APPENDIX

Appendix A: Process Operating Data
Appendix B: Calculations
Appendix C: Raw Field Data and Calibration Data Sheets
Appendix D: Reduced Field Data Sheets
Appendix E: Sampling Log and Chain of Custody Records
Appendix F: Analytical Data Sheets
Appendix G: List of Participants

© Mostardi-Platt Associates, Inc.

Plant Name: DUNK
General Average Report
Reporting Period: 10/13/1999 to 10/13/1999

Site Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:07
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/13/99	12:00	7.3	18153724.	273.9	11.1	100.3
	12:01	7.1	18179998.	274.2	11.2	100.3
	12:02	7.0	18216690.	274.2	11.1	100.5
	12:03	8.6	18263906.	274.2	11.1	100.3
	12:04	20.4H	18261952.	274.2	11.2	100.1
	12:05	8.1	18305758.	274.1	11.2	100.0
	12:06	7.0	18361972.	274.1	11.1	100.1
	12:07	6.5	18461096.	274.1	11.1	100.1
	12:08	7.5	18429066.	274.1	11.2	100.2
	12:09	6.9	18450548.	274.1	11.2	100.3
	12:10	20.8H	18352102.	274.1	11.3	100.3
	12:11	10.4	18376026.	274.1	11.3	100.4
	12:12	7.1	18326000.	274.1	11.2	100.2
	12:13	6.8	18338606.	274.2	11.2	100.1
	12:14	7.3	18324562.	274.2	11.2	100.0
	12:15	7.0	18365896.	274.2	11.3	100.1
	12:16	14.5	18334700.	274.2	11.3	100.2
	12:17	16.7	18312610.	274.2	11.3	100.3
	12:18	7.5	18314946.	274.2	11.3	100.4
	12:19	6.7	18333156.	274.2	11.3	100.4
	12:20	6.3	18498744.	274.2	11.3	100.4
	12:21	5.9	18516336.	274.2	11.3	100.3
	12:22	5.8	18470520.	274.1	11.3	100.3
	12:23	19.2	18423922.	274.1	11.2	100.3
	12:24	15.2	18420046.	274.0	11.3	100.2
	12:25	7.2	18371366.	273.9	11.3	100.2
	12:26	6.7	18368738.	273.8	11.3	100.2
	12:27	6.1	18257900.	273.7	11.3	100.4
	12:28	6.3	18251988.	273.8	11.2	100.5
	12:29	10.1	18288228.	273.8	11.3	100.4
	12:30	23.7H	18283016.	273.9	11.3	100.3
	12:31	8.2	18157444.	273.9	11.3	100.3
	12:32	6.9	18127476.	273.9	11.2	100.4
	12:33	6.5	18055180.	273.9	11.3	100.4
	12:34	6.2	17892092.	273.7	11.3	100.5
	12:35	6.8	17761336.	273.7	11.3	100.5
	12:36	24.9H	17749440.	273.7	11.3	100.5
	12:37	10.2	17763988.	273.7	11.3	100.5
	12:38	7.1	17763944.	273.6	11.3	100.5
	12:39	6.6	17797498.	273.6	11.3	100.5
	12:40	7.4	17833858.	273.2	11.3	100.5
	12:41	26.2H	17704284.	273.2	11.3	100.5
	12:42	9.1	17557132.	273.3	11.3	100.5
	12:43	7.1	17499522.	273.3	11.3	100.6
	12:44	6.9	17550260.	273.6	11.3	100.7
	12:45	6.2	17548312.	273.6	11.4	100.6
	12:46	6.5	17517536.	273.6	11.4	100.5
	12:47	20.6H	17589856.	273.6	11.3	100.3
	12:48	15.7	17612362.	273.6	11.3	99.8
	12:49	7.5	17652046.	273.6	11.3	99.3

Weekly Precipitator Report - Units 1 & 2

Week Ending:_____

Unit 2 — 10-13-99 Run 2

	0900					0930					1000					1030					1100				
	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1
V	170	270	–	200	290	170	280	–	200	290	180	270	–	200	260	160	270	–	200	255	170	270	–	200	230
A	48	65	70	98	158	48	65	70	98	155	48	65	70	98	150	48	65	70	98	115	45	65	70	100	80
mode																									
	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2
V	290	280	270	265	290	295	290	270	265	290	290	270	260	265	290	290	290	270	270	285	290	285	270	265	280
A	40	55	95	115	145	40	55	95	115	143	40	55	95	115	143	40	60	95	115	142	40	55	95	115	143
mode																									
	Opacity			%	R_	Opacity			%	R_	Opacity			%	R_	Opacity			%	R_	Opacity			%	R_

Unit 2

	1130																								
	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1
V	170	270	–	200	215																				
A	48	65	70	100	68																				
mode																									
	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2
V	290	290	270	265	280																				
A	40	55	90	115	143																				
mode																									
	Opacity			%	R_	Opacity			%	R_	Opacity			%	R_	Opacity			%	R_	Opacity			%	R_

Note: Indicate if on other than auto control U = swinging short X = shorted field H = hold out tag M = manual mode R = rapper check

Check Nuva feeder recorder **daily** - if *card full* message is showing, stop recording and remove card for data unloading.

Plant Name: DUNK
General Average Report
Reporting Period: 10/13/1999 to 10/13/1999

Site Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:07
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/13/99	12:50	7.9	17648596.	273.9	11.2	99.6
	12:51	10.2	17683704.	273.9	11.3	100.3
	12:52	7.9	17725106.	274.1	11.5	100.7
	12:53	7.2	17766612.	274.2	11.4	101.0
	12:54	25.5H	17715136.	275.0	11.4	101.1
	12:55	11.2	17718364.	275.0	11.3	101.0
	12:56	7.9	17683270.	275.4	11.3	101.0
	12:57	7.1	17671834.	275.4	11.2	100.8
	12:58	7.1	17755158.	275.5	11.1	100.5
	12:59	7.0	17779424.	275.6	11.1	100.3
	13:00	16.9	17785546.	275.9	11.1	100.0
	13:01	17.9	17760266.	276.1	11.1	99.9
	13:02	9.1	17805776.	276.5	11.1	99.8
	13:03	8.5	17882170.	276.5	11.2	100.0
	13:04	7.7	17911764.	276.5	11.2	99.9
	13:05	9.3	17871760.	276.5	11.2	100.0
	13:06	9.4	17878044.	276.5	11.2	100.1
	13:07	25.7H	17948026.	276.5	11.2	100.3
	13:08	9.4	18022926.	276.5	11.3	100.4
	13:09	7.9	18093670.	276.5	11.3	100.4
	13:10	7.6	18097584.	276.5	11.2	100.4
	13:11	7.6	18118872.	276.4	11.2	100.4
	13:12	8.0	18216094.	276.2	11.2	100.4
	13:13	20.8H	18192690.	276.2	11.2	100.5
	13:14	13.1	18126948.	276.2	11.2	100.5
	13:15	8.2	17994618.	276.3	11.2	100.5
	13:16	8.0	17943422.	276.5	11.2	100.5
	13:17	7.8	17999676.	276.5	11.2	100.4
	13:18	9.8	18003560.	276.5	11.2	100.4
	13:19	15.5	17978752.	276.6	11.2	100.3
	13:20	24.3H	17866158.	276.6	11.2	100.4
	13:21	11.0	17779694.	277.0	11.2	100.5
	13:22	10.8	17677146.	277.3	11.2	100.5
	13:23	13.6	17624322.	277.6	11.2	100.7
	13:24	10.4	17567626.	277.7	11.2	100.8
	13:25	8.5	17553394.	277.8	11.3	100.7
	13:26	16.3	17598530.	277.8	11.3	100.5
	13:27	16.0	17716988.	277.7	11.2	100.3
	13:28	8.2	17706756.	277.7	11.2	100.3
	13:29	8.3	17773622.	277.6	11.2	100.2
	13:30	8.6	17846840.	277.6	11.2	100.3
	13:31	7.7	17893632.	277.4	11.2	100.4
	13:32	10.7	17966174.	277.3	11.2	100.5
	13:33	22.0H	18020994.	277.3	11.3	100.7
	13:34	9.8	18102288.	277.3	11.3	100.7
	13:35	9.5	18178914.	277.3	11.3	100.7
	13:36	10.1	18180150.	277.3	11.2	100.6
	13:37	11.6	18183464.	277.3	11.2	100.6
	13:38	24.7H	18106722.	277.3	11.2	100.6
	13:39	12.8	18013394.	277.3	11.3	100.6

Plant Name: DUNK
General Average Report
Reporting Period: 10/13/1999 to 10/13/1999

Site Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:07
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/13/99	13:40	10.2	17926992.	277.3	11.2	100.6
	13:41	11.6	17909692.	277.3	11.2	100.6
	13:42	9.6	17973994.	277.3	11.2	100.6
	13:43	13.0	18059056.	277.3	11.2	100.7
	13:44	21.4H	18128120.	277.3	11.2	100.7
	13:45	18.2	18082420.	277.3	11.2	100.6
	13:46	11.7	18081708.	277.3	11.2	100.7
	13:47	11.5	18082092.	277.3	11.2	100.6
	13:48	11.7	18073582.	277.3	11.2	100.7
	13:49	24.0H	18100912.	277.1	11.3	100.8
	13:50	15.0	18092152.	277.1	11.2	100.7
	13:51	10.9	18149090.	277.1	11.2	100.7
	13:52	10.0	18192266.	277.1	11.2	100.7
	13:53	10.4	18223748.	277.3	11.2	100.7
	13:54	10.4	18279344.	277.4	11.3	100.6
	13:55	15.9	18248620.	277.6	11.2	100.7
	13:56	28.0H	18272548.	277.6	11.2	100.9
	13:57	14.5	18258682.	277.6	11.3	100.9
	13:58	9.0	18257272.	277.5	11.3	100.7
	13:59	9.2	18273358.	277.1	11.2	100.6
	14:00	10.5	18326184.	276.9	11.2	100.5
	14:01	12.4	18380310.	276.6	11.2	100.6
	14:02	20.5H	18422640.	276.8	11.2	100.6
	14:03	21.7H	18434560.	277.1	11.2	100.6
	14:04	14.7	18518414.	277.2	11.3	100.7
	14:05	16.5	18496168.	277.3	11.2	100.8
	14:06	16.7	18518652.	277.3	11.3	100.8
	14:07	21.1H	18511648.	277.3	11.2	100.9
	14:08	21.3H	18420854.	277.5	11.2	100.8
	14:09	12.1	18307690.	277.6	11.3	100.8
	14:10	12.0	18202182.	277.7	11.3	100.7
	14:11	12.9	18046276.	277.8	11.3	100.7
	14:12	11.2	18079110.	278.1	11.2	100.7
	14:13	14.3	18097088.	278.5	11.2	100.9
	14:14	23.6H	18118754.	278.5	11.2	100.9
	14:15	9.7	18128572.	278.4	11.2	101.0
	14:16	8.5	18195012.	278.3	11.3	101.1
	14:17	8.8	18273092.	278.2	11.2	101.0
	14:18	9.0	18297740.	278.0	11.2	100.9
	14:19	9.2	18102672.	277.8	11.2	100.8
	14:20	18.5	17929824.	277.8	11.2	100.9
	14:21	10.2	17911262.	277.7	11.2	100.9
	14:22	8.7	17790978.	277.7	11.2	101.2
	14:23	8.1	17719316.	277.7	11.2	101.2
	14:24	7.6	17629854.	277.7	11.3	101.0
	14:25	7.2	17505552.	277.7	11.2	100.7
	14:26	8.5	17481446.	277.8	11.1	100.7
	14:27	17.5	17505264.	277.8	11.1	100.7
	14:28	8.5	17550304.	277.8	11.1	100.7
	14:29	7.7	17562512.	277.8	11.2	100.7

Plant Name: DUNK
General Average Report
Reporting Period: 10/13/1999 to 10/13/1999

ite Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:07
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/13/99	14:30	7.5	17575520.	277.8	11.2	100.8
	14:31	8.0	17560694.	277.8	11.2	101.0
	14:32	8.2	17508266.	277.8	11.2	101.0
	14:33	14.8	17453252.	277.8	11.2	100.9
	14:34	13.2	17416438.	277.8	11.2	101.0
	14:35	7.9	17408118.	277.8	11.2	101.0
	14:36	7.5	17400824.	277.8	11.2	100.9
	14:37	8.5	17403610.	277.8	11.2	100.8
	14:38	16.1	17390806.	277.8	11.2	100.9
	14:39	9.6	17391640.	277.8	11.2	101.0
	14:40	7.3	17397568.	277.8	11.3	101.0
	14:41	8.1	17489460.	277.8	11.2	101.1
	14:42	7.8	17485070.	277.8	11.2	101.1
Average =		11.5	17987084.	276.1	11.2	100.5
Maximum =		28.0	18518652.	278.5	11.5	101.2
Minimum =		5.8	17390806.	273.2	11.1	99.3
ossible Values =		163	163	163	163	163
ncluded Values =		163	163	163	163	163
Total =		1872.7	2931894704	45007.3	1831.3	16388.7

: - excluded values (missing, OOC, invalid, suspect)
- missing
T - out-of-control
- invalid
; - suspect
√ - invalid for state
H - exceedance
- stack not operating
} - invalid (PADER)
J - missing data substituted
-999 - missing value
-888 - value could not be calculated

Weekly Precipitator Report - Units 1 & 2

Week Ending:_____

Unit 2 — 10-13-99 Run 3

	1300					1330					1400					1430					1500				
	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1
V	170	270	–	200	165	170	270	–	200	150	180	270	–	200	150	170	270	–	200	140	180	270	–	200	130
A	48	65	70	100	0	48	65	68	100	0	48	65	68	100	0	48	65	68	100	0	48	63	68	100	0
mode																									
	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2
V	280	270	270	270	280	290	275	270	270	280	290	280	270	270	280	290	280	280	270	280	280	270	265	270	280
A	40	55	93	115	143	40	55	95	115	143	50	55	93	115	143	50	60	95	115	143	45	55	93	110	142
mode																									
	Opacity			%	R_	Opacity		%		R_	Opacity			%	R_	Opacity			%	R_	Opacity			%	R_

Unit 2

	1530																								
	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1
V	170	270	–	200	130																				
A	48	55	68	100	0																				
mode																									
	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2
V	280	280	270	265	280																				
A	50	50	90	110	140																				
mode																									
	Opacity			%	R_	Opacity		%		R_	Opacity			%	R_	Opacity			%	R_	Opacity			%	R_

Note: Indicate if on other than auto control U = swinging short X = shorted field H = hold out tag M = manual mode R = rapper check

Check Nuva feeder recorder **daily** - if *card full* message is showing, stop recording and remove card for data unloading.

E1 0 ⇒ <25A

WDPF PC Logger Output File : @0000130.D01 Wed Oct 13 00:00:04 1999
WDPF PC Logger Collection In Progress

Unit 2 Office Log
Pch 140 Daily Log 1

1 UNIT 2 NET MEGAWATTS
2 UNIT 2 HOUSE SERVICE MW
3 Unit 2 Gross Megawatts
4 Generator 2 Hydrogen Press.
5 COAL FLOW 21
6 COAL FLOW 22
7 COAL FLOW 23
8 COAL FLOW 24
9 Unit 2 Total Coal Flow (Inst)
10 Generator 2 Hydrogen Press.
11
12

HH:MM:SS	1 A20508 MW INTGLH	2 A2HSMW MW INTGLH	3 A20500 MW INTGLH	4 A20398 PSIG INTGLH	5 A220670 KIPS AVG	6 A220671 KIPS AVG	7 A220673 KIPS AVG	8 A220674 KIPS AVG	9 A2TOTFLO K lbs. AVG	10 A20398 PSIG AVG	11	12
01:00:00	61.74	4.00	65.75	14.78	16.93	16.95	16.89	0.05	50.81	14.82		
02:00:00	62.80	4.01	66.82	14.58	16.89	16.91	16.85	0.05	50.70	14.58		
03:00:00	62.38	4.01	66.40	14.30	16.64	16.67	16.61	0.05	49.97	14.30		
04:00:00	62.35	3.99	66.33	14.04	16.62	16.65	16.59	0.05	49.92	14.04		
05:00:00	62.37	3.99	66.36	13.81	16.63	16.66	16.60	0.05	49.94	13.81		
06:00:00	62.51	3.99	66.49	13.60	16.66	16.68	16.62	0.05	50.01	13.60		
07:00:00	65.37	4.16	69.55	13.42	16.62	16.64	16.58	3.18	53.01	13.42		
08:00:00	94.38	5.22	99.60	13.38	18.99	18.48	18.96	19.01	75.43	13.38		
09:00:00	95.08	5.26	100.33	14.39	19.00	18.44	18.96	19.01	75.41	14.39		
10:00:00	95.78	5.25	101.04	15.61	19.17	18.35	19.14	19.18	75.83	T2 15.61		
11:00:00	95.46	5.20	100.65	15.30	19.32	18.24	18.98	19.33	75.88	15.30		
12:00:00	95.90	5.20	101.10	15.02	19.59	18.51	18.58	19.60	76.27	15.02		
13:00:00	95.03	5.16	100.20	14.75	19.31	18.23	18.30	19.32	75.16	14.75		
14:00:00	94.94	5.15	100.09	14.52	19.33	18.25	18.31	19.33	75.22	T3 14.52		
15:00:00	95.08	5.15	100.22	14.70	19.37	18.30	18.36	19.38	75.42	14.70		
16:00:00	95.47	5.15	100.63	15.40	19.39	18.31	18.38	19.39	75.46	15.40		

WDPF PC Logger Output File : @0000130.D90 Wed Oct 13 00:00:16 1999
WDPF PC Logger Collection In Progress

Unit 2 Mercury Testing Log
Save for Robert J Bombros

1 Unit 2 Gross Megawatts
2 UNIT 2 HOUSE SERVICE MVAR
3 UNIT 2 NET MEGAWATTS
4 2- SUPERHEAT OUTLET SEL. XMTR
5 SELECTED THROTTLE PRESS XMTR
6 2-HP TURB 1ST STG SHELL PRESS
7 2- AVERAGE REHEAT OUTLET TEMP.
8 2-COLD REHEAT EAST PRESS
9 2- TOTAL COMP. STEAM FLOW
10 FW Lvg 21-7 Htr Temp
11 2-FLOW TO HP ATTEMP
12 2-FLOW TO LP ATTEMP

HH:MM:SS	1 A20500 MW AVG	2 A2HSMV MVAR AVG	3 A20508 MW AVG	4 0024Z052 DEG AVG	5 0025Z052 PSIG AVG	6 A21200 PSIA AVG	7 0024X242 DEG_F AVG	8 A21201 PSIA AVG	9 0024X037 KPPH AVG	10 A20479 Deg.F AVG	11 A220421 K LBS AVG	12 A220422 K LBS AVG
00:30:10	65.54	3.08	61.54	974.36	1452.70	651.56	917.33	274.97	457.79	383.06	2.06	0.00
01:00:10	66.33	3.08	62.30	988.02	1451.15	654.25	933.53	276.27	457.67	384.38	2.06	0.00
01:30:10	66.87	3.08	62.84	1000.18	1450.53	654.94	947.77	276.98	456.86	384.98	2.05	0.00
02:00:10	66.78	3.08	62.75	1004.78	1450.66	652.54	957.11	275.90	453.31	385.02	3.63	0.00
02:30:10	66.70	3.02	62.68	998.91	1450.24	650.46	952.17	275.46	452.75	385.12	4.40	0.00
03:00:10	66.09	2.94	62.08	1000.89	1449.90	644.97	952.29	272.48	447.88	384.02	4.64	0.00
03:30:10	66.29	2.94	62.32	1000.48	1450.18	646.43	956.20	273.36	448.82	384.27	6.57	0.00
04:00:10	66.37	2.94	62.39	1000.14	1450.16	646.40	958.95	273.64	448.85	384.46	7.88	0.00
04:30:10	66.27	2.94	62.28	1000.29	1450.47	644.62	961.15	273.16	447.69	384.25	8.92	0.00
05:00:10	66.46	2.95	62.46	1000.18	1449.73	646.61	962.90	274.04	448.84	384.29	9.82	0.00
05:30:10	66.55	2.94	62.56	1000.15	1450.33	647.61	963.32	274.37	449.45	384.88	10.04	0.00
06:00:10	66.43	2.97	62.45	1000.27	1450.24	646.19	966.03	274.13	448.46	384.36	11.20	0.00
06:30:10	66.33	3.04	62.32	1000.33	1450.52	644.97	968.38	273.81	447.66	384.97	12.61	0.00
07:00:10	72.91	3.20	68.58	1002.20	1446.78	710.03	973.66	301.29	494.34	391.76	15.85	0.00
07:30:10	99.26	3.55	94.04	999.20	1458.32	1000.86	982.97	416.85	691.03	419.35	19.78	0.00
08:00:10	99.99	3.56	94.76	1000.23	1452.80	1009.49	986.20	420.22	696.18	419.98	18.85	0.00
08:30:10	100.30	3.57	95.07	1000.55	1451.29	1010.83	990.25	421.07	696.63	420.41	20.36	0.00
09:00:10	100.36	3.57	95.10	1000.80	1450.45	1010.08	992.77	421.10	695.85	420.47	21.91	0.00
09:30:10	100.63	3.55	95.41	1000.53	1449.67	1012.67	994.61	422.49	697.62	420.98	23.32	0.00
10:00:10	101.46	3.56	96.17	1000.94	1451.63	1020.41	998.52	426.11	702.70	421.77	25.14	0.00
10:30:10	100.40	3.52	95.24	996.87	1450.31	1016.66	981.80	422.96	701.24	420.50	17.48	0.00
11:00:10	100.90	3.52	95.67	1000.36	1450.31	1019.99	988.49	424.64	702.61	421.38	19.28	0.00
11:30:10	100.97	3.50	95.77	1000.72	1449.51	1020.82	989.04	425.11	703.00	421.17	20.06	0.00
12:00:10	101.24	3.50	96.02	1000.75	1450.42	1021.70	993.29	426.04	703.39	421.65	22.40	0.00
12:30:10	100.22	3.47	95.05	1000.14	1450.40	1008.72	993.48	420.91	694.29	420.75	23.51	0.00
13:00:10	100.17	3.47	95.00	1000.86	1450.67	1007.89	995.45	420.87	693.34	420.52	24.79	0.00
13:30:10	100.00	3.46	94.84	1000.17	1449.65	1007.22	992.78	420.47	693.02	420.48	25.34	0.00
14:00:10	100.19	3.46	95.03	999.86	1450.41	1008.17	994.96	421.23	693.57	420.50	26.52	0.00
14:30:10	100.07	3.46	94.93	1001.17	1449.68	1007.54	994.83	420.73	692.87	420.54	26.93	0.00
15:00:10	100.39	3.40	95.23	1000.92	1449.85	1007.74	998.53	421.48	692.85	420.84	28.83	0.00
15:30:10	100.59	3.38	95.43	1000.58	1450.18	1008.12	1000.71	421.96	693.20	420.79	30.39	0.00
16:00:10	100.67	3.37	95.52	999.80	1450.75	1008.78	1001.00	422.29	693.75	421.18	30.76	0.00
16:30:10	100.58	3.37	95.44	1000.25	1450.43	1007.79	1000.62	421.81	692.95	420.91	30.34	0.00

WDPF PC Logger Output File : @0000130.D91 Wed Oct 13 00:00:18 1999
WDPF PC Logger Collection In Progress

Unit 2 Mercury Testing Log
Save for Robert J Bombros

1 2 CIRC WTR INLET TEMP-LO SEL
2 2 CIRC WTR DISCH TEMP-LO SEL
3 Turbine 2 Condenser Vacuum
4 #1 Barometric Press.
5 21 Air Htr Gas Inlet Temp
6 21 Air Htr Gas Outlet Temp
7 FD FAN 21 AMBIENT TEMP
8 21 Air Htr Air Outlet Temp
9 FD FAN 21 AMBIENT TEMP
10 Unit 2 Total Coal Flow (Inst)
11 21 Air Htr Gas Outlet Temp
12 UNIT 2 OPACITY

HH:MM:SS	1 A2CWIT DegF AVG	2 A2CWDT DEGF AVG	3 A20364 IN.HG AVG	4 A1BAROM In Hg AVG	5 A2GT210 Deg F AVG	6 A2GT211 Deg F AVG	7 A220273 DEG.F AVG	8 A2AT211 Deg F AVG	9 A220273 DEG.F AVG	10 A2TOTFLO K lbs. AVG	11 A2GT211 Deg F AVG	12 A2OPAC Pct AVG
00:30:10	62.73	68.28	28.28	29.64	500.42	257.73	115.09	456.31	115.09	50.91	257.73	4.25
01:00:10	62.61	68.23	28.28	29.64	502.91	250.56	115.12	452.60	115.12	50.71	250.56	3.58
01:30:10	62.53	68.18	28.28	29.64	504.71	250.72	115.41	453.30	115.41	50.85	250.72	3.47
02:00:10	62.40	68.00	28.28	29.64	505.46	252.19	115.12	454.16	115.12	50.56	252.19	3.38
02:30:10	62.29	67.91	28.28	29.64	505.89	252.86	114.93	454.71	114.93	50.18	252.86	3.39
03:00:10	62.36	67.88	28.28	29.64	505.69	253.11	114.23	454.73	114.23	49.76	253.11	3.39
03:30:10	62.26	67.79	28.27	29.63	505.42	252.38	114.36	454.34	114.36	49.89	252.38	3.37
04:00:10	62.26	67.82	28.25	29.63	505.43	253.03	114.77	454.22	114.77	49.94	253.03	3.33
04:30:10	62.34	67.86	28.23	29.62	505.73	252.97	114.23	454.50	114.23	49.86	252.97	3.32
05:00:10	62.19	67.76	28.22	29.61	506.44	252.11	113.50	454.70	113.50	50.03	252.11	3.39
05:30:10	62.10	67.67	28.21	29.60	507.22	251.75	113.59	454.89	113.59	50.01	251.75	3.37
06:00:10	62.05	67.62	28.21	29.60	507.48	252.14	114.76	455.56	114.76	50.02	252.14	7.27
06:30:10	62.05	67.60	28.20	29.60	508.18	251.89	113.27	455.80	113.27	49.94	251.89	3.17
07:00:10	62.03	68.16	28.15	29.59	510.66	251.82	111.98	455.77	111.98	56.18	251.82	3.84
07:30:10	61.98	70.96	27.95	29.59	533.79	252.09	109.95	464.23	109.95	75.39	252.09	4.88
08:00:10	62.05	71.12	27.80	29.58	550.04	258.72	110.53	478.64	110.53	75.52	258.72	4.94
08:30:10	61.95	71.02	27.75	29.57	554.96	261.49	111.01	484.25	111.01	75.42	261.49	4.64
09:00:10	61.85	70.93	27.76	29.57	557.60	262.56	110.96	487.36	110.96	75.40	262.56	4.70
09:30:10	61.84	70.95	27.75	29.57	560.06	264.06	110.76	489.83	110.76	75.70	264.06	4.54
10:00:10	61.85	71.06	27.72	29.56	561.76	264.96	111.40	491.17	111.40	75.96	264.96	5.08
10:30:10	61.79	70.96	27.71	29.54	560.25	266.40	112.32	491.53	112.32	75.72	266.40	5.91
11:00:10	61.76	71.00	27.68	29.53	559.01	266.15	113.16	490.45	113.16	76.03	266.15	5.34
11:30:10	61.78	71.04	27.66	29.53	560.00	266.92	113.16	491.35	113.16	76.30	266.92	6.33
12:00:10	61.87	71.13	27.64	29.51	562.02	267.71	114.01	492.58	114.01	76.24	267.71	5.81
12:30:10	61.95	71.11	27.64	29.51	563.24	269.29	113.83	494.47	113.83	75.20	269.29	6.25
13:00:10	62.05	71.23	27.62	29.50	563.20	269.81	114.40	494.92	114.40	75.12	269.81	7.87
13:30:10	62.06	71.20	27.59	29.49	563.77	270.74	115.52	495.53	115.52	75.23	270.74	9.84
14:00:10	62.09	71.27	27.57	29.48	567.29	270.83	115.50	497.75	115.50	75.21	270.83	10.56
14:30:10	62.14	71.38	27.55	29.47	567.92	273.51	115.65	499.57	115.65	75.34	273.51	11.46
15:00:10	62.32	71.60	27.53	29.46	565.40	273.77	116.38	498.11	116.38	75.50	273.77	13.56
15:30:10	62.38	71.70	27.50	29.45	566.08	274.15	116.11	498.12	116.11	75.57	274.15	12.79
16:00:10	62.39	71.74	27.47	29.44	567.13	274.41	116.46	498.41	116.46	75.36	274.41	9.36
16:30:10	62.37	71.70	27.46	29.43	568.32	273.64	117.46	498.81	117.46	75.31	273.64	8.93

Plant Name: DUNK
General Average Report
Reporting Period: 10/12/1999 to 10/12/1999

Site Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:01
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/12/99	15:15	4.7	18516988.	282.6	11.5	101.6
	15:16	4.8	18566734.	282.6	11.5	101.6
	15:17	4.9	18587352.	282.6	11.5	101.6
	15:18	4.5	18527540.	282.6	11.4	101.7
	15:19	4.5	18485688.	282.6	11.4	101.5
	15:20	4.5	18460790.	282.7	11.4	101.3
	15:21	4.4	18428640.	282.7	11.4	101.4
	15:22	4.4	18430432.	282.9	11.4	101.5
	15:23	4.7	18458814.	282.9	11.4	101.4
	15:24	4.8	18472322.	282.9	11.4	101.4
	15:25	4.6	18483872.	282.9	11.4	101.4
	15:26	4.4	18409368.	282.9	11.4	101.5
	15:27	4.5	18340118.	282.9	11.5	101.5
	15:28	4.9	18322540.	282.9	11.4	101.6
	15:29	4.9	18333592.	282.9	11.4	101.6
	15:30	4.7	18384922.	282.9	11.5	101.7
	15:31	4.6	18454276.	283.0	11.5	101.4
	15:32	4.5	18458020.	283.1	11.4	101.0
	15:33	4.4	18475786.	283.1	11.3	101.0
	15:34	4.4	18479434.	283.1	11.3	101.2
	15:35	4.7	18455222.	283.1	11.4	101.4
	15:36	4.6	18373556.	283.1	11.5	101.6
	15:37	4.4	18407380.	283.1	11.5	101.5
	15:38	4.4	18367144.	283.1	11.5	101.5
	15:39	4.3	18360206.	283.1	11.4	101.5
	15:40	4.3	18422028.	283.1	11.4	101.4
	15:41	4.6	18489806.	283.1	11.4	101.5
	15:42	4.8	18424086.	283.1	11.4	101.4
	15:43	4.6	18368682.	283.2	11.5	101.4
	15:44	4.5	18423746.	283.2	11.5	101.4
	15:45	4.4	18491870.	282.9	11.5	101.5
	15:46	4.4	18487148.	282.9	11.5	101.5
	15:47	4.3	18547874.	282.9	11.5	101.5
	15:48	4.5	18542350.	282.9	11.5	101.5
	15:49	4.2	18501480.	282.9	11.5	101.5
	15:50	4.3	18372422.	282.9	11.5	101.5
	15:51	4.3	18278424.	283.1	11.5	101.4
	15:52	4.3	18271638.	283.1	11.5	101.4
	15:53	4.2	18323234.	283.1	11.5	101.5
	15:54	4.7	18362420.	283.1	11.5	101.5
	15:55	4.5	18385172.	282.9	11.5	101.5
	15:56	4.9	18330470.	282.9	11.5	101.7
	15:57	4.9	18297908.	283.1	11.4	101.8
	15:58	4.9	18348254.	283.1	11.4	101.9
	15:59	4.7	18350628.	283.1	11.4	101.7
	16:00	4.9	18403232.	283.1	11.4	101.6
	16:01	5.0	18395034.	283.2	11.4	101.4
	16:02	4.7	18441988.	283.2	11.4	101.0
	16:03	4.6	18437418.	283.6	11.4	100.8
	16:04	4.5	18419028.	283.5	11.3	101.0

Plant Name: DUNK
General Average Report
Reporting Period: 10/12/1999 to 10/12/1999

ite Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:01
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/12/99	16:05	4.5	18285122.	283.5	11.4	101.3
	16:06	4.4	18280668.	283.5	11.5	101.4
	16:07	4.6	18347670.	283.5	11.5	101.5
	16:08	4.6	18371130.	283.5	11.5	101.3
	16:09	4.4	18330426.	283.2	11.4	101.2
	16:10	4.8	18267858.	283.2	11.4	101.2
	16:11	4.6	18192202.	283.1	11.4	101.1
	16:12	4.8	18077700.	283.1	11.4	101.1
	16:13	4.7	18073440.	282.9	11.4	101.1
	16:14	4.4	18071964.	282.9	11.4	101.0
	16:15	4.6	18072856.	282.9	11.4	101.0
	16:16	4.5	17951388.	282.9	11.4	101.1
	16:17	4.5	17904770.	282.9	11.5	101.1
	16:18	4.7	17991136.	282.8	11.5	101.2
	16:19	4.9	18052796.	282.6	11.5	101.1
	16:20	4.6	18024722.	282.5	11.5	101.2
	16:21	4.4	17942724.	282.3	11.5	101.2
	16:22	4.5	17847638.	282.3	11.5	101.2
	16:23	4.5	17760056.	282.3	11.5	101.2
	16:24	4.7	17839046.	282.3	11.5	101.2
	16:25	5.0	17888402.	282.3	11.5	101.3
	16:26	4.7	17961084.	282.3	11.5	101.4
	16:27	4.6	18058540.	282.2	11.5	101.4
	16:28	4.5	18104882.	282.1	11.5	101.4
	16:29	4.4	18098588.	282.1	11.5	101.4
	16:30	4.4	18096102.	282.0	11.5	101.5
	16:31	4.7	18127338.	281.8	11.5	101.6
	16:32	4.7	18237844.	281.8	11.5	101.4
	16:33	4.4	18281864.	281.8	11.5	101.2
	16:34	4.5	18313076.	281.4	11.4	101.2
	16:35	4.4	18336992.	281.1	11.4	101.3
	16:36	4.4	18323124.	281.1	11.4	101.3
	16:37	4.6	18361000.	281.1	11.4	101.3
	16:38	4.9	18382970.	281.1	11.5	101.4
	16:39	4.8	18356380.	281.1	11.5	101.5
	16:40	4.6	18364484.	281.1	11.5	101.5
	16:41	4.6	18374874.	281.1	11.4	101.5
	16:42	4.4	18381686.	281.1	11.4	101.5
	16:43	4.4	18417404.	281.1	11.4	101.4
	16:44	4.4	18464242.	281.1	11.5	101.4
	16:45	4.4	18481644.	281.1	11.5	101.4
	16:46	4.4	18477568.	281.1	11.5	101.3
	16:47	4.5	18535040.	281.1	11.5	101.3
	16:48	4.6	18519282.	281.4	11.5	101.4
	16:49	5.0	18487092.	281.5	11.5	101.3
	16:50	4.6	18456070.	281.5	11.5	101.3
	16:51	4.8	18324084.	281.5	11.5	101.4
	16:52	4.9	18374464.	281.5	11.5	101.4
	16:53	4.7	18409372.	281.5	11.5	101.4
	16:54	4.6	18402406.	281.5	11.5	101.3

Plant Name: DUNK
General Average Report
Reporting Period: 10/12/1999 to 10/12/1999

Site Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:01
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/12/99	16:55	4.9	18367920.	281.5	11.5	101.4
	16:56	4.7	18355104.	281.1	11.5	101.3
	16:57	4.4	18350232.	281.1	11.5	101.4
	16:58	4.4	18316800.	281.1	11.5	101.4
	16:59	4.4	18399816.	281.1	11.5	101.4
	17:00	4.3	18462776.	281.1	11.5	101.4
	17:01	4.6	18470466.	281.1	11.5	101.6
	17:02	4.9	18464852.	281.5	11.5	101.7
	17:03	4.6	18453700.	281.5	11.5	101.4
	17:04	4.4	18448280.	281.5	11.5	101.1
	17:05	4.7	18406710.	281.5	11.4	101.0
	17:06	4.7	18445834.	281.5	11.3	101.2
	17:07	4.5	18447120.	281.5	11.4	101.3
	17:08	4.7	18505102.	281.5	11.5	101.4
	17:09	5.0	18536016.	281.5	11.5	101.4
	17:10	5.2	18550982.	281.5	11.5	101.7
	17:11	5.0	18442306.	281.6	11.4	101.9
	17:12	4.8	18429980.	281.8	11.5	101.7
	17:13	4.6	18478726.	281.8	11.5	101.5
	17:14	4.8	18508178.	281.8	11.4	101.3
	17:15	5.2	18520904.	282.0	11.3	101.2
	17:16	5.0	18488504.	282.3	11.3	101.1
	17:17	4.5	18373910.	282.4	11.4	101.1
	17:18	4.6	18210406.	282.6	11.4	101.2
	17:19	4.8	18209958.	282.6	11.5	101.4
	17:20	4.8	18243752.	282.7	11.5	101.5
	17:21	4.8	18284712.	282.7	11.5	101.5
	17:22	4.7	18321280.	282.7	11.4	101.5
	17:23	4.4	18337064.	282.5	11.4	101.6
	17:24	4.2	18364646.	282.3	11.4	101.5
	17:25	4.3	18418366.	282.3	11.4	101.6
	17:26	4.2	18476336.	282.3	11.4	101.8
	17:27	4.5	18506932.	282.2	11.4	101.9
	17:28	4.7	18600496.	282.2	11.4	101.8
	17:29	4.4	18630074.	282.1	11.5	101.4
	17:30	4.3	18671968.	282.1	11.5	100.9
	17:31	4.3	18685040.	281.9	11.4	100.9
	17:32	4.3	18718774.	281.8	11.3	101.1
	17:33	4.9	18730896.	281.8	11.5	101.6
	17:34	4.7	18733310.	281.8	11.6	101.7
	17:35	4.8	18723354.	281.6	11.6	101.8
	17:36	4.4	18677988.	281.5	11.5	101.9
	17:37	4.4	18456144.	281.7	11.5	101.7
	17:38	4.2	18423070.	281.8	11.5	101.6
	17:39	4.0	18481914.	281.8	11.5	101.5
	17:40	4.1	18500948.	281.8	11.4	101.4
	17:41	4.3	18505774.	281.8	11.4	101.3
	17:42	4.2	18535220.	281.8	11.5	101.3
	17:43	4.1	18539518.	281.8	11.5	101.3
	17:44	4.2	18522744.	281.8	11.5	101.4

Plant Name: DUNK
General Average Report
Reporting Period: 10/12/1999 to 10/12/1999

ite Name: DUNKIRK2
)ata Averaging Type: 1m

Time of Report: 10/13/99 16:01
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/12/99	17:45	5.0	18519206.	281.8	11.5	101.3
	17:46	4.7	18505282.	281.8	11.5	101.2
	17:47	5.0	18468954.	281.8	11.5	101.5
	17:48	4.7	18412626.	281.8	11.5	101.8
	17:49	4.6	18401860.	282.1	11.5	101.6
	17:50	4.8	18371380.	282.1	11.4	101.3
	17:51	4.8	18353374.	282.1	11.4	100.9
	17:52	4.6	18383212.	282.1	11.4	100.8
	17:53	4.4	18418178.	281.8	11.4	100.9
	17:54	4.6	18370066.	281.8	11.4	100.9
	17:55	4.7	18354590.	282.1	11.5	100.7
	17:56	4.9	18420006.	282.1	11.4	100.6
Average =		4.6	18376259.	282.3	11.4	101.4
Maximum =		5.2	18733310.	283.6	11.6	101.9
Minimum =		4.0	17760056.	281.1	11.3	100.6
Possible Values =		162	162	162	162	162
Included Values =		162	162	162	162	162
Total =		743.4	2976953922	45727.0	1854.8	16423.5

* - excluded values (missing, OOC, invalid, suspect)
- missing
- out-of-control
I - invalid
S - suspect
- invalid for state
- exceedance
F - stack not operating
R - invalid (PADER)
- missing data substituted
-999 - missing value
-888 - value could not be calculated

WDPF PC Logger Output File : @0000120.D01 Tue Oct 12 00:00:02 1999
WDPF PC Logger Collection Complete

Unit 2 Office Log
Pch 140 Daily Log 1

1 UNIT 2 NET MEGAWATTS
2 UNIT 2 HOUSE SERVICE MW
3 Unit 2 Gross Megawatts
4 Generator 2 Hydrogen Press.
5 COAL FLOW 21
6 COAL FLOW 22
7 COAL FLOW 23
8 COAL FLOW 24
9 Unit 2 Total Coal Flow (Inst)
10 Generator 2 Hydrogen Press.
11
12

HH:MM:SS	1 A20508 MW INTGLH	2 A2HSMW MW INTGLH	3 A20500 MW INTGLH	4 A20398 PSIG INTGLH	5 A220670 KIPS AVG	6 A220671 KIPS AVG	7 A220673 KIPS AVG	8 A220674 KIPS AVG	9 A2TOTFLO K lbs. AVG	10 A20398 PSIG AVG	11	12
01:00:00	68.85	4.37	73.24	15.29	17.74	16.15	15.64	5.23	54.79	15.29		
02:00:00	60.99	3.99	64.98	14.80	17.68	16.09	15.57	0.05	49.39	14.80		
03:00:00	61.11	3.99	65.09	14.52	17.74	16.14	15.63	0.05	49.56	14.52		
04:00:00	61.28	3.99	65.27	14.25	17.78	16.18	15.68	0.05	49.69	14.25		
05:00:00	62.18	4.03	66.22	14.01	18.06	16.46	15.96	0.05	50.53	14.01		
06:00:00	63.85	4.10	67.97	13.80	18.10	16.50	16.00	1.56	52.15	13.80		
07:00:00	92.95	5.23	98.19	13.75	19.84	18.24	17.75	18.97	74.80	13.75		
08:00:00	93.38	5.32	98.68	13.80	19.78	18.19	17.69	18.92	74.58	13.80		
09:00:00	93.67	5.28	98.95	15.74	19.83	18.24	17.73	18.96	74.76	15.74		
10:00:00	94.64	5.25	99.91	15.45	20.03	18.44	17.93	19.15	75.56	15.45		
11:00:00	95.43	5.25	100.69	15.20	20.20	18.61	18.10	19.32	76.24	15.20		
12:00:00	95.38	5.25	100.62	14.94	20.18	18.59	18.07	19.30	76.14	14.94		
13:00:00	95.56	5.27	100.82	14.69	20.16	18.58	18.06	19.28	76.09	14.69		
14:00:00	95.74	5.23	100.97	14.47	20.21	18.62	18.10	19.32	76.25	14.47		
15:00:00	95.84	5.24	101.07	14.24	20.25	18.67	18.15	19.37	76.44	14.24		
16:00:00	95.94	5.23	101.18	14.00	20.26	18.67	18.15	19.37	76.44	14.00		
17:00:00	95.98	5.22	101.20	13.78	20.29	18.71	18.19	19.40	76.58	13.78		
18:00:00	95.81	5.23	101.02	14.18	20.32	18.74	18.22	19.43	76.71	14.18		
19:00:00	95.84	5.25	101.06	14.10	20.25	18.67	18.15	19.37	76.43	14.10		
20:00:00	95.68	5.23	100.90	13.89	20.03	18.66	18.64	19.18	76.51	13.89		
21:00:00	95.65	5.24	100.89	13.66	19.52	18.68	18.63	18.69	75.51	13.66		
22:00:00	95.89	5.22	101.12	14.08	19.53	18.69	18.63	18.70	75.55	14.08		
23:00:00	96.27	5.21	101.48	15.64	19.68	18.84	18.79	18.85	76.15	15.64		
00:00:04	48.88	2.73	51.59	15.14	16.81	15.86	3.95	1.74	38.38	15.14		

T1

SUMMARY DATA

AVG	85.85	4.91	90.78	14.52	19.28	17.88	17.46	14.29	68.93	14.52		
SUM	2060.32	117.79	2178.73	348.54	462.66	429.12	419.13	343.05	1654.35	348.54		
MAX	96.69	5.33	101.90	15.92	20.35	18.88	18.82	19.51	76.94	15.92		
MIN	55.68	3.78	59.41	13.55	15.53	15.53	15.33	0.04	46.61	13.55		

#DPF PC Logger Output File : @0937120.D91 Tue Oct 12 09:37:33 1999
#DPF PC Logger Collection Complete

Unit 2 Mercury Testing Log
Save for Robert J Bombros

1 2 CIRC WTR INLET TEMP-LO SEL
2 2 CIRC WTR DISCH TEMP-LO SEL
3 Turbine 2 Condenser Vacuum
4 #1 Barometric Press.
5 21 Air Htr Gas Inlet Temp
6 21 Air Htr Gas Outlet Temp
7 FD FAN 21 AMBIENT TEMP
8 21 Air Htr Air Outlet Temp
9 FD FAN 21 AMBIENT TEMP
10 Unit 2 Total Coal Flow (Inst)
11 21 Air Htr Gas Outlet Temp
12 UNIT 2 OPACITY

HH:MM:SS	1 A2CWIT DegF AVG	2 A2CWDT DEGF AVG	3 A20364 IN.HG AVG	4 A1BAROM In Hg AVG	5 A2GT210 Deg F AVG	6 A2GT211 Deg F AVG	7 A220273 DEG.F AVG	8 A2AT211 Deg F AVG	9 A220273 DEG.F AVG	10 A2TOTFLO K lbs. AVG	11 A2GT211 Deg F AVG	12 A20PAC Pct AVG
10:07:30	63.06	72.13	28.17	29.84	562.26	269.99	117.24	486.45	117.24	76.31	269.99	10.27
10:37:30	63.12	72.16	28.16	29.84	563.57	272.30	118.13	488.54	118.13	76.15	272.30	10.58
11:07:30	63.14	72.15	28.17	29.84	563.81	272.88	119.18	489.30	119.18	76.21	272.88	6.94
11:37:30	63.33	72.28	28.16	29.83	566.40	273.94	120.21	491.30	120.21	76.16	273.94	5.60
12:07:30	63.32	72.34	28.14	29.83	567.29	274.64	120.69	492.58	120.69	76.19	274.64	4.69
12:37:30	63.26	72.29	28.14	29.83	567.75	275.98	121.00	493.74	121.00	76.02	275.98	4.54
13:07:30	63.23	72.21	28.12	29.82	567.77	275.68	121.51	493.71	121.51	76.16	275.68	4.36
13:37:30	63.28	72.37	28.10	29.80	568.67	275.57	122.12	494.05	122.12	76.26	275.57	4.15
14:07:30	63.29	72.48	28.08	29.79	568.93	276.34	122.86	494.79	122.86	76.29	276.34	4.22
14:37:30	63.50	72.69	28.04	29.78	567.46	276.49	123.20	494.01	123.20	76.31	276.49	4.53
15:07:30	63.63	72.78	28.01	29.76	564.24	277.68	123.32	492.11	123.32	76.61	277.68	4.61
15:37:30	63.73	72.83	27.99	29.75	562.88	276.65	123.68	490.66	123.68	76.41	276.65	4.55
16:07:30	63.86	72.94	27.97	29.74	562.55	276.56	124.34	490.15	124.34	76.56	276.56	4.61
16:37:30	64.10	73.18	27.94	29.73	560.50	276.29	124.61	489.18	124.61	76.58	276.29	4.53
17:07:30	64.15	73.22	27.92	29.73	558.83	276.05	124.87	487.70	124.87	76.53	276.05	4.51
17:37:30	64.37	73.39	27.90	29.72	557.84	275.09	125.06	486.54	125.06	76.75	275.09	4.55
18:07:30	64.78	73.94	27.86	29.71	557.83	274.34	124.50	486.57	124.50	76.68	274.34	4.56
18:37:30	65.33	74.55	27.83	29.71	558.36	274.95	123.51	486.87	123.51	76.49	274.95	4.59
19:07:30	65.73	74.93	27.80	29.71	556.13	274.62	123.74	485.90	123.74	76.37	274.62	4.75
19:37:30	65.71	74.87	27.79	29.70	557.06	273.84	123.99	485.70	123.99	76.59	273.84	4.49
20:07:30	65.99	75.24	27.77	29.70	558.05	271.87	123.97	490.68	123.97	76.08	271.87	4.20
20:37:30	65.76	74.95	27.77	29.69	558.07	271.72	123.84	491.72	123.84	75.58	271.72	4.35
21:07:30	65.41	74.58	27.76	29.69	558.04	271.44	121.67	491.76	121.67	75.47	271.44	4.30
21:37:30	65.30	74.51	27.75	29.68	557.91	269.84	115.83	491.47	115.83	75.40	269.84	4.27
22:07:30	64.34	73.49	27.78	29.67	556.89	268.18	113.53	490.32	113.53	75.88	268.18	4.31
22:37:30	63.78	72.98	27.79	29.65	557.44	266.10	113.04	489.50	113.04	76.21	266.10	4.47
23:07:30	63.29	72.48	27.81	29.65	558.08	265.45	112.60	490.01	112.60	74.68	265.45	4.51
23:37:30	62.59	66.41	28.43	29.65	546.36	275.73	116.38	484.58	116.38	33.60	275.73	5.14
00:00:18	62.61	65.83	28.50	29.65	518.01	276.06	117.96	475.19	117.96	34.08	276.06	7.35
SUMMARY DATA												
AVG	64.06	72.77	27.99	29.74	558.50	273.74	120.67	488.81	120.67	72.74	273.74	4.99
MAX	66.65	75.72	28.56	29.84	568.95	285.35	125.57	494.73	125.57	76.87	285.35	11.07
MIN	62.61	65.06	27.74	29.64	503.52	264.65	111.01	466.21	111.01	28.13	264.65	3.50

WDPF PC Logger Output File : @0937120.D90 Tue Oct 12 09:37:31 1999
WDPF PC Logger Collection Complete

Unit 2 Mercury Testing Log
Save for Robert J Bombros

1 Unit 2 Gross Megawatts
2 UNIT 2 HOUSE SERVICE MVAR
3 UNIT 2 NET MEGAWATTS
4 2- SUPERHEAT OUTLET SEL. XMTR
5 SELECTED THROTTLE PRESS XMTR
6 2-HP TURB 1ST STG SHELL PRESS
7 2- AVERAGE REHEAT OUTLET TEMP.
8 2-COLD REHEAT EAST PRESS
9 2- TOTAL COMP. STEAM FLOW
10 FW Lvg 21-7 Htr Temp
11 2-FLOW TO HP ATTEMP
12 2-FLOW TO LP ATTEMP

HH:MM:SS	1 A20500 MW AVG	2 A2HSMV MVAR AVG	3 A20508 MW AVG	4 0024Z052 DEG AVG	5 0025Z052 PSIG AVG	6 A21200 PSIA AVG	7 0024X242 DEG_F AVG	8 A21201 PSIA AVG	9 0024X037 KPPH AVG	10 A20479 Deg.F AVG	11 A220421 K LBS AVG	12 A220422 K LBS AVG
10:07:30	100.94	3.55	95.66	999.05	1450.28	1015.58	1000.33	424.27	700.42	421.49	27.48	0.00
10:37:30	100.74	3.56	95.47	997.79	1450.31	1016.08	994.58	424.07	701.00	421.00	24.71	0.00
11:07:30	100.64	3.55	95.40	1000.93	1450.08	1015.00	995.58	423.37	699.56	421.01	23.56	0.00
11:37:30	100.46	3.55	95.21	1000.52	1449.68	1013.33	995.02	422.71	698.27	420.79	24.25	0.00
12:07:30	100.79	3.56	95.55	1001.45	1449.84	1014.80	1000.85	423.95	698.84	421.19	27.35	0.00
12:37:30	100.69	3.57	95.41	999.29	1449.89	1015.29	996.81	423.84	699.88	421.29	26.67	0.00
13:07:30	101.00	3.55	95.74	1000.73	1449.75	1016.54	1001.14	424.79	700.33	421.10	28.15	0.00
13:37:30	100.95	3.54	95.74	999.88	1449.63	1016.37	1000.18	424.72	700.59	421.36	27.90	0.00
14:07:30	100.95	3.55	95.73	999.47	1449.69	1017.10	998.70	424.86	701.23	421.16	27.17	0.00
14:37:30	101.11	3.55	95.89	1000.89	1449.93	1017.65	1001.14	425.27	701.09	421.68	28.24	0.00
15:07:30	101.06	3.55	95.81	999.80	1449.21	1017.43	999.16	425.24	701.26	421.20	28.81	0.00
15:37:30	101.21	3.54	95.97	1000.08	1450.03	1017.96	1001.05	425.75	701.39	421.49	28.97	0.00
16:07:30	101.12	3.54	95.89	999.66	1449.41	1017.62	1000.16	425.61	701.24	421.35	28.35	0.00
16:37:30	101.21	3.54	95.99	999.74	1449.77	1018.02	1000.83	425.87	701.37	421.29	27.94	0.00
17:07:30	101.19	3.54	95.96	998.73	1450.18	1018.47	999.58	425.86	701.86	421.46	26.58	0.00
17:37:30	100.97	3.54	95.76	1001.24	1449.12	1016.97	999.37	424.82	700.41	421.32	26.06	0.00
18:07:30	101.10	3.54	95.89	999.83	1449.98	1017.91	1000.32	425.55	701.24	421.37	27.15	0.00
18:37:30	101.21	3.55	95.99	998.88	1450.47	1018.25	1002.96	426.15	701.72	421.42	26.30	0.00
19:07:30	100.82	3.55	95.60	998.25	1449.81	1017.63	996.60	424.93	701.65	420.89	20.84	0.00
19:37:30	100.90	3.53	95.68	1000.85	1449.69	1017.44	1000.37	424.85	700.82	421.22	21.74	0.00
20:07:30	100.84	3.54	95.63	1000.00	1451.12	1016.64	1000.13	424.69	700.40	421.37	22.18	0.00
20:37:30	100.95	3.56	95.72	999.95	1451.93	1016.53	1002.49	424.82	700.16	421.13	22.15	0.00
21:07:30	101.01	3.59	95.73	999.57	1450.43	1017.78	1000.99	425.09	701.13	421.43	21.17	0.00
21:37:30	101.18	3.58	95.95	998.83	1450.17	1019.98	1000.19	426.05	702.86	421.54	20.37	0.00
22:07:30	101.10	3.56	95.88	1001.04	1448.31	1021.16	996.12	425.75	703.40	421.20	19.10	0.00
22:37:30	101.52	3.57	96.29	1000.98	1449.26	1022.45	1000.77	427.02	704.07	421.96	22.90	0.00
23:07:30	100.85	3.56	95.70	1000.24	1449.54	1013.63	1001.20	424.06	698.22	421.48	23.12	0.00
23:37:30	46.67	1.78	44.43	979.02	1092.65	454.25	950.14	194.04	314.12F	359.56	9.75	0.00
00:00:16	42.36	2.22	39.82	959.57	1394.04	424.26	905.25	178.86	295.69	348.10	3.09	0.00
SUMMARY DATA												
AVG	96.46	3.40	91.52	996.99	1446.10	969.96	992.59	405.80	668.81	416.20	22.97	0.00
MAX	101.46	3.61	96.26	1002.82	1454.74	1022.46	1003.03	427.19	704.90	422.55	28.68	0.00
MIN	32.60	-0.00	32.93	949.16	1346.83	325.74	902.84	140.32	229.09	334.03	2.10	0.00

e... Pr...pita... Re...t - ...s 1 ...

10-12-97 – RUN 1

End ___ ___

Unit 2

	16:30					17:00					17:30					18:00					18:30				
	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1
	170	280	OUT T	200	290	170	270	–	200	295	180	280	–	200	290	185	280	–	200	290	170	270	–	200	290
	52	70	OUT	100	160	53	70	–	100	160	53	68	–	100	160	53	68	–	100	160	53	70	–	100	160
	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2
	270	270	270	265	285	270	272	270	265	285	280	280	270	265	285	280	270	270	270	285	275	265	270	270	285
	40	60	95	115	145	40	60	95	115	145	40	60	95	115	145	40	60	95	115	145	43	60	90	115	145
	Opacity			%	R__	Opacity		%		R__	Opacity			%	R__	Opacity			%	R__	Opacity			%	R__

Unit 2

	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1	A1	B1	C1	D1	E1
	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2	A2	B2	C2	D2	E2
	Opacity			%	R__	Opacity		%		R__	Opacity			%	R__	Opacity			%	R__	Opacity			%	R__

...te: Indicate if on other than auto control U = swinging short X = shorted field H = hold out tag M = manual mode R = rapper check

...eck Nuva feeder recorder daily - if *card full* message is showing, stop recording and remove card for data unloading.

Plant Name: DUNK
General Average Report
Reporting Period: 10/13/1999 to 10/13/1999

Site Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:05
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/13/99	08:00	4.3	17572408.	266.6	11.1	100.7
	08:01	4.3	17541164.	266.9	11.1	100.7
	08:02	4.4	17452854.	267.0	11.1	100.7
	08:03	4.6	17324828.	267.2	11.1	100.6
	08:04	4.4	17351862.	267.2	11.1	100.6
	08:05	4.3	17418444.	267.2	11.1	100.6
	08:06	4.2	17476016.	267.2	11.1	100.6
	08:07	4.7	17588874.	267.1	11.1	100.6
	08:08	4.6	17482284.	267.0	11.1	100.6
	08:09	4.8	17393158.	267.2	11.1	100.7
	08:10	4.7	17320896.	267.2	11.2	100.6
	08:11	4.6	17232414.	267.5	11.2	100.7
	08:12	4.4	17228098.	267.5	11.2	100.7
	08:13	4.4	17233638.	267.5	11.1	100.6
	08:14	4.4	17204006.	267.5	11.1	100.7
	08:15	4.3	17108014.	267.5	11.1	100.7
	08:16	4.6	17071966.	267.5	11.2	100.7
	08:17	4.6	17047820.	267.6	11.2	100.7
	08:18	4.3	17095008.	267.6	11.2	100.6
	08:19	4.3	17149150.	267.6	11.1	100.6
	08:20	4.4	17225402.	267.7	11.1	100.7
	08:21	4.8	17261936.	268.0	11.1	100.7
	08:22	5.0	17281836.	268.1	11.1	100.7
	08:23	4.9	17270886.	268.4	11.1	101.2
	08:24	4.7	17307960.	268.3	11.1	101.6
	08:25	4.6	17341234.	268.0	11.1	101.5
	08:26	4.6	17464304.	268.0	11.1	101.7
	08:27	4.9	17604930.	268.0	11.2	101.6
	08:28	4.9	17700740.	268.1	11.2	101.6
	08:29	4.5	17764490.	268.4	11.2	101.6
	08:30	4.7	17820656.	268.4	11.2	101.6
	08:31	5.0	17857902.	268.4	11.1	101.5
	08:32	4.7	17861510.	268.4	11.1	101.6
	08:33	4.8	17740912.	268.4	11.2	101.7
	08:34	5.1	17647538.	268.4	11.2	101.7
	08:35	5.2	17615198.	268.4	11.2	101.7
	08:36	4.8	17632612.	268.4	11.2	101.7
	08:37	4.8	17673080.	268.4	11.1	101.7
	08:38	4.8	17723728.	268.4	11.1	101.6
	08:39	4.8	17792198.	268.4	11.2	101.7
	08:40	5.3	17815792.	268.2	11.2	101.8
	08:41	5.0	17880468.	268.0	11.2	101.9
	08:42	4.7	17962154.	268.0	11.2	101.7
	08:43	4.6	18012148.	268.0	11.1	101.5
	08:44	4.7	18062826.	268.0	11.1	101.5
	08:45	4.6	18100892.	268.0	11.1	101.6
	08:46	4.5	18173856.	267.8	11.2	101.6
	08:47	5.0	18227816.	267.7	11.2	101.6
	08:48	4.7	18273506.	267.7	11.2	101.7
	08:49	4.9	18296440.	267.7	11.1	101.7

Plant Name: DUNK
General Average Report
Reporting Period: 10/13/1999 to 10/13/1999

ite Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:05
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/13/99	08:50	4.8	18305020.	267.9	11.2	101.7
	08:51	4.8	18312164.	268.0	11.2	101.6
	08:52	4.8	18255270.	268.3	11.2	101.5
	08:53	5.2	18191066.	268.4	11.1	101.5
	08:54	5.7	18166564.	269.0	11.1	101.6
	08:55	6.2	18155256.	269.2	11.2	101.7
	08:56	7.6	18141122.	269.4	11.2	101.8
	08:57	6.3	18002346.	269.5	11.3	102.0
	08:58	5.0	17768410.	269.7	11.3	102.4
	08:59	5.0	17658720.	269.8	11.3	102.2
	09:00	5.8	17613308.	270.1	11.3	102.0
	09:01	5.0	17618890.	270.2	11.1	101.8
	09:02	4.7	17587776.	270.3	11.1	101.6
	09:03	4.8	17575614.	270.3	11.0	101.2
	09:04	4.7	17612716.	270.8	11.1	100.8
	09:05	4.8	17629284.	270.9	11.1	100.6
	09:06	5.3	17688742.	271.0	11.1	100.5
	09:07	6.3	17717522.	271.0	11.2	100.5
	09:08	6.5	17555120.	270.9	11.2	100.5
	09:09	8.5	17432528.	270.9	11.2	100.4
	09:10	6.4	17345158.	270.9	11.3	100.4
	09:11	6.8	17387742.	270.9	11.3	100.4
	09:12	8.1	17503758.	270.6	11.3	100.5
	09:13	7.9	17547372.	270.5	11.3	100.6
	09:14	8.2	17604836.	270.3	11.3	100.6
	09:15	8.0	17672732.	270.3	11.3	100.5
	09:16	5.9	17768406.	270.3	11.3	100.5
	09:17	5.7	17671318.	270.3	11.3	100.5
	09:18	5.2	17666944.	270.2	11.2	100.7
	09:19	5.2	17779596.	270.1	11.2	100.7
	09:20	5.7	17816872.	269.8	11.3	100.6
	09:21	5.1	17863194.	269.8	11.2	100.6
	09:22	5.0	17932878.	269.8	11.2	100.6
	09:23	5.1	17664022.	269.7	11.2	100.6
	09:24	5.9	17583374.	269.5	11.3	100.7
	09:25	5.4	17640266.	269.4	11.2	100.7
	09:26	5.3	17705378.	269.2	11.2	100.7
	09:27	5.0	17772272.	269.1	11.2	100.7
	09:28	5.7	17814266.	268.9	11.2	100.7
	09:29	5.7	17848820.	268.9	11.2	100.8
	09:30	5.5	17847538.	268.9	11.2	100.7
	09:31	5.5	17856172.	269.0	11.3	100.9
	09:32	5.2	17922808.	269.2	11.2	100.9
	09:33	4.6	17984854.	269.2	11.2	100.8
	09:34	5.0	18031180.	269.2	11.2	101.4
	09:35	5.1	18036922.	269.3	11.2	101.2
	09:36	5.0	18029216.	269.5	11.2	101.0
	09:37	6.6	18097860.	269.5	11.3	101.2
	09:38	5.9	18098986.	269.5	11.3	101.3
	09:39	5.1	18158708.	269.5	11.3	101.4

Plant Name: DUNK
General Average Report
Reporting Period: 10/13/1999 to 10/13/1999

Site Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:05
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/13/99	09:40	5.2	18130106.	269.5	11.3	101.3
	09:41	5.5	18100870.	269.5	11.3	101.4
	09:42	5.9	18087892.	269.5	11.2	101.3
	09:43	5.5	18092366.	269.5	11.3	101.1
	09:44	5.0	18092430.	269.5	11.2	100.9
	09:45	5.1	18085768.	269.5	11.2	100.9
	09:46	5.1	18044000.	269.5	11.1	101.0
	09:47	5.4	18052026.	269.5	11.2	101.2
	09:48	6.2	18102080.	269.5	11.2	101.3
	09:49	5.9	18209372.	269.5	11.3	101.6
	09:50	5.6	18221512.	269.5	11.3	101.7
	09:51	5.1	18194830.	269.5	11.3	101.7
	09:52	5.1	18203734.	269.5	11.2	101.6
	09:53	5.2	18243644.	269.7	11.2	101.3
	09:54	5.7	18255188.	269.8	11.1	101.2
	09:55	5.4	18317820.	270.5	11.1	100.9
	09:56	4.9	18336108.	270.6	11.2	100.8
	09:57	5.2	18337586.	270.9	11.1	100.8
	09:58	5.0	18351810.	271.0	11.1	100.8
	09:59	5.3	18345748.	271.1	11.1	100.9
	10:00	5.9	18387010.	271.1	11.2	101.1
	10:01	6.4	18380218.	271.0	11.2	101.1
	10:02	5.5	18179382.	271.0	11.2	101.1
	10:03	5.3	18137762.	271.4	11.2	101.1
	10:04	5.5	18116354.	271.4	11.2	101.1
	10:05	5.7	18160212.	271.4	11.2	101.1
	10:06	5.1	18254434.	271.4	11.2	101.1
	10:07	5.7	18326840.	271.0	11.3	101.1
	10:08	6.4	18292870.	270.9	11.3	101.0
	10:09	6.6	18292530.	270.9	11.3	101.0
	10:10	5.5	18314026.	270.9	11.2	101.1
	10:11	6.2	18331918.	271.0	11.3	101.1
	10:12	6.6	18351290.	271.0	11.3	101.2
	10:13	6.3	18340604.	270.9	11.3	101.1
	10:14	8.3	18244132.	270.9	11.2	100.9
	10:15	6.5	18056988.	270.9	11.2	100.9
	10:16	6.6	17920488.	270.9	11.2	100.9
	10:17	9.3	17820906.	270.9	11.3	101.1
	10:18	8.3	17785254.	270.8	11.2	101.2
	10:19	9.0	17694968.	270.6	11.3	101.5
	10:20	6.5	17645210.	270.7	11.3	101.5
	10:21	6.4	17611510.	270.9	11.3	101.4
	10:22	5.4	17651036.	270.8	11.2	101.4
	10:23	5.5	17667456.	270.6	11.2	101.5
	10:24	7.3	17745044.	270.6	11.2	101.4
	10:25	6.0	17801998.	270.6	11.2	101.4
	10:26	6.7	17811848.	270.6	11.2	101.4
	10:27	6.6	17863032.	270.6	11.2	101.5
	10:28	5.4	17953104.	270.6	11.3	101.5
	10:29	5.2	17961444.	270.6	11.3	101.4

Plant Name: DUNK
General Average Report
Reporting Period: 10/13/1999 to 10/13/1999

Site Name: DUNKIRK2
Data Averaging Type: 1m

Time of Report: 10/13/99 16:05
Rolling Average Interval: 1

Date	Time	OPAC (percent)	FLOW (scfh)	TEMP (DegF)	CO2 (percent)	MW (MW)
10/13/99	10:30	5.3	17976030.	270.8	11.3	101.4
	10:31	5.6	18022146.	271.0	11.2	101.5
	10:32	8.3	18084954.	271.0	11.3	101.6
	10:33	5.6	18095732.	271.1	11.3	101.5
	10:34	5.4	18088550.	271.1	11.3	101.4
	10:35	5.4	18123076.	271.1	11.3	101.4
	10:36	5.5	18116194.	271.1	11.3	101.4
	10:37	5.9	18100228.	271.1	11.3	101.4
	10:38	7.8	18092386.	271.1	11.3	101.5
	10:39	6.2	18093700.	271.1	11.3	101.6
	10:40	5.8	18133208.	271.1	11.3	101.5
Average =		5.5	17845712.	269.4	11.2	101.2
Maximum =		9.3	18387010.	271.4	11.3	102.4
Minimum =		4.2	17047820.	266.6	11.0	100.4
Possible Values =		161	161	161	161	161
Included Values =		161	161	161	161	161
Total =		885.2	2873159700	43381.2	1803.7	16286.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
I - out-of-control
I - invalid
S - suspect
V - invalid for state
H - exceedance
F - stack not operating
B - invalid (PADER)
J - missing data substituted
-999 - missing value
-888 - value could not be calculated

SUMMARY OF RESULTS CALCULATIONS

$$Vm\,(std) = 17.647 \times Vm \times \left[\frac{P_{bar} + \frac{DH}{13.6}}{(460 + Tm)}\right] \times Y$$

$$Vw\,(std) = 0.0471 \times Vlc$$

Vlc = water + silica net

$$Bws = \left[\frac{Vw\,(std)}{Vw\,(std) + Vm\,(std)}\right]$$

$$Md = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + [0.28 \times (100 - \%CO_2 - \%O_2)]$$

$$MS = Md \times (1 - Bws) + (18 \times Bws)$$

$$Vs = \sqrt{\frac{(Ts + 460)}{Ms \times Ps}} \times \sqrt{DP} \times Cp \times 85.49$$

Cp = pitot tube correction factor
Ps = absolute flue gas pressure
Ms = molecular weight of gas (lb/lb mole)
Md = dry molecular weight of gas (lb/lb mole)
Bws = water vapor in gas stream proportion by volume

$$Acfm = Vs \times Area\,(of\ stack\ or\ duct) \times 60$$

$$Dscfm = Acfm \times 17.647 \times \left[\frac{Ps}{(460 + Ts)}\right] \times (1 - Bws)$$

$$Scfm = Acfm \times 17.647 \times \left[\frac{Ps}{(460 + Ts)}\right]$$

$$Scfh = Scfm \times 60\frac{min}{hr}$$

©Mostardi-Platt Associates, Inc.

NOMENCLATURE

A = Cross-sectional area of stack or duct, ft^2

A_n = Cross-sectional area of nozzle, ft^2

B_{ws} = Water vapor in gas stream, proportion by volume

C_a = Acetone blank residue concentration, g/g

C_{acf} = Concentration of particulate matter in gas stream at actual conditions, gr/acf

C_p = Pitot tube coefficient, dimensionless

C_s = Concentration of particulate matter in gas stream, dry basis, corrected to standard conditions, gr/dscf

IKV = Isokinetic sampling variance, must be $.90 \leq IKV \leq 1.10$

M_d = Dry molecular weight of gas, lb/lb-mole

m_n = Total amount of particulate matter collected, grams

M_s = Molecular weight of gas, wet basis, lb/lb-mole

M_w = Molecular weight of water, 18.0 lb/lb-mole

m_a = Mass of residue of acetone after evaporation, grams

P_{bar} = Barometric pressure at testing site, in. Hg

P_g = Static pressure of gas, in. Hg (in. H_2O/13.6)

P_s = Absolute pressure of gas, in. Hg = $P_{bar} + P_g$

P_{std} = Standard absolute pressure, 29.92 in. Hg

Q_{acfm} = Actual volumetric gas flow rate, acfm

Q_{sd} = Dry volumetric gas flow rate corrected to standard conditions, dscf/hr

R = Ideal gas constant, 21.85 in. Hg-ft^3/°R-lb-mole

T_m = Absolute dry gas meter temperature, °R

T_s = Absolute gas temperature, °R

T_{std} = Standard absolute temperature, 528°R

V_a = Volume of acetone blank, ml

V_{aw} = Volume of acetone used in wash, ml

V_{lc} = Total volume of liquid collected in impingers and silica gel, ml

V_m = Volume of gas sample as measured by dry gas meter, dcf

$V_{m(std)}$ = Volume of gas sample measured by dry gas meter, corrected to standard conditions, dscf

v_s = Gas velocity, ft/sec

$V_{w(std)}$ = Volume of water vapor in gas sample, corrected to standard conditions, scf

W_a = Weight of residue in acetone wash, grams

Y = Dry gas meter calibration factor

ΔH = Average pressure differential across the orifice meter, in. H_2O

Δp = Velocity head of gas, in. H_2O

ρ_a = Density of acetone, 0.7855 g/ml (average)

ρ_w = Density of water, 0.002201 lb/ml

θ = Total sampling time, minutes

K_1 = 17.64 °R/in. Hg

K_2 = 0.04707 ft^3/ml

K_4 = 0.09450/100 = 0.000945

K_p = Pitot tube constant, $85.49 \frac{ft}{sec}\left[\frac{(lb/lb-mole)(in.Hg)}{(°R)(in.H_2O)}\right]^{1/2}$

%EA = Percent excess air

$\%CO_2$ = Percent carbon dioxide by volume, dry basis

$\%O_2$ = Percent oxygen by volume, dry basis

%CO = Percent carbon monoxide by volume, dry basis

$\%N_2$ = Percent nitrogen by volume, dry basis

0.264 = Ratio of O_2 to N_2 in air, v/v

0.28 = Molecular weight of N_2 or CO, divided by 100

0.32 = Molecular weight of O_2 divided by 100

0.44 = Molecular weight of CO_2 divided by 100

13.6 = Specific gravity of mercury (Hg)

© Mostardi-Platt Associates, Inc.

CALCULATION FORMULAS

1. $$V_{m(std)} = V_m Y \left(\frac{T_{std}}{T_m}\right)\left(\frac{P_{bar} + \frac{\Delta H}{13.6}}{P_{std}}\right) = K_1 V_m Y \frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}$$

2. $$V_{w(std)} = V_{lc}\left(\frac{\rho_w}{M_w}\right)\left(\frac{RT_{std}}{P_{std}}\right) = K_2 V_{lc}$$

3. $$B_{ws} = \frac{V_{w(std)}}{V_{m(std)} + V_{w(std)}}$$

4a. $$C_a = \frac{m_a}{V_a \rho_a}$$

4b. $$W_a = C_a V_{aw} \rho_a$$

5. $$C_S = (15.43 \text{ grains/gram})\,(m_n / V_{m(std)})$$

6. $$C_{acf} = 15.43 K_i \left(\frac{m_n P_s}{V_{w(std)} + V_{m(std)}\, T_s}\right)$$

7. $$\%EA = \left(\frac{\%O_2 - (0.5\,\%CO}{0.264\,\%N_2 - (\%O_2 - 0.5\,\%CO)}\right) \times 100$$

8. $$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$

9. $$M_s = M_d(1 - B_{ws}) + 18.0 B_{ws}$$

10. $$v_s = K_p C_p \sqrt{\frac{\Delta P\, T_s}{P_s M_s}}$$

11. $$Q_{acfm} = v_s A(60_{sec/min})$$

12. $$Q_{sd} = (3600_{sec/hr})(1 - B_{ws})\, v_s \left(\frac{T_{std} P_s}{T_s P_{std}}\right) A$$

13. $$E \text{ (emission rate, lbs/hr)} = Q_{std}\left(C_s / 7000 \text{ grains/lb}\right)$$

14. $$IKV = \frac{T_s V_{m(std)} P_{std}}{T_{std} v_s \theta A_n P_s 60(1 - B_{ws})} = K_4 \frac{T_s V_{m(std)}}{P_s v_s A_n \theta (1 - B_{ws})}$$

© Mostardi-Platt Associates, Inc.

MERCURY CALCULATIONS

Determination of Speciated Mercury

Concentration

$$\frac{\text{ug of Mercury detected} \times \frac{10^{-6}\text{g}}{\text{ug}}}{453.6\,\text{g/lb}} = \text{lbs Mercury/sample}$$

$$\frac{\text{lbs Mercury/sample}}{\text{Vm(std)}} = \text{lbs Mercury/dscf}$$

Emission Rates

$$\text{lbs Mercury/hr} = \text{lbs/dscf} \times \text{dscf/min} \times 60\ \text{min/hr}$$

$$\text{lbs Mercury}/10^{12}\,\text{Btu} = \text{lbs/dscf} \times F_d\,\text{Factor}\left(\text{dscf}/10^{6}\,\text{Btu}\right) \times \frac{20.9\%}{20.9\% - O_2\%} \times 10^{6}$$

Mercury Fractions

Elemental Mercury Catch -- mercury collected in the acidified hydrogen peroxide (HNO_3-H_2O_2) and potassium permanganate (H_2SO_4-$KMnO_4$) impinger solutions.

Oxidized Mercury Catch – mercury collected in the aqueous potassium chloride (KCl) impinger solution.

Particle-bound Mercury Catch – mercury associated with the particulate matter collected in the front half of the sampling train.

Determination of Mercury Available from Coal

$$\text{lbs Mercury/hr} = \frac{\text{ug Mercury}}{\text{g Coal}}(\text{dry}) \times \frac{10^{-6}\text{g}}{\text{ug}} \times \frac{\text{lbs Coal (wet)}}{\text{hr}} \times (1 - B_{ws})\,\text{moisture corr.}$$

$$\text{lbs Mercury}/10^{12}\,\text{Btu} = \frac{\text{lbs Mercury}}{\text{hr}} \div \frac{10^{12}\,\text{Btu}}{\text{hr}}$$

© Mostardi-Platt Associates, Inc.

EMISSION RATE CALCULATIONS

A pollutant emission rate (E), expressed as pounds of pollutant per million Btu heat input from the fuel combusted can be calculated by several methods as follows:

1. $C = C_s/7000$ where, C = pollutant concentration, lb/dscf
   c_s = pollutant concentration, grains/dscf

2. If fuel flow is monitored and the fuel combusted during the test is sampled and analyzed for gross calorific value, then:

$$E = \frac{Q_{sd} C}{\text{fuel flow rate (lb / hr) GCV}} \times 10^6$$

where, E = lbs per million Btu
GCV = gross calorific value, Btu / lb
Q_{sd} = dry volumetric gas flow at standard conditions, dscf / hr

3. If an integrated gas sample is taken during the test and analyzed for $\%CO_2$ or $\%O_2$, dry basis by volume, with an Orsat gas analyzer, then

$$E = C F_c \frac{100}{(\%CO_2)} \text{ or, } E = C F \frac{20.9}{(20.9 - \%O_2)} \text{ where,}$$

$\%CO_2$ and $\%O_2$ are expressed as percent; and, for example, for subbituminous and bituminous coals:

F_c = a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted, 1800 scf CO_2/million Btu.

F = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted, 9780 dscf/million Btu.

4. If fuel sample increments are taken and composited during the test and an ultimate analysis is performed and the GCV is determined, then

$$F_c = \frac{321 \times 10^3 (\%C)}{GCV}$$ where, %C = carbon content by weight expressed as percent

$$F = \frac{[3.64\ (\%H) + 1.53\ (\%C) + 0.57\ (\%S) + 0.14\ (\%N) - 0.46\ (\%O_2)]}{GVC} \times 10^6$$

where, H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent) respectively.

5. If fuels other than subbituminous and bituminous coals are fired, other F-factors than those above will apply; and, if combinations of different fuels are fired, the F-factors must be prorated according to the fraction of the total heat input derived from each type of fuel.

© Mostardi-Platt Associates, Inc.

MOSTARDI-PLATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 1

COMPANY: NRG
PLANT: DUNKIRK UNIT 2
TEST LOCATION: INLET EAST
CLIENT: NGR
OPERATOR: JMB
DATE: 10/12/99
CONTROL BOX: E-15 POT. NO.: E-15
METER NO.: E-13
METER CALIBRATION FACTOR: 1.009
PITOT ID NO.: 544A
PITOT TUBE COEFFICIENT: 0.836
PORT LENGTH: 7 in.
PORT SIZE: 4 in.
PORT TYPE: NIPPLE

IMPINGER H_2O / SILICA GEL:
FINAL: 4788.0 ml/gm FINAL WT: 727.2 gm
INITIAL: 4709.1 ml/gm INITIAL WT: 715.7 gm
GAIN: 78.9 ml/gm WT. GAIN: 11.5 gm
TOTAL H_2O COLLECTED: 90.4 gm
DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY: JW
SILICA GEL WEIGHED BY: JW

COMMENTS & NOTES

THIMBLE NO: 046 TARE WT: 33598
FILTER NO: TARE WT:
BAROMETRIC PRESSURE in. Hg: 29.86
FLUE PRESSURE in. H_2O: -11.0
FLUE PRESSURE in. Hg ABS: 29.05
PROBE LENGTH: 5 ft.
PROBE LINER MATERIAL: GLASS
NOZZLE IDENTIFICATION NO: No 1 Set #2
CALIBRATED NOZZLE DIAMETER: 0.196
LEAK CHECK: PRE: 0.00 POST: 0.00 @ 15/16 in. Hg
DUCT SHAPE: Rect DIAMETER:
DUCT AREA: 73.96 sq. ft. L 4.7083' W 15.7083'
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 150 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 30
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 13.9 13.9 13.9
O_2: 5.1 5.1 5.1

PITOT LEAK CHECK: PRE ✓ POST
ΔH@
SAMPLES REMOVED FROM SITE BY: JMB

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F_d = 9,780 F_c = 1,800 Other = _____
Circle to indicate "Yes" or add other value if not given.

© Mostardi-Platt Associates, Inc.

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG / NIAGARA MOHAWK
TEST RUN NO. 1
TEST LOCATION UNIT 2 INLET EAST

DATE 10/12/99 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	Orifice (H) in. H_2O (0.68)	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	Meter Rate cfm (0.48)	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
1-1	0.80	0.894	1620	27.75	0.51	571	69	69	0.41	2.0		230	230	Full
2	0.68	0.825	1625	29.90	0.44	573	69	69	0.37		29.80	230	230	
3	0.75	0.866	1630	31.70	0.48	576	70	69	0.39		31.65	240	231	Ice
4	0.63	0.794	1635	33.70	0.39	576	71	70	0.36		33.60	244	231	
5	0.73	0.854	1640	35.55	0.45	573	72	70	0.38		35.40	243	230	
	(-0.0)		1645	37.40							37.30			
2-1	0.46	0.678	1646	37.60	0.29	568	73	70	0.30	3.0		243	230	
2	0.53	0.728	1651	39.10	0.33	575	74	71	0.33		39.00	242	230	
3	0.55	0.742	1656	40.65	0.36	576	75	71	0.34		40.65	243	231	
4	0.72	0.849	1701	42.30	0.45	575	76	72	0.38		42.35	243	231	
5	0.70	0.837	1706	44.20	0.43	576	77	73	0.37		44.25	243	231	
	(-0.27)		1711	46.00							46.10			
3-1	0.20	0.447	1713	46.27	0.12	566	77	73	0.20	3.0		242	230	
2	0.30	0.548	1718	47.30	0.19	575	78	74	0.25		47.27	242	231	
3	0.40	0.632	1723	48.00	0.24	576	79	75	0.28		48.52	243	231	
4	0.57	0.755	1728	50.00	0.35	576	80	76	0.34		48.92	242	231	
5	0.54	0.735	1733	51.70	0.33	574	80	76	0.33		51.62	242	231	
	(-0.20)		1738	53.35	0.37						53.27			
4-1	0.25	0.500	1739	53.55	0.15	570	79	76	0.22	4.5		243	230	
2	0.25	0.500	1744	54.70	0.15	579	80	76	0.22		54.65	242	231	
3	0.36	0.600	1749	55.80	0.22	582	80	76	0.27		55.75	242	231	
4	0.36	0.600	1754	57.17	0.22	584	80	76	0.27		57.10	242	230	
5	0.35	0.592	1759	58.60	0.22	585	80	76	0.27		58.45	242	230	
	(0.20)		1804	60.00							59.80			
		13.994			6.33	(1.20)	79	77						

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG/Niagara Mohawk
TEST RUN NO. 1
TEST LOCATION Unit 2 Inlet East

DATE 10/12/99 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	.62 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	.448 Meter Rate cfm	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
5-1	0.50	0.707	1805	60.20	0.31	584	80	74	0.32	4.5		245	230	Full
2	0.67	0.789	1810	62.00	0.38	589	81	77	0.35		61.80	243	230	
3	0.71	0.843	1815	63.70	0.44	590	81	77	0.38		63.55	244	231	
4	0.65	0.806	1820	65.50	0.40	593	79	77	0.36		65.45	243	230	
5	0.80	0.894	1825	67.20	0.50	593	81	77	0.40		67.25	243	231	
	-0.20		1830	69.15							69.25			
6-1	0.61	0.781	1831	69.35	0.38	587	81	77	0.35	5.0		242	230	
2	0.61	0.781	1836	71.10	0.38	589	82	78	0.35		71.10	242	231	
3	0.68	0.825	1841	72.80	0.42	592	83	78	0.37		72.85	241	230	
4	0.73	0.854	1846	74.67	0.45	590	84	78	0.38		74.70	242	230	
07-20	0.40	0.632	1851	76.55	0.25	590	84	78	0.28		76.60			
			1856	78.15							78.00			
				-2.75										
				50.40										
				-1.07										
		15.43			8.46	14455	3.7	61						
		21.906			10.24	17343	45	67						
		0.7302		49.33	0.341	578.1	76	.1						

10381 536.1

Form 1026 [Rev. 5/27]

© Mostardi-Platt Associates, Inc.

MOSTARDI-PLATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 2

COMPANY: NRG (NIDGARD MOHAWK)
PLANT: DUNKIRK UNIT 2
TEST LOCATION: INLET EAST
CLIENT:
OPERATOR: JRB
DATE: 10/13/99
CONTROL BOX: E-15 POT. NO.: E-15
METER NO.: E-15
METER CALIBRATION FACTOR: 1.009
PITOT ID NO.: 544A
PITOT TUBE COEFFICIENT: 0.836
PORT LENGTH: 7 in.
PORT SIZE: 4 in.
PORT TYPE: NIPPLE

IMPINGER H_2O
FINAL: 4911.2 ml/gm
INITIAL: 4836.7 ml/gm
GAIN: 74.5 ml/gm

SILICA GEL:
FINAL WT: 813.2 gm
INITIAL WT: 794.9 gm
WT. GAIN: 18.3 gm

TOTAL H_2O COLLECTED: 92.8 gm
DESCRIPTION OF IMPINGER H_2O: ~~92.8 gm~~ J.W.
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY: JW
SILICA GEL WEIGHED BY: JW

COMMENTS & NOTES

THIMBLE NO: 044 TARE WT: 3.5158
FILTER NO: TARE WT:
BAROMETRIC PRESSURE in. Hg: 29.56
FLUE PRESSURE in. H_2O: -10.5
FLUE PRESSURE in. Hg ABS: 28.79
PROBE LENGTH: 5 ft.
PROBE LINER MATERIAL: GLASS
NOZZLE IDENTIFICATION NO: #1 Set 2
CALIBRATED NOZZLE DIAMETER: 0.196
LEAK CHECK: PRE: 0.01 POST: 0.00 @ 15/18 in. Hg
DUCT SHAPE: Rect DIAMETER: —
DUCT AREA: 73.96 sq. ft. L 4.7085 W 15.7083
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 150 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 30
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 13.8
O_2: 4.9

PITOT LEAK CHECK: PRE ✓ POST
ΔH@
SAMPLES REMOVED FROM SITE BY:

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F = 9,780 F_c = 1,800 Other =
Circle to indicate "Yes" or add other value if not given.

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG - DUNKIRK 2
TEST RUN NO. 2
TEST LOCATION INLET EAST

DATE 10/13/99 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	Meter Rate cfm	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
6-1	0.62	0787	0900	79.10	0.40	595	84	81	0.33	4.0		230	230	FULL
2	0.67	0.819	0905	81.00	043	596	85	81	035		80.75	230	236	
3	0.73	0.854	0910	82.65	0.47	575	86	82	036		82.50	238	236	DRY
4	0.80	0.894	0915	84.50	0.51	570	88	83	0.38		84.30	236	236	
5	0 40	0.632	0920	86.40	026	570	88	83	0.27		86.20	236	236	
	(0.35)		0925	87.65							87.55			
5-1	0 50	0707	0926	88 00	032	588	89	84	0 30	4.5		236	235	
2	0.62	0 787	0931	89.60	040	543	89	84	0.34		89.50	235	236	
3	0 70	0 837	0936	91.20	0 45	596	90	85	0.36		91.20	234	236	
4	0 80	0 894	0941	93.00	051	600	91	85	0 38		93 00	235	235	
5	0 75	0 866	0946	94 90	0 48	600	92	86	0 37		94.90	236	235	
	(0.25)		0951	96 50							96 75			
4-1	0 28	0 529	0952	97.05	0.15	583	91	86	0.22	4 0		235	236	
2	0 30	0 548	0957	98.22	0.19	585	91	87	0 23		98.15	234	235	
3	0 36	0 600	1002	99.46	0.23	581	92	87	0.26		99 20	235	237	
4	0 40	0 632	1007	100.75	0 26	582	91	87	0 27		100 60	235	235	
5	0.45	0.671	1012	102.10	0 29	582	92	88	0 29		101.95	235	235	
	(0 20)		1017	103.50							103.40			
3-1	0.20	0 447	1018	103.70	013	570	92	88	019	5 0		234	234	
2	0.26	0.510	1023	104 70	0.17	576	93	88	0.22		104.65	233	235	
3	0.40	0632	1028	105.85	0.26	576	93	89	0.27		105.75	234	235	
4	0.55	0742	1033	107.25	0.35	576	93	89	0.32	8.0	107.10	235	234	
5	0.55	0 742	1038	108.80	0.35	576	94	90	022		108 70	234	235	
	(0 20)		1043	110. 45							110.30			

© Mostardi-Platt Associates, Inc.

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG - DUNKIRK 2
TEST RUN NO. 2
TEST LOCATION INLET - EAST

DATE 10/13/99 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.64 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	.426 Meter Rate cfm	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
2 1	0.45	0.671	1044	110.65	0.29	571	95	90	0.29	10.0		234	234	Fully
2	0.55	0.742	1049	112.10	0.35	572	95	90	0.32		112.10	234	232	[illegible]
3	0.60	0.775	1054	113.70	0.38	576	95	91	0.33		113.70	235	237	
4	0.70	0.837	1059	115.35	0.45	577	96	91	0.36		115.35	235	232	
5	0.66	0.812	1104	117.15	0.42	571	96	91	0.35		117.15	235	239	
	-0.20		1109	118.90							118.90			
1-1	0.45	0.671	1110	119.10	0.29	569	96	91	0.29			235	234	
2	0.52	0.721	1115	120.60	0.33	573	96	92	0.31		120.55	235	234	
3	0.58	0.762	1120	122.20	0.37	576	96	92	0.32		122.10	235	234	
4	0.72	0.849	1125	123.80	0.46	576	97	92	0.36		123.70			
5	0.70	0.837	1130	125.50	0.45	572	97	92	0.36		125.50			
			1135	127.40							127.30			
				-79.10										
				48.30										
				-1.20										
		[illegible]			6.64	11670								
		21.807			10.43	17403								
							5380							
		0.7269		47.10	0.348	580.1	89.8							

1010.1 5498

Form [illegible] [Rev. [illegible]]

stardi Associ nc.

MOSTARDI-PLATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 3

COMPANY: NRG (NIAGARA MOHAWK)
PLANT: DUNKIRK UNIT 2
TEST LOCATION: INLET FAST
CLIENT:
OPERATOR: JMP
DATE: 10/13/99
CONTROL BOX: E-15 POT. NO.: E-15
METER NO.: E-15
METER CALIBRATION FACTOR: 1.009
PITOT ID NO.: 544A
PITOT TUBE COEFFICIENT: 0.836
PORT LENGTH: 7 in.
PORT SIZE: 4 in.
PORT TYPE: NIPPLE

IMPINGER H_2O / SILICA GEL:
FINAL: 4798.4 ml/gm — FINAL WT: 705.3 gm
INITIAL: 4732.6 ml/gm — INITIAL WT: 692.9 gm
GAIN: 65.8 ml/gm — WT. GAIN: 12.4 gm
TOTAL H_2O COLLECTED: 78.2g
DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY: JW
SILICA GEL WEIGHED BY: JW

COMMENTS & NOTES

THIMBLE NO: 048 TARE WT: 3.4791
FILTER NO: TARE WT:
BAROMETRIC PRESSURE in. Hg: 29.56
FLUE PRESSURE in. H_2O: -10.5
FLUE PRESSURE in. Hg ABS: 28.79
PROBE LENGTH: 5 ft.
PROBE LINER MATERIAL: GLASS
NOZZLE IDENTIFICATION NO: #1 Set #2
CALIBRATED NOZZLE DIAMETER: 0.196
LEAK CHECK: PRE: 0.00 POST: 0.00 @ 15/15 in. Hg
DUCT SHAPE: Rect DIAMETER: —
DUCT AREA: 73.96 sq. ft. L 4.7083' W 15.708'
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 125 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 25
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 14.0
O_2: 4.4

PITOT LEAK CHECK: PRE POST
ΔH@
SAMPLES REMOVED FROM SITE BY:

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F_o = 9,780 F_c = 1,800 Other = _____
Circle to indicate "Yes" or add other value if not given.

© Mostardi-Platt Associates, Inc.

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NAS DUNKIRK 2
TEST RUN NO. 3
TEST LOCATION INLET

DATE 10/13/99 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	Orifice (H) in. H_2O (0.65)	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	Meter Rate cfm (0.47)	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
6-1	0.57	0.754	1300	128.36	0.37	591	91	90	0.35	3.5		237	240	FULL
2	0.63	0.794	1305	130.22	0.41	594	93	71	0.37		130.11	239	238	
3	0.67	0.819	1310	132.10	0.44	574	95	91	0.38		131.96	237	237	
4	0.63	0.794	1315	133.85	0.41	591	96	92	0.37		133.86	236	237	
5	0.72	0.849	1320	135.55	0.47	597	98	93	0.40		135.71	236	238	
	(-0.20)		1325	137.90							137.71			
5-1	0.48	0.693	1326	138.10	0.31	590	99	94	0.33	5.0		235	239	
2	0.60	0.775	1331	139.60	0.39	592	100	94	0.36		139.75	235	235	
3	0.66	0.812	1336	141.35	0.43	595	101	95	0.38		141.36	236	239	
4	0.69	0.831	1341	143.23	0.44	597	102	95	0.39		143.26	235	238	
5	0.75	0.866	1346	145.15	0.48	597	102	96	0.41		145.21	235	238	
	(-0.25)		1351	147.30							147.26			
4-1	0.20	0.447	1352	147.50	0.13	584	103	97	0.21	4.5		234	238	
2	0.30	0.548	1357	148.50	0.20	586	103	97	0.26		148.51	233	238	
3	0.38	0.616	1402	149.75	0.25	587	103	97	0.29		149.81	235	237	
4	0.47	0.686	1407	151.25	0.31	589	103	97	0.32		151.26	235	238	
5	0.50	0.707	1412	152.85	0.33	590	104	98	0.33		152.86	235	237	
	(-0.20)		1417	154.40							154.51			
3-1	0.20	0.447	1418	154.60	0.13	576	103	98	0.21	5.0		234	237	
2	0.27	0.520	1423	155.85	0.18	580	104	98	0.24		155.76	234	236	
3	0.40	0.632	1428	157.10	0.26	580	103	99	0.30	7.0	156.96	234	237	
4	0.58	0.762	1433	158.50	0.38	580	103	99	0.36		158.46	234	238	
5	0.60	0.775	1438	160.18	0.39	580	104	99	0.36	8.5	160.26	234	238	
	(-0.20)		1443	162.00							162.06			

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRC - Dominion 2
TEST RUN NO. 3
TEST LOCATION Inlet Duct

DATE 10/13/99 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	0.65 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	0.47 Meter Rate cfm	Pump Vacuum in. Hg	Notes	Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
2-1	0.48	0.693	1444	162.20	0.31	572	104	99	0.33	10		234	237	Fully
2	0.50	0.707	1449	163.93	0.33	575	104	99	0.33		163.91	235	240	Ice
3	0.60	0.775	1454	165.60	0.39	579	104	99	0.36		165.56	235	239	
4	0.70	0.837	1459	167.35	0.46	551	104	99	0.39		167.36	235	238	
5	0.70	0.837	1504	169.20	0.46	581	104	99	0.39		169.31	235	238	
			1509	171.38							171.26			
1-1	Fold			-18.36										
2	Test													
3				-0.80										
4														
5														
						1750								
		17.707			5.66	14645	4935							
		0.7191		42.22	0.346	5855	98.7							
						1045.5	558.7							

Form 1026 [Rev. 5/27]

© Mostardi-Platt Associates, Inc.

MOSTARDI-PLATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 1 - (HG SPECIATION)

COMPANY: NRG - DUNKIRK
PLANT: NRG - DUNKIRK
TEST LOCATION: UNIT 2 OUTLET - EAST
CLIENT: NRG - DUNKIRK
OPERATOR: J. GEIGER
DATE: 10/12/99
CONTROL BOX: E-25 POT. NO.: E-25
METER NO.: E-25
METER CALIBRATION FACTOR: 1.008
PITOT ID NO.: 541 A
PITOT TUBE COEFFICIENT: 0.837
PORT LENGTH: 12 in.
PORT SIZE: 4 in.
PORT TYPE: NIPPLE

IMPINGER H_2O / SILICA GEL:
FINAL: 4768.2 ml/gm — FINAL WT: 744.9 gm
INITIAL: 4604.4 ml/gm — INITIAL WT: 717.3 gm
GAIN: 163.8 ml/gm — WT. GAIN: 27.6 gm
TOTAL H_2O COLLECTED: 191.4 g
DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY: JW
SILICA GEL WEIGHED BY: JW

COMMENTS & NOTES

THIMBLE NO: 047 TARE WT: 3.6251
FILTER NO: N/A TARE WT: N/A
BAROMETRIC PRESSURE in. Hg: 29.86
FLUE PRESSURE in. H_2O: -11.4
FLUE PRESSURE in. Hg ABS: 29.02
PROBE LENGTH: 8 ft.
PROBE LINER MATERIAL: QUARTZ
NOZZLE IDENTIFICATION NO: N/A
CALIBRATED NOZZLE DIAMETER: 0.311
LEAK CHECK: PRE: 0.005 POST: 0.004 @ 10\10 in. Hg
DUCT SHAPE: RECTANGULAR DIAMETER:
DUCT AREA: 72.50 sq. ft. L 10 FT W 7.25 FT
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 150 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 30
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 12.4 12.6 12.3
O_2: 5.6 5.9 6.1

PITOT LEAK CHECK: PRE ✓ POST ✓
ΔH@ 1.830
SAMPLES REMOVED FROM SITE BY: JW

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F = 9,780 F_c = 1,800 Other = _____
Circle to indicate "Yes" or add other value if not given.

© Mostardi-Platt Associates, Inc

FIELD TEST DATA SHEET FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG - DUNKIRK
TEST RUN NO. 1 - (Hg SPECIATION)
TEST LOCATION UNIT 2 OUTLET - EAST

DATE 10/12/99 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	4.20 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	1.12 Meter Rate cfm	Pump Vacuum in. Hg	x5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
1-1	.41	.640	1615	545.638	1.72	563	62	61	.717	9	3.585		244	N/A	51
2	.42	.648	1620	549.215	1.76	564	62	61	.725	9	3.629	549.223	248	N/A	51
3	.42	.648	1625	552.537	1.76	564	64	61	.725	9	3.629	552.852	248	N/A	53
4	.41	.640	1630	556.489	1.72	563	64	61	.717	9	3.585	556.481	248	N/A	54
5	.40	.632	1635	560.135	1.68	536	66	62	.708	9	3.540	560.066	247	N/A	54
	2.06	3.208	1640	563.618	8.64	2790	318	306				563.606			
				17.98											
2-1	.40	.632	1642	563.618	1.68	557	70	61	.708	9	3.542		246	N/A	55
2	.40	.632	1647	567.201	1.68	563	70	62	.708	9	3.542	567.159	247	N/A	54
3	.42	.648	1652	570.721	1.76	563	70	62	.725	9	3.629	570.701	247	N/A	55
4	.41	.640	1657	574.341	1.72	562	70	63	.717	9	3.585	574.330	247	N/A	55
5	.40	.632	1702	577.922	1.68	560	69	63	.708	9	3.540	577.916	246	N/A	54
	2.03	3.184	1707	581.614	8.52	2805	349	311				581.456			
				17.996											
3-1	.41	.640	1709	581.614	1.72	553	69	63	.717	9	3.585		243	N/A	55
2	.41	.640	1714	585.202	1.72	561	69	63	.717	9	3.585	585.199	245	N/A	53
3	.43	.655	1719	588.793	1.80	562	68	63	.734	9	3.672	588.784	246	N/A	54
4	.43	.655	1724	592.255	1.80	561	68	64	.734	9	3.672	592.456	246	N/A	55
5	.53	.728	1729	596.131	2.22	561	68	64	.815	12	4.076	596.128	245	N/A	55
	2.21	3.318	1734	600.135	9.26	2798	342	317				600.204			
				18.521											
4-1	.40	.632	1736	600.135	1.68	559	66	65	.708	8	3.541		244	N/A	57
2	.40	.632	1741	603.694	1.68	561	65	63	.708	8	3.541	603.676	245	N/A	56
3	.42	.648	1746	607.237	1.76	561	65	64	.725	8	3.629	607.217	247	N/A	55
4	.40	.632	1751	610.404	1.68	561	64	62	.708	8	3.541	610.846	246	N/A	55
5	.38	.616	1756	614.381	1.60	561	63	60	.690		3.452	614.387	248	N/A	56
	2.00	3.160	1801	617.842	8.40	2803	323	314				617.839			
				17.707											

Form 1026 [Rev. 5/27]

© Mostardi-Platt Associates, Inc

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG - OUNKIRK

TEST RUN NO. 1

TEST LOCATION UNIT 2 OUTLET - EAST

DATE 10/12/99 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	4.20 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	1.12 Meter Rate cfm	Pump Vacuum in. Hg	x 5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
5-1	.46	.678	1804	617.842	1.93	558	65	61	.759	9	3.798		246	N/A	55
2	.45	.671	1809	621.656	1.89	561	65	62	.751	9	3.757	621.640	249	N/A	57
3	.42	.648	1814	625.411	1.76	562	66	63	.725	10	3.629	625.396	249	N/A	59
4	.43	.655	1819	629.155	1.81	563	66	63	.734	10	3.672	629.025	249	N/A	59
5	.43	.655	1824	632.701	1.81	559	67	63	.734	10	3.672	632.697	248	N/A	58
	2.19	3.307	1829	636.420	9.20	2803	329	312				636.369			
				18.578											
6-1	.45	.671	1831	636.422	1.89	559	67	63	.751	10	3.756		245	N/A	58
2	.45	.671	1836	640.219	1.89	560	68	63	.751	10	3.756	640.178	247	N/A	57
3	.42	.648	1841	644.008	1.76	562	70	62	.725	10	3.629	643.934	247	N/A	57
4	.42	.648	1846	647.569	1.76	563	71	64	.725	10	3.629	647.563	247	N/A	57
5	.43	.655	1851	651.199	1.81	560	68	63	.734	10	3.672	651.192	247	N/A	57
	2.17	3.288	1856	654.931	9.11	2804	344	315				654.864			
				18.509											
	.422	.649		109.291	1.77	560.1	66.83	62.5							
							64.6								

© Mostardi-Platt Associates, Inc.

MO...RD...LATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 2 - (Hg SPECIATION)

COMPANY: NRG - DUNKIRK
PLANT: NRG - DUNKIRK
TEST LOCATION: UNIT 2 OUTLET - EAST
CLIENT: NRG - DUNKIRK
OPERATOR: J. GEIGER
DATE: 10/13/99
CONTROL BOX: E-25 POT. NO.: E-25
METER NO.: E-25
METER CALIBRATION FACTOR: 1.008
PITOT ID NO.: 541 A
PITOT TUBE COEFFICIENT: 0.837
PORT LENGTH: 12 in.
PORT SIZE: 4 in.
PORT TYPE: NIPPLE

IMPINGER H_2O
FINAL: 4871.6 ml/gm
INITIAL: 4687.0 ml/gm
GAIN: 184.6 ml/gm

SILICA GEL:
FINAL WT: 752.5 gm
INITIAL WT: 729.9 gm
WT. GAIN: 22.6 gm

TOTAL H_2O COLLECTED: 207.2 gm
DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY: JW
SILICA GEL WEIGHED BY: JW

COMMENTS & NOTES

THIMBLE NO: 021 TARE WT: 3.0035
FILTER NO: ——— TARE WT: ———
BAROMETRIC PRESSURE in. Hg: 29.56
FLUE PRESSURE in. H_2O: -11.5
FLUE PRESSURE in. Hg ABS: 28.71
PROBE LENGTH: 8 ft.
PROBE LINER MATERIAL: QUARTZ
NOZZLE IDENTIFICATION NO: N/A
CALIBRATED NOZZLE DIAMETER: 0.311
LEAK CHECK: PRE: 0.005 POST: 0.004 @ 12/11 in. Hg
DUCT SHAPE: RECTANGULAR DIAMETER:
DUCT AREA: 72.50 sq. ft. L 10 FT W 7.25 FT.
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 150 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 30
GAS ANALYSIS (ORSAT/FYRITE):
CO_2: 12.9 13.0 13.3
O_2: 5.8 5.9 5.6

PITOT LEAK CHECK: PRE ✓ POST ✓
ΔH@ 1.830
SAMPLES REMOVED FROM SITE BY: JW

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F = 9,780 F_c = 1,800 Other = _____
Circle to indicate "Yes" or add other value if not given.

© Mostardi-Platt Associates, Inc

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG - DUNKIRK
TEST RUN NO. 2 - (H_2S SPECIATION)
TEST LOCATION UNIT 2 OUTLET - EAST

DATE 10/13/99 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	4.26 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	1.15 Meter Rate cfm	Pump Vacuum in. Hg	x5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
1-1	.45	.671	900	655.380	1.89	563	73	64	.751	7	3.756		240	N/A	68
2	.45	.671	905	659.144	1.89	563	73	65	.751	7	3.756	659.136	242	N/A	67
3	.41	.640	910	662.919	1.74	565	74	68	.736	7	3.681	662.892	247	N/A	58
4	.51	.714	915	666.621	2.17	565	73	72	.821	7	4.106	666.573	245	N/A	55
5	.42	.648	920	670.711	1.78	564	76	74	.745	7	3.726	670.679	245	N/A	53
	(2.24)	(3.344)	925	674.599	(9.47)	(2820)	(369)	(343)				674.405			
				(19.219)											
2-1	.44	.663	927	674.599	1.87	563	75	72	.762	7	3.814		242	N/A	57
2	.45	.671	932	678.410	1.92	564	76	73	.771	8	3.857	678.413	244	N/A	52
3	.44	.663	937	682.283	1.87	566	78	73	.762	7	3.814	682.270	246	N/A	54
4	.46	.678	942	686.131	1.95	567	79	73	.779	7	3.899	686.084	245	N/A	55
5	.41	.640	947	689.987	1.74	566	79	73	.736	8	3.680	689.993	242	N/A	55
	(2.20)	(3.315)	952	693.699	(9.35)	(2826)	(387)	(364)				693.663			
				(19.10)											
3-1	.40	.632	954	693.699	1.70	563	78	73	.727	7	3.636		243	N/A	55
2	.41	.640	959	697.342	1.75	566	77	72	.736	6	3.681	697.335	244	N/A	55
3	.43	.656	1004	701.109	1.83	566	77	72	.754	7	3.770	701.016	244	N/A	55
4	.40	.632	1009	704.792	1.70	565	76	73	.727	7	3.636	704.786	245	N/A	56
5	.43	.656	1014	708.431	1.83	564	76	73	.754	7	3.770	708.422	244	N/A	56
	(2.07)	(3.216)	1019	712.190	(8.81)	(2824)	(384)	(363)				712.192			
				(18.491)											
4-1	.42	.648	1021	712.190	1.78	562	76	71	.745	7	3.726		243	N/A	59
2	.42	.649	1026	715.922	1.78	561	75	72	.745	7	3.726	715.916	244	N/A	59
3	.40	.632	1031	719.645	1.70	563	75	72	.726	7	3.634	719.642	244	N/A	58
4	.40	.632	1036	723.281	1.70	563	77	74	.726	7	3.634	723.276	245	N/A	58
5	.41	.640	1041	726.925	1.75	563	77	74	.736	7	3.681	726.910	244	N/A	57
	(2.05)	(3.20)	1046	730.585	(8.71)	(2812)	(380)	(363)				730.591			
				(18.395)											

© Mostardi-Platt Associates, Inc.

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG - DUNKIRK
TEST RUN NO. 2 - (Hg SPECIATION)
TEST LOCATION UNIT 2 OUTLET - EAST

DATE 10/13/99 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	4.26 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	1.15 Meter Rate cfm	Pump Vacuum in. Hg	x5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
5-1	.40	.632	1048	730.585	1.70	561	74	74	.727	7	3.637		242	N/A	51
2	.42	.648	1053	734.259	1.78	560	76	73	.745	7	3.726	734.221	244	N/A	51
3	.42	.648	1058	737.953	1.78	561	76	74	.745	7	3.726	737.947	244	N/A	50
4	.40	.632	1103	741.701	1.70	563	77	73	.727	7	3.637	741.673	245	N/A	47
5	.40	.632	1108	745.322	1.70	560	78	73	.727	7	3.637	745.316	245	N/A	48
	2.04	3.192	1113	748.942	8.66	2805	381	367				748.947			
				18.357											
6-1	.39	.624	1115	748.942	1.66	562	79	74	.718	6	3.591		243	N/A	49
2	.40	.632	1120	752.541	1.70	562	80	74	.727	7	3.636	752.532	242	N/A	49
3	.42	.648	1125	756.211	1.78	563	80	73	.745	7	3.726	756.168	242	N/A	51
4	.41	.640	1130	759.913	1.75	564	80	72	.736	7	3.681	759.894	244	N/A	54
5	.40	.632	1135	763.582	1.70	563	80	74	.727	7	3.636	763.575	242	N/A	54
	2.02	3.176	1140	767.352	8.59	2814	399	367				767.211			
				18.416											
	.421	.648		111.972	1.786	563.3	76.0	72.23							
								74.1							

Form 1026 [Rev. 5/27]

© Mostardi-Platt Associates, Inc.

MOSTARDI-PLATT ASSOCIATES, INC.
TEST SUPPORT DATA

TEST RUN NO. 3 - (Hg SPECIATION)

COMPANY: NRG - DUNKIRK
PLANT: NRG - DUNKIRK
TEST LOCATION: UNIT 2 OUTLET - EAST
CLIENT: NRG - DUNKIRK
OPERATOR: J. GEIGER
DATE: 10/13/99
CONTROL BOX: E-25 POT. NO.: E-25
METER NO.: E-25
METER CALIBRATION FACTOR: 1.008
PITOT ID NO.: 541 A
PITOT TUBE COEFFICIENT: 0.837
PORT LENGTH: 12 in.
PORT SIZE: 4 in.
PORT TYPE: NIPPLE

IMPINGER H_2O / SILICA GEL:
FINAL: 4789.6 ml/gm — FINAL WT: 748.9 gm
INITIAL: 4625.6 ml/gm — INITIAL WT: 715.4 gm
GAIN: 163.0 ml/gm — WT. GAIN: 33.5 gm
TOTAL H_2O COLLECTED: 196.5 gm

DESCRIPTION OF IMPINGER H_2O:
SILICA GEL EXHAUSTED?:
IMPINGERS RECOVERED BY: JW
SILICA GEL WEIGHED BY: JW

COMMENTS & NOTES

THIMBLE NO: 037 TARE WT: 3.1786
FILTER NO: — TARE WT: —
BAROMETRIC PRESSURE in. Hg: 29.56
FLUE PRESSURE in. H_2O: -11.5
FLUE PRESSURE in. Hg ABS: 28.71
PROBE LENGTH: 8 ft.
PROBE LINER MATERIAL: QUARTZ
NOZZLE IDENTIFICATION NO: N/A
CALIBRATED NOZZLE DIAMETER: 0.311
LEAK CHECK: PRE: 0.007 POST: 0.005 @ 11/12 in. Hg
DUCT SHAPE: RECTANGULAR DIAMETER:
DUCT AREA: 72.50 sq. ft. L 10 FT W 7.25 FT
DISTURBANCE UPSTREAM: DOWNSTREAM:
TEST LENGTH: 150 min
MINUTES PER POINT: 5
TOTAL NUMBER OF TRAVERSE POINTS: 30
GAS ANALYSIS (ORSAT/FYRITE):

CO_2:	13.4	13.3	13.5
O_2:	6.0	5.6	5.4

PITOT LEAK CHECK: PRE ✓ POST ✓
ΔH@ 1.830
SAMPLES REMOVED FROM SITE BY: JW

For computer data entry: Supervisor, please complete.
Do you want to enter a fuel analysis? Y ☐ N ☐
What value do you want to use? F = 9,780 F_c = 1,800 Other = _____
Circle to indicate "Yes" or add other value if not given.

© Mostardi-Platt Associates, Inc

FIELD TEST DATA SHEET FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG - DUNKIRK
TEST RUN NO. 3 - (Hg SPECIATION)
TEST LOCATION UNIT 2 OUTLET - EAST

DATE 10/13/99 PAGE 1 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	4.26 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	1.15 Meter Rate cfm	Pump Vacuum in. Hg	x5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
1-1	.40	.632	1300	767.359	1.70	562	80	72	.727	8	3.637		245	N/A	64
2	.45	.671	1305	770.995	1.91	566	80	72	.771	8	3.857	770.995	242	N/A	60
3	.43	.655	1310	774.911	1.83	566	79	72	.754	9	3.770	774.852	239	N/A	61
4	.40	.632	1315	778.607	1.70	564	79	72	.727	7	3.636	778.622	247	N/A	61
5	.40	.632	1320	782.331	1.70	567	79	73	.727	7	3.636	782.258	245	N/A	56
	2.08	3.222	1325	785.874	8.94	2825	397	361				785.894			
				18.515											
2-1	.41	.640	1327	785.874	1.74	564	78	73	.736	7	3.681		245	N/A	51
2	.41	.640	1332	789.566	1.74	565	78	72	.736	7	3.681	789.555	245	N/A	52
3	.45	.671	1337	793.244	1.91	565	78	71	.771	10	3.857	793.236	245	N/A	55
4	.43	.655	1342	797.105	1.83	563	77	71	.754	8	3.770	797.093	247	N/A	55
5	.40	.632	1347	800.871	1.70	560	77	72	.727	7	3.636	800.863	246	N/A	56
	2.10	3.238	1352	804.223	8.92	2817	388	359				804.499			
				18.349											
3-1	.44	.663	1354	804.223	1.87	563	78	73	.762	7	3.814		245	N/A	58
2	.44	.663	1359	808.159	1.87	565	77	72	.762	7	3.814	808.037	246	N/A	57
3	.42	.648	1404	811.841	1.78	562	77	72	.745	7	3.726	811.851	245	N/A	57
4	.40	.632	1409	815.577	1.70	563	77	74	.727	7	3.636	815.577	244	N/A	56
5	.40	.632	1414	819.213	1.70	561	77	74	.727	7	3.636	819.213	244	N/A	55
	2.1	3.238	1419	822.631	8.92	2814	386	365				822.849			
				18.408											
4-1	.43	.655	1421	822.631	1.83	564	76	73	.754	8	3.770		243	N/A	55
2	.45	.671	1426	826.435	1.92	569	77	72	.771	9	3.857	826.401	245	N/A	57
3	.44	.663	1431	830.311	1.87	569	78	73	.762	9	3.814	830.258	245	N/A	57
4	.44	.663	1436	834.102	1.87	568	77	73	.762	9	3.814	834.072	244	N/A	56
5	.39	.624	1441	837.903	1.66	561	77	73	.718	7	3.591	837.886	245	N/A	55
	2.15	3.276	1446	841.470	9.15	2831	385	364				841.476			
				18.839											

Form 1026 [Rev. 5/27]

© Mostardi-Platt Associates, Inc.

FIELD TEST DATA SHEET
FOR ISOKINETIC SAMPLING

MOSTARDI-PLATT ASSOCIATES, INC.

PROJECT NRG - DUNKIRK
TEST RUN NO. 3 - (Hg SPECIATION)
TEST LOCATION UNIT 2 OUTLET - EAST

DATE 10/13/99 PAGE 2 OF 2

Port-Point No.	Velocity Head (P) in. H_2O	$\sqrt{P}$	Clock Time 24 hr.	Meter Volume (Vm) ft^3	4.26 Orifice (H) in. H_2O	Stack Temp (t_s) °F	Meter Temp. (t_m) Inlet °F	Meter Temp. (t_m) Outlet °F	1.15 Meter Rate cfm	Pump Vacuum in. Hg	x5 Notes		Probe Temp. °F	Filter Holder Temp. °F	Impinger Outlet Temp. °F
5-1	.42	.648	1450	841.470	1.78	562	78	73	.745	8	3.726		244	N/A	57
2	.44	.663	1455	845.219	1.87	568	79	71	.763	9	3.814	845.196	245	N/A	56
3	.45	.671	1500	849.050	1.92	568	79	72	.771	10	3.857	849.010	244	N/A	56
4	.43	.656	1505	852.873	1.83	567	79	72	.754	9	3.770	852.867	246	N/A	55
5	.41	.640	1510	856.644	1.75	562	78	74	.736	7	3.681	856.637	246	N/A	54
	(2.15)	(3.278)	1515	860.311	(9.15)	(2827)	(393)	(362)				860.318			
				(18.841)											
6-1	.40	.632	1517	860.311	1.70	565	79	74	.727	8	3.636		245	N/A	55
2	.43	.656	1522	863.955	1.83	564	79	73	.754	9	3.771	863.947	245	N/A	55
3	.46	.678	1527	867.725	1.95	564	78	73	.779	10	3.899	867.717	247	N/A	57
4	.44	.663	1532	871.629	1.87	566	78	73	.762	9	3.814	871.616	242	N/A	56
5	.40	.632	1537	875.421	1.70	560	78	74	.727	6	3.636	875.430	242	N/A	56
	(2.13)	(3.261)	1542	879.103	(9.05)	(2819)	(392)	(367)				879.066			
				(18.792)											
	(.423)	(.65)			(1.80)	(564.4)	(78.03)	(72.6)							
				(111.744)			(75.3)								

Form 1026 [Rev. 5/27]

© Mostardi-Platt Associates, Inc.

CALIBRATION PROCEDURES

PITOT TUBES

The pitot tubes used during this test program are fabricated according to the specification described and illustrated in the *Code of Federal Regulations*, Title 40, Part 60, Appendix A, Methods 1 through 5 as published in the *Federal Register*, Volume 42, No. 160; hereafter referred to by the appropriate method number. The pitot tubes comply with the alignment specifications in Method 2, Section 4; and the pitot tube assemblies are in compliance with specifications in the same section.

Pitot tube assemblies are calibrated in accordance with Method 2, Section 4, against a standard hemispherical pitot utilizing a wind tunnel meeting the specification in Method 2, Section 4.1.2.

TEMPERATURE SENSING DEVICES

The potentiometer and thermocouples are calibrated against a mercury thermometer in a calibration well. Alternatively, readings are checked utilizing a NBS traceable millivolt source.

DRY GAS METERS

The test meters are calibrated according to Method 5, Section 5.3 and "Procedures for Calibrating and Using Dry Gas Volume Meters as Calibration Standards" by P.R. Westlin and R.T. Shigehara, March 10, 1978.

ANALYTICAL BALANCE

The accuracy of the analytical balance is checked with Class S, Stainless Steel Type 303 weights manufactured by F. Hopken and Son, Jersey City, New Jersey.

© Mostardi-Platt Associates, Inc.

Pitot Tube Calibration Data

Calibration Pitot Tube: Type: std Size (OD): 1/4" Pitot ID #: Dwyer - 160-8

Type "S" Pitot Tube ID Numbe 544A Cp(std) = 1.00

Calibration Date: 10/08/99 Performed By: LC

P_{std}, (in.) H_2O		A-Side Calibration		
Set Value	**Read Value**	**P_s, (in.) H_2O**	**$C_{p(S)}$ [a]**	**DEV. [b]**
0.25	0.28	0.40	0.837	0.001
0.55	0.53	0.77	0.830	0.006
0.85	0.84	1.20	0.837	0.001
1.00	0.98	1.40	0.837	0.001
2.00	1.90	2.70	0.839	0.003
3.00	3.00	4.30	0.835	0.000
		Average	0.836	0.002

P_{std}, (in.) H_2O		B-Side Calibration		
Set Value	**Read Value**	**P_s, (in.) H_2O**	**$C_{p(S)}$ [a]**	**DEV. [b]**
0.25	0.28	0.40	0.837	0.001
0.55	0.53	0.77	0.830	0.006
0.82	0.84	1.20	0.837	0.001
1.00	0.98	1.40	0.837	0.001
2.00	1.90	2.70	0.839	0.003
3.00	3.00	4.30	0.835	0.000
		Average	0.836	0.002

$\overline{C_p}(A) - \overline{C_p}(B) =$ 0.000 (must be ≤ 0.01)

[a] $C_{p(S)} = C_{p(std)}\sqrt{\frac{\Delta P_{std}}{\Delta P_s}}$

[b] $DEV = C_{p(S)} - \overline{C_p}$, (must be ≤ 0.01)

Pitot Tube Calibration Data

Calibration Pitot Tube: Type: std Size (OD): 1/4" Pitot ID #: 160-8

Type "S" Pitot Tube ID Numbe 541A Cp(std) = 1.00

Calibration Date: 10/8/99 Performed By: LC

P_{std}, (in.) H_2O		A-Side Calibration		
Set Value	**Read Value**	**P_s, (in.) H_2O**	**$C_{p(S)}$[a]**	**DEV.[b]**
0.25	0.28	0.40	0.837	0.000
0.55	0.53	0.76	0.835	0.001
0.85	0.84	1.20	0.837	0.000
1.00	0.98	1.40	0.837	0.000
2.00	1.90	2.70	0.839	0.002
3.00	3.00	4.30	0.835	0.001
		Average	0.837	0.001

P_{std}, (in.) H_2O		B-Side Calibration		
Set Value	**Read Value**	**P_s, (in.) H_2O**	**$C_{p(S)}$[a]**	**DEV.[b]**
0.25	0.28	0.40	0.837	0.000
0.55	0.53	0.76	0.835	0.001
0.82	0.84	1.20	0.837	0.000
1.00	0.98	1.40	0.837	0.000
2.00	1.90	2.70	0.839	0.002
3.00	3.00	4.30	0.835	0.001
		Average	0.837	0.001

$\overline{C_p}(A) - \overline{C_p}(B) =$ 0.000 (must be ≤ 0.01)

[a] $C_{p(S)} = C_{p(std)}\sqrt{\frac{\Delta P_{std}}{\Delta P_s}}$

[b] $DEV = C_{p(S)} - \overline{C_p}$, (must be ≤ 0.01)

STACK TEMPERATURE SENSOR CALIBRATION DATA FORM (FOR K-TYPE THERMOCOUPLES)

EPA Control Module Number: E15 Name: Rich Russ

Ambient Temperatu 72 °F Date: 09-24-99

Model 1061; S/N: A20821 Reference Source (T/C Calibrator): Transmation, Inc.

Date of Calibration Verification: 10/18/94

Primary Standards Directly Traceable to
National Institute of Standards and Technology (NIST)

Reference[a] Source Temperature, (°F)	Test Thermometer Temperature, (°F)	Temperature Difference,[b] %
50	50	0.000
100	100	0.000
150	150	0.000
200	200	0.000
250	250	0.000
300	300	0.000
350	350	0.000
400	400	0.000
450	450	0.000
500	500	0.000
550	550	0.000
600	600	0.000
650	650	0.000
700	700	0.000
800	800	0.000
900	900	0.000
1000	1000	0.000
1100	1100	0.000
1200	1200	0.000

[a]Every (50°F) for each reference point.

$$\frac{(\text{Ref. Temp., °F} + 460) - (\text{Test Therm. Temp., °F} + 460)}{\text{Ref. Temp., °F} + 460} * 100 <= 1.5\ \%$$

STACK TEMPERATURE SENSOR CALIBRATION DATA FORM (FOR K-TYPE THERMOCOUPLES)

EPA Control Module Number: E25 Name: Rich Russ

Ambient Temperatu 68 °F Date: 09-28-99

Model 1061; S/N: A20821 Reference Source (T/C Calibrator): Transmation, Inc.

Date of Calibration Verification: 10/18/94

Primary Standards Directly Traceable to
National Institute of Standards and Technology (NIST)

Reference[a] Source Temperature, (°F)	Test Thermometer Temperature, (°F)	Temperature Difference,[b] %
50	50	0.000
100	100	0.000
150	150	0.000
200	200	0.000
250	250	0.000
300	300	0.000
350	351	0.123
400	400	0.000
450	451	0.110
500	501	0.104
550	551	0.099
600	601	0.094
650	651	0.090
700	701	0.086
800	801	0.079
900	901	0.074
1000	1001	0.068
1100	1101	0.064
1200	1201	0.060

[a]Every (50°F) for each reference point.

$$\frac{(\text{Ref. Temp., °F} + 460) - (\text{Test Therm. Temp., °F} + 460)}{\text{Ref. Temp., °F} + 460} * 100 <= 1.5\ \%$$

METER BOX CALIBRATION

Dry Gas Meter No.	E15	Date:	09-24-99
Standard Meter No.	3623851	Calibrated By:	Rich Russ
Standard Meter (Yr)	1.0063	Barometric Pressure :	29.26

Formula Protection Password: MPA

Run Number		Orifice Setting in H20 Chg (H)	Standard Meter Gas Volume Vr	Dry Meter Gas Volume Vd	Standard Meter Temp. F tr	Dry Gas Meter Inlet Temp. F tdi	Dry Gas Meter Outlet Temp. F tdo	Dry Gas Meter Avg. Temp. F td	Time Min.	Time Sec.	Y	Chg (H@)
Final			80.800	25.164	74	78	75					
Inital			75.792	20.151	74	75	74					
Difference	1	0.20	5.008	5.013	74	76.5	74.5	75.5	19	13	1.001	1.698
Final			95.326	39.591	75	82	78					
Inital			89.887	34.141	75	81	77					
Difference	2	0.50	5.439	5.450	75	81.5	77.5	79.5	13	21	1.005	1.730
Final			74.419	18.788	72	78	73					
Inital			69.141	13.526	72	74	72					
Difference	3	0.70	5.278	5.262	72	76	72.5	74.25	10	53	1.006	1.707
Final			9.806	53.997	75	87	79					
Inital			4.773	48.974	75	84	79					
Difference	4	0.90	5.033	5.023	75	85.5	79	82.25	9	15	1.013	1.737
Final			102.544	46.754	75	86	78					
Inital			96.464	40.721	75	81	78					
Difference	5	1.20	6.080	6.033	75	83.5	78	80.75	9	36	1.016	1.715
Final			89.076	33.349	75	83	76					
Inital			83.868	28.194	75	81	76					
Difference	6	2.00	5.208	5.155	75	82	76	79	6	30	1.013	1.791
									Average		1.009	1.730

©MOSTARDI-PLATT ASSOCIATES, INC.

VOLUME METERING SYSTEM FIELD AUDIT

Date: 09-24-99 Name: Rich Russ

EPA Control Module No.: E15 Ambient Temperature: 73 °F

Calibration (Y): 1.009 Barometric Pressure: 29.3 "Hg

Delta H: 1.73

#VALUE!

Run No.	Time (Minutes)	Gas Meter Reading/Gas Meter Temperature (Cubic Feet)	Inlet (°F)	Outlet (°F)	Yc (Calculated)
1	0	12.144	77	72	1.026
	10	19.587	82	73	
	Vm=	7.443	Avg.= 76.00	536.00	
2	0	19.587	81	73	1.037
	10	26.967	83	73	
	Vm=	7.380	Avg.= 77.50	537.50	
3	0	26.967	81	73	1.035
	10	34.365	85	73	
	Vm=	7.398	Avg.= 78.00	538.00	

$$Yc = \frac{10}{Vm}\sqrt{\frac{Pbar}{0.0319Tm}}$$

Limit: 0.97Y <Yc< 1.03Y

Limit: 0.979 <Yc< 1.039

$$\text{Calc. Delta H @} = \frac{0.0319\,(\text{Delta H})(Tm)(100)}{Pbar(Y^2)(Vm^2)}$$ (From Calibration Data) = 1.607

METER BOX CALIBRATION

Dry Gas Meter No.	E25	Date:	09-28-99
Standard Meter No.	677191	Calibrated By:	Rich Russ
Standard Meter (Yr)	0.9991	Barometric Pressure :	29.50

Formula Protection Password: MPA

Run Number		Orifice Setting in H20 Chg (H)	Standard Meter Gas Volume Vr	Dry Meter Gas Volume Vd	Standard Meter Temp. F tr	Dry Gas Meter Inlet Temp. F tdi	Dry Gas Meter Outlet Temp. F tdo	Dry Gas Meter Avg. Temp. F td	Time Min.	Time Sec.	Y	Chg (H@)
Final			76.119	27.769	68	72	70					
Inital			71.049	22.707	68	71	70					
Difference	1	0.20	5.070	5.062	68	71.5	70	70.75	20	3	1.006	1.764
Final			87.545	39.149	68	74	71					
Inital			82.170	33.784	68	73	71					
Difference	2	0.50	5.375	5.365	68	73.5	71	72.25	13	50	1.009	1.863
Final			70.723	22.374	68	72	70					
Inital			64.888	16.569	68	70	69					
Difference	3	0.70	5.835	5.805	68	71	69.5	70.25	11	59	1.008	1.667
Final			93.802	45.397	68	76	72					
Inital			87.840	39.454	68	74	71					
Difference	4	0.90	5.962	5.943	68	75	71.5	73.25	11	30	1.011	1.880
Final			99.831	51.431	68	77	72					
Inital			94.525	46.111	68	75	72					
Difference	5	1.20	5.306	5.320	68	76	72	74	8	59	1.006	1.928
Final			81.631	33.238	68	74	70					
Inital			76.519	28.166	68	72	71					
Difference	6	2.00	5.112	5.072	68	73	70.5	71.75	6	36	1.010	1.877
									Average		1.008	1.830

75

VOLUME METERING SYSTEM FIELD AUDIT

Date: 09-28-99 Name: Rich Russ

EPA Control Module No.: E25 Ambient Temperature: 68 °F

Calibration (Y): 1.008 Barometric Pressure: 29.5 "Hg

Delta H: 1.83

#VALUE!

Run No.	Time (Minutes)	Gas Meter Reading/Gas Meter Temperature (Cubic Feet)	Inlet (°F)	Outlet (°F)	Yc (Calculated)
1	0	61.815	76	71	1.037
	10	69.147	78	72	
	Vm=	7.332	Avg.= 74.25	534.25	
2	0	69.147	77	72	1.033
	10	76.512	79	72	
	Vm=	7.365	Avg.= 75.00	535.00	
3	0	76.512	77	72	1.028
	10	83.912	79	72	
	Vm=	7.400	Avg.= 75.00	535.00	

$$Yc = \frac{10}{Vm}\sqrt{\frac{Pbar}{0.0319Tm}}$$

Limit: 0.97Y <Yc< 1.03Y

Limit: 0.978 <Yc< 1.038

$$\text{Calc. Delta H @} = \frac{0.0319\ (\text{Delta H})(Tm)(100)}{Pbar(Y^2)(Vm^2)}$$ (From Calibration Data) = 1.958

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	94109	**TEST RUN NO.:**	1-Hg	**TEST DATE:**	10/12/99

CUSTOMER:	Niagara Mohawk Power Corporation	**BAROMETRIC PRESSURE (Pb)**	29.86	**in. Hg.**	
PLANT:	Dunkirk Station	**STATIC PRESSURE**	-11	**in. H2O**	
TEST LOC.:	Unit 2 Inlet East	**FLUE PRESSURE (Ps)**	29.05	**in. Hg. abs.**	
CLIENT:	Niagara Mohawk Power Corporation	**PROBE LENGTH:**	5	**ft.**	
OPERATOR:	J. Platt	**PROBE LINER MATERIAL:**	Glass		
CONTROL BOX:	E-15	**NOZZLE IDENTIFICATION NO.:**	No. 1 Set #2		
METER NO.:	E-15	**CALIBRATED NOZZLE DIAMETER:**	0.196	**in.**	
METER CALIBRATION FACTOR:	1.009	**LEAK CHECK** **PRE:**	0.000	**POST:**	0.000 @ 16 in. Hg.
PITOT ID NO.:	544A	**DUCT SHAPE:** Circular	DIA.		Feet
		Rectangular	4.7083 Feet		15.71 Feet
PITOT TUBE COEFFICIENT:	0.836	**DUCT AREA:**	73.959389	**sq. ft.**	
PORT LENGTH:	7 in.	**TEST LENGTH:**	150	**min.**	
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5		
PORT TYPE:	Nipple	**TOTAL NUMBER OF TRAVERSE POINTS:**	30		

ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Niagara Mohawk Power Corporation **Date:** 10/12/99 **Test Run:** 1-Hg

Location: Unit 2 Inlet East

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	0.80	0.894	16:20	27.75	0.51	571	69	69	2	2.150
1-2	0.68	0.825	16:25	29.90	0.44	573	69	69	2	1.800
1-3	0.75	0.866	16:30	31.70	0.48	576	70	69	2	2.000
1-4	0.63	0.794	16:35	33.70	0.39	576	71	70	2	1.850
1-5	0.73	0.854	16:40	35.55	0.45	573	72	70	2	1.850
			16:45	37.40						0.000
2-1	0.46	0.678	16:46	37.60	0.29	568	73	70	3	1.500
2-2	0.53	0.728	16:51	39.10	0.33	575	74	71	3	1.550
2-3	0.58	0.762	16:56	40.65	0.36	576	75	71	3	1.650
2-4	0.72	0.849	17:01	42.30	0.45	575	76	72	3	1.900
2-5	0.70	0.837	17:06	44.20	0.43	576	77	73	3	1.800
			17:11	46.00						0.000
3-1	0.20	0.447	17:13	46.27	0.12	566	77	73	3	1.030
3-2	0.30	0.548	17:18	47.30	0.19	575	78	74	3	1.300
3-3	0.40	0.632	17:23	48.60	0.25	576	79	75	3	1.400
3-4	0.57	0.755	17:28	50.00	0.35	576	80	76	3	1.700
3-5	0.54	0.735	17:33	51.70	0.33	574	80	76	3	1.650
			17:38	53.35						0.000
4-1	0.25	0.500	17:39	53.55	0.15	570	79	76	4.5	1.150
4-2	0.25	0.500	17:44	54.70	0.15	579	80	76	4.5	1.100
4-3	0.36	0.600	17:49	55.80	0.22	582	80	76	4.5	1.370
4-4	0.36	0.600	17:54	57.17	0.22	584	80	76	4.5	1.430
4-5	0.35	0.592	17:59	58.60	0.22	585	80	76	4.5	1.400
			18:04	60.00						0.000
5-1	0.50	0.707	18:05	60.20	0.31	584	80	74	4.5	1.800
5-2	0.62	0.787	18:10	62.00	0.38	589	81	77	4.5	1.700
5-3	0.71	0.843	18:15	63.70	0.44	590	81	77	4.5	1.800
5-4	0.65	0.806	18:20	65.50	0.40	593	79	77	4.5	1.700
5-5	0.80	0.894	18:25	67.20	0.50	593	81	77	4.5	1.950
			18:30	69.15						0.000
6-1	0.61	0.781	18:31	69.35	0.38	587	82	77	5	1.750
6-2	0.61	0.781	18:36	71.10	0.38	589	82	78	5	1.700
6-3	0.68	0.825	18:41	72.80	0.42	572	83	78	5	1.870
6-4	0.73	0.854	18:46	74.67	0.45	570	84	78	5	1.880
6-5	0.40	0.632	18:51	76.55	0.25	570	84	78	5	1.600
			18:56	78.15						0.000
										0.000
										0.000
		0.730		49.330	0.34	578	78	74		#####
							76.08			

MOISTURE, DILUENT AND MERCURY DATA

Company Niagara Mohawk Power Corporat **Date:** 10/12/99 **Test Run:** 1-Hg

Location: Unit 2 Inlet East

SILICA GEL FINAL WT.:	727.20	**grams**
SILICA GEL INITIAL WT.:	715.70	**grams**
DIFFERENCE:	11.50	
FINAL IMPINGER WATER:	4788.00	**mls.**
INITIAL IMPINGER WATER:	4709.10	**mls.**
DIFFERENCE:	78.90	
TOTAL WATER GAIN:	90.40	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:	0.225		0.000000225
PROBE WASH:	0.000		0.000000000
		Particle-bound Total:	0.000000225
KCl:	10.488		0.000010488
		Oxidized Total:	0.000010488
HNO_3/H_2O_2:	0.210		0.000000210
$KMNO_4$:	3.243		0.000003243
		Elemental Total:	0.000003453

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	13.90	13.90	13.90	13.90
Oxygen:	5.10	5.10	5.10	5.10

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	**Niagara Mohawk Power Corporation**
Date:	10/12/99
Test Run:	1-Hg
Stack or Duct No.:	Unit 2 Inlet East
Start Time:	16:20
Stop Time:	18:56

Pb:	29.86	Inches Hg
Static	-11.00	Inches H2O
Ps:	29.05	Inches Hg Abs.
Vlc: -	90	ml + grams
Mn:	0.0000	gm
Test Time:	150	minutes
% O2:	5.10	%
% CO2:	13.90	%
% N2:	81.00	%
Delta H:	0.34	Inches H20
Cp:	0.836	Dimensionless - pitot
Tm:	76.08	°F
Sqrt P:	0.730	Inches H20
Ts:	578.10	°F
Vm:	49.330	Cubic Feet
Dn:	0.196	Inches - nozzle
As:	73.96	Sq. Feet
Yd:	1.009	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	48.966	cubic feet (dry)
Vwstd:	4.258	cubic feet (wet)
Bwo:	0.080	
Md:	30.428	lb/lb-mole (dry)
Ms:	29.434	lb/lb-mole (wet)
Excess Air (%)	31.319	
Vs:	57.502	fps
ACFM:	255170.	
DSCFM:	115935.	
WSCFM:	126016	
%I:	99.5	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	94109	**TEST RUN NO.:**	2-Hg	**TEST DATE:**	10/13/99

CUSTOMER:	Niagara Mohawk Power Corporation	**BAROMETRIC PRESSURE (Pb)**	29.56	**in. Hg.**	
PLANT:	Dunkirk Station	**STATIC PRESSURE**	-10.5	**in. H2O**	
TEST LOC.:	Unit 2 Inlet East	**FLUE PRESSURE (Ps)**	28.79	**in. Hg. abs.**	
CLIENT:	Niagara Mohawk Power Corporation	**PROBE LENGTH:**	5	**ft.**	
OPERATOR:	J. Platt	**PROBE LINER MATERIAL:**	Glass		
CONTROL BOX:	E-15	**NOZZLE IDENTIFICATION NO.:**	No. 1 Set #2		
METER NO.:	E-15	**CALIBRATED NOZZLE DIAMETER:**	0.196	**in.**	
METER CALIBRATION FACTOR:	1.009	**LEAK CHECK** **PRE:**	0.010	**POST:**	0.000 @ 18 in. Hg.
PITOT ID NO.:	544A	**DUCT SHAPE:**	Circular DIA.		Feet
			Rectangular 4.7083	Feet	15.71 Feet
PITOT TUBE COEFFICIENT:	0.836	**DUCT AREA:**	73.959389	**sq. ft.**	
PORT LENGTH:	7 in.	**TEST LENGTH:**	150	**min.**	
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5		
PORT TYPE:	Nipple	**TOTAL NUMBER OF TRAVERSE POINTS:**	30		

ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Niagara Mohawk Power Corporation **Date:** 10/13/99 **Test Run:** 2-Hg

Location: Unit 2 Inlet East

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	0.62	0.787	9:00	79.10	0.40	595	84	81	4	1.900
1-2	0.67	0.819	9:05	81.00	0.43	596	85	81	4	1.650
1-3	0.73	0.854	9:10	82.65	0.47	575	86	82	4	1.850
1-4	0.80	0.894	9:15	84.50	0.51	570	88	83	4	1.900
1-5	0.40	0.632	9:20	86.40	0.26	570	88	83	4	1.250
			9:25	87.65						0.000
2-1	0.50	0.707	9:26	88.00	0.32	588	89	84	4.5	1.600
2-2	0.62	0.787	9:31	89.60	0.40	593	89	84	4.5	1.600
2-3	0.70	0.837	9:36	91.20	0.45	596	90	85	4.5	1.800
2-4	0.80	0.894	9:41	93.00	0.51	600	91	85	4.5	1.900
2-5	0.75	0.866	9:46	94.90	0.48	600	92	86	4.5	1.900
			9:51	96.80						0.000
3-1	0.28	0.529	9:52	97.05	0.18	583	91	86	4	1.170
3-2	0.30	0.548	9:57	98.22	0.19	585	91	87	4	1.240
3-3	0.36	0.600	10:02	99.46	0.23	581	92	87	4	1.290
3-4	0.40	0.632	10:07	100.75	0.26	582	91	87	4	1.350
3-5	0.45	0.671	10:12	102.10	0.29	582	92	88	4	1.400
			10:17	103.50						0.000
4-1	0.20	0.447	10:18	103.70	0.13	570	92	88	5	1.000
4-2	0.26	0.510	10:23	104.70	0.17	576	93	88	5	1.150
4-3	0.40	0.632	10:28	105.85	0.26	576	93	89	5	1.400
4-4	0.55	0.742	10:33	107.25	0.35	576	93	89	8	1.550
4-5	0.55	0.742	10:38	108.80	0.35	576	94	90	8	1.650
			10:43	110.45						0.000
5-1	0.45	0.671	10:44	110.65	0.29	571	95	90	10	1.450
5-2	0.55	0.742	10:49	112.10	0.35	572	95	90	10	1.600
5-3	0.60	0.775	10:54	113.70	0.38	576	95	91	10	1.650
5-4	0.70	0.837	10:59	115.35	0.45	577	96	91	10	1.800
5-5	0.66	0.812	11:04	117.15	0.42	571	96	91	10	1.750
			11:09	118.90						0.000
6-1	0.45	0.671	11:10	119.10	0.29	569	96	91	10	1.500
6-2	0.52	0.721	11:15	120.60	0.33	573	96	92	10	1.600
6-3	0.58	0.762	11:20	122.20	0.37	576	96	92	10	1.600
6-4	0.72	0.849	11:25	123.80	0.46	576	97	92	10	1.700
6-5	0.70	0.837	11:30	125.50	0.45	572	97	92	10	1.900
			11:35	127.40						0.000
										0.000
										0.000
		0.727		47.100	0.35	580	92	88		######
							89.80			

MOISTURE, DILUENT AND MERCURY DATA

Company Niagara Mohawk Power Corporat **Date:** 10/13/99 **Test Run:** 2-Hg

Location: Unit 2 Inlet East

SILICA GEL FINAL WT.:	813.20	**grams**
SILICA GEL INITIAL WT.:	794.90	**grams**
DIFFERENCE:	18.30	
FINAL IMPINGER WATER:	4911.20	**mls.**
INITIAL IMPINGER WATER:	4836.70	**mls.**
DIFFERENCE:	74.50	
TOTAL WATER GAIN:	92.80	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:	0.316		0.000000316
PROBE WASH:	0.000		0.000000000
		Particle-bound Total:	0.000000316
KCl:	10.188		0.000010188
		Oxidized Total:	0.000010188
HNO_3/H_2O_2:	0.054		0.000000054
$KMNO_4$:	1.583		0.000001583
		Elemental Total:	0.000001637

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	13.80			13.80
Oxygen:	4.90			4.90

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	**Niagara Mohawk Power Corporation**
Date:	10/13/99
Test Run:	2-Hg
Stack or Duct No.:	Unit 2 Inlet East
Start Time:	9:00
Stop Time:	11:35

Pb:	29.56	Inches Hg
Static	-10.50	Inches H2O
Ps:	28.79	Inches Hg Abs.
Vlc:	93	ml + grams
Mn:	0.0000	gm
Test Time:	150	minutes
% O2:	4.90	%
% CO2:	13.80	%
% N2:	81.30	%
Delta H:	0.35	Inches H20
Cp:	0.836	Dimensionless - pitot
Tm:	89.80	°F
Sqrt P:	0.727	Inches H20
Ts:	580.10	°F
Vm:	47.100	Cubic Feet
Dn:	0.196	Inches - nozzle
As:	73.96	Sq. Feet
Yd:	1.009	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	45.129	cubic feet (dry)
Vwstd:	4.371	cubic feet (wet)
Bwo:	0.088	
Md:	30.404	lb/lb-mole (dry)
Ms:	29.309	lb/lb-mole (wet)
Excess Air (%)	29.584	
Vs:	57.680	fps
ACFM:	255957.	
DSCFM:	113979.	
WSCFM:	125018	
%I:	93.2	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	94109	**TEST RUN NO.:**	3-Hg	**TEST DATE:**	10/13/99

CUSTOMER:	Niagara Mohawk Power Corporation	**BAROMETRIC PRESSURE (Pb)**	29.56	**in. Hg.**	
PLANT:	Dunkirk Station	**STATIC PRESSURE**	-10.5	**in. H2O**	
TEST LOC.:	Unit 2 Inlet East	**FLUE PRESSURE (Ps)**	28.79	**in. Hg. abs.**	
CLIENT:	Niagara Mohawk Power Corporation	**PROBE LENGTH:**	5	**ft.**	
OPERATOR:	J. Platt	**PROBE LINER MATERIAL:**	Glass		
CONTROL BOX:	E-15	**NOZZLE IDENTIFICATION NO.:**	No. 1 Set #2		
METER NO.:	E-15	**CALIBRATED NOZZLE DIAMETER:**	0.196	**in.**	
METER CALIBRATION FACTOR:	1.009	**LEAK CHECK**	**PRE:** 0.000	**POST:**	0.000 @ 15 in. Hg.
PITOT ID NO.:	544A	**DUCT SHAPE:**	Circular	DIA.	Feet
PITOT TUBE COEFFICIENT:	0.836		Rectangular	4.7083 Feet	15.71 Feet
PORT LENGTH:	7 in.	**DUCT AREA:**	73.959389	**sq. ft.**	
PORT SIZE:	4 in.	**TEST LENGTH:**	125	**min.**	
PORT TYPE:	Nipple	**MINUTES PER POINT:**	5		
		TOTAL NUMBER OF TRAVERSE POINTS:	25		

ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Niagara Mohawk Power Corporation **Date:** 10/13/99 **Test Run:** 3-Hg

Location: Unit 2 Inlet East

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
6-1	0.57	0.755	13:00	128.36	0.37	591	91	90	3.5	1.860
6-2	0.63	0.794	13:05	130.22	0.41	594	93	91	3.5	1.880
6-3	0.67	0.819	13:10	132.10	0.44	574	95	91	3.5	1.750
6-4	0.63	0.794	13:15	133.85	0.41	591	96	92	3.5	1.700
6-5	0.72	0.849	13:20	135.55	0.47	597	98	93	3.5	2.350
			13:25	137.90						0.000
5-1	0.48	0.693	13:26	138.10	0.31	590	99	94	5	1.500
5-2	0.60	0.775	13:31	139.60	0.39	592	100	94	5	1.750
5-3	0.66	0.812	13:36	141.35	0.43	595	101	95	5	1.880
5-4	0.69	0.831	13:41	143.23	0.44	597	102	95	5	1.920
5-5	0.75	0.866	13:46	145.15	0.48	597	102	96	5	2.150
			13:51	147.30						0.000
4-1	0.20	0.447	13:52	147.50	0.13	584	103	97	4.5	1.000
4-2	0.30	0.548	13:57	148.50	0.20	586	103	97	4.5	1.250
4-3	0.38	0.616	14:02	149.75	0.25	587	103	97	4.5	1.500
4-4	0.47	0.686	14:07	151.25	0.31	589	103	97	4.5	1.600
4-5	0.50	0.707	14:12	152.85	0.33	590	104	98	4.5	1.550
			14:17	154.40						0.000
3-1	0.20	0.447	14:18	154.60	0.13	576	103	98	5	1.250
3-2	0.27	0.520	14:23	155.85	0.18	580	104	98	5	1.250
3-3	0.40	0.632	14:28	157.10	0.26	580	103	99	7	1.400
3-4	0.58	0.762	14:33	158.50	0.38	580	103	99	7	1.680
3-5	0.60	0.775	14:38	160.18	0.39	580	104	99	8.5	1.820
			14:43	162.00						0.000
2-1	0.48	0.693	14:44	162.20	0.31	572	104	99	10	1.730
2-2	0.50	0.707	14:49	163.93	0.33	575	104	99	10	1.670
2-3	0.60	0.775	14:54	165.60	0.39	529	104	99	10	1.750
2-4	0.70	0.837	14:59	167.35	0.46	581	104	99	10	1.850
2-5	0.70	0.837	15:04	169.20	0.46	581	104	99	10	2.180
			15:09	171.38						0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
										0.000
		0.719		42.220	0.35	584	101	96		#####
							98.70			

MOISTURE, DILUENT AND MERCURY DATA

Company Niagara Mohawk Power Corporat **Date:** 10/13/99 **Test Run:** 3-Hg

Location: Unit 2 Inlet East

SILICA GEL FINAL WT.:	705.30	**grams**
SILICA GEL INITIAL WT.:	692.90	**grams**
DIFFERENCE:	12.40	
FINAL IMPINGER WATER:	4798.40	**mls.**
INITIAL IMPINGER WATER:	4732.60	**mls.**
DIFFERENCE:	65.80	
TOTAL WATER GAIN:	78.20	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:	0.358		0.000000358
PROBE WASH:	0.000		0.000000000
		Particle-bound Total:	0.000000358
KCl:	9.508		0.000009508
		Oxidized Total:	0.000009508
HNO_3/H_2O_2:	0.020		0.000000020
$KMNO_4$:	3.283		0.000003283
		Elemental Total:	0.000003303

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	14.00			14.00
Oxygen:	4.40			4.40

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	**Niagara Mohawk Power Corporation**
Date:	10/13/99
Test Run:	3-Hg
Stack or Duct No.:	Unit 2 Inlet East
Start Time:	13:00
Stop Time:	15:09

Pb:	29.56	Inches Hg
Static	-10.50	Inches H2O
Ps:	28.79	Inches Hg Abs.
Vlc:	78	ml + grams
Mn:	0.0000	gm
Test Time:	125	minutes
% O2:	4.40	%
% CO2:	14.00	%
% N2:	81.60	%
Delta H:	0.35	Inches H20
Cp:	0.836	Dimensionless - pitot
Tm:	98.70	°F
Sqrt P:	0.719	Inches H20
Ts:	583.52	°F
Vm:	42.220	Cubic Feet
Dn:	0.196	Inches - nozzle
As:	73.96	Sq. Feet
Yd:	1.009	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	39.809	cubic feet (dry)
Vwstd:	3.683	cubic feet (wet)
Bwo:	0.085	
Md:	30.416	lb/lb-mole (dry)
Ms:	29.365	lb/lb-mole (wet)
Excess Air (%)	25.667	
Vs:	57.088	fps
ACFM:	253331.	
DSCFM:	112886.	
WSCFM:	123330	
%I:	99.6	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	94109	**TEST RUN NO.:**	1-Hg	**TEST DATE:**	10/12/99

CUSTOMER:	Niagara Mohawk Power Corporation	**BAROMETRIC PRESSURE (Pb)**	29.86	**in. Hg.**	
PLANT:	Dunkirk Station	**STATIC PRESSURE**	-11.4	**in. H2O**	
TEST LOC.:	Unit 2 Outlet East	**FLUE PRESSURE (Ps)**	29.02	**in. Hg. abs.**	
CLIENT:	Niagara Mohawk Power Corporation	**PROBE LENGTH:**	8	**ft.**	
OPERATOR:	J. Geiger	**PROBE LINER MATERIAL:**	Quartz		
CONTROL BOX:	E-25	**NOZZLE IDENTIFICATION NO.:**	N/A		
METER NO.:	E-25	**CALIBRATED NOZZLE DIAMETER:**	0.311	**in.**	
METER CALIBRATION FACTOR:	1.008	**LEAK CHECK** **PRE:**	0.005	**POST:**	0.004 @ 10 in. Hg.
PITOT ID NO.:	541A	**DUCT SHAPE:**	Circular DIA.		Feet
			Rectangular 10 Feet		7.25 Feet
PITOT TUBE COEFFICIENT:	0.837	**DUCT AREA:**	72.5	**sq. ft.**	
PORT LENGTH:	12 in.	**TEST LENGTH:**	150	**min.**	
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5		
PORT TYPE:	Nipple	**TOTAL NUMBER OF TRAVERSE POINTS:**	30		

ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Niagara Mohawk Power Corporation **Date:** 10/12/99 **Test Run:** 1-Hg

Location: Unit 2 Outlet East

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	0.41	0.640	16:15	545.64	1.72	563	62	61	9	3.577
1-2	0.42	0.648	16:20	549.22	1.76	564	62	61	9	3.322
1-3	0.42	0.648	16:25	552.54	1.76	564	64	61	9	3.952
1-4	0.41	0.640	16:30	556.49	1.72	563	64	61	9	3.646
1-5	0.40	0.632	16:35	560.14	1.68	536	66	62	9	3.483
			16:40	563.62						0.000
2-1	0.40	0.632	16:42	563.62	1.68	557	70	61	9	3.583
2-2	0.40	0.632	16:47	567.20	1.68	563	70	62	9	3.520
2-3	0.42	0.648	16:52	570.72	1.76	563	70	62	9	3.620
2-4	0.41	0.640	16:57	574.34	1.72	562	70	63	9	3.581
2-5	0.40	0.632	17:02	577.92	1.68	560	69	63	9	3.692
			17:07	581.61						0.000
3-1	0.41	0.640	17:09	581.61	1.72	553	69	63	9	3.588
3-2	0.41	0.640	17:14	585.20	1.72	561	69	63	9	3.591
3-3	0.43	0.656	17:19	588.79	1.80	562	68	63	9	3.462
3-4	0.43	0.656	17:24	592.26	1.80	561	68	64	9	3.876
3-5	0.53	0.728	17:29	596.13	2.22	561	68	64	12	4.004
			17:34	600.14						0.000
4-1	0.40	0.632	17:36	600.14	1.68	559	66	65	8	3.549
4-2	0.40	0.632	17:41	603.68	1.68	561	65	63	8	3.553
4-3	0.42	0.648	17:46	607.24	1.76	561	65	64	8	3.167
4-4	0.40	0.632	17:51	610.40	1.68	561	64	62	8	3.977
4-5	0.38	0.616	17:56	614.38	1.60	561	63	60	8	3.461
			18:01	617.84						0.000
5-1	0.46	0.678	18:04	617.84	1.93	558	65	61	9	3.814
5-2	0.45	0.671	18:09	621.66	1.89	561	65	62	9	3.755
5-3	0.42	0.648	18:14	625.41	1.76	562	66	63	10	3.744
5-4	0.43	0.656	18:19	629.16	1.81	563	66	63	10	3.546
5-5	0.43	0.656	18:24	632.70	1.81	559	67	63	10	3.719
			18:29	636.42						0.000
6-1	0.45	0.671	18:31	636.42	1.89	559	67	63	10	3.797
6-2	0.45	0.671	18:36	640.22	1.89	560	68	63	10	3.789
6-3	0.42	0.648	18:41	644.01	1.76	562	70	62	10	3.561
6-4	0.42	0.648	18:46	647.57	1.76	563	71	64	10	3.630
6-5	0.43	0.656	18:51	651.20	1.81	560	68	63	10	3.732
			18:56	654.93						0.000
										0.000
										0.000
		0.649		109.291	1.77	560	67	63		#####
							64.67			

MOISTURE, DILUENT AND MERCURY DATA

Company Niagara Mohawk Power Corporat **Date:** 10/12/99 **Test Run:** 1-Hg

Location: Unit 2 Outlet East

SILICA GEL FINAL WT.:	744.90	**grams**
SILICA GEL INITIAL WT.:	717.30	**grams**
DIFFERENCE:	27.60	
FINAL IMPINGER WATER:	4768.20	**mls.**
INITIAL IMPINGER WATER:	4604.40	**mls.**
DIFFERENCE:	163.80	
TOTAL WATER GAIN:	191.40	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:	1.106		0.000001106
PROBE WASH:	0.000		0.000000000
		Particle-bound Total:	0.000001106
KCl:	18.188		0.000018188
		Oxidized Total:	0.000018188
HNO_3/H_2O_2:	0.820		0.000000820
$KMNO_4$:	8.873		0.000008873
		Elemental Total:	0.000009693

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	12.40	12.60	12.30	12.43
Oxygen:	5.60	5.90	6.10	5.87

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	**Niagara Mohawk Power Corporation**
Date:	10/12/99
Test Run:	1-Hg
Stack or Duct No.:	Unit 2 Outlet East
Start Time:	16:15
Stop Time:	18:56

Pb:	29.86	Inches Hg
Static	-11.40	Inches H2O
Ps:	29.02	Inches Hg Abs.
Vlc:	191	ml + grams
Mn:	0.0000	gm
Test Time:	150	minutes
% O2:	5.87	%
% CO2:	12.43	%
% N2:	81.70	%
Delta H:	1.77	Inches H20
Cp:	0.837	Dimensionless - pitot
Tm:	64.67	°F
Sqrt P:	0.649	Inches H20
Ts:	560.10	°F
Vm:	109.291	Cubic Feet
Dn:	0.311	Inches - nozzle
As:	72.50	Sq. Feet
Yd:	1.008	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	111.125	cubic feet (dry)
Vwstd:	9.015	cubic feet (wet)
Bwo:	0.075	
Md:	30.224	lb/lb-mole (dry)
Ms:	29.307	lb/lb-mole (wet)
Excess Air (%)	37.362	
Vs:	50.882	fps
ACFM:	221337.	
DSCFM:	102785.	
WSCFM:	111124	
%I:	99.1	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	94109	**TEST RUN NO.:**	2-Hg	**TEST DATE:**	10/13/99

CUSTOMER:	Niagara Mohawk Power Corporation	**BAROMETRIC PRESSURE (Pb)**	29.56	**in. Hg.**	
PLANT:	Dunkirk Station	**STATIC PRESSURE**	-11.5	**in. H2O**	
TEST LOC.:	Unit 2 Outlet East	**FLUE PRESSURE (Ps)**	28.71	**in. Hg. abs.**	
CLIENT:	Niagara Mohawk Power Corporation	**PROBE LENGTH:**	8	**ft.**	
OPERATOR:	J. Geiger	**PROBE LINER MATERIAL:**	Quartz		
CONTROL BOX:	E-25	**NOZZLE IDENTIFICATION NO.:**	N/A		
METER NO.:	E-25	**CALIBRATED NOZZLE DIAMETER:**	0.311	**in.**	
METER CALIBRATION FACTOR:	1.008	**LEAK CHECK** **PRE:**	0.005	**POST:**	0.004 @ 11 in. Hg.
PITOT ID NO.:	541A	**DUCT SHAPE:**	Circular DIA.		Feet
			Rectangular	10 Feet	7.25 Feet
PITOT TUBE COEFFICIENT:	0.837	**DUCT AREA:**	72.5	**sq. ft.**	
PORT LENGTH:	12 in.	**TEST LENGTH:**	150	**min.**	
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5		
PORT TYPE:	Nipple	**TOTAL NUMBER OF TRAVERSE POINTS:**	30		

ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Niagara Mohawk Power Corporation **Date:** 10/13/99 **Test Run:** 2-Hg

Location: Unit 2 Outlet East

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	0.45	0.671	9:00	655.38	1.89	563	73	64	7	3.764
1-2	0.45	0.671	9:05	659.14	1.89	563	73	65	7	3.775
1-3	0.41	0.640	9:10	662.92	1.74	565	74	68	7	3.702
1-4	0.51	0.714	9:15	666.62	2.17	565	73	72	7	4.090
1-5	0.42	0.648	9:20	670.71	1.78	564	76	74	7	3.888
			9:25	674.60						0.000
2-1	0.44	0.663	9:27	674.60	1.87	563	75	72	7	3.811
2-2	0.45	0.671	9:32	678.41	1.92	564	76	73	8	3.873
2-3	0.44	0.663	9:37	682.28	1.87	566	78	73	7	3.848
2-4	0.46	0.678	9:42	686.13	1.95	567	79	73	7	3.856
2-5	0.41	0.640	9:47	689.99	1.74	566	79	73	8	3.712
			9:52	693.70						0.000
3-1	0.40	0.632	9:54	693.70	1.70	563	78	73	7	3.643
3-2	0.41	0.640	9:59	697.34	1.75	566	77	72	6	3.767
3-3	0.43	0.656	10:04	701.11	1.83	566	77	72	7	3.683
3-4	0.40	0.632	10:09	704.79	1.70	565	76	73	7	3.639
3-5	0.43	0.656	10:14	708.43	1.83	564	76	73	7	3.759
			10:19	712.19						0.000
4-1	0.42	0.648	10:21	712.19	1.78	562	76	71	7	3.732
4-2	0.42	0.648	10:26	715.92	1.78	561	75	77	7	3.723
4-3	0.40	0.632	10:31	719.65	1.70	563	75	77	7	3.636
4-4	0.40	0.632	10:36	723.28	1.70	563	77	74	7	3.644
4-5	0.41	0.640	10:41	726.93	1.75	563	77	74	7	3.660
			10:46	730.59						0.000
5-1	0.40	0.632	10:48	730.59	1.70	561	74	74	7	3.674
5-2	0.42	0.648	10:53	734.26	1.78	560	76	73	7	3.694
5-3	0.42	0.648	10:58	737.95	1.78	561	76	74	7	3.748
5-4	0.40	0.632	11:03	741.70	1.70	563	77	73	7	3.621
5-5	0.40	0.632	11:08	745.32	1.70	560	78	73	7	3.620
			11:13	748.94						0.000
6-1	0.39	0.624	11:15	748.94	1.66	562	79	74	6	3.599
6-2	0.40	0.632	11:20	752.54	1.70	562	80	74	7	3.670
6-3	0.42	0.648	11:25	756.21	1.78	563	80	73	7	3.702
6-4	0.41	0.640	11:30	759.91	1.75	564	80	72	7	3.669
6-5	0.40	0.632	11:35	763.58	1.70	563	80	74	7	3.770
			11:40	767.35						0.000
										0.000
										0.000
		0.648		111.972	1.79	563	77	73		######
							74.62			

MOISTURE, DILUENT AND MERCURY DATA

Company Niagara Mohawk Power Corporat **Date:** 10/13/99 **Test Run:** 2-Hg

Location: Unit 2 Outlet East

SILICA GEL FINAL WT.:	752.50	**grams**
SILICA GEL INITIAL WT.:	729.90	**grams**
DIFFERENCE:	22.60	
FINAL IMPINGER WATER:	4871.60	**mls.**
INITIAL IMPINGER WATER:	4687.00	**mls.**
DIFFERENCE:	184.60	
TOTAL WATER GAIN:	207.20	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:	0.393		0.000000393
PROBE WASH:	0.000		0.000000000
		Particle-bound Total:	0.000000393
KCl:	12.088		0.000012088
		Oxidized Total:	0.000012088
HNO_3/H_2O_2:	0.464		0.000000464
$KMNO_4$:	6.063		0.000006063
		Elemental Total:	0.000006527

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	12.90	13.00	13.30	13.07
Oxygen:	5.80	5.90	5.60	5.77

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	**Niagara Mohawk Power Corporation**
Date:	10/13/99
Test Run:	2-Hg
Stack or Duct No.:	Unit 2 Outlet East
Start Time:	9:00
Stop Time:	11:40

Pb:	29.56	Inches Hg
Static	-11.50	Inches H2O
Ps:	28.71	Inches Hg Abs.
Vlc:	207	ml + grams
Mn:	0.0000	gm
Test Time:	150	minutes
% O2:	5.77	%
% CO2:	13.07	%
% N2:	81.17	%
Delta H:	1.79	Inches H20
Cp:	0.837	Dimensionless - pitot
Tm:	74.62	°F
Sqrt P:	0.648	Inches H20
Ts:	563.37	°F
Vm:	111.972	Cubic Feet
Dn:	0.311	Inches - nozzle
As:	72.50	Sq. Feet
Yd:	1.008	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	110.619	cubic feet (dry)
Vwstd:	9.759	cubic feet (wet)
Bwo:	0.081	
Md:	30.321	lb/lb-mole (dry)
Ms:	29.322	lb/lb-mole (wet)
Excess Air (%)	36.821	
Vs:	51.144	fps
ACFM:	222477.	
DSCFM:	101229.	
WSCFM:	110160	
%I:	100.2	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

ONTARIO HYDRO METHOD TEST SUPPORT DATA

PROJECT NO.:	94109	**TEST RUN NO.:**	3-Hg	**TEST DATE:**	10/13/99

CUSTOMER:	Niagara Mohawk Power Corporation	**BAROMETRIC PRESSURE (Pb)**	29.56	**in. Hg.**	
PLANT:	Dunkirk Station	**STATIC PRESSURE**	-11.5	**in. H2O**	
TEST LOC.:	Unit 2 Outlet East	**FLUE PRESSURE (Ps)**	28.71	**in. Hg. abs.**	
CLIENT:	Niagara Mohawk Power Corporation	**PROBE LENGTH:**	8	**ft.**	
OPERATOR:	J. Geiger	**PROBE LINER MATERIAL:**	Quartz		
CONTROL BOX:	E-25	**NOZZLE IDENTIFICATION NO.:**	N/A		
METER NO.:	E-25	**CALIBRATED NOZZLE DIAMETER:**	0.311	**in.**	
METER CALIBRATION FACTOR:	1.008	**LEAK CHECK** **PRE:**	0.007	**POST:**	0.005 @ 12 in. Hg.
PITOT ID NO.:	541A	**DUCT SHAPE:**	Circular DIA.		Feet
			Rectangular	10 Feet	7.25 Feet
PITOT TUBE COEFFICIENT:	0.837	**DUCT AREA:**		72.5 **sq. ft.**	
PORT LENGTH:	12 in.	**TEST LENGTH:**	150	**min.**	
PORT SIZE:	4 in.	**MINUTES PER POINT:**	5		
PORT TYPE:	Nipple	**TOTAL NUMBER OF TRAVERSE POINTS:**	30		

ONTARIO HYDRO METHOD TRAVERSE DATA

Company: Niagara Mohawk Power Corporation **Date:** 10/13/99 **Test Ru** 3-Hg

Location: Unit 2 Outlet East

Point	Δp	Sq. Root Δp	Time	Volume cubic feet	ΔH	Stack Temp °F	Meter Inlet °F	Meter Outlet °F	Vacuum in. Hg	
1-1	0.40	0.632	13:00	767.36	1.70	562	80	72	8	3.636
1-2	0.45	0.671	13:05	771.00	1.91	566	80	72	8	3.916
1-3	0.43	0.656	13:10	774.91	1.83	566	79	72	9	3.696
1-4	0.40	0.632	13:15	778.61	1.70	564	79	72	7	3.724
1-5	0.40	0.632	13:20	782.33	1.70	567	79	73	7	3.543
			13:25	785.87						0.000
2-1	0.41	0.640	13:27	785.87	1.74	564	78	73	7	3.692
2-2	0.41	0.640	13:32	789.57	1.74	565	78	72	7	3.678
2-3	0.45	0.671	13:37	793.24	1.91	565	78	71	10	3.861
2-4	0.43	0.656	13:42	797.11	1.83	563	77	71	8	3.766
2-5	0.40	0.632	13:47	800.87	1.70	560	77	72	7	3.352
			13:52	804.22						0.000
3-1	0.44	0.663	13:54	804.22	1.87	563	78	73	7	3.936
3-2	0.44	0.663	13:59	808.16	1.87	565	77	72	7	3.682
3-3	0.42	0.648	14:04	811.84	1.78	562	77	72	7	3.736
3-4	0.40	0.632	14:09	815.58	1.70	563	77	74	7	3.636
3-5	0.40	0.632	14:14	819.21	1.70	561	77	74	7	3.418
			14:19	822.63						0.000
4-1	0.43	0.656	14:21	822.63	1.83	564	76	73	8	3.804
4-2	0.45	0.671	14:26	826.44	1.92	569	77	72	9	3.876
4-3	0.44	0.663	14:31	830.31	1.87	569	78	73	9	3.791
4-4	0.44	0.663	14:36	834.10	1.87	568	77	73	9	3.801
4-5	0.39	0.624	14:41	837.90	1.66	561	77	73	7	3.567
			14:46	841.47						0.000
5-1	0.42	0.648	14:50	841.47	1.78	562	78	73	8	3.749
5-2	0.44	0.663	14:55	845.22	1.87	568	79	71	9	3.831
5-3	0.45	0.671	15:00	849.05	1.92	568	79	72	10	3.823
5-4	0.43	0.656	15:05	852.87	1.83	567	79	72	9	3.771
5-5	0.41	0.640	15:10	856.64	1.75	562	78	74	7	3.667
			15:15	860.31						0.000
6-1	0.40	0.632	15:17	860.31	1.70	565	79	74	8	3.644
6-2	0.43	0.656	15:22	863.96	1.83	564	79	73	9	3.770
6-3	0.46	0.678	15:27	867.73	1.95	564	78	73	10	3.904
6-4	0.44	0.663	15:32	871.63	1.87	566	78	73	9	3.792
6-5	0.40	0.632	15:37	875.42	1.70	560	78	74	6	3.682
			15:42	879.10						0.000
										0.000
										0.000
		0.651		111.744	1.80	564	78	73		#####
							75.32			

MOISTURE, DILUENT AND MERCURY DATA

Company Niagara Mohawk Power Corporat **Date:** 10/13/99 **Test Run:** 3-Hg

Location: Unit 2 Outlet East

SILICA GEL FINAL WT.:	748.90	**grams**
SILICA GEL INITIAL WT.:	715.40	**grams**
DIFFERENCE:	33.50	
FINAL IMPINGER WATER:	4788.60	**mls.**
INITIAL IMPINGER WATER:	4625.60	**mls.**
DIFFERENCE:	163.00	
TOTAL WATER GAIN:	196.50	

ITEM	MERCURY (UG)		= NET WT. (G)
FILTER:	0.168		0.000000168
PROBE WASH:	0.000		0.000000000
		Particle-bound Total:	0.000000168
KCl:	16.988		0.000016988
		Oxidized Total:	0.000016988
HNO_3/H_2O_2:	0.020		0.000000020
$KMNO_4$:	10.073		0.000010073
		Elemental Total:	0.000010093

Orsat Analysis	1	2	3	Average
Carbon Dioxide:	13.40	13.30	13.50	13.40
Oxygen:	6.00	5.60	5.40	5.67

ONTARIO HYDRO METHOD DATA ENTRY FORM

Field Data/Calculated Data

Company:	**Niagara Mohawk Power Corporation**
Date:	10/13/99
Test Run:	3-Hg
Stack or Duct No.:	Unit 2 Outlet East
Start Time:	13:00
Stop Time:	15:42

Pb:	29.56	Inches Hg
Static	-11.50	Inches H2O
Ps:	28.71	Inches Hg Abs.
Vlc:	197	ml + grams
Mn:	0.0000	gm
Test Time:	150	minutes
% O2:	5.67	%
% CO2:	13.40	%
% N2:	80.93	%
Delta H:	1.80	Inches H20
Cp:	0.837	Dimensionless - pitot
Tm:	75.32	°F
Sqrt P:	0.651	Inches H20
Ts:	564.43	°F
Vm:	111.744	Cubic Feet
Dn:	0.311	Inches - nozzle
As:	72.50	Sq. Feet
Yd:	1.008	Mcf
CF:	N/A	Process tons/hr
Heat Input:	N/A	MM BTU/hr
Fd:	N/A	dscf/10^6 Btu
Fc:	N/A	scf/10^6 Btu

Vmstd:	110.253	cubic feet (dry)
Vwstd:	9.255	cubic feet (wet)
Bwo:	0.077	
Md:	30.371	lb/lb-mole (dry)
Ms:	29.413	lb/lb-mole (wet)
Excess Air (%)	36.094	
Vs:	51.281	fps
ACFM:	223072.	
DSCFM:	101795.	
WSCFM:	110340	
%I:	99.3	isokinetic variance
GR/ACF:	---	
GR/DSCF:	---	
lbs/hr	---	
lbs/ton prod.:	N/A	
lbs/MM BTU:	N/A	Heat Input
lbs/MM BTU:	N/A	O2 Basis
lbs/MM BTU:	N/A	CO2 Basis

Project Summary-Samples Received Report

Project	*Client*	*Unit*
94109	NRG	DUNKIRK,NY

Project	*Sample*	*Sample Point*	*Date Received*	*Analyte Detail*
94109	001	INL HNO3 RNS T1	10/15/1999	Mercury
94109	002	INL HNO3 RNS T2	10/15/1999	Mercury
94109	003	INL HNO3 RNS T3	10/15/1999	Mercury
94109	004	INL KCL IMP T1	10/15/1999	Mercury
94109	005	INL KCL IMP T2	10/15/1999	Mercury
94109	006	INL KCL IMP T3	10/15/1999	Mercury
94109	007	IN HNO3/H2O2 T1	10/15/1999	Mercury
94109	008	IN HNO3/H2O2 T2	10/15/1999	Mercury
94109	009	IN HNO3/H2O2 T3	10/15/1999	Mercury
94109	010	INL KMNO4 IM T1	10/15/1999	Mercury
94109	011	INL KMNO4 IM T2	10/15/1999	Mercury
94109	012	INL KMNO4 IM T3	10/15/1999	Mercury
94109	013	OUT HNO3 RNS T1	10/15/1999	Mercury
94109	014	OUT HNO3 RNS T2	10/15/1999	Mercury
94109	015	OUT HNO3 RNS T3	10/15/1999	Mercury
94109	016	OUT KCL IMP T1	10/15/1999	Mercury
94109	017	OUT KCL IMP T2	10/15/1999	Mercury
94109	018	OUT KCL IMP T3	10/15/1999	Mercury
94109	019	OUT HNO3/H2O2-1	10/15/1999	Mercury
94109	020	OUT HNO3/H2O2-2	10/15/1999	Mercury
94109	021	OUT HNO3/H2O2-3	10/15/1999	Mercury
94109	022	OUT KMNO4 IM T1	10/15/1999	Mercury
94109	023	OUT KMNO4 IM T2	10/15/1999	Mercury
94109	024	OUT KMNO4 IM T3	10/15/1999	Mercury
94109	025	FLD BL INL KCL	10/15/1999	Mercury
94109	026	F/B INHNO3/H2O2	10/15/1999	Mercury

Project	*Sample*	*Sample Point*	*Date Received*	*Analyte Detail*
94109	027	FLD BL IN KMNO4	10/15/1999	Mercury
94109	028	FLD BL OUT KCL	10/15/1999	Mercury
94109	029	F/B HNO3/H2O2	10/15/1999	Mercury
94109	030	F/B OUTL KMNO4	10/15/1999	Mercury
94109	031	BLANK:QRTZ FLT	10/15/1999	Mercury
94109	032	BLANK:QRTZ FLT	10/15/1999	Mercury
94109	033	BLANK:QRTZ FLT	10/15/1999	Mercury
94109	034	REAG.BLNK HNO3	10/15/1999	Mercury
94109	035	REAG.BLNK KCL	10/15/1999	Mercury
94109	036	R/BL HNO3/H2O2	10/15/1999	Mercury
94109	037	REAG.BLNK KMNO4	10/15/1999	Mercury
94109	038	R/BL HYDROXYLAM	10/15/1999	Mercury
94109	039	COAL SAMPLE T1	10/15/1999	Chlorine
94109	039	COAL SAMPLE T1	10/15/1999	Mercury
94109	039	COAL SAMPLE T1	10/15/1999	Ultimate/Proximate on Coal
94109	040	COAL SAMPLE T2	10/15/1999	Chlorine
94109	040	COAL SAMPLE T2	10/15/1999	Mercury
94109	040	COAL SAMPLE T2	10/15/1999	Ultimate/Proximate on Coal
94109	041	COAL SAMPLE T3	10/15/1999	Chlorine
94109	041	COAL SAMPLE T3	10/15/1999	Mercury
94109	041	COAL SAMPLE T3	10/15/1999	Ultimate/Proximate on Coal
94109	042	ASH SAMPLE	10/15/1999	Hold

LABORATORY REPORT

TEI Analytical, Inc.
7177 N. Austin
Niles, IL 60714-4617
847-647-1345

PREPARED FOR:

Frank Jarke
Mostardi-Platt Associates, Inc.
945 Oaklawn Avenue
Elmhurst, IL 60126

Report #: 37153
Report Date: 2/4/00
Sample Received:
10/25/99 12:37

TEI	94109	Type	Total ug	mg/kg	Date	%RSD	Lin.Reg.	Blank	CPI	MS	MSD
37153	001	HNO3	<0.003		01/05/00	4.57	0.99998	NA	91.2	104	103
37154	002	HNO3	<0.003		01/05/00	2.26	0.99998	NA	91.2	104	103
37155	003	HNO3	<0.003		01/05/00	2.3	0.99998	NA	91.2	104	103
37156	004	KCl	10.5		01/12/00	0.482	0.99999	0.23	90.7	108	106
37157	005	KCl	10.2		01/12/00	0.493	0.99999	0.23	90.7	108	106
37158	006	KCl	9.52		01/12/00	0.321	0.99999	0.23	90.7	108	106
37159	007	H2O2	0.210		01/10/00	0.349	0.99998	0.135	97.2	103	103
37160	008	H2O2	0.054		01/10/00	3.59	0.99998	0.135	97.2	103	103
37161	009	H2O2	<0.04		01/10/00	3.98	0.99998	0.135	97.2	103	103
37162	010	KMnO4	3.37		12/13/99	3.24	1	0.023	93.5	99	106
37163	011	KMnO4	1.71		12/13/99	1.64	1	0.023	93.5	99	106
37164	012	KMnO4	3.41		12/13/99	3.28	1	0.023	93.5	99	106
37165	013	HNO3	<0.003		01/10/00	0.467	0.99998	NA	93.8	108	109
37166	014	HNO3	<0.003		01/05/00	2.65	0.99998	NA	91.2	104	103
37167	015	HNO3	<0.003		01/05/00	3.83	0.99998	NA	91.2	104	103
37168	016	KCl	18.2		01/12/00	0.327	0.99999	0.23	90.7	108	106
37169	017	KCl	12.1		01/12/00	0.294	0.99999	0.23	90.7	108	106
37170	018	KCl	17.0		01/15/00	0.661	0.99986	0.3	103	120	120
37171	019	H2O2	0.820		01/10/00	0.134	0.99998	0.135	97.2	103	103
37172	020	H2O2	0.464		01/10/00	0.517	0.99998	0.135	93.8	108	109
37173	021	H2O2	<0.04		01/10/00	2.83	0.99998	0.135	93.8	108	109
37174	022	KMnO4	9.00		12/13/99	8.65	1	0.023	93.5	99	106
37175	023	KMnO4	6.19		12/13/99	5.95	1	0.023	93.5	99	106
37176	024	KMnO4	10.2		12/13/99	9.82	1	0.023	93.5	99	106
37177	025	KCl	0.064		01/04/00	1.76	1	0.103	93.3	110	109

FEB 4 200

Gayle E. O'Neill, Ph.D.

This report may not be reproduced except in its entirety.

LABORATORY REPORT

TEI Analytical, Inc.
7177 N. Austin
Niles, IL 60714-4617
847-647-1345

PREPARED FOR:

Frank Jarke
Mostardi-Platt Associates, Inc.
945 Oaklawn Avenue
Elmhurst, IL 60126

Report #: 37153
Report Date: 2/4/00
Sample Received:
10/25/99 12:37

TEI	94109	Type	Total ug	mg/kg	Date	%RSD	Lin.Reg.	Blank	CPI	MS	MSD
37178	026	H2O2	<0.04		01/10/00	2.95	0.99998	0.135	93.8	108	109
37179	027	KMnO4	0.550		12/13/99	1.85	1	0.023	93.5	99	106
37180	028	KCl	0.062		01/04/00	1.16	1	0.103	93.3	110	109
37181	029	H2O2	<0.04		01/10/00	2.52	0.99998	0.135	93.8	108	109
37182	030	KMnO4	0.196		12/14/99	2.23	1	0.023	94.2	107	108
37183	031	Filt		<0.006	01/09/00	3.17	0.99998	0.138	101	122	108
37184	032	Filt		<0.006	01/11/00	20.9	0.99993	0.138	93.3	109	114
37185	033	Filt		0.041	01/11/00	1.3	0.99993	0.138	93.3	109	114
37186	034	HNO3	<0.002		01/06/00	24.8	0.99959	NA	107	99.5	84.3
37187	035	KCl	0.012		12/16/99	2.34	1	0.104	99	110	QNS
37188	036	H2O2	<0.007		01/10/00	2.48	0.99998	0.135	93.8	108	109
37189	037	KMnO4	0.127		12/14/99	0.393	1	0.023	94.2	107	108
37190	038	NH2OH	<0.003		12/15/99	1.32	0.99999	NA	96.5	115	114
37191	001Filter	Filt		0.067	01/11/00	0.107	0.99993	0.138	93.3	109	114
37192	002Filter	Filt		0.090	01/11/00	0.325	0.99993	0.138	93.3	109	114
37193	003Filter	Filt		0.103	01/11/00	0.404	0.99993	0.138	93.3	109	114
37194	013Filter	Filt		0.305	01/11/00	0.346	0.99993	0.138	93.3	109	114
37195	014Filter	Filt		0.131	01/11/00	0.192	0.99993	0.138	93.3	109	114
37196	015Filter	Filt		0.053	01/11/00	0.364	0.99993	0.138	93.3	109	114

Gayle E. O'Neill, Ph.D.

This report may not be reproduced except in its entirety.

LABORATORY REPORT

TEI Analytical, Inc.
7177 N. Austin
Niles, IL 60714-4617
847-647-1345

PREPARED FOR:

Frank Jarke
Mostardi-Platt Associates, Inc.
945 Oaklawn Avenue
Elmhurst, IL 60126

Report #: 37153
Report Date: 2/4/00
Sample Received:
10/25/99 12:37

Mercury (Ontario Hydro Method)

The QAPP called for the analysis of all samples in duplicate with every tenth sample run in triplicate. To simplify the instrument setup, we chose to run all samples, blanks, standards, matrix spikes and matrix spike duplicates in triplicate. The reported %RSD is for the triplicate measurements.

All sample results are reported as total micrograms in the sample received by the laboratory, with the exception of the filter samples. The filter sample results are expressed as mg/kg.

The instrument was calibrated at least daily with a blank and four standards. The Lin.Reg. column in this report represents the linear regression coefficient obtained during the calibration.

The laboratory method blank is reported in ug/l in the Blank column of this report. For samples requiring only addition of Hydroxylamine Hydrochloride, NA is entered in this column. No laboratory method blanks were applicable for these samples.

The CPI column presents the % Recovery of an independent standard (obtained from CPI). The calibration curve was prepared in our laboratory from Mercuric Chloride in accordance with EPA Method 7470.

The MS and MSD columns present the % Recovery of the Matrix Spikes and Matrix Spike Duplicates.

Gayle E. O'Neill, Ph.D.

This report may not be reproduced except in its entirety.

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

SINCE 1908®

SGS Member of the SGS Group (Société Générale de Surveillance)

ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

October 29, 1999

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 94109-039

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: October 12, 1999

Date received: October 27, 1999

P.O. No. 22442

Analysis Report No. 71-105626

PROXIMATE ANALYSIS	As Received	Dry Basis
% Moisture	5.76	xxxxx
% Ash	6.97	7.40
% Volatile	34.92	37.05
% Fixed Carbon	52.35	55.55
	100.00	100.00
Btu/lb	13106	13907
% Sulfur	2.18	2.31
MAF Btu		15018

ULTIMATE ANALYSIS	As Received	Dry Basis
% Moisture	5.76	xxxxx
% Carbon	72.90	77.36
% Hydrogen	4.82	5.11
% Nitrogen	1.45	1.54
% Sulfur	2.18	2.31
% Ash	6.97	7.40
% Oxygen(diff)	5.92	6.28
	100.00	100.00
CHLORIDE ug/g	764	811

METHODS

Moisture: ASTM D 3302; Ash: ASTM D 3174; Volatile: ASTM D 3175; Fixed Carbon: Calculated Value; ASTM D 3172
Btu/lb: ASTM 3286; Sulfur: ASTM D 4239 (Method C); Carbon, Hydrogen & Nitrogen: ASTM D 5373; Chloride: ASTM D 4208

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

South Holland Laboratory

MEMBER ACIL

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

-465
riginal Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

SINCE 1908®

SGS Member of the SGS Group (Société Générale de Surveillance)

ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

October 29, 1999

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 94109-039

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: October 12, 1999

Date received: October 27, 1999

P.O. No. 22442

Analysis Report No. 71-105626

	Dry Basis, ug/g	MDL, ug/g
Mercury, Hg	0.13	0.01

	Expected	Observed
SARM 1157	0.05	0.05
NIST 1630A	0.11	0.10

MDL Denotes Method Detection Limit

METHOD
Mercury: ASTM D 3684

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

South Holland Laboratory

MEMBER ACIL

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

ginal Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

SINCE 1908®

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

SGS Member of the SGS Group (Société Générale de Surveillance)

ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

October 29, 1999

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 94109-040

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: October 12, 1999

Date received: October 27, 1999

P.O. No. 22442

Analysis Report No. 71-105627 Page 1 of 2

PROXIMATE ANALYSIS	As Received	Dry Basis
% Moisture	5.10	xxxxx
% Ash	7.40	7.80
% Volatile	35.08	36.96
% Fixed Carbon	52.42	55.24
	100.00	100.00
Btu/lb	13307	14022
% Sulfur	2.12	2.23
MAF Btu		15208

ULTIMATE ANALYSIS	As Received	Dry Basis
% Moisture	5.10	xxxxx
% Carbon	73.36	77.30
% Hydrogen	4.87	5.13
% Nitrogen	1.48	1.56
% Sulfur	2.12	2.23
% Ash	7.40	7.80
% Oxygen(diff)	5.67	5.98
	100.00	100.00
CHLORIDE ug/g	878	925

METHODS

Moisture: ASTM D 3302; Ash: ASTM D 3174; Volatile: ASTM D 3175; Fixed Carbon: Calculated Value; ASTM D 3172
Btu/lb: ASTM 3286; Sulfur: ASTM D 4239 (Method C); Carbon, Hydrogen & Nitrogen: ASTM D 5373; Chloride: ASTM D 4208

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

South Holland Laboratory

MEMBER ACIL

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

465
riginal Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

SINCE 1908®

SGS Member of the SGS Group (Société Générale de Surveillance)

ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

October 29, 1999

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 94109-040

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: October 12, 1999

Date received: October 27, 1999

P.O. No. 22442

Analysis Report No. 71-105627

	Dry Basis, ug/g	MDL, ug/g
Mercury, Hg	0.13	0.01

	Expected	Observed
SARM 1157	0.05	0.05
NIST 1630A	0.11	0.10

MDL Denotes Method Detection Limit

METHOD
Mercury: ASTM D 3684

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

South Holland Laboratory

MEMBER ACIL

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

inal Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

SINCE 1908®

SGS Member of the SGS Group (Société Générale de Surveillance)

ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

October 29, 1999

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: October 12, 1999

Date received: October 27, 1999

MPA Sample No: 94109-041

P.O. No. 22442

Analysis Report No. 71-105628

PROXIMATE ANALYSIS	As Received	Dry Basis
% Moisture	6.60	xxxxx
% Ash	8.33	8.92
% Volatile	34.43	36.86
% Fixed Carbon	50.64	54.22
	100.00	100.00
Btu/lb	12907	13819
% Sulfur	2.10	2.25
MAF Btu		15172

ULTIMATE ANALYSIS	As Received	Dry Basis
% Moisture	6.60	xxxxx
% Carbon	71.02	76.04
% Hydrogen	4.74	5.07
% Nitrogen	1.40	1.50
% Sulfur	2.10	2.25
% Ash	8.33	8.92
% Oxygen(diff)	5.81	6.22
	100.00	100.00
CHLORIDE ug/g	822	880

METHODS

Moisture: ASTM D 3302; Ash: ASTM D 3174; Volatile: ASTM D 3175; Fixed Carbon: Calculated Value; ASTM D 3172
Btu/lb: ASTM 3286; Sulfur: ASTM D 4239 (Method C); Carbon, Hydrogen & Nitrogen: ASTM D 5373; Chloride: ASTM D 4208

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

South Holland Laboratory

MEMBER ACIL

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

465
riginal Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 630-953-9300 FAX: 630-953-9306

SINCE 1908®

SGS Member of the SGS Group (Société Générale de Surveillance)

ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD.
SOUTH HOLLAND, IL 60473
TEL: (708) 331-2900
FAX: (708) 333-3060

October 29, 1999

MOSTARDI-PLATT ASSOCIATES, INC
945 Oaklawn Avenue
Elmhurst, IL 60126
Attn: Frank Jarke

Sample identification by
Mostardi-Platt Assoc., Inc.

Kind of sample reported to us: Coal

MPA Sample No: 94109-041

Sample taken at: ------

Sample taken by: Mostardi-Platt Assoc., Inc.

Date sampled: October 12, 1999

Date received: October 27, 1999

P.O. No. 22442

Analysis Report No. 71-105628

	Dry Basis, ug/g	MDL, ug/g
Mercury, Hg	0.13	0.01

	Expected	Observed
SARM 1157	0.05	0.05
NIST 1630A	0.11	0.10

MDL Denotes Method Detection Limit

METHOD
Mercury: ASTM D 3684

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

South Holland Laboratory

MEMBER ACIL

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

5
ginal Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

LIST OF PARTICIPANTS

Name	Organization	Project Role
Thomas Coates	NRG Energy, Inc.	Plant Coordinator
James R. Platt	Mostardi Platt	Vice President
Joe Geiger	Mostardi Platt	Field Engineer
John Wendell	Mostardi Platt	Laboratory Chemist
Norm Smith	Mostardi Platt	Test Technician
Corey Shelby	Mostardi Platt	Test Technician
Gayle O'Neill, Ph.D.	TEI Analytical, Inc.	Speciated Hg Sample Analysis
Joseph Houser	CTE	Coal Sample Analysis

Mostardi-Platt Associates, Inc.
A Full-Service
Environmental Consulting
Company

945 Oaklawn Avenue
Elmhurst, Illinois 60126-1012
Phone 630-993-9000
Facsimile 630-993-9017