APPENDIX A

FIELD SAMPLING DATA

METHOD 1 - TRAVERSE POINT LOCATIONS

TRC
Environmental Corporation

Plant Name	MIRANT - POTOMAC
City/State	ALEXANDRIA, VA
Test Location	UNIT 1 STACK
Personnel / Date	JDK 1/12-20-05

Stack / Ports			
Put diagram of test location(s) on back of this sheet	Type of Stack:	Circular X	Rectangle
	No. of Ports Available	4	
	No. of Ports Used	4	
	Port Inside Diameter, in	6"	

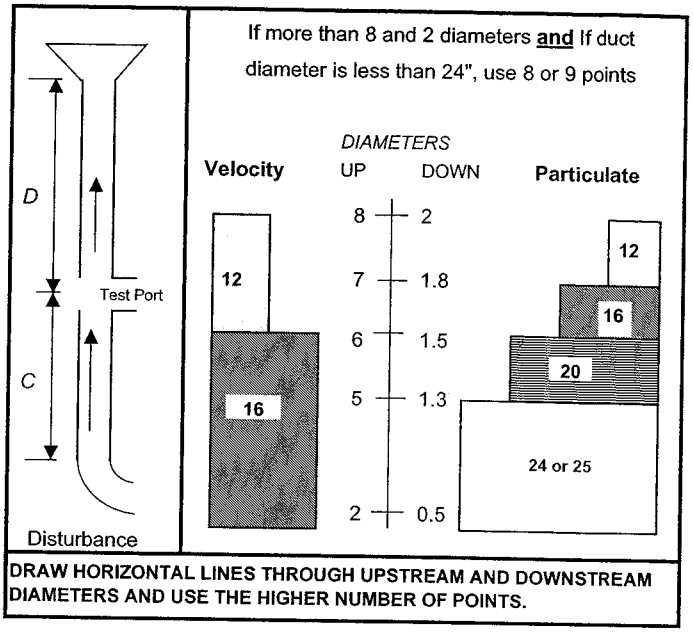
Dimensions		
	Far Wall to Outside of Port, in	198"
	Port Length, in	42"
	Stack Diameter or Depth, in	156"
Elevation of Ports (from ground)	Stack Width (if rectangle), in	
	Equivalent Stack Diameter, in	
	Area of Stack, ft^2	

Distance to Flow Disturbances	Distance, ft	Diameters
Upstream (C)	50	3.85
Downstream (D)	25	1.92

Number of Traverse Points			Minimum # Required
Particulate Traverse			(2014) 12
Velocity Traverse			
# of Ports Used	4	# Points/Port	3
Number of Traverse Points Used			12

Point No.	Fraction of Stack Dia.	Dist. from Inside Wall	Port Length	Dist. From Edge of Port
1	0.044	6.864	42	48 3/8
2	0.146	22.776		64 3/4
3	0.296	46.176		88 1/4
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

Note: When using 4 ports in a circular duct, the probe is marked with only the points for the first half of the full diameter traverse.



DRAW HORIZONTAL LINES THROUGH UPSTREAM AND DOWNSTREAM DIAMETERS AND USE THE HIGHER NUMBER OF POINTS.

Equivalent Diameter (for rectangular ducts):

De = 2 * Depth * Width / (Depth + Width)

De = 2 * ( ) * ( ) / ( ) + ( ) =

LOCATION OF POINTS IN CIRCULAR STACKS OR DUCTS

(Fraction of stack diameter from inside wall to traverse point)

	2	4	6	8	10	12	14	16	18	20
1	.146	.067	.044	.032	.026	.021	.018	.016	.014	.013
2	.854	.250	.146	.105	.082	.067	.057	.049	.044	.039
3		.750	.296	.194	.146	.118	.099	.085	.075	.067
4		.933	.704	.323	.226	.177	.146	.125	.109	.097
5			.854	.677	.342	.250	.201	.169	.146	.129
6			.956	.806	.658	.356	.269	.220	.188	.165
7				.895	.774	.644	.366	.283	.236	.204
8				.968	.854	.750	.634	.375	.296	.250
9					.918	.823	.731	.625	.382	.306
10					.974	.882	.799	.717	.618	.388
11						.933	.854	.780	.704	.612
12						.979	.901	.831	.764	.694
13							.943	.875	.812	.750
14							.982	.915	.854	.796
15								.951	.891	.835
16								.984	.925	.871
17									.956	.903
18									.986	.933
19										.961
20										.987

For 22 or 24 test points, see Method 1 table in CFR

LOCATION OF POINTS IN RECTANGULAR STACKS OR DUCTS

(Fraction of stack diameter from inside wall to traverse point)

	2	3	4	5	6	7	8	9	10	11	12
1	.250	.167	.125	.100	.083	.071	.063	.056	.050	.045	.042
2	.750	.500	.375	.300	.250	.214	.188	.167	.150	.136	.125
3		.833	.625	.500	.417	.357	.313	.278	.250	.227	.208
4			.875	.700	.583	.500	.438	.389	.350	.318	.292
5				.900	.750	.643	.563	.500	.450	.409	.375
6					.917	.786	.688	.611	.550	.500	.458
7						.929	.813	.722	.650	.591	.542
8							.938	.833	.750	.682	.625
9								.944	.850	.773	.708
10									.950	.864	.792
11										.955	.875
12											.958

Checked By: _____ (sign) JEFF KUNSTLING (print)
(Project Manager or QA Manger)

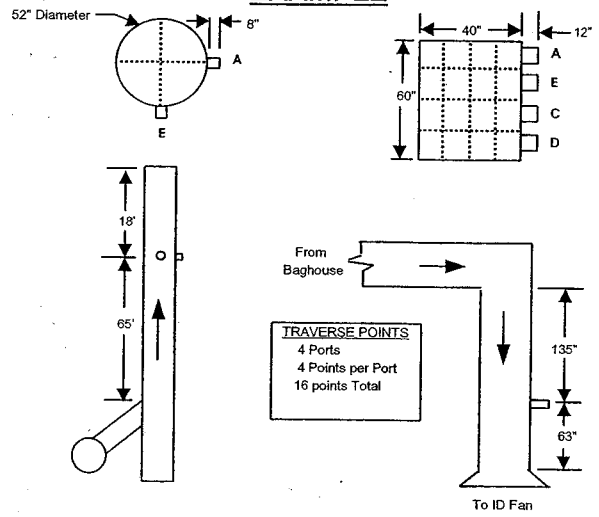
TEST LOCATION SCHEMATIC DIAGRAMS

1. Make a separate drawing for each Method 1 Sheet
2. Show distances to upstream and downstream disturbances. Show or note what the disturbances are.
3. All ports must be shown and labeled. Note which ports were used and for what type of testing.
4. Indicate the number of points per port and the total points that were sampled
5. Be sure to indicate the air flow direction.

Plant _____ Test Location _____ Date _____ Initials _____

CROSS SECTION

EXAMPLE



DIMENSIONS

Indicate View (top, side, etc.)

ISOKINETIC FIELD DATA SHEET

METHOD(S) M201A/202

Page 1 of 1

TRC Environmental Corporation

Client Name	MIRANT	Run Number	I-M201A/202-1
Plant Name	POTOMAC	Job Number	41434-0020
City / State	ALEXANDRIA, VA	Test Date	12-20-05
Sampling Location	UNIT 1 STACK	Start Time	1447
Test Personnel	WJA / JDK	Operator Signature	Stop Time 1628

Filter/XAD	Tare	P barometer (in. Hg)	P static (in H2O)	Meterbox ID #	Meterbox Delta H@	Meterbox Y (Gamma)	Nozzle ID #	Nozzle Diameter	Pitot Tube ID #	Pitot Tube Cp	Probe ID #	Liner Material
SF-20	0.2016	30.00	1.17	M9	1.781	.9821	3205	0.195	RAMS-6	0.84	RP-7H	GL

Equipment Leak Checks		Sample Train Leak Check Initial	Final	Interm 1	Interm 2	Interm 3	Interm 4	Fyrites Time	%O2	%CO2	Orsat Check
Pitot, pretest	in Hg	15	12								✓
Pitot, post-test	cfm	0.001	0.000								Bag ID
Positive DGM, pretest	Start Volume										1
Positive DGM, post-test	Stop Volume										

K Factor Setup Data: $K = 9.526 \times \sqrt{\Delta p}$

Delta H@	Meter Y	Nozzle Dia.	Avg DeltaP	% H2O	T stack	T meter	Pbar	Pstatic	% O2	%CO2	Cp

Line	Point No.	Time Clock (24-hr)	Time Test (min)	Dry Gas Meter Reading (cu. ft.)	Pitot Reading (in. H2O)	Delta H Actual (in. H2O)	DGM Temp (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter/Box Temp (°F)	Gauge Vacuum (in. Hg)	Imp Exit Temp (°F)	XAD Temp (°F)	____ Temp (°F)
1	B-1	0/00	0	60.272	0.54	0.54	52	358	241	230	2	42		
2	2	7	7	63.12	0.60	0.54	57	358	235	231	2	48		
3	3	14.5	7.5	66.41	0.65	0.54	56	360	232	227	2	47		
4	C-1	22.25	7.75	69.53	0.44	0.54	52	349	239	253	2	51		
5	2	28.5	6.25	72.1	0.45	0.54	53	360	242	253	2	52		
6	3	35	6.5	74.69	0.55	0.54	55	361	270	258	2	52		
7	D-1	42	7.0	77.560	0.7	0.54	53	357	229	248	2	46		
8	2	50	8.0	80.48	0.75	0.54	55	361	231	244	2	43		
9	3	58.25	8.25	84.271	0.75	0.54	55	359	228	253	2.5	44		
10	A-1	66.5	8.25	87.635	0.83	0.54	55	362	229	247	2.5	43		
11	2	75.25	8.75	91.235	0.83	0.54	57	362	254	249	2.5	43		
12	3	84.0	8.75	94.841										
13					STOP - LOST LOAD									
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

Run Time	Total Volume	RMS Delta P	Delta H	Tmeter Avg	Tstack Avg
84.0	34.569	0.637	0.54	54.5	358

Checked By: _____ (sign) JEFF KUNSTMAN (print)
(Project Manager or QA Manager)

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ISOKINETIC FIELD DATA SHEET

METHOD(S) 201A / 202

Page 1 of 1

TRC Environmental Corporation

Client Name	MIRANT	Run Number	I-M 201A/202-2
Plant Name	POTOMAC	Job Number	4434-5020
City / State	ALEXANDRIA VA	Test Date	12-20-05
Sampling Location	UNIT 1 STACK	Start Time	1740
Test Personnel	WDA / JDK	Operator Signature	Wayne Abbott
		Stop Time	1930

Filter/XAD	Tare	P barometer (in. Hg)	P static (in H2O)	Meterbox ID #	Meterbox Delta H@	Meterbox Y (Gamma)	Nozzle ID #	Nozzle Diameter	Pitot Tube ID #	Pitot Tube Cp	Probe ID #	Liner Material
SF-21	0.1980	30.00	1.22	M9	1.781	.9821	3105	0.197	RAM-6	0.84	RP-7H	GL

Equipment Leak Checks		Sample Train Leak Check Initial	Final	Interm 1	Interm 2	Interm 3	Interm 4	Fyrites Time	%O2	%CO2	Orsat Check
✓ Pitot, pretest	in Hg	15	9								✓
✓ Pitot, post-test	cfm	0.002	0.000								Bag ID
✓ Positive DGM, pretest	Start Volume										2
✓ Positive DGM, post-test	Stop Volume										

K Factor Setup Data		K = 9.526 × √ΔP								
Delta H@	Meter Y	Nozzle Dia.	Avg DeltaP	% H2O	T stack	T meter	Pbar	Pstatic	% O2	%CO2	Cp

Line	Point No.	Time Clock (24-hr)	Time Test (min)	Dry Gas Meter Reading (cu. ft.)	Pitot Reading (in. H2O)	Delta H Actual (in. H2O)	DGM Temp (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter/Box Temp (°F)	Gauge Vacuum (in. Hg)	Imp Exit Temp (°F)	XAD Temp (°F)	____ Temp (°F)
1	1	0	7	95.938	.54	.55	45	353	238	233	2.5	41		
2	2	14.5	7.5	98.9	.63	.55	56	357	236	245	2.5	41		
3	3	22.5	8	101.92	.69	.55	59	357	252	251	3	42		
4	1	28.5	6	105.195	.40	.55	50	354	240	249	3	42		
5	2	35	6.5	107	.47	.55	53	359	233	248	3	41		
6	3	42	7	110.265	.55	.55	54	357	242	250	3	38		
7	1	49.5	7.5	113.129	.64	.55	49	352	235	245	3	40		
8	2	57.5	8	115.999	.7	.55	53	360	233	236	3	41		
9	3	65.25	7.75	119.28	.67	.55	55	360	243	246	3	41		
10	1	74.25	9.0	122.667	.9	.55	46	360	240	238	3	41		
11	2	82.25	8.0	126.61	.72	.55	50	359	245	229	3	41		
12	3	91.0	8.75	130	.85	.55	53	362	245	236	3	39		
13	END	91.0		134.796										
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

Run Time	Total Volume	RMS Delta P	Delta H	Tmeter Avg	Tstack Avg
91.0	38.858	0.639	0.55	51.9	357.5

Checked By _____ (sign) Jeff Kunstman (print)
(Project Manager or QA Manager)

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ISOKINETIC FIELD DATA SHEET

METHOD(S) M201A/202 Page 1 of 1

TRC Environmental Corporation

Client Name	MIRANT	Run Number	I-M201A/202-3
Plant Name	POTOMAC	Job Number	41434-0020
City / State	ALEXANDRIA, VA	Test Date	12-21-05
Sampling Location	UNIT 1 STACK	Start Time	1113
Test Personnel	WDA/JDK	Operator Signature: Wayne Abbott	Stop Time	1307

Filter/XAD	Tare	P barometer (in. Hg)	P static (in H2O)	Meterbox ID #	Meterbox Delta H@	Meterbox Y (Gamma)	Nozzle ID #	Nozzle Diameter	Pitot Tube ID #	Pitot Tube Cp	Probe ID #	Liner Material
SF-22	0.2007	30.15	+1.6	M9	1.781	0.9821	3205	0.195	RPM10-6	0.84	RP-7H	GL

Equipment Leak Checks		Sample Train Leak Check Initial	Final	Interm 1	Interm 2	Interm 3	Interm 4	Fyrites Time	%O2	%CO2	Orsat Check
✓	Pitot, pretest	Vacuum, in Hg: 15	12								—
✓	Pitot, post-test	Leak Rate, cfm: 0.000	0.000								Bag ID
✓	Positive DGM, pretest	Start Volume									3
✓	Positive DGM, post-test	Stop Volume									

K Factor Setup Data: K = 9.526 × √ΔP

Delta H@	Meter Y	Nozzle Dia.	Avg DeltaP	% H2O	T stack	T meter	Pbar	Pstatic	% O2	%CO2	Cp
								+1.6			

Line	Point No.	Time Clock (24-hr)	Time Test (min)	Dry Gas Meter Reading (cu. ft.)	Pitot Reading (in. H2O)	Delta H Actual (in. H2O)	DGM Temp (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter/Box Temp (°F)	Gauge Vacuum (in. Hg)	Imp Exit Temp (°F)	XAD Temp (°F)	____ Temp (°F)
1	B-1	0	7	140.010	0.54	0.54	49	340	235	241	2	42		
2	2	7	7.5	143.015	0.64	0.54	52	343	237	244	2	45		
3	3	14.5	8.25	145.58	0.75	0.54	53	343	262	246	2	52		
4	C-1	22.75	6.75	149.018	0.5	0.54	46	345	254	261	2	56		
5	2	29.5	7	151.675	0.54	0.54	49	347	244	262	2.5	54		
6	3	36.5	7	154.485	0.54	0.54	50	347	250	260	2.5	56		
7	D-1	43.5	6.75	157.331	0.5	0.54	47	346	231	247	2.5	47		
8	2	50.25	8.5	160.125	0.8	0.54	50	350	237	258	2.5	49		
9	3	58.75	8.25	163.54	0.75	0.54	54	351	245	260	2.5	49		
10	A-1	67	8.75	166.910	0.84	0.54	49	342	249	237	2.5	48		
11	2	75.75	8.75	170.185	0.83	0.54	55	352	246	257	2.5	51		
12	3	84.5	9.5	173.7	0.97	0.54	57	353	241	253	2.5	50		
13	END	94	-	177.876										
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

Run Time	Total Volume	RMS Delta P	Delta H	Tmeter Avg	Tstack Avg
94.0	37.866	0.675	0.54	50.5	346.6

Checked By: _____ (sign) Jeff Kunstman (print)
(Project Manager or QA Manager)

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ISOKINETIC FIELD DATA SHEET

METHOD(S) M201A/202 Page 1 of 1

TRC Environmental Corporation

Client Name	MIRANT	Run Number	I-M201A/202-4
Plant Name	POTOMAC	Job Number	41434-0020
City / State	ALEXANDRIA, VA	Test Date	12-21-05
Sampling Location	UNIT 1 STACK	Start Time	1342
Test Personnel	WDA / JDK	Operator Signature: Wayne Acuff	Stop Time	1537

Filter/XAD	Tare	P barometer (in. Hg)	P static (in H2O)	Meterbox ID #	Meterbox Delta H@	Meterbox Y (Gamma)	Nozzle ID #	Nozzle Diameter	Pitot Tube ID #	Pitot Tube Cp	Probe ID #	Liner Material
SF-23	0.2000	30.15	+1.3	M9	1.781	0.9821	3105	0.197	RPM IV-6	0.84	RP-7H	G

Equipment Leak Checks	Sample Train Leak Check	Initial	Final	Interm 1	Interm 2	Interm 3	Interm 4	Fyrites Time	Fyrites %O2	Fyrites %CO2	Orsat Check
✓ Pitot, pretest	Vacuum, in Hg	15	9								✓
✓ Pitot, post-test	Leak Rate, cfm	0.000	0.000								Bag ID
✓ Positive DGM, pretest	Start Volume										4
✓ Positive DGM, post-test	Stop Volume										

K Factor Setup Data: K = 9.526 x √ΔP

Delta H@	Meter Y	Nozzle Dia.	Avg DeltaP	% H2O	T stack	T meter	Pbar	Pstatic	% O2	%CO2	Cp

Line	Point No.	Time Clock (24-hr)	Time Test (min)	Dry Gas Meter Reading (cu. ft.)	Pitot Reading (in. H2O)	Delta H Actual (in. H2O)	DGM Temp (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter/Box Temp (°F)	Gauge Vacuum (in. Hg)	Imp Exit Temp (°F)	XAD Temp (°F)	Temp (°F)
1	B-1	0	7	178.203	0.54	0.55	51	350	241	242	2	45		
2	2	7	6.5	181.090	0.45	0.55	56	354	258	266	2	52		
3	3	13.5	6.75	184.27	0.50	0.55	62	354	262	249	2	52		
4	C-1	20.25	6	187.053	0.4	0.55	55	355	248	248	2	58		
5	2	26.25	5.25	189.525	0.3	0.55	60	356	231	247	2	53		
6	3	31.5	6.75	191.710	0.50	0.55	63	356	248	233	2.5	44		
7	D-1	38.25	7.5	194.505	0.6	0.55	56	346	237	239	2.5	41		
8	2	45.75	6	197.590	0.7	0.55	62	356	237	231	2.5	41		
9	3	53.75	7.75	201.0	0.65	0.55	63	357	236	232	3	41		
10	A-1	61.5	9.25	204.104	0.91	0.55	58	351	232	245	3	44		
11	2	70.75	9.25	207.67	0.95	0.55	61	356	235	243	3	41		
12	3	80	9.5	211.755	1.0	0.55	63	356	238	242	2.5	42		
13	END	89.5		215.693										
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

Run Time	Total Volume	RMS Delta P	Delta H	Tmeter Avg	Tstack Avg
89.5	37.480	0.609	0.55	59.2	354.1

Checked By: _____ (sign) JEFF KUNSTLING (print)
(Project Manager or QA Manager)

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METHOD 4 - MOISTURE ANALYSIS DATA SHEET

TRC
Environmental Corporation

Client Name	MIRANT	Project Number	41434-0020
Plant Name	POTOMAC	Sample Method	M201A/202
City / State	ALEXANDRIA, VA	Recovery Location	CEM SHED
Test Location	UNIT 1 STACK	Analyst Signature	

Run Number	I-M201A/202-1	I-M201A/202-2	I-M201A/202-3	I-M201A/202-4
Test Date	12-20-05	12-20-05	12-21-05	12-21-05
Recovery Date	12-20-05	12-20-05	12-21-05	12-21-05
Recovered By	JDK	JDK	JDK	JDK
Impinger 1 DI H2O				
Final Weight, g	640.4	647.3	656.4	659.2
Initial Weight, g	609.0	611.8	615.7	622.9
Net weight, g	31.4	35.5	40.7	36.3
Impinger 2 DI H2O				
Final Weight, g	726.2	728.4	724.8	733.1
Initial Weight, g	728.7	729.3	727.1	735.2
Net weight, g	(-2.5)	(-0.9)	(-2.3)	(-2.1)
Impinger 3 DI H2O				
Final Weight, g	730.4	740.4	738.7	737.2
Initial Weight, g	731.6	741.2	740.7	738.9
Net weight, g	(-1.2)	(-0.8)	(-2.0)	(-1.7)
Impinger 4 SILICA				
Final Weight, g	801.1	852.9	753.0	890.9
Initial Weight, g	779.7	831.7	739.3	871.4
Net weight, g	21.4	21.2	13.7	19.5
Impinger 5				
Final Weight, g				
Initial Weight, g				
Net weight, g				
Impinger 6				
Final Weight, g				
Initial Weight, g				
Net weight, g				
Impinger 7				
Final Weight, g				
Initial Weight, g				
Net weight, g				
Total Catch, g	49.1 ✓	55.0 ✓	50.1 ✓	52.0 ✓
	A	B	A	B

Checked By: _____ (sign) JEFF KUNSTLING (print)
(Project Manager or QA Manager)

METHOD 3 - ORSAT ANALYSIS FIELD DATA

TRC
Environmental Corporation

Client Name	MIRANT	Project No.	41434-0020
Plant Name	POTOMAC	Fuel Type	COAL
City / State	ALEXANDRIA, VA	Orsat ID	39-507
Test Location	UNIT 1 STACK	Analysis Location	CEM SHED

Run No I-Moisture-1 Date 12.20.05 Bag ID 1 Operator (signature) Jeff Kunstmann

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start 1447	1750	12.1	19.4	7.3			
Stop 1628	1	12.1	19.5	7.4			
Leak Chk ✓	1805	12.1	19.5	7.4			
F_o 1.116	*Avg*	12.1	*Avg*	7.4	*Avg*		

Run No. _____ Date _____ Bag ID _____ Operator (signature) _____

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start							
Stop							
Leak Chk ____							
F_o _____	*Avg*		*Avg*		*Avg*		

Run No. _____ Date _____ Bag ID _____ Operator (signature) _____

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start							
Stop							
Leak Chk ____							
F_o _____	*Avg*		*Avg*		*Avg*		

QC Validation

$F_o = (20.9 - \%O2) / \%CO2$

Expected F_o Ranges

Distillate Oil	1.260 - 1.413	Anthracite/Lignite Coal	1.015 - 1.130
Residual Oil	1.210 - 1.370	Bituminous Coal	1.083 - 1.230
Natural Gas	1.600 - 1.836	Municipal Solid Waste	1.043 - 1.177
Wood/Bark	1.000 - 1.130		

Checked By _____ (sign) Jeff Kunstmann (print)
(Project Manager or QA Manager)

METHOD 3 - ORSAT ANALYSIS FIELD DATA

TRC
Environmental Corporation

Client Name	MIRANT	Project No.	41434-0020
Plant Name	POTOMAC	Fuel Type	COAL
City / State	ALEXANDRIA, VA	Orsat ID	39-507
Test Location	UNIT 1 STACK	Analysis Location	CEM SHED

Run No. I-MDAA/202-2 Date 12-20-05 Bag ID 2 Operator (signature) [signature]

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start 1740	2005	11.8	19.6	7.8			
Stop 1930	1	11.8	19.6	7.8			
Leak Chk ✓	2015	11.8	19.6	7.8			
F_o 1.110	Avg	11.8	Avg	7.8	Avg		

Run No. I-MDAA/202-3 Date 12-21-05 Bag ID 3 Operator (signature) [signature]

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start 1113	1400	12.5	19.5	7.0			
Stop 1307	1	12.5	19.5	7.0			
Leak Chk ✓	1410	12.5	19.5	7.0			
F_o 1.112	Avg	12.5	Avg	7.0	Avg		

Run No. I-MDAA/202-4 Date 12-21-05 Bag ID 4 Operator (signature) [signature]

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start 1342	1615	12.6	19.4	6.8			
Stop 1532	1	12.6	19.4	6.8			
Leak Chk ✓	1630	12.6	19.4	6.8			
F_o 1.112	Avg	12.6	Avg	6.8	Avg		

QC Validation

$F_o = (20.9 - \%O2) / \%CO2$

Expected F_o Ranges

Distillate Oil	1.260 - 1.413	Anthracite/Lignite Coal	1.015 - 1.130
Residual Oil	1.210 - 1.370	Bituminous Coal	1.083 - 1.230
Natural Gas	1.600 - 1.836	Municipal Solid Waste	1.043 - 1.177
Wood/Bark	1.000 - 1.130		

Checked By: [signature] (sign) JEFF KUMSTRICK (print)
(Project Manager or QA Manager)

ISOKINETIC FIELD DATA SHEET

METHOD(S) M2014/202

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TRC Environmental Corporation

Client Name	MIRANT	Run Number	II-M2014/202-1
Plant Name	POTOMAC	Job Number	41434-0020
City / State	ALEXANDRIA, VA	Test Date	12-21-05
Sampling Location	UNIT 1 STACK	Start Time	1802
Test Personnel	WDA / JDK	Operator Signature: Wayne Abbott	Stop Time: 1955

Filter/XAD	Tare	P barometer (in. Hg)	P static (in H2O)	Meterbox ID #	Meterbox Delta H@	Meterbox Y (Gamma)	Nozzle ID #	Nozzle Diameter	Pitot Tube ID #	Pitot Tube Cp	Probe ID #	Liner Material
SF-24	0.1991	30.05	+1.5	M9	1.781	0.9821	3205	0.195	RAM-6	.84	RAM-4	GL

Equipment Leak Checks	Sample Train Leak Check	Initial	Final	Interm 1	Interm 2	Interm 3	Interm 4	Fyrites Time	Fyrites %O2	Fyrites %CO2	Orsat Check
+ Pitot, pretest	Vacuum, in Hg	15	7								✓
/ Pitot, post-test	Leak Rate, cfm	0.006	0.001								Bag ID
+ Positive DGM, pretest	Start Volume										1
/ Positive DGM, post-test	Stop Volume										

K Factor Setup Data		K = 9.558 × √ΔP									
Delta H@	Meter Y	Nozzle Dia.	Avg DeltaP	% H2O	T stack	T meter	Pbar	Pstatic	% O2	%CO2	Cp

Line	Point No.	Time Clock (24-hr)	Time Test (min)	Dry Gas Meter Reading (cu. ft.)	Pitot Reading (in. H2O)	Delta H Actual (in. H2O)	DGM Temp (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter/Box Temp (°F)	Gauge Vacuum (in. Hg)	Imp Exit Temp (°F)	XAD Temp (°F)	Temp (°F)
1	B-3	0/00	8	216.121	0.70	0.54	40	349	259	248	2	39		
2	2	8	7.75	219.315	0.67	0.54	45	350	246	254	2	40		
3	1	15.75	8	222.48	0.7	0.54	50	349	249	239	2	40		
4	C-3	23.75	7.75	225.5375	0.65	0.54	50	351	250	244	2	40		
5	2	31.5	7	228.67	0.54	0.54	52	353	247	248	2	39		
6	1	38.5	7.5	231.6	0.6	0.54	55	353	241	240	2	40		
7	D-3	46	8	234.565	0.7	0.54	49	351	255	258	2	39		
8	2	54	8	237.775	0.68	0.54	54	355	241	239	2	39		
9	1	62	7.75	241.005	0.65	0.54	55	353	238	240	2	38		
10	A-3	69.75	7.25	244.148	0.92	0.54	47	353	261	259	2	37		
11	2	79	9.25	247.865	0.85	0.54	52	357	266	251	2	38		
12	1	88.25	9	251.460	0.9	0.54	54	355	241	239	2	38		
13	END	97.25		255.177										
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

Run Time	Total Volume	RMS Delta P	Delta H	Tmeter Avg	Tstack Avg
97.25	39.056	97A	0.54	50.3	352.4

Checked By: _____ (sign) Jeff Kunselman (print)
(Project Manager or QA Manager)

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ISOKINETIC FIELD DATA SHEET

METHOD(S) M201A/202

TRC Environmental Corporation

Client Name	MIRANT	Run Number	II-M201A/202-2
Plant Name	POTOMAC	Job Number	41434-0020
City / State	ALEXANDRIA, VA	Test Date	12-22-05
Sampling Location	UNIT 1 STACK	Start Time	1051
Test Personnel	WDA/JDK	Operator Signature: Wayne Abbott	Stop Time	1514

Filter/XAD	Tare	P barometer (in. Hg)	P static (in H2O)	Meterbox ID #	Meterbox Delta H@	Meterbox Y (Gamma)	Nozzle ID #	Nozzle Diameter	Pitot Tube ID #	Pitot Tube Cp	Probe ID #	Liner Material
SF-28	0.2002	30.18	+1.7	M9	1.731	0.9821	3/05	0.197	RAM-6	0.84	RP-THA	GL

Equipment Leak Checks	Sample Train Leak Check	Initial	Final	Interm 1	Interm 2	Interm 3	Interm 4	Fyrites Time	Fyrites %O2	Fyrites %CO2	Orsat Check
Pitot, pretest	Vacuum, in Hg	15	8	12	7						✓
Pitot, post-test	Leak Rate, cfm	0.004	0.000	.000	.005						Bag ID
Positive DGM, pretest	Start Volume			282.575							2
Positive DGM, post-test	Stop Volume			283.378							

K Factor Setup Data: K = 8.961 × $\sqrt{\Delta P}$

Delta H@	Meter Y	Nozzle Dia.	Avg DeltaP	% H2O	T stack	T meter	Pbar	Pstatic	% O2	%CO2	Cp

Line	Point No.	Time Clock (24-hr)	Time Test (min)	Dry Gas Meter Reading (cu. ft.)	Pitot Reading (in. H2O)	Delta H Actual (in. H2O)	DGM Temp (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter/Box Temp (°F)	Gauge Vacuum (in. Hg)	Imp Exit Temp (°F)	XAD Temp (°F)	Temp (°F)
1	B-3	0/00	7.5	255.985	0.70	0.54	60	347	245	235	2	62		
2	2	7.5	7.5	258.99	0.7	0.54	70	347	248	241	2	46		
3	1	15	7.0	262.1	0.6	0.54	72	343	248	239	2	43		
4	C-3	22	7.0	264.946	0.6	0.54	67	346	244	252	2.5	44		
5	2	29	6.25	267.92	0.5	0.54	70	347	242	238	2.5	45		
6	1	35.25	6.5	270.381	0.52	0.54	71	345	245	240	2.5	46		
7	D-3	41.75	7.5	273.075	0.70	0.54	65	344	236	240	2.5	48		
8	2	49.25	7.25	276.175	0.65	0.54	69	346	247	240	2.5	45		
9	1	56.5	7	279.19	0.6	0.54	70	344	243	239	2.5	45		
10	A-3	63.5	8	282.055	0.8	0.54	58	341	257	241	2.5	45		
11	2	71.5	8	286.125	0.81	0.54	59	342	240	241	2.5	44	14:52 RE START	
12	1	79.5	8	289.341	0.81	0.54	61	341	234	235	2.5	42		
13	END	87.5		292.595										
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

Run Time	Total Volume	RMS Delta P	Delta H	Tmeter Avg	Tstack Avg
87.5	35.807	0.662	0.54	66.0	344.4

Checked By: Jeff Kunstling (sign) JEFF KUNSTLING (print)

(Project Manager or QA Manager)

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ISOKINETIC FIELD DATA SHEET

TRC Environmental Corporation

METHOD(S) M201A/202

Client Name	MIRANT	Run Number	II-M201A/202-3
Plant Name	POTOMAC	Job Number	41434-0020
City / State	ALEXANDRIA, VA	Test Date	12-22-05
Sampling Location	UNIT 1 STACK	Start Time	1634
Test Personnel	WDA/JDK · Operator Signature:	Stop Time	1820

Filter/XAD	Tare	P barometer (in. Hg)	P static (in H2O)	Meterbox ID #	Meterbox Delta H@	Meterbox Y (Gamma)	Nozzle ID #	Nozzle Diameter	Pitot Tube ID #	Pitot Tube Cp	Probe ID #	Liner Material
SF-29	0.1987	30.18	+1.4	MT9	1.781	0.9821	3205	0.195	-2	0.84	RA7H	6L
									RPM10-7		RP-7E	

Equipment Leak Checks	Sample Train Leak Check	Initial	Final	Interm 1	Interm 2	Interm 3	Interm 4	Fyrites Time	Fyrites %O2	Fyrites %CO2	Orsat Check
✓ Pitot, pretest	Vacuum, in Hg	15	7								✓
✓ Pitot, post-test	Leak Rate, cfm	0.002	0.002								Bag ID
✓ Positive DGM, pretest	Start Volume										3
✓ Positive DGM, post-test	Stop Volume										

K Factor Setup Data: K = 8.961 × ΔP

Delta H@	Meter Y	Nozzle Dia.	Avg DeltaP	% H2O	T stack	T meter	Pbar	Pstatic	% O2	%CO2	Cp

Line	Point No.	Time Clock (24-hr)	Time Test (min)	Dry Gas Meter Reading (cu. ft.)	Pitot Reading (in. H2O)	Delta H Actual (in. H2O)	DGM Temp (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter/Box Temp (°F)	Gauge Vacuum (in. Hg)	Imp Exit Temp (°F)	XAD Temp (°F)	Temp (°F)
1	B-3	0/0	7.5	294.093	0.70	0.54	56	350	252	239	2	45		
2	2	7.5	7	297.18	0.6	0.54	60	350	248	238	2	43		
3	1	14.5	7.25	300.000	0.65	0.54	54	346	254	242	2	42		
4	C-3	21.75	7	302.946	0.62	0.54	53	344	255	256	2	41		
5	2	28.75	6.75	305.6	0.55	0.54	58	349	265	240	2	41		
6	1	35.5	6.75	308.505	0.55	0.54	59	348	247	231	2	40		
7	D-3	42.25	7.5	311.215	0.7	0.54	55	347	250	245	2	41		
8	2	49.75	7.5	314.24	0.7	0.54	58	352	258	236	2	40		
9	1	57.25	7.5	317.305	0.7	0.54	59	349	236	233	2	40		
10	A-3	64.75	8.25	320.339	0.85	0.54	54	349	260	257	2	45		
11	2	73	8.5	323.67	0.92	0.54	58	352	250	247	2	47		
12	1	81.5	8.5	327.120	0.90	0.54	60	351	244	241	2	43		
13	End	90		330.567										
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

Run Time	Total Volume	RMS Delta P	Delta H	Tmeter Avg	Tstack Avg
90.0	36.474	0.658	0.54	57.0	348.9

Checked By: [signature] (sign) JEFF KUNSTLING (print)

(Project Manager or QA Manager)

ISOKINETIC FIELD DATA SHEET

METHOD(S) M201A/202

Page 1 of 1

TRC Environmental Corporation

Client Name	MIRANT	Run Number	II-M201A/202-4
Plant Name	POTOMAC	Job Number	41434-0020
City / State	ALEXANDRIA, VA	Test Date	12-23-05
Sampling Location	UNIT 1 STACK	Start Time	0852
Test Personnel	WDA / JDK	Operator Signature	Wayne Abbott
		Stop Time	1033

Filter/XAD	Tare	P barometer	P static	Meterbox			Nozzle		Pitot Tube		Probe	Liner
		(in. Hg)	(in H2O)	ID #	Delta H@	Y (Gamma)	ID #	Diameter	ID #	Cp	ID #	Material
SF-30	0.1988	29.91	+1.6	M9	1.781	0.9821	3205	0.195	RAM D -7	0.84	PR-76	GL

Equipment Leak Checks		Sample Train Leak Check						Fyrites			Orsat
		Initial	Final	Interm 1	Interm 2	Interm 3	Interm 4	Time	%O2	%CO2	Check
Pitot, pretest	Vacuum, in Hg	15	9								✓
Pitot, post-test	Leak Rate, cfm	0.000	0000								Bag ID
Positive DGM, pretest	Start Volume										4
Positive DGM, post-test	Stop Volume										

K Factor Setup Data: K = $8.961 \times \sqrt{\Delta p}$

Delta H@	Meter Y	Nozzle Dia.	Avg DeltaP	% H2O	T stack	T meter	Pbar	Pstatic	% O2	%CO2	Cp

Line	Point No.	Time Clock (24-hr)	Time Test (min)	Dry Gas Meter Reading (cu. ft.)	Pitot Reading (in. H2O)	Delta H Actual (in. H2O)	DGM Temp (°F)	Stack Temp (°F)	Probe Temp (°F)	Filter/Box Temp (°F)	Gauge Vacuum (in. Hg)	Imp Exit Temp (°F)	XAD Temp (°F)	____ Temp (°F)
1	B-3	0/00	7.5	330.822	0.70	0.52	61	328	253	247	2	44		
2	2	7.5	7.25	333.845	0.66	0.52	63	329	245	251	2	44		
3	1	14.75	7.5	336.790	0.7	0.52	65	328	239	251	2	43		
4	C-3	22.25	7.25	339.735	0.65	0.52	60	331	243	245	2	43		
5	2	29.5	6.25	342.625	0.50	0.52	63	334	252	254	2	42		
6	1	35.75	6.75	345.13	0.55	0.52	64	334	240	251	2	41		
7	D-3	42.5	7	347.819	0.6	0.52	59	336	250	244	2	42		
8	2	49.5	7.75	350.625	0.75	0.52	65	335	245	245	2	42		
9	1	57.25	7	353.725	0.6	0.52	64	334	243	245	2	43		
10	A-3	64.25	8.75	356.612	0.94	0.52	61	335	254	249	2	44		
11	2	73	8.5	360.152	0.88	0.52	66	337	256	250	2	40		
12	1	81.5	8.25	363.598	0.87	0.52	66	337	249	250	2	40		
13	END	89.75		366.940										
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

Run Time	Total Volume	RMS Delta P	Delta H	Tmeter Avg	Tstack Avg
89.75	36.118	0.654	0.52	63.3	333.2

Checked By: _____ (sign) JEFF KUNSTLING (print)
(Project Manager or QA Manager)

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METHOD 3 - ORSAT ANALYSIS FIELD DATA

TRC
Environmental Corporation

Client Name	MIRANT	Project No.	41434-0020
Plant Name	POTOMAC	Fuel Type	COAL
City / State	ALEXANDRIA, VA	Orsat ID	39-507
Test Location	UNIT 1 STACK	Analysis Location	CONSITE

Run No. II-M3A/12021-1 Date 12-21-05 Bag ID 1 Operator (signature) Jeff Kunstling

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start 1802	2035	12.5	19.3	6.8			
Stop 1955	1	12.5	19.3	6.8			
Leak Chk ✓	2045	12.5	19.3	6.8			
F_o 1.128	Avg	12.5	Avg	6.8	Avg		

Run No. II-M3A/12021-2 Date 12-21-05 Bag ID 2 Operator (signature) Jeff Kunstling

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start 1051	1600	12.5	19.3	6.8			
Stop 1514	1	12.5	19.3	6.8			
Leak Chk ✓	1615	12.5	19.3	6.8			
F_o 1.128	Avg	12.5	Avg	6.8	Avg		

Run No. II-M3A/12021-3 Date 12-21-05 Bag ID 3 Operator (signature) Jeff Kunstling

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start 1634	1855	12.4	19.3	6.9			
Stop 1820	1	12.4	19.3	6.9			
Leak Chk ✓	1910	12.4	19.3	6.9			
F_o 1.129	Avg	12.4	Avg	6.9	Avg		

QC Validation

$F_o = (20.9 - \%O2) / \%CO2$

Expected F_o Ranges

Distillate Oil	1.260 - 1.413	Anthracite/Lignite Coal	1.015 - 1.130
Residual Oil	1.210 - 1.370	Bituminous Coal	1.083 - 1.230
Natural Gas	1.600 - 1.836	Municipal Solid Waste	1.043 - 1.177
Wood/Bark	1.000 - 1.130		

Checked By: Jeff Kunstling (sign) JEFF KUNSTLING (print)
(Project Manager or QA Manager)

METHOD 3 - ORSAT ANALYSIS FIELD DATA

TRC
Environmental Corporation

Client Name	MIRANT	Project No.	41434-0020
Plant Name	POTOMAC	Fuel Type	COAL
City / State	ALEXANDRIA, VA	Orsat ID	39-507
Test Location	UNIT 1 STACK	Analysis Location	CEM SHED

Run No. II-M2010/202-4 Date 12-23-05 Bag ID 4 Operator (signature) [signature]

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start 852	1120	12.4	19.1	6.7			
Stop 1033	1	12.4	19.1	6.7			
Leak Chk ✓	1135	12.4	19.1	6.7			
F_o 1.145	*Avg*	12.4	*Avg*	6.7	*Avg*		

Run No. _____ Date _____ Bag ID _____ Operator (signature) _____

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start							
Stop							
Leak Chk ____							
F_o _____	*Avg*		*Avg*		*Avg*		

Run No. _____ Date _____ Bag ID _____ Operator (signature) _____

Run Time	Time of Analysis	% CO_2 Reading (A)	% O_2 Reading (B)	% O_2 Value (B-A)	% CO Reading (C)	% CO Value (C-B)	% N_2 Value (100-C)
Start							
Stop							
Leak Chk ____							
F_o _____	*Avg*		*Avg*		*Avg*		

QC Validation

$F_o = (20.9 - \%O2) / \%CO2$

Expected F_o Ranges

Distillate Oil	1.260 - 1.413	Anthracite/Lignite Coal	1.015 - 1.130
Residual Oil	1.210 - 1.370	Bituminous Coal	1.083 - 1.230
Natural Gas	1.600 - 1.836	Municipal Solid Waste	1.043 - 1.177
Wood/Bark	1.000 - 1.130		

Checked By: [signature] (sign) JEFF KUNSTMAN (print)
(Project Manager or QA Manager)

METHOD 4 - MOISTURE ANALYSIS DATA SHEET

TRC
Environmental Corporation

Client Name	MIRANT	Project Number	41434-0020
Plant Name	POTOMAC	Sample Method	M201A/202
City / State	ALEXANDRIA, VA	Recovery Location	CONSHED
Test Location	UNIT 1 STACK	Analyst Signature	

Run Number	II-M201A/202-1	II-M201A/202-2	II-M201A/202-3	II-M201A/202-4
Test Date	12-21-05	12-22-05	12-22-05	12-23-05
Recovery Date	12-21-05	12-22-05	12-22-05	12-23-05
Recovered By	JDK	JDK	JDK	JDK
Impinger 1 DI H2O				
Final Weight, g	651.2	642.7	648.5	656.4
Initial Weight, g	611.3	624.1	611.5	615.2
Net weight, g	39.9	18.6	37.0	41.2
Impinger 2 DI H2O				
Final Weight, g	725.1	731.2	730.7	730.9
Initial Weight, g	727.3	735.8	732.0	731.8
Net weight, g	(-2.2)	(-4.6)	(-1.3)	(-0.9)
Impinger 3 DI H2O				
Final Weight, g	742.8	745.0	742.4	742.4
Initial Weight, g	745.4	747.7	744.0	744.0
Net weight, g	(-2.6)	(-2.7)	(-1.6)	(-1.6)
Impinger 4 SILICA				
Final Weight, g	751.1	919.4	788.7	752.0
Initial Weight, g	731.9	890.8	770.2	738.4
Net weight, g	19.8	28.6	18.5	13.6
Impinger 5 _____				
Final Weight, g				
Initial Weight, g				
Net weight, g				
Impinger 6 _____				
Final Weight, g				
Initial Weight, g				
Net weight, g				
Impinger 7 _____				
Final Weight, g				
Initial Weight, g				
Net weight, g				
Total Catch, g	54.9 ✓ (A)	39.9 ✓ (B)	52.6 ✓	52.3 ✓

Checked By: _____ (sign) Jeff KUNSTLING (print)
(Project Manager or QA Manager)

APPENDIX B

FIELD REDUCED DATA

Summary of Results
Mirant
Unit 1 Stack
Alexandria, VA

	Run ID	Run 2 I-M201A/202-2	Run 3 I-M201A/202-3	Run 4 I-M201A/202-4	Average
	Test Date	12/20/2005	12/21/2005	12/21/2005	
	Run Start Time	1740	1113	1342	
	Run Finish Time	1930	1307	1532	
	Net Traverse Points	12	12	12	
Theta	Net Run Time, Minutes	91	94	89.5	
Dia	Nozzle Diameter, Inches	0.197	0.195	0.197	
C_p	Pitot tube Coeffecient	0.84	0.84	0.84	
Y	Dry Gas Meter Calibration Factor	0.9821	0.9821	0.9821	
P_{bar}	Barometric Pressure, "Hg	30	30.15	30.15	
Delta H	Average Differential Pressure of Orifice, ft^3	0.55	0.54	0.55	0.55
V_m	Volume of Metered Gas Sample, ft^3	38.858	37.866	37.480	38.068
t_m	Average Temp. of Dry Gas Meter, °F	51.9	50.9	59.2	54.0
V_{mstd}	Volume of Stack Gas Metered At Standard Conditions, ft^3	39.504	38.763	37.759	38.675
vl	Volume of Liquid Collected in Impingers, g	55	50.1	52	52.4
V_{wstd}	Volume of Water Standard	2.59	2.36	2.45	2.46
% H20	Percent Moisture by Volume	6.15	5.73	6.09	5.99
Mfd	Dry Mole Fraction	0.938	0.943	0.939	0.940
$\%CO_2$	Percent Carbon Dioxide	11.8	12.5	12.6	12.3
$\%O_2$	Percent Oxygen	7.8	7	6.8	7.20
$\%CO\text{-}N_2$	Percent Carbon Monoxide and Nitrogen	80.4	80.5	80.6	80.5
Md	Gas Molecular Weight, Dry	30.20	30.28	30.29	30.26
Mw	Gas Molecular Weight, Wet	29.45	29.58	29.54	29.52
P_g	Static Pressure, "H_2O	1.22	1.6	1.3	1.37
P_s	Absolute Flue Gas Pressure, "Hg	30.09	30.27	30.25	30.20
t_s	Average Flue Gas Temp., °F	357.5	346.6	354.1	352.7
Delta-p	Average Velocity Head, "H_2O	0.639	0.675	0.607	0.640
vs	Flue Gas Velocity, ft/sec	55.14	56.00	53.42	54.85
A	Stack/Duct Area, in^2	19,113.4	19,113.4	19,113.4	19,113.4
Q_{sd}	Volumetric Flow, DSCFM	267,586	278,268	261,836	269,230
Q_{aw}	Volumetric Flow, ACFM	439,138	445,947	425,418	436,834
%I	Percent IsoKinetics	101.8	94.9	101.1	99.2
F_d	Fuel Factor	9902	9728	9912	9847
MMBtu/hr	Aproximate Heat input	1016.29	1141.45	1069.28	1075.67
Vs	Stack Gas Viscosity	243.65	240.55	242.25	242.15
Qs	PM10 Flow, @ Cyclone Conditions, ACFM	0.712	0.661	0.685	0.686
D50	Dia of Particles in Cyclone, Microns	9.62	10.01	9.83	9.82
mg Filterable PM10	Filterable Particulate Less then 10 Microns, mg	15.7	12.4	13.9	14.0
mg Organic CPM	Organic Condensible PM, mg	0.5	1.2	1.1	0.93
mg Inorganic CPM	Inorganic Condensible PM, mg	40.3	20.4	16.2	25.6
mg CPM	Total CPM	40.8	21.6	17.3	26.6
Filterable PM10	Total Milligrams Filterable PM10	15.7	12.4	13.9	14.0
gr/DSCF	Concentration, grains/DSCF	0.00613	0.00494	0.00568	0.00558
mg/DSCM	Concentration, mg/DSCM	14.0	11.3	13.0	12.8
lb/MMBtu	Emission Rate, lb/MMBtu	0.0138	0.0103	0.0119	0.0120
lb/hr	PM10 Emission Rate, lb/hr	14.1	11.8	12.8	12.9
Filterable and Condensible PM10	Total Milligrams Filterable and Condensible PM10	56.5	34.0	31.2	40.6
gr/DSCF	Concentration, grains/DSCF	0.0221	0.0135	0.0128	0.0161
mg/DSCM	Concentration, mg/DSCM	50.5	31.0	29.2	36.9
lb/MMBtu	Emission Rate, lb/MMBtu	0.0498	0.0283	0.0268	0.0350
lb/hr	PM10 Emission Rate, lb/hr	50.6	32.3	28.6	37.2

Summary of Results
Mirant
Unit 1 Stack
Alexandria, VA

	Run ID	Run 1 I-M201A/202-1	Run 2 I-M201A/202-2	Run 3 I-M201A/202-3	Average
	Test Date	12/20/2005	12/20/2005	12/21/2005	
	Run Start Time	1447	1740	1113	
	Run Finish Time	1628	1930	1307	
	Net Traverse Points	11	12	12	
Theta	Net Run Time, Minutes	84	91	94	
Dia	Nozzle Diameter, Inches	0.195	0.197	0.195	
C_p	Pitot tube Coeffecient	0.84	0.84	0.84	
Y	Dry Gas Meter Calibration Factor	0.9821	0.9821	0.9821	
P_{bar}	Barometric Pressure, "Hg	30	30	30.15	
Delta H	Average Differential Pressure of Orifice, ft^3	0.54	0.55	0.54	0.54
V_m	Volume of Metered Gas Sample, ft^3	34.569	38.858	37.866	37.098
t_m	Average Temp. of Dry Gas Meter, °F	54.5	51.9	50.9	52.5
V_{mstd}	Volume of Stack Gas Metered At Standard Conditions, ft^3	34.963	39.504	38.763	37.743
vl	Volume of Liquid Collected in Impingers, g	49.1	55	50.1	51.4
V_{wstd}	Volume of Water Standard	2.31	2.59	2.36	2.42
% H20	Percent Moisture by Volume	6.20	6.15	5.73	6.03
Mfd	Dry Mole Fraction	0.938	0.938	0.943	0.940
$\%CO_2$	Percent Carbon Dioxide	12.1	11.8	12.5	12.1
$\%O_2$	Percent Oxygen	7.4	7.8	7	7.40
$\%CO\text{-}N_2$	Percent Carbon Monoxide and Nitrogen	80.5	80.4	80.5	80.5
Md	Gas Molecular Weight, Dry	30.23	30.20	30.28	30.24
Mw	Gas Molecular Weight, Wet	29.47	29.45	29.58	29.50
P_g	Static Pressure, "H_2O	1.17	1.22	1.6	1.33
P_s	Absolute Flue Gas Pressure, "Hg	30.09	30.09	30.27	30.15
t_s	Average Flue Gas Temp., °F	358.8	357.5	346.6	354.3
Delta-p	Average Velocity Head, "H_2O	0.637	0.639	0.675	0.650
vs	Flue Gas Velocity, ft/sec	55.09	55.14	56.00	55.41
A	Stack/Duct Area, in^2	19,113.4	19,113.4	19,113.4	19,113.4
Q_{sd}	Volumetric Flow, DSCFM	266,752	267,586	278,268	270,868
Q_{aw}	Volumetric Flow, ACFM	438,763	439,138	445,947	441,282
%I	Percent IsoKinetics	99.9	101.8	94.9	98.8
F_d	Fuel Factor	9940	9902	9728	9857
MMBtu/hr	Aproximate Heat input	1040.06	1016.29	1141.45	1065.93
Vs	Stack Gas Viscosity	243.76	243.65	240.55	242.65
Qs	PM10 Flow, @ Cyclone Conditions, ACFM	0.685	0.712	0.661	0.686
D50	Dia of Particles in Cyclone, Microns	9.90	9.62	10.01	9.85
mg Filterable PM10	Filterable Particulate Less then 10 Microns, mg	13.8	15.7	12.4	13.97
mg Organic CPM	Organic Condensible PM, mg	0.6	0.5	1.2	0.77
mg Inorganic CPM	Inorganic Condensible PM, mg	55.5	40.3	20.4	38.73
mg CPM	Total CPM	56.1	40.8	21.6	39.50
Filterable PM10	Total Milligrams Filterable PM10	13.8	15.7	12.4	14.0
gr/DSCF	Concentration, grains/DSCF	0.00609	0.00613	0.00494	0.00572
mg/DSCM	Concentration, mg/DSCM	13.9	14.0	11.3	13.1
lb/MMBtu	Emission Rate, lb/MMBtu	0.0134	0.0138	0.0103	0.0125
lb/hr	PM10 Emission Rate, lb/hr	13.9	14.1	11.8	13.3
Filterable and Condensible PM10	Total Milligrams Filterable and Condensible PM10	69.9	56.5	34.0	53.5
gr/DSCF	Concentration, grains/DSCF	0.0309	0.0221	0.0135	0.0222
mg/DSCM	Concentration, mg/DSCM	70.6	50.5	31.0	50.7
lb/MMBtu	Emission Rate, lb/MMBtu	0.0678	0.0498	0.0283	0.0486
lb/hr	PM10 Emission Rate, lb/hr	70.5	50.6	32.3	51.2

Summary of Results
Mirant
Unit 1 Stack
Alexandria, VA

	Run ID	Run 1 II-M201A/202-1	Run 3 II-M201A/202-3	Run 4 II-M201A/202-4	Average
	Test Date	12/21/2005	12/22/2005	12/23/2005	
	Run Start Time	1802	1634	852	
	Run Finish Time	1955	1820	1033	
	Net Traverse Points	12	12	12	
Theta	Net Run Time, Minutes	97.25	90	89.75	
Dia	Nozzle Diameter, Inches	0.195	0.195	0.195	
C_p	Pitot tube Coeffecient	0.84	0.84	0.84	
Y	Dry Gas Meter Calibration Factor	0.9821	0.9821	0.9821	
P_{bar}	Barometric Pressure, "Hg	30.05	30.18	29.91	
Delta H	Average Differential Pressure of Orifice, ft^3	0.54	0.54	0.52	0.54
V_m	Volume of Metered Gas Sample, ft^3	39.056	36.474	36.118	37.216
t_m	Average Temp. of Dry Gas Meter, °F	50.3	57.0	63.3	56.9
V_{mstd}	Volume of Stack Gas Metered At Standard Conditions, ft^3	39.900	36.935	35.808	37.548
vl	Volume of Liquid Collected in Impingers, g	54.9	52.6	52.3	53.3
V_{wstd}	Volume of Water Standard	2.58	2.48	2.46	2.51
% H20	Percent Moisture by Volume	6.08	6.28	6.43	6.27
Mfd	Dry Mole Fraction	0.939	0.937	0.936	0.937
$\%CO_2$	Percent Carbon Dioxide	12.5	12.4	12.4	12.4
$\%O_2$	Percent Oxygen	6.8	6.9	6.7	6.80
$\%CO\text{-}N_2$	Percent Carbon Monoxide and Nitrogen	80.7	80.7	80.9	80.8
Md	Gas Molecular Weight, Dry	30.27	30.26	30.25	30.26
Mw	Gas Molecular Weight, Wet	29.53	29.49	29.46	29.49
P_g	Static Pressure, "H_2O	1.5	1.4	1.6	1.50
P_s	Absolute Flue Gas Pressure, "Hg	30.16	30.28	30.03	30.16
t_s	Average Flue Gas Temp., °F	352.4	348.9	333.2	344.8
Delta-p	Average Velocity Head, "H_2O	0.717	0.698	0.694	0.703
vs	Flue Gas Velocity, ft/sec	58.06	57.11	56.64	57.27
A	Stack/Duct Area, in^2	19,113.4	19,113.4	19,113.4	19,113.4
Q_{sd}	Volumetric Flow, DSCFM	284,384	281,503	281,861	282,583
Q_{aw}	Volumetric Flow, ACFM	462,384	454,850	451,082	456,105
%I	Percent IsoKinetics	92.4	93.3	90.6	92.1
F_d	Fuel Factor	9874	9896	9840	9870
MMBtu/hr	Aproximate Heat input	1165.83	1143.29	1167.70	1158.94
Vs	Stack Gas Viscosity	241.82	240.89	236.64	239.79
Qs	PM10 Flow, @ Cyclone Conditions, ACFM	0.667	0.663	0.639	0.656
D50	Dia of Particles in Cyclone, Microns	10.01	10.01	10.13	10.05
mg Filterable PM10	Filterable Particulate Less then 10 Microns, mg	8.2	5.6	6.4	6.73
mg Organic CPM	Organic Condensible PM, mg	0.3	0.6	0.8	0.57
mg Inorganic CPM	Inorganic Condensible PM, mg	17.6	14.4	11.5	14.50
mg CPM	Total CPM	17.9	15.0	12.3	15.07
Filterable PM10	Total Milligrams Filterable PM10	8.2	5.6	6.4	6.7
gr/DSCF	Concentration, grains/DSCF	0.00317	0.00234	0.00276	0.00276
mg/DSCM	Concentration, mg/DSCM	7.26	5.35	6.31	6.31
lb/MMBtu	Emission Rate, lb/MMBtu	0.00663	0.00494	0.00571	0.00576
lb/hr	PM10 Emission Rate, lb/hr	7.73	5.65	6.66	6.68
Filterable and Condensible PM10	Total Milligrams Filterable and Condensible PM10	26.1	20.6	18.7	21.8
gr/DSCF	Concentration, grains/DSCF	0.0101	0.00861	0.00806	0.00892
mg/DSCM	Concentration, mg/DSCM	23.1	19.7	18.4	20.4
lb/MMBtu	Emission Rate, lb/MMBtu	0.0211	0.0182	0.0167	0.0186
lb/hr	PM10 Emission Rate, lb/hr	24.6	20.8	19.5	21.6

Summary of Results
Mirant
Unit 1 Stack
Alexandria, VA

	Run ID	Run 1 II-M201A/202-1	Run 2 II-M201A/202-2	Run 3 II-M201A/202-3	Average
	Test Date	12/21/2005	12/22/2005	12/22/2005	
	Run Start Time	1802	1051	1634	
	Run Finish Time	1955	1514	1820	
	Net Traverse Points	12	12	12	
Theta	Net Run Time, Minutes	97.25	87.5	90	
Dia	Nozzle Diameter, Inches	0.195	0.197	0.195	
C_p	Pitot tube Coeffecient	0.84	0.84	0.84	
Y	Dry Gas Meter Calibration Factor	0.9821	0.9821	0.9821	
P_{bar}	Barometric Pressure, "Hg	30.05	30.18	30.18	
Delta H	Average Differential Pressure of Orifice, ft^3	0.54	0.54	0.54	0.54
V_m	Volume of Metered Gas Sample, ft^3	39.056	35.807	36.474	37.112
t_m	Average Temp. of Dry Gas Meter, °F	50.3	66.0	57.0	57.8
V_{mstd}	Volume of Stack Gas Metered At Standard Conditions, ft^3	39.900	35.639	36.935	37.492
vl	Volume of Liquid Collected in Impingers, g	54.9	39.9	52.6	49.1
V_{wstd}	Volume of Water Standard	2.58	1.88	2.48	2.31
% H20	Percent Moisture by Volume	6.08	5.01	6.28	5.79
Mfd	Dry Mole Fraction	0.939	0.950	0.937	0.942
$\%CO_2$	Percent Carbon Dioxide	12.5	12.5	12.4	12.5
$\%O_2$	Percent Oxygen	6.8	6.8	6.9	6.83
$\%CO\text{-}N_2$	Percent Carbon Monoxide and Nitrogen	80.7	80.7	80.7	80.7
Md	Gas Molecular Weight, Dry	30.27	30.27	30.26	30.27
Mw	Gas Molecular Weight, Wet	29.53	29.66	29.49	29.56
P_g	Static Pressure, "H_2O	1.5	1.7	1.4	1.53
P_s	Absolute Flue Gas Pressure, "Hg	30.16	30.31	30.28	30.25
t_s	Average Flue Gas Temp., °F	352.4	344.4	348.9	348.6
Delta-p	Average Velocity Head, "H_2O	0.717	0.662	0.698	0.692
vs	Flue Gas Velocity, ft/sec	58.06	55.27	57.11	56.81
A	Stack/Duct Area, in^2	19,113.4	19,113.4	19,113.4	19,113.4
Q_{sd}	Volumetric Flow, DSCFM	284,384	277,876	281,503	281,254
Q_{aw}	Volumetric Flow, ACFM	462,384	440,173	454,850	452,469
%I	Percent IsoKinetics	92.4	91.9	93.3	92.5
F_d	Fuel Factor	9874	9932	9896	9901
MMBtu/hr	Aproximate Heat input	1165.83	1132.50	1143.29	1147.21
Vs	Stack Gas Viscosity	241.82	240.17	240.89	240.96
Qs	PM10 Flow, @ Cyclone Conditions, ACFM	0.667	0.645	0.663	0.658
D50	Dia of Particles in Cyclone, Microns	10.01	10.16	10.01	10.06
mg Filterable PM10	Filterable Particulate Less then 10 Microns, mg	8.2	8.7	5.6	7.50
mg Organic CPM	Organic Condensible PM, mg	0.3	63.2	0.6	21.37
mg Inorganic CPM	Inorganic Condensible PM, mg	17.6	16.1	14.4	16.03
mg CPM	Total CPM	17.9	79.3	15.0	37.40
Filterable PM10	Total Milligrams Filterable PM10	8.2	8.7	5.6	7.5
gr/DSCF	Concentration, grains/DSCF	0.00317	0.00377	0.00234	0.00309
mg/DSCM	Concentration, mg/DSCM	7.26	8.62	5.35	7.08
lb/MMBtu	Emission Rate, lb/MMBtu	0.00663	0.00792	0.00494	0.00650
lb/hr	PM10 Emission Rate, lb/hr	7.73	8.97	5.65	7.45
Filterable and Condensible PM10	Total Milligrams Filterable and Condensible PM10	26.1	88.0	20.6	44.9
gr/DSCF	Concentration, grains/DSCF	0.0101	0.0381	0.00861	0.0189
mg/DSCM	Concentration, mg/DSCM	23.1	87.2	19.7	43.3
lb/MMBtu	Emission Rate, lb/MMBtu	0.0211	0.0801	0.0182	0.0398
lb/hr	PM10 Emission Rate, lb/hr	24.6	90.8	20.8	45.4

NGS Coal Analysis - Corrected for Wet Basis

Potomac Stack 1

SAMPLE:	**PM Run 1**	
Moisture	**9.29**	
	DRY	**WET**
Ash	9.42	8.54
Btu/lb	13720.00	12445.41
Carbon	78.70	71.39
Hydrogen	4.79	4.35
Nitrogen	1.52	1.38
Oxygen	4.72	4.28
Sulfur	0.85	0.77
F-FACTOR:	9940	

SAMPLE:	**PM Run 2**	
Moisture	**10.1**	
	DRY	**WET**
Ash	9.74	8.76
Btu/lb	13570.00	12199.43
Carbon	77.60	69.76
Hydrogen	4.83	4.34
Nitrogen	1.45	1.30
Oxygen	5.61	5.04
Sulfur	0.77	0.69
F-FACTOR:	9902	

SAMPLE:	**PM Run 3**	
Moisture	**9.78**	
	DRY	**WET**
Ash	9.36	8.44
Btu/lb	13650.00	12315.03
Carbon	76.90	69.38
Hydrogen	4.84	4.37
Nitrogen	1.44	1.30
Oxygen	6.74	6.08
Sulfur	0.72	0.65
F-FACTOR:	9728	

SAMPLE:	**PM Run 4**	
Moisture	**10.05**	
	DRY	**WET**
Ash	9.98	9.05
Btu/lb	13530.00	12273.06
Carbon	77.50	70.30
Hydrogen	4.73	4.29
Nitrogen	1.43	1.30
Oxygen	5.35	4.85
Sulfur	1.01	0.92
F-FACTOR:	9912	

SAMPLE:	**PM Run 5A**	
Moisture	**9.74**	
	DRY	**WET**
Ash	9.14	8.22
Btu/lb	13650.00	12271.35
Carbon	78.10	70.21
Hydrogen	4.76	4.28
Nitrogen	1.44	1.29
Oxygen	5.81	5.22
Sulfur	0.75	0.67
F-FACTOR:	9874	

SAMPLE:	**PM Run 6**	
Moisture	**9.26**	
	DRY	**WET**
Ash	9.45	8.53
Btu/lb	13770.00	12423.29
Carbon	78.90	71.18
Hydrogen	4.79	4.32
Nitrogen	1.46	1.32
Oxygen	4.53	4.09
Sulfur	0.87	0.78
F-FACTOR:	9932	

SAMPLE:	**PM Run 7**	
Moisture	**8.73**	
	DRY	**WET**
Ash	10.10	9.16
Btu/lb	13680.00	12409.13
Carbon	78.20	70.94
Hydrogen	4.72	4.28
Nitrogen	1.45	1.32
Oxygen	4.66	4.23
Sulfur	0.87	0.79
F-FACTOR:	9896	

SAMPLE:	**PM Run 8**	
Moisture	**8.66**	
	DRY	**WET**
Ash	11.30	10.16
Btu/lb	13430.00	12073.57
Carbon	76.50	68.77
Hydrogen	4.63	4.16
Nitrogen	1.42	1.28
Oxygen	5.29	4.76
Sulfur	0.86	0.77
F-FACTOR:	9840	

9878