628
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:12:39

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.400	2.10	192	98 98
2	2.100	1.80	191	98 98
3	1.900	1.70	191	100 98
4	0.650	0.57	189	102 98
5	0.040	0.03	187	103 99
6	2.500	2.20	187	100 99
7	2.500	2.20	188	103 99
8	1.900	1.70	188	106 100
9	0.880	0.78	189	108 100
10	0.100	0.08	187	108 101
11	2.600	2.30	187	106 102
12	2.700	2.40	189	108 102
13	2.600	2.30	190	110 103
14	0.990	0.88	189	112 103
15	0.400	0.35	189	112 104
16	2.600	2.30	189	110 104
17	2.600	2.30	190	112 105
18	2.100	1.90	191	113 105
19	1.800	1.60	191	114 106
20	0.300	0.26	191	114 106
21	2.500	2.20	190	112 106
22	2.400	2.10	192	113 107
23	2.300	2.10	192	114 107
24	0.900	0.80	191	115 107
25	0.140	0.12	190	114 108

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3954	3.3263	0.0000	0.0691

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5600	3.5481	43.5	0.0119
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R12B
RUN # - 12 - Method 17 TRAIN B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 07/15/99 Time: 1441-1630
PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
07-22-1999 12:13:32

Initial Meter Volume (Cubic Feet)=	119.105
Final Meter Volume (Cubic Feet)=	179.978
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.005
Net Meter Volume (Cubic Feet)=	60.143
Gas Volume (Dry Standard Cubic Feet)=	57.243

Barometric Pressure (in Hg)=	30.02
Static Pressure (Inches H2O)=	-26.68

Percent Oxygen=	4.5
Percent Carbon Dioxide=	14.8
Moisture Collected (ml)=	211.0
Percent Water=	14.8

Average Meter Temperature (F)=	98
Average Delta H (in H2O)=	1.49
Average Delta P (in H2O)=	1.675
Average Stack Temperature (F)=	190

Dry Molecular Weight=	30.55
Wet Molecular Weight=	28.69

Average Square Root of Delta P (in H2O)=	1.2040
% Isokinetic=	102.5

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)=	4,662
Flow Rate (Actual, Cubic ft/min)=	121,795
Flow rate (Standard, Wet, Cubic ft/min)=	92,739
Flow Rate (Standard, Dry, Cubic ft/min)=	79,020

Particulate Loading - Front Half

Particulate Weight (g)=	0.0819	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0220	0.0187 0.0179
Particulate Loading, Actual (gr/cu ft)=	0.0143	
Emission Rate (lb/hr)=	14.92	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R12B
 RUN # - 12 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1441-1630
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:13:32

Initial Meter Volume (Cubic Meters)= 3.373
 Final Meter Volume (Cubic Meters)= 5.096
 Meter Factor= 0.988
 Final Leak Rate (cu m/min)= 0.0001
 Net Meter Volume (Cubic Meters)= 1.703
 Gas Volume (Dry Standard Cubic Meters)= 1.621

Barometric Pressure (mm Hg)= 763
 Static Pressure (mm H2O)= -678

Percent Oxygen= 4.5
 Percent Carbon Dioxide= 14.8
 Moisture Collected (ml)= 211.0
 Percent Water= 14.8

Average Meter Temperature (C)= 37
 Average Delta H (mm H2O)= 37.8
 Average Delta P (mm H2O)= 42.5
 Average Stack Temperature (C)= 88

Dry Molecular Weight= 30.55
 Wet Molecular Weight= 28.69

Average Square Root of Delta P (mm H2O)= 6.0681
 % Isokinetic= 102.5

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)= 1,421
 Flow rate (Actual, Cubic m/min)= 3,449
 Flow rate (Standard, Wet, Cubic m/min)= 2,626
 Flow rate (Standard, Dry, Cubic m/min)= 2,238

Particulate Loading - Front Half

Particulate Weight (g)=	0.0819	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	50.5	42.9 41.0
Particulate Loading, Actual (mg/cu m)=	32.8	
Emission Rate (kg/hr)=	6.77	

No Back Half Analysis

FILE NAME - R12B
 RUN # - 12 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/15/99 Time: 1441-1630
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:13:32

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.700	2.40	194	94 94
2	2.600	2.30	191	94 94
3	2.400	2.10	191	95 94
4	1.000	0.88	189	96 94
5	0.270	0.24	188	97 94
6	2.600	2.30	187	97 95
7	2.200	2.00	188	97 95
8	2.000	1.80	188	99 95
9	1.100	0.90	188	100 95
10	0.180	0.16	188	100 96
11	2.400	2.10	189	100 97
12	2.100	1.90	190	100 96
13	2.100	1.90	190	101 97
14	0.700	0.62	190	102 97
15	0.040	0.03	190	102 98
16	2.600	2.30	191	101 98
17	2.600	2.30	191	101 98
18	1.600	1.40	191	102 98
19	0.920	0.82	191	103 99
20	0.100	0.08	191	103 99
21	2.700	2.40	193	102 99
22	2.800	2.50	193	102 99
23	2.100	1.90	192	104 99
24	1.900	1.70	192	104 100
25	0.160	0.14	191	104 100

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.4181	3.3451	0.0000	0.0730

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	4.0235	4.0146	38.2	0.0089
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R13A
RUN # - 13 - Method 17 TRAIN A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 07/16/99 Time: 0905-1055
PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
07-22-1999 12:14:26

Initial Meter Volume (Cubic Feet)= 942.875
Final Meter Volume (Cubic Feet)= 1001.400
Meter Factor= 1.011
Final Leak Rate (cu ft/min)= 0.008
Net Meter Volume (Cubic Feet)= 59.169
Gas Volume (Dry Standard Cubic Feet)= 57.629

Barometric Pressure (in Hg)= 30.04
Static Pressure (Inches H2O)= -27.11

Percent Oxygen= 5.8
Percent Carbon Dioxide= 13.6
Moisture Collected (ml)= 165.6
Percent Water= 11.9

Average Meter Temperature (F)= 86
Average Delta H (in H2O)= 1.38
Average Delta P (in H2O)= 1.685
Average Stack Temperature (F)= 186

Dry Molecular Weight= 30.41
Wet Molecular Weight= 28.93

Average Square Root of Delta P (in H2O)= 1.2064
% Isokinetic= 99.7

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)= 4,637
Flow Rate (Actual, Cubic ft/min)= 121,151
Flow rate (Standard, Wet, Cubic ft/min)= 92,838
Flow Rate (Standard, Dry, Cubic ft/min)= 81,771

Particulate Loading - Front Half

Particulate Weight (g)=	0.0284	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0076	0.0070 0.0067
Particulate Loading, Actual (gr/cu ft)=	0.0051	
Emission Rate (lb/hr)=	5.32	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R13A
 RUN # - 13 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 0905-1055
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:14:26

Initial Meter Volume (Cubic Meters)= 26.698
 Final Meter Volume (Cubic Meters)= 28.356
 Meter Factor= 1.011
 Final Leak Rate (cu m/min)= 0.0002
 Net Meter Volume (Cubic Meters)= 1.675
 Gas Volume (Dry Standard Cubic Meters)= 1.632

Barometric Pressure (mm Hg)= 763
 Static Pressure (mm H2O)= -689

Percent Oxygen= 5.8
 Percent Carbon Dioxide= 13.6
 Moisture Collected (ml)= 165.6
 Percent Water= 11.9

Average Meter Temperature (C)= 30
 Average Delta H (mm H2O)= 35.0
 Average Delta P (mm H2O)= 42.8
 Average Stack Temperature (C)= 85

Dry Molecular Weight= 30.41
 Wet Molecular Weight= 28.93

Average Square Root of Delta P (mm H2O)= 6.0802
 % Isokinetic= 99.7

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)= 1,413
 Flow rate (Actual, Cubic m/min)= 3,431
 Flow rate (Standard, Wet, Cubic m/min)= 2,629
 Flow rate (Standard, Dry, Cubic m/min)= 2,315

Particulate Loading - Front Half

Particulate Weight (g)=	0.0284	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	17.4	16.0 15.4
Particulate Loading, Actual (mg/cu m)=	11.7	
Emission Rate (kg/hr)=	2.41	

No Back Half Analysis

FILE NAME - R13A
 RUN # - 13 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 0905-1055
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:14:26

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.400	2.00	183	77 77
2	2.200	1.80	181	77 77
3	1.700	1.40	183	79 77
4	0.510	0.41	184	81 78
5	0.030	0.02	185	82 78
6	2.100	1.70	184	81 78
7	2.200	1.80	186	83 79
8	2.000	1.60	184	86 80
9	0.830	0.68	185	88 81
10	0.100	0.08	184	88 81
11	2.900	2.40	184	85 82
12	2.800	2.30	186	88 82
13	2.700	2.20	185	91 83
14	1.700	1.40	184	93 83
15	0.260	0.21	183	93 84
16	2.700	2.20	183	90 85
17	2.800	2.30	183	92 85
18	2.400	2.00	182	94 86
19	1.500	1.20	184	96 86
20	0.300	0.24	187	96 87
21	2.600	2.10	191	94 87
22	2.300	1.90	195	95 88
23	2.000	1.60	193	98 89
24	0.950	0.78	194	98 89
25	0.140	0.11	194	98 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	3.3016	3.2780	0.0000	0.0236

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.9103	3.9055	41.8	0.0048
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R13B
 RUN # - 13 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 0907-1057
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:15:12

Initial Meter Volume (Cubic Feet)=	193.304
Final Meter Volume (Cubic Feet)=	253.291
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	59.267
Gas Volume (Dry Standard Cubic Feet)=	57.813

Barometric Pressure (in Hg)=	30.04
Static Pressure (Inches H2O)=	-27.11

Percent Oxygen=	5.8
Percent Carbon Dioxide=	13.6
Moisture Collected (ml)=	165.2
Percent Water=	11.9

Average Meter Temperature (F)=	85
Average Delta H (in H2O)=	1.49
Average Delta P (in H2O)=	1.674
Average Stack Temperature (F)=	187

Dry Molecular Weight=	30.41
Wet Molecular Weight=	28.94

Average Square Root of Delta P (in H2O)=	1.2018
% Isokinetic=	99.4

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)=	4,623
Flow Rate (Actual, Cubic ft/min)=	120,778
Flow rate (Standard, Wet, Cubic ft/min)=	92,393
Flow Rate (Standard, Dry, Cubic ft/min)=	81,433

Particulate Loading - Front Half

Particulate Weight (g)=	0.0279	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0074	0.0068 0.0066
Particulate Loading, Actual (gr/cu ft)=	0.0050	
Emission Rate (lb/hr)=	5.19	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R13B
 RUN # - 13 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 0907-1057
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:15:12

Initial Meter Volume (Cubic Meters)=	5.474
Final Meter Volume (Cubic Meters)=	7.172
Meter Factor=	0.988
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.678
Gas Volume (Dry Standard Cubic Meters)=	1.637

Barometric Pressure (mm Hg)=	763
Static Pressure (mm H2O)=	-689

Percent Oxygen=	5.8
Percent Carbon Dioxide=	13.6
Moisture Collected (ml)=	165.2
Percent Water=	11.9

Average Meter Temperature (C)=	30
Average Delta H (mm H2O)=	37.8
Average Delta P (mm H2O)=	42.5
Average Stack Temperature (C)=	86

Dry Molecular Weight=	30.41
Wet Molecular Weight=	28.94

Average Square Root of Delta P (mm H2O)=	6.0571
% Isokinetic=	99.4

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)=	1,409
Flow rate (Actual, Cubic m/min)=	3,420
Flow rate (Standard, Wet, Cubic m/min)=	2,616
Flow rate (Standard, Dry, Cubic m/min)=	2,306

Particulate Loading - Front Half

Particulate Weight (g)=	0.0279	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	17.0	15.7 15.0
Particulate Loading, Actual (mg/cu m)=	11.5	
Emission Rate (kg/hr)=	2.35	

No Back Half Analysis

FILE NAME - R13B
 RUN # - 13 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 0907-1057
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:15:12

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.800	2.50	183	77 76
2	2.200	1.90	183	77 76
3	2.000	1.80	185	78 77
4	1.000	0.87	186	79 77
5	0.220	0.19	185	80 77
6	2.100	1.90	185	81 79
7	2.100	1.90	185	81 79
8	1.700	1.50	185	83 79
9	0.750	0.66	185	85 80
10	0.180	0.14	185	86 81
11	2.600	2.30	185	85 82
12	2.300	2.00	186	86 82
13	2.000	1.80	184	88 83
14	0.720	0.64	184	89 84
15	0.040	0.03	183	90 85
16	2.700	2.40	183	89 86
17	2.600	2.30	183	90 85
18	2.400	2.20	185	92 86
19	0.830	0.74	186	93 87
20	0.180	0.16	191	94 88
21	2.700	2.40	198	93 89
22	2.900	2.60	195	94 89
23	2.600	2.30	195	95 90
24	2.100	1.90	196	98 91
25	0.140	0.12	194	98 92

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2835	3.2596	0.0000	0.0239

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5891	3.5851	36.7	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 - R14A
RUN # - 14 - Method 17 TRAIN A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 07/16/99 Time: 1211-1400
PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
07-22-1999 12:15:57

Initial Meter Volume (Cubic Feet)=	1.618
Final Meter Volume (Cubic Feet)=	62.188
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.005
Net Meter Volume (Cubic Feet)=	61.236
Gas Volume (Dry Standard Cubic Feet)=	58.444

Barometric Pressure (in Hg)=	30.06
Static Pressure (Inches H2O)=	-25.81

Percent Oxygen=	4.7
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	186.8
Percent Water=	13.1

Average Meter Temperature (F)=	98
Average Delta H (in H2O)=	1.46
Average Delta P (in H2O)=	1.672
Average Stack Temperature (F)=	192

Dry Molecular Weight=	30.52
Wet Molecular Weight=	28.89

Average Square Root of Delta P (in H2O)=	1.2034
% Isokinetic=	100.7

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)=	4,642
Flow Rate (Actual, Cubic ft/min)=	121,263
Flow rate (Standard, Wet, Cubic ft/min)=	92,420
Flow Rate (Standard, Dry, Cubic ft/min)=	80,327

Particulate Loading - Front Half

Particulate Weight (g)=	0.0337
Particulate Loading, Dry Std. (gr/scf)=	0.0089
Particulate Loading, Actual (gr/cu ft)=	0.0059
Emission Rate (lb/hr)=	6.11

Corr. to 7% O2 & 12% CO2
0.0076 0.0073

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R14A
 RUN # - 14 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1211-1400
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:15:57

Initial Meter Volume (Cubic Meters)= 0.046
 Final Meter Volume (Cubic Meters)= 1.761
 Meter Factor= 1.011
 Final Leak Rate (cu m/min)= 0.0001
 Net Meter Volume (Cubic Meters)= 1.734
 Gas Volume (Dry Standard Cubic Meters)= 1.655

Barometric Pressure (mm Hg)= 764
 Static Pressure (mm H2O)= -656

Percent Oxygen= 4.7
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 186.8
 Percent Water= 13.1

Average Meter Temperature (C)= 36
 Average Delta H (mm H2O)= 37.1
 Average Delta P (mm H2O)= 42.5
 Average Stack Temperature (C)= 89

Dry Molecular Weight= 30.52
 Wet Molecular Weight= 28.89

Average Square Root of Delta P (mm H2O)= 6.0648
 % Isokinetic= 100.7

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)= 1,415
 Flow rate (Actual, Cubic m/min)= 3,434
 Flow rate (Standard, Wet, Cubic m/min)= 2,617
 Flow rate (Standard, Dry, Cubic m/min)= 2,275

Particulate Loading - Front Half

Particulate Weight (g)=	0.0337	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	20.4	17.5 16.7
Particulate Loading, Actual (mg/cu m)=	13.5	
Emission Rate (kg/hr)=	2.78	

No Back Half Analysis

FILE NAME - R14A
 RUN # - 14 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1211-1400
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:15:57

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.400	2.10	191	91 90
2	2.100	1.80	191	91 90
3	1.800	1.60	191	93 91
4	0.630	0.54	191	95 91
5	0.030	0.02	189	95 91
6	2.300	2.00	189	93 91
7	2.400	2.10	190	96 92
8	2.200	1.90	190	99 93
9	0.720	0.62	190	100 92
10	0.100	0.08	189	100 93
11	2.600	2.30	190	96 93
12	2.500	2.20	190	100 94
13	2.700	2.40	191	102 94
14	1.200	1.00	191	104 95
15	0.300	0.26	191	104 95
16	2.700	2.40	191	102 96
17	2.700	2.40	193	103 96
18	2.000	1.70	194	106 97
19	1.900	1.70	195	106 97
20	0.330	0.28	195	107 98
21	2.600	2.30	194	104 98
22	2.300	2.00	197	105 98
23	2.300	2.00	197	107 99
24	0.880	0.76	197	109 100
25	0.120	0.10	195	107 100

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3091	3.2797	0.0000	0.0294

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.4393	3.4350	35.4	0.0043
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R14B
 RUN # - 14 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1213-1402
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:16:46

Initial Meter Volume (Cubic Feet)=	253.506
Final Meter Volume (Cubic Feet)=	314.949
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.001
Net Meter Volume (Cubic Feet)=	60.706
Gas Volume (Dry Standard Cubic Feet)=	57.667

Barometric Pressure (in Hg)=	30.06
Static Pressure (Inches H2O)=	-25.81

Percent Oxygen=	4.7
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	190.1
Percent Water=	13.4

Average Meter Temperature (F)=	100
Average Delta H (in H2O)=	1.51
Average Delta P (in H2O)=	1.697
Average Stack Temperature (F)=	193

Dry Molecular Weight=	30.52
Wet Molecular Weight=	28.84

Average Square Root of Delta P (in H2O)=	1.2156
% Isokinetic=	100.9

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)=	4,695
Flow Rate (Actual, Cubic ft/min)=	122,652
Flow rate (Standard, Wet, Cubic ft/min)=	93,382
Flow Rate (Standard, Dry, Cubic ft/min)=	80,831

Particulate Loading - Front Half

Particulate Weight (g)=	0.0356	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0095	0.0082 0.0078
Particulate Loading, Actual (gr/cu ft)=	0.0063	
Emission Rate (lb/hr)=	6.59	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R14B
 RUN # - 14 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1213-1402
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:16:46

Initial Meter Volume (Cubic Meters)= 7.178
 Final Meter Volume (Cubic Meters)= 8.918
 Meter Factor= 0.988
 Final Leak Rate (cu m/min)= 0.0000
 Net Meter Volume (Cubic Meters)= 1.719
 Gas Volume (Dry Standard Cubic Meters)= 1.633

Barometric Pressure (mm Hg)= 764
 Static Pressure (mm H2O)= -656

Percent Oxygen= 4.7
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 190.1
 Percent Water= 13.4

Average Meter Temperature (C)= 38
 Average Delta H (mm H2O)= 38.3
 Average Delta P (mm H2O)= 43.1
 Average Stack Temperature (C)= 89

Dry Molecular Weight= 30.52
 Wet Molecular Weight= 28.84

Average Square Root of Delta P (mm H2O)= 6.1263
 % Isokinetic= 100.9

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)= 1,431
 Flow rate (Actual, Cubic m/min)= 3,473
 Flow rate (Standard, Wet, Cubic m/min)= 2,644
 Flow rate (Standard, Dry, Cubic m/min)= 2,289

Particulate Loading - Front Half

Particulate Weight (g)=	0.0356	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	21.8	18.7 17.9
Particulate Loading, Actual (mg/cu m)=	14.4	
Emission Rate (kg/hr)=	2.99	

No Back Half Analysis

FILE NAME - R14B
 RUN # - 14 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1213-1402
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:16:46

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.700	2.40	191	94 93
2	2.700	2.40	192	94 93
3	2.000	1.80	191	95 94
4	1.800	1.60	191	96 94
5	0.300	0.26	190	98 94
6	2.500	2.20	190	98 95
7	2.300	2.00	190	98 95
8	1.800	1.60	190	100 96
9	1.000	0.88	190	101 96
10	0.160	0.14	189	101 97
11	2.400	2.10	190	100 98
12	2.100	1.90	190	101 98
13	2.000	1.80	191	103 98
14	0.620	0.55	191	104 99
15	0.030	0.02	192	104 99
16	2.600	2.30	193	103 100
17	2.300	2.00	194	104 100
18	1.900	1.70	195	105 101
19	0.950	0.84	195	106 102
20	0.120	0.10	197	107 102
21	2.800	2.50	198	106 103
22	3.000	2.70	198	106 103
23	2.100	1.90	197	108 103
24	2.000	1.80	198	109 104
25	0.240	0.21	196	110 105

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3506	3.3197	0.0000	0.0309

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7862	3.7815	38.0	0.0047
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R15A
 RUN # - 15 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1543-1732
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:20:58

Initial Meter Volume (Cubic Feet)= 63.282
 Final Meter Volume (Cubic Feet)= 124.231
 Meter Factor= 1.011
 Final Leak Rate (cu ft/min)= 0.003
 Net Meter Volume (Cubic Feet)= 61.619
 Gas Volume (Dry Standard Cubic Feet)= 58.381

Barometric Pressure (in Hg)= 30.00
 Static Pressure (Inches H2O)= -26.41

Percent Oxygen= 4.7
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 184.7
 Percent Water= 13.0

Average Meter Temperature (F)= 101
 Average Delta H (in H2O)= 1.46
 Average Delta P (in H2O)= 1.738
 Average Stack Temperature (F)= 186

Dry Molecular Weight= 30.52
 Wet Molecular Weight= 28.90

Average Square Root of Delta P (in H2O)= 1.2255
 % Isokinetic= 100.6

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)= 4,713
 Flow Rate (Actual, Cubic ft/min)= 123,138
 Flow rate (Standard, Wet, Cubic ft/min)= 94,347
 Flow Rate (Standard, Dry, Cubic ft/min)= 82,112

Particulate Loading - Front Half

Particulate Weight (g)=	0.0369	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0097	0.0084 0.0080
Particulate Loading, Actual (gr/cu ft)=	0.0065	
Emission Rate (lb/hr)=	6.85	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R15A
 RUN # - 15 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1543-1732
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:20:58

Initial Meter Volume (Cubic Meters)= 1.792
 Final Meter Volume (Cubic Meters)= 3.518
 Meter Factor= 1.011
 Final Leak Rate (cu m/min)= 0.0001
 Net Meter Volume (Cubic Meters)= 1.745
 Gas Volume (Dry Standard Cubic Meters)= 1.653

Barometric Pressure (mm Hg)= 762
 Static Pressure (mm H2O)= -671

Percent Oxygen= 4.7
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 184.7
 Percent Water= 13.0

Average Meter Temperature (C)= 38
 Average Delta H (mm H2O)= 37.2
 Average Delta P (mm H2O)= 44.2
 Average Stack Temperature (C)= 86

Dry Molecular Weight= 30.52
 Wet Molecular Weight= 28.90

Average Square Root of Delta P (mm H2O)= 6.1764
 % Isokinetic= 100.6

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)= 1,437
 Flow rate (Actual, Cubic m/min)= 3,487
 Flow rate (Standard, Wet, Cubic m/min)= 2,672
 Flow rate (Standard, Dry, Cubic m/min)= 2,325

Particulate Loading - Front Half

Particulate Weight (g)=	0.0369	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	22.3	19.2 18.3
Particulate Loading, Actual (mg/cu m)=	14.9	
Emission Rate (kg/hr)=	3.11	

No Back Half Analysis

FILE NAME - R15A
 RUN # - 15 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1543-1732
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:20:58

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.000	1.70	185	99 99
2	2.500	2.10	186	98 98
3	2.200	1.80	187	98 97
4	0.800	0.67	187	100 98
5	0.040	0.03	186	100 98
6	2.600	2.20	186	98 97
7	2.600	2.20	186	102 98
8	1.700	1.40	187	104 98
9	0.900	0.75	188	105 98
10	0.120	0.10	186	103 98
11	2.700	2.30	186	101 98
12	2.900	2.50	185	102 98
13	2.900	2.40	187	104 98
14	1.900	1.60	188	105 98
15	0.240	0.20	187	106 99
16	2.800	2.40	184	103 99
17	2.700	2.30	185	104 98
18	2.300	1.90	186	105 98
19	1.400	1.20	186	106 99
20	0.280	0.23	186	105 99
21	2.500	2.10	186	102 99
22	2.300	1.90	186	104 99
23	2.100	1.80	186	105 99
24	0.900	0.76	187	106 99
25	0.080	0.06	187	105 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	3.4018	3.3723	0.0000	0.0295

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7163	3.7089	37.0	0.0074
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R15B
 RUN # - 15 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1545-1734
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:54:00

Initial Meter Volume (Cubic Feet)=	315.155
Final Meter Volume (Cubic Feet)=	379.115
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.001
Net Meter Volume (Cubic Feet)=	63.192
Gas Volume (Dry Standard Cubic Feet)=	59.565

Barometric Pressure (in Hg)=	30.00
Static Pressure (Inches H2O)=	-26.41

Percent Oxygen=	4.7
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	193.0
Percent Water=	13.2

Average Meter Temperature (F)=	104
Average Delta H (in H2O)=	1.62
Average Delta P (in H2O)=	1.762
Average Stack Temperature (F)=	187

Dry Molecular Weight=	30.52
Wet Molecular Weight=	28.87

Average Square Root of Delta P (in H2O)=	1.2370
% Isokinetic=	100.9

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)=	4,762
Flow Rate (Actual, Cubic ft/min)=	124,396
Flow rate (Standard, Wet, Cubic ft/min)=	95,258
Flow Rate (Standard, Dry, Cubic ft/min)=	82,645

Particulate Loading - Front Half

Particulate Weight (g)=	0.0357	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0092	0.0079 0.0076
Particulate Loading, Actual (gr/cu ft)=	0.0061	
Emission Rate (lb/hr)=	6.54	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R15B
 RUN # - 15 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1545-1734
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:54:00

Initial Meter Volume (Cubic Meters)= 8.924
 Final Meter Volume (Cubic Meters)= 10.735
 Meter Factor= 0.988
 Final Leak Rate (cu m/min)= 0.0000
 Net Meter Volume (Cubic Meters)= 1.789
 Gas Volume (Dry Standard Cubic Meters)= 1.687

Barometric Pressure (mm Hg)= 762
 Static Pressure (mm H2O)= -671

Percent Oxygen= 4.7
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 193.0
 Percent Water= 13.2

Average Meter Temperature (C)= 40
 Average Delta H (mm H2O)= 41.1
 Average Delta P (mm H2O)= 44.8
 Average Stack Temperature (C)= 86

Dry Molecular Weight= 30.52
 Wet Molecular Weight= 28.87

Average Square Root of Delta P (mm H2O)= 6.2341
 % Isokinetic= 100.9

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)= 1,451
 Flow rate (Actual, Cubic m/min)= 3,523
 Flow rate (Standard, Wet, Cubic m/min)= 2,697
 Flow rate (Standard, Dry, Cubic m/min)= 2,340

Particulate Loading - Front Half

Particulate Weight (g)=	0.0357	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	21.2	18.2 17.4
Particulate Loading, Actual (mg/cu m)=	14.1	
Emission Rate (kg/hr)=	2.97	

No Back Half Analysis

FILE NAME - R15B
 RUN # - 15 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/16/99 Time: 1545-1734
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:54:00

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.700	2.50	186	101 101
2	2.500	2.30	187	101 101
3	2.500	2.30	188	102 101
4	1.500	1.40	187	102 101
5	0.220	0.20	185	103 100
6	2.700	2.50	186	103 101
7	2.400	2.20	187	103 101
8	2.000	1.80	188	105 101
9	0.830	0.76	187	106 102
10	0.180	0.16	186	106 102
11	2.500	2.30	186	105 102
12	2.400	2.20	186	104 102
13	2.000	1.80	187	106 102
14	0.720	0.66	187	107 103
15	0.060	0.05	186	107 103
16	2.800	2.50	186	105 103
17	2.700	2.50	186	105 102
18	2.300	2.10	187	106 103
19	0.730	0.67	187	107 103
20	0.120	0.11	187	107 103
21	2.700	2.50	186	106 104
22	2.800	2.60	186	105 103
23	2.700	2.50	187	107 104
24	1.700	1.60	187	108 104
25	0.300	0.27	187	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	3.3467	3.3144	0.0000	0.0323

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.6907	3.6873	42.5	0.0034
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R16A
 RUN # - 16 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 0851-1041
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:54:46

Initial Meter Volume (Cubic Feet)=	124.784
Final Meter Volume (Cubic Feet)=	192.882
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.009
Net Meter Volume (Cubic Feet)=	68.847
Gas Volume (Dry Standard Cubic Feet)=	66.648

Barometric Pressure (in Hg)=	30.04
Static Pressure (Inches H2O)=	-26.68

Percent Oxygen=	5.1
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	217.1
Percent Water=	13.3

Average Meter Temperature (F)=	90
Average Delta H (in H2O)=	1.86
Average Delta P (in H2O)=	1.745
Average Stack Temperature (F)=	185

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.87

Average Square Root of Delta P (in H2O)=	1.2328
% Isokinetic=	100.8

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)=	4,738
Flow Rate (Actual, Cubic ft/min)=	123,784
Flow rate (Standard, Wet, Cubic ft/min)=	95,069
Flow Rate (Standard, Dry, Cubic ft/min)=	82,423

Particulate Loading - Front Half

Particulate Weight (g)=	0.0086	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0020	0.0017 0.0016
Particulate Loading, Actual (gr/cu ft)=	0.0013	
Emission Rate (lb/hr)=	1.40	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R16A
 RUN # - 16 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 0851-1041
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:54:46

Initial Meter Volume (Cubic Meters)= 3.533
 Final Meter Volume (Cubic Meters)= 5.462
 Meter Factor= 1.011
 Final Leak Rate (cu m/min)= 0.0003
 Net Meter Volume (Cubic Meters)= 1.949
 Gas Volume (Dry Standard Cubic Meters)= 1.887

Barometric Pressure (mm Hg)= 763
 Static Pressure (mm H2O)= -678

Percent Oxygen= 5.1
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 217.1
 Percent Water= 13.3

Average Meter Temperature (C)= 32
 Average Delta H (mm H2O)= 47.1
 Average Delta P (mm H2O)= 44.3
 Average Stack Temperature (C)= 85

Dry Molecular Weight= 30.54
 Wet Molecular Weight= 28.87

Average Square Root of Delta P (mm H2O)= 6.2133
 % Isokinetic= 100.8

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)= 1,444
 Flow rate (Actual, Cubic m/min)= 3,505
 Flow rate (Standard, Wet, Cubic m/min)= 2,692
 Flow rate (Standard, Dry, Cubic m/min)= 2,334

Particulate Loading - Front Half

Particulate Weight (g)= 0.0086
 Particulate Loading, Dry Std. (mg/cu m)= 4.6
 Particulate Loading, Actual (mg/cu m)= 3.0
 Emission Rate (kg/hr)= 0.64

Corr. to 7% O2 & 12% CO2
 4.0 3.7

No Back Half Analysis

FILE NAME - R16A
 RUN # - 16 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 0851-1041
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:54:47

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.400	2.50	184	81 81
2	2.300	2.40	184	82 81
3	2.100	2.20	184	84 81
4	0.620	0.65	184	85 82
5	0.050	0.05	183	86 82
6	2.500	2.70	183	85 83
7	2.600	2.60	184	88 84
8	1.700	1.80	185	91 84
9	0.850	0.90	186	92 85
10	0.120	0.12	185	92 85
11	2.800	3.00	185	90 85
12	3.000	3.20	186	94 86
13	2.200	2.40	186	95 87
14	1.800	1.90	187	97 87
15	0.400	0.42	187	97 88
16	2.800	3.00	187	96 88
17	2.700	2.90	184	95 89
18	2.500	2.70	185	99 89
19	1.400	1.50	186	100 90
20	0.340	0.36	186	100 90
21	2.500	2.70	186	97 91
22	2.400	2.60	185	97 91
23	2.500	2.70	185	101 92
24	0.950	1.00	186	102 93
25	0.100	0.10	186	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	3.3506	3.3444	0.0000	0.0062

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7232	3.7208	32.4	0.0024
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R16B
 RUN # - 16 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time:0853-1043
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:55:31

Initial Meter Volume (Cubic Feet)=	389.822
Final Meter Volume (Cubic Feet)=	460.231
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.002
Net Meter Volume (Cubic Feet)=	69.564
Gas Volume (Dry Standard Cubic Feet)=	67.438

Barometric Pressure (in Hg)=	30.04
Static Pressure (Inches H2O)=	-26.68

Percent Oxygen=	5.1
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	221.7
Percent Water=	13.4

Average Meter Temperature (F)=	89
Average Delta H (in H2O)=	2.01
Average Delta P (in H2O)=	1.784
Average Stack Temperature (F)=	186

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.86

Average Square Root of Delta P (in H2O)=	1.2453
% Isokinetic=	101.1

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)=	4,789
Flow Rate (Actual, Cubic ft/min)=	125,104
Flow rate (Standard, Wet, Cubic ft/min)=	96,017
Flow Rate (Standard, Dry, Cubic ft/min)=	83,143

Particulate Loading - Front Half

Particulate Weight (g)=	0.0087	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0020	0.0017 0.0016
Particulate Loading, Actual (gr/cu ft)=	0.0013	
Emission Rate (lb/hr)=	1.42	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R16B
 RUN # - 16 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time:0853-1043
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:55:31

Initial Meter Volume (Cubic Meters)= 11.038
 Final Meter Volume (Cubic Meters)= 13.032
 Meter Factor= 0.988
 Final Leak Rate (cu m/min)= 0.0001
 Net Meter Volume (Cubic Meters)= 1.970
 Gas Volume (Dry Standard Cubic Meters)= 1.910

Barometric Pressure (mm Hg)= 763
 Static Pressure (mm H2O)= -678

Percent Oxygen= 5.1
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 221.7
 Percent Water= 13.4

Average Meter Temperature (C)= 32
 Average Delta H (mm H2O)= 51.0
 Average Delta P (mm H2O)= 45.3
 Average Stack Temperature (C)= 85

Dry Molecular Weight= 30.54
 Wet Molecular Weight= 28.86

Average Square Root of Delta P (mm H2O)= 6.2759
 % Isokinetic= 101.1

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)= 1,460
 Flow rate (Actual, Cubic m/min)= 3,543
 Flow rate (Standard, Wet, Cubic m/min)= 2,719
 Flow rate (Standard, Dry, Cubic m/min)= 2,354

Particulate Loading - Front Half

Particulate Weight (g)= 0.0087
 Particulate Loading, Dry Std. (mg/cu m)= 4.6
 Particulate Loading, Actual (mg/cu m)= 3.0
 Emission Rate (kg/hr)= 0.64

Corr. to 7% O2 & 12% CO2
 4.0 3.7

No Back Half Analysis

FILE NAME - R16B
 RUN # - 16 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time:0853-1043
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:55:31

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.800	3.10	184	80 80
2	2.600	2.90	185	81 80
3	2.500	2.80	184	81 80
4	1.300	1.50	186	83 84
5	0.330	0.36	184	84 81
6	2.600	2.90	184	85 81
7	2.600	2.90	185	85 82
8	2.000	2.20	186	87 83
9	0.980	1.10	186	89 84
10	0.140	0.15	185	91 85
11	2.500	2.80	185	90 86
12	2.400	2.70	187	90 86
13	2.100	2.40	187	92 87
14	0.700	0.79	187	94 88
15	0.040	0.04	185	95 89
16	2.800	3.20	186	94 90
17	2.300	2.60	184	94 90
18	2.500	2.80	186	96 91
19	0.800	0.91	187	98 92
20	0.120	0.13	186	98 92
21	2.800	3.20	185	98 93
22	3.000	3.40	186	97 93
23	2.300	2.60	186	99 94
24	2.100	2.40	187	101 95
25	0.300	0.34	187	102 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	3.3169	3.3100	0.0000	0.0069

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.3603	3.3585	34.6	0.0018
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R17A
RUN # - 17 - Method 17 TRAIN A for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 07/17/99 Time: 1222-1411
PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
07-22-1999 12:56:11

Initial Meter Volume (Cubic Feet)=	193.064
Final Meter Volume (Cubic Feet)=	260.430
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.004
Net Meter Volume (Cubic Feet)=	68.107
Gas Volume (Dry Standard Cubic Feet)=	65.000

Barometric Pressure (in Hg)=	30.04
Static Pressure (Inches H2O)=	-25.51

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	191.6
Percent Water=	12.2

Average Meter Temperature (F)=	98
Average Delta H (in H2O)=	1.77
Average Delta P (in H2O)=	1.748
Average Stack Temperature (F)=	185

Dry Molecular Weight=	30.54
Wet Molecular Weight=	29.01

Average Square Root of Delta P (in H2O)=	1.2376
% Isokinetic=	99.8

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)=	4,738
Flow Rate (Actual, Cubic ft/min)=	123,783
Flow rate (Standard, Wet, Cubic ft/min)=	95,366
Flow Rate (Standard, Dry, Cubic ft/min)=	83,740

Particulate Loading - Front Half

Particulate Weight (g)=	0.0074	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0018	0.0015 0.0014
Particulate Loading, Actual (gr/cu ft)=	0.0012	
Emission Rate (lb/hr)=	1.26	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R17A
 RUN # - 17 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1222-1411
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:56:11

Initial Meter Volume (Cubic Meters)= 5.467
 Final Meter Volume (Cubic Meters)= 7.374
 Meter Factor= 1.011
 Final Leak Rate (cu m/min)= 0.0001
 Net Meter Volume (Cubic Meters)= 1.929
 Gas Volume (Dry Standard Cubic Meters)= 1.841

Barometric Pressure (mm Hg)= 763
 Static Pressure (mm H2O)= -648

Percent Oxygen= 5.0
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 191.6
 Percent Water= 12.2

Average Meter Temperature (C)= 36
 Average Delta H (mm H2O)= 45.0
 Average Delta P (mm H2O)= 44.4
 Average Stack Temperature (C)= 85

Dry Molecular Weight= 30.54
 Wet Molecular Weight= 29.01

Average Square Root of Delta P (mm H2O)= 6.2375
 % Isokinetic= 99.8

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)= 1,444
 Flow rate (Actual, Cubic m/min)= 3,505
 Flow rate (Standard, Wet, Cubic m/min)= 2,700
 Flow rate (Standard, Dry, Cubic m/min)= 2,371

Particulate Loading - Front Half

Particulate Weight (g)=	0.0074	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	4.0	3.5 3.3
Particulate Loading, Actual (mg/cu m)=	2.7	
Emission Rate (kg/hr)=	0.57	

No Back Half Analysis

FILE NAME - R17A
 RUN # - 17 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1222-1411
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:56:11

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.500	2.50	186	91 91
2	2.100	2.10	186	92 91
3	1.800	1.80	185	93 91
4	0.730	0.73	183	95 91
5	0.050	0.05	183	95 91
6	2.600	2.60	183	94 91
7	2.600	2.60	186	96 92
8	2.300	2.30	186	100 93
9	0.780	0.79	186	101 93
10	0.120	0.12	185	100 94
11	2.800	2.80	185	97 94
12	2.900	2.90	185	99 94
13	2.100	2.10	186	103 94
14	2.000	2.00	186	104 95
15	0.330	0.33	187	105 96
16	2.600	2.70	186	102 96
17	2.700	2.80	185	104 97
18	2.500	2.60	183	105 97
19	1.400	1.40	182	106 97
20	0.420	0.43	182	106 98
21	2.500	2.60	184	103 98
22	2.300	2.30	189	104 98
23	2.500	2.60	189	106 98
24	0.920	0.94	186	107 98
25	0.160	0.16	184	107 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	3.3081	3.3021	0.0000	0.0060

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5388	3.5374	23.3	0.0014
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R17B
 RUN # - 17 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1224-1413
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:57:12

Initial Meter Volume (Cubic Feet)= 468.423
 Final Meter Volume (Cubic Feet)= 535.962
 Meter Factor= 0.988
 Final Leak Rate (cu ft/min)= 0.002
 Net Meter Volume (Cubic Feet)= 66.729
 Gas Volume (Dry Standard Cubic Feet)= 63.558

Barometric Pressure (in Hg)= 30.04
 Static Pressure (Inches H2O)= -25.51

Percent Oxygen= 5.0
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 222.6
 Percent Water= 14.2

Average Meter Temperature (F)= 99
 Average Delta H (in H2O)= 1.85
 Average Delta P (in H2O)= 1.714
 Average Stack Temperature (F)= 186

Dry Molecular Weight= 30.54
 Wet Molecular Weight= 28.76

Average Square Root of Delta P (in H2O)= 1.2109
 % Isokinetic= 101.6

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)= 4,657
 Flow Rate (Actual, Cubic ft/min)= 121,674
 Flow rate (Standard, Wet, Cubic ft/min)= 93,671
 Flow Rate (Standard, Dry, Cubic ft/min)= 80,407

Particulate Loading - Front Half

Particulate Weight (g)=	0.0072	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0017	0.0015 0.0014
Particulate Loading, Actual (gr/cu ft)=	0.0012	
Emission Rate (lb/hr)=	1.20	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R17B
 RUN # - 17 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1224-1413
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:57:12

Initial Meter Volume (Cubic Meters)=	13.264
Final Meter Volume (Cubic Meters)=	15.176
Meter Factor=	0.988
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.889
Gas Volume (Dry Standard Cubic Meters)=	1.800

Barometric Pressure (mm Hg)=	763
Static Pressure (mm H2O)=	-648

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	222.6
Percent Water=	14.2

Average Meter Temperature (C)=	37
Average Delta H (mm H2O)=	47.0
Average Delta P (mm H2O)=	43.5
Average Stack Temperature (C)=	85

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.76

Average Square Root of Delta P (mm H2O)=	6.1028
% Isokinetic=	101.6

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)=	1,420
Flow rate (Actual, Cubic m/min)=	3,445
Flow rate (Standard, Wet, Cubic m/min)=	2,652
Flow rate (Standard, Dry, Cubic m/min)=	2,277

Particulate Loading - Front Half

Particulate Weight (g)=	0.0072	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	4.0	3.5 3.3
Particulate Loading, Actual (mg/cu m)=	2.6	
Emission Rate (kg/hr)=	0.55	

No Back Half Analysis

FILE NAME - R17B
 RUN # - 17 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1224-1413
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 12:57:12

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.700	2.90	186	93 93
2	2.000	2.10	186	93 93
3	2.300	2.50	184	94 93
4	1.500	1.60	184	95 93
5	0.200	0.21	185	96 93
6	2.600	2.80	187	96 94
7	2.500	2.70	187	97 94
8	2.200	2.40	186	99 95
9	0.950	1.00	186	100 95
10	0.100	0.10	185	101 96
11	2.600	2.80	185	100 97
12	2.400	2.60	186	99 96
13	2.000	2.20	186	102 97
14	0.680	0.73	186	103 97
15	0.030	0.03	186	103 99
16	2.700	2.90	186	102 99
17	2.700	2.90	184	101 98
18	1.700	1.90	183	104 99
19	0.820	0.89	182	105 100
20	0.080	0.08	183	105 101
21	2.900	3.10	189	104 101
22	3.000	3.20	189	104 100
23	2.200	2.40	188	106 101
24	1.800	2.00	186	107 101
25	0.200	0.21	185	107 102

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2851	3.2795	0.0000	0.0056

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7969	3.7953	33.7	0.0016
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R18A
 RUN # - 18 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1540-1729
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:02:21

Initial Meter Volume (Cubic Feet)=	261.719
Final Meter Volume (Cubic Feet)=	329.599
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.006
Net Meter Volume (Cubic Feet)=	68.627
Gas Volume (Dry Standard Cubic Feet)=	64.769

Barometric Pressure (in Hg)=	29.99
Static Pressure (Inches H2O)=	-27.21

Percent Oxygen=	5.1
Percent Carbon Dioxide=	14.5
Moisture Collected (ml)=	200.0
Percent Water=	12.7

Average Meter Temperature (F)=	103
Average Delta H (in H2O)=	1.84
Average Delta P (in H2O)=	1.703
Average Stack Temperature (F)=	186

Dry Molecular Weight=	30.52
Wet Molecular Weight=	28.93

Average Square Root of Delta P (in H2O)=	1.2049
% Isokinetic=	99.9

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)=	4,637
Flow Rate (Actual, Cubic ft/min)=	121,129
Flow rate (Standard, Wet, Cubic ft/min)=	92,609
Flow Rate (Standard, Dry, Cubic ft/min)=	80,850

Particulate Loading - Front Half

Particulate Weight (g)=	0.0090	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0021	0.0019 0.0018
Particulate Loading, Actual (gr/cu ft)=	0.0014	
Emission Rate (lb/hr)=	1.48	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R18A
 RUN # - 18 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1540-1729
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)= 7.411
 Final Meter Volume (Cubic Meters)= 9.333
 Meter Factor= 1.011
 Final Leak Rate (cu m/min)= 0.0002
 Net Meter Volume (Cubic Meters)= 1.943
 Gas Volume (Dry Standard Cubic Meters)= 1.834

Barometric Pressure (mm Hg)= 762
 Static Pressure (mm H2O)= -691

Percent Oxygen= 5.1
 Percent Carbon Dioxide= 14.5
 Moisture Collected (ml)= 200.0
 Percent Water= 12.7

Average Meter Temperature (C)= 39
 Average Delta H (mm H2O)= 46.7
 Average Delta P (mm H2O)= 43.3
 Average Stack Temperature (C)= 86

Dry Molecular Weight= 30.52
 Wet Molecular Weight= 28.93

Average Square Root of Delta P (mm H2O)= 6.0727
 % Isokinetic= 99.9

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)= 1,413
 Flow rate (Actual, Cubic m/min)= 3,430
 Flow rate (Standard, Wet, Cubic m/min)= 2,622
 Flow rate (Standard, Dry, Cubic m/min)= 2,289

Particulate Loading - Front Half

Particulate Weight (g)=	0.0090	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	4.9	4.3 4.1
Particulate Loading, Actual (mg/cu m)=	3.3	
Emission Rate (kg/hr)=	0.67	

No Back Half Analysis

FILE NAME - R18A
 RUN # - 18 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1540-1729
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.500	2.70	184	97 97
2	2.500	2.70	185	97 97
3	2.000	2.10	186	99 97
4	0.680	0.72	187	102 97
5	0.030	0.03	186	102 98
6	2.500	2.70	186	100 97
7	2.200	2.40	186	102 98
8	2.300	2.50	186	105 99
9	0.850	0.91	187	107 99
10	0.040	0.04	186	106 100
11	2.600	2.80	186	103 100
12	2.400	2.60	186	106 100
13	2.600	2.80	187	108 101
14	2.400	2.60	188	110 101
15	0.250	0.27	187	110 102
16	2.600	2.80	187	107 101
17	2.400	2.60	185	108 102
18	2.300	2.50	186	110 102
19	1.500	1.60	186	111 102
20	0.240	0.26	186	111 103
21	2.500	2.70	186	108 102
22	2.200	2.40	185	108 103
23	2.100	2.30	186	110 103
24	0.840	0.91	186	111 102
25	0.040	0.04	185	109 103

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3650	3.3583	0.0000	0.0067

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.8610	3.8587	56.2	0.0023
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R18B
 RUN # - 18 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1542-1731
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:03:08

Initial Meter Volume (Cubic Feet)=	539.689
Final Meter Volume (Cubic Feet)=	610.119
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.001
Net Meter Volume (Cubic Feet)=	69.585
Gas Volume (Dry Standard Cubic Feet)=	65.557

Barometric Pressure (in Hg)=	29.99
Static Pressure (Inches H2O)=	-27.21

Percent Oxygen=	5.1
Percent Carbon Dioxide=	14.5
Moisture Collected (ml)=	227.0
Percent Water=	14.0

Average Meter Temperature (F)=	104
Average Delta H (in H2O)=	1.98
Average Delta P (in H2O)=	1.729
Average Stack Temperature (F)=	186

Dry Molecular Weight=	30.52
Wet Molecular Weight=	28.77

Average Square Root of Delta P (in H2O)=	1.2197
% Isokinetic=	101.1

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)=	4,707
Flow Rate (Actual, Cubic ft/min)=	122,980
Flow rate (Standard, Wet, Cubic ft/min)=	94,006
Flow Rate (Standard, Dry, Cubic ft/min)=	80,825

Particulate Loading - Front Half

Particulate Weight (g)=	0.0088	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0021	0.0018 0.0017
Particulate Loading, Actual (gr/cu ft)=	0.0014	
Emission Rate (lb/hr)=	1.43	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R18B
 RUN # - 18 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1542-1731
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	15.282
Final Meter Volume (Cubic Meters)=	17.276
Meter Factor=	0.988
Final Leak Rate (cu m/min)=	0.0000
Net Meter Volume (Cubic Meters)=	1.970
Gas Volume (Dry Standard Cubic Meters)=	1.856

Barometric Pressure (mm Hg)=	762
Static Pressure (mm H2O)=	-691

Percent Oxygen=	5.1
Percent Carbon Dioxide=	14.5
Moisture Collected (ml)=	227.0
Percent Water=	14.0

Average Meter Temperature (C)=	40
Average Delta H (mm H2O)=	50.4
Average Delta P (mm H2O)=	43.9
Average Stack Temperature (C)=	86

Dry Molecular Weight=	30.52
Wet Molecular Weight=	28.77

Average Square Root of Delta P (mm H2O)=	6.1472
% Isokinetic=	101.1

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)=	1,435
Flow rate (Actual, Cubic m/min)=	3,482
Flow rate (Standard, Wet, Cubic m/min)=	2,662
Flow rate (Standard, Dry, Cubic m/min)=	2,289

Particulate Loading - Front Half

Particulate Weight (g)=	0.0088	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	4.7	4.2 3.9
Particulate Loading, Actual (mg/cu m)=	3.1	
Emission Rate (kg/hr)=	0.65	

No Back Half Analysis

FILE NAME - R18B
 RUN # - 18 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/17/99 Time: 1542-1731
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.800	3.20	184	97	97
2	2.800	3.20	186	98	97
3	2.300	2.60	187	99	97
4	1.300	1.50	187	100	98
5	0.260	0.29	185	102	98
6	2.800	3.20	185	102	99
7	2.600	3.00	186	102	99
8	1.900	2.20	187	105	100
9	0.820	0.93	187	105	100
10	0.060	0.06	186	106	101
11	2.600	3.00	187	105	102
12	2.200	2.50	186	105	102
13	2.000	2.30	187	108	103
14	0.770	0.88	187	109	103
15	0.060	0.06	186	109	104
16	2.500	2.90	185	107	104
17	2.400	2.80	186	108	104
18	2.300	2.60	187	110	105
19	0.900	1.00	187	111	106
20	0.060	0.06	186	111	106
21	2.700	3.10	186	110	107
22	2.300	2.70	186	110	106
23	2.700	3.10	186	111	106
24	1.800	2.10	186	112	107
25	0.300	0.34	186	113	107

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3462	3.3391	0.0000	0.0071

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.4080	3.4063	37.5	0.0017
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R19A
 RUN # - 19- Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 0928-1117
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:03:53

Initial Meter Volume (Cubic Feet)=	330.577
Final Meter Volume (Cubic Feet)=	389.719
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	59.793
Gas Volume (Dry Standard Cubic Feet)=	57.465

Barometric Pressure (in Hg)=	30.00
Static Pressure (Inches H2O)=	-25.24

Percent Oxygen=	5.2
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	183.7
Percent Water=	13.1

Average Meter Temperature (F)=	93
Average Delta H (in H2O)=	1.40
Average Delta P (in H2O)=	1.709
Average Stack Temperature (F)=	185

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.90

Average Square Root of Delta P (in H2O)=	1.2139
% Isokinetic=	99.9

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)=	4,657
Flow Rate (Actual, Cubic ft/min)=	121,657
Flow rate (Standard, Wet, Cubic ft/min)=	93,684
Flow Rate (Standard, Dry, Cubic ft/min)=	81,424

Particulate Loading - Front Half

Particulate Weight (g)=	0.0404	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0108	0.0096 0.0089
Particulate Loading, Actual (gr/cu ft)=	0.0072	
Emission Rate (lb/hr)=	7.55	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R19A
 RUN # - 19- Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 0928-1117
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)= 9.361
 Final Meter Volume (Cubic Meters)= 11.035
 Meter Factor= 1.011
 Final Leak Rate (cu m/min)= 0.0001
 Net Meter Volume (Cubic Meters)= 1.693
 Gas Volume (Dry Standard Cubic Meters)= 1.627

Barometric Pressure (mm Hg)= 762
 Static Pressure (mm H2O)= -641

Percent Oxygen= 5.2
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 183.7
 Percent Water= 13.1

Average Meter Temperature (C)= 34
 Average Delta H (mm H2O)= 35.5
 Average Delta P (mm H2O)= 43.4
 Average Stack Temperature (C)= 85

Dry Molecular Weight= 30.54
 Wet Molecular Weight= 28.90

Average Square Root of Delta P (mm H2O)= 6.1179
 % Isokinetic= 99.9

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)= 1,419
 Flow rate (Actual, Cubic m/min)= 3,445
 Flow rate (Standard, Wet, Cubic m/min)= 2,653
 Flow rate (Standard, Dry, Cubic m/min)= 2,306

Particulate Loading - Front Half

Particulate Weight (g)=	0.0404	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	24.8	22.0 20.4
Particulate Loading, Actual (mg/cu m)=	16.6	
Emission Rate (kg/hr)=	3.43	

No Back Half Analysis

FILE NAME - R19A
 RUN # - 19- Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 0928-1117
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:03:53

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.300	1.90	184	85 85
2	2.200	1.80	185	86 85
3	2.000	1.60	185	87 85
4	0.700	0.57	185	89 86
5	0.040	0.03	184	89 86
6	2.500	2.00	184	88 86
7	2.200	1.80	185	90 86
8	2.300	1.90	185	93 87
9	0.800	0.65	185	95 87
10	0.120	0.09	184	95 88
11	2.700	2.20	185	93 88
12	2.800	2.30	186	95 89
13	2.700	2.20	186	97 90
14	1.900	1.60	185	100 91
15	0.220	0.18	185	100 91
16	2.600	2.10	185	98 92
17	2.600	2.10	186	98 92
18	2.400	2.00	186	101 93
19	1.900	1.60	185	102 93
20	0.220	0.18	184	103 93
21	2.400	2.00	183	99 84
22	2.200	1.80	185	100 94
23	2.100	1.70	186	102 94
24	0.720	0.59	186	104 95
25	0.100	0.08	185	102 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	3.3056	3.2704	0.0000	0.0352

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.8354	3.8302	53.0	0.0052
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R19B
RUN # - 19 - Method 17 TRAIN B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 07/18/99 Time: 0930-1119
PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
07-22-1999 13:04:59

Initial Meter Volume (Cubic Feet)=	610.344
Final Meter Volume (Cubic Feet)=	671.292
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.002
Net Meter Volume (Cubic Feet)=	60.217
Gas Volume (Dry Standard Cubic Feet)=	57.903

Barometric Pressure (in Hg)=	30.00
Static Pressure (Inches H2O)=	-25.24

Percent Oxygen=	5.2
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	186.8
Percent Water=	13.2

Average Meter Temperature (F)=	92
Average Delta H (in H2O)=	1.51
Average Delta P (in H2O)=	1.700
Average Stack Temperature (F)=	185

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.89

Average Square Root of Delta P (in H2O)=	1.2101
% Isokinetic=	100.0

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)=	4,645
Flow Rate (Actual, Cubic ft/min)=	121,356
Flow rate (Standard, Wet, Cubic ft/min)=	93,376
Flow Rate (Standard, Dry, Cubic ft/min)=	81,059

Particulate Loading - Front Half

Particulate Weight (g)=	0.0394
Particulate Loading, Dry Std. (gr/scf)=	0.0105
Particulate Loading, Actual (gr/cu ft)=	0.0070
Emission Rate (lb/hr)=	7.28

Corr. to 7% O2 & 12% CO2	
0.0093	0.0086

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R19B
 RUN # - 19 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 0930-1119
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:04:59

Initial Meter Volume (Cubic Meters)= 17.283
 Final Meter Volume (Cubic Meters)= 19.008
 Meter Factor= 0.988
 Final Leak Rate (cu m/min)= 0.0001
 Net Meter Volume (Cubic Meters)= 1.705
 Gas Volume (Dry Standard Cubic Meters)= 1.640

Barometric Pressure (mm Hg)= 762
 Static Pressure (mm H2O)= -641

Percent Oxygen= 5.2
 Percent Carbon Dioxide= 14.6
 Moisture Collected (ml)= 186.8
 Percent Water= 13.2

Average Meter Temperature (C)= 34
 Average Delta H (mm H2O)= 38.2
 Average Delta P (mm H2O)= 43.2
 Average Stack Temperature (C)= 85

Dry Molecular Weight= 30.54
 Wet Molecular Weight= 28.89

Average Square Root of Delta P (mm H2O)= 6.0988
 % Isokinetic= 100.0

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)= 1,416
 Flow rate (Actual, Cubic m/min)= 3,436
 Flow rate (Standard, Wet, Cubic m/min)= 2,644
 Flow rate (Standard, Dry, Cubic m/min)= 2,295

Particulate Loading - Front Half

Particulate Weight (g)=	0.0394	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	24.0	21.3 19.8
Particulate Loading, Actual (mg/cu m)=	16.0	
Emission Rate (kg/hr)=	3.30	

No Back Half Analysis

FILE NAME - R19B
 RUN # - 19 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 0930-1119
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:04:59

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.700	2.40	185	84	84
2	2.700	2.40	185	85	84
3	2.300	2.00	186	85	84
4	1.300	1.10	185	87	85
5	0.180	0.15	184	88	85
6	2.600	2.30	186	89	86
7	2.300	2.00	186	89	86
8	1.900	1.70	186	91	87
9	0.850	0.75	185	92	88
10	0.100	0.08	184	93	88
11	2.500	2.20	184	93	89
12	2.400	2.10	186	93	90
13	1.900	1.70	185	95	91
14	0.660	0.59	185	97	91
15	0.050	0.04	185	98	92
16	2.600	2.30	186	96	93
17	2.300	2.10	187	97	93
18	2.500	2.20	187	99	94
19	0.850	0.76	185	100	95
20	0.120	0.10	184	100	95
21	2.700	2.40	186	99	96
22	2.600	2.30	187	100	96
23	2.800	2.50	187	101	96
24	1.300	1.20	186	102	97
25	0.300	0.27	185	103	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	3.3038	3.2690	0.0000	0.0348

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7352	3.7306	40.9	0.0046
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R20A
 RUN # - 20 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1259-1448
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:05:38

Initial Meter Volume (Cubic Feet)=	389.970
Final Meter Volume (Cubic Feet)=	452.137
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.010
Net Meter Volume (Cubic Feet)=	62.851
Gas Volume (Dry Standard Cubic Feet)=	59.507

Barometric Pressure (in Hg)=	29.98
Static Pressure (Inches H2O)=	-23.89

Percent Oxygen=	5.2
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	223.6
Percent Water=	15.0

Average Meter Temperature (F)=	101
Average Delta H (in H2O)=	1.50
Average Delta P (in H2O)=	1.736
Average Stack Temperature (F)=	186

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.66

Average Square Root of Delta P (in H2O)=	1.2317
% Isokinetic=	101.5

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)=	4,741
Flow Rate (Actual, Cubic ft/min)=	123,848
Flow rate (Standard, Wet, Cubic ft/min)=	95,550
Flow Rate (Standard, Dry, Cubic ft/min)=	81,183

Particulate Loading - Front Half

Particulate Weight (g)=	0.0263	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0068	0.0060 0.0056
Particulate Loading, Actual (gr/cu ft)=	0.0045	
Emission Rate (lb/hr)=	4.74	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R20A
 RUN # - 20 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1259-1448
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:05:38

Initial Meter Volume (Cubic Meters)=	11.042
Final Meter Volume (Cubic Meters)=	12.803
Meter Factor=	1.011
Final Leak Rate (cu m/min)=	0.0003
Net Meter Volume (Cubic Meters)=	1.780
Gas Volume (Dry Standard Cubic Meters)=	1.685

Barometric Pressure (mm Hg)=	761
Static Pressure (mm H2O)=	-607

Percent Oxygen=	5.2
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	223.6
Percent Water=	15.0

Average Meter Temperature (C)=	38
Average Delta H (mm H2O)=	38.2
Average Delta P (mm H2O)=	44.1
Average Stack Temperature (C)=	85

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.66

Average Square Root of Delta P (mm H2O)=	6.2074
% Isokinetic=	101.5

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)=	1,445
Flow rate (Actual, Cubic m/min)=	3,507
Flow rate (Standard, Wet, Cubic m/min)=	2,706
Flow rate (Standard, Dry, Cubic m/min)=	2,299

Particulate Loading - Front Half

Particulate Weight (g)=	0.0263	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	15.6	13.8 12.8
Particulate Loading, Actual (mg/cu m)=	10.2	
Emission Rate (kg/hr)=	2.15	

No Back Half Analysis

FILE NAME - R20A
 RUN # - 20 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1259-1448
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.400	2.10	185	93 93
2	2.200	1.90	186	94 93
3	1.900	1.60	186	96 93
4	0.690	0.59	186	98 94
5	0.030	0.02	184	98 93
6	2.600	2.20	186	96 94
7	2.500	2.20	184	99 95
8	2.000	1.70	184	101 95
9	1.100	0.95	186	103 96
10	0.180	0.15	186	103 96
11	2.800	2.40	186	101 96
12	2.800	2.40	186	102 97
13	2.800	2.40	186	105 97
14	1.300	1.10	186	107 98
15	0.300	0.26	187	107 99
16	2.700	2.40	187	105 99
17	2.600	2.30	186	106 99
18	2.100	1.80	185	108 100
19	1.800	1.60	185	108 100
20	0.250	0.21	186	110 101
21	2.400	2.10	186	108 101
22	2.500	2.20	186	109 102
23	2.400	2.10	185	111 102
24	0.880	0.77	184	112 103
25	0.180	0.15	185	111 104

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.2800	3.2576	0.0000	0.0224

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.6921	3.6882	35.1	0.0039
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R20B
 RUN # - 20 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1301-1450
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:06:21

Initial Meter Volume (Cubic Feet)=	678.559
Final Meter Volume (Cubic Feet)=	741.084
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.002
Net Meter Volume (Cubic Feet)=	61.775
Gas Volume (Dry Standard Cubic Feet)=	58.453

Barometric Pressure (in Hg)=	29.98
Static Pressure (Inches H2O)=	-23.89

Percent Oxygen=	5.2
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	226.8
Percent Water=	15.5

Average Meter Temperature (F)=	101
Average Delta H (in H2O)=	1.55
Average Delta P (in H2O)=	1.749
Average Stack Temperature (F)=	186

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.61

Average Square Root of Delta P (in H2O)=	1.2357
% Isokinetic=	102.0

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)=	4,763
Flow Rate (Actual, Cubic ft/min)=	124,422
Flow rate (Standard, Wet, Cubic ft/min)=	95,910
Flow Rate (Standard, Dry, Cubic ft/min)=	81,091

Particulate Loading - Front Half

Particulate Weight (g)=	0.0275	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0072	0.0064 0.0060
Particulate Loading, Actual (gr/cu ft)=	0.0047	
Emission Rate (lb/hr)=	5.03	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R20B
 RUN # - 20 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1301-1450
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:06:21

Initial Meter Volume (Cubic Meters)=	19.214
Final Meter Volume (Cubic Meters)=	20.985
Meter Factor=	0.988
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.749
Gas Volume (Dry Standard Cubic Meters)=	1.655

Barometric Pressure (mm Hg)=	761
Static Pressure (mm H2O)=	-607

Percent Oxygen=	5.2
Percent Carbon Dioxide=	14.6
Moisture Collected (ml)=	226.8
Percent Water=	15.5

Average Meter Temperature (C)=	38
Average Delta H (mm H2O)=	39.3
Average Delta P (mm H2O)=	44.4
Average Stack Temperature (C)=	86

Dry Molecular Weight=	30.54
Wet Molecular Weight=	28.61

Average Square Root of Delta P (mm H2O)=	6.2278
% Isokinetic=	102.0

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)=	1,452
Flow rate (Actual, Cubic m/min)=	3,523
Flow rate (Standard, Wet, Cubic m/min)=	2,716
Flow rate (Standard, Dry, Cubic m/min)=	2,296

Particulate Loading - Front Half

Particulate Weight (g)=	0.0275	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	16.6	14.7 13.7
Particulate Loading, Actual (mg/cu m)=	10.8	
Emission Rate (kg/hr)=	2.29	

No Back Half Analysis

FILE NAME - R20B
 RUN # - 20 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1301-1450
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.600	2.30	186	94 94
2	2.700	2.40	187	95 94
3	2.400	2.10	187	95 94
4	1.900	1.70	186	97 95
5	0.370	0.32	185	98 95
6	2.600	2.30	185	99 96
7	2.600	2.30	185	99 96
8	1.900	1.70	185	101 97
9	1.000	0.88	187	102 97
10	0.170	0.14	187	102 98
11	2.600	2.30	187	102 99
12	2.200	1.90	186	102 99
13	2.200	1.90	186	104 99
14	0.700	0.62	187	105 100
15	0.040	0.03	187	105 100
16	2.700	2.40	187	104 101
17	2.700	2.40	186	105 101
18	1.600	1.40	185	107 102
19	0.850	0.75	186	107 102
20	0.100	0.08	186	108 103
21	2.700	2.40	187	106 103
22	2.900	2.60	186	107 103
23	2.200	2.00	185	108 104
24	1.700	1.50	186	109 104
25	0.300	0.26	186	110 104

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3376	3.3137	0.0000	0.0239

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.6964	3.6928	33.7	0.0036
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R21A
 RUN # - 21 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1617-1806
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:07:02

Initial Meter Volume (Cubic Feet)=	453.291
Final Meter Volume (Cubic Feet)=	513.459
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.004
Net Meter Volume (Cubic Feet)=	60.830
Gas Volume (Dry Standard Cubic Feet)=	57.428

Barometric Pressure (in Hg)=	29.94
Static Pressure (Inches H2O)=	-26.55

Percent Oxygen=	5.4
Percent Carbon Dioxide=	14.1
Moisture Collected (ml)=	197.1
Percent Water=	13.9

Average Meter Temperature (F)=	101
Average Delta H (in H2O)=	1.44
Average Delta P (in H2O)=	1.721
Average Stack Temperature (F)=	185

Dry Molecular Weight=	30.47
Wet Molecular Weight=	28.74

Average Square Root of Delta P (in H2O)=	1.2144
% Isokinetic=	100.7

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)=	4,686
Flow Rate (Actual, Cubic ft/min)=	122,433
Flow rate (Standard, Wet, Cubic ft/min)=	93,711
Flow Rate (Standard, Dry, Cubic ft/min)=	80,670

Particulate Loading - Front Half

Particulate Weight (g)=	0.0238	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0064	0.0057 0.0054
Particulate Loading, Actual (gr/cu ft)=	0.0042	
Emission Rate (lb/hr)=	4.41	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R21A
 RUN # - 21 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1617-1806
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)=	12.835
Final Meter Volume (Cubic Meters)=	14.539
Meter Factor=	1.011
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.722
Gas Volume (Dry Standard Cubic Meters)=	1.626

Barometric Pressure (mm Hg)=	760
Static Pressure (mm H2O)=	-674

Percent Oxygen=	5.4
Percent Carbon Dioxide=	14.1
Moisture Collected (ml)=	197.1
Percent Water=	13.9

Average Meter Temperature (C)=	39
Average Delta H (mm H2O)=	36.6
Average Delta P (mm H2O)=	43.7
Average Stack Temperature (C)=	85

Dry Molecular Weight=	30.47
Wet Molecular Weight=	28.74

Average Square Root of Delta P (mm H2O)=	6.1205
% Isokinetic=	100.7

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)=	1,428
Flow rate (Actual, Cubic m/min)=	3,467
Flow rate (Standard, Wet, Cubic m/min)=	2,654
Flow rate (Standard, Dry, Cubic m/min)=	2,284

Particulate Loading - Front Half

Particulate Weight (g)=	0.0238	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	14.6	13.1 12.5
Particulate Loading, Actual (mg/cu m)=	9.6	
Emission Rate (kg/hr)=	2.00	

No Back Half Analysis

FILE NAME - R21A
 RUN # - 21 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1617-1806
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	In(F)	Meter T Out(F)
1	2.400	2.00	185	97	97
2	2.200	1.80	185	98	97
3	2.000	1.70	184	99	97
4	0.720	0.60	184	101	97
5	0.040	0.03	184	101	97
6	2.600	2.20	184	99	98
7	2.300	1.90	187	102	98
8	2.400	2.00	186	103	98
9	0.780	0.65	184	106	99
10	0.150	0.12	185	105	99
11	2.700	2.30	184	102	99
12	2.700	2.30	186	104	99
13	2.900	2.40	187	106	100
14	1.200	1.00	186	108	100
15	0.220	0.18	186	107	100
16	2.800	2.30	186	103	100
17	2.700	2.30	185	104	99
18	2.300	1.90	186	107	100
19	1.400	1.20	186	108	100
20	0.220	0.18	184	108	100
21	2.500	2.10	186	104	100
22	2.400	2.00	185	105	99
23	2.400	2.00	185	106	100
24	0.950	0.79	186	107	100
25	0.050	0.04	186	107	100

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3112	3.2914	0.0000	0.0198

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5230	3.5190	35.7	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 - R21B
 RUN # - 21 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1619-1808
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:07:45

Initial Meter Volume (Cubic Feet)=	746.002
Final Meter Volume (Cubic Feet)=	810.070
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.001
Net Meter Volume (Cubic Feet)=	63.299
Gas Volume (Dry Standard Cubic Feet)=	59.557

Barometric Pressure (in Hg)=	29.94
Static Pressure (Inches H2O)=	-26.55

Percent Oxygen=	5.4
Percent Carbon Dioxide=	14.1
Moisture Collected (ml)=	209.5
Percent Water=	14.2

Average Meter Temperature (F)=	104
Average Delta H (in H2O)=	1.63
Average Delta P (in H2O)=	1.796
Average Stack Temperature (F)=	186

Dry Molecular Weight=	30.47
Wet Molecular Weight=	28.70

Average Square Root of Delta P (in H2O)=	1.2457
% Isokinetic=	101.1

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)=	4,812
Flow Rate (Actual, Cubic ft/min)=	125,712
Flow rate (Standard, Wet, Cubic ft/min)=	96,150
Flow Rate (Standard, Dry, Cubic ft/min)=	82,484

Particulate Loading - Front Half

Particulate Weight (g)=	0.0236
Particulate Loading, Dry Std. (gr/scf)=	0.0061
Particulate Loading, Actual (gr/cu ft)=	0.0040
Emission Rate (lb/hr)=	4.31

Corr. to 7% O2 & 12% CO2	
0.0055	0.0052

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R21B
 RUN # - 21 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1619-1808
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:07:46

Initial Meter Volume (Cubic Meters)= 21.124
 Final Meter Volume (Cubic Meters)= 22.938
 Meter Factor= 0.988
 Final Leak Rate (cu m/min)= 0.0000
 Net Meter Volume (Cubic Meters)= 1.792
 Gas Volume (Dry Standard Cubic Meters)= 1.686

Barometric Pressure (mm Hg)= 760
 Static Pressure (mm H2O)= -674

Percent Oxygen= 5.4
 Percent Carbon Dioxide= 14.1
 Moisture Collected (ml)= 209.5
 Percent Water= 14.2

Average Meter Temperature (C)= 40
 Average Delta H (mm H2O)= 41.5
 Average Delta P (mm H2O)= 45.6
 Average Stack Temperature (C)= 85

Dry Molecular Weight= 30.47
 Wet Molecular Weight= 28.70

Average Square Root of Delta P (mm H2O)= 6.2781
 % Isokinetic= 101.1

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)= 1,467
 Flow rate (Actual, Cubic m/min)= 3,560
 Flow rate (Standard, Wet, Cubic m/min)= 2,723
 Flow rate (Standard, Dry, Cubic m/min)= 2,336

Particulate Loading - Front Half

Particulate Weight (g)= 0.0236
 Particulate Loading, Dry Std. (mg/cu m)= 14.0
 Particulate Loading, Actual (mg/cu m)= 9.2
 Emission Rate (kg/hr)= 1.96

Corr. to 7% O2 & 12% CO2
 12.6 11.9

No Back Half Analysis

FILE NAME - R21B
 RUN # - 21 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/18/99 Time: 1619-1808
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:07:46

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.800	2.50	186	99	99
2	2.800	2.50	185	99	99
3	2.200	2.00	184	100	99
4	1.900	1.70	185	101	99
5	0.200	0.18	186	102	100
6	2.600	2.40	187	103	100
7	2.500	2.30	186	103	100
8	2.400	2.20	185	104	100
9	0.900	0.81	185	106	101
10	0.140	0.12	186	106	102
11	2.600	2.40	186	105	102
12	2.200	2.00	186	105	102
13	2.200	2.00	187	106	102
14	0.680	0.61	186	107	103
15	0.050	0.04	185	108	103
16	2.700	2.50	186	106	103
17	2.800	2.50	186	106	103
18	1.800	1.60	186	107	103
19	0.850	0.77	186	108	104
20	0.100	0.09	185	108	104
21	2.800	2.60	186	107	104
22	2.600	2.40	186	107	104
23	2.700	2.50	186	108	104
24	2.100	1.90	186	109	105
25	0.270	0.24	186	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	3.2892	3.2692	0.0000	0.0200

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7292	3.7256	27.5	0.0036
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R22A
 RUN # - 22 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 0858-1047
 PROJECT # - 4702.02.04.09

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Initial Meter Volume (Cubic Feet)=	515.155
Final Meter Volume (Cubic Feet)=	575.121
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.008
Net Meter Volume (Cubic Feet)=	60.626
Gas Volume (Dry Standard Cubic Feet)=	58.432

Barometric Pressure (in Hg)=	29.95
Static Pressure (Inches H2O)=	-27.01

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.7
Moisture Collected (ml)=	193.5
Percent Water=	13.5

Average Meter Temperature (F)=	90
Average Delta H (in H2O)=	1.45
Average Delta P (in H2O)=	1.722
Average Stack Temperature (F)=	184

Dry Molecular Weight=	30.55
Wet Molecular Weight=	28.86

Average Square Root of Delta P (in H2O)=	1.2171
% Isokinetic=	99.8

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)=	4,685
Flow Rate (Actual, Cubic ft/min)=	122,391
Flow rate (Standard, Wet, Cubic ft/min)=	93,750
Flow Rate (Standard, Dry, Cubic ft/min)=	81,101

Particulate Loading - Front Half

Particulate Weight (g)=	0.0377	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0099	0.0087 0.0081
Particulate Loading, Actual (gr/cu ft)=	0.0066	
Emission Rate (lb/hr)=	6.91	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R22A
 RUN # - 22 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 0858-1047
 PROJECT # - 4702.02.04.09

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Initial Meter Volume (Cubic Meters)=	14.587
Final Meter Volume (Cubic Meters)=	16.285
Meter Factor=	1.011
Final Leak Rate (cu m/min)=	0.0002
Net Meter Volume (Cubic Meters)=	1.717
Gas Volume (Dry Standard Cubic Meters)=	1.655

Barometric Pressure (mm Hg)=	761
Static Pressure (mm H2O)=	-686

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.7
Moisture Collected (ml)=	193.5
Percent Water=	13.5

Average Meter Temperature (C)=	32
Average Delta H (mm H2O)=	36.8
Average Delta P (mm H2O)=	43.7
Average Stack Temperature (C)=	85

Dry Molecular Weight=	30.55
Wet Molecular Weight=	28.86

Average Square Root of Delta P (mm H2O)=	6.1338
% Isokinetic=	99.8

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)=	1,428
Flow rate (Actual, Cubic m/min)=	3,466
Flow rate (Standard, Wet, Cubic m/min)=	2,655
Flow rate (Standard, Dry, Cubic m/min)=	2,297

Particulate Loading - Front Half

Particulate Weight (g)=	0.0377	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	22.8	19.9 18.6
Particulate Loading, Actual (mg/cu m)=	15.1	
Emission Rate (kg/hr)=	3.14	

No Back Half Analysis

FILE NAME - R22A
 RUN # - 22 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 0858-1047
 PROJECT # - 4702.02.04.09

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Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)	
1	2.500	2.10	181	82	82
2	2.200	1.80	186	83	82
3	2.000	1.70	185	85	83
4	0.730	0.61	184	87	83
5	0.050	0.04	183	87	84
6	2.500	2.10	182	86	84
7	2.700	2.30	185	88	84
8	2.300	1.90	185	91	85
9	0.780	0.65	184	92	86
10	0.100	0.08	185	92	86
11	2.900	2.40	185	91	86
12	2.900	2.40	185	93	87
13	2.700	2.30	184	94	87
14	1.800	1.50	184	96	88
15	0.200	0.16	185	98	89
16	2.700	2.30	184	94	89
17	2.500	2.10	184	96	90
18	2.300	2.00	184	97	90
19	1.300	1.10	185	98	90
20	0.280	0.23	185	97	91
21	2.600	2.20	184	94	91
22	2.300	2.00	184	97	91
23	1.800	1.50	184	100	92
24	0.800	0.68	185	101	93
25	0.100	0.08	184	100	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	3.2863	3.2533	0.0000	0.0330

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.3638	3.3591	47.2	0.0047
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R22B
RUN # - 22 - Method 17 TRAIN B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 07/19/99 Time: 0900-1049
PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Feet)=	810.696
Final Meter Volume (Cubic Feet)=	871.746
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.003
Net Meter Volume (Cubic Feet)=	60.317
Gas Volume (Dry Standard Cubic Feet)=	58.175

Barometric Pressure (in Hg)=	29.95
Static Pressure (Inches H2O)=	-27.01

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.7
Moisture Collected (ml)=	195.3
Percent Water=	13.7

Average Meter Temperature (F)=	90
Average Delta H (in H2O)=	1.51
Average Delta P (in H2O)=	1.764
Average Stack Temperature (F)=	185

Dry Molecular Weight=	30.55
Wet Molecular Weight=	28.84

Average Square Root of Delta P (in H2O)=	1.2391
% Isokinetic=	99.9

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)=	4,774
Flow Rate (Actual, Cubic ft/min)=	124,717
Flow rate (Standard, Wet, Cubic ft/min)=	95,431
Flow Rate (Standard, Dry, Cubic ft/min)=	82,402

Particulate Loading - Front Half

Particulate Weight (g)=	0.0391	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0104	0.0091 0.0084
Particulate Loading, Actual (gr/cu ft)=	0.0068	
Emission Rate (lb/hr)=	7.31	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R22B
 RUN # - 22 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 0900-1049
 PROJECT # - 4702.02.04.09

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Initial Meter Volume (Cubic Meters)=	22.956
Final Meter Volume (Cubic Meters)=	24.684
Meter Factor=	0.988
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.708
Gas Volume (Dry Standard Cubic Meters)=	1.647

Barometric Pressure (mm Hg)=	761
Static Pressure (mm H2O)=	-686

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.7
Moisture Collected (ml)=	195.3
Percent Water=	13.7

Average Meter Temperature (C)=	32
Average Delta H (mm H2O)=	38.3
Average Delta P (mm H2O)=	44.8
Average Stack Temperature (C)=	85

Dry Molecular Weight=	30.55
Wet Molecular Weight=	28.84

Average Square Root of Delta P (mm H2O)=	6.2449
Isokinetic=	99.9

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)=	1,455
Flow rate (Actual, Cubic m/min)=	3,532
Flow rate (Standard, Wet, Cubic m/min)=	2,702
Flow rate (Standard, Dry, Cubic m/min)=	2,333

Particulate Loading - Front Half

Particulate Weight (g)=	0.0391	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	23.7	20.8 19.4
Particulate Loading, Actual (mg/cu m)=	15.7	
Emission Rate (kg/hr)=	3.32	

Go Back Half Analysis

FILE NAME - R22B
 RUN # - 22 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 0900-1049
 PROJECT # - 4702.02.04.09

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Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.700	2.30	182	82 82
2	2.600	2.20	186	82 82
3	2.500	2.10	186	83 82
4	1.400	1.20	184	84 82
5	0.300	0.25	183	85 83
6	2.700	2.30	184	86 84
7	2.300	2.00	185	87 84
8	2.100	1.80	185	88 84
9	0.860	0.73	184	90 85
10	0.080	0.06	185	91 86
11	2.600	2.20	185	90 87
12	2.300	2.00	185	91 87
13	2.000	1.70	184	93 88
14	0.770	0.66	185	94 89
15	0.040	0.03	185	95 90
16	2.600	2.20	185	93 90
17	2.500	2.20	185	94 91
18	2.300	2.00	185	96 91
19	0.860	0.74	186	97 92
20	0.200	0.17	186	97 92
21	2.800	2.40	185	96 93
22	2.800	2.40	185	97 93
23	2.600	2.20	186	98 94
24	1.900	1.60	186	100 94
25	0.300	0.26	186	101 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	3.2933	3.2573	0.0000	0.0360

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.4512	3.4481	44.1	0.0031
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R23A
 RUN # - 23 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1150-1339
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Feet)=	575.666
Final Meter Volume (Cubic Feet)=	634.533
Meter Factor=	1.011
Final Leak Rate (cu ft/min)=	0.009
Net Meter Volume (Cubic Feet)=	59.515
Gas Volume (Dry Standard Cubic Feet)=	56.412

Barometric Pressure (in Hg)=	29.94
Static Pressure (Inches H2O)=	-24.27

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.8
Moisture Collected (ml)=	177.9
Percent Water=	12.9

Average Meter Temperature (F)=	99
Average Delta H (in H2O)=	1.36
Average Delta P (in H2O)=	1.638
Average Stack Temperature (F)=	185

Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.94

Average Square Root of Delta P (in H2O)=	1.1903
% 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)=	4,562
Flow Rate (Actual, Cubic ft/min)=	119,180
Flow rate (Standard, Wet, Cubic ft/min)=	91,819
Flow Rate (Standard, Dry, Cubic ft/min)=	79,944

Particulate Loading - Front Half

Particulate Weight (g)=	0.0210	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0057	0.0050 0.0046
Particulate Loading, Actual (gr/cu ft)=	0.0038	
Emission Rate (lb/hr)=	3.93	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R23A
 RUN # - 23 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1150-1339
 PROJECT # - 4702.02.04.09

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Initial Meter Volume (Cubic Meters)=	16.301
Final Meter Volume (Cubic Meters)=	17.967
Meter Factor=	1.011
Final Leak Rate (cu m/min)=	0.0003
Net Meter Volume (Cubic Meters)=	1.685
Gas Volume (Dry Standard Cubic Meters)=	1.597

Barometric Pressure (mm Hg)=	760
Static Pressure (mm H2O)=	-616

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.8
Moisture Collected (ml)=	177.9
Percent Water=	12.9

Average Meter Temperature (C)=	37
Average Delta H (mm H2O)=	34.5
Average Delta P (mm H2O)=	41.6
Average Stack Temperature (C)=	85

Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.94

Average Square Root of Delta P (mm H2O)=	5.9988
% 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)=	1,390
Flow rate (Actual, Cubic m/min)=	3,375
Flow rate (Standard, Wet, Cubic m/min)=	2,600
Flow rate (Standard, Dry, Cubic m/min)=	2,264

Particulate Loading - Front Half

Particulate Weight (g)=	0.0210	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	13.1	11.5 10.7
Particulate Loading, Actual (mg/cu m)=	8.8	
Emission Rate (kg/hr)=	1.78	

No Back Half Analysis

FILE NAME - R23A
 RUN # - 23 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1150-1339
 PROJECT # - 4702.02.04.09

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Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)	
1	2.800	2.30	184	92	92
2	2.000	1.60	185	93	92
3	1.800	1.50	185	95	93
4	0.680	0.56	184	97	93
5	0.050	0.04	184	97	94
6	2.600	2.20	184	97	94
7	2.300	1.90	185	99	95
8	2.100	1.70	185	101	95
9	0.800	0.66	186	102	95
10	0.050	0.04	185	101	96
11	2.500	2.10	185	99	96
12	2.400	2.00	184	100	96
13	2.600	2.20	185	103	97
14	1.700	1.40	186	105	97
15	0.300	0.25	185	105	98
16	2.400	2.00	185	103	98
17	2.300	1.90	186	104	98
18	2.300	1.90	186	105	98
19	1.300	1.10	185	105	99
20	0.220	0.18	185	105	99
21	2.400	2.00	185	104	99
22	2.200	1.80	186	104	100
23	2.200	1.80	186	106	100
24	0.800	0.67	184	108	100
25	0.150	0.12	183	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	3.2315	3.2128	0.0000	0.0187

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.3269	3.3246	34.3	0.0023
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R23B
RUN # - 23 - Method 17 TRAIN B for PM
LOCATION - Unit 2A Baghouse Outlet Duct
DATE - 07/19/99 Time: 1152-1341
PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Feet)=	872.288
Final Meter Volume (Cubic Feet)=	932.231
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.000
Net Meter Volume (Cubic Feet)=	59.224
Gas Volume (Dry Standard Cubic Feet)=	56.038

Barometric Pressure (in Hg)=	29.94
Static Pressure (Inches H2O)=	-24.27

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.8
Moisture Collected (ml)=	185.8
Percent Water=	13.5

Average Meter Temperature (F)=	100
Average Delta H (in H2O)=	1.45
Average Delta P (in H2O)=	1.604
Average Stack Temperature (F)=	185

Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.87

Average Square Root of Delta P (in H2O)=	1.1723
% Isokinetic=	100.2

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)=	4,500
Flow Rate (Actual, Cubic ft/min)=	117,565
Flow rate (Standard, Wet, Cubic ft/min)=	90,519
Flow Rate (Standard, Dry, Cubic ft/min)=	78,292

Particulate Loading - Front Half

Particulate Weight (g)=	0.0207	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0057	0.0050 0.0046
Particulate Loading, Actual (gr/cu ft)=	0.0038	
Emission Rate (lb/hr)=	3.82	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R23B
 RUN # - 23 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1152-1341
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Initial Meter Volume (Cubic Meters)= 24.700
 Final Meter Volume (Cubic Meters)= 26.397
 Meter Factor= 0.988
 Final Leak Rate (cu m/min)= 0.0000
 Net Meter Volume (Cubic Meters)= 1.677
 Gas Volume (Dry Standard Cubic Meters)= 1.587

Barometric Pressure (mm Hg)= 760
 Static Pressure (mm H2O)= -616

Percent Oxygen= 5.0
 Percent Carbon Dioxide= 14.8
 Moisture Collected (ml)= 185.8
 Percent Water= 13.5

Average Meter Temperature (C)= 38
 Average Delta H (mm H2O)= 36.9
 Average Delta P (mm H2O)= 40.7
 Average Stack Temperature (C)= 85

Dry Molecular Weight= 30.57
 Wet Molecular Weight= 28.87

Average Square Root of Delta P (mm H2O)= 5.9083
 % Isokinetic= 100.2

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)= 1,372
 Flow rate (Actual, Cubic m/min)= 3,329
 Flow rate (Standard, Wet, Cubic m/min)= 2,563
 Flow rate (Standard, Dry, Cubic m/min)= 2,217

Particulate Loading - Front Half

Particulate Weight (g)=	0.0207	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	13.0	11.4 10.6
Particulate Loading, Actual (mg/cu m)=	8.7	
Emission Rate (kg/hr)=	1.73	

No Back Half Analysis

FILE NAME - R23B
 RUN # - 23 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1152-1341
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
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Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F) Out(F)
1	2.600	2.30	185	94 93
2	2.400	2.10	185	94 93
3	2.300	2.10	185	95 93
4	1.400	1.30	185	96 94
5	0.260	0.23	185	98 94
6	2.400	2.20	185	98 95
7	2.100	1.90	185	99 96
8	1.800	1.60	185	100 96
9	0.820	0.73	186	101 97
10	0.050	0.04	185	102 97
11	2.500	2.30	186	101 98
12	2.100	1.90	185	101 98
13	1.800	1.60	185	103 98
14	0.620	0.56	186	104 100
15	0.040	0.03	185	104 100
16	2.400	2.20	185	103 100
17	2.000	1.80	187	103 100
18	2.200	2.00	186	105 101
19	0.730	0.66	186	106 102
20	0.070	0.06	185	106 102
21	2.500	2.30	185	105 102
22	2.400	2.20	186	105 102
23	2.600	2.40	186	107 103
24	1.800	1.60	185	108 103
25	0.210	0.19	184	109 104

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3339	3.3156	0.0000	0.0183

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.4133	3.4109	32.7	0.0024
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

FILE NAME - R24A
 RUN # - 24 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1509-1658
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:16:55

Initial Meter Volume (Cubic Feet)= 637.184
 Final Meter Volume (Cubic Feet)= 697.063
 Meter Factor= 1.011
 Final Leak Rate (cu ft/min)= 0.006
 Net Meter Volume (Cubic Feet)= 60.538
 Gas Volume (Dry Standard Cubic Feet)= 56.789

Barometric Pressure (in Hg)= 29.88
 Static Pressure (Inches H2O)= -25.88

Percent Oxygen= 5.0
 Percent Carbon Dioxide= 14.8
 Moisture Collected (ml)= 195.4
 Percent Water= 13.9

Average Meter Temperature (F)= 104
 Average Delta H (in H2O)= 1.41
 Average Delta P (in H2O)= 1.629
 Average Stack Temperature (F)= 185

Dry Molecular Weight= 30.57
 Wet Molecular Weight= 28.82

Average Square Root of Delta P (in H2O)= 1.1850
 % Isokinetic= 100.1

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)= 4,567
 Flow Rate (Actual, Cubic ft/min)= 119,306
 Flow rate (Standard, Wet, Cubic ft/min)= 91,305
 Flow Rate (Standard, Dry, Cubic ft/min)= 78,572

Particulate Loading - Front Half

Particulate Weight (g)=	0.0460	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (gr/scf)=	0.0125	0.0109 0.0101
Particulate Loading, Actual (gr/cu ft)=	0.0082	
Emission Rate (lb/hr)=	8.40	

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R24A
 RUN # - 24 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1509-1658
 PROJECT # - 4702.02.04.09

PROG.=VER 06/27/89
 07-22-1999 13:16:55

Initial Meter Volume (Cubic Meters)= 18.043
 Final Meter Volume (Cubic Meters)= 19.738
 Meter Factor= 1.011
 Final Leak Rate (cu m/min)= 0.0002
 Net Meter Volume (Cubic Meters)= 1.714
 Gas Volume (Dry Standard Cubic Meters)= 1.608

Barometric Pressure (mm Hg)= 759
 Static Pressure (mm H2O)= -657

Percent Oxygen= 5.0
 Percent Carbon Dioxide= 14.8
 Moisture Collected (ml)= 195.4
 Percent Water= 13.9

Average Meter Temperature (C)= 40
 Average Delta H (mm H2O)= 35.8
 Average Delta P (mm H2O)= 41.4
 Average Stack Temperature (C)= 85

Dry Molecular Weight= 30.57
 Wet Molecular Weight= 28.82

Average Square Root of Delta P (mm H2O)= 5.9720
 % Isokinetic= 100.1

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)= 1,392
 Flow rate (Actual, Cubic m/min)= 3,378
 Flow rate (Standard, Wet, Cubic m/min)= 2,585
 Flow rate (Standard, Dry, Cubic m/min)= 2,225

Particulate Loading - Front Half

Particulate Weight (g)=	0.0460	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	28.6	25.0 23.2
Particulate Loading, Actual (mg/cu m)=	18.8	
Emission Rate (kg/hr)=	3.81	

No Back Half Analysis

FILE NAME - R24A
 RUN # - 24 - Method 17 TRAIN A for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1509-1658
 PROJECT # - 4702.02.04.09

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 07-22-1999 13:16:55

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.400	2.10	185	101	101
2	2.300	2.00	185	102	101
3	2.000	1.70	185	103	101
4	0.700	0.60	185	104	101
5	0.040	0.03	185	103	101
6	2.400	2.10	185	101	100
7	2.100	1.80	185	103	100
8	2.100	1.80	185	104	101
9	0.750	0.64	185	105	101
10	0.080	0.06	185	106	101
11	2.800	2.40	185	103	101
12	2.400	2.10	187	107	101
13	2.500	2.20	187	107	101
14	1.500	1.30	187	109	102
15	0.300	0.25	186	108	102
16	2.600	2.20	186	106	102
17	2.400	2.10	186	107	102
18	2.300	2.00	186	109	102
19	1.400	1.20	186	110	102
20	0.260	0.22	184	109	103
21	2.500	2.20	184	107	102
22	2.100	1.80	184	108	103
23	2.000	1.70	183	110	103
24	0.730	0.63	183	110	103
25	0.070	0.06	184	109	103

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3859	3.3452	0.0000	0.0407

Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.5600	3.5547	28.2	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 - R24B
 RUN # - 24 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1511-1700
 PROJECT # - 4702.02.04.09

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 07-22-1999 13:17:51

Initial Meter Volume (Cubic Feet)=	932.737
Final Meter Volume (Cubic Feet)=	993.985
Meter Factor=	0.988
Final Leak Rate (cu ft/min)=	0.004
Net Meter Volume (Cubic Feet)=	60.513
Gas Volume (Dry Standard Cubic Feet)=	56.738

Barometric Pressure (in Hg)=	29.88
Static Pressure (Inches H2O)=	-25.88

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.8
Moisture Collected (ml)=	199.2
Percent Water=	14.2

Average Meter Temperature (F)=	104
Average Delta H (in H2O)=	1.48
Average Delta P (in H2O)=	1.691
Average Stack Temperature (F)=	185

Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.78

Average Square Root of Delta P (in H2O)=	1.2099
% Isokinetic=	100.3

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)=	4,666
Flow Rate (Actual, Cubic ft/min)=	121,893
Flow rate (Standard, Wet, Cubic ft/min)=	93,262
Flow Rate (Standard, Dry, Cubic ft/min)=	80,028

Particulate Loading - Front Half

Particulate Weight (g)=	0.0452
Particulate Loading, Dry Std. (gr/scf)=	0.0123
Particulate Loading, Actual (gr/cu ft)=	0.0081
Emission Rate (lb/hr)=	8.41

Corr. to 7% O2 & 12% CO2	
0.0107	0.0099

No Back Half Analysis

* * METRIC UNITS * *

FILE NAME - R24B
 RUN # - 24 - Method 17 TRAIN B for PM
 LOCATION - Unit 2A Baghouse Outlet Duct
 DATE - 07/19/99 Time: 1511-1700
 PROJECT # - 4702.02.04.09

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 07-22-1999 13:17:51

Initial Meter Volume (Cubic Meters)=	26.411
Final Meter Volume (Cubic Meters)=	28.146
Meter Factor=	0.988
Final Leak Rate (cu m/min)=	0.0001
Net Meter Volume (Cubic Meters)=	1.713
Gas Volume (Dry Standard Cubic Meters)=	1.607

Barometric Pressure (mm Hg)=	759
Static Pressure (mm H2O)=	-657

Percent Oxygen=	5.0
Percent Carbon Dioxide=	14.8
Moisture Collected (ml)=	199.2
Percent Water=	14.2

Average Meter Temperature (C)=	40
Average Delta H (mm H2O)=	37.6
Average Delta P (mm H2O)=	43.0
Average Stack Temperature (C)=	85

Dry Molecular Weight=	30.57
Wet Molecular Weight=	28.78

Average Square Root of Delta P (mm H2O)=	6.0975
% Isokinetic=	100.3

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)=	1,422
Flow rate (Actual, Cubic m/min)=	3,452
Flow rate (Standard, Wet, Cubic m/min)=	2,641
Flow rate (Standard, Dry, Cubic m/min)=	2,266

Particulate Loading - Front Half

Particulate Weight (g)=	0.0452	Corr. to 7% O2 & 12% CO2
Particulate Loading, Dry Std. (mg/cu m)=	28.1	24.6 22.8
Particulate Loading, Actual (mg/cu m)=	18.5	
Emission Rate (kg/hr)=	3.82	

No Back Half Analysis

FILE NAME - R24B

PROG.=VER 06/27/89

RUN # - 24 - Method 17 TRAIN B for PM

07-22-1999 13:17:51

LOCATION - Unit 2A Baghouse Outlet Duct

DATE - 07/19/99 Time: 1511-1700

PROJECT # - 4702.02.04.09

Point #	Delta P (in. H2O)	Delta H (in. H2O)	Stack T (F)	Meter T In(F)	Meter T Out(F)
1	2.700	2.30	185	99	98
2	2.600	2.30	185	99	99
3	2.000	1.70	185	100	99
4	1.300	1.10	185	101	99
5	0.250	0.21	185	102	100
6	2.600	2.30	185	102	100
7	2.500	2.20	185	103	100
8	1.800	1.60	185	104	101
9	0.820	0.71	185	105	101
10	0.120	0.10	185	106	102
11	2.500	2.20	187	105	102
12	2.100	1.80	187	105	102
13	1.900	1.70	186	107	103
14	0.730	0.64	186	108	103
15	0.080	0.07	185	108	104
16	2.500	2.20	186	107	104
17	2.500	2.20	186	107	104
18	2.500	2.20	186	109	105
19	0.950	0.83	186	110	105
20	0.050	0.04	185	110	105
21	2.700	2.40	185	108	105
22	2.700	2.40	184	108	105
23	2.500	2.20	183	110	106
24	1.600	1.40	184	111	106
25	0.280	0.24	186	111	107

Fraction	Final Wt. (g)	Tare Wt. (g)	Blank Wt. (g)	Net Wt. (g)
DRY CATCH	0.0000	0.0000	0.0000	0.0000
FILTER	3.3124	3.2717	0.0000	0.0407

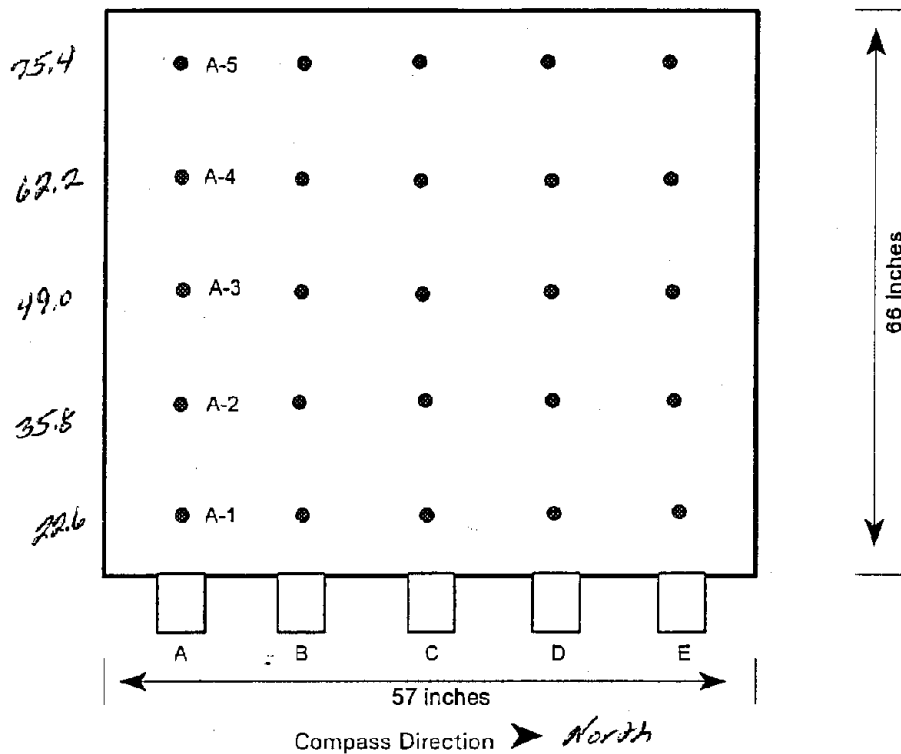
Fraction	Final Wt. (g)	Tare Wt. (g)	Vol. (ml)	Net Wt. (g)
PROBE RINSE	3.7243	3.7198	26.5	0.0045
IMPINGERS	0.0000	0.0000	0.0	0.0000
Probe Rinse Blank (mg/ml)=	0.0000			
Impinger Blank (mg/ml)=	0.0000			

ICal 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):	<u>82.0</u>	inches
Inside of near wall to outside of port (Distance B):	<u>16.0</u>	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: AM

COMMENTS:

SAMPLING NOZZLE CALIBRATION CHECK DATA

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

Nozzle I.D. Number or Dedicated Sampling Train Number	Nozzle Type (Shape and Material of Construction)	Three Measured Diameters, inches			Average Diameter, inches	Measured By	Date
		D1	D2	D3			
M17-1	goose-neck/quartz	0.192	0.192	0.192	0.192	<i>[Signature]</i>	07-09-99
M17-2	"	0.193	0.193	0.194	0.193	<i>[Signature]</i>	07-09-99
M17-3	"	0.196	0.196	0.196	0.196	<i>[Signature]</i>	07-09-99
M17-4	"	0.193	0.193	0.193	0.193	<i>[Signature]</i>	07-09-99
M17-5	"	0.185	0.185	0.185	0.185	<i>[Signature]</i>	07-09-99
M17-6	"	0.184	0.184	0.184	0.184	<i>[Signature]</i>	07-09-99
M17-7	"	0.192	0.192	0.192	0.192	<i>[Signature]</i>	07-09-99
M17-8	"	0.193	0.193	0.193	0.193	<i>[Signature]</i>	07-09-99
M17-9	"	0.146	0.146	0.146	0.146	<i>[Signature]</i>	07-09-99
M17-10	"	0.146	0.146	0.146	0.146	<i>[Signature]</i>	07-10-99
M17-11	"	0.196	0.196	0.196	0.196	<i>[Signature]</i>	07-12-99
M17-12	"	0.186	0.186	0.186	0.186	<i>[Signature]</i>	07-13-99
M17-13	"	0.184	0.184	0.184	0.184	<i>[Signature]</i>	07-13-99

COMMENTS:

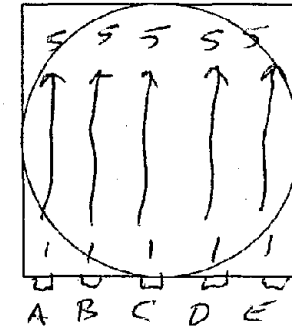
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

page 1 of 1

Run No. 10 Date 7-15-89
 Project No. 4122-02
 Client Cogentrix
 Source Bayshore 2a
 Sampling Location Duct Outlet
 Operator RJR
 Record data every 4 minutes
 Barometer No. 42102
 Barometric Pressure 30.07 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 30.04 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 30.04 in Hg
 Static Pressure 12.26-14.24.71 in H₂O

Train A No. A-1 M17-12
 Probe No. A Length: 10 ft
 Nozzle No. M17-12 Tip Dia. .186 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 3
 Filter Assembly No. 18
 Impinger Box No. A-1
 Umbilical/Impinger Hookup UH35
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.890

Train B No. B-1 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-13 Tip Dia. .184 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 4
 Filter Assembly No. 19
 Impinger Box No. B-2
 Umbilical/Impinger Hookup UH32
 Umbilical No. N50-1
 Meter Box No. N-11
 DGM Correction (Y) .988
 Orifice Meter ΔH@ 1.960



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)	0837	1050									0840	1054								
Pass or Fail	pass	pass									pass	pass								

Train A Sampling System Leak Checks											
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	
Time (24 Hr)	0835	1048									
Vacuum, in Hg	15	13									
Leak Rate, cfm	.004	.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)	0839	1052									
Vacuum, in Hg	15	16									
Leak Rate, cfm	.005	.002									
Final Meter Volume											
Initial Meter Volume											
Non-sample Volume											

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

7.8
7/17/89

	TRAIN A	TRAIN B
Meter Volume at Start of Run	758.680	995.405
Meter Volume at End of Run	819.283	1055.943
Total Leak Check Volume		
Adjusted Final Volume		

Run No. 10
Date 7-15-99

Sampling Location Baghouse 2a Duct Outlet
Project No. 4702-02

Operator G. J. J. page 1 of 1

Sampling Data for Method 17 Train A No. A-1

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>755.680</u>	Desired		Desired	Actual		Inlet	Outlet		
0917	C-5	4	0855	761.70	761.65	2.4	2.02	2.0	190	78	77	10	67
	4	8	0903	764.52	764.46	2.1	1.77	1.8	191	77	78	9	56
	3	12	0907	767.21	767.11	1.9	1.60	1.6	193	79	78	9	57
	2	16	0911	768.88	768.91	0.73	0.61	0.61	194	81	78	7	57
	1	20	0915	769.27	769.34	0.04	0.03	0.03	196	82	79	5	61
0939	D-5	24	0921	772.23	772.31	2.3	1.94	1.9	193	81	80	10	57
	4	28	0925	775.28	775.27	2.4	2.03	2.0	193	85	81	10	56
	3	32	0929	778.26	778.15	2.3	1.95	2.0	195	88	82	10	58
	2	36	0933	780.12	780.08	0.88	0.74	0.74	195	90	83	8	59
	1	40	0937	780.95	780.98	0.15	0.15	0.15	196	91	84	6	62
1001	E-5	44	0943	784.21	784.03	0.7	2.30	2.3	194	90	85	12	63
	4	48	0947	787.53	787.40	2.8	2.39	2.4	195	93	86	13	58
	3	52	0951	790.62	790.50	2.4	2.06	2.1	195	96	87	12	57
	2	56	0955	793.44	793.32	2.0	1.72	1.7	195	98	88	11	62
	1	60	0959	794.46	794.48	0.26	0.22	0.22	194	98	89	7	63
1024	A-5	64	1005	797.69	797.28	2.6	2.24	2.2	194	97	90	13	64
	4	68	1009	800.79	800.47	2.4	2.07	2.1	195	98	91	13	60
	3	72	1013	803.91	803.62	2.4	2.08	2.1	195	100	92	13	62
	2	76	1017	806.53	806.40	1.7	1.47	1.5	194	102	92	12	63
	1	80	1021	807.73	807.80	0.35	0.30	0.30	194	103	93	7	63
	B-5	84	1025	810.85	810.77	2.4	2.08	2.1	194	101	94	13	65
	4	88	1029	813.84	813.77	2.2	1.91	1.9	194	102	95	13	62
	3	92	1033	816.48	816.43	1.7	1.48	1.5	194	104	95	12	63
	2	96	1040	818.51	818.53	1.0	0.87	0.87	193	104	96	10	63
	1	100	1044	819.15	819.253	0.10	0.08	0.08	192	104	97	6	66

Sampling Data for Method 17 Train B No. <u>B-1</u>													
Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>995.405</u>	Desired		Desired	Actual		Inlet	Outlet		
0919	A-5	4	0901	998.61	998.49	2.7	2.31	2.3	191	77	77	11	57
	4	8	0905	1001.79	1001.64	2.6	2.22	2.2	193	78	78	11	48
	3	12	0909	1004.77	1004.70	2.4	2.05	2.1	194	79	78	11	51
	2	16	0913	1007.08	1007.04	1.4	1.19	1.2	196	79	78	9	52
	1	20	0917	1008.61	1008.62	0.62	0.52	0.52	196	80	78	7	53
0941	B-5	24	0923	1011.69	1011.62	2.5	2.13	2.1	196	81	78	11	52
	4	28	0927	1014.79	1014.58	2.5	2.14	2.1	195	82	79	11	51
	3	32	0931	1017.70	1017.50	2.2	1.88	1.9	195	84	80	11	53
	2	36	0935	1019.21	1019.22	0.60	0.51	0.51	196	85	80	8	54
	1	40	0939	1019.90	1019.92	0.12	0.10	0.10	196	86	81	6	56
1003	C-5	44	0945	1023.01	1022.98	2.5	2.15	2.2	194	86	82	12	55
	4	48	0949	1025.93	1025.89	2.2	1.89	1.9	195	86	82	12	52
	3	52	0953	1028.58	1028.55	1.8	1.55	1.6	195	88	83	11	54
	2	56	0957	1030.24	1030.27	0.71	0.61	0.61	196	89	84	9	54
	1	60	1001	1030.73	1030.81	0.06	0.05	0.05	195	89	84	6	56
1026	D-5	64	1007	1033.98	1033.88	2.7	2.34	2.3	195	89	85	14	56
	4	68	1011	1036.92	1036.82	2.2	1.90	1.9	195	89	85	13	53
	3	72	1015	1039.99	1039.86	2.4	2.08	2.1	195	91	86	14	54
	2	76	1019	1041.63	1041.72	0.68	0.59	0.59	194	92	87	9	55
	1	80	1023	1042.32	1042.44	0.12	0.10	0.10	195	93	88	7	57
	E-5	84	1030	1045.72	1045.79	2.9	2.53	2.5	195	93	88	15	56
	4	88	1034	1049.11	1049.13	2.9	2.53	2.5	194	92	88	16	54
	3	92	1038	1051.93	1051.02	2.0	1.75	1.8	194	94	89	14	55
	2	96	1042	1054.69	1054.75	1.9	1.66	1.7	193	95	89	14	55
	1	100	1046	1055.94	1055.943	0.39	0.34	0.34	192	95	90	8	56

Remarks and Notes:

Total pressure @ Pt C3 = -24.0 AP = 1.8

7/8
7/17/99

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

Run No. 10 Date 7-15-99 Client/Source Cogenerix
 Project No. 4702-02 Sampling Location Baghouse 22, Dust Outlet
 Sample Type (Multi-Point), Single-Point) Operator Griffin
 Flow Control Device (Valve), Critical Orifice) Bag Type Tedlar Sample No. _____
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm M3B Flow Meter Type Rotometer
 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
0855	3.0	✓				
0856	3.0		✓			
0906	3.0				✓	
0915	3.0			✓		Port Change
0917	3.0	✓				
0918	3.0		✓			
0928	3.0				✓	
0937	3.0			✓		Port Change
0939	3.0	✓				
0940	3.0		✓			
0950	3.0				✓	
0959	3.0			✓		Port Change
1001	3.0	✓				
1002	3.0		✓			
1012	3.0				✓	
1021	3.0			✓		Port Change
1024	3.0	✓				
1025	3.0		✓			
1035	3.0				✓	
1034	3.0			✓		End of Run

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

Run No. 10 Date 07-15-99Project No. 4702.02.04.09 Sample No. Train ASampling Location Unit 2A Baghouse Outlet DuctAnalysis Start Time 1100Sample Type (Bag, Grab) BagAnalyst J. Surman

Orsat Leak Check Before Analysis:

Burette No Change in 4 MinutesPipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burette No Change in 4 MinutesPipettes No Change in 4 Minutes

Analysis	1		2		3 + 4		Average Net Value (% v/v)
Gas	Actual Reading	Net Value	Actual Reading	Net Value	Actual Reading	Net Value	
CO ₂	1 15.5 2 15.5 3	15.5	1 14.6 2 14.6 3	14.6	1 14.6 14.6 2 14.6 14.6 3	14.6	14.6
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 20.5 2 20.5 3	5.0	1 19.6 2 19.6 3	5.0	1 19.6 19.6 2 19.6 19.6 3	5.0	5.0
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes: First analysis rejected.

JB
 7/17/99

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

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

Run No. 10 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: 07-14-99
Transfer to Sampler: _____
Relinquished By J. Surman Received By D. Griffin Date/Time 07-15-99 0800

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-12</u>	<u>M17-13</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>18</u>	<u>19</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>3</u>	<u>4</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
		Initial Weights (grams)**	
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>571.4</u>	<u>581.2</u>
U-Connector (A)			
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>581.0</u>	<u>580.8</u>
U-Connector (B)			
3rd Impinger (Mod-GBS) Empty		<u>496.0</u>	<u>466.0</u>
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel		<u>718.4</u>	<u>691.4</u>
Impinger Outlet Connector	Connector I.D. No.	<u>UH-35</u>	<u>UH-32</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

PS
7/17/99

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

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

Run No. 10 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 07-15-99 1100
Sample recovery person(s): J. Surman Date: 07-15-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>735.6</u>	<u>584.8</u>	<u>497.2</u>	<u>733.2</u>	<u>752.6</u>	<u>583.3</u>	<u>466.7</u>	<u>705.6</u>
Initial Wt.	<u>571.4</u>	<u>581.0</u>	<u>496.0</u>	<u>718.4</u>	<u>581.2</u>	<u>580.8</u>	<u>466.0</u>	<u>691.4</u>
Net Wt.	<u>164.2</u>	<u>3.8</u>	<u>1.2</u>	<u>14.8</u>	<u>171.4</u>	<u>2.5</u>	<u>0.7</u>	<u>14.2</u>
Total Condensate Collected:				<u>184.0</u>				<u>188.8</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>20</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>10002</u>	<u>10 004</u>
PM Description/color:	<u>b120K</u>	<u>b121K</u>
TRAIN RINSES:		
Sample Number:	<u>10 001</u>	<u>10 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

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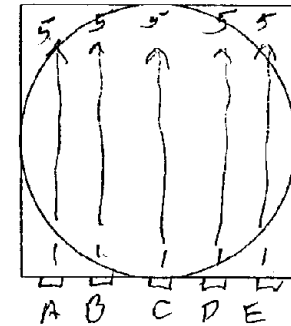
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

page 1 of 1

Run No. 11 Date 7-15-99
 Project No. 4702-02
 Client Cogenrix
 Source Boysen 22
 Sampling Location Dust Outlet
 Operator Graham
 Record data every 4 minutes
 Barometer No. 42101
 Barometric Pressure 30.09 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 30.06 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 30.06 in Hg
 Static Pressure 26.45 in H₂O

Train A No. A-2 M17-A
 Probe No. A Length: 10 ft
 Nozzle No. M17-6 Tip Dia. .134 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158 A
 Filter Holder No. 8
 Filter Assembly No. 20
 Impinger Box No. A-2
 Umbilical/Impinger Hookup UH-2
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.890

Train B No. B-2 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-5 Tip Dia. .135 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158 B
 Filter Holder No. 5
 Filter Assembly No. 21
 Impinger Box No. B-2
 Umbilical/Impinger Hookup UH-1
 Umbilical No. N50-1
 Meter Box No. N-11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.960



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)	1134	1242									1192	1245								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks										
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1126	1339								
Vacuum, in Hg	15	13								
Leak Rate, cfm	.008	.007								
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)	1124	1338								
Vacuum, in Hg	15	19								
Leak Rate, cfm	.002	.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	819.525	056.158
Meter Volume at End of Run	879.100	118.876
Total Leak Check Volume	0	0
Adjusted Final Volume		

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Run No. 11
Date 7-15-99

Sampling Location Bayhouse 27, Diet Outlet
Project No. 4107-02

Operator Griff page 1 of 1

Sampling Data for Method 17 Train A No. A-2

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>819.525</u>			Desired	Actual		Inlet	Outlet		
	C-5	4	1151	822.57	822.57	2.4	2.00	2.0	190	93	93	9	56
		8	1155	825.42	825.45	2.1	1.75	1.8	190	92	93	8	45
		12	1159	828.06	828.06	1.8	1.50	1.5	191	94	93	8	48
		16	1203	829.62	829.66	0.63	0.52	0.52	191	96	93	5	50
		20	1207	830.06	830.13	0.05	0.04	0.04	190	96	93	4	56
1209	D-5	24	1213	833.25	833.28	2.6	2.18	2.2	188	96	94	10	54
		28	1217	836.37	836.37	2.5	2.09	2.1	192	98	94	10	49
		32	1221	839.18	839.17	2.0	1.68	1.7	192	101	95	7	52
		36	1225	841.16	841.15	1.0	0.84	0.84	193	103	95	7	54
		40	1229	842.25	842.28	0.30	0.25	0.25	191	103	96	5	55
1231	E-5	44	1235	845.51	845.52	2.7	2.27	2.3	192	102	96	11	56
		48	1239	848.78	848.66	2.7	2.27	2.3	193	103	97	11	54
		52	1243	852.11	851.98	2.8	2.36	2.4	194	106	97	13	56
		56	1247	854.30	854.30	1.2	1.01	1.0	192	108	98	8	58
		60	1251	855.45	855.55	0.33	0.28	0.28	192	107	99	6	58
1253	A-5	64	1257	858.67	858.69	2.6	2.20	2.2	192	105	99	12	58
		68	1301	861.70	861.75	2.3	1.95	2.0	190	106	100	11	56
		72	1305	864.32	864.39	1.7	1.45	1.5	188	108	100	10	58
		76	1309	866.79	866.81	1.5	1.28	1.3	187	109	101	9	59
		80	1313	867.80	867.82	0.25	0.21	0.21	187	110	101	5	59
1316	D-5	84	1320	870.92	870.88	2.4	2.06	2.1	187	108	102	12	60
		88	1324	873.98	873.85	2.2	1.88	1.9	190	109	102	13	57
		92	1328	876.89	876.75	2.2	1.88	1.9	191	111	103	13	58
		96	1332	878.60	878.60	0.72	0.61	0.61	191	112	103	8	60
		100	1336	879.10	879.100	0.06	0.05	0.05	189	111	104	5	63

Sampling Data for Method 17 Train B No. <u>B-2</u>													
		0	1149		52.158								
	A-5	4	1153	53.54	53.50	2.8	2.52	2.5	190	89	89	12	57
		8	1157	62.85	62.87	2.7	2.42	2.4	191	89	89	12	44
		12	1201	66.05	66.05	2.5	2.24	2.2	191	90	89	12	49
		16	1205	68.76	68.78	1.8	1.62	1.6	191	91	89	10	51
		20	1209	69.99	70.01	0.37	0.33	0.33	191	92	89	6	53
1211	B-5	24	1215	73.32	73.24	2.7	2.43	2.4	191	93	90	13	51
		28	1219	76.65	76.48	2.7	2.43	2.4	192	93	90	13	51
		32	1223	79.38	79.25	1.8	1.62	1.6	192	94	91	11	52
		36	1227	81.51	81.50	1.1	0.99	0.99	192	95	91	9	54
		40	1231	82.37	82.32	0.18	0.16	0.16	191	96	91	5	56
1233	C-5	44	1237	85.65	85.54	2.6	2.34	2.3	193	95	92	14	56
		48	1241	88.66	88.53	2.2	1.98	2.0	193	95	92	13	53
		52	1245	91.68	91.48	2.2	1.98	2.0	194	97	92	13	53
		56	1249	93.32	93.28	0.65	0.58	0.58	192	98	93	8	56
		60	1253	93.73	93.70	0.04	0.03	0.03	192	98	93	4	57
1255	D-5	64	1259	96.96	96.90	2.5	2.27	2.3	192	97	94	15	57
		68	1303	100.06	100.02	2.3	2.09	2.0	189	97	94	15	53
		72	1307	102.57	102.60	1.5	1.37	1.4	188	98	94	12	55
		76	1311	104.28	104.35	0.70	0.64	0.64	187	99	94	9	56
		80	1315	104.93	104.80	0.10	0.09	0.09	188	99	95	6	58
1318	E-5	84	1322	108.37	108.46	2.8	2.55	2.6	190	99	96	19	52
		88	1326	111.86	111.89	2.4	2.64	2.6	191	99	96	19	55
		92	1330	114.83	114.90	2.1	1.91	1.9	191	100	96	16	56
		96	1334	117.66	117.61	1.9	1.73	1.7	191	100	96	14	58
		100	1338	118.82	118.876	0.32	0.29	0.29	189	101	96	8	56

Remarks and Notes:

P4 C-3 Total pressure = 24.9 AP = 2.2

7/17/99

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

Run No. 11 Date 7-15-99 Client/Source Cogentrix
 Project No. 4702-02 Sampling Location Boothouse 22, Duct Outlet
 Sample Type (Multi-Point) Single-Point) Operator Griffin
 Flow Control Device (Valve) Critical Orifice) Bag Type Tedlar Sample No. N/A
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm M3B Flow Meter Type Robmeter
 M3B Pump No. N-10 M3B Flow Meter No. 8800
 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 29 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1147	3.0	✓				
1148	3.0		✓			
1159	3.0				✓	
1208	3.0			✓		Pet Change
1209	3.0	✓				
1210	3.0		✓			
1220	3.0				✓	
1229	3.0			✓		Pet Change
1231	3.0	✓				
1232	3.0		✓			
1242	3.0				✓	
1251	3.0			✓		Pet Change
1253	3.0	✓				
1254	3.0		✓			
1304	3.0				✓	
1313	3.0			✓		Pet Change
1316	3.0	✓				
1317	3.0		✓			
1327	3.0				✓	
1336	3.0			✓		End of Run

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

Run No. 11 Date 07-15-99
 Project No. 4702.02.04.09 Sample No. Train A
 Sampling Location Unit 2A Baghouse Outlet Duct
 Analysis Start Time 1355
 Sample Type (Bag, Grab) Bag
 Analyst J. Surman

Orsat Leak Check Before Analysis:
 Burette No Change in 4 Minutes
 Pipettes No Change in 4 Minutes
 Orsat Leak Check After Analysis:
 Burette 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 <u>14.5</u> 2 <u>14.5</u> 3	<u>14.5</u>	1 <u>14.5</u> 2 <u>14.5</u> 3	<u>14.5</u>	1 <u>14.5</u> 2 <u>14.5</u> 3	<u>14.5</u>	<u>14.5</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.5</u> 2 <u>19.5</u> 3	<u>5.0</u>	1 <u>19.5</u> 2 <u>19.5</u> 3	<u>5.0</u>	1 <u>19.5</u> 2 <u>19.5</u> 3	<u>5.0</u>	<u>5.0</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

PS
7/17/99

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

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

Run No. 11 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: 07-14-99
Transfer to Sampler: _____
Relinquished By J. Surman Received By D. Griffin Date/Time 07-15-99 1100

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-6</u>	<u>M17-5</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>20</u>	<u>21</u>
Filter Type: Whatman 934 AH	Filter Holder No.	<u>8</u>	<u>5</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
		Initial Weights (grams)**	
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>609.7</u>	<u>586.2</u>
U-Connector (A)			
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>585.2</u>	<u>647.2</u>
U-Connector (B)			
3rd Impinger (Mod-GBS) Empty		<u>543.1</u>	<u>468.5</u>
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel		<u>689.5</u>	<u>685.2</u>
Impinger Outlet Connector	Connector I.D. No.	<u>UH-2</u>	<u>UH-1</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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7/17/99

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

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

Run No. 11 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. Gritton Received By J. Surman Date/Time 07-15-99 1415
Sample recovery person(s): J. Surman Date: 07-15-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>775.5</u>	<u>581.2</u>	<u>544.0</u>	<u>703.0</u>	<u>755.1</u>	<u>650.4</u>	<u>470.7</u>	<u>699.5</u>
Initial Wt.	<u>609.7</u>	<u>585.2</u>	<u>543.1</u>	<u>689.5</u>	<u>536.2</u>	<u>647.2</u>	<u>468.5</u>	<u>685.2</u>
Net Wt.	<u>165.8</u>	<u>-4.0</u>	<u>0.9</u>	<u>13.5</u>	<u>118.9</u>	<u>3.2</u>	<u>2.2</u>	<u>14.3</u>
Total Condensate Collected:				<u>176.2</u>				<u>188.6</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>11 002</u>	<u>11 004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>11 001</u>	<u>11 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

PS
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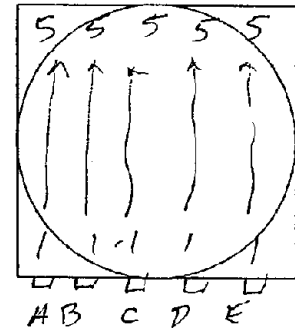
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

page 1 of 1

Run No. 12 Date 7-15-99
 Project No. 4702-02
 Client Cogentrix
 Source Baghouse 2a
 Sampling Location Duct Outlet
 Operator GR
 Record data every 4 minutes
 Barometer No. 42101
 Barometric Pressure 30.05 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 30.02 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 30.02 in Hg
 Static Pressure -26.48 in H₂O

Train A No. A-1 M17-A
 Probe No. A Length: 10 ft
 Nozzle No. M17-12 Tip Dia. .186 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 6
 Filter Assembly No. 22
 Impinger Box No. A-1
 Umbilical/Impinger Hookup UH35
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.890

Train B No. B-1 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-13 Tip Dia. .184 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 7
 Filter Assembly No. 23
 Impinger Box No. B-1
 Umbilical/Impinger Hookup UH32
 Umbilical No. N50-1
 Meter Box No. N11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.960



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)	1423	1634									1420	1638								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks											
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial
Time (24 Hr)	1422	1632									
Vacuum, in Hg	15	17									
Leak Rate, cfm	.012	.013									
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	Initial
Time (24 Hr)	1418	1636									
Vacuum, in Hg	15.0095	19									
Leak Rate, cfm	.009	.005									
Final Meter Volume											
Initial Meter Volume											
Non-sample Volume											

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

JB
7/17/99

	TRAIN A	TRAIN B
Meter Volume at Start of Run	879.727	119.105
Meter Volume at End of Run	941.693	179.978
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 12 Sampling Location Baghouse 2a Duct Outlet page 1 of 1
 Date 7-15-99 Project No. 4702-02 Operator Goff

Sampling Data for Method 17 Train A No. A-1

Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F	
				Initial	Desired		Actual	Desired		Actual	Inlet			Outlet
1501	C-5	4	1439											
		4	1443	882.85	882.77	2.4	2.09	2.1	192	98	98	9	67	
		8	1447	885.79	885.68	2.1	1.83	1.8	191	98	98	9	58	
		12	1451	888.58	888.56	1.9	1.66	1.7	191	100	98	9	59	
		16	1455	890.22	890.28	0.65	0.57	0.57	189	102	98	7	61	
1523	D-5	20	1459	890.63	890.53	0.04	0.03	0.03	187	103	99	5	65	
		24	1505	893.84	893.65	2.5	2.20	2.2	187	100	99	10	67	
		28	1509	897.07	896.83	2.5	2.21	2.2	188	103	99	11	58	
		32	1513	899.89	899.70	1.9	1.68	1.7	188	106	100	10	60	
		36	1517	901.81	901.72	0.88	0.78	0.78	189	108	100	8	63	
1545		40	1521	902.46	902.47	0.10	0.08	0.08	187	108	101	6	65	
	E-5	44	1527	905.77	905.66	2.6	2.31	2.3	187	106	102	12	66	
		48	1531	909.14	909.00	2.7	2.40	2.4	189	108	102	13	59	
		52	1535	912.45	912.18	2.6	2.31	2.3	190	110	103	13	62	
		56	1539	914.50	914.51	0.99	0.88	0.88	189	112	103	10	65	
1608		60	1543	915.81	915.81	0.40	0.35	0.35	189	112	104	7	67	
	A-5	64	1549	919.13	919.03	2.6	2.32	2.3	189	110	104	13	66	
		68	1553	922.45	922.24	2.6	2.32	2.3	190	112	105	14	62	
		72	1557	925.44	925.29	2.1	1.87	1.9	191	113	105	14	64	
		76	1601	928.22	928.08	1.8	1.61	1.6	191	114	106	13	60	
		80	1605	929.35	929.33	0.30	0.26	0.26	191	114	106	8	61	
	B-5	84	1612	932.61	932.49	2.5	2.23	2.2	190	112	106	14	61	
		88	1616	935.81	935.53	2.4	2.14	2.1	192	113	107	15	59	
		92	1620	938.95	938.65	2.3	2.05	2.1	192	114	107	17	60	
		96	1624	940.91	940.92	0.90	0.80	0.80	191	115	107	12	62	
		100	1628	941.69	941.693	0.14	0.12	0.12	190	114	108	7	63	

			Sampling Data for Method 17 Train B No. <u>B-1</u>									
			Initial	Desired	Velocity Head (Δp), in. H ₂ O	Desired	Actual	Stack Temp. (t _s), °F	Inlet	Outlet	Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
			119.105									
A-5	4	1441	122.40	122.41	2.7	2.37	2.4	194	94	94	11	57
	8	1445	125.65	125.66	2.6	2.29	2.3	191	94	94	11	49
	12	1453	128.77	128.78	2.4	2.12	2.1	191	95	94	11	52
	16	1457	130.78	130.80	1.0	0.88	0.88	189	96	94	8	53
	20	1501	131.83	131.83	0.27	0.24	0.24	188	97	94	6	56
B-5	24	1507	135.10	135.04	2.6	2.31	2.3	187	97	95	12	57
	28	1511	138.10	138.05	2.2	1.95	2.0	188	97	95	11	52
	32	1515	140.97	140.91	2.0	1.78	1.8	188	99	95	11	55
	36	1519	142.93	143.04	1.1	0.90	0.90	188	100	95	10	56
	40	1523	143.79	143.81	0.18	0.16	0.16	188	100	96	7	57
C-5	44	1529	146.94	146.79	2.4	2.14	2.1	189	100	97	12	60
	48	1533	149.88	149.77	2.1	1.87	1.9	190	100	96	13	54
	52	1537	152.82	152.67	2.1	1.87	1.9	190	101	97	13	56
	56	1541	154.52	154.56	0.70	0.62	0.62	190	102	97	10	57
	60	1545	154.93	154.95	0.04	0.03	0.03	190	102	98	6	61
D-5	64	1551	158.20	158.13	2.6	2.31	2.3	191	101	98	14	59
	68	1555	161.48	161.33	2.6	2.31	2.3	191	101	98	16	56
	72	1559	164.05	164.03	1.6	1.42	1.4	191	102	98	14	58
	76	1603	166.01	166.04	0.92	0.82	0.82	191	103	99	11	58
	80	1607	166.65	166.56	0.10	0.08	0.08	191	103	99	7	61
E-5	84	1614	169.99	169.99	2.7	2.40	2.4	193	102	99	16	55
	88	1618	173.39	173.48	2.8	2.49	2.5	193	102	99	19	57
	92	1622	176.34	176.50	2.1	1.87	1.9	192	104	99	17	59
	96	1626	179.15	179.15	1.9	1.70	1.7	192	104	100	15	59
	100	1630	179.97	179.978	0.16	0.14	0.14	191	104	100		

Remarks and Notes:

Total pressure from pt C3 = -25.2 ΔP = 2.1

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

Run No. 17 Date 7-15-99 Client/Source Cogentrix
 Project No. 4702 Sampling Location Baghouse 2a, Dust Outlet
 Sample Type (Multi-Point, Single-Point) Operator Griffin
 Flow Control Device (Valve, Critical Orifice) Bag Type Tedlar Sample No. NA
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm M3B Flow Meter Type Rotometer
 M3B Pump No. N-70 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
1439	3.0	✓				
1440	3.0		✓			
1450	3.0				✓	
1459	3.0			✓		Port Change
1501	3.0	✓				
1502	3.0		✓			
1512	3.0				✓	
1521	3.0			✓		Port Change
1523	3.0	✓				
1524	3.0		✓			
1534	3.0				✓	
1543	3.0			✓		Port Change
1545	3.0	✓				
1546	3.0		✓			
1552	3.0				✓	
1605	3.0			✓		Port Change
1608	3.0	✓				
1609	3.0		✓			
1619	3.0				✓	
1628	3.0			✓		End of Run

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

Run No. 12 Date 07-15-99
 Project No. 4702.0204.09 Sample No. Train A
 Sampling Location Unit 2A Bypass Outlet Duct
 Analysis Start Time 1700
 Sample Type (Bag, Grab) Bag
 Analyst J. Surman

Orsat Leak Check Before Analysis:
 Burette No Change in 4 Minutes
 Pipettes No Change in 4 Minutes
 Orsat Leak Check After Analysis:
 Burette 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 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	1 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	1 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	<u>14.8</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.3</u> 2 <u>19.3</u> 3	<u>4.5</u>	1 <u>19.3</u> 2 <u>19.3</u> 3	<u>4.5</u>	1 <u>19.3</u> 2 <u>19.3</u> 3	<u>4.5</u>	<u>4.5</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ > 4% 0.3% v/v O₂ ≥ 15% 0.2% v/v CO 0.3% v/v
 ≤ 4% 0.2% v/v < 15% 0.3% v/v

Remarks and Notes:

PS
7/17/99

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

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

Run No. 12 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: 07-15-99

Transfer to Sampler:

Relinquished By J. Surman Received By D. Gritfin Date/Time 07-15-99 1300

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-12</u>	<u>M17-13</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>22</u>	<u>23</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>6</u>	<u>7</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
	Initial Weights (grams)**		
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>582.1</u>	<u>594.2</u>
U-Connector (A)			
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>584.8</u>	<u>583.3</u>
U-Connector (B)			
3rd Impinger (Mod-GBS) Empty		<u>496.1</u>	<u>465.5</u>
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel		<u>723.1</u>	<u>689.9</u>
Impinger Outlet Connector	Connector I.D. No.	<u>VH-35</u>	<u>VH-32</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 12 Sampling Train A No. M17-A Impinger Box A No. B-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 07-15-99 1700
Sample recovery person(s): J. Surman Date: 07-15-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>761.8</u>	<u>592.0</u>	<u>498.5</u>	<u>739.8</u>	<u>779.8</u>	<u>591.0</u>	<u>462.2</u>	<u>705.9</u>
Initial Wt.	<u>582.1</u>	<u>584.8</u>	<u>496.1</u>	<u>723.1</u>	<u>594.2</u>	<u>583.3</u>	<u>465.5</u>	<u>689.9</u>
Net Wt.	<u>179.7</u>	<u>7.2</u>	<u>2.4</u>	<u>16.7</u>	<u>185.6</u>	<u>7.7</u>	<u>1.7</u>	<u>16.0</u>
Total Condensate Collected:				<u>206.0</u>				<u>211.0</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>20</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>20</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>12 002</u>	<u>12 004</u>
PM Description/color:	<u>b121k</u>	<u>b121k</u>
TRAIN RINSES:		
Sample Number:	<u>12 001</u>	<u>12 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

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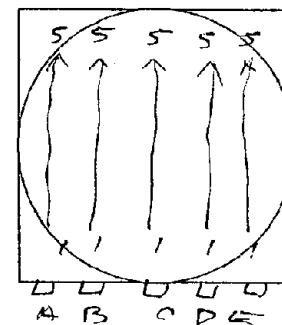
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

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Run No. B Date 7-16-99
 Project No. 4702-02
 Client Cogentrix
 Source Baghouse 22
 Sampling Location Dust Outlet
 Operator G. H.
 Record data every 4 minutes
 Barometer No. 72101
 Barometric Pressure 30.07 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 30.07 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 30.04 in Hg
 Static Pressure 25-27.11 in H₂O

Train A No. A-2 M17-A
 Probe No. A Length: 10 ft
 Nozzle No. M17-6 Tip Dia. .184 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158 A
 Filter Holder No. 1
 Filter Assembly No. 24
 Impinger Box No. A-2
 Umbilical/Impinger Hookup KH2
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.890

Train B No. B-2 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-6 Tip Dia. .185 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158 B
 Filter Holder No. 2
 Filter Assembly No. 25
 Impinger Box No. B-2
 Umbilical/Impinger Hookup KH1
 Umbilical No. N50-1
 Meter Box No. N11
 DGM Correction (Y) 0.938
 Orifice Meter ΔH@ 1.960



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)	0838	1101									0842	1105								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks											
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	
Time (24 Hr)	0836	1059									
Vacuum, in Hg	15	10									
Leak Rate, cfm	.008	.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)	0847	1103									
Vacuum, in Hg	15	15									
Leak Rate, cfm	.003	.003									
Final Meter Volume											
Initial Meter Volume											
Non-sample Volume											

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

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	TRAIN A	TRAIN B
Meter Volume at Start of Run	942.875	193.304
Meter Volume at End of Run	1001.400	253.291
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 13
Date 7-16-99

Sampling Location Baghows e 20, Diet Outlet
Project No. 4702-02

Operator Griffis page 1 of 1

Sampling Data for Method 17 Train A No. A-2

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>942.875</u>	Desired		Desired	Actual		Inlet	Outlet		
	C-5	4	0905										
		4	0909	945.84	945.85	2.4	1.95	2.0	183	77	77	8	55
		8	0913	948.68	948.69	2.2	1.79	1.8	181	77	77	7	47
		12	0917	951.18	951.23	1.7	1.38	1.4	183	79	77	6	49
		16	0921	952.55	952.59	0.9	0.41	0.41	184	81	78	5	50
		20	0925	952.98	952.86	0.03	0.02	0.02	185	82	78	3	56
0928	D-5	24	0932	955.66	955.63	2.1	1.71	1.70	184	81	78	7	53
		28	0936	958.51	958.40	2.2	1.79	1.8	186	83	79	7	47
		32	0940	961.24	961.07	2.0	1.64	1.6	184	84	80	7	49
		36	0944	963.01	963.96	0.83	0.48	0.48	185	88	81	6	50
		40	0948	963.62	963.60	0.10	0.08	0.08	184	88	81	4	53
0950	E-5	44	0954	966.91	966.83	2.9	2.38	2.4	184	85	82	9	53
		48	0958	970.15	970.08	2.8	2.29	2.3	186	88	82	10	50
		52	1002	973.35	973.25	2.7	2.22	2.2	185	91	83	9	52
		56	1006	975.89	975.82	1.7	1.40	1.4	184	93	89	8	54
		60	1010	976.88	976.99	0.26	0.21	0.21	183	93	84	5	54
1012	A-5	64	1016	980.08	980.04	2.7	2.23	2.2	183	90	85	10	52
		68	1020	983.35	983.23	2.8	2.32	2.3	183	92	85	10	53
		72	1024	986.38	986.18	2.4	2.00	2.0	182	94	86	9	52
		76	1028	988.78	988.68	1.5	1.24	1.2	184	96	86	8	57
		80	1032	989.86	989.77	0.30	0.24	0.24	187	96	87	5	52
1035	B-5	84	1039	992.00	992.80	2.6	2.13	2.1	191	94	87	10	58
		88	1043	995.95	995.77	2.3	1.88	1.9	195	95	88	10	55
		92	1047	998.71	998.52	2.0	1.64	1.6	193	98	89	9	58
		96	1051	1000.62	1000.61	0.95	0.78	0.78	194	98	89	7	58
		100	1055	1001.35	1001.400	0.14	0.11	0.11	194	98	90	5	58

Sampling Data for Method 17 Train B No. <u>B-2</u>													
		0	0907		193.304								
	A-5	4	0911	196.61	196.64	2.8	2.46	2.5	183	77	76	12	58
		8	0915	199.53	199.73	2.2	1.93	1.9	183	77	76	11	45
		12	0919	202.93	202.55	2.0	1.75	1.8	185	78	77	10	48
		16	0923	204.30	204.49	1.0	0.87	0.87	186	79	77	7	50
		20	0927	205.23	205.32	0.22	0.19	0.19	185	80	77	4	52
0930	B-5	24	0934	208.10	208.15	2.1	1.85	1.9	185	81	79	10	55
		28	0938	210.98	211.04	2.1	1.85	1.9	185	81	79	10	47
		32	0942	213.57	213.69	1.7	1.50	1.5	185	83	79	10	49
		36	0946	215.29	215.36	0.75	0.66	0.66	185	85	80	7	51
		40	0950	216.08	216.08	0.18	0.14	0.14	185	86	81	5	54
0952	C-5	44	0956	219.30	219.26	2.6	2.31	2.3	185	85	82	12	57
		48	1000	222.33	222.20	2.3	2.04	2.0	186	86	82	11	49
		52	1004	225.17	225.05	2.0	1.78	1.8	184	88	83	11	52
		56	1008	226.87	226.87	0.72	0.64	0.64	184	89	84	8	53
		60	1012	227.27	227.25	0.04	0.03	0.03	183	90	85	4	57
1014	D-5	64	1018	230.58	230.46	2.7	2.42	2.4	183	90	86	13	57
		68	1022	233.83	233.65	2.6	2.37	2.3	183	90	85	13	53
		72	1026	236.95	236.82	2.4	2.15	2.2	185	92	86	13	54
		76	1030	238.79	238.78	0.83	0.74	0.74	186	93	87	8	55
		80	1034	239.65	239.72	0.18	0.16	0.16	191	94	88	6	55
1037	E-5	84	1041	242.94	242.99	2.7	2.38	2.4	198	93	89	14	56
		88	1045	246.36	246.41	2.9	2.97	2.6	195	94	89	15	53
		92	1049	249.61	249.68	2.6	2.31	2.3	195	95	90	14	55
		96	1053	252.54	252.61	2.1	1.87	1.9	196	98	91	13	55
		100	1057	253.29	253.291	0.14	0.12	0.12	194	98	92	5	56

Remarks and Notes:

Total Pressure = 25.7 @ Pt C-3 AP = 2.0

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

Run No. 13 Date 7-16-99 Client/Source Cognitrix
 Project No. 4702-02 Sampling Location Baghouse 21, Dust Outlet
 Sample Type (Multi-Point) Single-Point Operator Griffin
 Flow Control Device (Valve) Critical Orifice Bag Type Tedlar Sample No. NA
 Method 5 Meter Box No. N10 Method 3B Train No. NA
 M3B Pump Type Diaphragm 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
0905	3.0	✓				
0906	3.0		✓			
0916	3.0				✓	
0925	3.0			✓		Port Change
0928	3.0	✓				
0929	3.0		✓			
0939	3.0				✓	
0948	3.0			✓		Port Change
0950	3.0	✓				
0951	3.0		✓			
1001	3.0				✓	
1010	3.0			✓		Port Change
1012	3.0	✓				
1013	3.0		✓			
1023	3.0				✓	
1032	3.0			✓		Port Change
1035	3.0	✓				
1036	3.0		✓			
1046	3.0				✓	
1055	3.0			✓		End of Run

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

Run No. 13 Date 02-16-99Project No. 4702.02.04.09 Sample No. Train ASampling Location Unit 2A Baghouse Outlet DuctAnalysis Start Time 1130Sample Type (Bag, Grab) BagAnalyst J. Surman

Orsat Leak Check Before Analysis:

Burette No Change in 4 MinutesPipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burette No Change in 4 MinutesPipettes 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 <u>13.6</u> 2 <u>13.6</u> 3	<u>13.6</u>	1 <u>13.6</u> 2 <u>13.6</u> 3	<u>13.6</u>	1 <u>13.6</u> 2 <u>13.6</u> 3	<u>13.6</u>	<u>13.6</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.4</u> 2 <u>19.4</u> 3	<u>5.8</u>	1 <u>19.4</u> 2 <u>19.4</u> 3	<u>5.8</u>	1 <u>19.4</u> 2 <u>19.4</u> 3	<u>5.8</u>	<u>5.8</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 13 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. Swann Date: 07-15-99
Transfer to Sampler:
Relinquished By J. Swann Received By D. Crittin Date/Time 07-16-99 0800

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-6</u>	<u>M17-5</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>24</u>	<u>25</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>1</u>	<u>2</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
	Initial Weights (grams)**		
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>612.1</u>	<u>589.5</u>
U-Connector (A)		<u>581.2</u>	<u>650.4</u>
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>543.2</u>	<u>468.0</u>
U-Connector (B)		<u>704.8</u>	<u>695.1</u>
3rd Impinger (Mod-GBS) Empty			
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel			
Impinger Outlet Connector	Connector I.D. No.	<u>UH-2</u>	<u>UH-1</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 13 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 07-16-99 1130
Sample recovery person(s): J. Surman Date: 07-16-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>756.3</u>	<u>584.2</u>	<u>545.9</u>	<u>720.5</u>	<u>734.5</u>	<u>654.6</u>	<u>469.4</u>	<u>709.7</u>
Initial Wt.	<u>612.1</u>	<u>581.2</u>	<u>543.2</u>	<u>704.8</u>	<u>589.5</u>	<u>650.4</u>	<u>468.0</u>	<u>695.1</u>
Net Wt.	<u>144.2</u>	<u>3.0</u>	<u>2.7</u>	<u>15.7</u>	<u>145.0</u>	<u>4.2</u>	<u>1.4</u>	<u>14.6</u>
Total Condensate Collected:				<u>165.6</u>				<u>165.2</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>25</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>25</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>13002</u>	<u>13004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>13001</u>	<u>13003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

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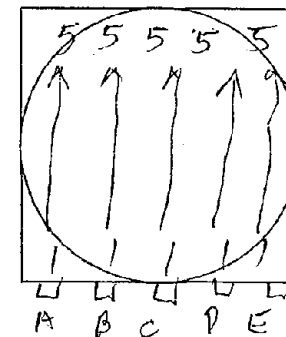
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

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Run No. 14 Date 7-16-99
 Project No. 4102-02
 Client Cogentrix
 Source Baghouse 22
 Sampling Location Dust Outlet
 Operator Griffin
 Record data every 4 minutes
 Barometer No. 22101
 Barometric Pressure 30.09 in Hg
 Elevation to Meter Boxes 30.08 ft
 Meter Box P_{bar} 30.06 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 30.06 in Hg
 Static Pressure -25.81 in H₂O Assumed Moisture 12.5 % Assumed %CO₂ 14.5 %O₂ 5.0

Train A No. A-1 M17-A
 Probe No. A Length: 10 ft
 Nozzle No. M17-12 Tip Dia. .136 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 3
 Filter Assembly No. 26
 Impinger Box No. A7
 Umbilical/Impinger Hookup UH-35
 Umbilical No. N-50-3
 Meter Box No. N-10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.890

Train B No. B-1 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-13 Tip Dia. .134 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 4
 Filter Assembly No. 27
 Impinger Box No. B-1
 Umbilical/Impinger Hookup UH-32
 Umbilical No. N-50-1
 Meter Box No. N-11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.960



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)	1158	1406									1200	1410								
Pass or Fail		Pass										Pass								

Train A Sampling System Leak Checks											
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	
Time (24 Hr)	1154	1404									
Vacuum, in Hg	15	12									
Leak Rate, cfm	.004	.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)	1196	1408									
Vacuum, in Hg	15	15									
Leak Rate, cfm	.010	.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	1.618	259.506
Meter Volume at End of Run	62.188	314.949
Total Leak Check Volume	0	0
Adjusted Final Volume		

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Run No. 14 Sampling Location Baghouse 22, Flue Outlet page 1 of 1
 Date 7-16-99 Project No. 4702-02 Operator Griffin

Sampling Data for Method 17 Train A No. A-1

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>1.1618</u>	Desired		Desired	Actual		Inlet	Outlet		
1233	C-5	4	1210	4.70	4.65	2.4	2.06	2.1	191	91	90	9	65
	4	8	1218	7.58	7.53	2.1	1.80	1.80	191	91	90	9	60
	3	12	1223	10.25	10.25	1.8	1.55	1.6	191	93	91	9	61
	2	16	1228	11.84	11.84	0.63	0.54	0.54	191	95	91	6	63
	1	20	1233	12.18	12.18	0.03	0.02	0.02	189	95	91	5	65
1256	D-5	24	1237	15.21	15.27	2.3	1.98	2.0	189	93	91	9	63
	4	28	1241	18.31	18.31	2.4	2.07	2.1	190	96	92	10	60
	3	32	1245	21.29	21.25	2.2	1.91	1.9	190	99	93	9	61
	2	36	1249	23.00	23.03	0.72	0.62	0.62	190	100	92	7	61
	1	40	1253	23.63	23.60	0.10	0.08	0.08	189	100	93	5	64
1318	E-5	44	1300	26.86	26.83	2.6	2.25	2.3	190	96	93	10	66
	4	48	1304	30.04	30.04	2.5	2.17	2.2	190	100	94	11	60
	3	52	1308	33.35	33.29	2.7	2.35	2.4	191	102	94	11	60
	2	56	1312	35.57	35.56	1.2	1.04	1.0	191	104	95	8	62
	1	60	1316	36.67	36.65	0.30	0.26	0.26	191	104	95	6	64
1340	A-5	64	1322	39.99	39.95	2.7	2.35	2.4	191	102	96	12	66
	4	68	1326	43.90	43.24	2.7	2.35	2.4	193	103	96	12	61
	3	72	1330	46.16	46.12	2.0	1.74	1.7	194	106	97	11	64
	2	76	1334	48.96	48.90	1.9	1.65	1.7	195	106	97	11	64
	1	80	1338	50.11	50.10	0.73	0.28	0.28	195	107	98	7	64
1340	B-5	84	1344	53.97	53.32	2.6	2.26	2.3	194	104	98	12	65
	4	88	1348	56.43	56.37	2.3	1.99	2.0	197	105	98	12	62
	3	92	1352	59.50	59.35	2.3	2.00	2.0	197	107	99	12	64
	2	96	1356	61.40	61.44	0.88	0.76	0.76	197	109	100	9	63
	1	100	1400	62.10	62.188	0.12	0.10	0.10	195	107	100	6	65

Sampling Data for Method 17 Train B No. <u>B-1</u>													
1235	A-5	4	1212	253.506	253.506	2.7	2.37	2.4	191	94	93	11	55
	4	8	1218	256.79	256.75	2.7	2.36	2.4	192	94	93	11	46
	3	12	1225	262.08	262.05	2.0	1.75	1.8	191	95	94	10	49
	2	16	1228	265.61	265.66	1.8	1.58	1.6	191	96	94	9	51
	1	20	1233	266.71	266.82	0.70	0.26	0.26	190	98	94	6	54
1258	B-5	24	1239	269.89	269.95	2.5	2.21	2.2	190	98	95	11	56
	4	28	1243	272.95	272.96	2.3	2.03	2.0	190	98	95	10	51
	3	32	1247	275.16	275.66	1.8	1.59	1.6	190	100	96	10	54
	2	36	1251	277.68	277.76	1.0	0.88	0.88	190	101	96	8	55
	1	40	1255	278.49	278.50	0.16	0.14	0.14	189	101	97	6	59
1320	C-5	44	1302	281.62	281.93	2.4	2.13	2.1	190	100	98	11	59
	4	48	1306	284.55	284.41	2.1	1.86	1.9	190	101	98	11	53
	3	52	1310	287.42	287.30	2.0	1.77	1.8	191	103	98	11	57
	2	56	1314	289.02	289.02	0.62	0.55	0.55	191	104	99	8	59
	1	60	1318	289.97	289.37	0.03	0.02	0.02	192	104	99	6	62
1342	D-5	64	1324	292.64	292.58	2.6	2.30	2.3	193	103	100	12	56
	4	68	1328	295.71	295.63	2.3	2.04	2.0	194	104	100	12	55
	3	72	1332	298.51	298.41	1.9	1.68	1.7	195	105	101	11	58
	2	76	1336	300.49	300.54	0.45	0.84	0.84	195	106	102	9	59
	1	80	1340	301.19	301.26	0.12	0.10	0.10	197	107	102	6	62
1342	E-5	84	1346	304.59	304.59	2.8	2.48	2.5	198	106	103	14	61
	4	88	1350	308.11	308.07	2.0	2.65	2.7	198	106	103	15	57
	3	92	1354	311.06	311.01	2.1	1.86	1.9	197	108	103	12	60
	2	96	1358	313.94	313.87	2.0	1.77	1.8	198	109	104	12	59
	1	100	1402	314.94	314.94	0.24	0.21	0.21	196	110	105	7	61

Remarks and Notes:

Total Pressure @ pt C3 -24.4 ΔP=2.0

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

Run No. 14 Date 7-16-99 Client/Source Cogentrix Bayshore 20
 Project No. 4702-02 Sampling Location Duct outlet
 Sample Type (Multi-Point, Single-Point) Operator G. R.
 Flow Control Device (Valve, Critical Orifice) Bag Type Teflon Sample No. NA
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm 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
1211	3.0	✓				
1212	3.0		✓			
1222	3.0				✓	
1231	3.0			✓		Port Change
1233	3.0	✓				
1234	3.0		✓			
1244	3.0				✓	
1253	3.0			✓		Port Change
1256	3.0	✓				
1257	3.0		✓			
1307	3.0				✓	
1316	3.0			✓		Port Change
1318	3.0	✓				
1319	3.0		✓			
1329	3.0				✓	
1338	3.0			✓		Port Change
1340	3.0	✓				
1341	3.0		✓			
1351	3.0				✓	
1400	2.0			✓		End of Run

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

Run No. 14 Date 07-16-99Project No. 4702.02.04.09 Sample No. Train ASampling Location Unit RA Baghouse Outer DuctAnalysis Start Time 1415Sample Type (Bag, Grab, ~~Grab~~) BagAnalyst J. Surman

Orsat Leak Check Before Analysis:

Burette No Change in 4 MinutesPipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burette No Change in 4 MinutesPipettes 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 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	<u>14.6</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.3</u> 2 <u>19.3</u> 3	<u>4.7</u>	1 <u>19.3</u> 2 <u>19.3</u> 3	<u>4.7</u>	1 <u>19.3</u> 2 <u>19.3</u> 3	<u>4.7</u>	<u>4.7</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

JS
7/17/99

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

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

Run No. 14 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: 07-15-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Grittin Date/Time 07-16-99 1015

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-12</u>	<u>M17-13</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>26</u>	<u>27</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>3</u>	<u>4</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
	Initial Weights (grams)**		
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>571.4</u>	<u>593.2</u>
U-Connector (A)		<u>592.0</u>	<u>591.0</u>
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>496.5</u>	<u>465.2</u>
U-Connector (B)		<u>700.5</u>	<u>683.1</u>
3rd Impinger (Mod-GBS) Empty			
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel			
Impinger Outlet Connector	Connector I.D. No.	<u>UH-35</u>	<u>UH-32</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 14 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 07-16-99 1415
Sample recovery person(s): J. Surman Date: 07-16-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>739.3</u>	<u>600.9</u>	<u>497.8</u>	<u>715.2</u>	<u>750.7</u>	<u>600.6</u>	<u>467.2</u>	<u>698.1</u>
Initial Wt.	<u>577.4</u>	<u>592.0</u>	<u>496.5</u>	<u>700.5</u>	<u>593.2</u>	<u>591.0</u>	<u>465.2</u>	<u>683.1</u>
Net Wt.	<u>161.9</u>	<u>8.9</u>	<u>1.3</u>	<u>14.7</u>	<u>163.5</u>	<u>9.6</u>	<u>2.0</u>	<u>15.0</u>
Total Condensate Collected:				<u>186.8</u>				<u>190.1</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>14002</u>	<u>14004</u>
PM Description/color:	<u>b1212</u>	<u>b1212</u>
TRAIN RINSES:		
Sample Number:	<u>14001</u>	<u>14003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

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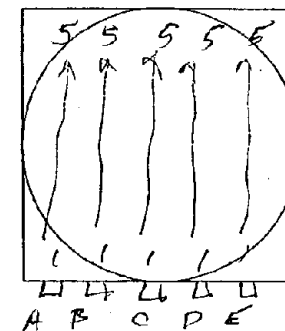
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

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Run No. 15 Date 7-16-99
 Project No. 4702-02
 Client Cogentrix
 Source Boothhouse 2a
 Sampling Location Duct Outlet
 Operator Gritter
 Record data every 4 minutes
 Barometer No. 42101
 Barometric Pressure 30.03 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 30.00 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 30.00 in Hg
 Static Pressure 21.25-26.41 in H₂O

Train A No. A-2
 Probe No. A Length: 10 ft
 Nozzle No. M17-6 Tip Dia. .184 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 8
 Filter Assembly No. 28
 Impinger Box No. A-2
 Umbilical/Impinger Hookup UH-2
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.89

Train B No. B-2
 Probe No. B Length: 10 ft
 Nozzle No. M17-5 Tip Dia. .185 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 5
 Filter Assembly No. 29
 Impinger Box No. B-2
 Umbilical/Impinger Hookup UH-1
 Umbilical No. N50-1
 Meter Box No. N11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.96



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)	1536	1736									1540	1742								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial
Time (24 Hr)	1534	1736							
Vacuum, in Hg	15	10							
Leak Rate, cfm	.009	.009							
Final Meter Volume									
Initial Meter Volume									
Leak Check Volume									

Train B Sampling System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial
Time (24 Hr)	1538	1740							
Vacuum, in Hg	15	16							
Leak Rate, cfm	.004	.001							
Final Meter Volume									
Initial Meter Volume									
Non-sample Volume									

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

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	TRAIN A	TRAIN B
Meter Volume at Start of Run	63.282	315.155
Meter Volume at End of Run	124.231	379.115
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 15
Date 7-16-99

Sampling Location Bayhouse 2a, Dust Outlet
Project No. 4702-02

Operator Guillen page 1 of 1

Sampling Data for Method 17 Train A No. A-2

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>63.282</u>	Desired		Desired	Actual		Inlet	Outlet		
	C-5	4	1547	66.09	66.28	2.0	1.68	1.7	185	99	99	8	67
	4	8	1551	69.22	69.31	2.5	2.10	2.1	186	98	98	8	49
	3	12	1555	72.16	72.16	2.2	1.84	1.8	187	98	97	8	50
	2	16	1559	73.93	73.93	0.80	0.67	0.67	187	100	99	5	57
	1	20	1603	74.33	74.34	0.04	0.03	0.03	186	100	98	4	55
1605	D-5	24	1609	77.52	77.53	2.6	2.18	2.2	186	98	97	8	55
	4	28	1613	80.72	80.71	2.6	2.19	2.2	186	102	98	8	53
	3	32	1617	83.72	83.29	1.7	1.43	1.4	187	104	98	7	53
	2	36	1621	85.21	85.20	0.90	0.75	0.75	188	105	98	6	54
1627	1	40	1625	85.90	85.86	0.12	0.10	0.10	186	103	98	4	56
	E-5	44	1631	89.13	89.07	2.7	2.27	2.3	186	101	98	9	57
	4	48	1635	92.55	92.40	2.9	2.45	2.5	185	102	98	10	54
	3	52	1639	95.94	95.70	2.9	2.44	2.4	187	104	98	10	57
	2	56	1643	98.68	98.49	1.9	1.60	1.6	188	105	98	8	59
	1	60	1647	99.66	99.56	0.24	0.20	0.20	187	106	99	5	59
1650	A-5	64	1654	103.00	102.86	2.8	2.37	2.4	184	103	99	10	61
	4	68	1658	106.27	106.15	2.7	2.28	2.3	185	104	98	10	59
	3	72	1702	109.29	109.13	2.3	1.94	1.9	186	105	98	9	60
	2	76	1706	111.66	111.50	1.4	1.18	1.2	186	106	98	8	59
	1	80	1710	112.71	112.65	0.28	0.23	0.23	186	105	99	5	58
1712	B-5	84	1716	115.86	115.70	2.5	2.11	2.1	186	102	99	10	61
	4	88	1720	118.88	118.75	2.3	1.94	1.9	186	104	99	10	57
	3	92	1724	121.77	121.65	2.1	1.77	1.8	186	105	99	10	58
	2	96	1728	123.67	123.66	0.90	0.76	0.76	187	106	99	7	58
	1	100	1732	124.23	124.231	0.08	0.06	0.06	187	105	99	5	61

Sampling Data for Method 17 Train B No. <u>B-2</u>													
	0	1545	315-155										
1607	A-5	4	1549	318.54	318.60	2.7	2.47	2.5	186	101	101	13	62
	4	8	1553	321.80	321.90	2.5	2.28	2.3	187	101	101	12	48
	3	12	1557	325.05	325.12	2.5	2.28	2.3	188	102	101	12	52
	2	16	1601	327.67	327.62	1.5	1.37	1.4	187	102	101	10	54
	1	20	1605	328.54	328.63	0.22	0.20	0.20	185	103	100	5	56
1629	B-5	24	1611	331.93	331.98	2.7	2.47	2.5	186	103	101	13	57
	4	28	1615	335.13	335.12	2.4	2.20	2.2	187	103	101	12	53
	3	32	1619	338.05	338.02	2.0	1.83	1.8	188	105	101	11	53
	2	36	1623	339.93	339.97	0.83	0.76	0.76	187	106	102	8	57
	1	40	1627	340.81	340.77	0.18	0.16	0.16	186	106	102	5	58
1652	C-5	44	1633	344.08	344.01	2.5	2.30	2.3	186	105	102	13	59
	4	48	1637	347.29	347.21	2.4	2.20	2.2	186	104	102	13	54
	3	52	1641	350.21	350.18	2.0	1.83	1.8	187	106	102	12	55
	2	56	1645	351.97	351.99	0.72	0.66	0.66	187	107	103	8	56
	1	60	1649	352.48	352.54	0.06	0.05	0.05	186	107	103	4	60
1714	D-5	64	1656	355.80	355.80	2.8	2.50	2.5	186	105	103	14	58
	4	68	1700	359.35	359.17	2.7	2.48	2.5	186	105	102	15	54
	3	72	1704	362.49	362.32	2.3	2.11	2.1	187	106	103	13	55
	2	76	1708	364.26	364.26	0.73	0.67	0.67	187	107	103	8	56
	1	80	1712	364.98	365.07	0.12	0.11	0.11	187	107	103	5	60
	E-5	84	1718	368.39	368.41	2.7	2.49	2.5	186	106	104	15	59
	4	88	1722	371.85	371.86	2.8	2.57	2.6	186	105	103	16	54
	3	92	1726	375.24	375.28	2.7	2.49	2.5	187	107	104	16	58
	2	96	1730	377.97	378.03	1.7	1.56	1.6	187	108	104	12	55
	1	100	1734	379.11	379.15	0.30	0.27	0.27	187	109	105	6	57

Remarks and Notes:

Total Pressure @ Pt G-3 = 25.0 AP = 2.0

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

Run No. 15 Date 7-16-89 Client/Source Cogentrix
 Project No. 4702-02 Sampling Location Baghouse 2a, Duct Outlet
 Sample Type (Multi-Point, Single-Point) Operator GSR
 Flow Control Device (Valve, Critical Orifice) Bag Type Tedlar Sample No. _____
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm M3B Flow Meter Type Rotometer
 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 30
 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
1543	3.0	✓				
1544	3.0		✓			
1554	3.0				✓	
1603	3.0			✓		Port Change
1605	3.0	✓				
1606	3.0		✓			
1616	3.0				✓	
1625	3.0			✓		Port Change
1627	3.0	✓				
1628	3.0		✓		✓	
1638	3.0				✓	
1647	3.0			✓		Port Change
1650	3.0	✓				
1651	3.0		✓			
1701	3.0				✓	
1710	3.0			✓		Port Change
1712	3.0	✓				
1713	3.0		✓			
1723	3.0				✓	
1732	3.0			✓		End of Run

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

Run No. 15 Date 07-16-99 Orsat Leak Check Before Analysis:
 Project No. 4702.02.04.09 Sample No. Train A Burette No Change in 4 Minutes
 Sampling Location Unit 2A Bayhouse Outlet Duct Pipettes No Change in 4 Minutes
 Analysis Start Time 1745 Orsat Leak Check After Analysis:
 Sample Type (Bag, Grab, Bag) Burette No Change in 4 Minutes
 Analyst J. Swindon 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 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	<u>14.6</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.3</u> 2 <u>19.3</u> 3	<u>4.7</u>	1 <u>19.3</u> 2 <u>19.3</u> 3	<u>4.7</u>	1 <u>19.3</u> 2 <u>19.3</u> 3	<u>4.7</u>	<u>4.7</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 15 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: 07-16-99

Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 07-16-99 1430

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz) *	Nozzle I.D. No.	<u>M17-6</u>	<u>M17-5</u>
Filter Assembly and Holder *	Filter Assembly No.	<u>28</u>	<u>29</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>8</u>	<u>5</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
	Initial Weights (grams) **		
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>608.4</u>	<u>583.4</u>
U-Connector (A)			
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>584.2</u>	<u>654.6</u>
U-Connector (B)			
3rd Impinger (Mod-GBS) Empty		<u>543.4</u>	<u>467.6</u>
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel		<u>680.0</u>	<u>682.7</u>
Impinger Outlet Connector	Connector I.D. No.	<u>VH-2</u>	<u>VH-1</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 15 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 07-16-99 1800
Sample recovery person(s): J. Surman Date: 07-16-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>768.8</u>	<u>593.2</u>	<u>545.0</u>	<u>693.7</u>	<u>754.1</u>	<u>662.8</u>	<u>469.7</u>	<u>695.7</u>
Initial Wt.	<u>608.4</u>	<u>584.2</u>	<u>543.4</u>	<u>682.0</u>	<u>583.4</u>	<u>654.6</u>	<u>467.6</u>	<u>682.7</u>
Net Wt.	<u>160.4</u>	<u>9.0</u>	<u>1.6</u>	<u>13.7</u>	<u>170.7</u>	<u>7.2</u>	<u>2.1</u>	<u>13.0</u>
Total Condensate Collected:				<u>184.7</u>				<u>193.0</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>5</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>5</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>15 002</u>	<u>15 004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>15 001</u>	<u>15 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to blacker liners for analysis

PS
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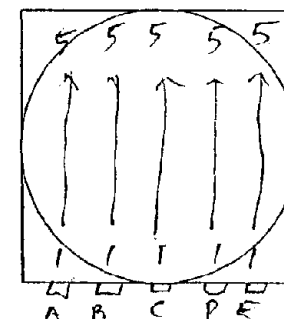
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

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Run No. 16 Date 7-17-99
 Project No. 4707-02
 Client Cognitix
 Source Baylor 22
 Sampling Location Duct Outlet
 Operator Giffin
 Record data every 4 minutes
 Barometer No. 72101
 Barometric Pressure 30.07 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 30.04 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 30.04 in Hg
 Static Pressure 21.25-26.68 in H₂O

Train A No. A-1 M17-A
 Probe No. A Length: 10 ft
 Nozzle No. M17-3 Tip Dia. 0.196 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 6
 Filter Assembly No. 30
 Impinger Box No. A-1
 Umbilical/Impinger Hookup U435
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.89

Train B No. B-1 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-11 Tip Dia. 0.196 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 7
 Filter Assembly No. 31
 Impinger Box No. B-1
 Umbilical/Impinger Hookup U432
 Umbilical No. N50-1
 Meter Box No. N11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.96



Traverse Point Layout

Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial
	0840	1045									0844	1049							
Pass or Fail		pass										pass							

Train A Sampling System Leak Checks									
Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial
	0838	1043							
Vacuum, in Hg	15	12							
Leak Rate, cfm	.006	.009							
Final Meter Volume									
Initial Meter Volume									
Leak Check Volume									

Train B Sampling System Leak Checks									
Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial
	0842	1047							
Vacuum, in Hg	15	13							
Leak Rate, cfm	.004	.002							
Final Meter Volume									
Initial Meter Volume									
Non-sample Volume									

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

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	TRAIN A	TRAIN B
Meter Volume at Start of Run	124.784	389.822
Meter Volume at End of Run	197.882	460.231
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 16
Date 7-17-99

Sampling Location Baghouse 2a, Dust outlet
Project No. 4702-02

Operator Grip page 1 of 1

Sampling Data for Method 17 Train A No. A-1

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>124.784</u>	Desired		Desired	Actual		Inlet	Outlet		
0912	C-5	4	0851										
		4	0855	128.16	128.07	2.4	2.52	2.5	184	81	81	11	66
		8	0859	131.47	131.29	2.3	2.42	2.4	184	82	81	10	58
		12	0903	134.64	134.52	2.1	2.21	2.2	184	84	81	10	58
		16	0907	136.37	136.33	0.62	0.65	0.65	184	85	82	7	60
0913		20	0911	136.86	136.90	0.05	0.05	0.05	183	86	82	5	63
	D-5	24	0917	140.33	140.35	2.5	2.65	2.7	183	85	83	11	61
		28	0921	143.63	143.73	2.6	2.56	2.6	184	88	84	11	58
		32	0925	146.51	146.55	1.7	1.80	1.8	185	91	84	9	60
		36	0929	148.55	148.70	0.85	0.90	0.90	186	92	85	8	60
0935		40	0933	149.31	149.53	0.12	0.12	0.12	185	92	85	5	64
	E-5	44	0939	153.00	153.14	2.8	2.97	3.0	185	90	85	12	65
		48	0943	156.84	156.82	3.0	3.20	3.2	186	94	86	12	62
		52	0947	160.13	160.52	2.2	2.35	2.4	186	95	87	12	63
		56	0951	163.11	163.39	1.8	1.92	1.9	187	97	87	10	64
0958		60	0955	164.51	164.74	0.40	0.42	0.42	187	97	88	6	66
	A-5	64	1002	168.23	168.34	2.8	2.99	3.0	187	96	88	12	66
		68	1006	171.89	171.90	2.7	2.89	2.9	184	95	89	12	63
		72	1010	175.42	175.40	2.5	2.69	2.7	185	99	89	12	63
		76	1014	178.06	178.04	1.4	1.50	1.5	186	100	90	9	60
1021		80	1018	179.36	179.38	0.34	0.36	0.36	186	100	90	6	60
	B-5	84	1025	182.89	182.86	2.5	2.68	2.7	186	97	91	11	64
		88	1029	186.35	186.29	2.4	2.58	2.6	185	97	91	11	60
		92	1033	189.89	189.76	2.5	2.70	2.7	186	101	92	11	60
		96	1037	192.08	192.17	0.95	1.02	1.0	186	102	93	8	61
		100	1041	192.79	192.882	0.10	0.10	0.10	186	101	93	6	63

Sampling Data for Method 17 Train B No. <u>B-1</u>													
Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>389.822</u>	Desired		Desired	Actual		Inlet	Outlet		
0915	A-5	4	0857	393.55	393.52	2.8	3.12	3.1	184	80	80	12	60
		8	0901	397.14	397.15	2.6	2.89	2.9	185	81	80	12	53
		12	0905	400.67	400.72	2.5	2.79	2.8	184	81	80	12	57
		16	0909	403.22	403.28	1.3	1.45	1.5	186	83	81	9	58
		20	0913	404.50	404.56	0.33	0.36	0.36	184	84	81	7	58
0937	B-5	24	0919	408.11	408.12	2.6	2.91	2.9	184	85	81	12	58
		28	0923	411.73	411.70	2.6	2.91	2.9	185	85	82	12	57
		32	0927	414.90	414.75	2.0	2.24	2.2	186	87	83	10	59
		36	0931	417.13	417.04	0.98	1.10	1.1	186	89	84	8	59
		40	0935	417.98	417.95	0.14	0.15	0.15	185	91	85	6	61
1000	C-5	44	0941	421.55	421.47	2.5	2.82	2.8	185	90	86	12	58
		48	0945	425.04	424.98	2.4	2.70	2.7	187	90	86	12	59
		52	0949	428.32	428.30	2.1	2.37	2.4	187	92	87	11	60
		56	0953	430.22	430.33	0.70	0.79	0.79	187	94	88	8	61
		60	0957	430.67	430.61	0.04	0.04	0.04	185	95	89	5	66
1023	D-5	64	1004	434.48	434.38	2.8	3.18	3.2	186	94	90	13	63
		68	1008	437.95	437.89	2.3	2.62	2.6	184	94	90	12	60
		72	1012	441.54	441.46	2.5	2.84	2.8	186	96	91	12	56
		76	1016	443.58	443.63	0.80	0.91	0.91	187	98	92	8	54
		80	1020	444.37	444.54	0.12	0.13	0.13	186	98	92	6	55
	E-5	84	1024	448.21	448.21	2.8	3.20	3.2	185	98	93	13	56
		88	1028	452.17	452.13	3.0	3.42	3.4	186	97	93	13	52
		92	1032	455.64	455.58	2.3	2.63	2.6	186	99	94	12	52
		96	1036	458.97	458.90	2.1	2.40	2.4	187	101	95	11	52
		100	1043	460.23	460.231	0.30	0.34	0.34	187	102	95	7	54

Remarks and Notes:

Total pressure - 25.2 @ Pt C-3 AP = 2.1

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

Run No. 16 Date 7-17-99 Client/Source Cogentrix
 Project No. 4702-02 Sampling Location Baghouse 2a, Duct Outlet
 Sample Type (Multi-Point) Single-Point Operator Griffin
 Flow Control Device (Valve) Critical Orifice Bag Type Tedlar Sample No. 1109
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm M3B Flow Meter Type Retomatin
 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 30
 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
0851	3.0	✓				
0852	3.0		✓			
0902	3.0				✓	
0911	3.0			✓		Port Change
0913	3.0	✓				
0914	3.0		✓			
0924	3.0				✓	
0933	3.0			✓		Port Change
0935	3.0	✓				
0936	3.0		✓			
0946	3.0				✓	
0955	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			✓		End of Run

M3BSAMP.WPD June 18, 1998

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

Run No. 16 Date 07-17-99
 Project No. 470202.D409 Sample No. 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:
 Burette ND Change in 4 Minutes
 Pipettes ND Change in 4 Minutes
 Orsat Leak Check After Analysis:
 Burette ND Change in 4 Minutes
 Pipettes ND 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 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	<u>14.6</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.7</u> 2 <u>19.7</u> 3	<u>5.1</u>	1 <u>19.7</u> 2 <u>19.7</u> 3	<u>5.1</u>	1 <u>19.7</u> 2 <u>19.7</u> 3	<u>5.1</u>	<u>5.1</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 16 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: 07-16-99

Transfer to Sampler:

Relinquished By J. Surman Received By D. Griffin Date/Time 07-17-99 0815

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-3</u>	<u>M17-11</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>30</u>	<u>31</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>6</u>	<u>7</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
	Initial Weights (grams)**		
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>574.9</u>	<u>592.8</u>
U-Connector (A)		<u>600.9</u>	<u>600.6</u>
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>496.3</u>	<u>465.8</u>
U-Connector (B)		<u>600.9</u>	<u>465.8</u>
3rd Impinger (Mod-GBS) Empty		<u>693.6</u>	<u>674.2</u>
U-Connector (C)		<u>496.3</u>	
4th Impinger (Mod-GBS) ~200 g indicating silica gel			
Impinger Outlet Connector	Connector I.D. No.	<u>UH-35</u>	<u>UH-32</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 16 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 07-18-99 1130
Sample recovery person(s): J. Surman Date: 07-17-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>769.0</u>	<u>606.8</u>	<u>497.9</u>	<u>709.0</u>	<u>796.4</u>	<u>608.1</u>	<u>468.0</u>	<u>689.6</u>
Initial Wt.	<u>574.9</u>	<u>600.9</u>	<u>496.3</u>	<u>693.5</u>	<u>599.8</u>	<u>600.6</u>	<u>465.8</u>	<u>674.2</u>
Net Wt.	<u>194.1</u>	<u>5.9</u>	<u>16</u>	<u>15.5</u>	<u>196.6</u>	<u>7.5</u>	<u>2.2</u>	<u>15.4</u>
Total Condensate Collected:	<u>217.1</u>				<u>221.7</u>			
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>15</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>
	% Blue				% Blue			

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>16002</u>	<u>16004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>16001</u>	<u>16003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to deuter liners for analysis.

JB
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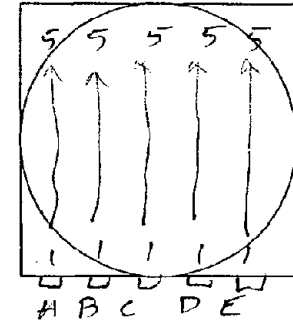
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

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Run No. 17 Date 7-17-99
 Project No. 402-02
 Client Cogentrix
 Source Baghouse 2a
 Sampling Location Duct Outlet
 Operator Griffin
 Record data every 4 minutes
 Barometer No. 42101
 Barometric Pressure 30.07 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 30.04 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 30.04 in Hg

Train A No. A-2
 Probe No. A Length: 10 ft
 Nozzle No. A-1-2 Tip Dia. .193 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 1
 Filter Assembly No. 32
 Impinger Box No. A-2
 Umbilical/Impinger Hookup 4H
 Umbilical No. N50-3
 Meter Box No. N-10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.890

Train B No. B-2
 Probe No. B Length: 10 ft
 Nozzle No. B-1-2 Tip Dia. .193 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 2
 Filter Assembly No. 33
 Impinger Box No. B-2
 Umbilical/Impinger Hookup 4H-1
 Umbilical No. N-50-1
 Meter Box No. N-11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.960



Traverse Point Layout

Static Pressure -25.51 in H₂O Assumed Moisture 12.5 % Assumed %CO₂ 14.5 %O₂ 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)	1143	1417									1147	1421								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks										
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1141	1415								
Vacuum, in Hg	15	10								
Leak Rate, cfm	.009	.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)	1201	1419									
Vacuum, in Hg	15	15									
Leak Rate, cfm	.001	.002									
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	193.064	468.423
Meter Volume at End of Run	260.430	535.962
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 17
Date 7-17-99

Sampling Location Boiler 22, Duct Outlet
Project No. 4702-02

Operator G. R. R. page 1 of 1

Sampling Data for Method 17 Train A No. A-2

Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
			Initial	Desired		Desired	Actual		Inlet	Outlet		
1244	0	1222	193.064									
	C-5	4	1226	196.46	196.40	2.5	2.51	186	91	91	8	53
	4	8	1230	199.58	199.53	2.1	2.11	186	92	91	8	46
	3	12	1234	202.48	202.42	1.8	1.81	185	93	91	7	49
	2	16	1238	204.33	204.34	0.73	0.73	183	95	91	5	51
1301	1	20	1242	204.81	204.81	0.05	0.05	183	95	91	4	55
	D-5	24	1248	208.30	208.35	2.6	2.63	183	94	91	9	54
	4	28	1252	211.78	211.82	2.6	2.62	186	96	92	9	52
	3	32	1256	215.08	215.06	2.3	2.33	186	100	93	8	56
	2	36	1300	217.00	217.00	0.78	0.79	186	101	93	6	56
1309	1	40	1304	217.75	217.74	0.12	0.12	185	100	94	4	58
	E-5	44	1311	221.38	221.28	2.8	2.84	185	97	94	9	59
	4	48	1315	225.08	224.91	2.9	2.94	185	99	94	10	57
	3	52	1319	228.24	228.09	2.1	2.13	186	103	94	8	59
	2	56	1323	231.33	231.13	2.0	2.04	186	104	95	8	59
1329	1	60	1329	232.59	232.50	0.33	0.33	187	105	96	5	59
	A-5	64	1333	236.10	236.01	2.6	2.65	186	102	96	9	59
	4	68	1337	239.70	239.55	2.7	2.76	185	104	97	9	57
	3	72	1341	243.17	243.00	2.5	2.56	183	105	97	7	58
	2	76	1345	245.77	245.67	1.4	1.44	182	106	97	7	58
1351	1	80	1349	247.20	247.23	0.42	0.43	182	106	98	5	58
	B-5	84	1355	250.67	250.61	2.5	2.56	184	103	98	9	60
	4	88	1359	253.98	253.96	2.3	2.34	189	104	98	8	56
	3	92	1403	257.44	257.32	2.5	2.55	189	106	98	9	56
	2	96	1407	259.55	259.64	0.92	0.94	186	107	98	6	56
	1	100	1411	260.43	260.430	0.16	0.16	184	107	99	5	59

Sampling Data for Method 17 Train B No. <u>B-2</u>												
	0	1224	468.423									
1246	A-5	4	1228	472.05	472.15	2.7	2.88	186	93	93	14	58
	4	8	1232	475.18	475.33	2.8	2.14	186	93	93	11	45
	3	12	1236	478.53	478.64	2.3	2.47	184	94	93	12	48
	2	16	1240	481.25	481.32	1.5	1.61	184	95	93	10	51
	1	20	1244	482.24	482.26	0.20	0.21	185	96	93	5	52
1309	B-5	24	1250	485.81	485.82	2.6	2.78	187	96	94	13	51
	4	28	1254	489.32	489.33	2.5	2.68	187	97	94	13	52
	3	32	1258	492.64	492.68	2.2	2.37	186	99	95	12	54
	2	36	1302	494.79	494.87	0.95	1.02	186	100	95	8	54
	1	40	1306	495.49	495.56	0.10	0.10	185	101	96	5	55
1329	C-5	44	1313	499.09	499.09	2.6	2.81	185	100	97	13	57
	4	48	1317	502.54	502.60	2.4	2.58	186	99	96	13	53
	3	52	1321	505.71	505.80	2.0	2.16	186	102	97	12	53
	2	56	1325	507.55	507.64	0.68	0.73	186	103	97	8	53
	1	60	1329	507.94	508.13	0.09	0.03	186	103	99	5	56
1351	D-5	64	1335	511.62	511.75	2.7	2.92	184	102	99	14	58
	4	68	1339	515.29	515.37	2.7	2.93	184	101	98	14	53
	3	72	1343	518.23	518.29	1.7	1.85	183	104	99	11	53
	2	76	1347	520.27	520.37	0.82	0.89	182	105	100	8	53
	1	80	1351	520.90	521.02	0.08	0.08	183	105	101	5	56
1353	E-5	84	1357	524.72	524.72	2.9	3.14	189	104	101	15	57
	4	88	1401	528.60	528.54	3.0	3.24	189	104	100	15	52
	3	92	1405	531.93	531.95	2.2	2.39	188	106	101	13	52
	2	96	1409	534.96	534.92	1.8	1.96	186	107	101	11	53
	1	100	1413	535.97	535.962	0.20	0.21	185	107	102	6	56

Remarks and Notes:

Total Pressure @ Pt C-3 = -24.1 ΔP = 2.0

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

Run No. 17 Date 7-17-99 Client/Source Copentia
 Project No. 4702-02 Sampling Location Baghouse 2a, Dust Outlet
 Sample Type (Multi-Point) Single-Point) Operator Griff
 Flow Control Device (Valve) Critical Orifice) Bag Type Tedlar Sample No. _____
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm M3B Flow Meter Type Rotometer
 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
1222	3.0	✓				
1223	3.0		✓			
1233	3.0				✓	
1242	3.0			✓		Part Change
1244	3.0	✓				
1245	3.0		✓			
1255	3.0				✓	
1304	3.0			✓		Part Change
1307	3.0	✓				
1308	3.0		✓			
1318	3.0				✓	
1327	3.0			✓		Part Change
1329	3.0	✓				
1330	3.0		✓			
1340	3.0				✓	
1349	3.0			✓		Part Change
1351	3.0	✓				
1352	3.0		✓			
1402	3.0				✓	
1411	3.0			✓		End of Run

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

Run No. 17 Date _____
 Project No. 4702.02.04.09 Sample No. Train A
 Sampling Location Unit 2A Baghouse Owner Duct
 Analysis Start Time 1515
 Sample Type (Bag, Grab, Bag)
 Analyst J. Surman

Orsat Leak Check Before Analysis:
 Burette No Change in 4 Minutes
 Pipettes No Change in 4 Minutes
 Orsat Leak Check After Analysis:
 Burette 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 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	<u>14.2</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.6</u> 2 <u>19.6</u> 3	<u>5.0</u>	1 <u>19.6</u> 2 <u>19.6</u> 3	<u>5.0</u>	1 <u>19.6</u> 2 <u>19.6</u> 3	<u>5.0</u>	<u>5.0</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 17 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: 07-16-99
Transfer to Sampler: _____
Relinquished By J. Surman Received By D. Griffin Date/Time 07-17-99 1430

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-2</u>	<u>M17-8</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>32</u>	<u>33</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>1</u>	<u>2</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
		Initial Weights (grams)**	
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>623.4</u>	<u>599.5</u>
U-Connector (A)		<u>593.2</u>	<u>661.8</u>
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>543.6</u>	<u>468.2</u>
U-Connector (B)		<u>672.0</u>	<u>677.1</u>
3rd Impinger (Mod-GBS) Empty			
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel			
Impinger Outlet Connector	Connector I.D. No.	<u>OH-2</u>	<u>UH-1</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 17 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 07-17-99 ¹⁵⁰⁰
Sample recovery person(s): J. Surman Date: 07-17-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>791.9</u>	<u>601.0</u>	<u>544.9</u>	<u>686.0</u>	<u>794.5</u>	<u>673.4</u>	<u>470.2</u>	<u>691.1</u>
Initial Wt.	<u>623.4</u>	<u>593.2</u>	<u>543.6</u>	<u>672.0</u>	<u>599.5</u>	<u>661.8</u>	<u>468.2</u>	<u>677.1</u>
Net Wt.	<u>168.5</u>	<u>7.8</u>	<u>1.3</u>	<u>14.0</u>	<u>195.0</u>	<u>11.6</u>	<u>2.0</u>	<u>14.0</u>
Total Condensate Collected:				<u>191.6</u>				<u>222.6</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>5</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>5</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>17 002</u>	<u>17 004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>17 001</u>	<u>17 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis

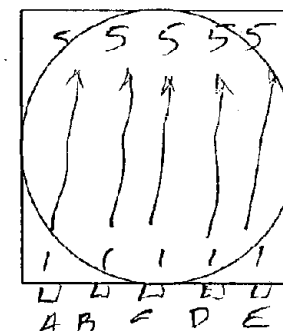
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

page 1 of 1

Run No. 18 Date 7-17-99
 Project No. 4702-02
 Client Cogentrix
 Source Baghouse-22
 Sampling Location Duct Outlet
 Operator C. Smith
 Record data every 4 minutes
 Barometer No. 2102
 Barometric Pressure 30.02 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 29.99 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 29.99 in Hg
 Static Pressure 14.28-27.2 in H₂O

Train A No. A-1 M17-B
 Probe No. A Length: 10 ft
 Nozzle No. M17-3 Tip Dia. .196 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 3
 Filter Assembly No. 34
 Impinger Box No. A-1
 Umbilical/Impinger Hookup U438
 Umbilical No. N50-3
 Meter Box No. N-10
 DGM Correction (Y) 1.82-1.01
 Orifice Meter ΔH@ 1.89

Train B No. B-1 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-11 Tip Dia. .196 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 4
 Filter Assembly No. 35
 Impinger Box No. B-1
 Umbilical/Impinger Hookup U432
 Umbilical No. N50-1
 Meter Box No. N-11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.96



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)	1936	1938									1938	1938								
Pass or Fail		pass										pass								

	Train A Sampling System Leak Checks										Train B Sampling 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)	1934	1932																		
Vacuum, in Hg	15	11																		
Leak Rate, cfm	.011	.006																		
Final Meter Volume																				
Initial Meter Volume																				
Leak Check Volume																				

	Train A Sampling System Leak Checks										Train B Sampling 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)	1932	1936																		
Vacuum, in Hg	15	13																		
Leak Rate, cfm	.004	.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	261.719	539.689
Meter Volume at End of Run	329.599	610.119
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 18
Date 7-11-99

Sampling Location Baghouse 2a, Duct Outlet
Project No. 4702-02

Operator Griffin page 1 of 1

Sampling Data for Method 17 Train A No. A-1

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial	Actual		Desired	Actual		Inlet	Outlet		
				261.719									
1602	C-5	4	1544	265.25	265.16	2.5	2.67	2.7	184	97	97	10	63
	4	8	1548	268.78	268.66	2.5	2.66	2.7	185	97	97	10	59
	3	12	1552	271.94	271.80	2.0	2.43	2.1	186	99	97	9	61
	2	16	1556	273.78	273.78	0.68	0.72	0.72	187	102	97	7	63
	1	20	1600	274.17	274.18	0.03	0.03	0.03	186	102	98	5	65
1624	D-5	24	1604	277.70	277.65	2.5	2.67	2.7	186	100	97	10	65
	4	28	1610	281.03	280.95	2.2	2.35	2.4	186	102	99	10	59
	3	32	1614	284.44	284.28	2.3	2.47	2.5	186	105	99	10	62
	2	36	1618	286.52	286.30	0.85	0.91	0.91	187	107	99	8	64
	1	40	1622	286.97	287.07	0.04	0.04	0.04	186	106	100	5	66
1647	E-5	44	1628	290.59	290.62	2.6	2.79	2.8	186	103	100	11	67
	4	48	1632	294.08	294.05	2.4	2.58	2.6	186	106	100	11	61
	3	52	1636	297.72	297.57	2.6	2.80	2.8	187	109	101	11	62
	2	56	1640	301.23	301.05	2.4	2.59	2.6	188	110	101	11	63
	1	60	1644	302.36	302.38	0.25	0.27	0.27	187	110	102	6	65
1709	A-5	64	1651	305.99	305.97	2.6	2.80	2.8	187	107	101	11	66
	4	68	1655	309.50	309.40	2.4	2.59	2.6	185	108	102	11	61
	3	72	1659	312.94	312.76	2.3	2.49	2.5	186	110	102	11	62
	2	76	1703	315.71	315.56	1.5	1.62	1.6	186	111	102	9	63
	1	80	1707	316.83	316.88	0.24	0.26	0.26	186	111	103	6	65
1709	B-5	84	1713	320.40	320.40	2.5	2.70	2.70	186	108	102	11	61
	4	88	1717	323.76	323.74	2.2	2.38	2.4	185	108	103	11	62
	3	92	1721	327.05	326.93	2.1	2.27	2.3	186	110	103	10	63
	2	96	1725	329.13	329.12	0.84	0.91	0.91	186	111	102	8	64
	1	100	1729	329.58	329.544	0.04	0.04	0.04	185	109	103	5	66

Sampling Data for Method 17 Train B No. <u>B-1</u>													
Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial	Actual		Desired	Actual		Inlet	Outlet		
				539.689									
1604	A-5	4	1546	543.51	543.49	2.8	3.17	3.2	184	97	97	12	62
	4	8	1550	547.33	547.35	2.8	3.17	3.2	186	98	97	12	50
	3	12	1554	550.80	550.79	2.3	2.60	2.6	187	99	97	11	55
	2	16	1558	553.41	553.47	1.3	1.47	1.5	187	100	98	9	55
	1	20	1602	554.58	554.75	0.26	0.29	0.29	185	102	98	6	56
1626	B-5	24	1608	558.42	558.57	2.8	3.19	3.2	185	102	99	12	57
	4	28	1612	562.12	562.23	2.6	2.96	3.0	186	102	99	12	55
	3	32	1616	565.30	565.44	1.9	2.16	2.2	187	105	100	11	57
	2	36	1620	567.38	567.62	0.82	0.93	0.93	187	105	100	8	57
	1	40	1624	567.95	568.09	0.06	0.06	0.06	186	106	101	5	61
1649	C-5	44	1630	571.67	571.80	2.6	2.97	3.0	187	105	102	12	60
	4	48	1634	575.09	575.28	2.2	2.51	2.5	186	105	102	11	57
	3	52	1638	578.36	578.51	2.0	2.29	2.3	187	108	103	11	57
	2	56	1642	580.34	580.53	0.77	0.88	0.88	187	109	103	8	58
	1	60	1646	580.96	581.00	0.06	0.06	0.06	186	109	104	5	62
1711	D-5	64	1653	584.63	584.65	2.5	2.87	2.9	185	107	104	12	59
	4	68	1657	588.22	588.30	2.4	2.75	2.8	186	108	104	12	56
	3	72	1701	591.74	591.79	2.3	2.64	2.6	187	110	105	12	56
	2	76	1705	593.95	593.98	0.90	1.03	1.0	187	111	106	8	56
	1	80	1709	594.52	594.66	0.06	0.06	0.06	186	111	106	5	61
1711	E-5	84	1715	598.35	598.41	2.7	3.11	3.1	186	110	107	13	59
	4	88	1719	601.87	601.99	2.3	2.65	2.7	186	110	106	12	55
	3	92	1723	605.70	605.75	2.7	3.11	3.1	186	111	106	13	56
	2	96	1727	608.83	608.98	1.8	2.08	2.1	186	112	107	11	56
	1	100	1731	610.11	610.114	0.30	0.34	0.34	186	113	107	7	59

Remarks and Notes:

Total Pressure = -25.8 @ P+C-3 ΔP=2.0

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

Run No. 18 Date 7-17-99 Client/Source Cogentrix
 Project No. 4702-02 Sampling Location Baghouse 23, DuctOutlet
 Sample Type (Multi-Point) Single-Point) Operator Griff
 Flow Control Device (Valve) Critical Orifice) Bag Type Tedlar Sample No. NA
 Method 5 Meter Box No. N/A Method 3B Train No. N/A
 M3B Pump Type Diaphragm M3B Flow Meter Type Rotameter
 M3B Pump No. N/A 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 29 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1546	3.0	✓				
1547	3.0		✓			
1551	3.0				✓	
1600	3.0			✓		Port Change
1602	3.0	✓				
1603	3.0		✓			
1613	3.0				✓	
1622	3.0			✓		Port Change
1624	3.0	✓				
1625	3.0		✓			
1635	3.0				✓	
1644	3.0			✓		Port Change
1647	3.0	✓				
1648	3.0		✓			
1658	3.0				✓	
1707	3.0			✓		Port Change
1709	3.0	✓				
1710	3.0		✓			
1720	3.0				✓	
1729	3.0			✓		End of Run
	3.00					
	3.00					

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

Run No. 18 Date _____
 Project No. 4702.02.04.09 Sample No. Train A
 Sampling Location Unit 2A Baghouse Outlet Duct
 Analysis Start Time 1800
 Sample Type (Bag, Grab) Bag
 Analyst J. Surman

Orsat Leak Check Before Analysis:
 Burette NO Change in 4 Minutes
 Pipettes NO Change in 4 Minutes
 Orsat Leak Check After Analysis:
 Burette 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 <u>14.5</u> 2 <u>14.5</u> 3	<u>14.5</u>	1 <u>14.5</u> 2 <u>14.5</u> 3	<u>14.5</u>	1 <u>14.5</u> 2 <u>14.5</u> 3	<u>14.5</u>	<u>14.5</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.6</u> 2 <u>19.6</u> 3	<u>5.1</u>	1 <u>19.6</u> 2 <u>19.6</u> 3	<u>5.1</u>	1 <u>19.6</u> 2 <u>19.6</u> 3	<u>5.1</u>	<u>5.1</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ > 4% 0.3% v/v O₂ ≥ 15% 0.2% v/v CO 0.3% v/v
 ≤ 4% 0.2% v/v < 15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 18 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: 07-17-99

Transfer to Sampler:

Relinquished By J. Surman Received By D. Griffin Date/Time 07-17-99 1450

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-3</u>	<u>M17-11</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>34</u>	<u>35</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>3</u>	<u>4</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
	Initial Weights (grams)**		
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>584.0</u>	<u>611.9</u>
U-Connector (A)			
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>583.7</u>	<u>581.1</u>
U-Connector (B)			
3rd Impinger (Mod-GBS) Empty		<u>496.5</u>	<u>465.8</u>
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel		<u>691.0</u>	<u>674.6</u>
Impinger Outlet Connector	Connector I.D. No.	<u>UH-35</u>	<u>UH-32</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 18 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 07-17-99 1800
Sample recovery person(s): J. Surman Date: 07-18-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>755.8</u>	<u>595.7</u>	<u>498.7</u>	<u>705.0</u>	<u>810.4</u>	<u>592.6</u>	<u>467.5</u>	<u>689.9</u>
Initial Wt.	<u>584.0</u>	<u>583.7</u>	<u>496.5</u>	<u>691.0</u>	<u>611.9</u>	<u>581.1</u>	<u>465.8</u>	<u>674.6</u>
Net Wt.	<u>171.8</u>	<u>12.0</u>	<u>2.2</u>	<u>14.0</u>	<u>198.5</u>	<u>11.5</u>	<u>1.7</u>	<u>15.3</u>
Total Condensate Collected:				<u>200.0</u>				<u>229.0</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>15</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>18 002</u>	<u>18 004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>18 001</u>	<u>18 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

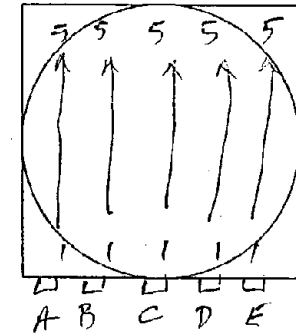
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

page 1 of 1

Run No. 19 Date 7-18-99
 Project No. 4702-02
 Client Cogentrix
 Source Baghouse 22,
 Sampling Location Duct outlet
 Operator Griff
 Record data every 4 minutes
 Barometer No. 42101
 Barometric Pressure 30.03 in Hg
 Elevation to Meter Boxes 24 ft
 Meter Box P_{bar} 30.00 in Hg
 Elevation to Sampling Loc. 24 ft
 Sampling Location P_{bar} 30.00 in Hg
 Static Pressure -25.24 in H₂O

Train A No. A-2 M17-A
 Probe No. A Length: 10 ft
 Nozzle No. M17-4 Tip Dia. .184 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 8
 Filter Assembly No. 36
 Impinger Box No. A-2
 Umbilical/Impinger Hookup UH-2
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.89

Train B No. B-2 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-5 Tip Dia. .185 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 5
 Filter Assembly No. 37
 Impinger Box No. B-2
 Umbilical/Impinger Hookup UH-1
 Umbilical No. N50-1
 Meter Box No. N-11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.96



Traverse Point Layout

Train A Pitot Tube Pressure Measurement System Leak Checks										Train B Pitot Tube Pressure Measurement System Leak Checks									
Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial
Pass or Fail	0917	1122								0924	1124								

Train A Sampling System Leak Checks										Train B Sampling System Leak Checks									
Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial
Vacuum, in Hg	0915	1120								0919	1124								
Leak Rate, cfm	15	9								15	15								
Final Meter Volume	.009	.003								.001	.002								
Initial Meter Volume																			
Leak Check Volume																			

Train A Sampling System Leak Checks										Train B Sampling System Leak Checks									
Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Time (24 Hr)	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial
Vacuum, in Hg	0919	1124								0919	1124								
Leak Rate, cfm	15	15								15	15								
Final Meter Volume	.001	.002								.001	.002								
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	330.577	610.344
Meter Volume at End of Run	389.719	671.292
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 19 Sampling Location Baghouse 2, Dust Outlet page 1 of 1
 Date 7-18-99 Project No. 4702-02 Operator G. J. R.

Sampling Data for Method 17 Train A No. A-2

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>330.577</u>	Desired		Desired	Actual		Inlet	Outlet		
0950	C-5	4	0952	332.50	333.55	2.3	1.86	1.9	184	85	85	8	59
	4	8	0956	336.35	336.41	2.2	1.78	1.8	185	86	85	7	55
	3	12	0940	339.08	339.11	2.0	1.62	1.6	185	87	85	7	58
	2	16	0944	340.70	340.77	0.70	0.97	0.97	185	89	86	5	58
	1	20	0948	341.08	340.98	0.24	0.03	0.03	184	89	86	4	62
1013	D-5	24	0954	344.14	344.03	2.5	2.03	2.0	184	88	86	8	59
	4	28	0958	347.01	346.93	2.2	1.79	1.8	185	90	86	8	58
	3	32	1002	349.95	349.81	2.3	1.88	1.9	185	93	87	8	60
	2	36	1006	351.63	351.65	0.80	0.65	0.65	185	95	87	6	60
	1	40	1010	352.37	352.39	0.12	0.09	0.09	184	95	88	4	61
1035	E-5	44	1017	355.56	355.57	2.7	2.21	2.2	185	93	88	8	65
	4	48	1021	358.82	358.78	2.8	2.29	2.3	186	95	89	9	61
	3	52	1025	362.02	361.83	2.7	2.22	2.2	186	97	90	9	63
	2	56	1029	364.73	364.65	1.9	1.57	1.6	185	100	91	8	63
	1	60	1033	365.65	365.65	0.22	0.18	0.18	185	100	91	5	63
1059	A-5	64	1039	368.81	368.65	2.6	2.14	2.1	185	98	92	9	64
	4	68	1043	371.96	371.75	2.6	2.14	2.1	186	98	92	9	63
	3	72	1047	375.01	374.80	2.4	1.98	2.0	186	101	93	9	63
	2	76	1051	377.72	377.60	1.9	1.57	1.6	185	102	93	9	63
	1	80	1055	378.64	378.64	0.22	0.18	0.18	184	103	93	5	63
1097	B-5	84	1101	381.66	381.52	2.4	1.97	2.0	183	99	94	9	62
	4	88	1105	384.60	384.47	2.2	1.82	1.8	185	100	94	9	62
	3	92	1109	387.43	387.37	2.1	1.74	1.7	186	102	94	9	63
	2	96	1113	389.11	389.17	0.72	0.59	0.59	186	104	95	6	62
	1	100	1117	389.73	389.79	0.10	0.08	0.08	185	102	95	4	67

Sampling Data for Method 17 Train B No. B-2

0952	A-5	4	0954	613.61	613.62	2.7	2.37	2.4	185	84	84	12	63
	4	8	0958	616.87	616.93	2.7	2.37	2.4	185	85	84	12	57
	3	12	0942	619.89	619.99	2.3	2.01	2.0	186	85	84	11	56
	2	16	0946	622.16	622.33	1.3	1.14	1.1	185	87	85	8	56
	1	20	0950	623.01	623.07	0.18	0.15	0.15	184	88	85	5	57
1015	B-5	24	0956	626.23	626.24	2.6	2.29	2.3	186	89	86	12	59
	4	28	1000	629.26	629.24	2.3	2.03	2.0	186	89	86	11	53
	3	32	1004	632.02	631.98	1.9	1.68	1.7	186	91	87	10	54
	2	36	1008	633.87	633.91	0.85	0.75	0.75	185	92	88	7	54
	1	40	1012	634.51	634.51	0.10	0.08	0.08	184	93	88	5	57
1037	C-5	44	1018	637.69	637.59	2.5	2.22	2.2	184	93	89	12	60
	4	48	1023	640.91	640.66	2.4	2.13	2.1	186	93	90	12	53
	3	52	1027	643.59	643.57	1.9	1.69	1.7	185	95	91	11	54
	2	56	1031	645.24	645.30	0.66	0.59	0.59	185	97	91	7	55
	1	60	1035	645.69	645.68	0.05	0.04	0.04	185	98	92	5	59
1059	D-5	64	1041	648.95	648.89	2.6	2.32	2.3	186	96	93	13	60
	4	68	1045	652.02	651.98	2.3	2.05	2.1	187	97	93	13	53
	3	72	1049	655.23	655.13	2.5	2.23	2.2	187	99	94	13	54
	2	76	1053	657.10	657.02	0.85	0.76	0.76	185	100	95	8	54
	1	80	1057	657.81	657.81	0.12	0.10	0.10	184	100	95	5	57
1097	E-5	84	1003	661.15	661.07	2.7	2.42	2.4	186	99	96	14	55
	4	88	1007	664.43	664.33	2.6	2.33	2.3	187	100	96	14	53
	3	92	1011	667.84	667.70	2.8	2.51	2.5	187	101	96	15	54
	2	96	1015	670.17	670.30	1.3	1.17	1.2	186	102	97	11	54
	1	100	1019	671.29	671.29	0.30	0.27	0.27	185	103	98	9	56

Remarks and Notes:

Total pressure = -23.9 @ Pt C-3 AP = 1.9

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

Run No. 19 Date 7-18-89 Client/Source Copco
 Project No. 402-02 Sampling Location Baghouse 2c Port Outlet
 Sample Type (Multi-Point) Single-Point Operator Gulch
 Flow Control Device (Valve) Critical Orifice Bag Type Tedlar Sample No. NA
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm M3B Flow Meter Type Rotameter
 M3B Pump No. N-10 M3B Flow Meter No. 1800
 Desired Sampling Rate 300 cc/min
 Leak Check Before Sampling 0 After Sampling 0
 Total Sampling Time 95 min Average Flow Meter Reading 30
 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
0928	3.0	✓				
0929	3.0		✓			
0939	3.0				✓	
0948	3.0			✓		Port Change
0950	3.0	✓				
0951	3.0		✓			
1001	3.0				✓	
1010	3.0			✓		Port Change
1013	3.0	✓				
1014	3.0		✓			
1024	3.0				✓	
1033	3.0			✓		Port Change
1035	3.0	✓				
1036	3.0		✓			
1046	3.0				✓	
1055	3.0			✓		Port Change
1057	3.0	✓				
1058	3.0		✓			
1108	3.0				✓	
1117	3.0			✓		End of Run

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

Run No. 19 Date 07-18-99
 Project No. 4702.02.04.09 Sample No. Train B
 Sampling Location Unit RA Bayhouse Outer Duct
 Analysis Start Time 1250
 Sample Type (Bag, Grab) Bag
 Analyst J. Surman

Orsat Leak Check Before Analysis:

Burette NO Change in 4 MinutesPipettes NO Change in 4 Minutes

Orsat Leak Check After Analysis:

Burette NO Change in 4 MinutesPipettes 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 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	<u>14.6</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.2</u>	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.2</u>	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.2</u>	<u>5.2</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 19 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: 07-17-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 07-18-99 0845

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-6</u>	<u>M17-5</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>36</u>	<u>37</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>8</u>	<u>5</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
		Initial Weights (grams)**	
1st Impinger (Mod-GBS)	100 mLs ASTM Type I Water	<u>620.0</u>	<u>585.9</u>
U-Connector (A)			
2nd Impinger (GBS)	100 mLs ASTM Type I Water	<u>601.0</u>	<u>636.8</u>
U-Connector (B)			
3rd Impinger (Mod-GBS)	Empty	<u>543.5</u>	<u>467.7</u>
U-Connector (C)			
4th Impinger (Mod-GBS)	~200 g indicating silica gel	<u>673.0</u>	<u>684.0</u>
Impinger Outlet Connector	Connector I.D. No.	<u>VH-2</u>	<u>VH-1</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 19 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. Gritton Received By J. Surman Date/Time 07-18-99 1245
Sample recovery person(s): J. Surman Date: 07-18-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>782.9</u>	<u>606.9</u>	<u>545.0</u>	<u>686.4</u>	<u>754.1</u>	<u>641.0</u>	<u>469.2</u>	<u>696.9</u>
Initial Wt.	<u>620.0</u>	<u>601.0</u>	<u>543.5</u>	<u>673.0</u>	<u>585.9</u>	<u>636.8</u>	<u>467.7</u>	<u>684.0</u>
Net Wt.	<u>162.9</u>	<u>105.9</u>	<u>101.5</u>	<u>113.4</u>	<u>168.2</u>	<u>42</u>	<u>1.5</u>	<u>12.9</u>
Total Condensate Collected:	<u>183.7</u>				<u>186.8</u>			
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>
	% Blue				% Blue			

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>19002</u>	<u>19004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>19001</u>	<u>19003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis

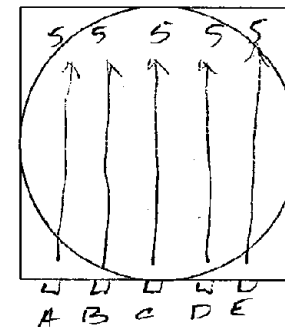
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

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Run No. 20 Date 7-18-99
 Project No. 4702-02
 Client Cogentrix
 Source Baghouse 2a
 Sampling Location Dust Outlet
 Operator Griffin
 Record data every 4 minutes
 Barometer No. 42021
 Barometric Pressure 30.01 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 29.99 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 29.99 in Hg
 Static Pressure 25.2389 in H₂O

Train A No. A1 M17-A
 Probe No. A Length: 10 ft
 Nozzle No. M17-12 Tip Dia. .186 in
 Pitot Tube No. A C_o .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 6
 Filter Assembly No. 38
 Impinger Box No. A-1
 Umbilical/Impinger Hookup U1430
 Umbilical No. N-52-9
 Meter Box No. N-10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.89

Train B No. B1 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-13 Tip Dia. .184 in
 Pitot Tube No. B C_o .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 7
 Filter Assembly No. 39
 Impinger Box No. B-1
 Umbilical/Impinger Hookup U1430
 Umbilical No. N-50-1
 Meter Box No. N-11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.90



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)	1243	1456									1237	1500								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks											
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	
Time (24 Hr)	1241	1454									
Vacuum, in Hg	15	11									
Leak Rate, cfm	.005	.010									
Final Meter Volume											
Initial Meter Volume											
Leak Check Volume											

	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1239	1453								
Vacuum, in Hg	15	13								
Leak Rate, cfm	.002	.002								
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	389.907	618.559
Meter Volume at End of Run	452.197	741.034
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 20
Date 7-18-99

Sampling Location Baghouse 23, Dust Outlet
Project No. 4702-02

page 1 of 1

Operator Giffen

Sampling Data for Method 17 Train A No. A-1

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial <u>389.907</u>	Desired		Desired	Actual		Inlet	Outlet		
1301	C-5	4	1303	392.00	393.00	2.4	2.06	2.1	183	93	93	9	60
	4	8	1307	395.96	396.03	2.2	1.89	1.9	186	94	93	9	62
	3	12	1311	398.71	398.73	1.9	1.63	1.6	186	96	93	8	64
	2	16	1315	400.38	400.51	0.69	0.59	0.59	186	98	94	6	66
	1	20	1319	400.73	400.81	0.03	0.02	0.02	184	98	93	4	68
1343	D-5	24	1325	403.95	403.96	2.6	2.24	2.2	186	96	94	9	67
	4	28	1329	407.13	407.13	2.5	2.16	2.2	184	99	95	9	62
	3	32	1333	409.98	409.96	2.0	1.73	1.7	184	101	95	8	65
	2	36	1337	412.10	412.14	1.1	0.95	0.95	186	103	96	7	66
	1	40	1341	412.95	412.95	0.19	0.15	0.15	186	103	96	5	68
1405	E-5	44	1347	416.32	416.22	2.8	2.42	2.4	186	101	96	10	68
	4	48	1351	419.70	419.50	2.8	2.43	2.4	186	102	97	10	65
	3	52	1355	423.08	422.92	2.8	2.43	2.4	186	105	97	11	66
	2	56	1359	425.40	425.92	1.3	1.13	1.1	186	107	98	8	67
	1	60	1403	426.51	426.50	0.30	0.26	0.26	187	107	99	6	67
1428	A-5	64	1407	429.83	429.85	2.7	2.35	2.4	187	105	99	11	67
	4	68	1411	433.10	433.12	2.6	2.27	2.3	186	106	99	11	65
	3	72	1417	436.05	436.06	2.1	1.84	1.8	185	108	100	10	65
	2	76	1421	438.78	438.79	1.8	1.57	1.6	185	108	100	9	65
	1	80	1425	439.80	439.79	0.25	0.21	0.21	186	110	101	6	67
1430	B-5	84	1429	442.95	442.90	2.4	2.10	2.1	186	108	101	10	69
	4	88	1436	446.18	446.11	2.5	2.19	2.2	186	109	102	11	64
	3	92	1440	449.34	449.25	2.4	2.11	2.1	185	111	102	11	64
	2	96	1444	451.27	451.27	0.88	0.77	0.77	184	112	103	8	66
	1	100	1448	452.14	452.17	0.18	0.15	0.15	185	111	104	6	68

Sampling Data for Method 17 Train B No. B-1

1323	A-5	4	1305	681.78	681.78	2.6	2.27	2.3	186	94	94	11	48
	4	8	1309	685.07	684.92	2.7	2.35	2.4	187	95	94	11	50
	3	12	1313	688.17	687.96	2.4	2.09	2.1	187	95	94	10	55
	2	16	1317	690.94	690.80	1.9	1.66	1.7	186	97	95	10	56
	1	20	1321	692.16	692.14	0.37	0.32	0.32	185	98	95	7	57
1345	B-5	24	1327	695.41	695.33	2.6	2.29	2.3	185	98	96	11	58
	4	28	1331	698.66	698.53	2.6	2.29	2.3	185	99	96	11	56
	3	32	1335	701.44	701.32	1.9	1.67	1.7	185	101	97	10	58
	2	36	1339	703.46	703.49	1.0	0.88	0.88	187	102	97	8	56
	1	40	1343	704.29	704.28	0.17	0.14	0.14	187	102	98	6	60
1407	C-5	44	1349	707.55	707.52	2.6	2.29	2.3	187	102	99	11	58
	4	48	1353	710.55	710.41	2.2	1.94	1.9	186	102	99	10	57
	3	52	1357	713.56	713.34	2.2	1.94	1.9	186	104	99	10	56
	2	56	1401	715.26	715.27	0.70	0.62	0.62	187	105	100	8	57
	1	60	1405	715.66	715.64	0.04	0.03	0.03	187	105	100	5	64
1430	D-5	64	1409	719.00	719.93	2.7	2.39	2.40	187	104	101	12	62
	4	68	1413	722.34	722.31	2.7	2.39	2.4	186	105	101	12	55
	3	72	1417	724.92	724.93	1.6	1.42	1.4	185	107	102	9	56
	2	76	1421	726.80	726.91	0.85	0.75	0.75	186	107	102	8	56
	1	80	1425	727.44	727.53	0.10	0.08	0.08	186	108	103	5	60
1430	E-5	84	1429	730.79	730.86	2.7	2.40	2.4	187	106	103	12	62
	4	88	1433	734.26	734.34	2.9	2.58	2.6	186	107	103	13	55
	3	92	1437	737.30	737.44	2.2	1.96	2.0	185	108	104	11	56
	2	96	1441	739.96	740.03	1.7	1.51	1.5	186	109	104	10	56
	1	100	1445	741.08	741.084	0.30	0.24	0.26	186	110	104	7	59

Remarks and Notes:

Total pressure @ H_{C-2} -23.4 0.70 AP

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

Run No. 20 Date 7-18-99 Client/Source Cogentrix
 Project No. 4702-02 Sampling Location Beghouse 2c, Dust Outlet
 Sample Type (Multi-Point, Single-Point) Operator Griffin
 Flow Control Device (Valve, Critical Orifice) Bag Type Tedlar Sample No. N/A
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm 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 200 Highest 300 Lowest 300
 Estimated Total Sample Volume 29 liters

Time (24-Hr)	Flow Meter Reading	Start Purge	Start Sampling	Stop Sampling	Sampling	Remarks and Notes
1259	3.0	✓				
1300	3.0		✓			
1310	3.0				✓	
1319	3.0			✓		Port Change
1321	3.0	✓				
1322	3.0		✓			
1332	3.0				✓	
1341	3.0			✓		Port Change
1343	3.0	✓				
1344	3.0		✓			
1354	3.0				✓	
1403	3.0			✓		Port Change
1405	3.0	✓				
1406	3.0		✓			
1416	3.0				✓	
1425	3.0			✓		Port Change
1428	3.0	✓				
1429	3.0		✓			
1439	3.0				✓	
1448	3.0			✓		End of Run

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

Run No. 20 Date 07-18-99Project No. 470202.04.09 Sample No. Train ASampling Location Unit 2A Baghouse Outlet DuctAnalysis Start Time 1610Sample Type (Bag, Grab) BagAnalyst J. Surman

Orsat Leak Check Before Analysis:

Burrete No Change in 4 MinutesPipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burrete No Change in 4 MinutesPipettes 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 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	1 <u>14.6</u> 2 <u>14.6</u> 3	<u>14.6</u>	<u>14.6</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.2</u>	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.2</u>	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.2</u>	<u>5.2</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 20 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: 07-18-99

Transfer to Sampler:

Relinquished By D. Griffin Received By J. Surman Date/Time 07-18-99 1130

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No. <u>M17-12</u>	<u>M17-12</u>	<u>M17-13</u>
Filter Assembly and Holder*	Filter Assembly No. <u>38</u>	<u>38</u>	<u>39</u>
Filter Type: Whatman 934-AH	Filter Holder No. <u>6</u>	<u>6</u>	<u>7</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
		Initial Weights (grams)**	
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>588.8</u>	<u>603.8</u>
U-Connector (A)			
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>595.7</u>	<u>592.6</u>
U-Connector (B)			
3rd Impinger (Mod-GBS) Empty		<u>490.3</u>	<u>465.3</u>
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel		<u>672.0</u>	<u>650.1</u>
Impinger Outlet Connector	Connector I.D. No. <u>UH-30</u>	<u>UH-30</u>	<u>UH-32</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 20 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. Gritton Received By J. Surman Date/Time 07-18-99 1515
Sample recovery person(s): J. Surman Date: 07-18-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>786.4</u>	<u>607.9</u>	<u>498.3</u>	<u>683.8</u>	<u>806.4</u>	<u>607.5</u>	<u>467.9</u>	<u>661.8</u>
Initial Wt.	<u>588.8</u>	<u>595.7</u>	<u>496.3</u>	<u>672.0</u>	<u>603.8</u>	<u>592.6</u>	<u>465.3</u>	<u>650.1</u>
Net Wt.	<u>197.6</u>	<u>12.2</u>	<u>2.0</u>	<u>11.8</u>	<u>202.6</u>	<u>9.9</u>	<u>2.6</u>	<u>11.7</u>
Total Condensate Collected:				<u>223.6</u>				<u>226.8</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>10</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>20 002</u>	<u>20 004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>20 001</u>	<u>20 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

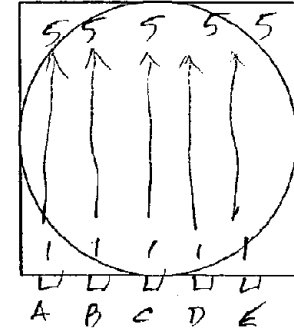
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

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Run No. 21 Date 7-18-99
 Project No. 4702-02
 Client Cogentrix
 Source Baghouse 22
 Sampling Location Duct Outlet
 Operator Griffin
 Record data every 4 minutes
 Barometer No. 42021
 Barometric Pressure 29.97 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 29.94 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 29.94 in Hg
 Static Pressure 25-26.55 in H₂O

Train A No. A-2 M17-A
 Probe No. A Length: 10 ft
 Nozzle No. M17-6 Tip Dia. .184 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158 A
 Filter Holder No. 1
 Filter Assembly No. 40
 Impinger Box No. A-2
 Umbilical/Impinger Hookup UH 2
 Umbilical No. N50-3
 Meter Box No. N-10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.39
 Assumed Moisture 13.2 %

Train B No. B-2 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-5 Tip Dia. .185 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158 B
 Filter Holder No. 2
 Filter Assembly No. 41
 Impinger Box No. B-2
 Umbilical/Impinger Hookup UH-1
 Umbilical No. N50-1
 Meter Box No. N-11
 DGM Correction (Y) 0.983
 Orifice Meter ΔH@ 1.96
 Assumed %CO₂ 14.5 %O₂ 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	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1602	1813								1606	1817								
Pass or Fail		pass									pass								

Train A Sampling System Leak Checks										Train B Sampling System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1600	1811																	
Vacuum, in Hg	15	9																	
Leak Rate, cfm	.004	.004																	
Final Meter Volume																			
Initial Meter Volume																			
Leak Check Volume																			

Train B Sampling System Leak Checks										Train A Sampling System Leak Checks									
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1604	1815																	
Vacuum, in Hg	15	13																	
Leak Rate, cfm	.001	.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	453.291	746.002
Meter Volume at End of Run	513.468	810.070
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 21
Date 7-13-99

Sampling Location Boothouse 2a, Duct Outlet
Project No. 4702-02

Operator GRIFFIN page 1 of 1

Sampling Data for Method 17 Train A No. A-2

Initial Time

Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
			Initial <u>453.291</u>	Desired		Desired	Actual		Inlet	Outlet		
C-5	4	1617	456.74	456.29	2.4	1.99	2.0	185	97	97	7	59
	8	1625	459.26	459.15	2.2	1.82	1.8	185	98	97	7	52
	12	1629	462.05	462.09	2.0	1.66	1.7	184	99	97	7	53
	16	1633	463.73	463.91	0.72	0.60	0.60	184	101	97	5	51
	20	1637	464.12	464.15	0.04	0.03	0.03	184	101	97	4	62
D-5	24	1643	467.31	467.33	2.6	2.16	2.2	184	99	98	8	62
	28	1647	470.30	470.33	2.3	1.91	1.9	187	102	98	8	52
	32	1651	473.37	473.36	2.4	1.99	2.0	186	103	98	8	55
	36	1655	475.13	475.27	0.73	0.65	0.65	184	106	99	5	57
	40	1659	475.90	475.89	0.15	0.12	0.12	185	109	99	4	57
E-5	44	1706	479.15	479.16	2.7	2.25	2.3	184	102	99	9	62
	48	1710	482.41	482.43	2.7	2.25	2.3	186	104	99	9	57
	52	1714	485.79	485.74	2.9	2.42	2.4	187	106	100	9	60
	56	1718	487.97	488.01	1.2	1.00	1.0	186	108	100	6	61
	60	1722	488.91	488.97	0.22	0.18	0.18	186	107	100	5	63
A-5	64	1728	492.22	492.15	2.8	2.33	2.3	186	103	100	9	65
	68	1732	495.48	495.40	2.7	2.25	2.3	185	104	99	9	61
	72	1736	498.50	498.60	2.3	1.92	1.9	186	107	100	8	63
	76	1740	500.86	500.88	1.4	1.17	1.2	186	108	100	7	61
	80	1744	501.79	501.80	0.22	0.18	0.18	184	108	100	5	62
B-5	84	1750	504.93	504.90	0.5	2.08	2.1	186	104	100	9	63
	88	1754	508.00	508.00	2.4	2.00	2.0	185	105	99	9	59
	92	1758	511.09	511.03	2.4	2.01	2.0	185	106	100	9	62
	96	1802	513.02	513.04	0.95	0.79	0.79	186	107	100	7	62
	100	1806	513.47	513.49	0.05	0.04	0.04	186	107	100	4	66

Sampling Data for Method 17 Train B No. <u>B-2</u>												
	0	1619		746.002								
A-5	4	1623	749.42	749.36	2.8	2.52	2.5	186	99	99	11	56
	8	1627	752.34	752.77	2.8	2.52	2.5	185	99	99	11	46
	12	1631	755.87	755.87	2.2	1.99	2.0	184	100	99	11	49
	16	1635	758.69	758.76	1.9	1.71	1.7	185	101	99	10	52
	20	1639	759.61	759.65	0.2	0.18	0.18	186	102	100	4	53
B-5	24	1645	762.91	762.93	2.6	2.35	2.4	187	103	100	11	56
	28	1649	766.16	766.22	2.5	2.26	2.3	186	103	100	11	50
	32	1653	769.34	769.45	2.4	2.17	2.2	185	104	100	11	54
	36	1657	771.23	771.42	0.70	0.81	0.81	185	106	101	7	56
	40	1701	772.06	772.06	0.14	0.12	0.12	186	106	102	4	57
C-5	44	1708	775.38	775.37	2.6	2.36	2.4	186	105	102	12	59
	48	1712	778.43	778.43	2.2	1.99	2.0	186	105	102	11	52
	52	1716	781.49	781.49	2.2	1.99	2.0	187	106	102	11	55
	56	1720	783.19	783.25	0.68	0.61	0.61	186	107	103	7	57
	60	1724	783.65	783.62	0.05	0.04	0.04	185	108	103	7	61
D-5	64	1730	787.04	787.00	2.7	2.45	2.5	186	106	103	12	60
	68	1734	790.49	790.60	2.8	2.54	2.5	186	106	103	13	55
	72	1738	793.25	793.16	1.8	1.63	1.6	186	107	103	10	57
	76	1742	795.16	795.16	0.85	0.77	0.77	186	108	104	8	57
	80	1746	795.81	795.84	0.10	0.09	0.09	185	108	104	5	60
E-5	84	1752	799.27	799.30	2.8	2.55	2.8	186	107	104	13	59
	88	1756	802.60	802.72	2.6	2.37	2.4	186	107	104	13	56
	92	1800	806.00	806.13	2.7	2.46	2.5	186	108	104	13	58
	96	1804	809.00	809.03	2.1	1.91	1.9	186	109	105	11	58
	100	1808	810.07	810.070	0.27	0.24	0.24	186	109	105	6	60

Remarks and Notes:

Total Pressure @ Pt C-3 = -25.0 AP = 2.2

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

Run No. 21 Date 7-18-99 Client/Source Cogentrix
 Project No. 4902-02 Sampling Location Baghouse 2a, Duct outlet
 Sample Type (Multi-Point) Single-Point Operator G. R.
 Flow Control Device (Valve) Critical Orifice Bag Type Tedlar Sample No. NA
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm M3B Flow Meter Type Rotometer
 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
1617	3.0	✓				
1618	3.0		✓			
1628	3.0				✓	
1637	3.0			✓		Port Change
1639	3.0	✓				
1640	3.0		✓			
1650	3.0				✓	
1659	3.0			✓		Port Change
1702	3.0	✓				
1703	3.0		✓			
1713	3.0				✓	
1722	3.0			✓		Port Change
1724	3.0	✓				
1725	3.0		✓			
1735	3.0				✓	
1744	3.0			✓		Port Change
1746	3.0	✓				
1747	3.0		✓			
1757	3.0				✓	
1806	3.0			✓		End of Run

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

Run No. 21 Date _____
 Project No. 4702.02.0409 Sample No. Train A
 Sampling Location Unit 2A Baghouse Outlet Duct
 Analysis Start Time 1815
 Sample Type (Bag, Grab) Bag
 Analyst J. Surman

Orsat Leak Check Before Analysis:
 Burette No Change in 4 Minutes
 Pipettes No Change in 4 Minutes
 Orsat Leak Check After Analysis:
 Burette 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 <u>14.1</u> 2 <u>14.1</u> 3	<u>14.1</u>	1 <u>14.1</u> 2 <u>14.1</u> 3	<u>14.1</u>	1 <u>14.1</u> 2 <u>14.1</u> 3	<u>14.1</u>	<u>14.1</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.5</u> 2 <u>19.5</u> 3	<u>5.4</u>	1 <u>19.5</u> 2 <u>19.5</u> 3	<u>5.4</u>	1 <u>19.5</u> 2 <u>19.5</u> 3	<u>5.4</u>	<u>5.4</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

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

MRI Project No. 4702.02.04.09
Client/Source: U.S. EPA CAQPS EMAD EMC / Cogentrix Unit 2A
Source Location: Rocky Mount, North Carolina
Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Run No. 21 Sampling Train A No. M17-A Impinger Box A No. A-2
Sampling Train B No. M17-B Impinger Box B No. A-2
Set-up person(s): J. Surman Date: 07-18-99
Transfer to Sampler:
Relinquished By J. Surman Received By D. Grittin Date/Time 07-18-99 1435

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-6</u>	<u>M17-5</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>40</u>	<u>41</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>1</u>	<u>2</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
	Initial Weights (grams)**		
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>616.3</u>	<u>581.3</u>
U-Connector (A)			
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>606.9</u>	<u>641.0</u>
U-Connector (B)			
3rd Impinger (Mod-GBS) Empty		<u>543.3</u>	<u>467.7</u>
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel		<u>732.0</u>	<u>706.5</u>
Impinger Outlet Connector	Connector I.D. No.	<u>VH-30A</u>	<u>VH-32A</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 21 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 07-18-99 1845

Sample recovery person(s): J. Surman Date: 07-19-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>786.6</u>	<u>614.9</u>	<u>544.3</u>	<u>748.8</u>	<u>763.1</u>	<u>649.7</u>	<u>469.7</u>	<u>722.5</u>
Initial Wt.	<u>616.3</u>	<u>606.9</u>	<u>543.3</u>	<u>731.0</u>	<u>581.3</u>	<u>641.0</u>	<u>467.7</u>	<u>705.5</u>
Net Wt.	<u>170.3</u>	<u>8.0</u>	<u>1.0</u>	<u>17.8</u>	<u>181.8</u>	<u>8.7</u>	<u>2.0</u>	<u>17.0</u>
Total Condensate Collected:	<u>197.1</u>				<u>209.5</u>			
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>25</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>20</u>
	% Blue				% Blue			

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>21002</u>	<u>21004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>21001</u>	<u>21003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

- * Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

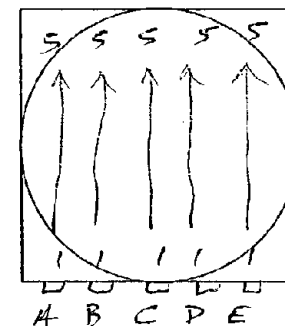
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

page 1 of 1

Run No. 2A Date 7-19-99
 Project No. 4702-02
 Client Cogentrix
 Source Baghouse 2a
 Sampling Location Duct Outlet
 Operator G. Miller
 Record data every 4 minutes
 Barometer No. 42101
 Barometric Pressure 29.98 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 29.95 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 29.95 in Hg
 Static Pressure 14.25-27.01 in H₂O

Train A No. A-1 M17-A
 Probe No. 4 Length: 10 ft
 Nozzle No. M17-12 Tip Dia. .186 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 3
 Filter Assembly No. 42
 Impinger Box No. A-1
 Umbilical/Impinger Hookup U430
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.39

Train B No. B-1 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-13 Tip Dia. .184 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 4
 Filter Assembly No. 43
 Impinger Box No. B-1
 Umbilical/Impinger Hookup U43
 Umbilical No. N50-1
 Meter Box No. N11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.96



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)	0844	1059									0848	1057								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks										
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	0842	1091								
Vacuum, in Hg	15	12								
Leak Rate, cfm	.005	.008								
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)	0846	1056								
Vacuum, in Hg	15	13								
Leak Rate, cfm	.002	.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	515.155	810.696
Meter Volume at End of Run	576.121	871.746
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 22
Date 7-19-99

Sampling Location Reshouse 2a Dust Outlet
Project No. 4702-02

Operator G. A. ... page 1 of 1

Sampling Data for Method 17 Train A No. A-1

Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
			Initial <u>515.155</u>	Desired		Desired	Actual		Inlet	Outlet		
C-5	4	0902	518.23	518.19	2.5	2.08	2.1	181	82	82	9	63
	8	0906	521.12	521.09	2.2	1.82	1.8	186	83	82	9	54
	3	0910	523.87	523.88	2.0	1.66	1.7	185	85	83	9	56
	2	0914	525.54	525.62	0.73	0.61	0.61	184	87	83	7	53
	1	0918	525.98	526.02	0.05	0.04	0.04	183	87	84	5	61
D-5	24	0924	529.07	529.01	2.5	2.09	2.1	182	86	84	10	64
	4	0928	532.29	532.22	2.7	2.25	2.3	185	88	84	10	54
	3	0932	535.27	535.22	2.3	1.93	1.9	185	91	85	10	56
	2	0936	537.00	537.02	0.78	0.65	0.65	184	92	86	7	60
	1	0940	537.63	537.66	0.10	0.09	0.08	185	92	86	5	64
E-5	44	0948	540.97	540.91	2.9	2.43	2.4	185	91	86	11	62
	4	0950	544.93	544.17	2.9	2.44	2.4	185	93	87	11	55
	3	0954	547.97	547.41	2.7	2.28	2.3	184	94	87	11	59
	2	0958	550.23	550.22	1.8	1.52	1.5	184	96	88	10	61
	1	1002	551.11	551.11	0.20	0.16	0.16	185	98	89	5	64
A-5	64	1009	554.36	554.73	2.7	2.28	2.3	184	94	89	11	65
	4	1013	557.50	557.45	2.5	2.12	2.1	184	96	90	11	59
	3	1017	560.51	560.53	2.3	1.95	2.0	184	97	90	11	62
	2	1021	562.77	562.83	1.3	1.10	1.1	185	98	90	9	64
	1	1025	563.82	563.87	0.28	0.23	0.23	185	97	91	6	64
B-5	84	1031	567.02	567.02	2.6	2.20	2.2	184	94	91	12	66
	4	1035	570.03	570.06	2.3	1.95	2.0	184	97	91	11	61
	3	1039	572.70	572.76	1.8	1.53	1.5	184	100	92	10	63
	2	1043	574.49	574.53	0.80	0.68	0.68	185	101	93	8	64
	1	1047	575.12	575.12	0.10	0.08	0.08	184	100	93	5	65

Sampling Data for Method 17 Train B No. B-1

A-5	4	0900	810.696	810.696	2.7	2.28	2.3	182	82	82	11	63
	8	0908	817.03	817.08	2.6	2.19	2.2	186	82	82	10	52
	3	0912	820.11	820.14	2.5	2.10	2.1	186	83	82	10	55
	2	0916	822.41	822.43	1.4	1.18	1.2	184	84	82	8	57
	1	0920	823.48	823.54	0.90	0.25	0.25	183	85	83	6	58
B-5	24	0926	826.70	826.75	2.7	2.29	2.3	184	86	84	11	59
	4	0930	829.67	829.71	2.7	1.95	2.0	185	87	84	10	54
	3	0934	832.51	832.55	2.1	1.78	1.8	185	88	84	10	57
	2	0938	834.33	834.49	0.86	0.73	0.73	184	90	85	8	58
	1	0942	834.89	835.04	0.08	0.06	0.06	185	91	86	5	63
C-5	44	0948	838.06	838.20	2.6	2.21	2.2	185	90	87	11	59
	4	0952	841.05	841.12	2.3	1.96	2.0	185	91	87	11	56
	3	0956	843.84	843.93	2.0	1.71	1.7	184	93	88	11	53
	2	1000	845.58	845.74	0.77	0.66	0.66	185	94	89	8	59
	1	1004	845.97	846.13	0.04	0.03	0.03	185	95	90	5	64
D-5	64	1011	849.17	849.29	2.6	2.23	2.2	185	93	90	12	60
	4	1015	852.30	852.43	2.5	2.15	2.2	185	94	91	12	57
	3	1019	855.31	855.44	2.3	1.98	2.0	185	96	91	12	59
	2	1023	857.15	857.21	0.86	0.74	0.74	186	97	92	8	59
	1	1027	858.04	858.06	0.20	0.17	0.17	186	97	92	6	65
E-5	84	1033	861.37	861.37	2.8	2.41	2.4	185	96	93	13	63
	4	1037	864.70	864.67	2.8	2.41	2.4	185	97	93	13	60
	3	1041	867.92	867.90	2.6	2.24	2.2	186	98	94	13	61
	2	1045	870.67	870.67	1.9	1.64	1.6	186	100	94	11	62
	1	1049	871.77	871.746	0.30	0.26	0.26	186	101	95	6	62

Remarks and Notes:

Total pressure from pt. C-3 = -25.6 AP = 2.0

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

Run No. 22 Date 7-19-99 Client/Source Cogentrix
Project No. 4702-02 Sampling Location Baghouse 2a Dust Outlet
Sample Type (Multi-Point) Single-Point Operator Gutfr
Flow Control Device (Valve, Critical Orifice) Bag Type Filter Sample No. _____
Method 5 Meter Box No. N-10 Method 3B Train No. N/A
M3B Pump Type Displacement M3B Flow Meter Type Rotameter
M3B Pump No. N-10 M3B Flow Meter No. 6300
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 95 liters

[illegible]

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

Run No. 22 Date 07-19-99Project No. 4702-0204-09 Sample No. Train ASampling Location Unit 2A Baghouse Outlet DuctAnalysis Start Time 1115Sample Type (Bag, Grab) BagAnalyst J. Surman

Orsat Leak Check Before Analysis:

Burette No Change in 4 MinutesPipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burette No Change in 4 MinutesPipettes 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 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	1 <u>14.7</u> 2 <u>14.7</u> 3	<u>14.7</u>	1 <u>14.7</u> 2 <u>14.7</u> 3	<u>14.7</u>	<u>14.7</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.0</u>	1 <u>19.7</u> 2 <u>19.7</u> 3	<u>5.0</u>	1 <u>19.7</u> 2 <u>19.7</u> 3	<u>5.0</u>	<u>5.0</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ >4% 0.3% v/v O₂ ≥15% 0.2% v/v CO 0.3% v/v
 ≤4% 0.2% v/v <15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 22 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: 07-18-99

Transfer to Sampler:
Relinquished By J. Surman Received By D. Griffin Date/Time 07-19-99 0800

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-12</u>	<u>M17-13</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>42</u>	<u>43</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>3</u>	<u>4</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
		Initial Weights (grams)**	
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>592.3</u>	<u>595.2</u>
U-Connector (A)		<u>586.8</u>	<u>583.2</u>
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>496.6</u>	<u>465.6</u>
U-Connector (B)		<u>720.6</u>	<u>686.9</u>
3rd Impinger (Mod-GBS) Empty			
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel			
Impinger Outlet Connector	Connector I.D. No.	<u>UH-30</u>	<u>UH-32</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 22 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 07-19-99 1110
Sample recovery person(s): J. Surman Date: 07-19-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>763.1</u>	<u>592.4</u>	<u>498.9</u>	<u>735.4</u>	<u>763.9</u>	<u>591.2</u>	<u>468.2</u>	<u>702.9</u>
Initial Wt.	<u>592.3</u>	<u>586.8</u>	<u>496.6</u>	<u>720.6</u>	<u>595.2</u>	<u>583.2</u>	<u>465.6</u>	<u>686.9</u>
Net Wt.	<u>170.8</u>	<u>516</u>	<u>2.3</u>	<u>14.8</u>	<u>168.7</u>	<u>8.0</u>	<u>2.6</u>	<u>16.0</u>
Total Condensate Collected:	<u>193.5</u>				<u>195.3</u>			
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>25</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>20</u>
	% Blue				% Blue			

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>22 002</u>	<u>22 004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>22 001</u>	<u>22 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker rinses for analysis

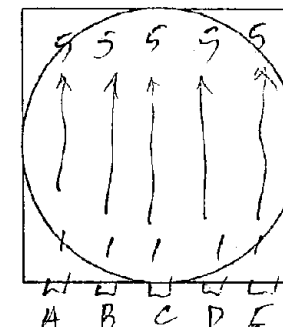
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

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Run No. 23 Date 7-19-99
 Project No. 4702-02
 Client Cogentrix
 Source Baghouse 2a
 Sampling Location Duct Outlet
 Operator Griplin
 Record data every 4 minutes
 Barometer No. 72101
 Barometric Pressure 29.97 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 29.94 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 29.94 in Hg
 Static Pressure 22.5-24.27 in H₂O

Train A No. A-2 M17-A
 Probe No. A Length: 10 ft
 Nozzle No. M17-6 Tip Dia. .184 in
 Pitot Tube No. A C_p .94
 Stack Thermocouple No. 3158-A
 Filter Holder No. 8
 Filter Assembly No. 44
 Impinger Box No. A-2
 Umbilical/Impinger Hookup UH2
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.89

Train B No. B-2 M17-B
 Probe No. B Length: 10 ft
 Nozzle No. M17-9 Tip Dia. .185 in
 Pitot Tube No. B C_p .94
 Stack Thermocouple No. 3158-B
 Filter Holder No. 5
 Filter Assembly No. 45
 Impinger Box No. B-2
 Umbilical/Impinger Hookup UH1
 Umbilical No. N501
 Meter Box No. N11
 DGM Correction (Y) 0.988
 Orifice Meter ΔH@ 1.96



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		
Time (24 Hr)	1120	1346									1124	1348								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks										
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Time (24 Hr)	1113	1342								
Vacuum, in Hg	15	11								
Leak Rate, cfm	.005	.009								
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)	1122	1344								
Vacuum, in Hg	15	14								
Leak Rate, cfm	.000	.000								
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	579.664	872.285
Meter Volume at End of Run	644.533	932.231
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 23
Date 7-19-97

Sampling Location Bighouse 23, Duct Cat 1
Project No. 4702-02

Operator G. R. R. page 1 of 1

Sampling Data for Method 17 Train A No. A-2

Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
			Initial <u>575.666</u>	Desired	Actual	Desired	Actual		Inlet	Outlet		
1212	C-5	4	1150	578.93	578.99	2.8	2.30	2.3	184	92	8	61
	4	8	1154	581.69	581.77	2.0	1.64	1.6	185	93	7	49
	3	12	1202	584.32	584.38	1.8	1.43	1.5	185	95	11	50
	2	16	1206	585.94	586.00	0.68	0.56	0.56	134	97	5	52
	1	20	1210	586.38	586.49	0.05	0.04	0.04	184	97	4	54
1235	D-5	24	1216	589.54	589.74	2.6	2.15	2.2	184	97	8	56
	4	28	1220	592.53	592.68	2.3	1.90	1.9	185	99	7	50
	3	32	1224	595.39	595.39	2.1	1.74	1.7	185	101	7	51
	2	36	1228	597.15	597.15	0.80	0.66	0.66	186	102	5	55
	1	40	1232	597.59	597.62	0.05	0.04	0.04	185	101	4	57
1257	E-5	44	1238	600.70	600.70	2.5	2.07	2.1	185	99	8	61
	4	48	1243	603.76	603.76	2.4	1.99	2.0	184	100	8	52
	3	52	1247	606.95	606.93	2.6	2.16	2.2	185	103	8	54
	2	56	1251	609.53	609.48	1.7	1.41	1.4	186	105	7	57
	1	60	1255	610.62	610.61	0.30	0.25	0.25	185	105	5	59
1319	A-5	64	1301	613.69	613.64	2.4	2.00	2.0	185	103	8	61
	4	68	1305	616.69	616.63	2.3	1.91	1.9	186	104	8	52
	3	72	1309	619.70	619.62	2.3	1.92	1.9	186	105	8	58
	2	76	1313	621.96	621.93	1.3	1.08	1.1	185	105	7	60
	1	80	1317	622.89	622.87	0.22	0.18	0.18	185	105	4	63
	B-5	84	1323	625.97	625.88	2.4	2.00	2.0	185	104	8	63
	4	88	1327	628.91	628.88	2.2	1.83	1.8	186	104	8	59
	3	92	1331	631.86	631.85	2.2	1.84	1.8	186	106	8	61
	2	96	1335	633.64	633.68	0.80	0.67	0.67	184	108	6	63
	1	100	1339	634.41	634.539	0.15	0.12	0.12	183	107	4	64

Sampling Data for Method 17 Train B No. B2

1214	A-5	4	1152	875.60	875.54	2.6	2.32	2.3	185	94	93	12	61
	A 4	8	1200	878.68	878.68	2.4	2.14	2.1	185	94	93	11	47
	A 3	12	1204	881.75	881.79	2.3	2.05	2.1	185	95	93	11	49
	A 2	16	1208	884.15	884.34	1.4	1.25	1.3	185	96	94	10	52
	A 1	20	1212	885.19	885.38	0.26	0.23	0.23	185	98	94	5	53
1259	B-5	24	1218	888.34	888.54	2.4	2.15	2.2	185	98	95	11	66
	B-4	28	1222	891.29	891.41	2.1	1.89	1.9	185	99	96	10	57
	B 3	32	1226	894.03	894.01	1.8	1.62	1.6	185	100	96	9	53
	B 2	36	1230	895.38	895.92	0.82	0.73	0.73	186	101	97	7	55
	B 1	40	1234	896.34	896.40	0.05	0.04	0.04	185	102	97	5	52
1321	C-5	44	1240	899.57	899.61	2.5	2.25	2.3	186	101	98	12	61
	C-4	48	1244	902.53	902.63	2.1	1.89	1.9	185	101	98	12	52
	C 3	52	1248	905.28	905.41	1.8	1.62	1.6	185	103	98	11	57
	C 2	56	1252	906.89	906.95	0.62	0.56	0.56	186	104	100	7	58
	C 1	60	1257	907.31	907.36	0.04	0.03	0.03	185	104	100	4	59
	D-5	64	1303	910.48	910.54	2.4	2.17	2.2	185	103	100	12	64
	D-4	68	1307	913.38	913.47	2.0	1.80	1.8	187	103	100	11	56
	D 3	72	1311	916.43	916.49	2.2	1.99	2.0	186	105	101	12	59
	D 2	76	1315	918.19	918.25	0.73	0.66	0.66	186	106	102	7	60
	D 1	80	1319	918.74	918.79	0.07	0.06	0.06	185	106	102	5	61
	E-5	84	1325	921.99	922.04	2.5	2.27	2.3	185	105	102	13	63
	E-4	88	1329	925.18	925.26	2.4	2.18	2.2	186	105	102	13	57
	E 3	92	1333	928.51	928.56	2.6	2.36	2.4	186	107	103	14	60
	E 2	96	1337	931.28	931.28	1.8	1.64	1.6	185	108	103	11	62
	E 1	100	1341	932.23	932.231	0.21	0.19	0.19	184	109	104	5	62

Remarks and Notes:

Table pressure @ Pt C-3 -23.0 AP=1.8

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

Run No. 23 Date 7-17-99 Client/Source Cogentrix
Project No. 4762-02 Sampling Location Big House 22, Duct #1
Sample Type (Multi-Point, Single-Point) Operator Giffin
Flow Control Device (Valve, Critical Orifice) Bag Type Tedlar Sample No. _____
Method 5 Meter Box No. N-10 Method 3B Train No. NA
M3B Pump Type Dizphor M3B Flow Meter Type Robinson
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 30
Flow Rate, cc/min: Average 300 Highest 300 Lowest 300
Estimated Total Sample Volume 28 liters

[illegible]

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

Run No. 23 Date 07-29-99
 Project No. 4702.02.04.09 Sample No. Train A
 Sampling Location Unit 2A Baghouse Outlet Duct
 Analysis Start Time 1420
 Sample Type (Bag, Grab) Bag
 Analyst J. Surman

Orsat Leak Check Before Analysis:
 Burette NO Change in 4 Minutes
 Pipettes NO Change in 4 Minutes
 Orsat Leak Check After Analysis:
 Burette 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 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	1 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	1 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	<u>14.8</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.0</u>	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.0</u>	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.0</u>	<u>5.0</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ > 4% 0.3% v/v O₂ ≥ 15% 0.2% v/v CO 0.3% v/v
 ≤ 4% 0.2% v/v < 15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 23 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: 07-19-99
Transfer to Sampler: _____
Relinquished By: J. Surman Received By: D. Gritton Date/Time 07-19-99 1110

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-6</u>	<u>M17-5</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>44</u>	<u>45</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>8</u>	<u>5</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
		Initial Weights (grams)**	
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>622.1</u>	<u>601.3</u>
U-Connector (A)		<u>589.6</u>	<u>649.7</u>
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>543.1</u>	<u>467.6</u>
U-Connector (B)		<u>719.8</u>	<u>713.4</u>
3rd Impinger (Mod-GBS) Empty			
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel			
Impinger Outlet Connector	Connector I.D. No.	<u>VH-2</u>	<u>VH-1</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 23 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 07-19-99 1410

Sample recovery person(s): J. Surman Date: 07-19-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>776.5</u>	<u>595.9</u>	<u>544.6</u>	<u>735.5</u>	<u>1228.84</u>	<u>655.4</u>	<u>468.9</u>	<u>728.8</u>
Initial Wt.	<u>622.1</u>	<u>589.6</u>	<u>543.1</u>	<u>719.8</u>	<u>601.3</u>	<u>649.7</u>	<u>467.6</u>	<u>713.4</u>
Net Wt.	<u>154.4</u>	<u>6.3</u>	<u>1.5</u>	<u>15.7</u>	<u>163.4</u>	<u>5.7</u>	<u>1.3</u>	<u>15.4</u>
Total Condensate Collected:				<u>177.9</u>				<u>185.8</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>25</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>25</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>23 002</u>	<u>23 004</u>
PM Description/color:	<u>b)2C1C</u>	<u>b)2C1C</u>
TRAIN RINSES:		
Sample Number:	<u>23 001</u>	<u>23 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

* Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

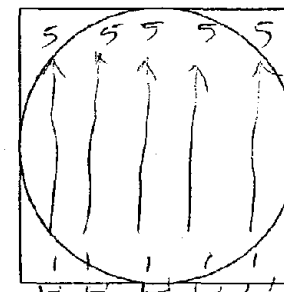
FIELD SAMPLING DATA FOR METHOD 17 TRAINS

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Run No. 24 Date 7-19-99
 Project No. 4702-02
 Client Cogentrix
 Source Boysen 22
 Sampling Location Duct Outlet
 Operator Griff
 Record data every 4 minutes
 Barometer No. 72101
 Barometric Pressure 29.91 in Hg
 Elevation to Meter Boxes 34 ft
 Meter Box P_{bar} 29.88 in Hg
 Elevation to Sampling Loc. 34 ft
 Sampling Location P_{bar} 29.88 in Hg
 Static Pressure -25.88 in H₂O

Train A No. A-1 M17-20
 Probe No. A Length: 10 ft
 Nozzle No. M17-12 Tip Dia. .186 in
 Pitot Tube No. A C_p .84
 Stack Thermocouple No. 3158-A
 Filter Holder No. 6
 Filter Assembly No. 46
 Impinger Box No. A-1
 Umbilical/Impinger Hookup U430
 Umbilical No. N50-3
 Meter Box No. N10
 DGM Correction (Y) 1.011
 Orifice Meter ΔH@ 1.89

Train B No. B-1 M17-23
 Probe No. B Length: 10 ft
 Nozzle No. M17-13 Tip Dia. .184 in
 Pitot Tube No. B C_p .84
 Stack Thermocouple No. 3158-B
 Filter Holder No. 7
 Filter Assembly No. 47
 Impinger Box No. B-1
 Umbilical/Impinger Hookup U432
 Umbilical No. N50-1
 Meter Box No. N11
 DGM Correction (Y) 0.938
 Orifice Meter ΔH@ 1.96



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)	1412	1705									1416	1707								
Pass or Fail		pass										pass								

Train A Sampling System Leak Checks											
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	
Time (24 Hr)	1410	1701									
Vacuum, in Hg	15	12									
Leak Rate, cfm	.009	.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)	1414	1703									
Vacuum, in Hg	15	16									
Leak Rate, cfm	.004	.004									
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	637.184	932.737
Meter Volume at End of Run	697.063	993.985
Total Leak Check Volume	0	0
Adjusted Final Volume		

Run No. 24
Date 7-19-99

Sampling Location Baghouse 2a, Dust Outlet
Project No. 442,02

Operator G. R. page 1 of 1

Sampling Data for Method 17 Train A No. A-1

Initial Time	Traverse Point	Sampling Time, min.	Clock Time (24-Hr)	Dry Gas Meter Reading (V _m), ft ³		Velocity Head (Δp), in. H ₂ O	Orifice Pressure Differential (ΔH), in. H ₂ O		Stack Temp. (t _s), °F	Dry Gas Meter Temperature (t _m), °F		Pump Vacuum, in. Hg	Silica Gel Impinger Outlet Temp., °F
				Initial	Desired		Desired	Actual		Inlet	Outlet		
				652.184									
	C-5	4	1513	640.30	640.30	2.4	2.06	2.1	185	101	101	9	63
	4	8	1517	643.36	643.38	2.3	1.97	2.0	185	102	101	9	57
	3	12	1521	646.21	646.16	2.0	1.72	1.7	185	103	101	8	57
	2	16	1525	647.89	647.95	0.70	0.60	0.60	185	104	101	6	60
1531	1	20	1529	648.30	648.39	0.04	0.03	0.03	185	103	101	5	63
	D-5	24	1535	651.41	651.49	2.4	2.06	2.1	185	101	100	9	65
	4	28	1539	654.33	654.02	2.1	1.80	1.8	185	103	100	8	58
	3	32	1543	657.25	656.94	2.1	1.80	1.8	185	104	101	10	61
	2	36	1547	659.00	659.07	0.75	0.64	0.64	185	105	101	8	60
	1	40	1551	659.47	659.58	0.08	0.06	0.06	185	106	101	5	63
1553	E-5	44	1557	662.95	662.88	2.8	2.40	2.4	185	103	101	11	65
	4	48	1601	666.08	666.02	2.4	2.06	2.1	187	107	101	11	59
	3	52	1605	669.27	669.18	2.5	2.15	2.2	187	107	101	11	62
	2	56	1609	671.75	671.76	1.5	1.29	1.3	187	109	102	9	58
	1	60	1613	672.86	672.88	0.30	0.25	0.25	186	108	102	5	60
1616	A-5	64	1620	676.12	676.03	2.6	2.24	2.2	186	106	102	11	61
	4	68	1624	679.25	679.16	2.4	2.07	2.1	186	107	102	11	57
	3	72	1628	682.33	682.26	2.3	1.98	2.0	186	109	102	12	60
	2	76	1632	684.73	684.65	1.4	1.21	1.2	186	110	102	9	61
	1	80	1636	685.76	685.73	0.26	0.22	0.22	184	109	103	6	62
1638	B-5	84	1642	688.97	688.91	2.5	2.16	2.2	184	107	102	12	63
	4	88	1646	691.91	691.88	2.1	1.82	1.8	184	108	103	11	58
	3	92	1650	694.78	694.72	2.0	1.74	1.7	183	110	103	11	61
	2	96	1654	696.52	696.52	0.73	0.63	0.63	183	110	103	8	61
	1	100	1658	697.06	697.063	0.07	0.06	0.06	184	109	103	6	63

Sampling Data for Method 17 Train B No. B-1

				932.737									
	H-5	4	1515	936.03	936.02	2.7	2.34	2.3	185	99	98	11	61
	4	8	1519	939.27	939.29	2.6	2.26	2.3	185	99	99	11	48
	3	12	1523	942.11	942.16	2.0	1.74	1.7	185	100	99	10	48
	2	16	1527	944.41	944.43	1.3	1.13	1.1	185	101	99	9	51
	1	20	1531	945.41	945.40	0.25	0.21	0.21	185	102	100	6	52
1643	I-5	24	1539	948.66	948.66	2.6	2.27	2.3	185	102	100	12	58
	4	28	1541	951.85	951.91	2.5	2.18	2.2	185	103	100	12	50
	3	32	1545	954.56	954.72	1.8	1.57	1.6	185	104	101	11	53
	2	36	1549	956.39	956.47	0.32	0.27	0.27	185	105	101	8	54
	1	40	1553	957.09	957.09	0.12	0.10	0.10	185	106	102	6	54
1555	C-5	44	1559	960.29	960.28	2.5	2.18	2.2	187	105	102	12	57
	4	48	1603	963.22	963.25	2.4	1.83	1.8	187	105	102	12	52
	3	52	1607	966.01	966.05	1.9	1.66	1.7	186	107	103	12	54
	2	56	1611	967.75	967.86	0.73	0.64	0.64	186	108	103	9	56
	1	60	1615	968.32	968.39	0.08	0.07	0.07	185	108	104	6	56
1618	D-5	64	1622	971.53	971.56	2.5	2.19	2.2	186	107	104	13	61
	4	68	1626	974.74	974.78	2.5	2.19	2.2	186	107	104	14	54
	3	72	1630	977.96	977.98	2.5	2.20	2.2	186	109	105	14	58
	2	76	1634	979.94	980.03	0.95	0.83	0.83	186	110	105	10	59
	1	80	1638	980.40	980.42	0.05	0.04	0.04	185	110	105	8	59
1640	E-5	84	1644	983.74	983.76	2.7	2.38	2.4	189	108	105	15	63
	4	88	1648	987.09	987.14	2.7	2.38	2.4	184	108	105	16	59
	3	92	1652	990.32	990.39	2.5	2.21	2.2	183	110	106	15	60
	2	96	1656	992.92	992.91	1.6	1.41	1.4	184	111	106	12	62
	1	100	1700	993.98	993.985	0.28	0.24	0.24	186	111	107	8	61

Remarks and Notes:

Total pressure from Pt C-3 = -24.4, ΔP = 2.1

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

Run No. 24 Date 7-19-99 Client/Source Cogentrix
 Project No. 4702-02 Sampling Location Baghouse 2a, Dust Outlet
 Sample Type (Multi-Point, Single-Point) Operator G. R.
 Flow Control Device (Valve Critical Orifice) Bag Type Tedlar Sample No. NA
 Method 5 Meter Box No. N-10 Method 3B Train No. NA
 M3B Pump Type Diaphragm M3B Flow Meter Type Rotonet
 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
1509	3.0	✓				
1510	3.0		✓			
1520	3.0				✓	
1529	3.0			✓		Port Change
1531	3.0	✓				
1532	3.0		✓			
1542	3.0				✓	
1551	3.0			✓		Port Change
1553	3.0	✓				
1554	3.0		✓			
1604	3.0				✓	
1613	3.0			✓		Port Change
1616	3.0	✓				
1617	3.0		✓			
1627	3.0				✓	
1634	3.0			✓		Port Change
1638	3.0	✓				
1639	3.0		✓			
1649	3.0				✓	
1658	3.0			✓		End of Run

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

Run No. 24 Date 07-19-99
 Project No. 4702.02.04.09 Sample No. Train A
 Sampling Location Unit 2A Bayshore Outlet Duct
 Analysis Start Time 1710
 Sample Type (Bag, Grab) Bag
 Analyst J. Surman

Orsat Leak Check Before Analysis:

Burette No Change in 4 MinutesPipettes No Change in 4 Minutes

Orsat Leak Check After Analysis:

Burette No Change in 4 MinutesPipettes 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 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	1 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	1 <u>14.8</u> 2 <u>14.8</u> 3	<u>14.8</u>	<u>14.8</u>
O ₂ (Net is actual reading minus actual CO ₂ reading)	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.0</u>	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.0</u>	1 <u>19.8</u> 2 <u>19.8</u> 3	<u>5.0</u>	<u>5.0</u>
CO (Net is actual reading minus actual O ₂ reading)	1 2 3		1 2 3		1 2 3		

Acceptance Criteria per Method 3B

CO₂ > 4% 0.3% v/v O₂ ≥ 15% 0.2% v/v CO 0.3% v/v
 ≤ 4% 0.2% v/v < 15% 0.3% v/v

Remarks and Notes:

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

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

Run No. 24 Sampling Train A No. M17-B Impinger Box A No. A-1
Sampling Train B No. M17-B Impinger Box B No. B-1
Set-up person(s): J. Sarman Date: 07-19-99
Transfer to Sampler:
Relinquished By J. Sarman Received By D. Griffin Date/Time 07-19-99 1320

TRAIN COMPONENT	REAGENT	LOADING DATA	
		TRAIN A	TRAIN B
Sampling Nozzle (Quartz)*	Nozzle I.D. No.	<u>M17-212</u>	<u>M17-213</u>
Filter Assembly and Holder*	Filter Assembly No.	<u>46</u>	<u>47</u>
Filter Type: Whatman 934-AH	Filter Holder No.	<u>6</u>	<u>7</u>
Probe (316 SS)			
Sample Transfer/Vacuum Line			
Male 1st Impinger Inlet Blank-Off			
		Initial Weights (grams)**	
1st Impinger (Mod-GBS) 100 mLs ASTM Type I Water		<u>571.9</u>	<u>595.8</u>
U-Connector (A)			
2nd Impinger (GBS) 100 mLs ASTM Type I Water		<u>592.4</u>	<u>591.2</u>
U-Connector (B)			
3rd Impinger (Mod-GBS) Empty		<u>496.6</u>	<u>466.1</u>
U-Connector (C)			
4th Impinger (Mod-GBS) ~200 g indicating silica gel		<u>710.5</u>	<u>707.5</u>
Impinger Outlet Connector	Connector I.D. No.	<u>UH-30</u>	<u>UH-32</u>

* 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 placed in Ziploc® bag. 1st impinger inlet sealed with glass blank-off.

** Initial weights of additional components exchanged during the run also entered here.

Component Changes After Set-up And Before Recovery And Other Comments:

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

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

Run No. 24 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 07-19-99 1724
Sample recovery person(s): J. Surman Date: 07-19-99

Weights below are in grams.

BACK HALF RECOVERIES

	TRAIN A				TRAIN B			
Impinger:	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Wt.	<u>739.9</u>	<u>602.0</u>	<u>498.7</u>	<u>726.2</u>	<u>765.4</u>	<u>602.6</u>	<u>468.5</u>	<u>723.3</u>
Initial Wt.	<u>571.9</u>	<u>592.4</u>	<u>496.6</u>	<u>710.5</u>	<u>595.8</u>	<u>591.2</u>	<u>466.1</u>	<u>707.5</u>
Net Wt.	<u>168.0</u>	<u>9.6</u>	<u>2.1</u>	<u>15.7</u>	<u>169.6</u>	<u>11.4</u>	<u>2.4</u>	<u>15.8</u>
Total Condensate Collected:				<u>195.4</u>				<u>199.2</u>
Description and/or color:	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>20</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>20</u>
				% Blue				% Blue

FRONT HALF RECOVERIES

	TRAIN A	TRAIN B
FILTER ASSEMBLY:		
Sample Number:	<u>24002</u>	<u>24 004</u>
PM Description/color:	<u>black</u>	<u>black</u>
TRAIN RINSES:		
Sample Number:	<u>24001</u>	<u>24 003</u>
Sample Bottle Tare Wt.	<u>NA</u>	<u>NA</u>
Components Rinsed*: nozzle, filter holder front		
Sample Bottle Gross Wt.		with Acetone Rinses
Net Acetone Sample Wt.		
Sample Bottle Final Wt.	<u>NA</u>	<u>NA</u> with added Water Rinses
Net Water Sample Wt.	<u>NA</u>	<u>NA</u>

- * Acetone rinses with brushing 3 times or more until perceivably clean. If any residue remains in a component, follow with ASTM Type I water rinses with brushing until perceivably clean. Do not add any water rinses to the sample bottle until after the bottle is weighed with all of the acetone rinses.

COMMENTS: Rinses transferred directly to beaker liners for analysis.

ICal Appendix D

M17 Field Laboratory Particulate Weight Data

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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. 9A Assembly No. 16 Sample No. 9002

Gross Wt.	Date	Time	Comments:
<u>3.3470</u>	<u>07-14-99</u>	<u>1730</u>	
<u>3.3469</u>	<u>07-15-99</u>	<u>0800</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3470</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3036</u>

Run No. 9B Assembly No. 17 Sample No. 9004

Gross Wt.	Date	Time	Comments:
<u>3.3790</u>	<u>07-14-99</u>	<u>1730</u>	
<u>3.3790</u>	<u>07-15-99</u>	<u>0800</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3790</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3393</u>

Run No. 10A Assembly No. 18 Sample No. 10002

Gross Wt.	Date	Time	Comments:
<u>3.3784</u>	<u>07-15-99</u>	<u>1835</u>	
<u>3.3785</u>	<u>07-16-99</u>	<u>0830</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3785</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3214</u>

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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. 108 Assembly No. 19 Sample No. 10004

Gross Wt.	Date	Time	Comments:
<u>3.3692</u>	<u>07-15-99</u>	<u>1835</u>	
<u>3.3692</u>	<u>07-16-99</u>	<u>0830</u>	
Assembly Gross Weight used for data entry:			<u>3.3692</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3149</u>

Run No. 11A Assembly No. 20 Sample No. 11002

Gross Wt.	Date	Time	Comments:
<u>3.3457</u>	<u>07-15-99</u>	<u>1835</u>	
<u>3.3457</u>	<u>07-16-99</u>	<u>0830</u>	
Assembly Gross Weight used for data entry:			<u>3.3457</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.2909</u>

Run No. 11B Assembly No. 21 Sample No. 11004

Gross Wt.	Date	Time	Comments:
<u>3.4127</u>	<u>07-15-99</u>	<u>1835</u>	
<u>3.4128</u>	<u>07-16-99</u>	<u>0830</u>	
Assembly Gross Weight used for data entry:			<u>3.4128</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3564</u>

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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. 12A Assembly No. 22 Sample No. 12002

Gross Wt.	Date	Time	Comments:
<u>3.3954</u>	<u>07-16-99</u>	<u>0830</u>	
<u>3.3954</u>	<u>07-17-99</u>	<u>0945</u>	
_____	_____	_____	
_____	_____	_____	

Assembly Gross Weight used for data entry: 3.3954

Assembly Tare Weight from Tare Weight Data: 3.3263

Run No. 12B Assembly No. 23 Sample No. 12004

Gross Wt.	Date	Time	Comments:
<u>3.4181</u>	<u>07-16-99</u>	<u>0830</u>	
<u>3.4181</u>	<u>07-17-99</u>	<u>0945</u>	
_____	_____	_____	
_____	_____	_____	

Assembly Gross Weight used for data entry: 3.4181

Assembly Tare Weight from Tare Weight Data: 3.3451

Run No. 13A Assembly No. 24 Sample No. 13002

Gross Wt.	Date	Time	Comments:
<u>3.3016</u>	<u>07-17-99</u>	<u>0945</u>	
<u>3.3015</u>	<u>07-18-99</u>	<u>1100</u>	
_____	_____	_____	
_____	_____	_____	

Assembly Gross Weight used for data entry: 3.3016

Assembly Tare Weight from Tare Weight Data: 3.2780

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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. 138 Assembly No. 25 Sample No. 13004

Gross Wt.	Date	Time	Comments:
<u>3.2835</u>	<u>07-17-99</u>	<u>0945</u>	
<u>3.2835</u>	<u>07-18-99</u>	<u>1100</u>	
Assembly Gross Weight used for data entry: <u>3.2835</u>			
Assembly Tare Weight from Tare Weight Data: <u>3.2596</u>			

Run No. 14A Assembly No. 26 Sample No. 14002

Gross Wt.	Date	Time	Comments:
<u>3.3091</u>	<u>07-17-99</u>	<u>0945</u>	
<u>3.3091</u>	<u>07-18-99</u>	<u>1100</u>	
Assembly Gross Weight used for data entry: <u>3.3091</u>			
Assembly Tare Weight from Tare Weight Data: <u>3.2797</u>			

Run No. 14B Assembly No. 27 Sample No. 14004

Gross Wt.	Date	Time	Comments:
<u>3.3506</u>	<u>07-17-99</u>	<u>0945</u>	
<u>3.3505</u>	<u>07-18-99</u>	<u>1100</u>	
Assembly Gross Weight used for data entry: <u>3.3506</u>			
Assembly Tare Weight from Tare Weight Data: <u>3.3197</u>			

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: JS

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. 15B Assembly No. 28 Sample No. 15002

Gross Wt.	Date	Time	Comments:
<u>3.4018</u>	<u>07-17-99</u>	<u>0945</u>	
<u>3.4018</u>	<u>07-18-99</u>	<u>1100</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.4018</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3723</u>

Run No. 15B Assembly No. 29 Sample No. 15004

Gross Wt.	Date	Time	Comments:
<u>3.3467</u>	<u>07-17-99</u>	<u>0945</u>	
<u>3.3467</u>	<u>07-18-99</u>	<u>1100</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3467</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3144</u>

Run No. 16A Assembly No. 30 Sample No. 16002

Gross Wt.	Date	Time	Comments:
<u>3.3506</u>	<u>07-18-99</u>	<u>1100</u>	
<u>3.3506</u>	<u>07-19-99</u>	<u>0910</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3506</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3444</u>

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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. 168 Assembly No. 31 Sample No. 16004

Gross Wt.	Date	Time	Comments:
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<u>3.3169</u>	<u>07-18-99</u>	<u>1100</u>	
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<u>3.3168</u>	<u>07-19-99</u>	<u>0910</u>	
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Assembly Gross Weight used for data entry: 3.3169

Assembly Tare Weight from Tare Weight Data: 3.3100

Run No. 17A Assembly No. 32 Sample No. 17002

Gross Wt.	Date	Time	Comments:
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<u>3.3081</u>	<u>07-18-99</u>	<u>1100</u>	
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<u>3.3081</u>	<u>07-19-99</u>	<u>0910</u>	
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Assembly Gross Weight used for data entry: 3.3081

Assembly Tare Weight from Tare Weight Data: 3.3021

Run No. 178 Assembly No. 33 Sample No. 17004

Gross Wt.	Date	Time	Comments:
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<u>3.2851</u>	<u>07-18-99</u>	<u>1100</u>	
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<u>3.2851</u>	<u>07-19-99</u>	<u>0910</u>	
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Assembly Gross Weight used for data entry: 3.2851

Assembly Tare Weight from Tare Weight Data: 3.2795

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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. 18A Assembly No. 34 Sample No. 18002

Gross Wt.	Date	Time	Comments:
<u>3.3650</u>	<u>07-18-99</u>	<u>1100</u>	
<u>3.3650</u>	<u>07-19-99</u>	<u>0910</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3650</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3583</u>

Run No. 18B Assembly No. 35 Sample No. 18004

Gross Wt.	Date	Time	Comments:
<u>3.3462</u>	<u>07-18-99</u>	<u>1100</u>	
<u>3.3462</u>	<u>07-19-99</u>	<u>0910</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3462</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3391</u>

Run No. 19A Assembly No. 36 Sample No. 19002

Gross Wt.	Date	Time	Comments:
<u>3.3056</u>	<u>07-19-99</u>	<u>0910</u>	
<u>3.3054</u>	<u>07-19-99</u>	<u>1905</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3056</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.2704</u>

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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. 198 Assembly No. 37 Sample No. 19004

Gross Wt.	Date	Time	Comments:
<u>3.3038</u>	<u>07-19-99</u>	<u>0910</u>	
<u>3.3038</u>	<u>07-19-99</u>	<u>1905</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3038</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.2690</u>

Run No. 20A Assembly No. 38 Sample No. 20002

Gross Wt.	Date	Time	Comments:
<u>3.2800</u>	<u>07-19-99</u>	<u>0910</u>	
<u>3.2799</u>	<u>07-19-99</u>	<u>1905</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.2800</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.2576</u>

Run No. 20B Assembly No. 39 Sample No. 20004

Gross Wt.	Date	Time	Comments:
<u>3.3376</u>	<u>07-19-99</u>	<u>0910</u>	
<u>3.3376</u>	<u>07-19-99</u>	<u>1905</u>	
_____	_____	_____	
_____	_____	_____	
Assembly Gross Weight used for data entry:			<u>3.3376</u>
Assembly Tare Weight from Tare Weight Data:			<u>3.3137</u>

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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. 21A Assembly No. 40 Sample No. 21002

Gross Wt.	Date	Time	Comments:
<u>3.3112</u>	<u>07-19-99</u>	<u>0910</u>	
<u>3.3112</u>	<u>07-19-99</u>	<u>1905</u>	
_____	_____	_____	
_____	_____	_____	

Assembly Gross Weight used for data entry: _____

Assembly Tare Weight from Tare Weight Data: 3.2914

Run No. 21B Assembly No. 41 Sample No. 21004

Gross Wt.	Date	Time	Comments:
<u>3.2892</u>	<u>07-19-99</u>	<u>0910</u>	
<u>3.2891</u>	<u>07-19-99</u>	<u>1905</u>	
_____	_____	_____	
_____	_____	_____	

Assembly Gross Weight used for data entry: _____

Assembly Tare Weight from Tare Weight Data: 3.2692

Run No. 22A Assembly No. 42 Sample No. 22002

Gross Wt.	Date	Time	Comments:
<u>3.2863</u>	<u>07-19-99</u>	<u>1905</u>	
<u>3.2863</u>	<u>0720-99</u>	<u>0800</u>	
_____	_____	_____	
_____	_____	_____	

Assembly Gross Weight used for data entry: 3.2863

Assembly Tare Weight from Tare Weight Data: 3.2533

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: *JS*

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. 22B Assembly No. 43 Sample No. 22004

Gross Wt.	Date	Time	Comments:
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<u>3.2933</u>	<u>07-19-99</u>	<u>1905</u>	
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<u>3.2932</u>	<u>07-20-99</u>	<u>0800</u>	
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Assembly Gross Weight used for data entry: 3.2933

Assembly Tare Weight from Tare Weight Data: 3.2573

Run No. 23A Assembly No. 44 Sample No. 23002

Gross Wt.	Date	Time	Comments:
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<u>3.2315</u>	<u>07-19-99</u>	<u>1905</u>	
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<u>3.2314</u>	<u>07-20-99</u>	<u>0800</u>	
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Assembly Gross Weight used for data entry: 3.2315

Assembly Tare Weight from Tare Weight Data: 3.2128

Run No. 23B Assembly No. 45 Sample No. 23004

Gross Wt.	Date	Time	Comments:
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<u>3.3339</u>	<u>07-19-99</u>	<u>1905</u>	
---------------	-----------------	-------------	--

<u>3.3339</u>	<u>07-20-99</u>	<u>0800</u>	
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Assembly Gross Weight used for data entry: 3.3339

Assembly Tare Weight from Tare Weight Data: 3.3156

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

PARTICULATE MATTER IN FILTER ASSEMBLY ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: JSurman

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. 247 Assembly No. 46 Sample No. 24002

Gross Wt.	Date	Time	Comments:
<u>3.3859</u>	<u>07-19-99</u>	<u>1905</u>	
<u>3.3859</u>	<u>07-20-99</u>	<u>0800</u>	
_____	_____	_____	

Assembly Gross Weight used for data entry: 3.3859

Assembly Tare Weight from Tare Weight Data: 3.3452

Run No. 248 Assembly No. 47 Sample No. 24004

Gross Wt.	Date	Time	Comments:
<u>3.3124</u>	<u>07-19-99</u>	<u>1905</u>	
<u>3.3124</u>	<u>07-20-99</u>	<u>0800</u>	
_____	_____	_____	

Assembly Gross Weight used for data entry: 3.3124

Assembly Tare Weight from Tare Weight Data: 3.2717

Run No. _____ Assembly No. _____ Sample No. _____

Gross Wt.	Date	Time	Comments:
_____	_____	_____	
_____	_____	_____	
_____	_____	_____	

Assembly Gross Weight used for data entry: _____

Assembly Tare Weight from Tare Weight Data: _____

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

FILTER ASSEMBLY TARE WEIGHT DATA

MRI Project No. 4702.02.04.09

Sampling Team Leader: Jim Surman

Analyst: JSurman

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: 07-09-99

Time Started: 0800

Balance Check before filter assemblies are weighed:

Balance Used: AND ER-120A MRI#12007

Weight Value: 1g

Balance Reads: 1.0000

Assembly No.	First Weighing	Second Weighing	Third Weighing	Average Weight or Weight to be Used as the Tare
1	3.2921			
2	3.3425			
3	3.3318			
4	3.3216			
5	3.2944			
6	3.3067			
7	3.2763			
8	3.3235			
9	3.2889			
10	3.2935			
11	3.3176			
12	3.3138			
13	3.3205			
14	3.2759			
15	3.2598			
16	3.3039			
17	3.3395			
18	3.3216			
19	3.3150			
20	3.2911			

Balance Check after filter assemblies are weighed:

Balance Reads: 1.0000

COMMENTS:

FILTER ASSEMBLY TARE WEIGHT DATA

MRI Project No. 4702.02.04.09

Sampling Team Leader: Jim Surman

Analyst: D. G. R.

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: 6-30-99

7-1-99

Time Started: :1500

:0900

Balance Check before filter assemblies are weighed:

Balance Used: Mettler AE200, MRI #10586

Weight Value: 2 + 1 grams

2 + 1 grams

2 + 1 grams

Balance Reads: 3.0001

3.0001

Assembly No.	First Weighing	Second Weighing	Third Weighing	Average Weight or Weight to be Used as the Tare
1	3.2919	3.2921		3.2920199 <i>3.292</i>
2	3.3419	3.3423		3.3421199 <i>3.342</i>
3	3.3313	3.3314		3.33143 <i>3.331</i>
4	3.3213	3.3214		3.32143 <i>3.321</i>
5	3.2941	3.2943		3.2942
6	3.3066	3.3067		3.30676 <i>3.306</i>
7	3.2761	3.2761		3.2761
8	3.3231	3.3232		3.32321 <i>3.323</i>
9	3.2888	3.2889		3.28888 <i>3.288</i>
10	3.2935	3.2935		3.2935
11	3.3174	3.3173		3.31743 <i>3.317</i>
12	3.3137	3.3137		3.3137
13	3.3206	3.3207		3.32076 <i>3.320</i>
14	3.2759	3.2760		3.27605 <i>3.276</i>
15	3.2597	3.2598		3.25987 <i>3.259</i>
16	3.3037	3.3036		3.30376 <i>3.303</i>
17	3.3393	3.3393		3.3393
18	3.3214	3.3214		3.3214
19	3.3149	3.3149		3.3149
20	3.2909	3.2910		3.29109 <i>3.291</i>

Balance Check after filter assemblies are weighed:

Balance Reads: 2.9997

3.0001

COMMENTS:

FILTER ASSEMBLY TARE WEIGHT DATA

MRI Project No. 4702.02.04.09

Sampling Team Leader: Jim Surman

Analyst: D. 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: 6-30-99 7-1-99

Time Started: 1500 :0900

Balance Check before filter assemblies are weighed:

Balance Used: Mettler AE200, MRI #10586

Weight Value: 2 + 1 grams 2 + 1 grams 2 + 1 grams

Balance Reads: 3.0001 3.0001

Assembly No.	First Weighing	Second Weighing	Third Weighing	Average Weight or Weight to be Used as the Tare
21	3.3562	3.3566		3.3564
22	3.3264	3.3263		3.3264 3.3264
23	3.3451	3.3452		3.3451 3.3452
24	3.2780	3.2780		3.2780
25	3.2596	3.2597		3.2596 3.2597
26	3.2797	3.2798		3.2798 3.2797
27	3.3196	3.3198		3.3197
28	3.3723	3.3723		3.3723
29	3.3144	3.3145		3.3144 3.3145
30	3.3444	3.3444		3.3444
31	3.3101	3.3100		3.3101 3.3100
32	3.3021	3.3021		3.3021
33	3.2795	3.2795		3.2795
34	3.3583	3.3584		3.3584 3.3583
35	3.3391	3.3391		3.3391
36	3.2704	3.2705		3.2705 3.2704
37	3.2689	3.2692		3.2690 3.2689
38	3.2574	3.2578		3.2576
39	3.3136	3.3138		3.3137
40	3.2913	3.2916		3.2915 3.2913

Balance Check after filter assemblies are weighed:

Balance Reads: 2.9997 3.0001

COMMENTS:

FILTER ASSEMBLY TARE WEIGHT DATA

MRI Project No. 4702.02.04.09

Sampling Team Leader: Jim Surman

Analyst: D. 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: 6-30-99

7-1-99

Time Started: 1500

1:0000

Balance Check before filter assemblies are weighed:

Balance Used: Mettler AE200, MRI #10586

Weight Value: 2 + 1 grams

2 + 1 grams

2 + 1 grams

Balance Reads: 3.0001

3.0001

Assembly No.	First Weighing	Second Weighing	Third Weighing	Average Weight or Weight to be Used as the Tare
41	3.2691	3.2694		3.26932
42	3.2531	3.2535		3.2533
43	3.2572	3.2574		3.2573
44	3.2126	3.2130		3.2128
45	3.3154	3.3158		3.3156
46	3.3450	3.3454		3.3452
47	3.2715	3.2719		3.2717
48	3.3370	3.3374		3.3372
49	3.3159	3.3163		3.3161
50	3.3362	3.3366		3.3364
51	3.2614	3.2617		3.26155
52	3.2317	3.2320		3.23188
53	3.2585	3.2588		3.25865
54	3.2558	3.2561		3.25595
55	3.2466	3.2469		3.2468
56	3.2046	3.2050		3.2048
57	3.2598	3.2602		3.2600
58	3.2721	3.2724		3.2723
59	3.2753	3.2756		3.27545
60	3.2611	3.2614		3.26125

Balance Check after filter assemblies are weighed:

Balance Reads: 2.9997

3.0001

COMMENTS:

FILTER ASSEMBLY TARE WEIGHT DATA

MRI Project No. 4702.02.04.09

Sampling Team Leader: Jim Surman

Analyst:

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:

6-30-99

7-1-99

Time Started:

500

20900

Balance Check before filter assemblies are weighed:

Balance Used: Mettler AE200, MRI #10586

Weight Value: 2 + 1 grams

2 + 1 grams

2 + 1 grams

Balance Reads:

3,0001

3-0001

Average Weight
or Weight to be
Used as the Tare

[illegible]

Balance Check after filter assemblies are weighed:

Balance Reads:

Z. 9997

3.0001

COMMENTS:

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman Analyst: JS
 Beaker Liner Size and Type: 250-mL Teflon®
 Acetone Lot No. B0363 Water Lot No. 5/26/99
 Sample Treatment: Acetone and water 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. 9A Beaker No. 16 Sample No. 9001
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>117.5</u>	<u>—</u>	<u>3.5112</u>	<u>07-15-99</u>	<u>0820</u>
Beaker + Liner Tare Wt.	<u>87.6</u>	<u>—</u>	<u>3.5112</u>	<u>07-15-99</u>	<u>1900</u>
A. Sample + Rinses Wt.	<u>29.9</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>29.9</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>37.8</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.5112</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.5081</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>37.8</u>		mLs

Comments:

Run No. 9B Beaker No. 17 Sample No. 9003
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>136.2</u>	<u>—</u>	<u>3.6622</u>	<u>07-15-99</u>	<u>0820</u>
Beaker + Liner Tare Wt.	<u>109.6</u>	<u>—</u>	<u>3.6622</u>	<u>07-15-99</u>	<u>1900</u>
A. Sample + Rinses Wt.	<u>26.6</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>26.6</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>33.7</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.6622</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.6562</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>33.7</u>		mLs

Comments:

Run No. 10A Beaker No. 18 Sample No. 10001
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>136.1</u>	<u>—</u>	<u>3.5778</u>	<u>07-15-99</u>	<u>1900</u>
Beaker + Liner Tare Wt.	<u>116.0</u>	<u>—</u>	<u>3.5778</u>	<u>07-16-99</u>	<u>0855</u>
A. Sample + Rinses Wt.	<u>20.1</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>20.1</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>25.4</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.5778</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.5701</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>25.4</u>		mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

Beaker Liner Size and Type: 250-mL Teflon®

Acetone Lot No. B0363Water Lot No. 5/26/99

Sample Treatment: Acetone and water 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. 10B Beaker No. 19 Sample No. 10003

Sample Volume + Acetone Rinses of Bottle

Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>137.8</u>	<u>—</u>	<u>3.7589</u>	<u>07-15-99</u>	<u>1900</u>
Beaker + Liner Tare Wt.	<u>108.1</u>	<u>—</u>	<u>3.7590</u>	<u>07-16-99</u>	<u>0853</u>
A. Sample + Rinses Wt.	<u>29.7</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>29.7</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>37.6</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.7590</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.7466</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>37.6</u>		mLs

Comments:

Run No. 11A Beaker No. 20 Sample No. 11001

Sample Volume + Acetone Rinses of Bottle

Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>130.2</u>	<u>—</u>	<u>3.8842</u>	<u>07-15-99</u>	<u>1900</u>
Beaker + Liner Tare Wt.	<u>90.2</u>	<u>—</u>	<u>3.8842</u>	<u>07-16-99</u>	<u>0855</u>
A. Sample + Rinses Wt.	<u>40.0</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>40.0</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>50.6</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.8842</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.8703</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>50.6</u>		mLs

Comments:

Run No. 11B Beaker No. 21 Sample No. 11003

Sample Volume + Acetone Rinses of Bottle

Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>153.1</u>	<u>—</u>	<u>3.6626</u>	<u>07-15-99</u>	<u>1900</u>
Beaker + Liner Tare Wt.	<u>117.2</u>	<u>—</u>	<u>3.6627</u>	<u>07-16-99</u>	<u>0855</u>
A. Sample + Rinses Wt.	<u>35.9</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>35.9</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>45.4</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.6627</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.6497</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>45.4</u>		mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman Analyst: JS
 Beaker Liner Size and Type: 250-mL Teflon®
 Acetone Lot No. B0363 Water Lot No. 5/26/99
 Sample Treatment: Acetone and water 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. 12A Beaker No. 22 Sample No. 12001
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>124.7</u>	<u>—</u>	<u>3.5600</u>	<u>07-16-99</u>	<u>0835</u>
Beaker + Liner Tare Wt.	<u>90.3</u>	<u>—</u>	<u>3.5600</u>	<u>07-17-99</u>	<u>0945</u>
A. Sample + Rinses Wt.	<u>34.4</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>34.4</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>43.5</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.5600</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.5481</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>43.5</u>		mLs

Comments:

Run No. 12B Beaker No. 23 Sample No. 12003
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>134.6</u>	<u>—</u>	<u>4.0235</u>	<u>07-16-99</u>	<u>0853</u>
Beaker + Liner Tare Wt.	<u>104.4</u>	<u>—</u>	<u>4.0235</u>	<u>07-17-99</u>	<u>0945</u>
A. Sample + Rinses Wt.	<u>30.2</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>30.2</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>38.2</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>4.0235</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>4.0146</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>38.2</u>		mLs

Comments:

Run No. 13A Beaker No. 24 Sample No. 13001
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>140.8</u>	<u>—</u>	<u>3.9103</u>	<u>07-17-99</u>	<u>0945</u>
Beaker + Liner Tare Wt.	<u>107.8</u>	<u>—</u>	<u>3.9103</u>	<u>07-18-99</u>	<u>1120</u>
A. Sample + Rinses Wt.	<u>33.0</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>33.0</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>41.8</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.9103</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.9055</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>41.8</u>		mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

Beaker Liner Size and Type: 250-mL Teflon®

Acetone Lot No. B0363

Water Lot No. 5/26/99

Sample Treatment: Acetone and water 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. 138 Beaker No. 25 Sample No. 13003

Sample Volume + Acetone Rinses of Bottle			Beaker Liner + Sample Residue Weights		
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>138.7</u>	<u>—</u>	<u>3.5891</u>	<u>07-17-99</u>	<u>0945</u>
Beaker + Liner Tare Wt.	<u>109.7</u>	<u>—</u>	<u>3.5891</u>	<u>07-18-99</u>	<u>1120</u>
A. ----- Sample + Rinses Wt.	<u>29.0</u>				
B. ----- Water Wt. from Recovery Data:	<u>0</u>				
C. ----- Acetone Wt. (A - B):	<u>29.0</u>				
D. ----- Acetone Wt./0.79 = mLs Acetone:	<u>36.7</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.5891</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.5891</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>36.7</u>		mLs

Comments:

Run No. 149 Beaker No. 26 Sample No. 14001

Sample Volume + Acetone Rinses of Bottle			Beaker Liner + Sample Residue Weights		
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>131.5</u>	<u>—</u>	<u>3.4393</u>	<u>07-17-99</u>	<u>0945</u>
Beaker + Liner Tare Wt.	<u>103.5</u>	<u>—</u>	<u>3.4393</u>	<u>07-18-99</u>	<u>1120</u>
A. ----- Sample + Rinses Wt.	<u>28.0</u>				
B. ----- Water Wt. from Recovery Data:	<u>0</u>				
C. ----- Acetone Wt. (A - B):	<u>28.0</u>				
D. ----- Acetone Wt./0.79 = mLs Acetone:	<u>35.4</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.4393</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.4393</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>35.4</u>		mLs

Comments:

Run No. 143 Beaker No. 27 Sample No. 14003

Sample Volume + Acetone Rinses of Bottle			Beaker Liner + Sample Residue Weights		
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>152.2</u>	<u>—</u>	<u>3.7862</u>	<u>07-17-99</u>	<u>0945</u>
Beaker + Liner Tare Wt.	<u>122.2</u>	<u>—</u>	<u>3.7862</u>	<u>07-18-99</u>	<u>1120</u>
A. ----- Sample + Rinses Wt.	<u>30.0</u>				
B. ----- Water Wt. from Recovery Data:	<u>0</u>				
C. ----- Acetone Wt. (A - B):	<u>30.0</u>				
D. ----- Acetone Wt./0.79 = mLs Acetone:	<u>38.0</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.7862</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.7862</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>38.0</u>		mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman Analyst: Jim Surman
 Beaker Liner Size and Type: 250-mL Teflon®
 Acetone Lot No. B0363 Water Lot No. 5/26/99
 Sample Treatment: Acetone and water 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. 15A Beaker No. 28 Sample No. 15001
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>133.6</u>	<u>—</u>	<u>3.7163</u>	<u>07-17-99</u>	<u>0945</u>
Beaker + Liner Tare Wt.	<u>104.4</u>	<u>—</u>	<u>3.7162</u>	<u>07-18-99</u>	<u>1120</u>
A. ----- Sample + Rinses Wt.	<u>29.2</u>				
B. ----- Water Wt. from Recovery Data:	<u>0</u>				
C. ----- Acetone Wt. (A - B):	<u>29.2</u>				
D. ----- Acetone Wt./0.79 = mLs Acetone:	<u>37.0</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.7163</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.7089</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>37.0</u>		mLs

Comments:

Run No. 15B Beaker No. 29 Sample No. 15003
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>148.6</u>	<u>—</u>	<u>3.6907</u>	<u>07-17-99</u>	<u>0945</u>
Beaker + Liner Tare Wt.	<u>107.0</u>	<u>—</u>	<u>3.6906</u>	<u>07-18-99</u>	<u>1120</u>
A. ----- Sample + Rinses Wt.	<u>33.6</u>				
B. ----- Water Wt. from Recovery Data:	<u>0</u>				
C. ----- Acetone Wt. (A - B):	<u>33.6</u>				
D. ----- Acetone Wt./0.79 = mLs Acetone:	<u>42.5</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.6907</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.6873</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>42.5</u>		mLs

Comments:

Run No. 16A Beaker No. 30 Sample No. 16001
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>131.0</u>	<u>—</u>	<u>3.7232</u>	<u>07-18-99</u>	<u>1120</u>
Beaker + Liner Tare Wt.	<u>105.4</u>	<u>—</u>	<u>3.7231</u>	<u>07-19-99</u>	<u>0910</u>
A. ----- Sample + Rinses Wt.	<u>25.6</u>				
B. ----- Water Wt. from Recovery Data:	<u>0</u>				
C. ----- Acetone Wt. (A - B):	<u>25.6</u>				
D. ----- Acetone Wt./0.79 = mLs Acetone:	<u>32.4</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.7232</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.7208</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>32.4</u>		mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

MRI Project No. 4702.02.04.09

Client/Source: U.S. EPA OACPS EMAD EMC / Cogentrix Unit 2A

Source Location: Rocky Mount, North Carolina

Sampling Location: Baghouse (Fabric Filter) Outlet Duct

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

Beaker Liner Size and Type: 250-mL Teflon®

Acetone Lot No. B0363

Water Lot No. 5/26/99

Sample Treatment: Acetone and water 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. 16B Beaker No. 31 Sample No. 16003

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights			
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>130.3</u>	<u>-</u>	<u>3.3603</u>	<u>07-18-99</u>	<u>1120</u>
Beaker + Liner Tare Wt.	<u>102.7</u>	<u>-</u>	<u>3.3603</u>	<u>07-19-99</u>	<u>0910</u>
A. Sample + Rinses Wt.	<u>27.3</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>27.3</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>34.6</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.3603</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.3585</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>34.6</u>		mLs

Comments:

Run No. 17A Beaker No. 32 Sample No. 17001

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights			
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>124.2</u>	<u>-</u>	<u>3.5388</u>	<u>07-18-99</u>	<u>1120</u>
Beaker + Liner Tare Wt.	<u>105.8</u>	<u>-</u>	<u>3.5388</u>	<u>07-19-99</u>	<u>0910</u>
A. Sample + Rinses Wt.	<u>18.4</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>18.4</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>23.3</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.5388</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.5374</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>23.3</u>		mLs

Comments:

Run No. 17B Beaker No. 33 Sample No. 17003

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights			
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>128.1</u>	<u>-</u>	<u>3.7969</u>	<u>07-18-99</u>	<u>1120</u>
Beaker + Liner Tare Wt.	<u>101.5</u>	<u>-</u>	<u>3.7968</u>	<u>07-19-99</u>	<u>0910</u>
A. Sample + Rinses Wt.	<u>26.6</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>26.6</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>33.7</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.7969</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.7953</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>33.7</u>		mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman
 Beaker Liner Size and Type: 250-mL Teflon®

Analyst: JSurman

Acetone Lot No. B0363 Water Lot No. 5/26/99

Sample Treatment: Acetone and water 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. 18A Beaker No. 34 Sample No. 18001

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights			
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>146.0</u>	<u>—</u>	<u>3.8610</u>	<u>07-18-99</u>	<u>1120</u>
Beaker + Liner Tare Wt.	<u>101.6</u>	<u>—</u>	<u>3.8610</u>	<u>07-19-99</u>	<u>0910</u>
A. Sample + Rinses Wt.	<u>44.4</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>44.4</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>56.2</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.8610</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.8587</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>56.2</u>		mLs

Comments:

Run No. 18B Beaker No. 35 Sample No. 18003

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights			
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>134.3</u>	<u>—</u>	<u>3.4080</u>	<u>07-18-99</u>	<u>1120</u>
Beaker + Liner Tare Wt.	<u>104.7</u>	<u>—</u>	<u>3.4080</u>	<u>07-19-99</u>	<u>0910</u>
A. Sample + Rinses Wt.	<u>29.6</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>29.6</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>37.5</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.4080</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.4063</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>37.5</u>		mLs

Comments:

Run No. 19A Beaker No. 36 Sample No. 19001

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights			
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>146.5</u>	<u>—</u>	<u>3.8354</u>	<u>07-19-99</u>	<u>0910</u>
Beaker + Liner Tare Wt.	<u>104.6</u>	<u>—</u>	<u>3.8354</u>	<u>07-19-99</u>	<u>1905</u>
A. Sample + Rinses Wt.	<u>41.9</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>41.9</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>53.0</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.8354</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.8302</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>53.0</u>		mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: JSurman

Beaker Liner Size and Type: 250-mL Teflon®

Acetone Lot No. B0363

Water Lot No. 5/26/99

Sample Treatment: Acetone and water 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. 198 Beaker No. 37 Sample No. 19003

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights			
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>118.3</u>	<u>—</u>	<u>3.7352</u>	<u>07-19-99</u>	<u>0910</u>
Beaker + Liner Tare Wt.	<u>86.0</u>	<u>—</u>	<u>3.7351</u>	<u>07-19-99</u>	<u>1905</u>
A. Sample + Rinses Wt.	<u>32.3</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>32.3</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>40.9</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.7352</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.7306</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>40.9</u>		mLs

Comments:

Run No. 20A Beaker No. 38 Sample No. 20001

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights			
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>133.3</u>	<u>—</u>	<u>3.6921</u>	<u>07-19-99</u>	<u>0910</u>
Beaker + Liner Tare Wt.	<u>105.6</u>	<u>—</u>	<u>3.6920</u>	<u>07-19-99</u>	<u>1905</u>
A. Sample + Rinses Wt.	<u>27.7</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>27.7</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>35.1</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.6921</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.6882</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>35.1</u>		mLs

Comments:

Run No. 20B Beaker No. 39 Sample No. 20003

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights			
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>132.5</u>	<u>—</u>	<u>3.6964</u>	<u>07-19-99</u>	<u>0910</u>
Beaker + Liner Tare Wt.	<u>105.9</u>	<u>—</u>	<u>3.6963</u>	<u>07-19-99</u>	<u>1905</u>
A. Sample + Rinses Wt.	<u>26.6</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>26.6</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>33.7</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.6964</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.6928</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>33.7</u>		mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: JS

Beaker Liner Size and Type: 250-mL Teflon®

Acetone Lot No. B0363

Water Lot No. 5/26/99

Sample Treatment: Acetone and water 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. 21A Beaker No. 40 Sample No. 21001

Sample Volume + Acetone Rinses of Bottle			Beaker Liner + Sample Residue Weights		
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>133.6</u>	<u>—</u>	<u>3.5230</u>	<u>07-19-99</u>	<u>0910</u>
Beaker + Liner Tare Wt.	<u>105.4</u>	<u>—</u>	<u>3.5230</u>	<u>07-19-99</u>	<u>1905</u>
A. Sample + Rinses Wt.	<u>28.2</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>28.2</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>35.7</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.5230</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.5190</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>35.7</u>		mLs

Comments:

Run No. 21B Beaker No. 41 Sample No. 21003

Sample Volume + Acetone Rinses of Bottle			Beaker Liner + Sample Residue Weights		
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>128.5</u>	<u>—</u>	<u>3.7292</u>	<u>07-19-99</u>	<u>0910</u>
Beaker + Liner Tare Wt.	<u>106.8</u>	<u>—</u>	<u>3.7292</u>	<u>07-19-99</u>	<u>1905</u>
A. Sample + Rinses Wt.	<u>21.7</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>21.7</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>27.5</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.7292</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.7256</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>27.5</u>		mLs

Comments:

Run No. 22A Beaker No. 42 Sample No. 22001

Sample Volume + Acetone Rinses of Bottle			Beaker Liner + Sample Residue Weights		
	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>138.8</u>	<u>—</u>	<u>3.3638</u>	<u>07-19-99</u>	<u>1905</u>
Beaker + Liner Tare Wt.	<u>101.5</u>	<u>—</u>	<u>3.3638</u>	<u>07-20-99</u>	<u>0800</u>
A. Sample + Rinses Wt.	<u>37.3</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>37.3</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>47.2</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.3638</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.3591</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>47.2</u>		mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: JSurman

Beaker Liner Size and Type: 250-mL Teflon®

Acetone Lot No. B0363

Water Lot No. 5/26/99

Sample Treatment: Acetone and water 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. 22B Beaker No. 43 Sample No. 22003

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt. <u>122.4</u>	<u>—</u>	<u>3.4512</u>	<u>07-19-99</u>	<u>1905</u>
Beaker + Liner Tare Wt. <u>87.6</u>	<u>—</u>	<u>3.4512</u>	<u>07-20-99</u>	<u>0800</u>
A. ----- Sample + Rinses Wt. <u>34.8</u>				
B. ----- Water Wt. from Recovery Data: <u>0</u>				
C. ----- Acetone Wt. (A - B): <u>34.8</u>				
D. ----- Acetone Wt./0.79 = mLs Acetone: <u>44.1</u>				
Beaker Liner + Residue Gross Weight used for data entry: <u>3.4512</u>				
Beaker Liner Tare Weight from Tare Weight Data: <u>3.4481</u>				
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) = <u>0</u>				mg/mL
Volume (B + D) for data entry = <u>44.1</u>				mLs

Comments:

Run No. 23A Beaker No. 44 Sample No. 23001

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt. <u>134.9</u>	<u>—</u>	<u>3.3269</u>	<u>07-19-99</u>	<u>1905</u>
Beaker + Liner Tare Wt. <u>102.8</u>	<u>—</u>	<u>3.3269</u>	<u>07-20-99</u>	<u>0800</u>
A. ----- Sample + Rinses Wt. <u>32.1</u>				
B. ----- Water Wt. from Recovery Data: <u>0</u>				
C. ----- Acetone Wt. (A - B): <u>32.1</u>				
D. ----- Acetone Wt./0.79 = mLs Acetone: <u>34.3</u>				
Beaker Liner + Residue Gross Weight used for data entry: <u>3.3269</u>				
Beaker Liner Tare Weight from Tare Weight Data: <u>3.3246</u>				
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) = <u>0</u>				mg/mL
Volume (B + D) for data entry = <u>34.3</u>				mLs

Comments:

Run No. 23B Beaker No. 45 Sample No. 23003

Sample Volume + Acetone Rinses of Bottle		Beaker Liner + Sample Residue Weights		
start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt. <u>144.6</u>	<u>—</u>	<u>3.4133</u>	<u>07-19-99</u>	<u>1905</u>
Beaker + Liner Tare Wt. <u>118.8</u>	<u>—</u>	<u>3.4133</u>	<u>07-20-99</u>	<u>0800</u>
A. ----- Sample + Rinses Wt. <u>25.8</u>				
B. ----- Water Wt. from Recovery Data: <u>0</u>				
C. ----- Acetone Wt. (A - B): <u>25.8</u>				
D. ----- Acetone Wt./0.79 = mLs Acetone: <u>32.7</u>				
Beaker Liner + Residue Gross Weight used for data entry: <u>3.4133</u>				
Beaker Liner Tare Weight from Tare Weight Data: <u>3.4109</u>				
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) = <u>0</u>				mg/mL
Volume (B + D) for data entry = <u>32.7</u>				mLs

Comments:

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

PARTICULATE MATTER (FRONT-HALF) RINSES ANALYSIS DATA

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

Sampling Team Leader: Jim Surman Analyst: JSurman
 Beaker Liner Size and Type: 250-mL Teflon®
 Acetone Lot No. B0363 Water Lot No. 5/26/99
 Sample Treatment: Acetone and water 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. 2419 Beaker No. 46 Sample No. 24001
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>123.5</u>	<u>—</u>	<u>3.5600</u>	<u>07-20-99</u>	<u>0800</u>
Beaker + Liner Tare Wt.	<u>101.2</u>	<u>—</u>	<u>3.5600</u>	<u>07-20-99</u>	<u>1400</u>
A. Sample + Rinses Wt.	<u>22.3</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>22.3</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>28.2</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.5600</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.5547</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>28.2</u>		mLs

Comments:

Run No. 2413 Beaker No. 47 Sample No. 24003
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.	<u>137.8</u>	<u>—</u>	<u>3.7243</u>	<u>07-20-99</u>	<u>0800</u>
Beaker + Liner Tare Wt.	<u>116.9</u>	<u>—</u>	<u>3.7243</u>	<u>07-20-99</u>	<u>1400</u>
A. Sample + Rinses Wt.	<u>20.9</u>				
B. Water Wt. from Recovery Data:	<u>0</u>				
C. Acetone Wt. (A - B):	<u>20.9</u>				
D. Acetone Wt./0.79 = mLs Acetone:	<u>26.5</u>				
Beaker Liner + Residue Gross Weight used for data entry:			<u>3.7243</u>		
Beaker Liner Tare Weight from Tare Weight Data:			<u>3.7198</u>		
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =			<u>0</u>		mg/mL
Volume (B + D) for data entry =			<u>26.5</u>		mLs

Comments:

Run No. _____ Beaker No. _____ Sample No. _____
Sample Volume + Acetone Rinses of Bottle Beaker Liner + Sample Residue Weights

	start	end	Gross Wt.	Date	Time
Beaker + Liner + Sample + Rinses Wt.					
Beaker + Liner Tare Wt.					
A. Sample + Rinses Wt.					
B. Water Wt. from Recovery Data:					
C. Acetone Wt. (A - B):					
D. Acetone Wt./0.79 = mLs Acetone:					
Beaker Liner + Residue Gross Weight used for data entry:					
Beaker Liner Tare Weight from Tare Weight Data:					
Combined Blank = ((Water Blank x B) + (Acetone Blank x D))/(B + D) =					mg/mL
Volume (B + D) for data entry =					mLs

Comments:

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

PARTICULATE MATTER CONTROLS ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Balance: AND ER-120A MRI #12007

Weight Unit: grams

Analyst: *[Signature]*

Control Filter Assembly Weights & Balance Checks:

Assembly No. <u>55</u>	NIST Weight(s):			Assembly No. <u>56</u>	NIST Weight(s):		
Original Tare Wt.: <u>3.2467</u>				Original Tare Wt.: <u>3.2048</u>			
			<u>1g</u>				<u>1g</u>
Current Wt.	Date	Time	Balance Reading	Current Wt.	Date	Time	Balance Reading
<u>3.2467</u>	<u>07-18-99</u>	<u>1100</u>	<u>1.0000</u>				
<u>3.2467</u>	<u>07-19-99</u>	<u>0910</u>	<u>1.0000</u>				
<u>3.2467</u>	<u>07-19-99</u>	<u>1905</u>	<u>1.0000</u>				
<u>3.2467</u>	<u>07-20-99</u>	<u>0800</u>	<u>1.0000</u>				

Comments:

Control Beaker Liner Weights & Balance Checks:

Beaker No. <u>55</u>	NIST Weight(s):			Beaker No. <u>56</u>	NIST Weight(s):		
Original Tare Wt.: <u>3.5793</u>				Original Tare Wt.: <u>3.4457</u>			
			<u>1g</u>				<u>1g</u>
Current Wt.	Date	Time	Balance Reading	Current Wt.	Date	Time	Balance Reading
<u>3.5793</u>	<u>07-18-99</u>	<u>1120</u>	<u>1.0000</u>				
<u>3.5794</u>	<u>07-19-99</u>	<u>0910</u>	<u>1.0000</u>				
<u>3.5793</u>	<u>07-19-99</u>	<u>1905</u>	<u>1.0000</u>				
<u>3.5794</u>	<u>07-20-99</u>	<u>0800</u>	<u>1.0000</u>				
<u>3.5793</u>	<u>07-20-99</u>	<u>1100</u>	<u>1.0000</u>				

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 weight approximating the weights of the assemblies or liners.

PARTICULATE MATTER CONTROLS ANALYSIS DATA

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

Sampling Team Leader: Jim Surman

Analyst: *JSurman*

Balance: AND ER-120A MRI#12007

Weight Unit: grams

Control Filter Assembly Weights & Balance Checks:

Assembly No. <u>35</u>				Assembly No. <u>36</u>			
Original Tare Wt.: <u>3.3391</u>				Original Tare Wt.: <u>3.2704</u>			
Current Wt.	Date	Time	Balance Reading	Current Wt.	Date	Time	Balance Reading
<u>3.3391</u>	<u>07-10-99</u>	<u>0935</u>	<u>1.0000</u>	<u>3.2704</u>	<u>07-17-99</u>	<u>0945</u>	<u>1.0000</u>
<u>3.3391</u>	<u>07-10-99</u>	<u>1715</u>	<u>1.0000</u>				
<u>3.3392</u>	<u>07-12-99</u>	<u>0840</u>	<u>1.0000</u>				
<u>3.3391</u>	<u>07-12-99</u>	<u>1700</u>	<u>1.0000</u>				
<u>3.3391</u>	<u>07-13-99</u>	<u>0915</u>	<u>1.0000</u>				
<u>3.3390</u>	<u>07-13-99</u>	<u>1600</u>	<u>1.0000</u>				
<u>3.3391</u>	<u>07-14-99</u>	<u>1730</u>	<u>1.0000</u>				
<u>3.3392</u>	<u>07-15-99</u>	<u>0800</u>	<u>1.0000</u>				
<u>3.3391</u>	<u>07-15-99</u>	<u>1835</u>	<u>1.0000</u>				
<u>3.3391</u>	<u>07-16-99</u>	<u>0830</u>	<u>1.0000</u>				

Comments:

Control Beaker Liner Weights & Balance Checks:

Beaker No. <u>35</u>				Beaker No. <u>36</u>			
Original Tare Wt.: <u>3.4063</u>				Original Tare Wt.: <u>3.8302</u>			
Current Wt.	Date	Time	Balance Reading	Current Wt.	Date	Time	Balance Reading
<u>3.4062</u>	<u>07-10-99</u>	<u>0950</u>	<u>1.0000</u>	<u>3.8303</u>	<u>07-17-99</u>	<u>0945</u>	<u>—</u>
<u>3.4063</u>	<u>07-10-99</u>	<u>1645</u>	<u>1.0000</u>				
<u>3.4063</u>	<u>07-12-99</u>	<u>0830</u>	<u>1.0000</u>				
<u>3.4062</u>	<u>07-12-99</u>	<u>1700</u>	<u>—</u>				
<u>3.4063</u>	<u>07-13-99</u>	<u>0915</u>	<u>—</u>				
<u>3.4063</u>	<u>07-13-99</u>	<u>1600</u>	<u>—</u>				
<u>3.4062</u>	<u>07-14-99</u>	<u>1750</u>	<u>1.0000</u>				
<u>3.4063</u>	<u>07-15-99</u>	<u>0820</u>	<u>1.0000</u>				
<u>3.4063</u>	<u>07-15-99</u>	<u>1900</u>	<u>1.0000</u>				
<u>3.4064</u>	<u>07-16-99</u>	<u>0855</u>	<u>1.0000</u>				

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.

BEAKER LINER TARE WEIGHT DATA

MRI Project No. 4702.02.04.09

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: 07-09-99

07-09-99

Time Started: 0850

1645

Balance Check before beaker liners are weighed:

Balance Used: AND ER-120A MRF#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	3.6001	3.6001		3.6001
2	3.5182	3.5182		3.5182
3	3.3932	3.3931		3.3931
4	3.6646	3.6646		3.6646
5	3.7225	3.7225		3.7225
6	3.8235	3.8234		3.8234
7	3.6465	3.6465		3.6465
8	3.7393	3.7393		3.7393
9	3.8057	3.8057		3.8057
10	3.6069	3.6070		3.6069
11	3.8238	3.8238		3.8238
12	3.4835	3.4835		3.4835
13	3.6599	3.6600		3.6599
14	3.4456	3.4457		3.4456
15	3.6294	3.6294		3.6294
16	3.5081	3.5081		3.5081
17	3.6562	3.6562		3.6562
18	3.5701	3.5702		3.5701
19	3.7466	3.7467		3.7466
20	3.8703	3.8703		3.8703

Balance Check after beaker liners are weighed:

Balance Reads: 1.0000

1.0000

COMMENTS:

BEAKER LINER TARE WEIGHT DATA

MRI Project No. 4702.02.04.09

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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: 07-09-99

07-09-99

Time Started: 0850

1645

Balance Check before beaker liners are weighed:

Balance Used: ANDER-1201A MAX#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	3.6497	3.6498	3.6497
22	3.5481	3.5481	3.5481
23	4.0146	4.0147	4.0146
24	3.9055	3.9055	3.9055
25	3.5851	3.5851	3.5851
26	3.4350	3.4350	3.4350
27	3.7815	3.7815	3.7815
28	3.7089	3.7090	3.7089
29	3.6873	3.6873	3.6873
30	3.7208	3.7208	3.7208
31	3.3585	3.3585	3.3585
32	3.5374	3.5374	3.5374
33	3.7952	3.7953	3.7952
34	3.8587	3.8587	3.8587
35	3.4063	3.4063	3.4063
36	3.8302	3.8302	3.8302

Balance Check after beaker liners are weighed:

Balance Reads: 1.0000

1.0000

COMMENTS:

BEAKER LINER TARE WEIGHT DATA

MRI Project No. 4702.02.04.09

Sampling Team Leader: Jim Surman

Analyst: Jim Surman

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: 07-16-99

07-17-99

Time Started: 1000

1345

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

37	3.7307	3.7306		3.7306
38	3.6882	3.6882		3.6882
39	3.6929	3.6928		3.6928
40	3.5190	3.5190		3.5190
41	3.7256	3.7256		3.7256
42	3.3592	3.3591		3.3591
43	3.4482	3.4481		3.4481
44	3.3246	3.3246		3.3246
45	3.4109	3.4109		3.4109
46	3.5548	3.5547		3.5547
47	3.7198	3.7198		3.7198
48	3.7610	3.7610		3.7610
49	3.7268	3.7268		3.7268
50	3.5333	3.5332		3.5332
51	3.7624	3.7623		3.7623
52	3.6460	3.6460		3.6460
53	3.4245	3.4245		3.4245
54	3.5855	3.5855		3.5855
55	3.5793	3.5793		3.5793
56	3.4457	3.4457		3.4457

Balance Check after beaker liners are weighed:

Balance Reads: 1.0000

1.0000

COMMENTS:

PARTICULATE MATTER REAGENT BLANK ANALYSIS DATA

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

Sampling Team Leader: Jim Surman Analyst: JS
 Beaker Liner Size and Type: 250-mL Teflon®
 Acetone Lot No. BD363 Water Lot No. 5/26/99
 Sample Treatment: Acetone and water 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) A11 Beaker No. 34 Sample No. 1005
Acetone Reagent Blank Sample Volume Beaker Liner + Sample Residue Weights

	Gross Wt.	Date	Time
Beaker + Liner + Acetone Sample Wt.	<u>188.7</u>	<u>07-10-99</u>	<u>0950</u>
Beaker + Liner Tare Wt.	<u>101.7</u>	<u>07-10-99</u>	<u>1645</u>
Acetone Sample Wt.	<u>87.0</u>		
A. ----- Acetone Wt./0.79 = mLs Acetone:	<u>110.1</u>		
Beaker Liner + Residue Gross Weight used for blank determination: <u>3.8587</u>			
Beaker Liner Tare Weight from Tare Weight Data: <u>3.8587</u>			
B. ----- Net Weight of Residue in beaker liner:	<u>0</u>		
Acetone Blank (B x 1000/A) for data entry or for computing Combined Blank:	<u>0</u>		mg/mL

Comments:

Water Blank Determination: For Run No.(s) _____ Beaker No. _____ Sample No. _____
Water Reagent Blank Sample Volume Beaker Liner + Sample Residue Weights

	Gross Wt.	Date	Time
Beaker + Liner + Water Sample Wt.			
Beaker + Liner Tare Wt.			
Water Sample Wt.			
A. ----- Water Wt. = mLs Water:			
Beaker Liner + Residue Gross Weight used for blank determination: _____			
Beaker Liner Tare Weight from Tare Weight Data: _____			
B. ----- Net Weight of Residue in beaker liner:			
Water Blank (B x 1000/A) for data entry or for computing Combined Blank:			mg/mL

Comments:

Filter Assembly Blank Determination: For Run No.(s) A11 Assembly No. 34 Sample No. 1006

Gross Wt.	Date	Time	Comments:
<u>3.3583</u>	<u>07-10-99</u>	<u>0955</u>	
<u>3.3583</u>	<u>07-10-99</u>	<u>1715</u>	
A. ----- Assembly Gross Weight used for blank determination:	<u>3.3583</u>		
B. ----- Assembly Tare Weight from Tare Weight Data:	<u>3.3583</u>		
Net Assembly Weight Difference (A - B) for data entry:	<u>0</u>		
{retain minus sign if value is negative}			

NOTE: Control liner and filter assembly weights and balance check data are documented on another form.

**40 CFR 60, APPENDIX A, METHOD 17 - PARTICULATE MATTER TRAIN (M17)
FIELD REAGENT BLANK PREPARATION DATA**

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

Blank(s) Prepared By: J. Surman Date: 07-09-99

Weights below are in grams.

<u>Reagent Blank Description</u>	<u>Sample Number</u>	<u>Bottle Tare Weight</u>	<u>Bottle Gross Weight</u>	<u>Net Sample Weight</u>
Acetone for particulate matter Volume needed: 100 mLs Lot Number: <u>80363</u>	<u>1005</u>	<u>NA</u>		
Acetone for particulate matter Volume needed: 100 mLs Lot Number: _____	<u>005</u>			
ASTM Type I water for particulate matter Volume needed: 100 mLs Lot Number: _____	<u>006</u>			
ASTM Type I water for particulate matter Volume needed: 100 mLs Lot Number: _____	<u>006</u>			
Filter Assembly for particulate matter Type: Whatman 934-AH Filter Assembly Number: <u>34</u> Filter Lot Number: <u>29439A</u>	<u>1007</u>			
Filter Assembly for particulate matter Type: Whatman 934-AH Filter Assembly Number: _____ Filter Lot Number: _____	<u>007</u>			

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).

<u>Sample Number(s)</u>	<u>For Test and/or Run Number(s)</u>	<u>For Sampling Location(s)</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

COMMENTS: Acetone reagent blanks transferred from wash bottle directly to beaker liners for analysis.

ICal Appendix E

M 17 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. 4702.02.04.09
Date: 07/20/99
Time: 1130

Readings Obtained By: J. Surman



Observed Barometer Reading: 30.03 in. Hg

Mercury Column Temperature: 71 °F

Correction For Temperature: -0.11 in. Hg

Reading Corrected For Temperature: 29.92 in. Hg

Correction For Gravity: -0.03 in. Hg

Temperature Corrected Reading Corrected For Gravity: 29.89 in. Hg

Aneroid Barometer I.D. No.: Y-2101

Reading Before Adjustment: 29.89 in. Hg

Calibration Check Result: within 0.1 in. Hg

Reading After Adjustment: _____ in. Hg

Remarks:

July 19, 1999

Paul Gorman

Check calibration of Hg/glass thermometer
borrowed from plant (Cogentrix)
(Fisherbrand 15-041-1A)
Range -20 to 110°C

Immersed in ice bath

<u>Time</u>	<u>Thermometer</u> <u>Reading</u>
13:22	0°C

Will use this thermometer for calibration
tests on thermocouples (dry gas meter inlet/outlet T/c
and final impinger thermocouple)

ON SITE MERCURY BAROMETER READING CORRECTION
AND ADJUSTED BAROMETRIC PRESSURE AT TEST LOCATION

Mercury Barometer Description: Princo Model 453, S/N W13559
Mercury Barometer Location: Plant Control Room

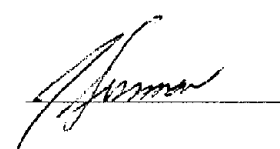
Distance Of Barometer From Test Site: 0.00 miles
Altitude Of Barometer Above Sea Level: 124.0 feet
Latitude (north): 36 degrees, 0.00 minutes

Facility: Cogentrix of Rocky Mount, North Carolina

Test Site And Sampling Location: Unit 2A Baghouse Outlet Duct

MRI Project No. 4702.02.04.09
Date: 07/20/99
Time: 1130

Readings Obtained By: J. Surman



Observed Barometer Reading: 30.03 in. Hg

Mercury Column Temperature: 71 °F

Correction For Temperature: -0.11 in. Hg

Reading Corrected For Temperature: 29.92 in. Hg

Correction For Gravity: -0.03 in. Hg

Temperature Corrected Reading Corrected For Gravity: 29.89 in. Hg

Aneroid Barometer I.D. No.: Y-2101

Reading Before Adjustment: 29.89 in. Hg

Calibration Check Result: within 0.1 in. Hg

Reading After Adjustment: in. Hg

Remarks:

METHOD 5 METERING CONSOLE CALIBRATION WITH CRITICAL ORIFICE

MRI Project No.	4702-02-04-09	Metering Console No.	N10
Date:	7-20-99	Previous Dry Gas Meter Factor (Y):	1.011
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	705.299	711.960	718.640
Final Dry Gas Meter Gas Volume, ft. ³	711.960	718.640	725.329
Net Dry Gas Meter Gas Volume (V _m), ft. ³	6.661	6.680	6.689
CALIBRATION CONDITIONS DATA			
Dry Gas Meter Temperature, °F:			
Initial Inlet Temperature, °F	88.0	90.0	92.0
Final Inlet Temperature, °F	90.0	91.0	93.0
Initial Outlet Temperature, °F	86.0	87.0	88.0
Final Outlet Temperature, °F	86.0	87.0	89.0
Average Dry Gas Meter Temperature (t _m), °F	87.5	88.8	90.5
Time, seconds	600	600	600
Orifice Meter Delta-H, inches w.c.	1.450	1.450	1.450
Barometric Pressure, in. Hg	29.89	29.89	29.89
Critical Orifice Inlet (Ambient) Temperature, °F:			
Initial Ambient Temperature, °F	83.6	83.8	85.4
Final Ambient Temperature, °F	83.4	84.8	84.2
Avg. Critical Orifice Inlet Temperature (t _{amb}), °F	83.5	84.3	84.8
Pump Vacuum, in. Hg	18	18	18
COMPUTED CALIBRATION RESULTS			
Critical Orifice Gas Volume (V _{cr} (std)), std. ft. ³	6.568	6.563	6.560
Dry Gas Meter Gas Volume (V _m (std)), std. ft. ³	6.440	6.443	6.432
Dry Gas Meter Calibration Factor (Y)	1.020	1.019	1.020
Orifice Meter Delta-H@	1.835	1.833	1.829
AVERAGE CALIBRATION RESULTS			
Average Dry Gas Meter Calibration Factor (Y)	1.019		
Average Orifice Meter Delta-H@	1.832		
CALIBRATION RESULTS COMPARISON			
Criterion: Y Must Be Within 2% Of Average Y			
Percent Difference Of Y From Average Y	0.04%	0.09%	0.05%
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	0.83%		
Tolerance Result	PASS		

Y = 1.019439290348411

Remarks:

CRORCALB.WK4 10/24/96 (rev. 4702N10.WK4 07/20/99 10:17 AM)

**METHOD 5 METERING CONSOLE CALIBRATION
CRITICAL ORIFICE BRACKETING DATA**

MRI Project No.	4702-02-04-09	Critical Orifice Being Evaluated	
Date:	7-20-99	Critical Orifice No.	D19
Operator:	D. Neal	Critical Orifices Used For Bracketing	
Metering Console No.	N10	First Orifice	
Dry Gas Meter Factor (Y):	1.019	Critical Orifice No.	D16
Orifice Used for the Calibration:	D19	Coefficient (K'):	0.44410
Ambient Temperature Meter No.	Y-0815	Second Orifice	
Note: Critical orifice coefficients are in English units.		Critical Orifice No.	D24
		Coefficient (K'):	0.65490

	First Orifice	Second Orifice
CALIBRATION GAS VOLUME DATA		
Initial Dry Gas Meter Gas Volume, ft. ³	732.300	738.504
Final Dry Gas Meter Gas Volume, ft. ³	738.148	747.149
Net Dry Gas Meter Gas Volume (V _m), ft. ³	5.848	8.645
CALIBRATION CONDITIONS DATA		
Dry Gas Meter Temperature, °F:		
Initial Inlet Temperature, °F	94.0	96.0
Final Inlet Temperature, °F	95.0	99.0
Initial Outlet Temperature, °F	91.0	92.0
Final Outlet Temperature, °F	91.0	93.0
Average Dry Gas Meter Temperature (t _m), °F	92.8	95.0
Time, seconds	600	600
Orifice Meter Delta-H, inches w.c.	1.100	2.500
Barometric Pressure, in. Hg	29.89	29.89
Critical Orifice Inlet (Ambient) Temperature, °F:		
Initial Ambient Temperature, °F	85.8	86.8
Final Ambient Temperature, °F	86.6	87.4
Average Critical Orifice Inlet Temperature (t _{amb}), °F	86.2	87.1
Pump Vacuum, in. Hg	18	18
COMPUTED CALIBRATION RESULTS		
Critical Orifice Gas Volume (V _{cr} (std)), std. ft. ³	5.681	8.371
Dry Gas Meter Gas Volume (V _m (std)), std. ft. ³	5.595	8.266
Factor (Y) Obtained With Bracketing Orifice	1.015	1.013
CRITICAL ORIFICE ACCEPTABILITY		
<i>Criterion: All Ys Must Be Within 2% Of All Other Ys</i>		
Larger % Difference Between Dry Gas Meter Factor (Y) And Factor (Y) Obtained With The Bracketing Orifice	0.35%	0.62%
Larger % Difference Between Factors (Ys) Obtained With Bracketing Orifices	0.26%	
Acceptability Result	All Orifices Are Acceptable	

Remarks:

CRORBRKT.WK4 10/24/96 (rev. 4702N10B.WK4 07/20/99 10:24 AM)

CONSOLE CALIBRATION WORKSHEET

Job No. 4702-02-04-09 Console No. N10
 Date 7-30-99 Orifice No. 019
 Performed By B. Neal K Factor 0.5121
 Barometer 29.89 in. Hg. Previous Y 1.011

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: -N/A In. Hg.

Console vacuum gauge correction factor: 18.0 In. Hg.

	RUN #1	RUN #2	RUN #3
DGM Initial Volume:			
Initial:	<u>705.799</u>	<u>711.960</u>	<u>718.640</u>
Final:	<u>711.960</u>	<u>718.640</u>	<u>725.329</u>
DGM Inlet Temperature:			
Initial:	<u>88</u>	<u>90</u>	<u>92</u>
Final:	<u>90</u>	<u>91</u>	<u>93</u>
DGM Outlet Temperature:			
Initial:	<u>86</u>	<u>87</u>	<u>88</u>
Final:	<u>86</u>	<u>87</u>	<u>89</u>
Time of run (In Seconds):	<u>600</u>	<u>600</u>	<u>600</u>
Orifice Delta H (in. H ₂ O):	<u>1.45</u>	<u>1.45</u>	<u>1.45</u>
Room Temperature:			
Initial:	<u>83.6</u>	<u>83.8</u>	<u>85.4</u>
Final:	<u>83.4</u>	<u>84.8</u>	<u>84.2</u>
Pump Vacuum (in. Hg):	<u>18.0</u>	<u>18.0</u>	<u>18.0</u>

CONSOLE BRACKETING WORKSHEET

Job No. 4707-02-04-09 Console No. N/A
 Date 7-20-99 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 1.019 K Factor 0.6549
 Barometer 29.87 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: - N/A in. Hg.

Console vacuum gauge correction factor: 18.0 in. Hg.

	RUN #1	RUN #2
DGM Initial Volume:		
Initial:	<u>732.300</u>	<u>738.504</u>
Final:	<u>738.148</u>	<u>747.149</u>
DGM Inlet Temperature:		
Initial:	<u>94</u>	<u>96</u>
Final:	<u>95</u>	<u>99</u>
DGM Outlet Temperature:		
Initial:	<u>91</u>	<u>92</u>
Final:	<u>91</u>	<u>93</u>
Time of run (In Seconds):	<u>600</u>	<u>600</u>
Orifice Delta H(in. H ₂ O):	<u>1.1</u>	<u>2.5</u>
Room Temperature:		
Initial:	<u>85.8</u>	<u>86.8</u>
Final:	<u>86.6</u>	<u>87.4</u>
Pump Vacuum (in. Hg):	<u>18.0</u>	<u>18.0</u>

M5 CONSOLE POST TEST CHECKLIST

Job No. 4702-02-04-09 Date 7-20-99

Console No. N10 Performed By D. NEAL / GORMAN

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	DGM Inlet: (29C) = 84.2°F	84	Pass
Within +/-5.4°F	DGM Outlet: (29C) = 84.2°F	84	Pass

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: FISHER BRAND Serial Number: 15-041-1A

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.	4702-02-04-09	Metering Console No.	N11
Date:	7-20-99	Previous Dry Gas Meter Factor (Y):	0.988
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	1,006.701	1,013.332	1,019.976
Final Dry Gas Meter Gas Volume, ft. ³	1,013.332	1,019.976	1,026.638
Net Dry Gas Meter Gas Volume (Vm), ft. ³	6.631	6.644	6.662
CALIBRATION CONDITIONS DATA			
Dry Gas Meter Temperature, °F:			
Initial Inlet Temperature, °F	88.0	89.0	91.0
Final Inlet Temperature, °F	89.0	90.0	92.0
Initial Outlet Temperature, °F	87.0	88.0	89.0
Final Outlet Temperature, °F	87.0	88.0	90.0
Average Dry Gas Meter Temperature (tm), °F	87.8	88.8	90.5
Time, seconds	600	600	600
Orifice Meter Delta-H, inches w.c.	1.500	1.500	1.500
Barometric Pressure, in. Hg	29.89	29.89	29.89
Critical Orifice Inlet (Ambient) Temperature, °F:			
Initial Ambient Temperature, °F	85.4	85.0	86.4
Final Ambient Temperature, °F	84.8	86.2	87.2
Avg. Critical Orifice Inlet Temperature (tamb), °F	85.1	85.6	86.8
Pump Vacuum, in. Hg	18	18	18
COMPUTED CALIBRATION RESULTS			
Critical Orifice Gas Volume (Vcr (std)), std. ft. ³	6.558	6.555	6.548
Dry Gas Meter Gas Volume (Vm (std)), std. ft. ³	6.409	6.410	6.406
Dry Gas Meter Calibration Factor (Y)	1.023	1.023	1.022
Orifice Meter Delta-H@	1.903	1.901	1.899
AVERAGE CALIBRATION RESULTS			
Average Dry Gas Meter Calibration Factor (Y)	1.023		
Average Orifice Meter Delta-H@	1.901		
CALIBRATION RESULTS COMPARISON			
Criterion: Y Must Be Within 2% Of Average Y			
Percent Difference Of Y From Average Y	0.06%	0.00%	0.06%
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	3.51%		
Tolerance Result	PASS		

Y = 1.022590817611001

Remarks:

CRORCALB.WK4 10/24/96 (rev. 4702N11.WK4 07/20/99 10:32 AM)

CONSOLE CALIBRATION WORKSHEET

Job No. 4702-02-04-09 Console No. N11
 Date 7-20-99 Orifice No. 019
 Performed By D. Neal K Factor 0.5121
 Barometer 29.89 in. Hg. Previous Y 0.988

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: - N/A In. Hg.
 Console vacuum gauge correction factor: 18.0 In. Hg.

	RUN #1	RUN #2	RUN #3
DGM Initial Volume:			
Initial:	<u>1006.701</u>	<u>1013.332</u>	<u>1019.976</u>
Final:	<u>1013.332</u>	<u>1019.976</u> 1013.332	<u>1026.638</u>
DGM Inlet Temperature:			
Initial:	<u>88</u>	<u>89</u>	<u>91</u>
Final:	<u>89</u>	<u>90</u>	<u>92</u>
DGM Outlet Temperature:			
Initial:	<u>87</u>	<u>88</u>	<u>89</u>
Final:	<u>87</u>	<u>88</u>	<u>90</u>
Time of run (In Seconds):	<u>600</u>	<u>600</u>	<u>600</u>
Orifice Delta H (in. H ₂ O):	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>
Room Temperature:			
Initial:	<u>85.4</u>	<u>85.0</u>	<u>86.4</u>
Final:	<u>84.8</u>	<u>86.2</u>	<u>87.2</u>
Pump Vacuum (in. Hg):	<u>18.0</u>	<u>18.0</u>	<u>18.0</u>

M5 CONSOLE POST TEST CHECKLIST

Job No. 4702-02-04-09 Date 7-20-99

Console No. N11 Performed By D. NEAL/Gorman

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:	(28.5C)=83.3°F	83	Pow
	DGM Outlet:	(28.5C)=83.3°F	83	For

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: FISHBURN Serial Number: 15-041-1A

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!

STACK THERMOCOUPLE CALIBRATION DATA FORM

Job No. 4702-02-04-09 Stack Thermocouple No. 3158B
 Date 7-20-89 Probe No. B
 Performed By O. Neal Pyrometer No. Consolid N11
 Avg. Stack Temp. (°F) 190

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 (%)
(87.9C) 190.2	192	-1.8	-0.28

$$\frac{(\text{ref. Temp., F} + 460) - (\text{pyro. Temp., F} + 460)}{(\text{ref. Temp., F} + 460)} \times 100 \leq 1.5\%$$

STACK THERMOCOUPLE CALIBRATION DATA FORM

Job No. 4702-02-04-09 Stack Thermocouple No. 3158A
 Date 7-20-99 Probe No. A
 Performed By D. Neal Pyrometer No. CONSOLE N10
 Avg. Stack Temp. (°F) 190

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 (%)
(87.60) 189.7	190	-0.3	-0.046

$$\frac{(\text{ref. Temp., } F + 460) - (\text{pyro. Temp., } F + 460)}{(\text{ref. Temp., } F + 460)} \times 100 \leq 1.5\%$$

Type S Pitot Tube Inspection Data Form

Pitot Tube #: B Date: 7-20-99 Performed By: Griffin

Probe #: B Job #: 4702-02

Pitot tube assembly level? ☒ Yes ☐ No

Pitot tube openings damaged? ☐ Yes (explain below) ☒ No

$\alpha_1 =$ 2 ° (<10 °), $\alpha_2 =$ 2 ° (<10 °)

$\beta_1 =$ 1 ° (<5 °), $\beta_2 =$ 1 ° (<5 °)

$\gamma =$ 0 °, $\theta =$ 1 °, $A =$ 0.75 (in)

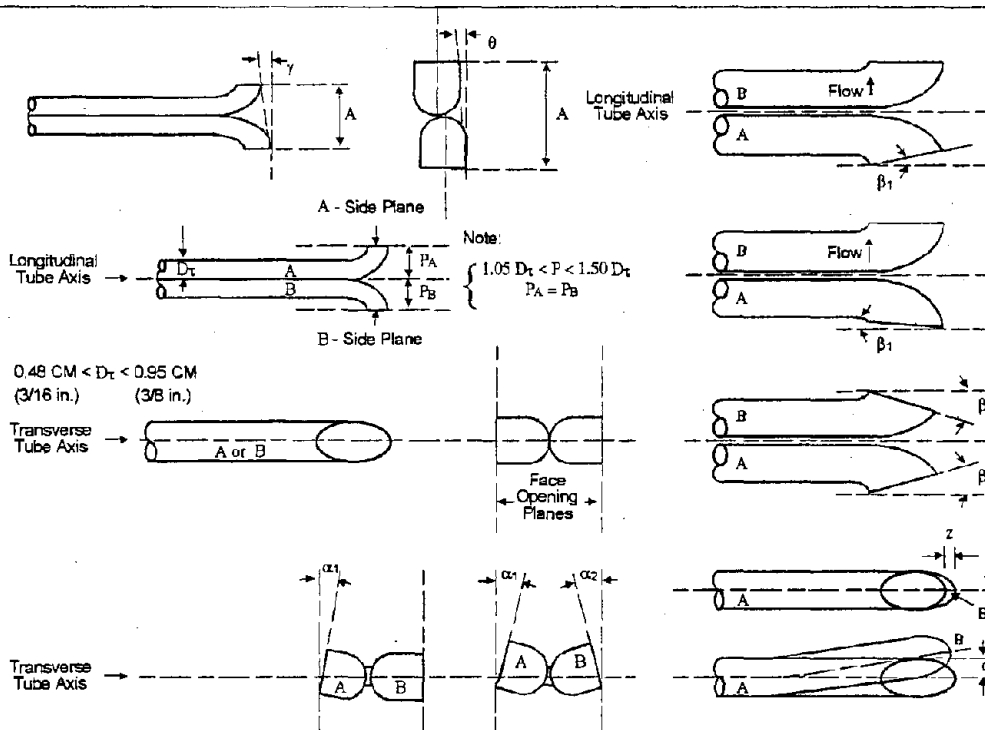
$z = A \sin \gamma$ 0.031 (in); (< 0.125 in)

$\varphi = A \sin \theta$ 0.0125 (in); (< 0.03125 in)

$P_A =$ 0.375 (in), $P_B =$ 0.375 (in), $D_t =$ 0.25 (in)

Calibration required? ☐ Yes ☒ No

Comments: _____



970114

Type S Pitot Tube Inspection Data Form

Pitot Tube #: A Date: 7-20-99 Performed By: GRI

Probe #: A Job #: 4702-02

Pitot tube assembly level? ☒ Yes ☐ No

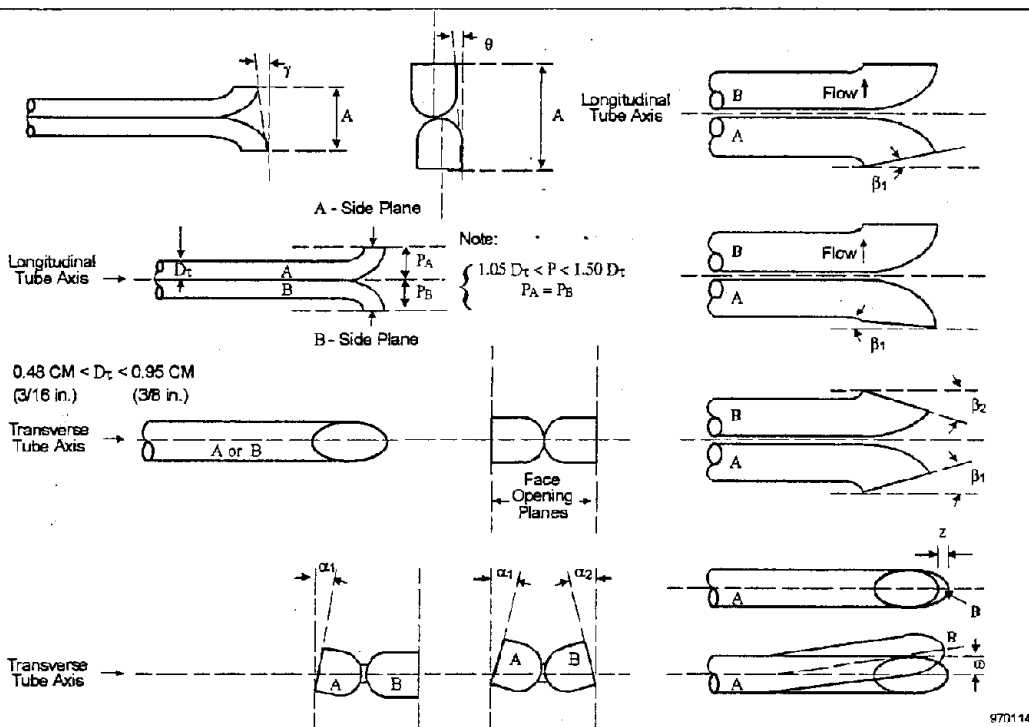
Pitot tube openings damaged? ☐ Yes (explain below) ☒ No

$$\alpha_1 = 0^\circ (<10^\circ), \quad \alpha_2 = 0^\circ (<10^\circ)$$
$$\beta_1 = 2^\circ (<5^\circ), \quad \beta_2 = 0^\circ (<5^\circ)$$
$$\gamma = 2.0^\circ, \quad \theta = 10.5^\circ, \quad A = \frac{3}{4} (0.75) \text{ (in)}$$
$$z = A \sin \gamma \quad 0.0625 \quad \text{(in)}; (< 0.125 \text{ in})$$
$$\omega = A \sin \theta \quad 0.01309 \quad (\text{in}); (< 0.03125 \text{ in})$$

$P_A = 0.375$ (in), $P_B = 0.375$ (in), $D_i = 0.25$ (in)

Calibration required? - Yes ☒ No

Comments: _____



GOOSENECK THERMOCOUPLE CALIBRATION DATA FORM

Job No. 4702-02-04-09 Pyrometer No. CONSOLE NII

Date 7-20-99 Reference Thermometer FISHER BRAND

Performed By D. Neal/Gorman Serial Number 15-041-1A

Calibration Method: Direct comparison of gooseneck thermocouple with reference thermometer in ambient air.

[illegible]

GOOSENECK THERMOCOUPLE CALIBRATION DATA FORM

Job No. 4702-02-04-09 Pyrometer No. CONSOLE N10

Date 7-20-99 Reference Thermometer FISHER BRAND

Performed By D. Neal / Command Serial Number 15-041-1A

Calibration Method: Direct comparison of gooseneck thermocouple with reference thermometer in ambient air.

[illegible]

ICal Appendix F

PM CEMS Data for Each Run

Correlation Testing - Run 10: Medium-High PM concentration - 1st correlation test run

7/15/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
8:55	11.88	18.56		10.93	1.05	86
8:56	11.15	18.58		10.83	1.04	86
8:57	11.64	18.52		11.04	1.06	86
8:58	11.97	19.49		11.04	1.06	86
8:59	12.04	19.84		10.72	1.03	86
9:00	12.16	17.61		10.83	1.04	86
9:01	11.52	19.81		10.86	1.04	87
9:02	11.92	20.83		10.89	1.04	88
9:03	10.74	24.28		10.78	1.03	88
9:04	10.50	28.18		10.68	1.02	88
9:05	10.25	28.36		10.68	1.02	88
9:06	10.73	21.19	12.48	10.68	1.02	88
9:07	13.96	17.40	12.48	10.68	1.02	88
9:08	14.52	19.72	12.48	10.78	1.03	88
9:09	14.54	21.19	12.48	11.93	1.14	88
9:10	10.62	23.26	12.48	13.30	1.27	88
9:11	11.04	24.91	12.48	13.32	1.27	89
9:12	11.29	24.94	12.48	13.05	1.24	90
9:13	11.56	20.17	12.48	13.47	1.28	90
9:14	11.93	18.94	12.48	13.37	1.27	90
9:15	11.58	18.89	12.48	12.69	1.21	89
9:16	11.98	18.55	12.48	11.62	1.11	88
9:17	11.07	17.22	12.48	11.62	1.11	88
9:18	10.96	17.70	12.48	10.68	1.02	88
9:19	11.35	18.00	12.31	10.57	1.01	88
9:20	10.61	16.43	12.25	10.47	1.00	88
9:21	10.79	16.92	12.25	10.57	1.01	88
9:22	10.99	17.63	12.25	10.57	1.01	88
9:23	11.23	19.00	12.25	10.47	1.00	88
9:24	9.66	25.54	12.25	10.57	1.01	88
9:25	10.21	24.64	12.25	10.57	1.01	88
9:26	11.20	21.28	12.25	10.68	1.02	88
9:27	12.94	16.10	12.25	10.68	1.02	88
9:28	14.16	18.58	12.25	10.68	1.02	88
9:29	14.88	18.80	12.25	10.78	1.03	88
9:30	9.87	19.63	12.25	10.68	1.02	88
9:31	10.07	21.61	12.25	10.68	1.02	88
9:32	10.91	22.24	11.71	10.78	1.03	88
9:33	9.97	17.79	11.53	10.68	1.02	88
9:34	11.14	17.56	11.53	10.78	1.03	88
9:35	11.41	17.50	11.53	10.68	1.02	88
9:36	11.74	18.91	11.53	10.68	1.02	88
9:37	11.58	16.66	11.53	10.68	1.02	88
9:38	11.26	18.48	11.53	10.78	1.03	88
9:39	11.63	19.52	11.53	10.78	1.03	88
9:40	11.40	17.22	11.53	10.57	1.01	88
9:41	11.22	18.40	11.53	10.68	1.02	88
9:42	11.65	18.58	11.53	10.78	1.03	88
9:43	10.63	19.99	11.53	10.89	1.04	88

9:44	9.49	23.98	11.53	10.89	1.04	88
9:45	10.26	24.40	11.25	10.89	1.04	88
9:46	11.21	23.98	10.97	10.78	1.03	88
9:47	11.93	16.10	10.97	10.89	1.04	88
9:48	14.11	17.94	10.97	10.89	1.04	88
9:49	14.84	19.18	10.97	10.89	1.04	88
9:50	11.00	19.39	10.97	10.89	1.04	88
9:51	9.88	20.65	10.97	10.89	1.04	88
9:52	10.23	22.57	10.97	10.89	1.04	88
9:53	9.84	19.96	10.97	10.78	1.03	88
9:54	11.08	17.96	10.97	10.68	1.02	88
9:55	11.54	18.14	10.97	10.68	1.02	88
9:56	11.86	18.79	10.97	10.78	1.03	88
9:57	10.80	16.82	10.97	10.78	1.03	88
9:58	11.39	17.89	11.09	10.78	1.03	88
9:59	11.05	17.97	11.45	10.68	1.02	88
10:00	10.93	18.03	11.45	10.47	1.00	88
10:01	10.99	17.60	11.45	10.68	1.02	88
10:02	10.96	18.54	11.45	10.68	1.02	88
10:03	11.80	18.31	11.45	10.68	1.02	88
10:04	9.61	21.34	11.45	10.57	1.01	88
10:05	9.62	24.76	11.45	10.57	1.01	88
10:06	10.62	23.77	11.45	10.57	1.01	88
10:07	10.73	16.63	11.45	10.68	1.02	88
10:08	13.38	17.03	11.45	10.68	1.02	88
10:09	13.66	17.65	11.45	10.78	1.03	88
10:10	11.42	17.47	11.45	10.89	1.04	88
10:11	9.95	20.29	11.45	10.89	1.04	88
10:12	9.99	20.83	11.53	10.89	1.04	88
10:13	9.69	20.53	11.53	10.89	1.04	88
10:14	10.53	17.66	11.52	10.99	1.05	88
10:15	11.74	18.91	11.53	11.10	1.06	88
10:16	11.79	19.00	11.53	10.99	1.05	88
10:17	11.03	17.65	11.53	10.99	1.05	88
10:18	11.88	19.53	11.53	11.10	1.06	88
10:19	12.19	20.08	11.53	11.10	1.06	88
10:20	11.93	20.80	11.53	11.10	1.06	88
10:21	12.06	19.39	11.53	10.99	1.05	88
10:22	11.91	20.86	11.53	10.99	1.05	88
10:23	12.54	21.13	11.53	10.99	1.05	88
10:24	10.72	24.46	11.53	10.89	1.04	88
10:25	10.43	29.11	11.83	10.47	1.00	88
10:26	11.14	30.28	11.93	10.47	1.00	88
10:27	11.33	21.91	11.93	10.57	1.01	88
10:28	14.55	19.06	11.93	10.47	1.00	88
10:29	14.81	19.78	11.92	10.57	1.01	88
10:30	14.02	19.90	11.93	10.57	1.01	88
10:31	9.26	18.61	11.93	10.78	1.03	88
10:32	9.78	20.98	11.93	10.99	1.05	88
10:33	9.94	22.99	11.93	11.10	1.06	88
10:34	10.61	18.20	11.93	11.20	1.07	88
10:35	11.78	18.90	11.93	11.41	1.09	88

10:36	11.96	20.38	11.93	11.20	1.07	88	
10:37	11.77	19.78	11.93	11.20	1.07	88	
10:38	11.64	18.19	12.16	11.31	1.08	88	
10:39	11.75	19.16	12.40	11.10	1.06	88	
10:40	11.67	18.80	12.40	10.74	1.03	87	
10:41	10.95	16.87	12.40	10.41	1.00	86	
10:42	11.28	18.39	12.40	10.72	1.03	86	
10:43	11.33	18.80	12.40	10.93	1.05	86	
10:44	10.40	21.61	12.40	10.93	1.05	86	
10:45	9.49	25.36	12.40	10.83	1.04	86	
10:46	10.16	26.86	12.40	10.93	1.05	86	
10:47			12.40				
10:48			12.40				
10:49			12.40				
10:50			12.40				
10:51			12.08				
10:52			11.12				
10:53			11.12				
10:54			11.13				
10:55			11.13				
10:56			11.13				
10:57			11.12				
10:58			11.13				
10:59			11.13				
11:00			11.13				
11:01			11.13				
11:02			11.13				
11:03			11.13				
11:04			11.13				
Average	11.40	20.06	11.74	10.95	1.05	87.84	190
Minimum	9.26	16.10	10.97	10.41	1.00	86.00	
Maximum	14.88	30.28	12.48	13.47	1.28	90.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 10

M17	For P5B & 300-40	For F904K & RSD	Moisture
Results	mg/acm	mg/dscm	%
Train A	25.63	38.6	12.8
Train B	26.63	40.4	13.2
Average	26.13	39.5	13

Correlation Testing - Run 11: Medium-High PM concentration - 2nd correlation test run

7/15/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
11:47	11.34	18.90		10.83	1.04	86
11:48	10.90	17.23		10.52	1.01	86
11:49	11.26	18.06		10.62	1.02	86
11:50	11.58	18.71		10.72	1.03	86
11:51	10.92	19.33		10.83	1.04	86
11:52	10.29	24.52		10.83	1.04	86
11:53	10.19	26.05		10.83	1.04	86
11:54	10.41	25.48		10.93	1.05	86
11:55	11.58	17.23		10.83	1.04	86
11:56	13.27	17.57		10.72	1.03	86
11:57	14.05	18.33		10.83	1.04	86
11:58	11.18	18.55	10.25	10.83	1.04	86
11:59	9.85	20.74	10.25	10.72	1.03	86
12:00	10.11	21.52	10.25	10.72	1.03	86
12:01	10.14	20.08	10.25	10.62	1.02	86
12:02	10.68	17.55	10.25	10.72	1.03	86
12:03	11.09	17.45	10.25	10.83	1.04	86
12:04	11.75	18.35	10.25	10.83	1.04	86
12:05	10.44	16.08	10.25	10.72	1.03	86
12:06	11.42	17.82	10.25	10.83	1.04	86
12:07	11.31	19.39	10.25	10.83	1.04	86
12:08	11.87	19.69	10.25	11.14	1.07	86
12:09	11.43	19.00	10.25	10.83	1.04	86
12:10	11.56	19.72	10.25	11.04	1.06	86
12:11	12.31	20.29	10.97	10.83	1.04	86
12:12	11.11	22.12	10.97	10.83	1.04	86
12:13	10.30	29.59	10.97	10.72	1.03	86
12:14	10.56	29.98	10.97	10.83	1.04	86
12:15	10.42	26.71	10.97	10.83	1.04	86
12:16	14.14	18.76	10.97	10.93	1.05	86
12:17	15.41	20.83	10.97	11.14	1.07	86
12:18	15.14	22.90	10.97	11.14	1.07	86
12:19	10.69	23.02	10.97	11.14	1.07	86
12:20	10.82	25.09	10.97	11.24	1.08	86
12:21	11.74	27.16	10.97	11.24	1.08	86
12:22	11.78	21.85	10.97	11.14	1.07	86
12:23	11.86	20.80	10.97	10.93	1.05	86
12:24	13.02	21.79	12.58	10.93	1.05	86
12:25	12.98	21.88	13.12	10.83	1.04	86
12:26	12.50	19.27	13.12	10.93	1.05	86
12:27	12.97	21.43	13.12	10.93	1.05	86
12:28	13.22	22.33	13.13	10.83	1.04	86
12:29	12.30	20.08	13.12	10.62	1.02	86
12:30	12.12	20.77	13.12	10.72	1.03	86
12:31	13.02	22.15	13.12	10.72	1.03	86
12:32	12.53	24.64	13.12	10.83	1.04	86
12:33	10.47	30.52	13.12	10.83	1.04	86
12:34	11.10	33.31	13.12	10.93	1.05	86
12:35	12.31	31.93	13.12	11.04	1.06	86

12:36	13.25	19.06	13.12	10.93	1.05	86
12:37	15.81	22.21	12.93	11.07	1.06	87
12:38	16.92	22.72	12.72	10.99	1.05	88
12:39	11.88	22.03	12.72	10.89	1.04	88
12:40	11.00	25.15	12.72	10.89	1.04	88
12:41	11.19	25.30	12.72	10.89	1.04	88
12:42	12.05	22.90	12.73	10.89	1.04	88
12:43	12.04	20.53	12.72	10.89	1.04	88
12:44	12.07	20.44	12.72	10.98	1.05	88
12:45	12.58	20.11	12.72	10.93	1.05	86
12:46	11.39	18.55	12.72	10.83	1.04	86
12:47	11.96	19.63	12.73	10.93	1.05	86
12:48	12.30	21.01	12.72	11.04	1.06	86
12:49	11.41	19.27	12.72	10.83	1.04	86
12:50	12.27	20.05	12.56	10.93	1.05	86
12:51	12.25	20.77	12.08	10.93	1.05	86
12:52	12.36	21.28	12.08	10.62	1.02	86
12:53	9.96	26.17	12.08	10.52	1.01	86
12:54	10.60	28.69	12.08	10.31	0.99	86
12:55	9.88	27.52	12.08	10.20	0.98	86
12:56	11.26	16.24	12.08	10.10	0.97	86
12:57	13.25	17.23	12.08	9.99	0.96	86
12:58	13.28	18.21	12.08	10.20	0.98	86
12:59	11.78	17.17	12.08	10.41	1.00	86
13:00	9.18	19.27	12.08	10.93	1.05	86
13:01	9.54	20.35	12.08	11.45	1.10	86
13:02	9.83	18.52	12.08	11.51	1.11	85
13:03	11.37	18.55	11.88	12.01	1.16	84
13:04	11.71	19.38	11.28	12.01	1.16	84
13:05	12.62	20.44	11.28	11.91	1.15	84
13:06	10.69	18.01	11.28	11.70	1.13	84
13:07	10.43	17.33	11.28	11.60	1.12	84
13:08	11.86	19.30	11.28	11.70	1.13	84
13:09	12.32	21.10	11.28	11.60	1.12	84
13:10	12.11	22.12	11.28	11.49	1.11	84
13:11	12.08	18.91	11.28	11.18	1.08	84
13:12	12.02	20.95	11.28	11.18	1.08	84
13:13	11.94	20.38	11.28	11.18	1.08	84
13:14	11.76	22.06	11.28	10.97	1.06	84
13:15	9.92	27.46	11.28	10.87	1.05	84
13:16	10.80	28.87	11.28	10.87	1.05	84
13:17	11.01	29.41	11.36	10.87	1.05	84
13:18	12.46	17.59	11.36	10.87	1.05	84
13:19	14.89	20.02	11.36	10.89	1.05	85
13:20	14.73	20.29	11.36	11.14	1.07	86
13:21	11.10	19.69	11.36	11.04	1.06	86
13:22	10.33	21.40	11.36	11.04	1.06	86
13:23	10.71	24.10	11.36	10.93	1.05	86
13:24	11.28	20.14	11.36	10.93	1.05	86
13:25	11.29	18.63	11.36	10.83	1.04	86
13:26	11.75	18.76	11.36	11.04	1.06	86
13:27	12.17	19.87	11.36	11.24	1.08	86

13:28	11.31	18.06	11.36	11.24	1.08	86
13:29	12.48	19.57	11.36	11.45	1.10	86
13:30	12.48	20.98	11.36	11.45	1.10	86
13:31	12.03	20.20	11.36	11.24	1.08	86
13:32	12.49	21.01	11.36	11.35	1.09	86
13:33	12.53	21.61	11.36	11.45	1.10	86
13:34	13.03	22.27	11.36	11.39	1.10	84
13:35	9.98	28.66	11.36	11.18	1.08	84
13:36	10.36	33.01	11.36	11.08	1.07	84
13:37	10.78	32.08	11.36	10.97	1.06	84
13:38	12.00	21.94	11.36	10.77	1.04	84
13:39			11.36			
13:40			11.36			
13:41			11.36			
13:42			11.36			
13:43			11.81			
13:44			12.25			
13:45			12.25			
13:46			12.25			
13:47			12.25			
13:48			12.25			
13:49			12.25			
13:50			12.25			
13:51			12.25			
13:52			12.25			
13:53			12.25			
13:54			12.25			
13:55			12.25			

Average	11.76	21.62	11.71	10.96	1.05	85.74	186
Minimum	9.18	16.08	10.25	9.99	0.96	84.00	
Maximum	16.92	33.31	13.13	12.01	1.16	88.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 11

	For P5B & 300-40	For F904K & RSD	Moisture
M17 Results	mg/acm	mg/dscm	%
Train A	28.22	42.4	12.7
Train B	27.29	41.2	13
Average	27.755	41.8	12.85

Correlation Testing - Run 12: High PM concentration - 3rd correlation test run

7/15/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
14:39	12.61	20.65		10.78	1.03	88
14:40	12.89	22.15		10.89	1.04	88
14:41	12.54	19.93		10.75	1.03	87
14:42	13.15	21.13		10.83	1.04	86
14:43	13.61	23.05		10.93	1.05	86
14:44	12.22	26.41		11.04	1.06	86
14:45	11.30	33.37		11.04	1.06	86
14:46	11.67	32.89		11.14	1.07	86
14:47	12.12	30.88		11.14	1.07	86
14:48	14.86	21.04		11.04	1.06	86
14:49	16.48	23.29		11.04	1.06	86
14:50	16.73	22.87	13.76	11.14	1.07	86
14:51	10.35	23.23	13.76	11.14	1.07	86
14:52	11.07	25.72	13.76	11.24	1.08	86
14:53	11.03	26.65	13.76	11.24	1.08	86
14:54	12.06	22.90	13.76	11.24	1.08	86
14:55	12.41	21.49	13.76	11.28	1.09	84
14:56	12.97	22.39	13.76	11.28	1.09	84
14:57	12.82	23.14	13.76	11.28	1.09	84
14:58	12.52	19.24	13.76	11.28	1.09	84
14:59	13.39	21.94	13.76	11.28	1.09	84
15:00	13.50	22.87	13.76	11.28	1.09	84
15:01	13.37	22.09	13.76	10.97	1.06	84
15:02	12.98	22.84	13.52	11.08	1.07	84
15:03	13.85	24.10	12.80	11.18	1.08	84
15:04	12.62	25.45	12.80	11.08	1.07	84
15:05	10.98	32.89	12.80	11.08	1.07	84
15:06	11.42	35.83	12.80	11.08	1.07	84
15:07	11.98	32.80	12.80	11.08	1.07	84
15:08	14.26	19.66	12.80	11.08	1.07	84
15:09	16.57	23.65	12.81	11.08	1.07	84
15:10	16.80	24.85	12.80	11.18	1.08	84
15:11	12.26	23.71	12.80	11.18	1.08	84
15:12	11.05	26.41	12.80	11.28	1.09	84
15:13	11.18	27.67	12.80	11.18	1.08	84
15:14	11.45	25.60	12.80	11.18	1.08	84
15:15	12.70	23.05	12.80	11.28	1.09	84
15:16	13.22	23.65	12.56	11.28	1.09	84
15:17	13.93	23.47	12.56	11.28	1.09	84
15:18	12.69	22.27	12.56	11.18	1.08	84
15:19	13.75	23.14	12.56	11.28	1.09	84
15:20	13.39	23.95	12.56	11.18	1.08	84
15:21	13.46	22.99	12.56	10.87	1.05	84
15:22	13.19	22.36	12.56	11.08	1.07	84
15:23	14.13	25.78	12.56	11.08	1.07	84
15:24	14.46	26.26	12.56	11.18	1.08	84
15:25	11.47	33.22	12.56	11.18	1.08	84
15:26	11.94	37.84	12.56	11.08	1.07	84
15:27	12.49	36.85	12.56	11.14	1.07	86

15:28	13.80	24.64	12.56	11.24	1.08	86
15:29	16.67	24.79	13.10	11.14	1.07	86
15:30	17.69	26.20	13.28	11.24	1.08	86
15:31	14.74	26.98	13.28	11.35	1.09	86
15:32	11.71	29.05	13.28	11.14	1.07	86
15:33	12.14	30.16	13.28	11.24	1.08	86
15:34	12.99	30.52	13.28	11.35	1.09	86
15:35	13.23	25.51	13.28	11.24	1.08	86
15:36	14.34	26.29	13.28	11.24	1.08	86
15:37	14.77	27.13	13.28	11.24	1.08	86
15:38	14.32	25.00	13.28	11.24	1.08	86
15:39	14.87	25.96	13.28	11.24	1.08	86
15:40	15.05	27.85	13.28	11.35	1.09	86
15:41	15.54	28.15	13.28	11.14	1.07	86
15:42	14.32	25.39	13.96	11.24	1.08	86
15:43	15.13	27.85	14.63	11.14	1.07	86
15:44	15.81	29.32	14.63	11.24	1.08	86
15:45	13.34	34.48	14.63	11.24	1.08	86
15:46	13.24	40.66	14.63	11.14	1.07	86
15:47	13.85	40.27	14.63	11.24	1.08	86
15:48	13.79	33.40	14.64	11.35	1.09	86
15:49	17.30	27.40	14.64	11.14	1.07	86
15:50	18.16	28.84	14.63	11.24	1.08	86
15:51	17.62	30.37	14.63	11.24	1.08	86
15:52	11.97	29.59	14.63	11.24	1.08	86
15:53	12.35	31.72	14.63	11.14	1.07	86
15:54	13.02	34.51	14.63	11.24	1.08	86
15:55	12.93	26.05	14.83	11.24	1.08	86
15:56	14.10	27.40	15.43	11.24	1.08	86
15:57	15.43	28.21	15.43	11.24	1.08	86
15:58	15.00	29.35	15.43	11.24	1.08	86
15:59	15.51	26.26	15.43	11.24	1.08	86
16:00	16.20	28.69	15.44	11.24	1.08	86
16:01	16.58	29.89	15.43	11.24	1.08	86
16:02	14.72	27.28	15.44	10.93	1.05	86
16:03	16.37	29.20	15.43	11.14	1.07	86
16:04	16.29	30.16	15.43	11.04	1.06	86
16:05	13.78	32.80	15.43	10.93	1.05	86
16:06	13.22	42.67	15.43	10.93	1.05	86
16:07	14.00	42.13	15.43	11.04	1.06	86
16:08	14.11	37.69	15.44	11.04	1.06	86
16:09	16.52	25.57	17.11	11.04	1.06	86
16:10	18.39	28.63	17.11	11.04	1.06	86
16:11	19.50	28.69	17.11	11.14	1.07	86
16:12	11.85	29.23	17.11	11.14	1.07	86
16:13	11.82	32.17	17.11	11.14	1.07	86
16:14	12.74	34.96	17.11	11.24	1.08	86
16:15	12.74	28.57	17.11	11.24	1.08	86
16:16	14.02	26.86	17.11	11.24	1.08	86
16:17	14.66	28.30	17.11	11.24	1.08	86
16:18	14.81	29.59	17.11	11.14	1.07	86
16:19	14.31	23.92	17.11	11.14	1.07	86

16:20	14.99	26.65	17.11	11.14	1.07	86	
16:21	14.75	27.70	17.11	11.14	1.07	86	
16:22	14.42	24.94	14.96	10.83	1.04	86	
16:23	14.85	27.52	14.96	11.04	1.06	86	
16:24	14.40	29.20	14.96	11.14	1.07	86	
16:25	14.46	30.52	14.96	11.14	1.07	86	
16:26	11.81	38.02	14.96	11.04	1.06	86	
16:27	13.21	38.50	14.96	11.04	1.06	86	
16:28	13.15	38.98	14.96	11.04	1.06	86	
16:29	15.28	22.48	14.96	11.14	1.07	86	
16:30	17.55	26.56	14.96	11.04	1.06	86	
16:31			14.96				
16:32			14.96				
16:33			14.96				
16:34			14.96				
16:35			15.67				
16:36			15.91				
16:37			15.91				
16:38			15.91				
16:39			15.91				
16:40			15.91				
16:41			15.91				
16:42			15.91				
16:43			15.91				
16:44			15.91				
16:45			15.91				
16:46			15.91				
16:47			15.91				
Average	13.88	27.83	14.49	11.15	1.07	85.47	186
Minimum	10.35	19.24	12.56	10.75	1.03	84.00	
Maximum	19.50	42.67	17.11	11.35	1.09	88.00	
	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	31.77	48.6	14.1
Train B	32.78	50.5	14.8
Average	32.275	49.55	14.45

Correlation Testing - Run 13: Medium PM concentration - 4th correlation test run

7/16/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acrn H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
9:06	10.56	14.20		10.40	1.01	82
9:07	11.68	16.52		10.40	1.01	82
9:08	11.90	16.30		10.40	1.01	82
9:09	8.80	17.09		10.30	1.00	82
9:10	8.84	17.32		10.40	1.01	82
9:11	9.03	17.45		10.60	1.03	82
9:12	8.14	14.96		10.71	1.04	82
9:13	9.01	13.48		10.91	1.06	82
9:14	9.23	13.29		10.50	1.02	82
9:15	9.52	13.71		11.02	1.07	82
9:16	7.76	10.49		11.22	1.09	82
9:17	7.68	10.94	8.17	11.32	1.10	82
9:18	8.15	11.30	8.17	11.60	1.12	84
9:19	7.82	11.41	8.17	11.39	1.10	84
9:20	8.18	11.75	8.17	11.28	1.09	84
9:21	8.03	12.06	8.17	10.97	1.06	84
9:22	8.26	11.59	8.17	10.77	1.04	84
9:23	8.57	11.77	8.17	10.66	1.03	84
9:24	8.62	11.69	8.17	10.66	1.03	84
9:25	8.45	11.70	8.17	10.87	1.05	84
9:26	8.80	12.60	8.17	11.08	1.07	84
9:27	8.71	12.79	8.17	11.39	1.10	84
9:28	9.00	14.08	8.17	11.60	1.12	84
9:29	9.55	15.17	7.91	11.80	1.14	84
9:30	9.69	15.88	7.13	11.80	1.14	84
9:31	9.96	16.38	7.13	11.60	1.12	84
9:32	9.88	15.20	7.13	11.08	1.07	84
9:33	9.92	15.69	7.13	10.87	1.05	84
9:34	10.19	15.07	7.13	10.56	1.02	84
9:35	9.96	16.27	7.13	10.30	1.00	82
9:36	8.83	20.41	7.13	10.40	1.01	82
9:37	9.27	20.44	7.13	10.71	1.04	82
9:38	9.68	21.70	7.13	11.02	1.07	82
9:39	10.73	12.89	7.13	11.22	1.09	82
9:40	11.82	14.90	7.13	11.53	1.12	82
9:41	12.80	15.39	7.13	11.74	1.14	82
9:42	9.81	16.00	7.13	11.74	1.14	82
9:43	9.19	18.15	8.80	11.65	1.13	83
9:44	8.94	18.58	8.80	11.60	1.12	84
9:45	9.82	17.05	8.81	11.49	1.11	84
9:46	9.79	14.99	8.81	11.39	1.10	84
9:47	10.12	15.35	8.81	11.18	1.08	84
9:48	10.82	15.73	8.81	11.18	1.08	84
9:49	8.56	14.08	8.81	11.08	1.07	84
9:50	9.20	12.76	8.81	11.08	1.07	84
9:51	9.07	12.64	8.81	11.18	1.08	84
9:52	9.36	12.84	8.81	11.28	1.09	84
9:53	9.55	13.83	8.81	11.28	1.09	84
9:54	10.30	16.55	8.81	11.49	1.11	84

9:55	10.47	16.46	8.81	11.60	1.12	84
9:56	10.44	16.49	9.29	11.39	1.10	84
9:57	9.94	15.57	9.45	11.49	1.11	84
9:58	9.96	16.39	9.45	11.58	1.12	84
9:59	10.61	16.75	9.45	11.53	1.12	82
10:00	9.48	19.81	9.45	11.53	1.12	82
10:01	9.34	23.74	9.45	11.53	1.12	82
10:02	10.06	23.83	9.45	11.53	1.12	82
10:03	9.62	17.77	9.45	11.53	1.12	82
10:04	12.42	15.69	9.45	11.53	1.12	82
10:05	12.62	17.44	9.45	11.53	1.12	82
10:06	12.53	17.98	9.45	11.53	1.12	82
10:07	8.90	17.20	9.45	11.53	1.12	82
10:08	9.61	19.29	9.45	11.53	1.12	82
10:09	8.96	19.78	9.29	11.43	1.11	82
10:10	9.00	14.09	9.13	11.53	1.12	82
10:11	9.95	15.42	9.13	11.63	1.13	82
10:12	10.12	15.48	9.13	11.74	1.14	82
10:13	9.47	14.66	9.13	11.63	1.13	82
10:14	9.23	14.22	9.13	11.84	1.15	82
10:15	9.42	14.13	9.13	11.84	1.15	82
10:16	9.44	13.94	9.13	11.74	1.14	82
10:17	9.09	13.93	9.13	11.32	1.10	82
10:18	9.32	14.55	9.13	11.43	1.11	82
10:19	9.42	14.57	9.13	11.32	1.10	82
10:20	8.67	15.68	9.13	11.32	1.10	82
10:21	8.48	19.51	9.13	11.22	1.09	82
10:22	8.75	19.28	8.85	11.22	1.09	82
10:23	8.94	17.20	8.02	11.22	1.09	82
10:24	10.79	12.78	8.02	11.22	1.09	82
10:25	11.29	13.50	8.02	11.22	1.09	82
10:26	11.38	14.16	8.02	11.24	1.09	83
10:27	8.07	14.69	8.02	11.18	1.08	84
10:28	8.57	15.89	8.02	10.97	1.06	84
10:29	8.62	16.79	8.02	10.77	1.04	84
10:30	8.12	13.29	8.02	10.59	1.02	85
10:31	8.88	12.18	8.02	10.62	1.02	86
10:32	9.31	12.58	8.02	10.62	1.02	86
10:33	8.94	14.03	8.02	10.44	1.00	87
10:34	8.40	11.26	8.02	10.57	1.01	88
10:35	8.78	13.03	8.02	10.68	1.02	88
10:36	8.95	13.39	8.41	10.78	1.03	88
10:37	9.38	13.12	8.41	10.78	1.03	88
10:38	9.46	13.73	8.41	10.68	1.02	88
10:39	9.39	14.62	8.41	10.78	1.03	88
10:40	9.56	15.55	8.41	10.78	1.03	88
10:41	9.31	17.44	8.41	10.68	1.02	88
10:42	9.36	20.71	8.41	10.68	1.02	88
10:43	9.44	20.23	8.41	10.78	1.03	88
10:44	10.74	14.51	8.41	10.78	1.03	88
10:45	12.32	15.30	8.41	10.89	1.04	88
10:46	12.66	15.67	8.41	11.10	1.06	88

10:47	10.34	18.73	8.41	11.10	1.06	88	
10:48	9.01	18.40	8.40	11.10	1.06	88	
10:49	9.24	19.42	9.01	11.10	1.06	88	
10:50	8.82	17.35	9.21	10.89	1.04	88	
10:51	10.05	15.60	9.21	10.68	1.02	88	
10:52	10.55	15.34	9.20	10.36	0.99	88	
10:53	10.60	15.96	9.20	10.47	1.00	88	
10:54	9.85	13.75	9.21	10.57	1.01	88	
10:55	9.69	14.62	9.21	10.78	1.03	88	
10:56	9.60	14.40	9.21	10.68	1.02	88	
10:57	9.62	14.68	9.21	10.57	1.01	88	
10:58			9.21				
10:59			9.21				
11:00			9.20				
11:01			9.21				
11:02			9.05				
11:03			8.89				
11:04			8.89				
11:05			8.89				
11:06			8.89				
11:07			8.89				
11:08			8.89				
11:09			8.89				
11:10			8.89				
11:11			8.89				
11:12			8.89				
11:13			8.89				
11:14			8.89				
Average	9.60	15.45	8.58	11.10	1.07	84.07	183
Minimum	7.68	10.49	7.13	10.30	0.99	82.00	
Maximum	12.80	23.83	9.45	11.84	1.15	88.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 13

M17	For P5B & 300-40	For F904K & RSD	Moisture
Results	mg/acm	mg/dscm	%
Train A	11.74	17.4	11.9
Train B	11.48	17	11.9
Average	11.61	17.2	11.9

Correlation Testing - Run 14: Medium PM concentration - 5th correlation test run

7/16/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	degC
12:12	9.46	15.54		10.83	1.04	86
12:13	9.71	16.05		10.93	1.05	86
12:14	8.80	16.96		11.04	1.06	86
12:15	9.30	22.69		10.93	1.05	86
12:16	9.40	21.46		11.04	1.06	86
12:17	9.76	18.37		11.04	1.06	86
12:18	11.76	14.19		11.04	1.06	86
12:19	12.93	14.97		11.04	1.06	86
12:20	12.08	18.46		10.93	1.05	86
12:21	8.87	15.67		10.93	1.05	86
12:22	9.33	18.16	8.65	10.93	1.05	86
12:23	9.29	18.39	8.65	10.93	1.05	86
12:24	8.83	15.23	8.65	10.93	1.05	86
12:25	10.07	15.23	8.65	10.93	1.05	86
12:26	10.15	14.99	8.65	10.93	1.05	86
12:27	9.96	14.68	8.65	10.83	1.04	86
12:28	8.50	11.92	8.65	10.93	1.05	86
12:29	9.56	14.14	8.65	11.14	1.07	86
12:30	9.56	14.90	8.65	11.14	1.07	86
12:31	9.64	15.05	8.65	11.04	1.06	86
12:32	9.09	15.02	8.65	10.72	1.03	86
12:33	9.70	14.93	8.65	10.93	1.05	86
12:34	10.26	15.74	8.65	11.04	1.06	86
12:35	8.91	16.54	8.49	10.83	1.04	86
12:36	8.84	21.76	8.49	10.83	1.04	86
12:37	9.09	22.12	8.49	10.93	1.05	86
12:38	8.97	19.24	8.49	10.93	1.05	86
12:39	11.15	13.75	8.49	10.83	1.04	86
12:40	11.97	14.34	8.49	11.04	1.06	86
12:41	12.31	14.45	8.49	11.14	1.07	86
12:42	8.59	14.90	8.49	11.24	1.08	86
12:43	8.81	16.82	8.49	11.35	1.09	86
12:44	8.58	17.57	8.49	11.24	1.08	86
12:45	8.96	15.12	8.49	11.14	1.07	86
12:46	9.48	14.18	8.49	11.14	1.07	86
12:47	9.76	15.34	8.49	11.14	1.07	86
12:48	9.54	15.63	9.27	11.04	1.06	86
12:49	9.02	12.42	9.53	10.83	1.04	86
12:50	9.33	14.07	9.53	11.04	1.06	86
12:51	9.69	14.73	9.53	11.04	1.06	86
12:52	9.20	14.60	9.53	10.83	1.04	86
12:53	9.23	14.92	9.53	10.93	1.05	86
12:54	9.53	15.54	9.53	10.93	1.05	86
12:55	9.47	16.63	9.53	11.04	1.06	86
12:56	8.59	19.72	9.53	11.14	1.07	86
12:57	9.13	21.64	9.53	11.04	1.06	86
12:58	9.20	21.40	9.53	11.04	1.06	86
12:59	10.03	16.06	9.53	11.04	1.06	86
12:59	10.08	16.09	9.53	11.04	1.06	86

13:00	12.25	15.88	9.53	11.04	1.06	86
13:01	12.48	15.76	8.51	11.04	1.06	86
13:02	9.97	19.12	8.17	10.93	1.05	86
13:03	9.32	17.79	8.17	10.83	1.04	86
13:04	9.23	18.16	8.17	10.93	1.05	86
13:05	8.83	16.45	8.17	10.83	1.04	86
13:06	9.66	15.15	8.17	10.83	1.04	86
13:07	9.67	15.12	8.17	10.93	1.05	86
13:08	10.06	15.72	8.17	11.04	1.06	86
13:09	8.80	13.09	8.17	10.93	1.05	86
13:10	8.64	12.22	8.17	10.93	1.05	86
13:11	8.74	12.54	8.17	10.93	1.05	86
13:12	9.86	15.07	8.17	11.04	1.06	86
13:13	10.25	16.21	8.17	11.04	1.06	86
13:14	10.40	16.56	8.05	11.04	1.06	86
13:15	10.17	16.02	7.93	10.72	1.03	86
13:16	10.25	16.73	7.93	10.83	1.04	86
13:17	10.21	17.08	7.93	10.93	1.05	86
13:18	9.95	18.40	7.93	10.93	1.05	86
13:19	9.31	23.89	7.93	10.83	1.04	86
13:20	9.24	25.03	7.93	10.85	1.04	87
13:21	10.20	24.22	7.93	10.99	1.05	88
13:22	10.84	14.33	7.93	10.89	1.04	88
13:23	13.03	16.23	7.93	10.78	1.03	88
13:24	12.88	17.35	7.93	10.78	1.03	88
13:25	11.93	19.66	7.93	10.68	1.02	88
13:26	9.40	19.54	7.93	10.78	1.03	88
13:27	9.34	19.58	8.89	10.78	1.03	88
13:28	9.06	17.47	9.85	10.68	1.02	88
13:29	10.14	15.66	9.85	10.78	1.03	88
13:30	10.36	16.06	9.85	10.89	1.04	88
13:31	11.38	16.90	9.85	10.89	1.04	88
13:32	9.74	15.13	9.85	10.78	1.03	88
13:33	10.04	16.09	9.85	10.99	1.05	88
13:34	10.39	16.29	9.85	10.99	1.05	88
13:35	10.04	15.57	9.85	10.68	1.02	88
13:36	10.36	17.16	9.85	10.68	1.02	88
13:37	10.31	17.46	9.85	10.78	1.03	88
13:38	10.33	18.55	9.85	10.68	1.02	88
13:39	9.29	22.45	9.85	10.68	1.02	88
13:40	9.75	25.60	9.87	10.57	1.01	88
13:41	9.43	25.96	9.93	10.78	1.03	88
13:42	10.69	15.77	9.93	10.81	1.03	89
13:43	13.15	16.90	9.93	10.84	1.03	90
13:44	13.97	17.22	9.93	10.84	1.03	90
13:45	12.94	18.10	9.93	10.84	1.03	90
13:46	9.54	20.11	9.93	10.84	1.03	90
13:47	9.69	19.90	9.93	10.84	1.03	90
13:48	9.35	19.30	9.93	10.74	1.02	90
13:49	10.19	16.17	9.93	10.84	1.03	90
13:50	10.47	16.16	9.93	10.84	1.03	90
13:51	11.16	16.80	9.93	10.84	1.03	90

13:52	10.06	15.97	9.93	10.84	1.03	90	
13:53	10.12	15.86	9.93	10.95	1.04	90	
13:54	10.20	16.18	10.08	11.05	1.05	90	
13:55	10.44	16.38	10.08	10.84	1.03	90	
13:56	9.76	16.24	10.08	10.84	1.03	90	
13:57	10.05	17.09	10.08	10.80	1.03	89	
13:58	10.59	17.83	10.08	10.89	1.04	88	
13:59	9.36	22.09	10.08	10.92	1.04	89	
14:00	9.43	26.44	10.08	10.84	1.03	90	
14:01	10.73	26.47	10.08	10.74	1.02	90	
14:02	9.94	19.57	10.08	10.74	1.02	90	
14:03			10.08				
14:04			10.08				
14:05			10.08				
14:06			10.08				
14:07			10.45				
14:08			10.57				
14:09			10.57				
14:10			10.57				
14:11			10.57				
14:12			10.57				
14:13			10.57				
14:14			10.57				
14:15			10.57				
14:16			10.57				
14:17			10.57				
14:18			10.57				
14:19			10.57				
Average	10.01	17.22	9.24	10.92	1.05	87.09	189
Minimum	8.50	11.92	7.93	10.57	1.01	86.00	
Maximum	13.97	26.47	10.57	11.35	1.09	90.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 14

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	13.48	20.4	13.1
Train B	14.36	21.8	13.4
Average	13.92	21.1	13.25

Correlation Testing - Run 15: Medium PM concentration - 6th correlation test run

7/16/99 Time	ESC P5B raw mA	Durag 300-40 raw ra mA	Durag F904K raw mA	Moisture %	g/acm H2O Vdc	Temp. deg C
15:43	9.42	26.11		11.28	1.09	84
15:44	10.41	26.26		11.18	1.08	84
15:45	10.64	20.68		11.18	1.08	84
15:46	13.64	18.42		11.08	1.07	84
15:47	14.24	19.96		11.08	1.07	84
15:48	13.21	24.22		11.18	1.08	84
15:49	9.78	21.55		11.18	1.08	84
15:50	9.99	21.76		11.18	1.08	84
15:51	10.11	22.24		11.18	1.08	84
15:52	9.94	16.91		11.08	1.07	84
15:53	10.89	18.18	10.65	11.18	1.08	84
15:54	11.35	18.27	10.65	11.18	1.08	84
15:55	10.55	17.98	10.65	11.18	1.08	84
15:56	10.41	15.77	10.65	11.28	1.09	84
15:57	10.44	17.21	10.65	11.49	1.11	84
15:58	10.83	17.41	10.65	11.49	1.11	84
15:59	9.95	16.39	10.65	11.18	1.08	84
16:00	10.15	17.92	10.65	11.39	1.10	84
16:01	10.37	18.61	10.65	11.28	1.09	84
16:02	9.85	20.05	10.65	11.39	1.10	84
16:03	9.25	26.26	10.65	11.28	1.09	84
16:04	9.67	25.60	10.65	11.43	1.11	82
16:05	10.03	23.74	10.65	11.22	1.09	82
16:06	13.11	17.29	9.69	11.22	1.09	82
16:07	13.42	18.13	9.37	11.32	1.10	82
16:08	14.12	18.73	9.37	11.22	1.09	82
16:09	9.76	24.82	9.37	11.28	1.09	84
16:10	9.61	20.62	9.37	11.28	1.09	84
16:11	9.92	21.73	9.37	11.28	1.09	84
16:12	9.73	17.32	9.37	11.08	1.07	84
16:13	10.82	17.03	9.37	11.28	1.09	84
16:14	10.78	17.95	9.37	11.28	1.09	84
16:15	11.32	18.13	9.37	11.39	1.10	84
16:16	9.55	14.65	9.37	11.39	1.10	84
16:17	10.23	16.17	9.37	11.60	1.12	84
16:18	10.50	16.95	9.37	11.60	1.12	84
16:19	10.21	16.10	9.49	11.49	1.11	84
16:20	9.85	16.97	9.61	11.60	1.12	84
16:21	9.88	17.59	9.60	11.49	1.11	84
16:22	9.83	18.61	9.60	11.49	1.11	84
16:23	9.15	23.11	9.60	11.39	1.10	84
16:24	9.12	24.94	9.60	11.49	1.11	84
16:25	10.16	24.94	9.60	11.49	1.11	84
16:26	11.27	17.00	9.60	11.48	1.11	84
16:27	12.71	17.12	9.60	11.32	1.10	82
16:28	12.95	17.83	9.61	11.32	1.10	82
16:29	10.80	24.73	9.60	11.43	1.11	82
16:30	9.20	21.07	9.60	11.32	1.10	82
16:31	9.59	20.26	9.60	11.46	1.11	83

16:32	9.24	18.67	9.78	11.18	1.08	84
16:33	10.44	17.71	10.33	11.28	1.09	84
16:34	10.63	17.20	10.33	11.18	1.08	84
16:35	10.66	17.37	10.33	11.18	1.08	84
16:36	10.63	15.86	10.33	11.18	1.08	84
16:37	10.07	16.19	10.33	11.18	1.08	84
16:38	10.12	16.62	10.33	11.39	1.10	84
16:39	10.19	16.02	10.33	11.28	1.09	84
16:40	10.50	16.58	10.33	11.28	1.09	84
16:41	9.92	17.30	10.33	11.39	1.10	84
16:42	10.39	17.98	10.33	11.39	1.10	84
16:43	9.08	21.76	10.33	11.39	1.10	84
16:44	9.33	25.36	10.33	11.49	1.11	84
16:45	9.42	24.88	10.33	11.39	1.10	84
16:46	11.30	19.12	9.29	11.49	1.11	84
16:47	12.19	16.65	9.29	11.49	1.11	84
16:48	12.83	18.10	9.29	11.49	1.11	84
16:49	11.48	21.85	9.29	11.60	1.12	84
16:50	9.58	19.93	9.29	11.43	1.11	82
16:51	9.31	19.96	9.29	11.53	1.12	82
16:52	9.38	18.91	9.30	11.43	1.11	82
16:53	9.58	15.77	9.29	11.56	1.12	83
16:54	10.08	16.41	9.29	11.60	1.12	84
16:55	10.62	17.19	9.30	11.60	1.12	84
16:56	10.13	15.21	9.29	11.49	1.11	84
16:57	9.57	15.74	9.29	11.39	1.10	84
16:58	10.04	16.28	9.29	11.39	1.10	84
16:59	10.48	16.75	9.71	11.39	1.10	84
17:00	9.54	14.87	9.85	11.08	1.07	84
17:01	10.64	17.09	9.85	11.28	1.09	84
17:02	10.21	17.81	9.85	11.28	1.09	84
17:03	9.37	20.71	9.85	11.39	1.10	84
17:04	10.23	24.19	9.85	11.39	1.10	84
17:05	10.09	25.75	9.85	11.28	1.09	84
17:06	10.46	21.91	9.85	11.28	1.09	84
17:07	12.46	16.28	9.85	11.18	1.08	84
17:08	13.09	17.36	9.85	11.18	1.08	84
17:09	14.97	47.02	9.85	11.28	1.09	84
17:10	9.17	18.22	9.85	11.28	1.09	84
17:11	9.96	20.02	9.85	11.39	1.10	84
17:12	9.55	20.02	10.37	11.39	1.10	84
17:13	9.03	15.74	10.88	11.49	1.11	84
17:14	9.94	16.13	10.88	11.70	1.13	84
17:15	10.61	16.65	10.88	11.49	1.11	84
17:16	10.43	16.25	10.88	11.49	1.11	84
17:17	9.49	14.83	10.88	11.28	1.09	84
17:18	10.49	16.34	10.88	11.28	1.09	84
17:19	10.30	16.57	10.88	11.28	1.09	84
17:20	9.71	15.20	10.88	11.08	1.07	84
17:21	9.64	16.46	10.88	11.28	1.09	84
17:22	10.37	17.04	10.88	11.39	1.10	84
17:23	9.60	18.77	10.88	11.39	1.10	84

17:24	9.21	24.10	10.88	11.28	1.09	84
17:25	9.44	25.75	10.48	11.39	1.10	84
17:26	10.91	24.16	9.29	11.28	1.09	84
17:27	12.79	16.28	9.29	11.28	1.09	84
17:28	13.23	17.59	9.29	11.39	1.10	84
17:29	13.90	18.70	9.29	11.49	1.11	84
17:30	12.10	24.64	9.29	11.49	1.11	84
17:31	9.91	20.77	9.30	11.60	1.12	84
17:32	9.74	21.28	9.29	11.49	1.11	84
17:33	9.32	18.21	9.29	11.49	1.11	84
17:34	10.28	17.40	9.29	11.60	1.12	84
17:35			9.29			
17:36			9.29			
17:37			9.29			
17:38			9.30			
17:39			10.57			
17:40			10.57			
17:41			10.57			
17:42			10.57			
17:43			10.57			
17:44			10.57			
17:45			10.57			
17:46			10.57			
17:47			10.57			
17:48			10.57			
17:49			10.57			
17:50			10.57			

Average	10.54	19.36	9.98	11.35	1.10	83.77	183
Minimum	9.03	14.65	9.29	11.08	1.07	82.00	
Maximum	14.97	47.02	10.88	11.70	1.13	84.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 15

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	14.88	22.3	13
Train B	14.05	21.2	13.2
Average	14.465	21.75	13.1

Correlation Testing - Run 16: Low PM concentration - 7th correlation test run

7/17/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
8:51	6.03	8.56		14.10	1.37	82
8:52	6.02	6.65		14.10	1.37	82
8:53	6.78	6.73		13.69	1.33	82
8:54	6.21	6.03		14.41	1.40	82
8:55	6.08	6.51		14.31	1.39	82
8:56	6.06	7.69		13.49	1.31	82
8:57	6.17	8.30		12.05	1.17	82
8:58	6.45	8.59		11.94	1.16	82
8:59	5.97	6.62		11.12	1.08	82
9:00	6.08	6.72		11.32	1.10	82
9:01	6.10	6.59	5.77	11.43	1.11	82
9:02	5.92	6.56	5.77	11.43	1.11	82
9:03	5.78	6.04	5.77	11.63	1.13	82
9:04	5.81	6.04	5.77	11.74	1.14	82
9:05	5.81	6.17	5.77	11.80	1.14	84
9:06	5.77	6.24	5.77	11.39	1.10	84
9:07	5.77	6.15	5.77	11.58	1.12	84
9:08	5.80	6.15	5.77	11.53	1.12	82
9:09	5.72	6.43	5.77	11.63	1.13	82
9:10	5.72	6.96	5.77	11.63	1.13	82
9:11	5.71	7.07	5.77	11.53	1.12	82
9:12	5.75	6.57	5.77	11.74	1.14	82
9:13	5.85	5.80	5.77	11.63	1.13	82
9:14	5.79	5.47	4.50	11.63	1.13	82
9:15	5.99	5.67	4.50	11.63	1.13	82
9:16	6.00	7.06	4.50	11.63	1.13	82
9:17	6.07	7.13	4.50	11.63	1.13	82
9:18	5.88	7.27	4.50	11.63	1.13	82
9:19	6.03	6.91	4.50	11.53	1.12	82
9:20	5.85	6.25	4.50	11.63	1.13	82
9:21	6.03	6.23	4.50	11.53	1.12	82
9:22	5.98	6.88	4.50	11.48	1.11	84
9:23	5.57	5.37	4.50	11.60	1.12	84
9:24	5.57	5.41	4.50	11.49	1.11	84
9:25	5.63	5.43	4.50	11.49	1.11	84
9:26	5.75	5.95	4.50	11.70	1.13	84
9:27	5.78	6.03	4.86	11.80	1.14	84
9:28	6.48	6.87	4.97	11.80	1.14	84
9:29	5.76	6.11	4.97	11.49	1.11	84
9:30	5.81	6.00	4.97	11.70	1.13	84
9:31	5.81	6.07	4.97	11.60	1.12	84
9:32	5.75	7.00	4.97	11.60	1.12	84
9:33	5.82	7.46	4.97	11.39	1.10	84
9:34	5.67	7.19	4.97	11.53	1.12	82
9:35	5.78	6.85	4.97	11.53	1.12	82
9:36	5.87	5.53	4.97	11.53	1.12	82
9:37	5.83	5.60	4.97	11.43	1.11	82
9:38	6.07	6.76	4.97	11.53	1.12	82
9:39	5.94	6.93	4.97	11.53	1.12	82

9:40	6.08	7.46	4.94	11.69	1.13	84
9:41	6.00	7.33	4.90	11.60	1.12	84
9:42	5.71	6.63	4.90	11.60	1.12	84
9:43	5.93	6.63	4.90	11.70	1.13	84
9:44	5.97	6.46	4.90	11.60	1.12	84
9:45	6.17	6.38	4.90	11.60	1.12	84
9:46	5.58	5.57	4.90	11.49	1.11	84
9:47	5.74	5.89	4.90	11.60	1.12	84
9:48	5.76	5.93	4.90	11.60	1.12	84
9:49	5.81	5.96	4.90	11.39	1.10	84
9:50	5.70	5.95	4.90	11.39	1.10	84
9:51	5.72	6.06	4.90	11.60	1.12	84
9:52	5.79	6.00	4.90	11.60	1.12	84
9:53	5.87	6.70	4.78	11.70	1.13	84
9:54	5.65	6.94	4.42	11.70	1.13	84
9:55	5.75	6.84	4.42	11.70	1.13	84
9:56	5.87	6.60	4.42	11.65	1.13	83
9:57	5.80	5.42	4.42	11.74	1.14	82
9:58	6.05	5.71	4.42	11.74	1.14	82
9:59	5.96	6.43	4.42	11.84	1.15	82
10:00	5.82	6.66	4.42	11.84	1.15	82
10:01	5.95	7.13	4.42	11.74	1.14	82
10:02	5.75	7.63	4.42	11.53	1.12	82
10:03	5.70	6.02	4.42	11.74	1.14	82
10:04	5.91	6.34	4.42	11.74	1.14	82
10:05	5.89	6.18	4.42	11.63	1.13	82
10:06	5.79	6.07	4.42	11.53	1.12	82
10:07	5.60	5.40	5.77	11.53	1.12	82
10:08	5.56	5.33	5.77	11.53	1.12	82
10:09	5.56	5.36	5.77	11.60	1.12	84
10:10	5.64	5.42	5.77	11.60	1.12	84
10:11	5.61	5.45	5.77	11.49	1.11	84
10:12	5.85	6.01	5.77	11.49	1.11	84
10:13	6.10	6.64	5.77	11.60	1.12	84
10:14	5.88	6.21	5.77	11.60	1.12	84
10:15	5.89	6.55	5.77	11.39	1.10	84
10:16	5.83	6.12	5.77	11.60	1.12	84
10:17	5.82	6.24	5.77	11.60	1.12	84
10:18	5.79	6.82	5.77	11.70	1.13	84
10:19	5.72	7.18	5.77	11.70	1.13	84
10:20	5.74	7.29	5.17	11.80	1.14	84
10:21	5.79	7.29	4.97	11.69	1.13	84
10:22	5.85	5.60	4.97	11.84	1.15	82
10:23	5.90	5.66	4.97	11.63	1.13	82
10:24	5.97	5.84	4.97	11.63	1.13	82
10:25	6.41	7.84	4.97	11.63	1.13	82
10:26	5.94	7.46	4.97	11.63	1.13	82
10:27	6.05	7.80	4.97	11.67	1.13	83
10:28	5.80	7.10	4.97	11.60	1.12	84
10:29	5.91	6.63	4.97	11.60	1.12	84
10:30	6.02	6.36	4.97	11.60	1.12	84
10:31	6.16	6.83	4.97	11.49	1.11	84

10:32	5.58	5.47	4.97	11.49	1.11	84
10:33	5.57	5.57	5.01	11.39	1.10	84
10:34	5.62	5.47	5.05	11.39	1.10	84
10:35	5.70	5.55	5.05	11.49	1.11	84
10:36	5.58	5.54	5.05	11.39	1.10	84
10:37	5.70	5.69	5.05	11.39	1.10	84
10:38	5.81	6.19	5.05	11.60	1.12	84
10:39	5.79	6.18	5.05	11.60	1.12	84
10:40	5.92	6.70	5.05	11.39	1.10	84
10:41	5.81	6.24	5.05	11.49	1.11	84
10:42	5.88	6.34	5.05	11.63	1.13	82
10:43	6.21	6.56	5.05	11.32	1.10	82
10:44			5.05			
10:45			5.05			
10:46			5.05			
10:47			5.05			
10:48			5.05			
10:49			5.05			
10:50			5.05			
10:51			5.05			
10:52			5.05			
10:53			5.05			
10:54			5.05			
10:55			5.05			
10:56			5.05			
10:57			5.05			
10:58			5.05			

Average	5.87	6.42	5.04	11.72	1.14	83.04	181
Minimum	5.56	5.33	4.42	11.12	1.08	82.00	
Maximum	6.78	8.59	5.77	14.41	1.40	84.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 16

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	3.03	4.6	13.3
Train B	3.02	4.6	13.4
Average	3.025	4.6	13.35

Correlation Testing - Run 17: Low PM concentration - 8th correlation test run

7/17/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
12:23	5.83	6.09		11.18	1.08	84
12:24	5.58	5.56		11.28	1.09	84
12:25	5.44	5.27		11.39	1.10	84
12:26	5.43	5.28		11.28	1.09	84
12:27	5.43	5.25		11.28	1.09	84
12:28	5.55	5.55		11.49	1.11	84
12:29	5.65	6.13		11.60	1.12	84
12:30	5.64	5.88		11.70	1.13	84
12:31	5.59	6.16		11.49	1.11	84
12:32	5.60	5.95		11.65	1.13	83
12:33	5.64	5.90	4.90	11.53	1.12	82
12:34	5.67	5.98	4.90	11.53	1.12	82
12:35	5.58	6.80	4.90	11.22	1.09	82
12:36	5.66	7.07	4.90	11.12	1.08	82
12:37	5.68	6.99	4.90	11.12	1.08	82
12:38	5.59	5.94	4.90	11.12	1.08	82
12:39	5.72	5.39	4.90	11.12	1.08	82
12:40	5.79	5.46	4.90	11.12	1.08	82
12:41	6.05	6.29	4.90	11.18	1.08	84
12:42	5.89	7.07	4.90	11.18	1.08	84
12:43	5.90	7.21	4.90	11.28	1.09	84
12:44	6.03	7.84	4.90	11.28	1.09	84
12:45	5.75	6.44	4.78	11.49	1.11	84
12:46	5.80	6.19	4.66	11.39	1.10	84
12:47	5.87	6.14	4.66	11.39	1.10	84
12:48	5.56	6.24	4.66	11.39	1.10	84
12:49	5.45	5.29	4.66	11.39	1.10	84
12:50	5.45	5.32	4.66	11.39	1.10	84
12:51	5.53	5.37	4.66	11.39	1.10	84
12:52	5.45	5.43	4.66	11.28	1.09	84
12:53	5.49	5.44	4.66	11.28	1.09	84
12:54	5.49	5.50	4.66	11.28	1.09	84
12:55	5.51	5.45	4.66	11.18	1.08	84
12:56	5.62	5.83	4.66	11.39	1.10	84
12:57	5.81	6.17	4.66	11.60	1.12	84
12:58	5.81	6.35	4.68	11.60	1.12	84
12:59	6.45	6.72	4.74	11.28	1.09	84
13:00	5.96	6.82	4.74	11.39	1.10	84
13:01	5.80	6.41	4.74	11.39	1.10	84
13:02	5.85	7.03	4.74	11.39	1.10	84
13:03	5.64	7.49	4.74	11.28	1.09	84
13:04	6.39	7.65	4.74	11.39	1.10	84
13:05	5.73	7.44	4.74	11.28	1.09	84
13:06	5.91	6.33	4.74	11.08	1.07	84
13:07	5.94	5.65	4.74	10.87	1.05	84
13:08	5.96	5.78	4.74	10.66	1.03	84
13:09	6.16	7.51	4.74	10.77	1.04	84
13:10	5.86	7.22	4.74	10.87	1.05	84
13:11	5.91	7.50	4.74	11.08	1.07	84

13:12	5.76	7.47	5.45	11.18	1.08	84
13:13	5.80	6.25	5.45	11.39	1.10	84
13:14	5.77	6.22	5.45	11.49	1.11	84
13:15	5.99	7.18	5.45	11.49	1.11	84
13:16	5.81	5.74	5.45	11.49	1.11	84
13:17	5.50	5.37	5.45	11.49	1.11	84
13:18	5.50	5.39	5.45	11.39	1.10	84
13:19	5.47	5.43	5.45	11.28	1.09	84
13:20	5.57	5.62	5.45	11.49	1.11	84
13:21	5.67	6.10	5.45	11.60	1.12	84
13:22	5.79	6.24	5.45	11.49	1.11	84
13:23	5.78	6.27	5.45	11.39	1.10	84
13:24	5.68	6.21	5.45	11.49	1.11	84
13:25	5.80	6.39	4.90	11.49	1.11	84
13:26	5.82	6.47	4.90	11.49	1.11	84
13:27	6.41	7.53	4.90	11.39	1.10	84
13:28	5.73	7.55	4.90	11.70	1.13	84
13:29	5.87	7.58	4.90	11.60	1.12	84
13:30	6.74	7.13	4.90	11.49	1.11	84
13:31	5.85	5.65	4.90	11.34	1.10	83
13:32	5.78	5.80	4.90	11.22	1.09	82
13:33	6.72	7.01	4.90	11.22	1.09	82
13:34	5.95	7.44	4.90	11.12	1.08	82
13:35	5.95	7.73	4.90	11.32	1.10	82
13:36	5.86	8.48	4.90	11.43	1.11	82
13:37	5.78	6.35	4.90	11.74	1.14	82
13:38	5.92	6.41	5.38	11.63	1.13	82
13:39	5.86	6.35	5.54	11.53	1.12	82
13:40	5.65	6.25	5.54	11.53	1.12	82
13:41	5.52	5.56	5.54	11.53	1.12	82
13:42	5.54	5.59	5.54	11.63	1.13	82
13:43	5.64	5.89	5.54	11.74	1.14	82
13:44	5.70	6.05	5.54	11.84	1.15	82
13:45	5.95	7.10	5.54	11.63	1.13	82
13:46	5.74	6.17	5.54	11.43	1.11	82
13:47	5.69	6.14	5.54	11.43	1.11	82
13:48	5.71	6.27	5.54	11.32	1.10	82
13:49	5.57	7.90	5.54	11.12	1.08	82
13:50	5.71	7.35	5.54	11.12	1.08	82
13:51	5.77	7.36	5.34	10.97	1.06	84
13:52	5.87	6.71	5.14	10.97	1.06	84
13:53	5.90	5.75	5.14	10.97	1.06	84
13:54	5.91	5.92	5.14	11.08	1.07	84
13:55	6.18	7.48	5.14	11.08	1.07	84
13:56	6.11	7.82	5.14	11.13	1.07	86
13:57	5.92	7.69	5.14	11.35	1.09	86
13:58	5.85	7.63	5.14	11.45	1.10	86
13:59	5.76	6.58	5.14	11.35	1.09	86
14:00	5.97	6.95	5.14	11.32	1.09	85
14:01	6.06	6.90	5.14	11.49	1.11	84
14:02	5.95	6.84	5.14	11.49	1.11	84
14:03	5.72	6.12	5.14	11.49	1.11	84

14:04	5.76	6.14	5.30	11.49	1.11	84
14:05	5.84	6.60	5.77	11.39	1.10	84
14:06	5.71	6.11	5.77	11.39	1.10	84
14:07	5.73	6.14	5.77	11.49	1.11	84
14:08	5.76	6.34	5.77	11.43	1.11	82
14:09	5.66	7.11	5.77	11.53	1.12	82
14:10	5.62	7.30	5.77	11.53	1.12	82
14:11	5.64	7.37	5.77	11.63	1.13	82
14:12	5.75	6.97	5.77	11.63	1.13	82
14:13	5.84	5.73	5.78	11.43	1.11	82
14:14			5.77			
14:15			5.77			
14:16			5.77			
14:17			5.77			
14:18			4.74			
14:19			4.74			
14:20			4.74			
14:21			4.74			
14:22			4.74			
14:23			4.74			
14:24			4.74			
14:25			4.74			
14:26			4.74			
14:27			4.74			
14:28			4.74			
14:29			4.74			
14:30			4.74			

Average	5.78	6.44	5.09	11.36	1.10	83.47	182
Minimum	5.43	5.25	4.66	10.66	1.03	82.00	
Maximum	6.74	8.48	5.78	11.84	1.15	86.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 17

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	2.72	4	12.2
Train B	2.64	4	14.2
Average	2.68	4	13.2

Correlation Testing - Run 18: Low PM concentration - 9th correlation test run

7/17/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
15:40	5.88	5.95		11.32	1.10	82
15:41	5.88	6.08		11.32	1.10	82
15:42	6.04	6.12		11.32	1.10	82
15:43	6.25	8.59		11.22	1.09	82
15:44	6.04	8.33		11.24	1.09	83
15:45	6.03	8.49		11.28	1.09	84
15:46	6.19	8.50		11.08	1.07	84
15:47	6.07	7.33		11.18	1.08	84
15:48	6.12	7.11		11.18	1.08	84
15:49	6.55	7.44		11.18	1.08	84
15:50	5.76	6.32		11.18	1.08	84
15:51	5.88	6.63	5.45	11.28	1.09	84
15:52	5.91	6.63	5.45	11.39	1.10	84
15:53	6.45	6.87	5.45	11.28	1.09	84
15:54	5.90	6.71	5.45	11.39	1.10	84
15:55	5.87	6.83	5.45	11.49	1.11	84
15:56	5.97	7.52	5.45	11.39	1.10	84
15:57	5.77	8.21	5.45	11.39	1.10	84
15:58	5.76	8.38	5.45	11.39	1.10	84
15:59	5.88	8.10	5.45	11.60	1.12	84
16:00	5.99	6.87	5.45	11.49	1.11	84
16:01	5.92	6.19	5.45	11.49	1.11	84
16:02	6.38	7.51	5.45	11.32	1.10	82
16:03	6.38	8.61	5.33	11.32	1.10	82
16:04	6.01	8.13	4.97	11.22	1.09	82
16:05	6.08	8.27	4.98	11.32	1.10	82
16:06	5.87	8.20	4.97	11.28	1.09	84
16:07	5.99	7.15	4.97	11.28	1.09	84
16:08	6.05	7.20	4.97	11.28	1.09	84
16:09	6.18	7.36	4.97	11.28	1.09	84
16:10	6.09	6.80	4.97	11.28	1.09	84
16:11	5.97	6.77	4.98	11.28	1.09	84
16:12	6.05	6.78	4.98	11.39	1.10	84
16:13	6.47	6.94	4.98	11.28	1.09	84
16:14	5.93	6.79	4.98	11.08	1.07	84
16:15	5.99	6.87	4.97	11.18	1.08	84
16:16	6.01	7.16	4.98	11.39	1.10	84
16:17	6.49	9.86	5.45	11.39	1.10	84
16:18	5.83	8.77	5.45	11.60	1.12	84
16:19	5.91	8.71	5.45	11.60	1.12	84
16:20	6.09	7.50	5.45	11.49	1.11	84
16:21	5.95	6.10	5.45	11.39	1.10	84
16:22	6.09	6.36	5.45	11.39	1.10	84
16:23	6.48	8.21	5.45	11.49	1.11	84
16:24	6.04	8.17	5.45	11.28	1.09	84
16:25	6.28	8.61	5.45	11.49	1.11	84
16:26	5.96	9.23	5.45	11.18	1.08	84
16:27	5.83	7.05	5.45	11.28	1.09	84
16:28	6.10	7.42	5.45	11.18	1.08	84

16:29	6.20	7.28	5.45	11.18	1.08	84
16:30	6.10	7.00	5.75	11.18	1.08	84
16:31	5.95	6.72	5.85	11.18	1.08	84
16:32	6.50	7.99	5.85	11.18	1.08	84
16:33	6.13	6.92	5.85	11.28	1.09	84
16:34	5.86	6.62	5.85	10.97	1.06	84
16:35	5.78	6.81	5.85	11.18	1.08	84
16:36	5.92	6.88	5.85	11.28	1.09	84
16:37	6.28	7.69	5.85	11.28	1.09	84
16:38	5.71	8.58	5.85	11.28	1.09	84
16:39	5.75	8.44	5.85	11.39	1.10	84
16:40	6.06	7.90	5.85	11.49	1.11	84
16:41	5.91	6.16	5.85	11.39	1.10	84
16:42	5.88	6.13	5.85	11.49	1.11	84
16:43	6.59	7.47	5.34	11.49	1.11	84
16:44	5.98	7.55	4.82	11.39	1.10	84
16:45	5.96	8.10	4.82	11.49	1.11	84
16:46	6.00	8.12	4.82	11.49	1.11	84
16:47	5.84	8.80	4.82	11.36	1.10	83
16:48	5.95	7.08	4.82	11.43	1.11	82
16:49	5.95	7.02	4.82	11.48	1.11	84
16:50	5.94	6.96	4.82	11.49	1.11	84
16:51	5.83	6.36	4.82	11.49	1.11	84
16:52	5.83	6.49	4.82	11.39	1.10	84
16:53	5.88	6.55	4.82	11.39	1.10	84
16:54	5.83	6.53	4.82	11.08	1.07	84
16:55	5.81	6.48	4.82	11.18	1.08	84
16:56	5.71	6.60	4.88	11.18	1.08	84
16:57	6.41	7.39	5.05	11.18	1.08	84
16:58	5.81	8.20	5.05	11.08	1.07	84
16:59	5.74	8.04	5.05	11.18	1.08	84
17:00	6.31	8.24	5.06	11.28	1.09	84
17:01	5.88	5.91	5.05	11.18	1.08	84
17:02	6.46	6.35	5.05	11.28	1.09	84
17:03	5.96	6.05	5.05	11.28	1.09	84
17:03	6.88	7.00	5.05	11.28	1.09	84
17:04	5.92	6.72	5.05	11.28	1.09	84
17:04	5.83	6.78	5.05	11.28	1.09	84
17:05	5.96	8.04	5.05	11.39	1.10	84
17:06	5.99	8.10	5.05	11.49	1.11	84
17:07	5.67	7.58	5.05	11.18	1.08	84
17:08	5.81	6.83	5.05	11.39	1.10	84
17:09	5.88	6.93	5.11	11.39	1.10	84
17:10	5.86	6.76	5.30	11.39	1.10	84
17:11	5.71	6.18	5.30	11.49	1.11	84
17:12	5.81	6.40	5.30	11.60	1.12	84
17:13	5.86	6.53	5.30	11.60	1.12	84
17:14	5.77	6.39	5.30	11.39	1.10	84
17:15	5.76	6.49	5.30	11.39	1.10	84
17:16	5.76	6.79	5.30	11.28	1.09	84
17:17	6.26	7.79	5.30	11.18	1.08	84
17:18	5.68	7.88	5.30	10.97	1.06	84

17:19	5.68	8.00	5.30	11.08	1.07	84	
17:20	6.07	7.96	5.30	11.08	1.07	84	
17:21	5.76	6.00	5.30	11.18	1.08	84	
17:22	5.84	5.95	5.30	11.28	1.09	84	
17:23	5.80	6.01	4.74	11.39	1.10	84	
17:24	6.89	7.61	4.74	11.49	1.11	84	
17:25	5.99	7.83	4.74	11.49	1.11	84	
17:26	6.02	8.22	4.74	11.70	1.13	84	
17:27	5.72	7.59	4.74	11.49	1.11	84	
17:28	5.80	6.80	4.74	11.49	1.11	84	
17:29	5.91	7.03	4.74	11.43	1.11	82	
17:30	5.97	6.83	4.74	11.63	1.13	82	
17:31			4.74				
17:32			4.74				
17:33			4.74				
17:34			4.74				
17:35			4.74				
17:36			5.16				
17:37			5.30				
17:38			5.30				
17:39			5.30				
17:40			5.30				
17:41			5.30				
17:42			5.30				
17:43			5.30				
17:44			5.30				
17:45			5.30				
17:46			5.30				
17:47			5.30				
17:48			5.30				
Average	6.00	7.28	5.21	11.33	1.10	83.79	183
Minimum	5.67	5.91	4.74	10.97	1.06	82.00	
Maximum	6.89	9.86	5.85	11.70	1.13	84.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 18

M17	For P5B & 300-40	For F904K & RSD	Moisture
Results	mg/acm	mg/dscm	%
Train A	3.27	4.9	12.7
Train B	3.12	4.7	14
Average	3.195	4.8	13.35

Correlation Testing - Run 19: Mid PM concentration - 10th correlation test run

7/18/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
9:29	10.25	15.15		11.74	1.14	82
9:30	10.49	15.43		11.77	1.14	83
9:31	10.16	16.14		11.80	1.14	84
9:32	10.62	16.86		11.70	1.13	84
9:33	11.00	16.76		11.70	1.13	84
9:34	10.96	16.35		11.60	1.12	84
9:35	11.45	16.98		11.60	1.12	84
9:36	12.23	17.50		11.60	1.12	84
9:37	12.51	22.48		11.70	1.13	84
9:38	12.54	22.33	9.93	11.70	1.13	84
9:39	12.58	22.33	9.93	11.39	1.10	84
9:40	12.37	21.22	9.93	11.49	1.11	84
9:41	12.72	21.82	9.93	11.60	1.12	84
9:42	12.17	22.57	9.93	11.70	1.13	84
9:43	12.06	25.84	9.93	11.70	1.13	84
9:44	11.48	29.86	9.93	11.70	1.13	84
9:45	11.17	28.57	9.93	11.84	1.15	82
9:46	11.71	22.75	9.93	11.74	1.14	82
9:47	15.34	19.66	9.93	11.63	1.13	82
9:48	16.33	20.23	9.93	11.63	1.13	82
9:49	15.54	23.20	9.93	11.74	1.14	82
9:50	10.92	22.63	9.93	11.53	1.12	82
9:51	10.91	25.84	10.77	11.63	1.13	82
9:52	12.22	26.71	11.05	11.63	1.13	82
9:53	11.44	18.16	11.05	11.53	1.12	82
9:54	12.54	19.01	11.05	11.56	1.12	83
9:55	12.99	19.18	11.05	11.70	1.13	84
9:56	11.40	18.85	11.05	11.80	1.14	84
9:57	10.51	15.85	11.05	11.91	1.15	84
9:58	10.37	16.58	11.05	11.91	1.15	84
9:59	10.63	16.31	11.05	11.91	1.15	84
10:00	10.89	16.30	11.05	11.91	1.15	84
10:01	11.23	18.52	11.05	11.91	1.15	84
10:02	12.09	21.01	11.05	11.91	1.15	84
10:03	11.92	21.61	11.05	11.91	1.15	84
10:04	11.52	20.35	10.41	11.70	1.13	84
10:05	11.53	20.59	9.77	11.76	1.14	83
10:06	11.70	20.44	9.77	11.84	1.15	82
10:07	11.79	21.64	9.77	11.84	1.15	82
10:08	10.59	25.69	9.77	11.63	1.13	82
10:09	10.77	28.78	9.77	11.63	1.13	82
10:10	11.34	27.76	9.77	11.63	1.13	82
10:11	12.19	18.11	9.77	11.53	1.12	82
10:12	15.31	20.17	9.77	11.53	1.12	82
10:13	16.16	20.68	9.77	11.63	1.13	82
10:14	14.10	23.11	9.77	11.63	1.13	82
10:15	10.81	23.74	9.77	11.80	1.14	84
10:16	11.01	25.12	9.77	11.80	1.14	84
10:17	10.90	23.47	10.07	11.80	1.14	84

10:18	11.40	18.94	10.97	11.80	1.14	84
10:19	12.18	19.25	10.97	11.91	1.15	84
10:20	12.93	19.93	10.97	11.80	1.14	84
10:21	11.88	18.43	10.97	11.70	1.13	84
10:22	10.09	15.74	10.97	11.60	1.12	84
10:23	10.27	15.47	10.97	11.70	1.13	84
10:24	10.30	15.16	10.97	11.67	1.13	83
10:25	10.33	16.21	10.97	11.74	1.14	82
10:26	10.27	16.61	10.97	11.84	1.15	82
10:27	10.48	16.80	10.97	11.74	1.14	82
10:28	10.86	16.98	10.97	11.74	1.14	82
10:29	10.93	17.18	10.97	11.74	1.14	82
10:30	11.03	17.80	10.79	11.94	1.16	82
10:31	12.20	21.94	10.25	12.15	1.18	82
10:32	12.20	22.00	10.25	12.18	1.18	83
10:32	12.31	22.33	10.25	12.18	1.18	83
10:34	12.36	22.15	10.25	11.94	1.16	82
10:35	12.23	23.08	10.25	11.84	1.15	82
10:36	12.38	23.11	10.25	11.84	1.15	82
10:36	12.15	23.89	10.25	11.84	1.15	82
10:37	11.12	29.95	10.25	11.70	1.13	84
10:38	12.56	31.24	10.25	11.70	1.13	84
10:39	12.48	33.40	10.25	11.60	1.12	84
10:40	13.76	20.35	10.25	11.70	1.13	84
10:41	16.55	20.83	10.25	11.60	1.12	84
10:42	18.02	22.51	10.25	11.70	1.13	84
10:43	13.89	25.06	10.43	11.60	1.12	84
10:44	11.33	25.93	10.97	11.70	1.13	84
10:45	11.11	25.18	10.97	11.70	1.13	84
10:46	10.72	24.01	10.97	11.70	1.13	84
10:47	12.32	20.02	10.97	11.80	1.14	84
10:48	12.59	19.42	10.97	11.80	1.14	84
10:49	12.77	18.94	10.97	11.91	1.15	84
10:50	11.24	16.65	10.97	11.76	1.14	83
10:51	10.29	15.48	10.97	11.74	1.14	82
10:52	10.90	15.75	10.97	11.74	1.14	82
10:53	11.41	18.25	10.97	11.53	1.12	82
10:54	11.70	20.53	10.97	11.74	1.14	82
10:55	12.22	20.50	10.97	11.74	1.14	82
10:56	12.19	19.57	10.97	11.53	1.12	82
10:57	11.85	21.04	10.08	11.43	1.11	82
10:58	12.38	21.28	10.08	11.63	1.13	82
10:59	12.09	23.05	10.08	11.53	1.12	82
11:00	11.32	27.37	10.09	11.63	1.13	82
11:01	11.70	29.41	10.08	11.65	1.13	83
11:02	11.78	28.96	10.08	11.70	1.13	84
11:03	13.33	18.01	10.08	11.70	1.13	84
11:04	16.83	19.84	10.08	11.60	1.12	84
11:05	17.42	21.49	10.08	11.60	1.12	84
11:06	12.89	22.33	10.08	11.60	1.12	84
11:07	11.33	26.47	10.08	11.70	1.13	84
11:08	11.94	26.14	10.08	11.60	1.12	84

11:09	10.50	23.11	10.09	11.49	1.11	84
11:10	12.65	20.56	11.41	11.70	1.13	84
11:11	12.55	19.42	11.85	11.80	1.14	84
11:12	13.10	20.95	11.85	11.70	1.13	84
11:13	12.14	17.62	11.85	11.60	1.12	84
11:14	10.95	15.85	11.85	11.48	1.11	84
11:15	10.69	16.02	11.85	11.53	1.12	82
11:16	10.59	16.45	11.85	11.74	1.14	82
11:17	10.52	17.81	11.85	11.63	1.13	82
11:18	10.81	16.62	11.85	11.63	1.13	82
11:19	10.85	17.24	11.85	11.43	1.11	82
11:20			11.85			
11:21			11.85			
11:22			11.85			
11:23			10.61			
11:24			9.37			
11:25			9.37			
11:26			9.37			
11:27			9.37			
11:28			9.37			
11:29			9.37			
11:30			9.37			
11:31			9.37			
11:32			9.37			
11:33			9.37			
11:34			9.37			
11:35			9.37			

Average	12.00	20.93	10.48	11.71	1.13	83.13	182
Minimum	10.09	15.15	9.37	11.39	1.10	82.00	
Maximum	18.02	33.40	11.85	12.18	1.18	84.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 19

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	16.61	24.8	13.1
Train B	16.05	24	13.2
Average	16.33	24.4	13.15

Correlation Testing - Run 20: Mid-Low PM concentration - 11th correlation test run

7/18/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
12:59	9.79	15.37		11.80	1.14	84
13:00	9.57	14.55		11.60	1.12	84
13:01	9.45	15.46		11.91	1.15	84
13:02	9.85	15.82		11.91	1.15	84
13:03	9.47	17.65		12.01	1.16	84
13:04	8.96	21.43		11.91	1.15	84
13:05	9.80	23.32		11.80	1.14	84
13:06	9.57	24.16		11.80	1.14	84
13:07	11.04	15.02		11.60	1.12	84
13:08	12.68	16.36		11.70	1.13	84
13:09	13.16	16.86		11.70	1.13	84
13:10	10.90	20.26	8.65	11.60	1.12	84
13:11	9.88	21.25	8.65	11.70	1.13	84
13:12	10.45	21.94	8.65	11.80	1.14	84
13:13	10.72	19.36	8.65	11.80	1.14	84
13:14	10.15	17.07	8.65	11.91	1.15	84
13:15	10.79	16.95	8.65	11.91	1.15	84
13:16	11.22	17.44	8.65	12.01	1.16	84
13:17	9.39	15.66	8.65	11.80	1.14	84
13:18	10.00	15.93	8.65	11.91	1.15	84
13:19	10.06	16.38	8.65	11.91	1.15	84
13:20	10.14	15.95	8.65	11.63	1.13	82
13:21	9.92	16.84	8.65	11.63	1.13	82
13:22	10.15	16.88	8.85	11.94	1.16	82
13:23	9.94	17.08	9.05	11.94	1.16	82
13:24	8.86	20.86	9.05	11.94	1.16	82
13:25	9.07	24.76	9.05	11.84	1.15	82
13:26	9.32	24.40	9.05	11.84	1.15	82
13:27	9.91	17.56	9.05	11.84	1.15	82
13:28	12.17	14.90	9.05	11.84	1.15	82
13:29	12.69	17.03	9.05	11.74	1.14	82
13:30	13.83	18.82	9.05	11.63	1.13	82
13:31	9.16	18.04	9.05	11.63	1.13	82
13:32	9.62	19.87	9.05	11.77	1.14	83
13:33	9.79	20.59	9.05	11.70	1.13	84
13:34	9.71	15.22	9.05	11.80	1.14	84
13:35	10.41	16.08	8.97	11.80	1.14	84
13:36	10.91	16.84	8.73	11.80	1.14	84
13:37	9.80	16.25	8.73	11.70	1.13	84
13:38	9.97	15.76	8.73	11.80	1.14	84
13:39	10.22	16.43	8.73	11.91	1.15	84
13:40	10.32	16.96	8.73	11.91	1.15	84
13:41	9.91	16.38	8.73	11.39	1.10	84
13:42	10.51	16.97	8.73	11.70	1.13	84
13:43	10.58	17.34	8.73	11.80	1.14	84
13:44	9.75	19.96	8.73	11.80	1.14	84
13:45	9.65	24.88	8.73	11.91	1.15	84
13:46	10.32	23.47	8.73	11.91	1.15	84
13:47	9.46	22.18	8.73	11.91	1.15	84

13:48	11.66	15.31	8.73	11.80	1.14	84
13:49	11.99	16.50	8.57	11.70	1.13	84
13:50	13.05	17.78	8.57	11.80	1.14	84
13:51	9.25	17.92	8.57	11.80	1.14	84
13:52	9.62	20.32	8.57	11.80	1.14	84
13:53	9.13	20.35	8.57	11.91	1.15	84
13:54	9.41	16.13	8.57	11.80	1.14	84
13:55	10.42	16.13	8.57	11.91	1.15	84
13:56	11.10	16.71	8.57	11.80	1.14	84
13:57	11.57	18.54	8.57	11.80	1.14	84
13:58	9.70	14.13	8.57	11.91	1.15	84
13:59	10.43	16.97	8.57	12.01	1.16	84
14:00	8.78	12.63	8.57	12.01	1.16	84
14:01	8.40	12.53	8.57	11.60	1.12	84
14:02	8.21	12.34	8.81	11.70	1.13	84
14:03	8.47	12.59	8.89	11.80	1.14	84
14:04	8.47	12.83	8.89	11.91	1.15	84
14:05	8.04	15.22	8.89	12.01	1.16	84
14:06	7.81	17.70	8.90	11.91	1.15	84
14:07	8.36	17.45	8.89	11.80	1.14	84
14:08	8.38	13.56	8.90	11.80	1.14	84
14:09	9.71	11.60	8.89	11.70	1.13	84
14:10	10.23	12.28	8.89	11.70	1.13	84
14:11	9.59	12.93	8.89	11.70	1.13	84
14:12	8.13	15.24	8.89	11.70	1.13	84
14:13	8.29	15.56	8.89	11.70	1.13	84
14:14	8.59	15.79	8.89	11.80	1.14	84
14:15	8.02	11.61	8.17	11.91	1.15	84
14:16	8.56	12.11	7.45	11.89	1.15	84
14:17	8.67	12.20	7.45	11.77	1.14	83
14:18	8.23	12.66	7.45	11.80	1.14	84
14:19	8.01	11.15	7.45	11.91	1.15	84
14:20	8.27	11.81	7.45	11.91	1.15	84
14:21	8.35	11.94	7.45	11.91	1.15	84
14:22	7.82	11.67	7.45	11.60	1.12	84
14:23	8.38	12.08	7.45	11.70	1.13	84
14:24	8.40	12.81	7.45	11.91	1.15	84
14:25	8.24	13.34	7.45	12.01	1.16	84
14:26	8.11	16.72	7.45	11.80	1.14	84
14:27	8.13	17.84	7.45	11.91	1.15	84
14:28	9.30	17.29	7.23	11.80	1.14	84
14:29	8.87	10.90	6.57	11.80	1.14	84
14:30	10.28	12.56	6.57	11.91	1.15	84
14:31	9.87	12.89	6.57	11.60	1.12	84
14:32	9.44	15.91	6.57	11.49	1.11	84
14:33	8.21	15.27	6.57	11.60	1.12	84
14:34	7.99	15.82	6.58	11.70	1.13	84
14:35	7.78	13.88	6.57	11.60	1.12	84
14:36	8.27	11.93	6.57	11.80	1.14	84
14:37	8.69	11.91	6.57	11.80	1.14	84
14:38	8.70	12.42	6.57	11.63	1.13	82
14:39	7.50	9.55	6.57	11.53	1.12	82

14:40	7.48	9.63	6.57	11.74	1.14	82	
14:41	7.52	9.49	6.58	11.63	1.13	82	
14:42	7.91	10.61	7.13	11.74	1.14	82	
14:43	8.35	11.54	7.13	11.89	1.15	84	
14:44	8.19	11.74	7.13	11.91	1.15	84	
14:45	8.15	11.40	7.13	11.70	1.13	84	
14:46	8.14	11.23	7.13	11.70	1.13	84	
14:47	7.89	11.72	7.13	11.60	1.12	84	
14:48	7.97	12.18	7.13	11.49	1.11	84	
14:49	7.55	13.56	7.13	11.49	1.11	84	
14:50	7.70	14.17	7.13	11.39	1.10	84	
14:51			7.13				
14:52			7.13				
14:53			7.13				
14:54			7.13				
14:55			7.50				
14:56			7.62				
14:57			7.62				
14:58			7.62				
14:59			7.62				
15:00			7.62				
15:01			7.61				
15:02			7.61				
15:03			7.61				
15:04			7.62				
15:05			7.61				
15:06			7.62				
15:07			7.62				
Average	9.45	15.80	8.07	11.78	1.14	83.68	183
Minimum	7.48	9.49	6.57	11.39	1.10	82.00	
Maximum	13.83	24.88	9.05	12.01	1.16	84.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 20

M17	For P5B & 300-40	For F904K & RSD	Moisture
Results	mg/acm	mg/dscm	%
Train A	10.22	15.6	15
Train B	10.82	16.6	15.5
Average	10.52	16.1	15.25

Correlation Testing - Run 21: Mid-Low PM concentration - 12th correlation test run

7/18/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
16:18	8.46	15.06		12.01	1.16	84
16:19	8.40	18.85		11.91	1.15	84
16:20	8.66	18.43		12.01	1.16	84
16:21	9.12	17.95		12.11	1.17	84
16:22	9.80	11.30		12.22	1.18	84
16:23	10.65	12.21		12.11	1.17	84
16:24	10.73	13.06		12.22	1.18	84
16:25	9.04	16.39		12.08	1.17	83
16:26	8.93	16.76		12.05	1.17	82
16:27	8.52	16.60		12.15	1.18	82
16:28	8.24	13.56	8.65	12.05	1.17	82
16:29	8.90	12.78	8.65	12.05	1.17	82
16:30	9.16	13.07	8.65	11.94	1.16	82
16:31	10.22	14.71	8.65	11.74	1.14	82
16:32	8.31	11.91	8.65	11.84	1.15	82
16:33	8.76	12.70	8.65	11.94	1.16	82
16:34	8.62	12.92	8.65	11.91	1.15	84
16:35	8.80	12.21	8.65	11.80	1.14	84
16:36	8.63	13.35	8.65	11.80	1.14	84
16:37	9.00	13.52	8.65	11.70	1.13	84
16:38	8.66	13.98	8.65	11.91	1.15	84
16:39	8.28	16.61	8.65	11.70	1.13	84
16:40	8.47	17.69	8.63	11.80	1.14	84
16:41	8.80	17.89	8.57	11.91	1.15	84
16:42	9.36	12.20	8.57	11.80	1.14	84
16:43	10.38	12.28	8.57	11.91	1.15	84
16:44	10.66	12.80	8.57	11.91	1.15	84
16:45	9.28	15.46	8.57	12.01	1.16	84
16:46	8.26	16.87	8.57	12.01	1.16	84
16:47	8.08	16.14	8.57	12.01	1.16	84
16:48	7.93	14.64	8.57	11.91	1.15	84
16:49	8.59	12.57	8.57	12.01	1.16	84
16:50	8.82	12.51	8.57	11.91	1.15	84
16:51	9.03	12.97	8.57	11.91	1.15	84
16:52	8.37	11.09	8.57	11.96	1.16	83
16:53	7.45	10.39	8.57	11.94	1.16	82
16:54	7.73	10.38	8.02	11.94	1.16	82
16:55	8.55	11.94	8.02	12.08	1.17	83
16:56	8.86	13.05	8.02	12.32	1.19	84
16:57	8.84	13.64	8.02	12.22	1.18	84
16:58	8.56	12.54	8.02	11.91	1.15	84
16:59	8.64	13.57	8.02	12.01	1.16	84
17:00	8.93	13.78	8.02	11.91	1.15	84
17:01	10.17	15.75	8.02	11.80	1.14	84
17:02	8.17	17.30	8.02	11.80	1.14	84
17:03	8.46	18.45	8.02	11.91	1.15	84
17:04	8.45	18.66	8.02	11.91	1.15	84
17:05	8.90	13.01	8.02	11.91	1.15	84
17:06	10.65	12.16	8.02	12.01	1.16	84

17:07	10.77	13.01	8.02	11.91	1.15	84
17:08	9.90	13.97	8.02	11.91	1.15	84
17:09	8.65	16.59	8.02	11.91	1.15	84
17:10	8.22	17.13	8.02	11.80	1.14	84
17:11	8.40	16.52	8.02	11.70	1.13	84
17:12	8.66	12.95	8.02	11.80	1.14	84
17:13	9.01	13.11	8.02	11.80	1.14	84
17:14	9.52	13.62	8.02	11.70	1.13	84
17:15	8.32	13.04	8.02	11.70	1.13	84
17:16	8.65	13.47	8.02	11.70	1.13	84
17:17	8.50	12.71	8.02	11.91	1.15	84
17:18	8.44	12.52	8.02	11.70	1.13	84
17:19	8.11	12.46	8.02	11.91	1.15	84
17:20	8.34	12.87	7.59	12.01	1.16	84
17:21	8.56	12.91	7.45	12.11	1.17	84
17:22	8.04	15.53	7.45	12.00	1.16	84
17:23	7.87	18.06	7.45	11.84	1.15	82
17:24	8.61	17.88	7.45	11.84	1.15	82
17:25	8.64	14.04	7.45	11.84	1.15	82
17:26	10.60	12.07	7.45	11.63	1.13	82
17:27	10.94	12.85	7.45	11.65	1.13	83
17:28	10.87	14.74	7.45	11.70	1.13	84
17:29	8.61	16.31	7.45	11.60	1.12	84
17:30	8.79	17.38	7.45	11.80	1.14	84
17:31	9.24	18.46	7.45	11.80	1.14	84
17:32	8.47	13.47	7.45	11.80	1.14	84
17:33	9.13	13.17	7.81	11.91	1.15	84
17:34	9.26	13.34	8.17	12.01	1.16	84
17:35	8.74	12.99	8.17	12.01	1.16	84
17:36	8.70	12.42	8.18	12.01	1.16	84
17:37	8.55	12.81	8.17	12.11	1.17	84
17:38	8.61	12.79	8.17	12.01	1.16	84
17:39	8.16	12.35	8.17	11.60	1.12	84
17:40	8.88	13.22	8.17	11.91	1.15	84
17:41	8.74	13.53	8.17	11.89	1.15	84
17:42	8.41	15.00	8.17	11.84	1.15	82
17:43	8.66	18.98	8.17	11.74	1.14	82
17:44	8.16	18.42	8.17	11.74	1.14	82
17:45	8.80	16.48	8.17	11.84	1.15	82
17:46	10.03	12.23	8.07	11.74	1.14	82
17:47	12.06	13.75	7.77	11.84	1.15	82
17:48	11.07	13.43	7.77	11.74	1.14	82
17:49	8.64	15.15	7.77	11.74	1.14	82
17:50	8.83	16.90	7.78	11.77	1.14	83
17:51	8.46	16.70	7.77	11.80	1.14	84
17:52	9.97	13.93	7.77	11.70	1.13	84
17:53	9.14	13.13	7.77	11.80	1.14	84
17:54	9.55	13.20	7.77	11.80	1.14	84
17:55	9.05	14.24	7.77	11.70	1.13	84
17:56	8.53	11.44	7.77	11.80	1.14	84
17:57	8.91	13.14	7.77	11.91	1.15	84
17:58	8.93	13.82	7.77	12.01	1.16	84

17:59	8.79	13.08	7.77	11.70	1.13	84
18:00	9.00	13.48	7.77	11.91	1.15	84
18:01	8.97	13.97	7.77	11.91	1.15	84
18:02	9.16	15.29	7.77	11.70	1.13	84
18:03	8.43	16.96	7.77	11.60	1.12	84
18:04	8.24	18.24	7.77	11.60	1.12	84
18:05	8.81	17.90	7.77	11.60	1.12	84
18:06	8.68	12.78	7.77	11.70	1.13	84
18:07	10.30	12.25	7.77	11.76	1.14	83
18:08	10.56	13.25	7.77	11.94	1.16	82
			7.77			
			7.77			
			7.77			
			7.77			

Average	8.97	14.32	8.05	11.88	1.15	83.53	182
Minimum	7.45	10.38	7.45	11.60	1.12	82.00	
Maximum	12.06	18.98	8.65	12.32	1.19	84.00	
	ESC P5B	DR 300-40	F904K	Moisture		Temp	

Run 21

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	9.65	14.6	13.9
Train B	9.18	14	14.2
Average	9.415	14.3	14.05

Correlation Testing - Run 22: Mid-High PM concentration - 13th correlation test run

7/19/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
8:58	11.65	22.57		11.22		82
8:59	13.34	20.92		11.43		82
9:00	13.59	22.09		11.46		83
9:01	14.10	22.54		11.39		84
9:02	11.94	17.26		11.49		84
9:03	12.64	23.14		11.60		84
9:04	13.31	22.96		11.70		84
9:05	13.43	23.59		11.70		84
9:06	12.21	21.82		11.60		84
9:07	13.40	24.46		11.70		84
9:08	13.31	24.13		11.60		84
9:09	12.33	27.31	11.36	11.60		84
9:10	12.42	32.65	11.36	11.60		84
9:11	12.56	33.94	11.36	11.67		83
9:12	13.21	29.05	11.36	11.63		82
9:13	15.53	21.10	11.36	11.74		82
9:14	17.10	23.26	11.36	11.84		82
9:15	16.92	27.76	11.36	11.84		82
9:16	11.87	25.78	11.36	11.84		82
9:17	11.89	28.81	11.36	11.84		82
9:17	11.53	28.75	11.36	11.84		82
9:18	12.20	30.19	11.36	11.63		82
9:18	11.71	29.23	11.36	11.53		82
9:19	12.59	24.31	11.36	11.63		82
9:20	13.93	23.62	11.36	11.63		82
9:21	14.30	23.74	11.36	11.63		82
9:22	12.99	20.53	11.05	11.74		82
9:23	11.80	18.06	11.05	11.74		82
9:24	11.87	18.80	11.05	11.63		82
9:25	11.94	19.00	11.05	11.74		82
9:26	13.00	21.94	11.05	11.74		82
9:27	13.73	24.34	11.05	11.84		82
9:28	13.53	24.55	11.05	11.94		82
9:29	13.00	23.11	11.05	11.55		83
9:30	12.97	24.94	11.05	11.63		82
9:31	13.22	25.30	11.05	11.74		82
9:32	13.45	26.35	11.05	11.74		82
9:33	11.98	32.92	11.05	11.74		82
9:34	13.48	35.05	11.05	11.63		82
9:35	11.91	36.10	10.21	11.53		82
9:36	13.85	23.80	9.93	11.53		82
9:37	17.71	24.10	9.93	11.63		82
9:38	18.32	24.16	9.93	11.65		83
9:39	15.20	26.56	9.93	11.80		84
9:40	13.03	30.01	9.93	11.70		84
9:41	12.15	30.46	9.93	11.70		84
9:42	13.95	29.20	9.93	11.70		84
9:43	13.15	22.42	9.93	11.80		84
9:44	13.96	22.36	9.93	11.80		84

9:45	13.66	22.27	9.93	11.91	84
9:46	12.48	21.07	9.93	11.91	84
9:47	12.66	21.82	9.93	11.94	82
9:48	13.21	22.27	10.41	11.63	82
9:49	12.73	22.45	10.88	11.32	82
9:50	12.23	20.98	10.88	11.43	82
9:51	12.37	22.81	10.88	11.43	82
9:52	13.68	24.55	10.88	11.43	82
9:53	12.00	27.31	10.88	11.43	82
9:54	12.89	32.41	10.88	11.43	82
9:55	13.05	32.41	10.88	11.53	82
9:56	12.57	25.75	10.88	11.53	82
9:57	16.30	21.55	10.88	11.43	82
9:58	17.25	23.11	10.88	11.53	82
9:59	15.59	26.59	10.88	11.53	82
10:00	11.59	27.58	10.88	11.53	82
10:01	11.80	28.54	10.97	11.48	84
10:02	13.30	29.89	11.05	11.49	84
10:03	12.00	21.52	11.05	11.38	84
10:04	13.84	22.48	11.05	11.43	82
10:05	13.24	22.12	11.05	11.22	82
10:06	12.26	21.55	11.05	11.32	82
10:07	12.07	19.81	11.05	11.43	82
10:08	12.12	21.34	11.05	11.53	82
10:09	12.66	22.15	11.05	11.53	82
10:10	11.87	21.19	11.05	11.22	82
10:11	12.15	23.02	11.05	11.53	82
10:12	12.23	22.87	11.05	11.53	82
10:13	12.56	25.45	11.05	11.43	82
10:14	11.79	30.97	10.79	11.22	82
10:15	11.72	30.88	10.01	11.43	82
10:16	12.60	30.04	10.00	11.34	83
10:17	14.66	19.21	10.01	11.49	84
10:18	17.26	21.70	10.00	11.49	84
10:19	17.19	23.74	10.00	11.49	84
10:20	12.90	23.95	10.00	11.70	84
10:21	11.88	27.37	10.00	11.60	84
10:22	11.61	29.77	10.01	11.70	84
10:23	11.50	24.73	10.01	11.70	84
10:24	13.00	22.27	10.00	11.60	84
10:25	12.98	20.98	10.00	11.38	84
10:26	13.17	21.85	10.01	11.53	82
10:27	10.85	18.20	10.01	11.32	82
10:28	11.15	16.67	11.36	11.53	82
10:29	11.15	17.07	11.36	11.53	82
10:30	11.07	18.52	11.36	11.53	82
10:31	11.19	17.76	11.36	11.53	82
10:32	11.50	18.31	11.36	11.53	82
10:33	11.63	18.53	11.36	11.53	82
10:34	12.02	19.63	11.36	11.53	82
10:35	12.11	22.63	11.36	11.63	82
10:36	13.63	24.91	11.36	11.74	82

10:37	13.80	24.73	11.36	11.63	82	
10:38	13.53	23.08	11.36	11.43	82	
10:39	13.62	24.61	11.36	11.32	82	
10:40	13.57	25.27	11.36	11.32	82	
10:41	13.12	26.80	10.77	11.43	82	
10:42	12.31	31.99	10.57	11.32	82	
10:43	12.66	33.04	10.57	11.28	84	
10:44	13.45	33.13	10.57	11.28	84	
10:45	14.83	22.69	10.57	11.39	84	
10:46	16.78	21.52	10.57	11.28	84	
10:47	18.00	22.42	10.57	11.18	84	
10:48	14.96	25.72	10.57	11.27	84	
10:49	12.02	27.31	10.57	11.27	84	
10:50			10.57			
10:51			10.57			
10:52			10.57			
10:53			10.57			
10:54			11.49			
10:55			12.40			
10:56			12.40			
10:57			12.40			
10:58			12.40			
10:59			12.40			
11:00			12.40			
11:01			12.40			
11:02			12.40			
11:03			12.40			
11:04			12.40			
11:05			12.40			
11:06			12.40			
Average	13.16	24.54	10.95	11.56	82.69	181
Minimum	10.85	16.67	9.93	11.18	82.00	
Maximum	18.32	36.10	12.40	11.94	84.00	
	ESC P5B	DR 300-40	F904K	Moisture	Temp	

Run 22

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	15.1	22.8	13.5
Train B	15.67	23.7	13.7
Average	15.385	23.25	13.6

Correlation Testing - Run 23: Mid PM concentration - 14th correlation test run

7/19/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
11:50	8.90	12.23		11.12		82
11:51	8.83	12.89		11.12		82
11:52	8.87	12.72		11.27		84
11:53	9.07	12.88		11.28		84
11:54	9.18	14.02		11.28		84
11:55	9.54	13.92		11.28		84
11:56	10.29	16.44		11.60		84
11:57	10.18	16.39		11.60		84
11:58	10.20	16.69		11.28		84
11:59	9.81	15.29		11.49		84
12:00	9.81	16.86		11.38		84
12:01	10.17	16.44	7.77	11.22		82
12:02	9.08	20.98	7.77	11.22		82
12:03	9.57	23.20	7.77	11.12		82
12:04	9.35	22.81	7.77	11.12		82
12:05	9.72	18.43	7.77	11.12		82
12:06	11.36	14.87	7.77	11.12		82
12:07	12.20	15.46	7.77	11.14		83
12:08	11.44	17.88	7.77	11.18		84
12:09	9.27	18.19	7.77	11.18		84
12:10	9.41	20.05	7.77	11.08		84
12:11	11.86	20.14	7.77	11.18		84
12:12	8.92	14.04	7.77	11.12		82
12:13	9.63	14.24	7.77	11.12		82
12:14	10.10	14.70	9.05	11.12		82
12:15	9.31	14.36	9.05	11.12		82
12:16	8.29	11.20	9.05	11.12		82
12:17	8.49	11.27	9.05	11.22		82
12:18	8.17	11.23	9.05	11.32		82
12:19	8.30	11.60	9.05	11.32		82
12:20	8.69	12.10	9.05	11.32		82
12:21	9.51	14.31	9.05	11.43		82
12:22	9.54	14.79	9.05	11.43		82
12:23	9.58	15.60	9.05	11.43		82
12:24	9.28	14.76	9.05	11.18		84
12:25	9.68	15.21	9.05	11.24		83
12:26	9.94	15.49	9.05	11.28		84
12:27	9.46	17.02	7.45	11.39		84
12:28	9.28	21.64	7.45	11.28		84
12:29	8.83	20.95	7.45	11.39		84
12:30	9.30	20.29	7.45	11.49		84
12:31	10.63	13.26	7.45	11.49		84
12:32	11.38	14.16	7.45	11.49		84
12:33	11.92	15.37	7.45	11.46		83
12:34	9.56	18.06	7.45	11.43		82
12:35	8.93	18.41	7.45	11.43		82
12:36	9.26	18.52	7.45	11.53		82
12:37	8.40	14.78	7.45	11.43		82
12:38	9.37	14.54	7.45	11.53		82

12:39	9.64	13.93	7.45	11.53	82
12:40	10.20	15.03	8.41	11.53	82
12:41	8.34	11.30	8.73	11.53	82
12:42	8.61	11.61	8.73	11.32	82
12:43	8.91	12.75	8.73	11.32	82
12:44	8.57	12.04	8.73	11.32	82
12:45	8.96	12.44	8.73	11.22	82
12:46	9.57	13.38	8.73	11.32	82
12:47	9.78	15.67	8.73	11.48	84
12:48	10.07	15.74	8.73	11.39	84
12:49	10.49	15.87	8.73	11.28	84
12:50	9.84	15.72	8.73	11.14	83
12:51	9.81	16.42	8.73	11.22	82
12:52	9.85	16.45	8.73	11.22	82
12:53	8.82	20.44	8.53	11.22	82
12:54	9.21	21.79	8.33	11.22	82
12:55	9.41	22.30	8.33	11.02	82
12:56	9.71	15.31	8.33	11.22	82
12:57	11.55	14.69	8.33	11.12	82
12:58	12.22	15.08	8.33	11.22	82
12:59	11.69	19.84	8.33	11.24	83
13:00	9.45	19.84	8.33	11.18	84
13:01	9.45	20.08	8.33	11.28	84
13:02	8.82	18.60	8.33	11.18	84
13:03	8.92	14.19	8.33	11.18	84
13:04	9.56	14.48	8.33	11.28	84
13:05	9.74	15.46	8.33	11.18	84
13:06	9.80	13.58	8.49	11.28	84
13:07	8.25	11.43	8.97	11.28	84
13:08	8.94	12.28	8.97	11.28	84
13:09	9.31	14.22	8.97	11.39	84
13:10	9.60	14.47	8.97	11.49	84
13:11	9.18	14.25	8.97	11.28	84
13:12	9.16	14.84	8.97	11.39	84
13:13	9.38	15.17	8.97	11.49	84
13:14	9.34	15.60	8.97	11.36	83
13:15	8.31	19.51	8.97	11.32	82
13:16	9.10	20.44	8.97	11.32	82
13:17	9.21	19.81	8.97	11.22	82
13:18	9.80	14.52	8.97	11.22	82
13:19	10.91	13.72	8.97	11.12	82
13:20	11.40	14.69	7.22	11.12	82
13:21	10.65	18.13	7.22	11.02	82
13:22	9.37	18.18	7.22	11.14	83
13:23	9.00	18.13	7.22	11.08	84
13:24	9.70	18.28	7.22	11.18	84
13:25	9.35	14.35	7.22	11.28	84
13:26	9.65	14.79	7.22	11.28	84
13:27	10.05	15.53	7.22	11.28	84
13:28	9.61	14.79	7.22	11.18	84
13:29	8.47	12.19	7.22	11.18	84
13:30	8.58	12.20	7.22	11.22	82

13:31	8.97	12.03	7.22	11.22	82	
13:32	8.61	12.30	7.22	11.32	82	
13:33	8.69	12.67	7.45	11.32	82	
13:34	9.15	13.20	7.53	11.32	82	
13:35	9.84	15.82	7.53	11.53	82	
13:36	9.95	15.74	7.53	11.43	82	
13:37	9.46	16.14	7.53	11.32	82	
13:38	9.49	14.59	7.53	11.53	82	
13:39	9.48	15.56	7.53	11.43	82	
13:40	9.64	16.09	7.53	11.43	82	
13:41			7.53			
13:42			7.53			
13:43			7.53			
13:44			7.53			
13:45			7.53			
13:46			7.61			
13:47			7.69			
13:48			7.69			
13:49			7.69			
13:50			7.70			
13:51			7.69			
13:52			7.70			
13:53			7.70			
13:54			7.70			
13:55			7.69			
13:56			7.69			
13:57			7.69			
13:58			7.70			
Average	9.57	15.68	8.08	11.29	82.87	181
Minimum	8.17	11.20	7.22	11.02	82.00	
Maximum	12.22	23.20	9.05	11.60	84.00	
	ESC P5B	DR 300-40	F904K	Moisture	Temp	

Run 23

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	8.82	13.1	12.9
Train B	8.69	13	13.5
Average	8.755	13.05	13.2

Correlation Testing - Run 24: High PM concentration - 15th correlation test run

7/19/99	ESC P5B	Durag 300-40	Durag F904K	Moisture	g/acm H2O	Temp.
Time	raw mA	raw ra mA	raw mA	%	Vdc	deg C
15:10	19.04	30.88		11.49		84
15:11	15.54	98.14		11.60		84
15:12	12.31	34.45		11.60		84
15:13	12.39	32.44		11.60		84
15:14	12.62	31.06		11.49		84
15:15	14.28	27.43		11.53		82
15:16	14.70	27.58		11.63		82
15:17	15.03	28.09		11.67		83
15:18	14.18	23.83		11.60		84
15:19	14.31	25.45	12.80	11.60		84
15:20	14.59	26.65	12.80	11.49		84
15:21	14.85	25.96	12.80	11.49		84
15:22	14.56	26.32	12.80	11.39		84
15:23	14.37	27.49	12.80	11.39		84
15:24	15.32	30.37	12.80	11.49		84
15:24	14.48	31.51	12.80	11.39		84
15:25	14.01	34.93	12.80	11.39		84
15:25	13.90	35.26	12.80	11.39		84
15:26	13.01	41.92	12.80	11.39		84
15:27	14.11	39.76	12.80	11.49		84
15:28	15.31	25.96	12.81	11.49		84
15:29	18.64	26.86	12.80	11.39		84
15:30	19.70	28.48	12.80	11.39		84
15:31	14.74	69.25	12.80	11.28		84
15:32	12.03	29.92	12.73	11.49		84
15:33	12.34	31.63	12.73	11.60		84
15:34	12.06	29.08	12.73	11.60		84
15:35	13.28	25.00	12.73	11.60		84
15:36	14.27	25.90	12.73	11.69		84
15:37	14.28	26.62	12.72	11.53		82
15:38	13.02	22.21	12.73	11.56		83
15:39	13.54	23.89	12.73	11.56		83
15:40	13.72	25.03	12.73	11.70		84
15:41	13.57	24.58	12.72	11.49		84
15:42	13.41	24.34	12.73	11.60		84
15:43	13.90	25.72	12.73	11.70		84
15:44	14.84	27.10	12.72	11.80		84
15:45	12.31	34.69	11.83	11.80		84
15:46	11.73	40.03	11.52	11.70		84
15:47	12.82	39.07	11.53	11.70		84
15:48	13.93	29.38	11.53	11.60		84
15:49	16.35	25.06	11.53	11.56		83
15:50	18.13	26.32	11.53	11.63		82
15:51	17.16	31.66	11.53	11.53		82
15:52	12.23	30.01	11.53	11.53		82
15:53	12.80	31.66	11.53	11.46		83
15:54	12.45	33.94	11.53	11.49		84
15:55	13.57	26.62	11.53	11.60		84
15:56	14.55	27.31	11.53	11.49		84

15:57	15.47	28.12	11.52	11.60	84
15:58	14.26	26.11	12.16	11.39	84
15:59	14.90	26.29	12.80	11.39	84
16:00	15.74	27.55	12.80	11.39	84
16:01	15.49	28.18	12.81	11.49	84
16:02	13.65	26.41	12.80	11.18	84
16:03	15.75	28.57	12.80	11.28	84
16:04	15.37	28.72	12.80	11.39	84
16:05	13.59	32.89	12.80	11.39	84
16:06	13.11	42.25	12.80	11.28	84
16:07	13.71	38.92	12.80	11.39	84
16:08	15.29	34.09	12.80	11.39	84
16:09	17.59	23.56	12.80	11.39	84
16:10	19.07	27.28	12.80	11.49	84
16:11	18.82	32.53	12.58	11.39	84
16:12	12.33	27.40	11.93	11.48	84
16:13	12.94	33.10	11.93	11.39	84
16:14	12.37	31.21	11.93	11.43	82
16:15	12.82	27.40	11.93	11.22	82
16:16	14.30	25.72	11.93	11.43	82
16:17	14.54	26.95	11.93	11.48	84
16:18	14.63	25.03	11.92	11.49	84
16:19	13.04	24.01	11.93	11.49	84
16:20	14.49	25.39	11.93	11.49	84
16:21	14.78	26.65	11.93	11.49	84
16:22	13.54	25.45	11.93	11.28	84
16:23	14.02	27.85	11.93	11.49	84
16:24	14.46	27.79	11.93	11.60	84
16:25	13.88	30.07	12.48	11.60	84
16:26	13.24	39.22	12.48	11.70	84
16:27	13.36	39.88	12.48	11.70	84
16:28	14.15	39.76	12.48	11.80	84
16:29	14.97	22.99	12.48	11.70	84
16:30	18.96	27.67	12.48	11.70	84
16:31	19.53	28.90	12.48	11.69	84
16:32	14.24	33.01	12.48	11.63	82
16:33	11.95	32.35	12.48	11.53	82
16:34	12.71	33.25	12.48	11.63	82
16:35	12.45	31.60	12.48	11.53	82
16:36	14.35	27.61	12.48	11.74	82
16:37	15.14	28.81	12.48	11.74	82
16:38	16.05	29.62	12.61	11.84	82
16:39	13.86	23.80	12.65	11.84	82
16:40	14.82	26.95	12.65	12.05	82
16:41	15.50	27.19	12.65	11.94	82
16:42	14.87	26.80	12.65	11.74	82
16:43	14.16	28.93	12.65	11.84	82
16:44	15.29	29.29	12.65	11.94	82
16:45	15.31	31.18	12.64	11.94	82
16:46	12.02	41.32	12.65	11.94	82
16:47	12.70	43.66	12.64	11.84	82
16:48	13.12	44.32	12.65	11.84	82

16:49	15.63	28.57	12.64	11.84	82	
16:50	17.85	27.25	12.65	11.84	82	
16:51	19.43	29.95	12.76	11.74	82	
16:52	16.30	34.15	12.80	11.63	82	
16:53	13.59	33.79	12.81	11.63	82	
16:54	13.06	35.68	12.80	11.63	82	
16:55	12.93	34.66	12.80	11.56	83	
16:56	14.58	28.21	12.80	11.70	84	
16:57	15.50	29.59	12.80	11.70	84	
16:58	16.09	29.71	12.81	11.60	84	
16:59	14.45	26.53	12.80	11.60	84	
17:00			12.80			
17:01			12.80			
17:02			12.81			
17:03			12.80			
17:04			13.12			
17:05			13.44			
17:06			13.44			
17:07			13.44			
17:08			13.44			
17:09			13.44			
17:10			13.44			
17:11			13.43			
17:12			13.44			
17:13			13.44			
17:14			13.44			
17:15			13.44			
17:16			13.43			
Average	14.50	30.88	12.57	11.57	83.38	182
Minimum	11.73	22.21	11.52	11.18	82.00	
Maximum	19.70	98.14	13.44	12.05	84.00	
	ESC P5B	DR 300-40	F904K	Moisture	Temp	

Run 24

M17 Results	For P5B & 300-40 mg/acm	For F904K & RSD mg/dscm	Moisture %
Train A	18.84	28.6	13.9
Train B	18.47	28.1	14.2
Average	18.655	28.35	14.05

ICal Appendix G

Statistical Analysis Data and Graphs for PM CEMS

Definitions of Terms in Correlation Statistical Calculations Tables

Column headings for linear correlations:

x	Signal in mA
y	Corresponding PM concentration from reference test method
ylin	Predicted PM concentration based on linear correlation ($\hat{y}$)
(x-xbar)^2	$(x_i - \bar{x})^2$
(y-ybar)^2	$(y_i - \bar{y})^2$
(x-xbar)(y-ybar)	$(x_i - \bar{x})(y_i - \bar{y})$
Clow	lower confidence interval for the predicted concentration y at point x_i
Chigh	upper confidence interval for the predicted concentration y at point x_i
CI%	confidence interval as a percent of the emissions limit

$$n' = \frac{n}{1 + \frac{n(x - \bar{x})^2}{S_{xx}}}, n' \geq 2$$

nprime

kt $k_T = u_{n'} \cdot v_f$, where $u_{n'}$ and v_f are taken from Table I and $f = n - 2$

Tlow lower tolerance interval for the predicted concentration y at point x_i

Thigh upper tolerance interval for the predicted concentration y at point x_i

TI% tolerance interval as a percent of the emissions limit

Confidence interval: $\hat{y} \pm t_f \cdot s_L \sqrt{\frac{1}{n} + \frac{(x - \bar{x})^2}{S_{xx}}}$

Tolerance interval: $\hat{y} \pm k_T \cdot s_L$

Other variables shown:

N number of observations

xbar mean of x, $\bar{x}$

ybar mean of y, $\bar{y}$

a constant (slope) in linear equation $y = ax + b$, $a = \frac{S_{xx}}{S_{xy}}$

b constant (y-intercept) in linear equation $y = ax + b$, $b = \bar{y} - a\bar{x}$

R linear correlation coefficient

Sxx
$$S_{xx} = \sum_{i=1}^n (x_i - \bar{x})^2$$

Syy
$$S_{yy} = \sum_{i=1}^n (y_i - \bar{y})^2$$

Sxy
$$S_{xy} = \sum_{i=1}^n (\hat{y}_i - y_i)^2$$

tf value of t from Table I for f degrees of freedom, where $f = n - 2$

vf value of v from Table I for f degrees of freedom, where $f = n - 2$

EL PM emissions limit

SL scatter of values around the linear correlation

Column headings for polynomial correlations:

x Signal in mA

y Corresponding PM concentration from reference test method

yquad Predicted PM concentration based on polynomial correlation ($\hat{y}$)

X2 x_i^2

X3	x_i^3
X4	x_i^4
XY	$x_i y_i$
X2Y	$x_i^2 y_i$
(yhat-y)2	$(\hat{y} - y_i)^2$
delta	$C_0 + 2C_1 x_i + (2C_2 + C_3) x_i^2 + 2C_4 x_i^3 + C_5 x_i^4$
Clow	lower confidence interval for the predicted concentration y at point x_i
Chigh	upper confidence interval for the predicted concentration y at point x_i
CI%	confidence interval as a percent of the emissions limit

$$n' = \frac{1}{\Delta}, n' \geq 2$$

nprime

$$k_T = u_{n'} \cdot v_f, \text{ where } u_{n'} \text{ and } v_f \text{ are taken from Table I and } f = n - 2$$

kt

Tlow	lower tolerance interval for the predicted concentration y at point x_i
Thigh	upper tolerance interval for the predicted concentration y at point x_i
TI%	tolerance interval as a percent of the emissions limit

$$\text{Confidence Interval: } \hat{y} \pm t_f \cdot s_q \sqrt{\Delta}$$

$$\text{Tolerance Interval: } \hat{y} \pm k_T \cdot s_q$$

Other variables shown:

N number of observations

$$S_1 = \sum_{i=1}^n x_i$$

S1

$$S_2 = \sum_{i=1}^n (x_i)^2$$

S2

S3
$$S_3 = \sum_{i=1}^n (x_i)^3$$

S4
$$S_4 = \sum_{i=1}^n (x_i)^4$$

S5
$$S_5 = \sum_{i=1}^n y_i$$

S6
$$S_6 = \sum_{i=1}^n x_i y_i$$

S7
$$S_7 = \sum_{i=1}^n x_i^2 y_i$$

DETA
$$\det A = nS_2S_4 - S_2S_2S_2 + S_1S_3S_2 - S_3S_3n + S_2S_1S_3 - S_4S_1S_1$$

b0 constant in polynomial equation, $y = b_0 + b_1x + b_2x^2$

$$b_0 = (S_5S_2S_4 + S_1S_3S_7 + S_2S_6S_3 - S_7S_2S_2 - S_3S_3S_5 - S_4S_6S_1)/\det A$$

b1 constant in polynomial equation, $y = b_0 + b_1x + b_2x^2$

$$b_1 = (nS_6S_4 + S_5S_3S_2 + S_2S_1S_7 - S_2S_6S_2 - S_7S_3n - S_4S_1S_5)/\det A$$

b2 constant in polynomial equation, $y = b_0 + b_1x + b_2x^2$

$$b_2 = (nS_2S_7 + S_1S_6S_2 + S_5S_1S_3 - S_2S_2S_5 - S_3S_6n - S_7S_1S_1)/\det A$$

ybar mean of y

f degrees of freedom, $f = n-3$

sq scatter of the y values around the polynomial curve

$$s_q = \sqrt{\frac{1}{n-3} \sum_{i=1}^n (\hat{y}_i - y_i)^2}$$

vf value of v for f degrees of freedom from Table I, where $f = n-3$

EL	PM emissions limit
c0	$(S_2S_4-S_3^2)/D$
c1	$(S_3S_2-S_1S_4)/D$
c2	$(S_1S_3-S_2^2)/D$
c3	$(nS_4-S_2^2)/D$
c4	$(S_1S_2-nS_3)/D$
c5	$(nS_2-S_1^2)/D$
D	$n(S_2S_4-S_3^2)+S_1(S_3S_2-S_1S_4)+S_2(S_1S_3-S_2^2)$

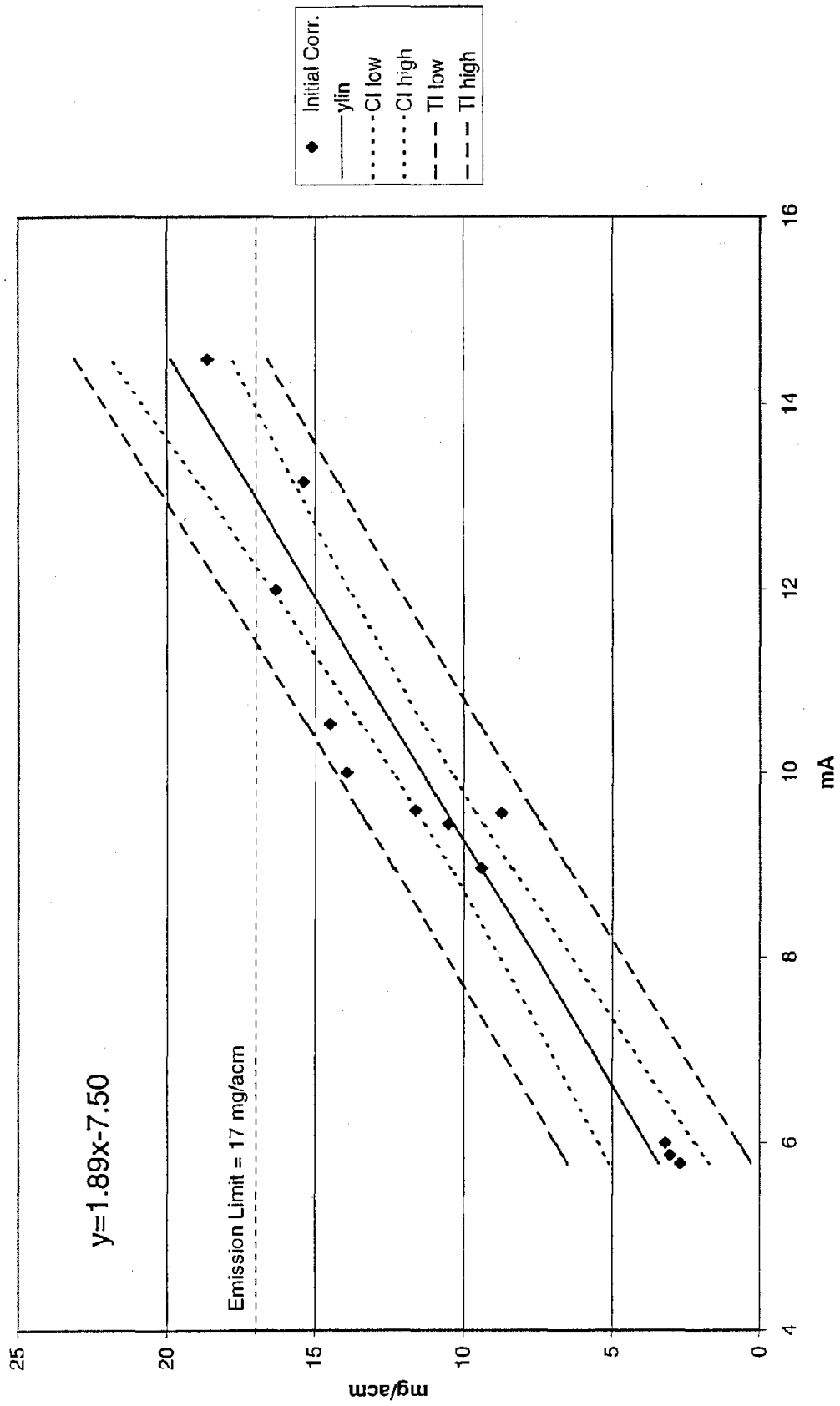
$$S_y = \sqrt{\frac{\sum_{i=1}^n (y_i - \bar{y})^2}{n-1}}$$

sy

$$r = \sqrt{1 - \frac{S_q^2}{S_y^2}}$$

r polynomial correlation coefficient,

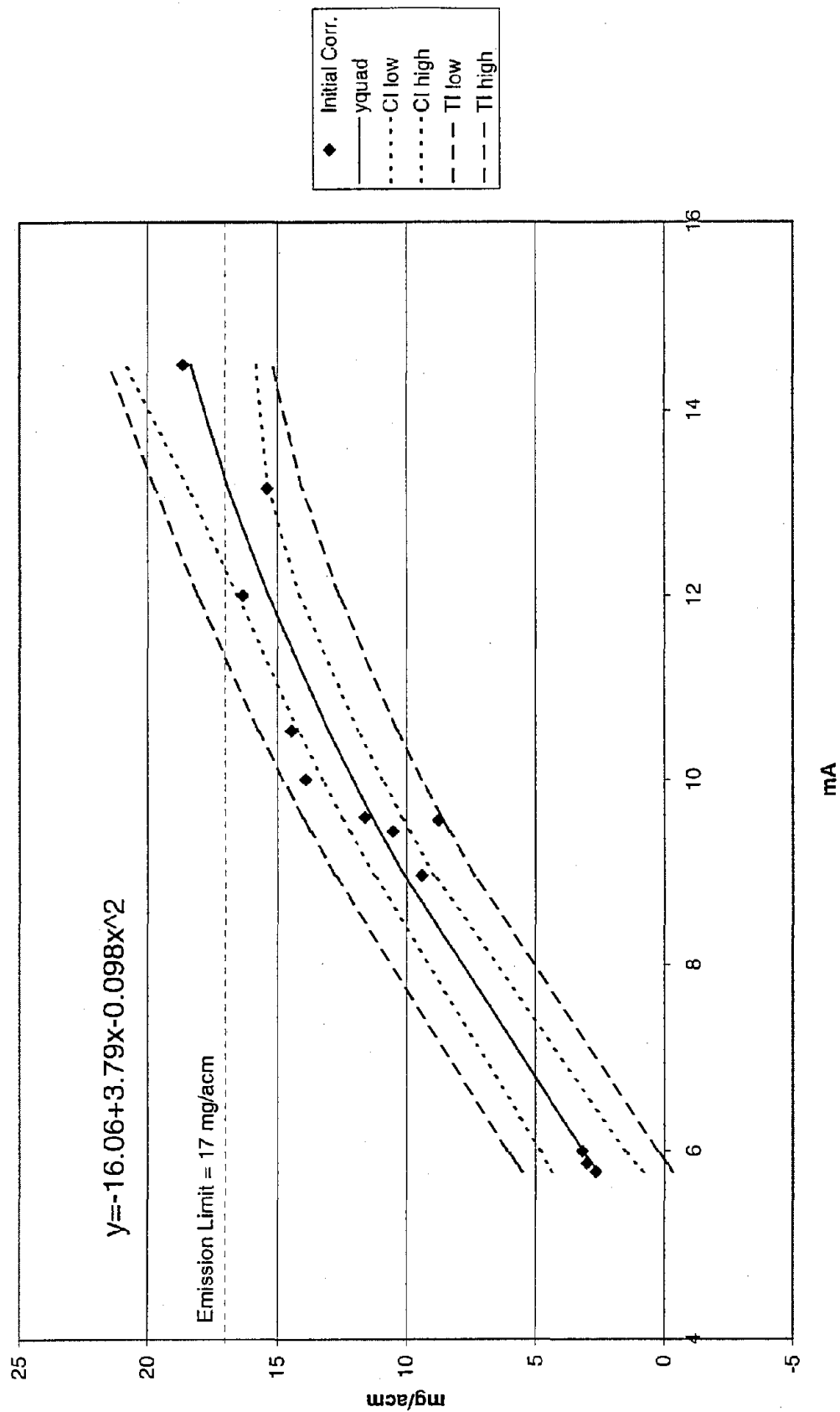
ESC P5B - Linear



ICAL APPENDIX G

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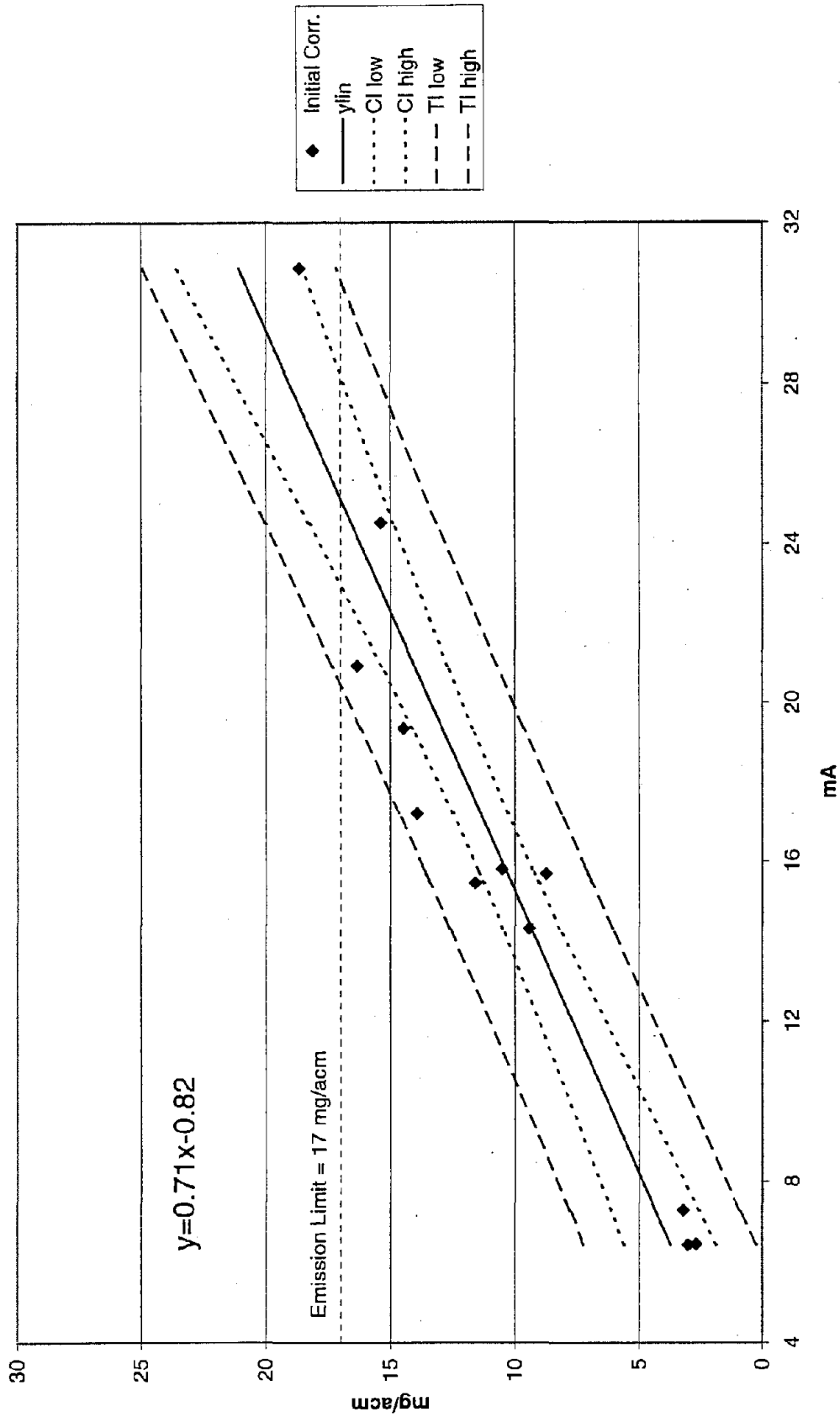
ESC P5B - Polynomial



ESC P5B - Polynomial

Run	x (mA)	y (mg/acm) Initial Corr.	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	2.5854	33.4084	193.1006	1116.121	15.4904	89.53451	0.0089	0.3531	0.8013	4.3696	10.4949	2.8323	1.3400	2.2043	-0.3406	5.5115	17.2120	63.7270
16	5.87	3.03	2.8241	34.4569	202.262	1187.278	17.75675	104.2321	0.0404	0.3296	1.1003	4.5479	10.1400	3.0341	1.3400	2.2043	-0.1020	5.7501	17.2120	58.3378
18	6.00	3.20	3.1659	36	216	1296	19.17	115.02	0.0008	0.2989	1.5243	4.8076	9.6567	3.3454	1.3400	2.2043	0.2399	6.0920	17.2120	55.7698
21	8.97	9.42	10.0755	80.4609	721.7343	6473.956	84.45255	757.5394	0.4363	0.1469	8.9245	11.2265	6.7707	6.8051	1.2330	2.0283	7.3831	12.7679	15.8376	1.5573
20	9.45	10.52	11.0302	89.3025	843.9086	7974.937	99.414	939.4623	0.2603	0.1515	9.8615	12.1988	6.8745	8.6012	1.2330	2.0283	8.3378	13.7226	15.8376	0.0204
23	9.57	8.76	11.2818	91.5849	876.4675	8387.794	83.78535	801.8258	6.2840	0.1522	10.0905	12.4331	6.8899	6.5717	1.2330	2.0283	8.5694	13.9542	15.8376	3.6401
13	9.60	11.61	11.3193	92.16	884.736	8493.466	111.456	1069.978	0.0845	0.1523	10.1474	12.4911	6.8930	6.5658	1.2330	2.0283	8.8269	14.0118	15.8376	0.8970
14	10.01	13.92	12.0870	100.2001	1003.003	10040.06	139.3392	1394.785	3.3600	0.1528	10.9133	13.2606	6.9040	6.5449	1.2330	2.0283	9.3946	14.7793	15.8376	10.6086
16	10.54	14.47	13.0306	111.0916	1170.905	12341.34	152.4611	1606.94	2.0575	0.1502	11.8671	14.1941	6.8441	6.6599	1.2330	2.0283	10.3382	15.7230	15.8376	14.4558
19	12.00	16.33	15.3458	144	1728	20736	195.96	2351.52	0.9686	0.1548	14.1845	16.5272	6.9491	6.4602	1.2470	2.0513	12.6229	18.0688	18.0174	32.1158
22	13.16	15.39	16.8879	173.1856	2279.122	29993.25	202.4666	2654.46	2.2568	0.2599	15.3570	18.4189	9.0051	3.8470	1.2950	2.1303	14.0601	19.7157	16.6339	22.2981
24	14.50	18.66	18.3415	210.25	3048.825	44205.08	270.4975	3922.214	0.0983	0.6978	15.8332	20.8498	14.7546	1.4330	1.4330	2.3573	15.2124	21.4706	18.4065	63.8734
N																				
12																				
S1				115.45				f 9				c0 11.5962				sy 5.45478				
S2				1196.1009								c1 -2.4324								
S3				13167.8649				sq 1.32742				c2 0.1193				r 0.96994				
S4				152245.27								c3 0.5277								
S5				127.955				vf 1.645				c4 -0.0265								
S6				1392.24945				tf 2.262				c5 0.0014								
S7				15817.5113								D 750939.4								
DETA 750939.371																				
b0 -16.06																				
b1 3.791																				
b2 -0.098																				
				EL				17												
ybar		10.6829167																		

Durag DR 300-40 - Linear

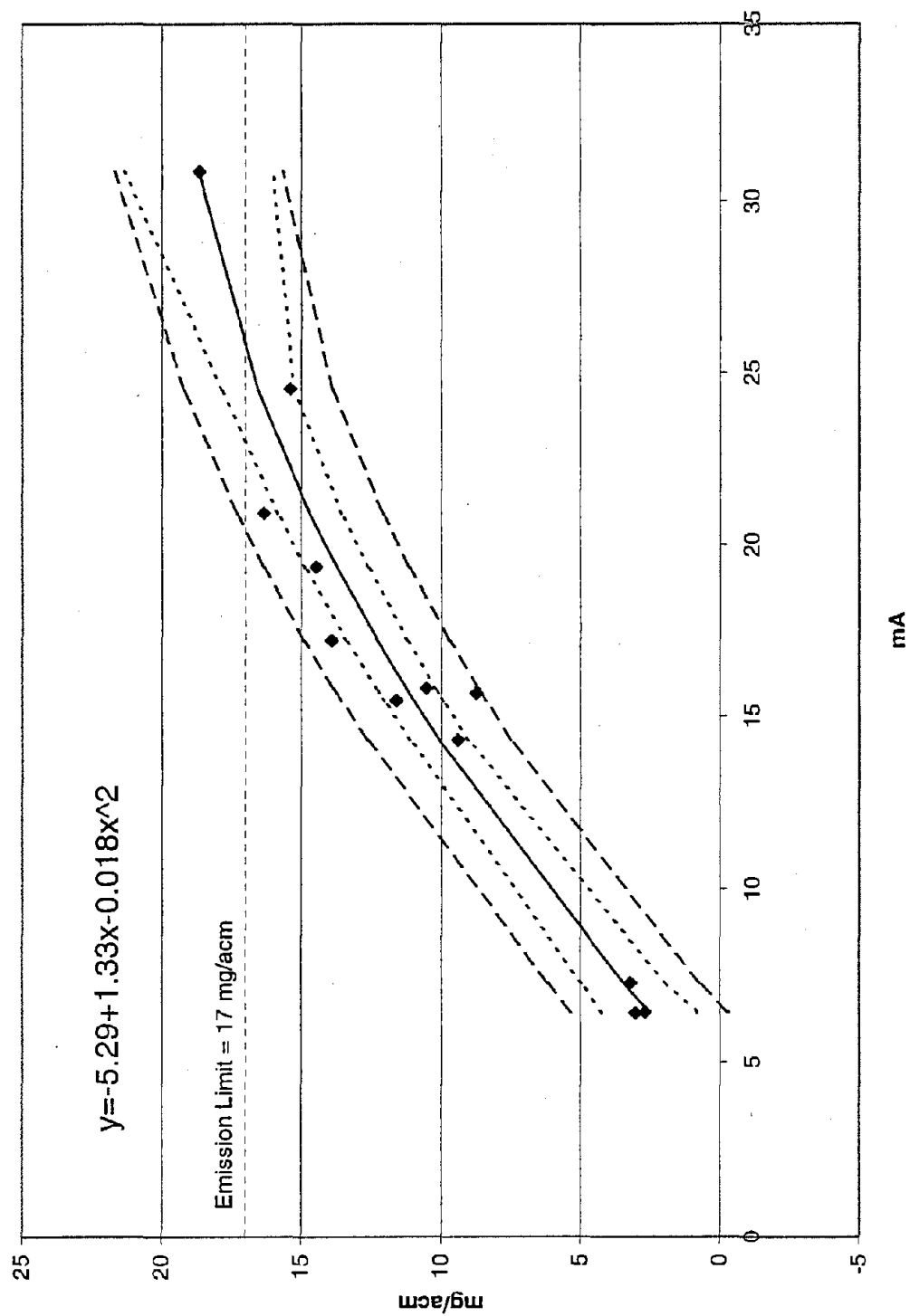


Durag DR 300-40 - Linear

Run	x (mA)	y (mg/acm) Initial Corr.	ylln	(x-xbar)^2	(y-ybar)^2	(x-xbar)(y-ybar)	Cl low	Cl high	Cl %	nprime	un'	kt	Tl low	Tl high	Tl %
16	6.42	3.03	3.7336	95.5180	58.3378	74.6479	1.8589	5.6084	11.0279	4.0936	1.295	2.0629	0.2216	7.2457	20.6593
17	6.44	2.68	3.7478	95.1275	63.7270	77.8600	1.8756	5.6200	11.0130	4.1046	1.295	2.0629	0.2358	7.2599	20.6593
18	7.28	3.20	4.3434	79.4475	55.7698	66.5640	2.5756	6.1112	10.3987	4.6039	1.266	2.0167	0.9100	7.7768	20.1966
21	14.32	9.42	9.3347	3.5094	1.5573	2.3378	8.2016	10.4679	6.6656	11.2049	1.203	1.9164	6.0722	12.5973	19.1916
13	15.45	11.61	10.1359	0.5525	0.8970	-0.7040	9.0348	11.2370	8.4769	11.8674	1.199	1.9100	6.8842	13.3876	19.1278
23	15.68	8.76	10.2990	0.2635	3.6401	0.9794	9.2011	11.3968	6.4581	11.9364	1.199	1.9100	7.0472	13.5507	19.1278
20	15.8	10.52	10.3640	0.1547	0.0204	0.0562	9.2874	11.4807	6.4511	11.9626	1.199	1.9100	7.1323	13.6358	19.1278
14	17.22	13.92	11.3908	1.0540	10.6086	3.3439	10.2842	12.4974	6.5093	11.7496	1.199	1.9100	8.1391	14.6425	19.1278
15	19.36	14.47	12.9081	10.0278	14.4558	12.0399	11.7072	14.1089	7.0639	9.9770	1.208	1.9243	9.6319	16.1842	19.2713
19	20.93	16.33	14.0212	22.4360	32.1158	26.8431	12.7010	15.3414	7.7658	8.2550	1.223	1.9482	10.7044	17.3380	19.5106
22	24.54	15.39	16.5807	69.6668	22.2981	39.4137	14.8813	18.2801	9.9964	4.9819	1.266	2.0167	13.1473	20.0141	20.1966
24	30.88	18.66	21.0757	215.6982	63.8734	117.3771	18.5403	23.6111	14.9141	2.2382	1.433	2.2828	17.1894	24.9621	22.8608
limit	25.13		17	79.8894			15.2292	18.7708	10.4165	4.5882	1.266	2.0167	13.5666	20.4334	20.1966
sum	194.32	127.955													

N	12	Sxx	593.45607	SL	1.702464
xbar	16.19333	Syy	327.30107		
ybar	10.66292	Sxy	420.75903		
		f	10		
a	0.708996	tf	2.228		
b	-0.81812	vf	1.593		
R	0.954697	EL	17		

Durag DR 300-40 - Polynomial

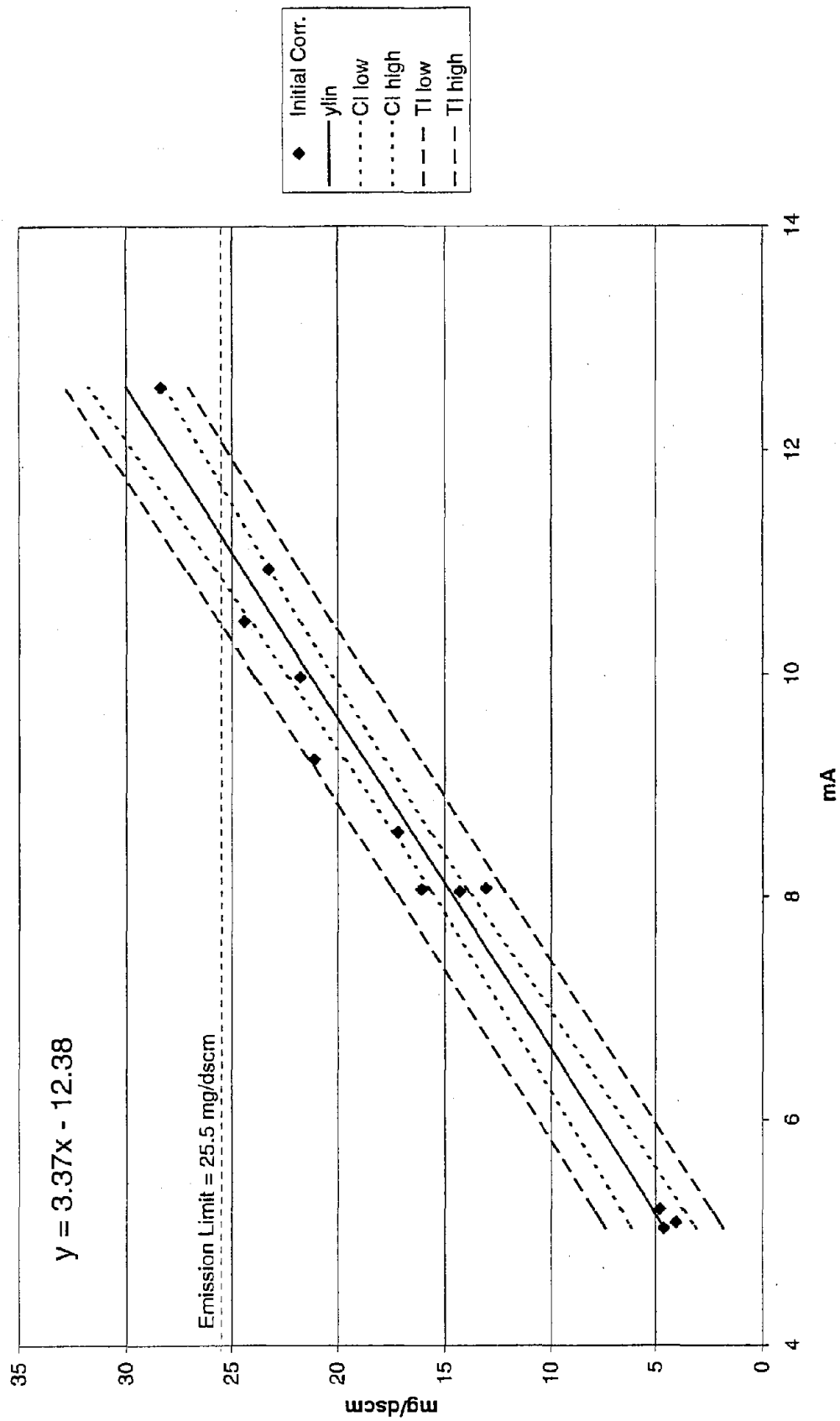


Durag DR 300-40 - Polynomial

Run	x (mA)	y (mg/acm)	Initial Corr.	yquad	X2	X3	X4	XY	X2Y	(yhat-y)2	delta	Cl low	Cl high	Cl %	n'	un'	kt	Ti low	Ti high	Ti %	y-ybar2
16	6.42	3.03	2.5172	41.2164	264.6093	1698.7916	19.4205	124.6796	0.2579	0.3473	0.8129	4.2215	10.0252	2.8752	1.3400	2.2043	-0.2989	5.3333	16.5654	58.3378	
17	6.44	2.68	2.5392	41.4736	267.0900	1720.0695	17.2592	111.1492	0.0198	0.3458	0.8398	4.2366	9.9905	2.8917	1.3400	2.2043	-0.2769	5.3553	16.5654	63.7270	
18	7.28	3.20	3.4500	52.9984	385.8284	2808.8304	23.2696	159.3299	0.0650	0.2730	1.9400	4.9601	8.8825	3.6625	1.2950	2.1303	0.7285	6.1716	16.0091	55.7698	
21	14.32	9.42	10.0862	205.0624	2936.4936	42050.5879	134.8228	1930.6625	0.4506	0.1288	9.0493	11.1232	6.0997	7.7666	1.2230	2.0118	7.5180	12.8565	15.1191	1.5573	
13	15.45	11.61	10.9855	238.7025	3687.9536	56978.8835	179.3745	2771.3360	0.3901	0.1348	9.9246	12.0463	6.2402	7.4208	1.2330	2.0283	8.3942	13.5767	15.2427	0.8970	
23	15.68	8.76	11.1629	245.8624	3855.1224	60448.3197	137.2784	2152.5253	5.7978	0.1360	10.0972	12.2285	6.2687	7.3536	1.2330	2.0283	8.5716	13.7541	15.2427	3.6401	
20	15.80	10.52	11.2547	249.6400	3944.3120	62320.1296	166.2160	2626.2128	0.5397	0.1366	10.1865	12.3228	6.2832	7.3195	1.2330	2.0283	8.6634	13.8459	15.2427	0.9204	
14	17.22	13.92	12.3017	296.5284	5106.2190	87929.0920	239.7024	4127.6753	2.6189	0.1432	11.2083	13.3951	6.4317	6.9855	1.2330	2.0283	9.7104	14.8930	15.2427	10.6086	
15	19.36	14.47	13.7427	374.8096	7256.3139	140482.2353	280.0424	5421.6209	0.5218	0.1490	12.6273	14.6580	6.5608	6.7132	1.2330	2.0283	11.1514	16.3339	15.2427	14.4558	
19	20.83	16.33	14.6951	438.0649	9168.6884	191900.8566	341.7869	7153.5998	2.6728	0.1529	13.5651	15.8252	6.6473	6.5397	1.2330	2.0283	12.1036	17.2864	15.2427	32.1158	
22	24.54	15.39	16.5490	602.2116	14778.2727	362658.8112	377.5479	9265.0255	1.3549	0.2008	15.2541	17.8440	7.6173	4.9802	1.2660	2.0828	13.8884	19.2096	15.6508	22.2981	
24	30.88	18.66	18.6708	953.5744	29446.3775	909304.1363	576.0664	17788.9304	0.0003	0.8514	16.0043	21.3373	15.6853	1.1745	1.4330	2.3573	15.6592	21.6824	17.7151	63.8734	
	25.59		17.0006	654.8654	16759.3777	428887.9583				0.2395	15.5863	18.4150	8.3199	4.1746	1.2950	2.1303	14.2791	19.7222	16.0091		
N	12																				
S1	194.32							c0 1.8219869		sy 5.454782											
S2	3740.1448							c1 -0.2217033													
S3	81097.2906							c2 0.00561945		r 0.972188											
S4	1920300.73							c3 0.02874552													
S5	127.955							c4 -0.0007822													
S6	2492.777							c5 2.2608E-05													
S7	53642.7473							D 315003122													
DETA	315003122																				
b0	-5.29																				
b1	1.331																				
b2	-0.018																				
ybar	10.6629187																				

EL= 17

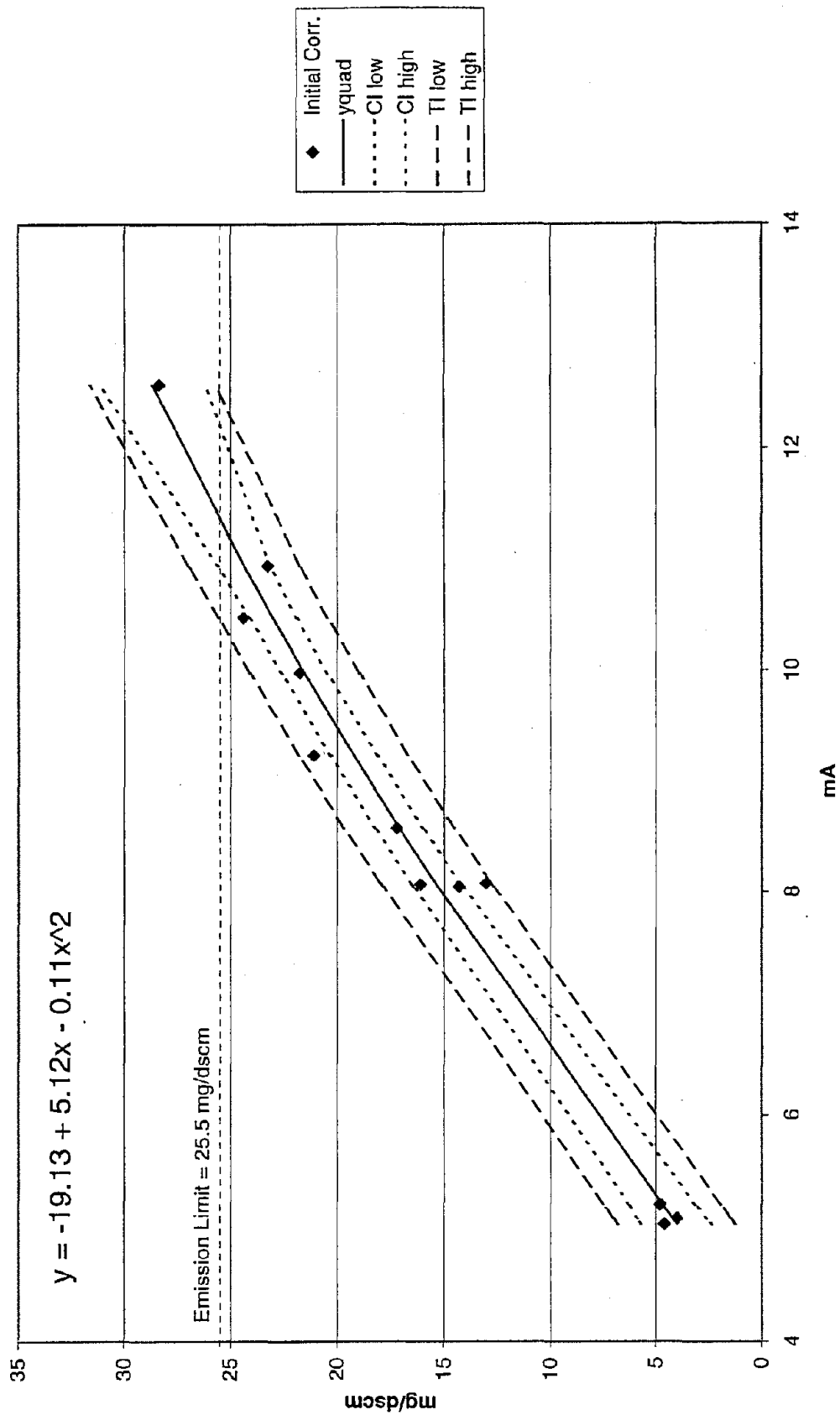
Durag F904K - Linear



Durag F904K - Linear

Run	x (mA)	y (mg/dscm) Initial Corr.	ylin	(x-xbar)^2	(y-ybar)^2	(x-xbar)(y-ybar)	Cl low	Cl high	Cl %	nprlme	un'	kt	Tl low	Tl high	Tl %
16	5.04	4.60	4.6021	11.5940	131.6756	39.0724	3.0487	6.1555	6.0918	3.7883	1.295	2.0629	1.8026	7.4016	10.9784
17	5.09	4.00	4.7706	11.2560	145.8056	40.5116	3.2327	6.3084	6.0307	3.8654	1.295	2.0629	1.9711	7.5701	10.9784
18	5.21	4.80	5.1749	10.4652	127.1256	36.4746	3.6741	6.6757	5.8854	4.0587	1.295	2.0629	2.3754	7.9744	10.9784
21	8.05	14.30	14.7441	0.1560	3.1506	0.7011	13.8586	15.6295	3.4723	11.6599	1.199	1.9100	12.1521	17.3360	10.1645
20	8.07	16.10	14.8115	0.1406	0.0006	-0.0094	13.9273	15.6957	3.4675	11.6926	1.199	1.9100	12.2195	17.4034	10.1645
23	8.08	13.05	14.8452	0.1332	9.1506	1.1041	13.9616	15.7288	3.4651	11.7084	1.199	1.9100	12.2532	17.4371	10.1645
13	8.58	17.20	16.5299	0.0182	1.2656	0.1519	15.6556	17.4042	3.4286	11.9592	1.199	1.9100	13.9379	19.1218	10.1645
14	9.24	21.10	18.7537	0.6320	25.2506	3.9949	17.8308	19.6766	3.6193	10.7319	1.203	1.9164	16.1531	21.3543	10.1984
15	9.98	21.75	21.2471	2.3562	32.2056	8.7111	20.1995	22.2946	4.1081	8.3303	1.223	1.9482	18.6032	23.8909	10.3680
19	10.48	24.40	22.9318	4.1412	69.3056	16.9414	21.7692	24.0944	4.5592	6.7634	1.233	1.9642	20.2663	25.5972	10.4528
22	10.95	23.25	24.5154	6.2750	51.4806	17.9734	23.2287	25.8021	5.0458	5.5218	1.247	1.9865	21.8197	27.2111	10.5714
24	12.57	28.35	29.9739	17.0156	150.6756	50.6344	28.1891	31.7586	6.9990	2.8699	1.340	2.1346	27.0771	32.8706	11.3599
sum	11.2422		25.5	7.8244			24.1303	26.8697	5.3715	4.8723	1.266	2.0167	22.7632	28.2368	10.7325
sum	101.34	192.9													
N	12		Sxx	64.1835			SL	1.357039							
xbar	8.445		Syy	747.0925											
ybar	16.075		Sxy	216.2615											
a	3.36943		f	10											
b	-12.3798		tf	2.228											
R	0.9876		vf	1.593											
			EL	25.5											

Durag F904K - Polynomial



ICa1 APPENDIX G

Run	x (m/s)	y (mg/dscm)	Initial	Corr.	yquad	X2	X3	X4	XY	X2Y	(yhat-y)2	della	CI low	CI high	CI %	n'	un'	kt	TI low	TI high	TI %	y-ybar2
16	5.04	4.80	4.0178	25.4016	128.0241	845.2413	23.1840	118.8474	0.3389	0.3462	2.3424	5.6932	8.5703	2.8886	1.340	2.2043	1.2429	6.7927	10.8821	131.6758		
17	5.09	4.00	4.2207	25.9081	131.8722	671.2296	20.3600	103.6324	0.0467	0.3315	2.5812	5.8603	6.4296	3.0165	1.340	2.2043	1.4458	6.9956	10.8821	145.8055		
18	5.21	4.80	4.7055	27.1441	141.4209	736.8022	25.0080	130.2917	0.0089	0.2994	3.1473	6.2638	6.1106	3.3396	1.340	2.2043	1.9306	7.4805	10.8821	127.1258		
21	8.05	14.30	15.2974	64.8025	521.6001	4199.3640	115.1150	926.6758	0.9949	0.1595	14.1602	16.4347	4.4598	6.2697	1.247	2.0513	12.7151	17.8798	10.1268	3.1506		
20	8.07	16.10	15.3660	65.1249	525.5579	4241.2526	129.9270	1048.5109	0.5387	0.1596	14.2285	16.5035	4.4609	6.2668	1.247	2.0513	12.7837	17.9484	10.1268	0.0006		
23	8.08	13.05	15.4003	65.2864	527.5141	4262.3140	105.4440	851.9875	5.5238	0.1595	14.2626	16.5379	4.4614	6.2651	1.247	2.0513	12.8179	17.9826	10.1268	9.1506		
13	8.58	17.20	17.0866	73.6164	631.6287	5419.3743	147.5760	1266.2021	0.0129	0.1583	15.9536	18.2194	4.4423	5.3191	1.247	2.0513	14.5042	19.6689	10.1268	1.2655		
14	9.24	21.10	19.2322	85.3776	788.8890	7289.3346	194.9640	1801.4874	3.4888	0.1483	18.1355	20.3288	4.3005	6.7427	1.233	2.0283	16.6788	21.7855	10.0131	25.2506		
15	9.88	21.75	21.5290	99.6004	994.0120	9920.2397	217.0650	2166.3087	0.0488	0.1392	20.4667	22.5914	4.1662	7.1844	1.233	2.0283	18.9757	24.0824	10.0131	32.2058		
19	10.48	24.40	23.0159	109.8304	1151.0226	12062.7168	255.7120	2879.6618	1.9157	0.1496	21.9147	24.1172	4.3186	6.6863	1.233	2.0283	20.4826	25.5693	10.0131	59.3056		
22	10.95	23.25	24.3657	119.8025	1312.9324	14376.6095	254.5875	2787.7331	1.2448	0.1885	23.1360	25.5954	4.8225	5.3620	1.266	2.0826	21.7440	26.9874	10.2811	51.4808		
24	12.57	28.35	28.6628	158.0049	1986.1216	24965.5484	356.3595	4479.4389	0.0978	0.7624	26.1765	31.1491	9.7503	1.3117	1.433	2.3673	26.8963	31.6303	11.6373	150.6756		
N	12																					
S1	101.34		f	9			c0	12.1601			sy 8.2412											
S2	919.9998						c1	-2.9786														
S3	8840.6555		sq	12589			c2	0.1706			r 0.9883											
S4	88790.0270						c3	0.7648														
S5	192.9			vf 1.645			c4	-0.0443														
S6	1845.302			lf 2.262			c5	0.0027														
S7	18358.9575						D	290261.4723														
DETA	290261.4723																					
b0	-19.13																					
b1	5.121																					
b2	-0.105		EL		25.5																	
ybar	18.0750																					

Tests for best regression fit

Ff (12) = 5.12

Durag F904K

Polynomial vs. Linear (dropped 3 values)

Ff BG 2.620414 less than Ff(12), so linear is better

Durag DR 300-40

Polynomial vs. Linear (dropped 3 values)

Ff DLS 8.757966 greater than Ff(12), so polynomial is better

ESC P5B

Polynomial vs. Linear (dropped 3 values)

Ff ELS 3.982599 less than Ff(12), so linear is better

TECHNICAL REPORT DATA <i>(Please read Instructions on reverse before completing)</i>		
1. REPORT NO. EPA-454/R-00-040b	2.	3. RECIPIENT'S ACCESSION NO.
4. TITLE AND SUBTITLE EVALUATION OF PARTICULATE MATTER CONTINUOUS EMISSION MONITORING SYSTEMS Volume 2	5. REPORT DATE September 2000	
	6. PERFORMING ORGANIZATION CODE	
7. AUTHOR(S) Dan Bivins Emission Monitoring and Analysis Division		8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Environmental Protection Agency Office of Air Quality Planning and Standards Research Triangle Park, NC 27711	10. PROGRAM ELEMENT NO.	
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	14. SPONSORING AGENCY CODE EPA/200/04	
15. SUPPLEMENTARY NOTES		
16. ABSTRACT This final report describes an extended field demonstration of three particulate matter (PM) continuous emission monitoring systems (CEMS) at a coal-fired boiler equipped with a lime slurry scrubber and baghouse for air pollution control. The primary objectives of the field study were to: (1) demonstrate whether the PM CEMS could provide reliable and accurate data over an extended period, (2) evaluate the PM CEMS for durability, data availability, and setup/maintenance requirements, and (3) determine whether the PM CEMS satisfy all the requirements of draft PS-11 and the quality assurance (QA) criteria specified in draft Procedure 2, or determine if changes are needed in the requirements of PS-11 and/or Procedure 2. This report presents the results of the study involving two different PM CEMS technologies (light scatter and beta gauge) at the coal-fired boiler. The report consists of five separate volumes.		
17. KEY WORDS AND DOCUMENT ANALYSIS		
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PS-11 Method 17 Procedure 2 Moisture CEMS Demonstration Particulate Matter PM CEMS	Air Pollution control	
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