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BUREAU OF AIR REGULATION

FINAL EMISSIONS AND PERFORMANCE SUMMARY REPORT

POLK POWER STATION
FACILITY ID NUMBER: 1050233

IGCC – UNIT 1, EMISSIONS UNIT ID -001
NITROGEN OXIDES, SULFUR DIOXIDE, SULFURIC ACID MIST,
CARBON MONOXIDE AND VISIBLE EMISSIONS

SULFURIC ACID PLANT, EMISSIONS UNIT ID -004
SULFUR DIOXIDE, SULFURIC ACID MIST
AND VISIBLE EMISSIONS

Volume 2 of 2
Trial Burn #1 (Appendices J through R)
Trial Burn #2 (Appendices S through AA)
Trial Burn #4 (Appendices BB through KK)

TRIAL BURN # 1

Appendices J through R

APPENDIX J

IGCC CEMS DATA
SO_2, NO_X, CO_2, STACK FLOW

HRSG CEMS Data

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
12/1/2006 9:00	34.8	18.2	12.103	815.8	8.6
12/1/2006 9:01	33.69	19.1	12.629	808.4	8.6
12/1/2006 9:02	35.26	19.7	13.097	817.1	8.6
12/1/2006 9:03	34.88	19.9	13.308	827.5	8.6
12/1/2006 9:04	35.12	19.6	12.986	800.9	8.6
12/1/2006 9:05	35.79	18.3	12.213	795.3	8.6
12/1/2006 9:06	35.05	18.1	11.905	804.4	8.6
12/1/2006 9:07	36.82	18.7	12.371	819	8.6
12/1/2006 9:08	37.65	19	12.502	812.8	8.6
12/1/2006 9:09	37.65	19.3	12.796	817.5	8.6
12/1/2006 9:10	38.79	17.8	11.795	813.2	8.5
12/1/2006 9:11	36.15	17.9	11.751	808.2	8.5
12/1/2006 9:12	37.01	18.8	12.268	818.2	8.5
12/1/2006 9:13	37.37	19.3	12.769	795.7	8.5
12/1/2006 9:14	37.99	19.7	13.097	809	8.5
12/1/2006 9:15	38.36	19.2	12.881	817.9	8.5
12/1/2006 9:16	38.76	19	12.708	804.2	8.5
12/1/2006 9:17	39.7	19.3	12.828	799.6	8.5
12/1/2006 9:18	39.26	19.6	13.003	811	8.5
12/1/2006 9:19	40.05	19.3	12.918	809.3	8.5
12/1/2006 9:20	37.73	18	11.883	818.2	8.5
12/1/2006 9:21	35.59	19	12.495	822.3	8.5
12/1/2006 9:22	35.44	19.7	13.142	826.7	8.5
12/1/2006 9:23	36.38	19.7	13.075	826.9	8.5
12/1/2006 9:24	37.57	20	13.287	814.6	8.4
12/1/2006 9:25	36.21	18.7	12.532	809.5	8.5
12/1/2006 9:26	35.85	18.3	12.038	813.9	8.5
12/1/2006 9:27	36.37	18.8	12.485	816.5	8.4
12/1/2006 9:28	38.04	19.6	12.952	817.4	8.4
12/1/2006 9:29	38.34	19.8	13.201	800.4	8.5
12/1/2006 9:30	37.06	18.2	12.179	800.2	8.4
12/1/2006 9:31	34.55	18	11.751	804.5	8.5
12/1/2006 9:32	35.43	18.8	12.423	807.6	8.5
12/1/2006 9:33	37.54	18.9	12.56	802.2	8.5
12/1/2006 9:34	37.59	19.3	12.8	811.4	8.4
12/1/2006 9:35	38.17	19.1	12.62	802.6	8.5
12/1/2006 9:36	37.86	18.8	12.479	813.7	8.5
12/1/2006 9:37	39.02	19.1	12.708	826.2	8.5
12/1/2006 9:38	39.14	19.4	12.863	826	8.4
12/1/2006 9:39	38.48	19.4	12.92	822.9	8.4

HRSG CEMS Data

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
12/1/2006 9:40	38.42	18.1	12.093	816.7	8.5
12/1/2006 9:41	36.99	18.8	12.396	806.2	8.5
12/1/2006 9:42	37.08	19.5	12.986	808.2	8.5
12/1/2006 9:43	38.53	20.1	13.342	811	8.5
12/1/2006 9:44	39.21	20.1	13.381	804.9	8.5
12/1/2006 9:45	39.34	18.7	12.511	803.1	8.5
12/1/2006 9:46	36.84	18.4	12.229	806.1	8.5
12/1/2006 9:47	36.51	19.1	12.674	811.2	8.5
12/1/2006 9:48	36.88	19.6	13.088	815.4	8.5
12/1/2006 9:49	38.98	19.9	13.234	803.5	8.5
12/1/2006 9:50	38.1	18.4	12.366	818.9	8.5
12/1/2006 9:51	37.4	18	11.896	830.4	8.5
12/1/2006 9:52	36.99	19.2	12.763	821.4	8.5
12/1/2006 9:53	38.35	19.6	13.03	817.8	8.5
12/1/2006 9:54	38.15	19.4	12.997	811.1	8.5
12/1/2006 9:55	38.39	19.4	12.975	794.1	8.5
12/1/2006 9:56	38.69	19.5	13.008	814.5	8.5
12/1/2006 9:57	38.28	19.6	13.086	815.8	8.5
12/1/2006 9:58	40.38	19.5	13.008	818.5	8.5
12/1/2006 9:59	39.88	19.3	12.807	815	8.5
12/1/2006 10:00	38.52	18.4	12.282	812.7	8.5
12/1/2006 10:01	37.67	19.1	12.685	817.3	8.5
12/1/2006 10:02	38.14	19.9	13.231	817.4	8.5
12/1/2006 10:03	38.39	20.3	13.542	823.2	8.5
12/1/2006 10:04	37.85	19.9	13.308	818.2	8.5
12/1/2006 10:05	36.29	19	12.852	818.6	8.5
12/1/2006 10:06	35.85	18.9	12.529	826.2	8.5
12/1/2006 10:07	36.68	19.4	12.919	814.5	8.5
12/1/2006 10:08	37.61	19.4	12.919	821.5	8.5
12/1/2006 10:09	38.05	19.7	13.05	799.8	8.5
12/1/2006 10:10	37.02	18.7	12.499	807.6	8.5
12/1/2006 10:11	35.88	18.3	12.095	807.8	8.5
12/1/2006 10:12	36.17	19	12.629	815.2	8.5
12/1/2006 10:13	37.55	19.6	13.03	824.5	8.5
12/1/2006 10:14	36.85	20	13.353	794.8	8.5
12/1/2006 10:15	36.52	19.6	13.108	832.3	8.5
12/1/2006 10:16	37.27	19.3	12.897	799.6	8.5
12/1/2006 10:17	38.22	19.7	13.075	813.1	8.5
12/1/2006 10:18	37.81	20	13.308	818.2	8.5
12/1/2006 10:19	37.75	20	13.32	784	8.5

HRSG CEMS Data

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
12/1/2006 10:20	36.72	18.4	12.339	818.3	8.5
12/1/2006 10:21	38.12	19.4	12.808	817.1	8.5
12/1/2006 10:22	36.33	19.8	13.208	808.4	8.5
12/1/2006 10:23	37.84	20.1	13.386	828	8.5
12/1/2006 10:24	38.7	20.1	13.442	818.6	8.5
12/1/2006 10:25	37.6	19.2	12.975	836.5	8.5
12/1/2006 10:26	37.12	19	12.574	825.6	8.5
12/1/2006 10:27	36.27	19.5	12.997	829.3	8.5
12/1/2006 10:28	37.84	19.8	13.231	830.8	8.5
12/1/2006 10:29	38.24	20	13.326	819.7	8.5
12/1/2006 10:30	39.28	18.8	12.645	816.4	8.5
12/1/2006 10:31	37.41	18.2	12.106	807.5	8.5
12/1/2006 10:32	37.22	19.3	12.752	798.2	8.5
12/1/2006 10:33	39.15	19.7	13.175	805.1	8.5
12/1/2006 10:34	38.18	19.6	13.153	792.1	8.5
12/1/2006 10:35	39.78	19.7	13.164	809.6	8.5
12/1/2006 10:36	37.88	19.7	13.186	813.6	8.5
12/1/2006 10:37	38.02	19.7	13.142	805.6	8.5
12/1/2006 10:38	39.94	20.1	13.427	800.8	8.5
12/1/2006 10:39	38.72	19.9	13.32	811.4	8.5
12/1/2006 10:40	38.06	18.5	12.348	805.1	8.5
12/1/2006 10:41	36.68	19.4	12.808	814.5	8.5
12/1/2006 10:42	38.53	19.8	13.247	811	8.5
12/1/2006 10:43	40.43	20.2	13.464	801.9	8.5
12/1/2006 10:44	39.46	20	13.412	801.8	8.5
12/1/2006 10:45	41.16	19.3	12.986	826.1	8.5
12/1/2006 10:46	37.08	19.2	12.741	824.2	8.5
12/1/2006 10:47	38.24	19.8	13.186	820.1	8.5
12/1/2006 10:48	37.76	20	13.308	820.9	8.5
12/1/2006 10:49	39.51	20.2	13.495	816.1	8.5
12/1/2006 10:50	38.31	19	12.73	803.8	8.5
12/1/2006 10:51	38.44	18.4	12.274	827.6	8.5
12/1/2006 10:52	37.13	19.2	12.752	817.1	8.5
12/1/2006 10:53	39.58	19.7	13.141	809.8	8.5
12/1/2006 10:54	40.02	20	13.364	813.7	8.5
12/1/2006 10:55	38.56	19.7	13.197	810.8	8.5
12/1/2006 10:56	37.83	19.4	12.964	810.3	8.5
12/1/2006 10:57	38.63	19.7	13.119	812.6	8.5
12/1/2006 10:58	39.02	19.8	13.255	802.2	8.5
12/1/2006 10:59	40.59	19.9	13.286	803.2	8.5

HRSG CEMS Data

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
12/1/2006 11:00	39.45	18.6	12.496	813.6	8.5
12/1/2006 11:01	37.26	19.2	12.818	818.4	8.5
12/1/2006 11:02	38.14	20	13.461	817	8.5
12/1/2006 11:03	39.73	20.4	13.663	823.1	8.5
12/1/2006 11:04	41.34	20.6	13.851	813	8.5
12/1/2006 11:05	42.09	19.7	13.264	815	8.5
12/1/2006 11:06	38.89	19.3	12.863	822	8.5
12/1/2006 11:07	38.05	19.8	13.164	810.1	8.5
12/1/2006 11:08	39.79	19.9	13.359	823.6	8.5
12/1/2006 11:09	40.48	20.1	13.412	810.4	8.5
12/1/2006 11:10	39.15	19	12.815	816.4	8.5
12/1/2006 11:11	38.2	18.7	12.396	820.2	8.5
12/1/2006 11:12	38.66	19.6	13.019	817.3	8.5
12/1/2006 11:13	39.93	20	13.331	813.7	8.5
12/1/2006 11:14	41.11	20	13.353	820.2	8.5
12/1/2006 11:15	40.19	19.8	13.208	820.7	8.5
12/1/2006 11:16	41.19	20.1	13.356	827	8.5
12/1/2006 11:17	41.04	20.3	13.52	823.5	8.5
12/1/2006 11:18	41.59	20.2	13.497	827.3	8.5
12/1/2006 11:19	41.86	19.8	13.242	825.9	8.5
12/1/2006 11:20	39.7	18.6	12.496	819.8	8.5
12/1/2006 11:21	37.86	19.4	12.808	821	8.5
12/1/2006 11:22	40.31	20	13.458	810.6	8.5
12/1/2006 11:23	40.91	20.2	13.618	795.1	8.5
12/1/2006 11:24	40.92	20.7	13.865	815.8	8.5
12/1/2006 11:25	40.49	19.8	13.475	823.2	8.5
12/1/2006 11:26	40.04	19	12.663	821.7	8.5
12/1/2006 11:27	38.35	19.6	13.117	833.8	8.5
12/1/2006 11:28	40.4	20.1	13.4	803.6	8.5
12/1/2006 11:29	40.59	20.2	13.535	821.4	8.5
12/1/2006 11:30	39.55	19.2	12.98	813.8	8.5
12/1/2006 11:31	38.4	18.7	12.418	817.3	8.5
12/1/2006 11:32	38.38	19.5	12.875	811	8.5
12/1/2006 11:33	38.7	20	13.37	816.2	8.5
12/1/2006 11:34	38.83	20.1	13.426	830.4	8.5
12/1/2006 11:35	39.94	19.8	13.253	818.4	8.5
12/1/2006 11:36	40.8	19.9	13.211	823.4	8.5
12/1/2006 11:37	40.09	20.4	13.753	817.5	8.5
12/1/2006 11:38	39.7	20.1	13.512	817.5	8.5
12/1/2006 11:39	40.99	20	13.431	815	8.5

HRSG CEMS Data

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
12/1/2006 11:40	39.22	18.8	12.607	811	8.5
12/1/2006 11:41	37.29	19.3	12.835	816.8	8.5
12/1/2006 11:42	38.64	20	13.517	812.8	8.5
12/1/2006 11:43	39.19	20.4	13.694	829.2	8.5
12/1/2006 11:44	39.45	20.6	13.791	837.7	8.5
12/1/2006 11:45	41.77	19.4	13.13	813.1	8.5
12/1/2006 11:46	39.85	18.9	12.574	832.3	8.5
12/1/2006 11:47	40.24	19.7	13.053	831.5	8.5
12/1/2006 11:48	40.35	20	13.393	819.8	8.5
12/1/2006 11:49	39.44	20.4	13.627	796.9	8.5
12/1/2006 11:50	38.95	19.3	12.973	803.8	8.5
12/1/2006 11:51	37.53	18.5	12.318	792	8.5
12/1/2006 11:52	37.53	19.4	12.875	797.4	8.5
12/1/2006 11:53	37.93	19.6	13.111	793	8.5
12/1/2006 11:54	38.49	19.8	13.317	818.5	8.5
12/1/2006 11:55	38.35	19.8	13.247	809.6	8.5
12/1/2006 11:56	39.14	19.6	13.147	798.9	8.5
12/1/2006 11:57	39.83	20.1	13.448	832.7	8.5
12/1/2006 11:58	40.15	20.2	13.498	823.1	8.5
12/1/2006 11:59	40.63	20.2	13.433	823.3	8.5
12/1/2006 12:00	39.59	18.5	12.471	824	8.5
12/1/2006 12:01	37.36	19.4	12.819	826.5	8.5
12/1/2006 12:02	37.82	20	13.345	814.6	8.5
12/1/2006 12:03	38.64	20	13.379	824.8	8.5
12/1/2006 12:04	40.52	20.3	13.486	833.9	8.5
12/1/2006 12:05	39.86	19.5	13.141	799.1	8.5
12/1/2006 12:06	38.66	19.1	12.73	788.8	8.5
12/1/2006 12:07	37.46	19.6	13.119	800	8.5
12/1/2006 12:08	40.02	19.9	13.396	813.4	8.5
12/1/2006 12:09	40.41	19.9	13.3	809.7	8.5
12/1/2006 12:10	41.14	18.8	12.73	800.4	8.5
12/1/2006 12:11	39.08	18	11.984	803.2	8.5
12/1/2006 12:12	38.82	18.9	12.496	827.2	8.5
12/1/2006 12:13	39.55	19.5	13.019	813.8	8.5
12/1/2006 12:14	40.69	20.1	13.331	824.3	8.5
12/1/2006 12:15	40.47	19.9	13.364	820	8.5
12/1/2006 12:16	41.2	19.7	13.119	798.9	8.5
12/1/2006 12:17	42.08	19.8	13.36	810.4	8.5
12/1/2006 12:18	42.53	20.2	13.585	819.3	8.5
12/1/2006 12:19	42.9	20.1	13.534	801.8	8.5

HRSG CEMS Data

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
12/1/2006 12:20	42.23	19	12.823	822.4	8.5
12/1/2006 12:21	39.84	19.6	13.135	818.9	8.5
12/1/2006 12:22	39.68	20.3	13.607	820.5	8.5
12/1/2006 12:23	39.46	20.8	14.001	824.4	8.5
12/1/2006 12:24	39.66	20.9	14.098	829	8.5
12/1/2006 12:25	39.16	20	13.609	834.2	8.5
12/1/2006 12:26	31.83	12.3	10.325	810.7	3.4
12/1/2006 12:27	2.83	0.4	0.27	807.6	0
12/1/2006 12:28	16.43	11.4	6.156	815.9	6.8
12/1/2006 12:29	39.2	20.1	13.415	819.6	8.4
12/1/2006 12:30	40.79	19.4	13.047	818.7	8.4
12/1/2006 12:31	37.6	18.7	12.418	818.1	8.4
12/1/2006 12:32	38.08	19.5	12.963	826.3	8.4
12/1/2006 12:33	39.49	19.9	13.326	827.1	8.4
12/1/2006 12:34	39.29	20	13.378	824.3	8.4
12/1/2006 12:35	39.37	19.9	13.308	830.4	8.4
12/1/2006 12:36	39.24	19.7	13.314	827.6	8.4
12/1/2006 12:37	40.67	20.3	13.578	794.2	8.4
12/1/2006 12:38	40.78	20.5	13.832	819	8.4
12/1/2006 12:39	41.27	20.2	13.518	820	8.4
12/1/2006 12:40	40.06	18.8	12.663	818.8	8.4
12/1/2006 12:41	37.33	19.5	13.089	822.1	8.4
12/1/2006 12:42	38.87	20	13.506	828.5	8.4
12/1/2006 12:43	39.51	20.4	13.753	812.7	8.4
12/1/2006 12:44	40.5	20.6	13.813	826	8.4
12/1/2006 12:45	40.66	19.9	13.453	822.4	8.4
12/1/2006 12:46	39.2	19.2	12.811	817.2	8.4
12/1/2006 12:47	39	19.8	13.278	806.1	8.4
12/1/2006 12:48	39.99	20.5	13.787	833.3	8.4
12/1/2006 12:49	40.64	20.5	13.817	814.1	8.4
12/1/2006 12:50	41.79	19.5	13.231	820.5	8.4
12/1/2006 12:51	39.31	18.6	12.374	814.9	8.4
12/1/2006 12:52	38.62	19.5	12.98	805.4	8.4
12/1/2006 12:53	40.35	20	13.41	824	8.4
12/1/2006 12:54	41.28	20.2	13.507	825.6	8.4
12/1/2006 12:55	41.17	19.8	13.331	823.6	8.4
12/1/2006 12:56	41.22	19.9	13.285	819	8.4
12/1/2006 12:57	42.26	20.3	13.615	830.9	8.4
12/1/2006 12:58	41.15	20.1	13.607	832.6	8.4
12/1/2006 12:59	41.4	20	13.408	821.5	8.5

HRSG CEMS Data

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
12/1/2006 13:00	41.28	19	12.73	819.2	8.4
12/1/2006 13:01	38.97	19.5	13.033	821.2	8.4
12/1/2006 13:02	39.31	20.3	13.618	827.1	8.4
12/1/2006 13:03	40.77	20.7	13.967	821	8.4
12/1/2006 13:04	40	20.4	13.765	823.1	8.4
12/1/2006 13:05	39.76	20	13.453	806.1	8.4
12/1/2006 13:06	38.59	19.3	12.948	811.6	8.4
12/1/2006 13:07	36.86	20.1	13.472	819.7	8.4
12/1/2006 13:08	38.67	20.6	13.877	835.7	8.4
12/1/2006 13:09	40.48	20.2	13.669	818.8	8.4
12/1/2006 13:10	40.46	19.3	13.014	812.1	8.3
12/1/2006 13:11	38.47	18.5	12.352	803.3	8.3
12/1/2006 13:12	38.51	19.4	12.929	808.8	8.3
12/1/2006 13:13	39.55	19.7	13.281	812.1	8.3
12/1/2006 13:14	41.51	19.9	13.379	831.7	8.3
12/1/2006 13:15	39.95	20	13.434	833.1	8.3
12/1/2006 13:16	40.09	19.9	13.326	817.4	8.3
12/1/2006 13:17	40.94	20.1	13.518	821.7	8.3
12/1/2006 13:18	42.58	20.2	13.675	796.1	8.3
12/1/2006 13:19	44.21	20.2	13.517	810.3	8.3
12/1/2006 13:20	43.38	18.6	12.563	821.8	8.3

APPENDIX K

SULFURIC ACID MIST TEST DATA – IGCC

FIELD DATA SHEETS

Isokinetic Field Data Sheet - EPA Method 5

Client TECO | Run Number 1

City/State Tampa FL | Date ~~12-30-06~~ 12-1-06

Sampling Location UNIT #1 | Operators JAB

Bar. Press., In. Hg 29.97 | *NOMOGRAPH SET-UP: K Factor* ~~.908~~ 1.358 *LEAK CHECKS*

Static Press., In. H_2O -0.50 | ΔH @ 1.88 Y = .979 | Avg. Δ P 1.40 | Pre-Test 0.004 @ 15 In. Hg.

Meter Box No. 390.390 | Meter Temp. 85 | Ref. Δ P — | Post-Test 0.003 @ 5 In. Hg.

Sample Box No. 5 | Stack Temp. 314 | Desired Nozzle .209 | Pre-Test Pitot <0.1 @ +5.2/-3.4 In. H_2O

Probe/Pitot No. 200 109 | Pitot Coeff. 0.84 | Nozzle No. 200 ~~.209~~ | Post-Test Pitot <0.1 @ +6.8/-4.9 In. H_2O

Probe Temp. Setting 250 | % Moisture 6 | Nozzle Calibration ~~.189~~ .187 .209 .190 .209

Sample ID No. 12/2c-01/02 | C Factor — | Nozzle Diameter ~~.189~~ .209 | Observer —

Filter No. N/A | Start Time ~~0854~~ 0900 | End Time ~~1000~~ 10:06 | Agency —

Sample Point		Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading Δ P In. H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
A	1	0	79.900	1.3	1.77	1.80	77	1.0	312	248	N/A	59
	2	2.5	81.55	1.30	1.77	1.80	77	1.0	312	247		55
	3	5	83.37	1.40	1.90	1.90	77	1.0	311	248		53
	4	7.5	85.22	1.40	1.90	1.90	78	1.0	312	248		55
	5	10	87.07	1.40	1.90	1.90	78	1.0	311	247		56
	6	12.5	88.92	1.30	1.77	1.80	79	1.0	311	247		59
B	1	15	90.83	1.40	1.90	1.90	80	1.0	311	246		59
	2	17.5	92.53	1.30	1.77	1.80	80	1.0	311	245		59
	3	20	94.35	1.40	1.90	1.90	80	1.0	311	247		60
	4	22.5	96.23	1.40	1.90	1.90	81	1.0	311	249		59
	5	25	98.12	1.30	1.77	1.80	82	1.0	311	246		58
	6	27.5	99.95	1.30	1.77	1.80	82	1.0	311	245		57
C	1	30	101.763	1.30	1.77	1.80	82	1.0	308	246		60
	2	32.5	103.58	1.40	1.90	1.90	82	1.0	311	243		56
	3	35	105.44	1.40	1.90	1.90	83	1.0	311	245		56
	4	37.5	107.30	1.40	1.90	1.90	83	1.0	311	248		58
	5	40	109.16	1.30	1.77	1.80	83	1.0	311	248		58
	6	42.5	111.00	1.30	1.77	1.80	83	1.0	311	249		59
D	1	45	112.845	1.40	1.90	1.90	83	1.0	312	249		58
	2	47.5	114.74	1.40	1.90	1.90	83	1.0	312	250		58
	3	50	116.65	1.50	2.03	2.05	84	1.0	311	247		54
	4	52.5	118.73	1.40	2.17	2.15	84	1.5	311	249		58
	5	55	120.77	1.60	2.17	2.15	84	1.5	312	250		54
	6	57.5	122.75	1.40	1.90	1.90	84	1.5	311	250		58
		60	124.631	—	—	—	—	—	—	—	—	—
			44.731	1.383		1.990	81.2		311.1			

57.2

Comments: —

Isokinetic Check: 99.435

Audited by: ZBK Date: 12/1/06

O2 11.6

CO2 8.6

67.2 H_2O → COLLECTED

TRIGON

Isokinetic Field Data Sheet - EPA Method 8

Client TECO | Run Number 2

City/State Tampa, FL | Date 12/1/2006

Sampling Location Unit # | Operators JAB

Bar. Press., In. Hg 29.97 | *NOMOGRAPH SET-UP: K Factor* 1.409 | *LEAK CHECKS*

Static Press., In. H_2O -0.50 | ΔH @ 1.878 Y = .992 | Avg. Δ P 1.40 | Pre-Test .002 @ 11 In. Hg.

Meter Box No. 300-390 | Meter Temp. 85 | Ref. Δ P — | Post-Test 0.001 @ 5 In. Hg.

Sample Box No. 5 | Stack Temp. 314 | Desired Nozzle .209 | Pre-Test Pitot <0.1 @ +5.6/-4.2 In. H_2O

Probe/Pitot No. 200-108 | Pitot Coeff. 0.84 | Nozzle No. 300-217 | Post-Test Pitot <0.1 @ +4.2/-5.1 In. H_2O

Probe Temp. Setting 250 | % Moisture 6 | Nozzle Calibration .211, .211, .211

Sample ID No. 061206/03/04 | C Factor — | Nozzle Diameter .211 | Observer —

Filter No. N/A | Start Time 10:48 | End Time 11:51 | Agency —

	Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading Δ P In H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
A	1	0	124.900	1.60	2.25	2.25	85	2.0	311	242	N/A	58
	2	2.5	126.74	1.50	2.11	2.10	85	2.0	312	253		57
	3	5	128.77	1.50	2.11	2.10	85	2.0	312	254		55
	4	7.5	130.88	1.60	2.25	2.25	86	2.0	312	255		55
	5	10	152.86	1.50	2.11	2.10	86	2.0	311	253		56
	6	12.5	134.89	1.40	1.97	2.00	87	2.0	310	251		57
B	1	15	136.854	1.40	1.97	2.00	87	2.0	308	250		58
	2	17.5	138.80	1.50	2.11	2.10	87	2.0	310	252		57
	3	20	140.88	1.40	1.97	2.00	87	2.0	312	252		56
	4	22.5	142.67	1.40	1.97	2.00	87	2.0	312	255		56
	5	25	144.68	1.40	1.97	2.00	87	2.0	312	254		57
	6	27.5	146.50	1.40	1.97	2.00	88	2.0	311	252		58
C	1	30	148.436	1.40	1.97	2.00	88	2.0	309	246		59
	2	32.5	150.37	1.40	1.97	2.00	88	2.0	308	250		57
	3	35	152.30	1.40	1.97	2.00	88	2.0	311	251		56
	4	37.5	154.24	1.40	1.97	2.00	88	2.0	312	253		56
	5	40	156.26	1.40	1.97	2.00	89	2.0	309	254		57
	6	42.5	158.10	1.40	1.97	2.00	89	2.0	308	251		58
D	1	45	160.035	1.40	1.97	2.00	89	2.0	305	251		58
	2	47.5	161.95	1.50	2.11	2.10	89	2.0	310	252		57
	3	50	163.92	1.50	2.11	2.10	89	2.0	312	252		57
	4	52.5	165.94	1.50	2.11	2.10	89	2.0	312	254		58
	5	55	167.96	1.50	2.11	2.10	90	2.0	312	255		58
	6	57.5	169.99	1.50	2.11	2.10	90	2.0	312	253	↓	58
		60	171.992	—	—	—	—	—	—	—	—	—
			47.092	1.454		2.058	87.6		310.5			

57.2

Comments:

Isokinetic Check: 99.000 | O_2 11.6

Audited by: JAB Date: 12/1/06 | CO 8.8

TRIGON

Isokinetic Field Data Sheet - EPA Method 8

Client: TECO | Run Number: 3
City/State: TAMPA, FL | Date: 12/01/2006
Sampling Location: UNIT #1 | Operators: JAB

Bar. Press., In. Hg: ~~29.97~~ 29.91 | *NOMOGRAPH SET-UP:* K Factor 1.369 | *LEAK CHECKS*
Static Press., In. H_2O: -0.50 | ΔH @ 1.878 Y = .992 | Avg. ΔP 1.45 | Pre-Test 0.004 @ 15 In. Hg.
Meter Box No. 300.390 | Meter Temp. 90 | Ref. ΔP — | Post-Test 0.003 @ 5 In. Hg.
Sample Box No. 5 | Stack Temp. 314 | Desired Nozzle .206 | Pre-Test Pitot <0.1 @ 14.5/.49 In. H_2O
Probe/Pitot No. 200.109 | Pitot Coeff. 0.84 | Nozzle No. ~~.209~~ .222 | Post-Test Pitot <0.1 @ 15.8/3.2 In. H_2O
Probe Temp. Setting 250 | % Moisture 10 | Nozzle Calibration .209, .209, .209
Sample ID No. 12120/05/06 | C Factor — | Nozzle Diameter .209 | Observer —
Filter No. n/a | Start Time 1220 | End Time 1325 | Agency —

	Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading ΔP In. H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
A	1	0	173.100	1.40	1.91	1.90	87	1.0	313	246	n/a	57
	2	2.5	174.99	1.40	1.91	1.90	87	1.0	313	246		57
	3	5	176.82	1.50	2.05	2.05	87	1.0	313	247		57
	4	7.5	178.78	1.50	2.05	2.05	87	1.0	313	248		58
	5	10	180.77	1.50	2.05	2.05	87	1.0	313	249		58
	6	12.5	182.75	1.40	1.91	1.90	87	1.0	313	248		58
B	1	15	184.6666	1.40	1.91	1.90	87	1.0	313	250		57
	2	17.5	186.68	1.40	1.91	1.90	87	1.0	312	252		58
	3	20	188.47	1.30	1.78	1.80	88	1.0	312	253		58
	4	22.5	190.36	1.40	1.91	1.90	88	1.0	312	250		59
	5	25	192.29	1.40	1.91	1.90	88	1.0	312	246		59
	6	27.5	194.22	1.30	1.78	1.80	88	1.0	312	249		60
C	1	30	196.100	1.40	1.91	1.90	87	1.0	309	250		57
	2	32.5	197.99	1.40	1.91	1.90	87	1.0	312	247		58
	3	35	199.900	1.40	1.91	1.90	87	1.0	311	244		59
	4	37.5	201.800	1.40	1.91	1.90	87	1.0	312	243		59
	5	40	203.71	1.40	1.91	1.90	87	1.0	312	250		59
	6	42.5	205.61	1.40	1.91	1.90	87	1.0	312	248		59
D	1	45	207.528	1.40	1.91	1.90	87	1.0	312	245		59
	2	47.5	209.45	1.40	1.91	1.90	87	1.0	312	250		59
	3	50	211.35	1.50	2.05	2.05	88	1.0	312	251		59
	4	52.5	213.29	1.60	2.19	2.20	88	1.5	311	253		59
	5	55	215.31	1.50	2.05	2.05	88	1.5	311	247		59
	6	57.5	217.27	1.50	2.05	2.05	88	1.5	311	249		59
		60	219.234	—	—	—	—	—	—	—	—	—
			46.134	1.425		1.942	87.3		312.6			

Comments: 518

Isokinetic Check: 99.877
Filed by: _____ Date: / /

O_2 11.6
CO 8.8

EPA Methods 4 and 8 - Moisture Determination and Sample Recovery - Data Analysis

Client Name TECO
City/State Polk Co. FL
Sampling Location Unit 1
Clean-Up Box Number 1
Chain of Custody: Date Received 12/1/06

Project Number 046-06-120
Sample Date 11/30/06
Samples Recovered By ITD
Recovery Date ~~11/30/06~~ 12/1/06
Received By _____ Locked? _____

Equipment Documentation

Run Number	~~04~~ 1	2	3	
Sample ID Number	6120-01/02	6120-03/04	6120-05/06	
Sample Box Number	5	5	5	
Probe Number	200.109	200.109	200.109	

Analysis of Moisture and Sample Recovery - Sulfuric Acid

Reagent Recovery Container #	6120-01	6120-03	6120-05	6120-~~07~~ 09
Impinger Absorbing Solution	80% IPA	80% IPA	80% IPA	
Description of Reagent	clear	clear	clear	
Reagent Level Marked?	✓	✓	✓	
Final Volume, ml	60	68	60	
Initial Volume, ml	100	100	100	
Net Condensed Volume, ml	-40	-32	-40	
80% Isopropanol Rinse?	✓	✓	✓	
Dilute to 250 ml in Isopropanol?	✓	✓	✓	

Analysis of Moisture and Sample Recovery - Sulfur Dioxide

Reagent Recovery Container #	6120-02	6120-04	6120-06	
Impinger Absorbing Solution	H_2O_2 (3%)	3% H_2O_2	3% H_2O_2	
Description of Reagent	clear	clear	clear	
Reagent Level Marked?	✓	✓	✓	
Final Volume, ml	275	270	270	
Initial Volume, ml	200	200	200	
Net Condensed Volume, ml	75	70	70	
Distilled Water Rinse?	✓	✓	✓	
Dilute to 1000 ml in DI Water?	✓	✓	✓	

Analysis of Moisture Recovery

Silica Gel Recovery Container #	1	2	3	
Percent Silica Gel Spent	15	15	10	
Final Weight, g	222.2	219.2	221.8	
Initial Weight, g	200	200	200	
Net Absorbed Water, g	22.2	19.2	21.8	
Total Moisture Collected, ml	57.2	57.2	57.8	

Reagent Blanks

Absorbing Reagent Blank	80% IPA	Rinsing Reagent Blank	
Absorbing Blank Identification #	6120-07	Rinsing Blank Identification #	~~6120-09~~ 10
Absorbing Reagent Blank	H_2O_2	Rinsing Reagent Blank	~~H_2O_2~~ ~~Water~~ DI
Absorbing Blank Identification #	6120-08	Rinsing Blank Identification #	~~6120-09~~

EPA Method 2
Determination of Stack Gas Velocity, Volumetric Flow Rate and Cyclonic Flow

Client TECO - POLK POWER STATION
Sampling Location UNIT #1
Run Date 11/30/2006
Barometric Pressure, in. Hg 29.97
Static Pressure, in. H_2O -0.50
Pitot Tube Coefficient 0.84

City, State POLK COUNTY, FL
Operators LGR / JAB
Time 0930
Pitot Tube I.D. No. 200.109
Date Calibrated 01-03-06
Leak Check, in. H_2O <0.1 @ -6.51 - 4.5

Field Data

Traverse Point Number	Velocity Head Δp Inches H_2O		Stack Temperature °F		Cyclonic Flow Determination			
					Δp_1 at 0° Reference		Angle Which Yields a Null Δp	
1	1.40		314					
2	1.40		314					
3	~~1.30~~ 1.40		314					
4	1.30		314					
5	1.30		314					
6	1.30		314					
Averages	1.40		314					

Stack Temperature, Dry, °F (A) _____ Stack Temperature, Wet °F (B) _____

Difference (A - B) _____ Preliminary Percent Moisture _____

Comments _____

Audited by: _____ Date: / /

TRIGON

CALCULATED DATA

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 1
Date: 12/01/06

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.209 inches
Barometric Pressure, P_b:	29.97 "Hg	Nozzle Area, A_n:	0.0002382 ft^2
Stack Pressure, P_s:	29.93 "Hg	Average Orifice Meter, ΔH:	1.890 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	44.731 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	81.2 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	311.1 °F
	11.6 % O_2	Average $\sqrt{\Delta p}$:	1.176 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	57.2 ml
	79.6 % N_2	Meter Box Y:	0.992 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	2.696 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	43.563 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.058 %
$FDA = 1.0 - B_{ws}$	0.942 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.87 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.18 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	79.32 ft/second
$Q_s = v_s \times A_s \times 60$	1349432.0 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	870502.8 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 60)$	99.3 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.1
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	6.55

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	7.922E-07 lb/dscf
F_c-factor =	2310 dscf/mmBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.02080 lb/mmBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	41.3765 lb/hr

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 2
Date: 12/01/06

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.211 inches
Barometric Pressure, P_b:	29.97 "Hg	Nozzle Area, A_n:	0.00024281 ft^2
Stack Pressure, P_s:	29.93 "Hg	Average Orifice Meter, ΔH:	2.058 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	47.092 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	87.6 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	310.5 °F
	11.6 % O_2	Average $\sqrt{\Delta p}$:	1.206 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	57.2 ml
	79.6 % N_2	Meter Box Y:	0.992 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	2.696 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	45.344 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.056 %
$FDA = 1.0 - B_{ws}$	0.944 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.87 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.21 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460) / (M_s \times P_s)})$	81.28 ft/second
$Q_s = v_s \times A_s \times 60$	1382717.2 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	894697.9 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 6$	98.6 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.1
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	5.25

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	6.100E-07 lb/dscf
F_c-factor =	2310 dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01601 lb/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	32.7476 lb/hr

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 3
Date: 12/01/06

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.209 inches
Barometric Pressure, P_b:	29.91 "Hg	Nozzle Area, A_n:	0.00023823 ft^2
Stack Pressure, P_s:	29.87 "Hg	Average Orifice Meter, ΔH:	1.942 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	46.134 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	87.3 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	304.4 °F
	11.6 % O_2	Average $\sqrt{\Delta p}$:	1.193 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	51.8 ml
	79.6 % N_2	Meter Box Y:	0.992 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	2.442 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	44.344 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.052 %
$FDA = 1.0 - B_{ws}$	0.948 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.87 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.25 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	80.15 ft/second
$Q_s = v_s \times A_s \times 60$	1363572.9 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	891298.5 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 6$	98.7 %

Data from Laboratory Analysis:	**H_2SO_4**
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.1
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	4.15

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	4.931E-07 lb/dscf
F_c-factor =	2310 dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01294 lb/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	26.3694 lb/hr

LABORATORY ANALYSIS

TECO TAMPA ELECTRIC

Laboratory Services

5012 Causeway Blvd * Tampa Fl. 33619 * Ph (813)630-7378 * Fax (813)630-7360 * DOH #E54272

Report For:

Report Date: 1/3/2007

Laboratory ID: AA85903

Location Code: TE_PPS_1_SAM_SYNGAS

Sample Information

Description: Polk No. 1 Acid Mist Comp on Syngas

Project Account Code:

Sample Collection Method:

Sampled By: TRIGON

Date and Time Collected: 12/1/2006 1:30:00 PM

Date of Sample Receipt: 12/4/2006

Laboratory Results

PARAMETER	Result	Units	MDL	Qualifier Code	Test Method	Analyst	Analysis Date & Time	Lower Limit	Upper Limit	Violation Check
Normality of BaCl2 * 2H2O	0.00975		0.0001			MM	12/4/2006 7:15:00 AM			
SO3 emission rate, lbs/hr	34	lbs/hr			EPA - RM8	RAM	1/3/2007 8:28:00 AM			
SO3, Avg. of Blank Titrations	0.1	milliliters	0.01		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Run #1, Avg. of Titrations	6.55	milliliters	0.01		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Run #2, Avg. of Titrations	5.25	milliliters	0.01		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Run #3, Avg. of Titrations	4.15	milliliters	0.01		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Volume of Contained Sample	500	milliliters	1		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Volume of Sample Aliquot	100	milliliters	0.1		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			

Comments

All results calculated on a wet to wet basis, unless otherwise indicated.

Data Qualifier Codes Explanation:

Subcontracted Laboratories:

Robert Dorey,
Manager, Laboratory Services

CALIBRATION DATA

Meter Console Information	
Console Number	300.200
Dry Gas Meter Number	7811505
Calibration Date:	10/25/2006
Expiration Date	10/25/2007

Calibration Condition	
Time	
Barometric Pressure (P_b).	29 18
Calibration Technician	S. Marquis
Wet Test Meter ID	11088.00
Wet Test Meter Verification Date	8/1/2006

Pass Positive Leak Check?	Yes
Pass Negative Leak Check?	Yes

		Console Meter						Wet Test Meter						Run
DGM Orifice Setting	Vacuum Setting	Meter Initial Volume	Meter Final Volume	Sample Volume	Outlet Temp. Initial	Outlet Temp. Final	Outlet Temp Average	Wet Test Initial Volume	Wet Test Final Volume	Wet Test Volume	Wet Test Temp Initial	Wet Test Temp Final	Wet Test Temp. Average	Elapsed
(P_m)	(2-4 in Hg)	(V_{di})	(V_{df})	(V_m)	(T_{di})	(T_{df})	(T_d)	(V_{wi})	(V_{wf})	(V_w)	(T_{wi})	(T_{wf})	(T_w)	Θ
in H_2O	in Hg	cubic feet	cubic feet	cubic feet	°F	°F	°F	cubic feet	cubic feet	cubic feet	°F	°F	°F	minutes
0.5	3.0	0	4.945	4.945	76	76	76.0	0	5	5.000	68	68	68.0	12.32
1.0	3.3	0	7.834	7.834	80	76	78.0	0	8	8.000	68	68	68.0	13.7
1.5	3.0	0	9.63	9.630	68	78	73.0	0	10	10.000	68	68	68.0	14.17
2.0	3.0	0	30.403	30.403	80	88	84.0	0	31	31.000	68	68	68.0	39
3.0	3.0	0	11.316	11.316	85	90	87.5	0	11.51	11.510	68	68	68.0	12
4.0	3.0	0	9.834	9.834	90	91	90.5	0	10	10.000	68	68	68.0	9.1

DGM Orifice Setting	DGM Factor	DGM Factor	Orifice Meter	Orifice Meter
(P_m)	γ_i	$\Delta\gamma$	$\Delta H_@$	$\Delta\Delta H_@$
in. H_2O			in. H_2O	in. H_2O
0.5	1.025	-0.016	1.715	-0.029
1	1.038	-0.004	1.651	-0.093
1.5	1.044	0.003	1.711	-0.033
2	1.045	0.004	1.762	0.018
3	1.047	0.005	1.804	0.059
4	1.050	0.008	1.822	0.078
	1.042	γ Average	1.744	$\Delta H@$ Average

Meter Box Thermocouple Calibration.

Test Points	30	50	75	90	120
Reading	31	51	75	90	120

$\gamma = V_w * P_b * (T_d + 460) / V_d * (P_b - \Delta H/13.6) * (T_w + 460)$

$\Delta H_@ = ((0.0319 * \Delta H) / (P_b * (T_d + 460))) * (((T_w + 460) * \theta) / V_w)^2$

Note: For Calibration Factor γ, the ratio of the calibration meter to dry gas meter, acceptable tolerance of individual values from the average is ±0.02

Note: For $\Delta H_@$, orifice pressure differential that equates to 0.75 cfm (0.0212 m3/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2 inches (5.1mm) H2O

APPENDIX L

SULFURIC ACID MIST TEST DATA – SULFURIC ACID PLANT

FIELD DATA SHEETS

ISOKINETIC FIELD DATA SHEET

Plant	Polk Power Station	Run No	1	Dry Gas Meter Volume	
Location	Acid Plant Stack	Nozzle I.D. No	74	Final	710.521 Ft.
Date	12-1-06	Nozzle Diameter	0.490	Initial	663.114 Ft.³
Method No.	RM-8	Pitot Tube No.	A705	Net	47.410 Ft.³
Box Operator	DAS	Pitot Tube (C_p)	2.84		
Probe Operator	SEG	Probe Length	9'	Equipment Leak Checks	
Time - Start	0900 End 1016	Probe Liner Material	6/a C3	Initial	0.0 CFM @ 15 "Hg
Sampling Time	64 min	Pressure	Pb ("Hg): 30.15 Pg ("H2O)	Final	0.0 CFM @ 10 "H2O
Min.\ Pt.	4 min.	Assumed Moisture (%)	6.0%	Pitot Tube	✓ "H2O
Meter Box No.	MB07	Filter Holder No.			
Pyrometer No.	PY07	Comments		Moisture Determination	
Barometer No		Start	Imp#1 200 Imp#2 100 Imp#3 100	Impinger	-10.0 ml
Meter Cal (Δ H)	1.670	Finish	Imp#1 160 Imp#2 120 Imp#3 110	Silica Gel	14.5 gm
Meter Cal. (Δ Y)	0.999	O_2 8.9	CO_2 17.4	Total	4.5

Traverse Point No	Clock Time	Gas Sample Volume (Ft³)	Stack Temp Ts (F)	Meter Temp. (F)	Δ P (In. H2O)	Δ H (In. H2O)	Probe Temp (F)	Filter Box Temp. Tm (F)	Last Imp. Temp. (F)	Vacuum (in Hg)
1	9:00	666.0	151	87	0.034	1.60	209	~~62~~	62	6
2		668.96	160	92	0.042	1.63	214		62	6
3		671.82	163	93	.035	1.63	224		63	6
4		674.83	162	92	.038	1.76	218		63	6.5
6		677.77	161	93	.038	1.76	221		63	6.5
6		680.59	161	93	.040	1.86	213		61	7
7		683.92	160	93	.046	2.14	204		62	8
8	0932	687.033	158	93	.040	1.87	205		62	8
1	0944	~~687.017~~ 687.017	159	90	.037	1.75	169		58	7
2		693.05	160	95	.038	1.77	172		57	7
3		696.06	160	96	.035	1.64	172		60	7
4		698.91	160	94	.035	1.64	171		60	6
5		701.89	160	94	.031	1.45	176		60	6
6		704.62	160	96	.036	1.68	174		60	6
7		707.52	160	96	.035	1.64	169		61	6
8	1016	710.521	155	96	.037	1.74	170		61	6

Quality Assurance / Quality Control Information

Console Operator Signature: [signature] Date: 1-3-07

Complete. ✓ Legible. ✓ Accurate ✓ Project Scope. ✓ Reasonableness. ✓

Reviewer's Signature: [signature] Title QA/QC Date 3 JAN-07

ISOKINETIC FIELD DATA SHEET

Plant	Polk	Run No.	2	Dry Gas Meter Volume	
Location	Acid Plant	Nozzle I.D. No.	74	Final	760.072 Ft.³
Date	12-1-06	Nozzle Diameter	0.490	Initial	713.801 Ft.³
Method No.	RM-5	Pitot Tube No.	PTO5	Net	46.271 Ft.³
Box Operator	DMS	Pitot Tube (C_p)			
Probe Operator	SEC	Probe Length	9'	Equipment Leak Checks	
Time - Start:	10:45 End: 11:57	Probe Liner Material	Glass	Initial	0.0 CFM @ 10 "Hg
Sampling Time	4 @ 4 min.	Pressure	Pb ("Hg): 30.15 Pg ("H2O):	Final	0.0 CFM @ 12 "H2O
Min.\ Pt.	4 min.	Assumed Moisture (%)	22	Pitot Tube	Δ "H2O
Meter Box No.	MB07	Filter Holder No.			
Pyrometer No.	PY05	Comments		Moisture Determination	
Barometer No.		Start	Imp#1 200 Imp#2 100 Imp#3 100	Impinger	-18.0 ml
Meter Cal. (Δ H)	.999	Finish	Imp#1 140 Imp#2 130 Imp#3 112	Silica Gel	17.5 gm
Meter Cal. (Δ Y)	1.670	O_2 9.8	CO_2 17.8	Total	-0.5

Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp Temp. (°F)	Vacuum (In Hg)
1	1045	713.801	158	87	.035	1.62	210		63	8
2		716.83	160	97	.037	1.83	213		61	8
3		719.65	161	98	.036	1.69	213		62	8
4		722.84	164	98	.036	1.75	205		62	8
5		726.01	160	98	~~.044~~ .038	~~2.07~~ 1.81	214		63	8
6		728.97	~~159~~ 160	98	~~.037~~ .044	~~1.83~~ 2.07	213		63	8
7		732.07	~~159~~ 160	98	~~.043~~ .039	~~2.05~~ 1.83	209		63	10
8	1117	735.27	159	98	.043	2.05	210		62	10
1	1125	738.6	160	91	.037	1.71	178		62	9
2		741.35	160	97	.034	1.57	177		62	8.5
3		744.42	160	98	.041	1.92	171		63	9
4		747.52	160	98	.038	1.81	177		62	9
5		750.65	161	100	.040	1.88	178		60	9
6		753.79	159	101	.041	1.94	174		61	9.5
7		757.08	155	101	.040	1.90	178		63	9.5
8	1157	760.072	154	101	.036	1.74	176		63	9

Quality Assurance / Quality Control Information

Console Operator Signature: _____ Date: 1-3-07

Complete: ✓ Legible: ✓ Accurate: ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: _____ Title: QA/QC Date: 3-JAN-07

ISOKINETIC FIELD DATA SHEET

Plant	Polk Power	Run No.	3	Dry Gas Meter Volume	
Location	Acid Plant	Nozzle I.D. No.	74	Final	809,615 Ft.³
Date	12-1-06	Nozzle Diameter	0.490	Initial	760,338 Ft.³
Method No.	RM-8	Pitot Tube No.	PT05	Net	49,260 Ft.³
Box Operator	DB	Pitot Tube (C_p)			
Probe Operator	SEG	Probe Length	9'	Equipment Leak Checks	
Time - Start:	12:21 End: 13:52	Probe Liner Material	Glass	Initial	0.0 CFM @ 12 "Hg
Sampling Time	64 min.	Pressure	Pb ("Hg): 30.15 Pg ("H2O): .5	Final	0.0 CFM @ 10 "H2O
Min.\ Pt.	8 ea.w	Assumed Moisture (%)	2.8	Pitot Tube	Ø "H2O
Meter Box No.	MB07	Filter Holder No.			
Pyrometer No.	PY09	Comments		Moisture Determination	
Barometer No.		Start	Imp#1 200 Imp#2 100 Imp#3 100	Impinger	-15 ml
Meter Cal (Δ H)	.999	Finish	Imp#1 143 Imp#2 126 Imp#3 111	Silica Gel	18.4 gm
Meter Cal. (Δ Y)	1.670	O_2 7.5	CO_2 18.7	Total	3.4

Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1221	763.52	159	90	.039	1.81	215		60	8
2		766.67	159	101	.040	1.89	215		59	8
3		769.72	159	101	.038	1.82	227		59	8
4		772.74	163	102	.035	1.65	219		60	7.5
5		775.58	163	102	.031	1.46	213		63	7
6		778.51	160	101	.041	1.93	211		61	7
7		781.48	159	102	.039	1.85	216		62	8
8	1253	784.81	156	102	.041	1.95	207		65	8.5
1	1300	788.07	154	94	.043	2.05	180		61	8.5
2		791.16	161	100	.039	1.86	184		63	8
3		794.28	160	102	.041	1.94	183		64	8.5
4		797.15	160	102	.030	1.44	187		62	6.5
5		800.23	162	102	.041	1.93	190		66	8
6		803.42	160	102	.037	1.87	196		66	8
7		806.47	157	103	.036	1.71	191		65	8
8	1332	809.615	157	103	.036	1.71	180		65	8

Quality Assurance / Quality Control Information

Console Operator Signature: [signature] Date: 1-3-07

Complete: ✓ Legible: ✓ Accurate: ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: [signature] Title: QA/QC Date: 3-JAN-07

G:\Environmental Technician\Forms\Compliance Forms

CALCULATED DATA

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Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 1
Date: 12/01/06

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.490 inches
Barometric Pressure, P_b:	30.15 "Hg	Nozzle Area, A_n:	0.00130946 ft^2
Stack Pressure, P_s:	30.19 "Hg	Average Orifice Meter, ΔH:	1.743 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	47.407 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	93.8 °F
Gas Analysis:	17.4 % CO_2	Average Stack Temp., T_s:	159.8 °F
	8.9 % O_2	Average √Δp:	0.193 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	4.5 ml
	73.7 % N_2	Meter Box Y:	0.999 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.212 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	45.698 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.005 %
$FDA = 1.0 - B_{ws}$	0.995 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	31.14 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.08 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460) / (M_s \times P_s)})$	11.28 ft/second
$Q_s = v_s \times A_s \times 60$	19131.0 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	16368.1 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 60)$	94.2 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.1
Volume Titrant Sample, V_t	5.1
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	500

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1702.90063	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.5088026	%
Tons of Acid Produced During The Test Period,	P_{st}	12.2251999	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	16368.1	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)}$ = 5.766E-07 lbs/dscf

Calculated H_2SO_4 Emission Rate, E= 0.04941 lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

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40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 2
Date: 12/01/06

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.490 inches
Barometric Pressure, P_b:	30.15 "Hg	Nozzle Area, A_n:	0.00130946 ft^2
Stack Pressure, P_s:	30.19 "Hg	Average Orifice Meter, ΔH:	1.821 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	49.264 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	97.4 °F
Gas Analysis:	17.8 % CO_2	Average Stack Temp., T_s:	159.4 °F
	8.8 % O_2	Average $\sqrt{\Delta p}$:	0.197 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	-0.5 ml
	73.4 % N_2	Meter Box Y:	0.999 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	-0.024 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	47.183 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.000 %
$FDA = 1.0 - B_{ws}$	1.000 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \% CO))$	31.20 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.21 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	11.46 ft/second
$Q_s = v_s \times A_s \times 60$	19441.3 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	16729.3 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	95.2 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.1
Volume Titrant Sample, V_t	5.25
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	500

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1560.977516	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.51097609	%
Tons of Acid Produced During The Test Period,	P_{st}	11.20658801	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	16729.3	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$ 5.752E-07 lbs/dscf

Calculated H_2SO_4 Emission Rate, E= 0.05496 lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

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40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: *Polk Power Station*
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 3
Date: 12/01/06

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.490 inches
Barometric Pressure, P_b:	30.15 "Hg	Nozzle Area, A_n:	0.00130946 ft^2
Stack Pressure, P_s:	30.19 "Hg	Average Orifice Meter, ΔH:	1.804 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	49.257 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	100.6 °F
Gas Analysis:	18.7 % CO_2	Average Stack Temp., T_s:	159.3 °F
	7.9 % O_2	Average $\sqrt{\Delta p}$:	0.195 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	8.1 ml
	73.4 % N_2	Meter Box Y:	0.999 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.382 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	46.911 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.008 %
$FDA = 1.0 - B_{ws}$	0.992 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	31.31 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.20 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	11.37 ft/second
$Q_s = v_s \times A_s \times 60$	19290.9 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	16459.3 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	96.2 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975 meq/ml
Volume Titrant Blank, V_{tb}	0.1 ml
Volume Titrant Sample, V_t	4.85 ml
Volume of Sample Aliquot, V_a	100 ml
Total Volume of Solution, V_{soln}	500 ml

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1556.541618	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.50460243	%
Tons of Acid Produced During The Test Period,	P_{st}	11.1739801	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	16459.3	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$ 5.336E-07 lbs/dscf

Calculated H_2SO_4 Emission Rate, E= **0.05030** lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

LABORATORY ANALYSIS

TECO TAMPA ELECTRIC

Laboratory Services

5012 Causeway Blvd * Tampa Fl. 33619 * Ph (813)630-7378 * Fax (813)630-7360 * DOH #E54272

Report For:

Report Date: 1/3/2007

Laboratory ID: AA85904

Location Code: TE_PPS_SAP_COMP_SYNGAS

Sample Information

Description: Polk Sulfuric Acid Plant Compliance

Project Account Code:

Sample Collection Method:

Sampled By: ASG

Date and Time Collected: 12/1/2006 1:30:00 PM

Date of Sample Receipt: 12/4/2006

Laboratory Results

PARAMETER	Result	Units	MDL	Qualifier Code	Test Method	Analyst	Analysis Date & Time	Lower Limit	Upper Limit	Violation Check
Normality of BaCl2 * 2H2O	0.00975		0.0001			MM	12/4/2006 7:15:00 AM			
SO2 emission rate, lbs/ton of acid	3	lbs/ton acid			EPA - RM6C	RAM	1/3/2007 8:30:00 AM			
SO3 emission rate, lbs/ton of acid	0.05	lbs/ton acid			EPA - RM8	RAM	1/3/2007 8:30:00 AM			
SO3, Avg. of Blank Titrations	0.05	milliliters	0.01		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Run #1, Avg. of Titrations	5.1	milliliters	0.01		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Run #2, Avg. of Titrations	5.25	milliliters	0.01		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Run #3, Avg. of Titrations	4.85	milliliters	0.01		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Volume of Contained Sample	500	milliliters	1		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			
SO3, Volume of Sample Aliquot	100	milliliters	0.1		EPA - Meth.8	MM	12/4/2006 7:15:00 AM			

Comments

All results calculated on a wet to wet basis, unless otherwise indicated.

Data Qualifier Codes Explanation:

Subcontracted Laboratories:

Robert Dorey,
Manager, Laboratory Services

CALIBRATION DATA

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

SUMMARY OF EQUIPMENT CALIBRATIONS

EQUIPMENT	CAL DATE	METHOD	RESULTS
CONSOLE (MB 07)		USEPA RM 5	
INITIAL	10/03/2006	(ORIFICE)	0.999
POST TEST	12/04/2006		0.976
NOZZLE (SN74)			
INITIAL	10/02/2006	CALIPER	0.490
POST TEST	12/04/2006	MEASUREMENTS	0.490
PYROMETER (PY 09)	10/02/2006	ASTM THERMOMETER	$\pm 2^{o}$ F
PITOT TUBE (PT 05)	10/03/2006	USEPA RM 2	$C_p = 0.84$
BAROMETER (BR 07)	10/02/2006	NWS COMPARISON	$\pm$ 0.01" Hg

TECO
TAMPA ELECTRIC

USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
Quarterly Calibration

Environmental Services
Air Services Group

Blue Team

Manufacturer: Thermo Anderson
Model Number: MST-C1
Instrument Code Number: ^MB07
LabWorks Sample Number:

Calibration Date: 10/3/2006
Barometric Pressure: 30.15 "Hg
Theoretical Critical Vacuum: 14.22 "Hg
Calibrated By: JAV

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH "H_2O	Time Minutes	Initial Volume ft^3	Final Volume ft^3	Total Volume ft^3	Initial Temperatures Inlet °F	Initial Temperatures Outlet °F	Final Tempertures Inlet °F	Final Tempertures Outlet °F
0.60	15	356.984	363.887	6.903	79	77	79	77
1.10	15	347.782	356.984	9.202	81	78	80	78
1.90	15	335.841	347.782	11.941	81	78	83	78
3.50	15	319.720	335.841	16.121	80	75	88	78

Critical Orifice Readings

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures Initial °F	Ambient Temperatures Final °F	Ambient Temperatures Average °F
48	0.3483	22.0	72	72	72.0
55	0.4660	21.0	72	72	72.0
63	0.5971	19.0	72	72	72.0
73	0.8177	16.5	72	72	72.0

CALCULATED DATA

Dry Gas Meter Volume Corrected $Vm_{(std)}$, ft^3	Critical Orifice Volume Corrected $Vcr_{(std)}$, ft^3	Critical Orifice Volume Nominal $Vcr_{(std)}$, ft^3	Calibration Y Value (ratio)	QA/QC ± 0.02	Calibration ΔHα Value "H_2O	QA/QC ± 0.2
6.834	6.829	6.831	0.999	0.000	1.610	-0.060
9.100	9.137	9.140	1.004	0.005	1.645	-0.025
11.815	11.708	11.711	0.991	-0.008	1.729	0.058
16.006	16.033	16.038	1.002	0.003	1.697	0.027
		Averages:	**0.999**		**1.670**	

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval: 5-Oct-06

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
POST - TEST CALIBRATION CHECK

Manufacturer: Thermo
Model Number: MST
Instrument Code Number: MB07
LabWorks Sample Number:
Associated Test: Polk Acid Plant

Calibration Date: 12/4/2006
Barometric Pressure: 30.4 "Hg
Theoretical Critical Vacuum: 14.34 "Hg
Calibrated By: GDB
Team: BLUE

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH "H_2O	Time Minutes	Initial Volume ft^3	Final Volume ft^3	Total Volume ft^3	Initial Temperatures Inlet °F	Initial Temperatures Outlet °F	Final Tempertures Inlet °F	Final Tempertures Outlet °F
2	10	827.100	834.998	7.898	74	68	75	71
2	10	834.998	842.717	7.719	75	71	75	74
2	10	842.717	850.675	7.958	75	74	78	74

Critical Orifice Readings

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures Initial °F	Ambient Temperatures Final °F	Ambient Temperatures Average °F
63	0.5877	19.0	72	72	72.0
63	0.5877	19.0	72	72	72.0
63	0.5877	19.0	72	72	72.0

CALCULATED DATA

Dry Gas Meter Volume Corrected $Vm_{(std)}$, ft^3	Critical Orifice Volume Corrected $Vcr_{(std)}$, ft^3	Critical Orifice Volume Nominal $Vcr_{(std)}$, ft^3	Calibration Y Value (ratio)	QA/QC ± 0.02	Calibration ΔHα Value "H_2O	QA/QC ± 0.2
8.000	7.746	7.684	0.968	-0.008	1.891	0.006
7.793	7.746	7.684	0.994	0.018	1.885	0.000
8.012	7.746	7.684	0.967	-0.010	1.879	-0.006
		Averages:	**0.976**		**1.885**	
		Prior Y:	**0.999**			
		% Difference:	**2.27%**			

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval [signature] Date: 7-Dec-06

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Environmental Services
Air Services Group

QUARTERLY NOZZLE CALIBRATIONS

Shared Resource

STEEL NOZZLE SET

Calibration Date: 10/2/2006 Responsible Party: **SEG**

Nozzle I.D.	Nozzle Diameter, D_n (cm)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
^*SN01*	0.296	0.294	0.290	0.002	0.115
^*SN04*	0.320	0.320	0.320	0.000	0.126
^*SN05*	0.380	0.380	0.378	0.001	0.149
^*SN06*	0.500	0.496	0.500	0.002	0.196
^*SN09*	0.695	0.689	0.690	0.002	0.272
^*SN10*	0.755	0.750	0.755	0.002	0.297
^*SN12*	0.985	0.985	0.983	0.001	0.388
^*SN15*	0.420	0.420	0.420	0.000	0.165
^*SN16*	0.504	0.505	0.505	0.000	0.199
^*SN19*	0.717	0.714	0.715	0.001	0.282
^*SN22*	0.932	0.930	0.934	0.002	0.367
^*SN30*	0.795	0.792	0.795	0.001	0.313
^*SN36*	0.480	0.477	0.477	0.001	0.188
^*SN37*	0.535	0.534	0.532	0.001	0.210
^*SN38*	0.635	0.640	0.640	0.002	0.251
^*SN46*	0.482	0.485	0.483	0.001	0.190
^*SN47*	0.515	0.516	0.516	0.000	0.203
^*SN48*	0.645	0.640	0.640	0.002	0.253
^*SN50*	0.788	0.790	0.791	0.001	0.311
^*SN58*	0.619	0.611	0.615	0.003	0.242
^*SN68*	0.630	0.625	0.632	0.003	0.248
^*SN69*	0.950	0.950	0.950	0.000	0.374
^*SN70*	1.565	1.565	1.565	0.000	0.616
^*SN71*	1.558	1.560	1.560	0.001	0.614
^*SN72*	0.955	0.953	0.950	0.002	0.375
^*SN73*	1.277	1.280	1.280	0.001	0.504
^*SN74*	1.245	1.240	1.245	0.002	0.490

Data Notations: All micometer readings are converted from cm to inches by multiplying by 0.393700787. Maximum Difference must be $\leq$ 0.004".

QA/QC Review by:  5-Oct-06

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

POST TEST NOZZLE CALIBRATION

Shared Resource

Calibration Date: 12/4/2006
Calibration Personnel: SEG
Test Designation: POLK ACID PLANT

Nozzle Identifier	Nozzle Diameter, D_n (cm)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
^SN74	1.245	1.245	1.240	0.002	0.490

Data Notations: All micometer readings are converted from cm to inches by multiplying by 0.393700787. Maximum Difference must be $\leq$ 0.004".

Quarterly (pre-test) value for nozzle ID ^SN74 was 0.490

Difference (Pre-test/Post-test) is: 0.000

QA/QC Review by: 7-Dec-06

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

Blue Team

Pyrometer Calibration

Pyrometer Under Test

Pyrometer Number: ^PY09
Labworks Sample # 0
Calibration Date: 10/2/2006

Calibrator Information

Calibrator Type/Manufacturer: Hart Scientific
Calibrator Serial Number: AOA024
Date of Last Calibration: 7/11/2006
Calibration Personnel (Typed and Signature): JAV

Calibration Data

Calibration Point	Reference Temperature	Pyrometer Indication	Difference
1	400	399	1
2	212	213	-1
3	32	33	-1

Reference temperatures must encompass the expected range of measurement. These three points should be ~ 32 degrees, ~212 degrees, and ~ 400 degrees Farenheit.
Difference is calculated as follows:

(reference temperature) – (pyrometer indication)

Qaulity Control Data

Calibration Point	Difference
1	Pass
2	Pass
3	Pass

Reviewer: 5-Oct-06

TECO
TAMPA ELECTRIC

PITOT TUBE CALIBRATION DATA SHEET

Environmental Services
Air Services Group

Pitot Tube ID # PT05
Calibration Date 10/3/2006 Operating Quarter/Year: _____ Red Team
Openings Damaged? ☐ Y ☑ N Repaired? ☐ Y ☑ N ☐ N/A

Labworks #: 0

Alpha and Beta Angle Determinations

α_1	2	degrees	*Pass*
α_2	0.8	degrees	*Pass*
β_1	2.1	degrees	*Pass*
β_2	3.1	degrees	*Pass*

Gamma, Theta, A, Z, and W Determinations

ψ	0.3	degrees	
A	2.31	cm	
Z	0.012	cm	*Pass*
o	0.1	degrees	
W	0.004	cm	*Pass*

Acceptable Limits:
Dt 0.48 < Dt > 0.95 cm
α < 10 degrees
(α_1 measured across top impact openings)
(α_2 measured across bottom impact openings)
β_1 < 5 degrees (alongside top impact openings)
β_2 < 5 degrees (alongside bottom impact openings)
Z < 0.32 cm (Asinψ)
W < 0.08 cm (Asino)
A distance between tips
o angle of plane on side of pitots
ψ angle between tips

NOTES

All measurements are taken in accordance with the requirements of 40 CFR 60, Appendix A - Test Methods, Method 2, "Determination of stack gas velocity and volumetric flow rate (Type S pitot tube)". Measurement details are found in EPA/600/4-77/027b, "Quality Assurance Handbook for Air Pollution Measurement Systems: Stationary Source Specific Methods", sub-section 3.1.1, Procuement of Apparatus and Supplies.

Comments: REMOVABLE

Calibrated by: _____

Quality Assurance Review / Approval:  16-Oct-06

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

BAROMETER CALIBRATION

Blue Team

Instrument Number: ^BR04
Calibration Date: 10/2/2006
Calibration Personnel: JAV
Labworks #:

Time	Barometer Reading Inches Mercury	Reference Reading Inches Mercury	Difference "Hg
11:00	30.25	30.18	0.07
13:00	30.2	30.15	0.05
14:50	30.2	30.12	0.08
		Average Difference:	0.07

Note: Barometric readings must agree within ± 0.1 "Hg.
Current Reference is National Weather Service, TIA.
Current Conditions at Tampa International Airport

Comments (Note any adjustments):

QA/QC Review by: [signature] Date: 5-Oct-06

APPENDIX M

INSTRUMENTAL REFERENCE METHOD TEST DATA – IGCC

OXYGEN, CARBON DIOXIDE, CARBON MONOXIDE DATA

Calibration Error Test, Run 1 STRATA Version 2.01

	O2 OT %	CO2 OT %	CO ppm
12-01-2006 07:34:41	9.135	6.605	-0.101
12-01-2006 07:35:41	21.896	17.456	-1.407
12-01-2006 07:36:40	21.919	17.552	-2.381*
12-01-2006 07:37:41	21.902	17.575	-2.402*
12-01-2006 07:38:40	18.771	14.771	-2.356*
12-01-2006 07:39:41	12.463	9.949	-1.777
12-01-2006 07:40:41	3.870	2.940	-0.796
12-01-2006 07:41:41	0.127	0.049	3.921
12-01-2006 07:42:41	0.015	0.018	6.644
12-01-2006 07:43:41	0.015	0.009	8.672
12-01-2006 07:44:41	0.016	0.009	9.032
12-01-2006 07:45:41	0.017	0.009	9.131
12-01-2006 07:46:41	0.018	0.009	10.894
12-01-2006 07:47:41	0.018	0.013	15.974
12-01-2006 07:48:41	0.018	0.029	16.016
12-01-2006 07:49:41	0.019	0.029	15.959
12-01-2006 07:50:41	0.019	0.029	15.691
12-01-2006 07:51:41	0.173	0.070	17.469
12-01-2006 07:52:41	0.019	0.029	17.377
12-01-2006 07:53:41	0.020	0.019	15.944
12-01-2006 07:54:41	0.020	0.019	15.830
12-01-2006 07:55:41	0.019	0.018	12.653
12-01-2006 07:56:41	0.019	0.017	9.195

Calibration Error Test at Run 1
Operator: Ian T. DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

	Reference Cylinder Numbers Zero	Low-range	Mid-range	High-range
O2 OT	CC-136551		CC-107096	CC-250656
CO2 OT	CC-136551		CC-107096	CC-250656
CO	CC-136551	CC-165111	CC-150548	CC-50737

Date/Time 12-01-2006 07:57:40 PASSED

Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0.000	0.000	0.000
Zero Avg	0.004	0.000	0.013
Zero Error%	0.0%	0.0%	0.1%
Low Ref Cyl			9.260
Low Avg			9.286
Low Error%			0.2%
Mid Ref Cyl	12.500	9.810	15.900
Mid Avg	12.460	9.948	15.921
Mid Error%	0.2%	0.7%	0.1%
High Ref Cyl	21.900	17.700	
High Avg	21.904	17.580	
High Error%	0.0%	0.6%	

Calibration Error Test End

Initial System Bias Check, Run 1 STRATA Version 2.01

	O2 OT %	CO2 OT %	CO ppm
12-01-2006 07:59:02	20.711	0.117	5.555
12-01-2006 08:00:02	20.694	0.129	0.443
12-01-2006 08:01:02	20.679	0.130	-0.058
12-01-2006 08:02:01	19.888	0.202	0.005
12-01-2006 08:03:01	0.275	0.102	0.558
12-01-2006 08:04:02	0.002	0.096	0.149
12-01-2006 08:05:02	-0.013	0.075	-0.185
12-01-2006 08:06:02	5.774	4.635	-0.094
12-01-2006 08:07:02	12.284	9.826	-1.114
12-01-2006 08:08:02	7.463	5.968	-1.522
12-01-2006 08:09:01	-0.002	0.152	3.734
12-01-2006 08:10:01	-0.018	0.120	8.256
12-01-2006 08:11:02	-0.023	0.118	8.642
12-01-2006 08:12:01	-0.026	0.109	8.708
12-01-2006 08:13:01	-0.026	0.109	8.609
12-01-2006 08:14:01	-0.026	0.106	8.705

Initial System Bias Check for Run 1
Operator: Ian T. DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

	Reference Cylinder Numbers Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time 12-01-2006 08:14:08 PASSED

Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0.000	0.000	0.000
Zero Cal	0.004	0.000	0.013
Zero Avg	-0.010	0.079	-0.185
Zero Bias%	0.1%	0.4%	1.2%
Zero Drift%			
Span Ref Cyl	12.500	9.810	9.260
Span Cal	12.460	9.948	9.286
Span Avg	12.281	9.812	8.769
Span Bias%	0.7%	0.7%	3.3%
Span Drift%			

System Bias Check End

Test Run 1 STRATA Version 2.01

	O2 OT %	CO2 OT %	CO ppm
12-01-2006 08:59:39	11.711	8.837	3.268
12-01-2006 09:00:39	11.711	8.844	3.256
Begin calculating run averages			
12-01-2006 09:01:46	11.715	8.837	3.094
12-01-2006 09:02:47	11.719	8.832	3.065
12-01-2006 09:03:47	11.707	8.835	2.979
12-01-2006 09:04:47	11.684	8.824	3.289
12-01-2006 09:05:47	11.609	8.829	3.284
12-01-2006 09:06:47	11.669	8.842	3.543
12-01-2006 09:07:47	11.716	8.840	3.358
12-01-2006 09:08:47	11.738	8.845	3.211
12-01-2006 09:09:47	11.713	8.867	3.127
12-01-2006 09:10:46	11.639	8.873	3.081
12-01-2006 09:11:46	11.642	8.884	3.280
12-01-2006 09:12:46	11.663	8.899	3.198
12-01-2006 09:13:46	11.701	8.879	2.988
12-01-2006 09:14:46	11.689	8.880	3.356
12-01-2006 09:15:46	11.617	8.841	3.499
12-01-2006 09:16:47	11.606	8.854	3.710
12-01-2006 09:17:47	11.673	8.844	3.655
12-01-2006 09:18:47	11.699	8.836	3.500
12-01-2006 09:19:47	11.740	8.825	3.205
12-01-2006 09:20:47	11.717	8.829	2.885
12-01-2006 09:21:46	11.705	8.836	3.048
12-01-2006 09:22:46	11.716	8.843	2.986
12-01-2006 09:23:46	11.731	8.847	3.085
12-01-2006 09:24:46	11.708	8.839	3.178
12-01-2006 09:25:46	11.623	8.853	3.201
12-01-2006 09:26:46	11.689	8.839	3.624
12-01-2006 09:27:46	11.738	8.821	3.478
12-01-2006 09:28:46	11.759	8.817	2.945
12-01-2006 09:29:46	11.771	8.804	2.659
12-01-2006 09:30:46	11.676	8.815	2.735
12-01-2006 09:31:46	11.658	8.828	3.158
12-01-2006 09:32:46	11.701	8.830	3.126
12-01-2006 09:33:46	11.733	8.833	2.946
12-01-2006 09:34:46	11.742	8.827	3.189
12-01-2006 09:35:46	11.638	8.825	3.028
12-01-2006 09:36:46	11.617	8.846	3.527
12-01-2006 09:37:46	11.693	8.816	3.430
12-01-2006 09:38:46	11.699	8.812	3.123
12-01-2006 09:39:46	11.724	8.809	3.100
12-01-2006 09:40:46	11.694	8.809	2.836
12-01-2006 09:41:47	11.675	8.811	3.218
12-01-2006 09:42:47	11.695	8.813	3.244
12-01-2006 09:43:47	11.741	8.818	3.229
12-01-2006 09:44:46	11.727	8.820	3.007
12-01-2006 09:45:46	11.633	8.827	3.190
12-01-2006 09:46:46	11.688	8.831	3.576
12-01-2006 09:47:46	11.735	8.823	3.223
12-01-2006 09:48:46	11.750	8.824	2.978
12-01-2006 09:49:46	11.743	8.810	3.152
12-01-2006 09:50:46	11.667	8.796	3.068
12-01-2006 09:51:46	11.663	8.795	3.346
12-01-2006 09:52:46	11.717	8.796	3.203
12-01-2006 09:53:46	11.747	8.796	2.982
12-01-2006 09:54:46	11.769	8.804	2.721
12-01-2006 09:55:46	11.654	8.812	2.778
12-01-2006 09:56:46	11.625	8.827	3.424
12-01-2006 09:57:47	11.705	8.823	3.362
12-01-2006 09:58:47	11.733	8.816	3.086
12-01-2006 09:59:47	11.736	8.799	3.047
12-01-2006 10:00:47	11.726	8.793	2.713

Run Averages	O2 OT %	CO2 OT %	CO ppm
12-01-2006 10:00:47	11.697	8.830	3.171

Operator: Ian T. DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1
Test Run 1 End

Final System Bias Check, Run 1 STRATA Version 2.01

	O2 OT %	CO2 OT %	CO ppm
12-01-2006 10:02:14	4.656	3.219	3.068
12-01-2006 10:03:14	-0.025	0.192	1.134
12-01-2006 10:04:14	-0.035	0.167	-0.163
12-01-2006 10:05:14	-0.019	0.170	-0.228
12-01-2006 10:06:14	11.704	9.449	-0.778
12-01-2006 10:07:14	12.267	9.927	-1.867
12-01-2006 10:08:14	4.153	3.451	-0.961
12-01-2006 10:09:14	-0.024	0.212	5.731
12-01-2006 10:10:14	-0.034	0.185	8.584
12-01-2006 10:11:14	-0.037	0.158	8.560
12-01-2006 10:12:14	-0.039	0.149	8.666

Final System Bias Check for Run 1
Operator: Ian T. DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

	Reference Cylinder Numbers Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time 12-01-2006 10:12:38 PASSED

Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0.000	0.000	0.000
Zero Cal	0.004	0.000	0.013
Zero Avg	-0.036	0.163	-0.245
Zero Bias%	0.2%	0.8%	1.6%
Zero Drift%	-0.1%	0.4%	-0.4%
Span Ref Cyl	12.500	9.810	9.260
Span Cal	12.460	9.948	9.286
Span Avg	12.262	9.911	8.768
Span Bias%	0.8%	0.2%	3.3%
Span Drift%	-0.1%	0.5%	0.0%
Ini Zero Avg	-0.010	0.079	-0.185
Ini Span Avg	12.281	9.812	8.769
Run Avg	11.697	8.830	3.171
Co	-0.023	0.121	-0.215
Cm	12.271	9.862	8.769
Correct Avg	11.916	8.771	3.490

System Bias Check End

Test Run 2 STRATA Version 2.01

	O2 OT %	CO2 OT %	CO ppm
12-01-2006 10:13:39	0.387	0.430	8.564
12-01-2006 10:14:40	11.489	8.597	6.702
12-01-2006 10:15:39	11.679	8.736	3.535
12-01-2006 10:16:39	11.636	8.783	3.486
12-01-2006 10:17:39	11.693	8.790	3.624
12-01-2006 10:18:39	11.729	8.786	3.468
12-01-2006 10:19:39	11.763	8.783	2.958
12-01-2006 10:20:39	11.737	8.779	2.574
12-01-2006 10:21:40	11.731	8.770	2.727
12-01-2006 10:22:40	11.728	8.769	2.890
12-01-2006 10:23:39	11.746	8.774	2.984
12-01-2006 10:24:39	11.759	8.761	3.060
12-01-2006 10:25:39	11.665	8.771	2.946
12-01-2006 10:26:39	11.705	8.785	2.975
12-01-2006 10:27:39	11.755	8.795	2.962
12-01-2006 10:28:39	11.751	8.824	2.766
12-01-2006 10:29:39	11.764	8.817	2.736
12-01-2006 10:30:39	11.726	8.814	2.877
12-01-2006 10:31:39	11.697	8.822	3.027
12-01-2006 10:32:39	11.732	8.817	3.149
12-01-2006 10:33:39	11.747	8.794	2.925
12-01-2006 10:34:39	11.750	8.792	2.664
12-01-2006 10:35:40	11.691	8.778	2.888
12-01-2006 10:36:39	11.674	8.758	2.859
12-01-2006 10:37:39	11.737	8.763	2.688
12-01-2006 10:38:39	11.749	8.780	2.647
12-01-2006 10:39:39	11.744	8.783	2.899
12-01-2006 10:40:39	11.746	8.788	2.672
12-01-2006 10:41:39	11.768	8.767	2.625
12-01-2006 10:42:39	11.758	8.780	2.419
12-01-2006 10:43:39	11.765	8.783	2.593
12-01-2006 10:44:39	11.768	8.765	2.626
Begin calculating run averages			
12-01-2006 10:46:05	11.668	8.771	2.919
12-01-2006 10:47:05	11.750	8.759	3.003
12-01-2006 10:48:05	11.773	8.758	2.703
12-01-2006 10:49:05	11.774	8.757	2.506
12-01-2006 10:50:05	11.766	8.765	2.549
12-01-2006 10:51:04	11.707	8.780	2.902
12-01-2006 10:52:04	11.723	8.775	3.095
12-01-2006 10:53:04	11.746	8.777	3.064
12-01-2006 10:54:04	11.750	8.778	3.031
12-01-2006 10:55:04	11.745	8.775	2.894
12-01-2006 10:56:04	11.657	8.753	2.885
12-01-2006 10:57:04	11.669	8.761	3.222
12-01-2006 10:58:04	11.718	8.750	3.138
12-01-2006 10:59:04	11.750	8.754	2.945
12-01-2006 11:00:04	11.734	8.757	2.775
12-01-2006 11:01:04	11.719	8.762	2.898
12-01-2006 11:02:05	11.714	8.783	3.131
12-01-2006 11:03:05	11.737	8.772	2.921
12-01-2006 11:04:05	11.750	8.779	2.947
12-01-2006 11:05:05	11.723	8.771	2.854
12-01-2006 11:06:05	11.671	8.776	3.290
12-01-2006 11:07:05	11.734	8.763	3.083
12-01-2006 11:08:05	11.766	8.750	2.816
12-01-2006 11:09:05	11.780	8.757	2.563
12-01-2006 11:10:05	11.782	8.745	2.581
12-01-2006 11:11:05	11.703	8.759	2.570
12-01-2006 11:12:05	11.721	8.764	3.056
12-01-2006 11:13:05	11.735	8.787	2.781
12-01-2006 11:14:05	11.739	8.798	2.433
12-01-2006 11:15:05	11.750	8.776	2.645
12-01-2006 11:16:05	11.664	8.777	2.956
12-01-2006 11:17:05	11.692	8.788	3.150
12-01-2006 11:18:05	11.733	8.777	2.907
12-01-2006 11:19:05	11.738	8.767	2.690
12-01-2006 11:20:05	11.750	8.751	2.738
12-01-2006 11:21:05	11.733	8.754	2.712
12-01-2006 11:22:05	11.762	8.749	2.690
12-01-2006 11:23:05	11.743	8.772	2.743
12-01-2006 11:24:05	11.725	8.789	2.911
12-01-2006 11:25:05	11.701	8.776	3.106
12-01-2006 11:26:05	11.678	8.786	3.106
12-01-2006 11:27:05	11.734	8.795	2.932
12-01-2006 11:28:05	11.769	8.781	2.584
12-01-2006 11:29:05	11.798	8.759	2.609
12-01-2006 11:30:05	11.793	8.760	2.333
12-01-2006 11:31:05	11.713	8.753	2.452
12-01-2006 11:32:05	11.687	8.776	2.787
12-01-2006 11:33:05	11.752	8.757	2.961
12-01-2006 11:34:05	11.753	8.765	2.849
12-01-2006 11:35:04	11.759	8.777	2.864

12-01-2006 11:36:05	11.677	8.768	2.580
12-01-2006 11:37:05	11.688	8.787	2.988
12-01-2006 11:38:04	11.738	8.779	3.134
12-01-2006 11:39:04	11.764	8.775	2.822
12-01-2006 11:40:04	11.762	8.766	2.685
12-01-2006 11:41:04	11.748	8.757	2.599
12-01-2006 11:42:04	11.759	8.762	2.690
12-01-2006 11:43:04	11.771	8.763	2.535
12-01-2006 11:44:04	11.766	8.771	2.570
12-01-2006 11:45:04	11.725	8.781	2.679
Run Averages	O2 OT	CO2 OT	CO
	%	%	ppm
12-01-2006 11:45:04	11.734	8.769	2.826

Operator: Ian T. DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1
Test Run 2 End

Final System Bias Check, Run 2 STRATA Version 2.01

	O2 OT	CO2 OT	CO
	%	%	ppm
12-01-2006 11:47:04	8.454	6.058	3.028
12-01-2006 11:48:04	-0.016	0.284	1.581
12-01-2006 11:49:04	-0.034	0.247	-0.482
12-01-2006 11:50:04	1.360	1.328	-0.452
12-01-2006 11:51:04	12.208	9.871	-1.100
12-01-2006 11:52:04	12.258	9.942	-1.675
12-01-2006 11:53:04	1.510	1.400	0.062
12-01-2006 11:54:04	-0.027	0.247	6.694
12-01-2006 11:55:04	-0.035	0.224	8.255
12-01-2006 11:56:04	-0.037	0.220	8.358
12-01-2006 11:57:05	-0.039	0.227	8.642

Final System Bias Check for Run 2
Operator: Ian T. DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

	Reference Cylinder Numbers	
	Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time 12-01-2006 11:57:30 PASSED

Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0.000	0.000	0.000
Zero Cal	0.004	0.000	0.013
Zero Avg	-0.034	0.245	-0.564
Zero Bias%	0.2%	1.2%	3.6%
Zero Drift%	0.0%	0.4%	-2.0%
Span Ref Cyl	12.500	9.810	9.260
Span Cal	12.460	9.948	9.286
Span Avg	12.249	9.925	8.914
Span Bias%	0.8%	0.1%	2.3%
Span Drift%	-0.1%	0.1%	0.9%
Ini Zero Avg	-0.036	0.163	-0.245
Ini Span Avg	12.262	9.911	8.768
Run Avg	11.734	8.769	2.826
Co	-0.035	0.204	-0.405
Cm	12.255	9.918	8.841
Correct Avg	11.969	8.650	3.236

System Bias Check End

Test Run 3 STRATA Version 2.01

	O2 OT %	CO2 OT %	CO ppm
12-01-2006 12:17:01	11.640	8.740	3.143
12-01-2006 12:18:00	11.705	8.737	3.038
12-01-2006 12:19:00	11.730	8.740	2.841
12-01-2006 12:20:00	11.748	8.765	2.670
Begin calculating run averages			
12-01-2006 12:21:21	11.737	8.758	2.820
12-01-2006 12:22:21	11.733	8.763	2.877
12-01-2006 12:23:21	11.751	8.764	3.100
12-01-2006 12:24:21	11.761	8.763	2.860
12-01-2006 12:25:21	11.728	8.747	2.710
12-01-2006 12:26:21	11.709	8.750	2.975
12-01-2006 12:27:20	11.763	8.729	2.843
12-01-2006 12:28:20	11.791	8.727	2.655
12-01-2006 12:29:20	11.812	8.713	2.634
12-01-2006 12:30:20	11.775	8.724	2.448
12-01-2006 12:31:21	11.709	8.733	2.645
12-01-2006 12:32:21	11.714	8.739	2.726
12-01-2006 12:33:21	11.753	8.751	2.721
12-01-2006 12:34:21	11.768	8.739	2.780
12-01-2006 12:35:20	11.748	8.736	2.556
12-01-2006 12:36:20	11.653	8.748	2.960
12-01-2006 12:37:20	11.692	8.753	3.243
12-01-2006 12:38:21	11.728	8.733	3.066
12-01-2006 12:39:21	11.733	8.731	2.734
12-01-2006 12:40:21	11.738	8.724	2.822
12-01-2006 12:41:21	11.741	8.713	2.925
12-01-2006 12:42:20	11.777	8.711	2.766
12-01-2006 12:43:20	11.764	8.756	2.652
12-01-2006 12:44:20	11.779	8.740	2.660
12-01-2006 12:45:20	11.718	8.739	2.847
12-01-2006 12:46:20	11.698	8.750	3.080
12-01-2006 12:47:21	11.763	8.739	2.797
12-01-2006 12:48:21	11.779	8.744	2.561
12-01-2006 12:49:21	11.783	8.743	2.620
12-01-2006 12:50:21	11.769	8.728	2.714
12-01-2006 12:51:21	11.721	8.719	2.742
12-01-2006 12:52:20	11.733	8.732	2.842
12-01-2006 12:53:20	11.761	8.735	2.899
12-01-2006 12:54:21	11.789	8.718	2.648
12-01-2006 12:55:21	11.771	8.729	2.370
12-01-2006 12:56:21	11.680	8.731	2.574
12-01-2006 12:57:21	11.705	8.747	2.777
12-01-2006 12:58:21	11.744	8.745	2.894
12-01-2006 12:59:20	11.756	8.737	2.728
12-01-2006 13:00:20	11.752	8.732	2.781
12-01-2006 13:01:21	11.728	8.752	2.742
12-01-2006 13:02:21	11.760	8.738	2.850
12-01-2006 13:03:21	11.772	8.736	2.488
12-01-2006 13:04:21	11.771	8.740	2.412
12-01-2006 13:05:21	11.726	8.741	2.686
12-01-2006 13:06:21	11.716	8.742	2.821
12-01-2006 13:07:21	11.765	8.751	2.895
12-01-2006 13:08:21	11.792	8.740	2.598
12-01-2006 13:09:21	11.793	8.734	2.460
12-01-2006 13:10:20	11.769	8.735	2.640
12-01-2006 13:11:20	11.727	8.724	2.886
12-01-2006 13:12:21	11.748	8.728	2.899
12-01-2006 13:13:20	11.784	8.721	2.768
12-01-2006 13:14:20	11.795	8.703	2.294
12-01-2006 13:15:20	11.762	8.707	2.015
12-01-2006 13:16:20	11.674	8.710	2.799
12-01-2006 13:17:20	11.714	8.712	3.015
12-01-2006 13:18:21	11.752	8.714	2.735
12-01-2006 13:19:21	11.780	8.718	2.425
12-01-2006 13:20:21	11.764	8.737	2.303

Run Averages	O2 OT %	CO2 OT %	CO ppm
12-01-2006 13:20:21	11.748	8.735	2.730

Operator: Ian T. DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1
Test Run 3 End

Final System Bias Check, Run 3 STRATA Version 2.01

	O2 OT %	CO2 OT %	CO ppm
12-01-2006 13:21:28	4.919	3.523	2.629
12-01-2006 13:22:28	-0.021	0.299	0.899
12-01-2006 13:23:28	-0.033	0.274	-0.315
12-01-2006 13:24:28	4.819	4.069	-0.391
12-01-2006 13:25:28	12.239	9.876	-1.419
12-01-2006 13:26:28	6.082	4.985	-1.571
12-01-2006 13:27:28	-0.018	0.296	4.431
12-01-2006 13:28:28	-0.031	0.262	8.447

Final System Bias Check for Run 3

Operator: Ian T. DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

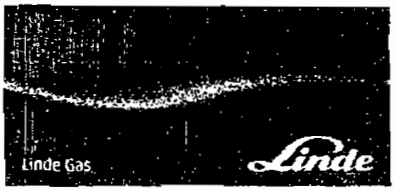
	Reference Cylinder Numbers Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time 12-01-2006 13:28:54 PASSED

Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0.000	0.000	0.000
Zero Cal	0.004	0.000	0.013
Zero Avg	-0.032	0.278	-0.341
Zero Bias%	0.1%	1.4%	2.2%
Zero Drift%	0.0%	0.2%	1.4%
Span Ref Cyl	12.500	9.810	9.260
Span Cal	12.460	9.948	9.286
Span Avg	12.232	9.861	8.785
Span Bias%	0.9%	0.4%	3.2%
Span Drift%	-0.1%	-0.3%	-0.8%
Ini Zero Avg	-0.034	0.245	-0.564
Ini Span Avg	12.249	9.925	8.914
Run Avg	11.748	8.735	2.730
Co	-0.033	0.261	-0.453
Cm	12.240	9.893	8.849
Correct Avg	11.998	8.631	3.168

System Bias Check End

CALIBRATION GAS CERTIFICATIONS



Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

MFD/HOLOX LTD
4236 STATESVILLE RD
CHARLOTTE NC 28269-4298
USA
704-596-6262

Material:	6132 EPA CO/N2 3-9.9 PPM A31	**Blend Tolerance:**	5 % Relative
Production #:	100065596	**Store/Use Temp:**	35 to 90 F
Lot #:	02499D3040GD	**Blend Type:**	EPA Protocol
Cylinder #:	CC165111	**Cyl. Pressure:**	2000 psig
Expiration Date:	11/16/2009	**Balance Gas:**	Nitrogen
Shelf Life:	36 months	**CGA:**	350
		Analytical Accuracy:	1.00 % Relative

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	9	9.28 +/- 0.1 ppm	11/16/2006
7727-37-9	Nitrogen		Balance	11/16/2006
630-08-0	Carbon Monoxide	9	9.26 +/- 0.18 ppm	04/15/2003
7727-37-9	Nitrogen		Balance	04/15/2003

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC180333 , NTRM	10.17 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
MCTa FTIR	AET0600294	FTIR	11/16/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Linde Gas LLC
6055 Rockside Woods Blvd.
Independence, OH 44131
USA

Analytical report approved by: Greg Eccleston
Phone: (216) 642-6600
Fax: (216) 447-9677
www.us.lindegas.com

HiQ Analysis Certificate

NATIONAL SPECIALTY GASES

P. O. Box 12013
Research Triangle Park, N.C. 27709
Phone 919/544-3772

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS MIXTURE

Customer:	National Welders, Charlotte, NC	Reference #	88-94904
NSG PO#	4704164	Certification Date:	12/28/04
Customer PO#		Expiration Date:	12/28/07
Cylinder #	CC50737	Pressure, psig*	2000

ANALYTICAL INFORMATION

METHOD: This standard was analyzed according to EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards: Procedure G1 (September 1997)

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Accuracy**
Carbon Monoxide	29.8 ppm	+/-1%
Balance - Nitrogen		

REFERENCE STANDARD

Type/SRM Sample #	Cylinder #	Concentration	
GMIS (Traceable to SRM # 1678c)	CC67177	50.2 ppm	CO/N2

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Method
Rosemount 880A CO 00172	12/06/04	Non-dispersive Infrared

Analyst: Jeremy Kenworthy

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, National Specialty Gases shall have no liability in excess of established charge for this service. Assayed at National Specialty Gases, 630 United Drive, Durham, NC 27713 (919) 544-3772

*Do not use this standard when cylinder pressure is below 150 psig.

**Analytical accuracy includes typical known error sources which, at least, include precision of the analytical instrument.

NSG 020149L

Certificate of Analysis

EPA Protocol

HiQ® Certificate formed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18225		**Blend Tolerance:**	5 % Relative
EPA 20-25% O2/16-20% CO2/N2		A31	**Blend Type:**	EPA Protocol
Production #:	100124043		**Cyl. Pressure:**	2000 psig
Lot #:	30499H6210DC		**Balance Gas:**	Nitrogen
Cylinder #:	CC250656		**CGA:**	590
Expiration Date:	8/25/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
124-38-9	Carbon Dioxide	18	17.7 +/- 0.17 %	08/25/2006
7782-44-7	Oxygen	22	21.9 +/- 0.2 %	08/25/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	AT9284 , GMIS	21.04 %	03/17/2009
124-38-9	Carbon Dioxide	CC234661 , GMIS	18.11 %	03/29/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	05/24/2005
HORIBA MODEL VIA-510 CO2	4285416002	NDIR	11/22/2005

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

HiQ certificate

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18224		**Blend Tolerance:**	5 % Relative
EPA 10-15% O2/8-12% CO2/N2		A31	**Blend Type:**	EPA Protocol
Production #:	100118070		**Cyl. Pressure:**	2000 psig
Lot #:	30499E6010CC		**Balance Gas:**	Nitrogen
Cylinder #:	CC107096		**CGA:**	590
Expiration Date:	5/8/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
7782-44-7	Oxygen	10 to 15	12.5 +/- 0.09 %	05/08/2006
124-38-9	Carbon Dioxide	8 to 12	9.81 +/- 0.09 %	05/08/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	112347 , GMIS	10.01 %	05/02/2009
124-38-9	Carbon Dioxide	HO2290685Y , GMIS	14.01 %	05/02/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	05/08/2006
HORIBA MODEL VIA-510 CO2	4285416002	NDIR	05/08/2006

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Analytical report approved by Lance Crayton

EHQ Analysis Certificate

Certificate of Analysis

EPA Protocol

HiQ® Certificate

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	13968		**Blend Tolerance:**	5 % Relative
EPA 13 - 18 PPM CO/N2		A31	**Blend Type:**	GRAVIMETRIC
Production #:	100121715		**Cyl. Pressure:**	2000 psig
Lot #:	30499G6060DC		**Balance Gas:**	Nitrogen
Cylinder #:	CC150548		**CGA:**	350
Expiration Date:	7/19/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	13 to 18	15.9 +/- 0.18 ppm	07/19/2006
7727-37-9	Nitrogen		Balance	07/19/2006

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC180333 , NTRM	10.17 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/19/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Greg Eccleston

HiQ certificate

Linde Gas

Certificate of Analysis

EPA Protocol

HiQ® Certificate

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	13970		**Blend Tolerance:**	5 % Relative
EPA 43 - 47 PPM CO/N2		A31	**Blend Type:**	GRAVIMETRIC
Production #:	100121717		**Cyl. Pressure:**	2000 psig
Lot #:	30499G6060DB		**Balance Gas:**	Nitrogen
Cylinder #:	CC149754		**CGA:**	350
Expiration Date:	7/19/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	43 to 47	46.3 +/- 0.3 ppm	07/19/2006
7727-37-9	Nitrogen		Balance	07/19/2006

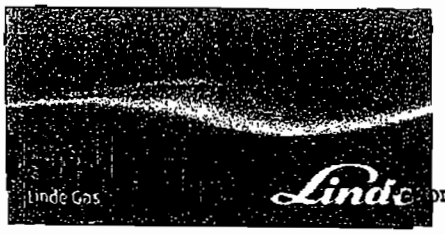
CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC179892 , NTRM	49.33 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/19/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Greg Eccleston

HiQ certificate



Certificate of Analysis

EPA Protocol

Gas Mixtures Blended and Analyzed according to EPA-600/R-97/121 Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18246		**Blend Tolerance:**	5 % Relative
EPA 60 PPM CO/N2 (+/-2%)		A31	**Blend Type:**	EPA Protocol
Production #:	100118386		**Cyl. Pressure:**	2000 psig
Lot #:	30499E6050DD		**Balance Gas:**	Nitrogen
Cylinder #:	CC174902		**CGA:**	350
Expiration Date:	7/12/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	60	61.7 ppm	07/12/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC179892 , NTRM	49.33 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/12/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

L Cr

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	6198	**Blend Tolerance:**	5 % Relative
EPA CO/N2 100-999 PPM	A31	**Blend Type:**	EPA Protocol
Production #:	100117213	**Cyl. Pressure:**	2000 psig
Lot #:	30499D6060DD	**Balance Gas:**	Nitrogen
Cylinder #:	CC237798	**CGA:**	350
Expiration Date:	4/18/2009	**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months	**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	100	101 +/- 0.7 ppm	04/18/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC179992 , NTRM	99.49 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	04/18/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

Analysis Certificate

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	2179		**Blend Tolerance:**	5 % Relative
MISC 3 COMPONENT EPA		A31	**Blend Type:**	EPA Protocol
Production #:	100115060		**Cyl. Pressure:**	2000 psig
Lot #:	30499B6100DB		**Balance Gas:**	Nitrogen
Cylinder #:	CC7551		**CGA:**	590
Expiration Date:	2/21/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	100	101 +/- 0.7 ppm	02/21/2006
7782-44-7	Oxygen	11	11.0 +/- 0.08 %	02/14/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	CC73289 , NTRM	9.90 %	06/13/2009
630-08-0	Carbon Monoxide	CC179992 , NTRM	99.49 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	02/14/2006
HORIBA MODEL VIA-510 CO	4345887002	NDIR	02/21/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

HiQ Analysis Certificate

NATIONAL SPECIALTY GASES

P. O. Box 12013
Research Triangle Park, N.C. 27709
Phone 919/544-3772

CERTIFICATE OF ANALYSIS

CERTIFIED MIXTURE

Customer: National Welders
Charlotte, NC

Reference #: 88-99088
Cylinder #: CC85291
Order #: 5031323
Date Reported: 8/8/2005
Expiration Date: 8/8/2008

Component	Specification	Concentration / *Cert. Accuracy	Analytical Method
Oxygen	12%	12.0% +/- 2%	Paramagnetic
Carbon Dioxide	10%	10.0% +/- 2%	Non-Dispersive Infrared
Balance - Nitrogen			

Carolyn S. Williams

Analyst Carolyn S. Williams

* CERTIFICATION ACCURACY IS A PERCENTAGE (+/-) OF THE COMPONENT

NSG020149K

APPENDIX N

INSTRUMENTAL REFERENCE METHOD TEST DATA – SULFURIC ACID PLANT

SULFUR DIOXIDE, OXYGEN, CARBON DIOXIDE SUMMARY

Polk Acid Plant - Report			
RUN 1			
12/1/2006	**9:00:01**		
Linearity Check - Calibration Error	O2	SO2	CO22
Analyzer Range	25	300	50
Units	%	%	%
Low Level Certified Value (PPM or %)			
Mid Level Certified Value (PPM or %)	10.1	152.2	25.07
High Level Certified Value (PPM or %)	20.9	269	45.1
Zero Level Observed	0.002	-0.003	0.12
Low Level Observed	-	-	-
Mid Level Observed	10.195	152.166	25.024
High Level Observed	21.243	268.599	45.167
Initial Readings			
Zero	0.002	0.583	0.12
Span	10.134	152.166	25.024
Final Readings			
Zero	0.002	0.583	-0.002
Span	10.134	151.873	25.024
Run Results			
Raw Results	8.83	186.01	17.71
Corrected Results (ppmv)	8.8	186.36	17.73
Polk Acid Plant - Report			
RUN 2			
12/1/2006	**10:37:40**		
Initial Readings			
Zero	0.002	0.583	-0.002
Span	10.134	151.873	25.024
Final Readings			
Zero	0.002	0.437	-0.002
Span	10.195	152.166	25.024
Run Results			
Raw Results	8.71	188.96	17.87
Corrected Results (ppmv)	8.65	189.31	17.9
Polk Acid Plant - Report			
RUN 3			
12/1/2006	**12:09:56**		
Initial Readings			
Zero	0.002	0.437	-0.002
Span	10.195	152.166	25.024
Final Readings			
Zero	0.002	0.437	0.12
Span	10.195	152.605	24.902
Run Results			
Raw Results	8.63	193.98	17.94
Corrected Results (ppmv)	8.55	193.86	18

QUALITY ASSURANCE ACTIVITIES

TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

SULFURIC ACID PLANT
Analyzer Calibration Error

ACE = $((C_{Dir} - C_V) / CS) \times 100$ **Eq. 7E-1**

		O_2	SO_2	CO_2
Low-level gas	C_{Dir} =	n/a	n/a	n/a
	C_V =	n/a	n/a	n/a
	CS =	n/a	n/a	n/a
	$C_{Dir} - C_V$ =	n/a	n/a	n/a
	$(C_{Dir} - C_V) / CS$ =	n/a	n/a	n/a
	$((C_{Dir} - C_V) / CS) \times 100$ =	n/a	n/a	n/a

		O_2	SO_2	CO_2
Mid-level gas	C_{Dir} =	10.195	152.166	25.024
	C_V =	10.1	152.2	25.07
	CS =	20.9	269	45.1
	$C_{Dir} - C_V$ =	0.095	-0.034	-0.046
	$(C_{Dir} - C_V) / CS$ =	0.00455	-0.00013	-0.00102
	$((C_{Dir} - C_V) / CS) \times 100$ =	0.45	-0.01	-0.10

		O_2	SO_2	CO_2
High-level gas	C_{Dir} =	21.243	268.599	45.167
	C_V =	20.9	269	45.1
	CS =	20.9	269	45.1
	$C_{Dir} - C_V$ =	0.343	-0.401	0.067
	$(C_{Dir} - C_V) / CS$ =	0.01641	-0.00149	0.00149
	$((C_{Dir} - C_V) / CS) \times 100$ =	1.64	-0.15	0.15

Performance Specification is:

ACE ± 2% or $|C_{Dir} - C_V| \leq$ 0.5 ppm or 0.5 % volume

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
System Bias Calculations

SB = $((C_S - C_{Dir}) / CS) \times 100$ **Eq. 7E-2**

		O_2	SO_2	CO_2
Initial Zero	C_S =	0.002	0.583	0.12
	C_{Dir} =	0.002	-0.003	0.12
	CS =	20.9	269	45.1
	$(C_S - C_{Dir})$ =	0.000	0.586	0.000
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.00218	0.00000
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	0.22	0.00

		O_2	SO_2	CO_2
Initial Span	C_S =	10.134	152.166	25.024
	C_{Dir} =	10.195	152.166	25.024
	CS =	20.9	269	45.1
	$(C_S - C_{Dir})$ =	-0.061	0.000	0.000
	$(C_S - C_{Dir}) / CS$ =	-0.00292	0.00000	0.00000
	$((C_S - C_{Dir}) / CS) \times 100$ =	-0.29	0.00	0.00

		O_2	SO_2	CO_2
Run 1 Post Run Zero	C_S =	0.002	0.583	-0.002
	C_{Dir} =	0.002	-0.003	0.12
	CS =	20.9	269	45.1
	$(C_S - C_{Dir})$ =	0.000	0.586	-0.122
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.00218	-0.00271
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	0.22	-0.27

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TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
System Bias Calculations

		O_2	SO_2	CO_2
Run 1 Post Run Span	C_S =	10.134	151.873	25.024
	C_{Dir} =	10.195	152.166	25.024
	CS =	20.9	269	45.1
	$(C_S - C_{Dir})$ =	-0.061	-0.293	0.000
	$(C_S - C_{Dir})$ / CS =	-0.00292	-0.00109	0.00000
	$((C_S - C_{Dir})$ / CS) x 100 =	-0.29	-0.11	0.00

		O_2	SO_2	CO_2
Run 2 Post Run Zero	C_S =	0.002	0.437	-0.002
	C_{Dir} =	0.002	-0.003	0.12
	CS =	20.9	269	45.1
	$(C_S - C_{Dir})$ =	0.000	0.440	-0.122
	$(C_S - C_{Dir})$ / CS =	0.00000	0.00164	-0.00271
	$((C_S - C_{Dir})$ / CS) x 100 =	0.00	0.16	-0.27

		O_2	SO_2	CO_2
Run 2 Post Run Span	C_S =	10.195	152.166	25.024
	C_{Dir} =	10.195	152.166	25.024
	CS =	20.9	269	45.1
	$(C_S - C_{Dir})$ =	0.000	0.000	0.000
	$(C_S - C_{Dir})$ / CS =	0.00000	0.00000	0.00000
	$((C_S - C_{Dir})$ / CS) x 100 =	0.00	0.00	0.00

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TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
System Bias Calculations

		O_2	SO_2	CO_2
Run 3 Post Run Zero	C_S =	0.002	0.437	0.12
	C_{Dir} =	0.002	-0.003	0.12
	CS =	20.9	269	45.1
	$(C_S - C_{Dir})$ =	0.000	0.440	0.000
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.00164	0.00000
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	0.16	0.00

		O_2	SO_2	CO_2
Run 3 Post Run Span	C_S =	10.195	152.605	24.902
	C_{Dir} =	10.195	152.166	25.024
	CS =	20.9	269	45.1
	$(C_S - C_{Dir})$ =	0.000	0.439	-0.122
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.00163	-0.00271
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	0.16	-0.27

Performance Specification is:
SB **± 5% or $|C_S - Cdir| \leq 0.5$ ppm or 0.5 % volume**

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TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
Drift Assessment Calculations

$D = |SB_{final} - SB_i|$ Eq. 7E-4

		O_2	SO_2	CO_2
Run 1 Zero	SB_{final} =	0.00	0.22	-0.27
	SB_i =	0.00	0.22	0.00
	$\|SB_{final} - SB_i\|$ =	0.00	0.00	0.27
		O_2	SO_2	CO_2
Run 1 Span	SB_{final} =	-0.29	-0.11	0.00
	SB_i =	-0.29	0.00	0.00
	$\|SB_{final} - SB_i\|$ =	0.00	0.11	0.00
		O_2	SO_2	CO_2
Run 2 Zero	SB_{final} =	0.00	0.16	-0.27
	SB_i =	0.00	0.22	-0.27
	$\|SB_{final} - SB_i\|$ =	0.00	0.05	0.00
		O_2	SO_2	CO_2
Run 2 Span	SB_{final} =	0.00	0.00	0.00
	SB_i =	-0.29	-0.11	0.00
	$\|SB_{final} - SB_i\|$ =	0.29	0.11	0.00
		O_2	SO_2	CO_2
Run 3 Zero	SB_{final} =	0.00	0.16	0.00
	SB_i =	0.00	0.16	-0.27
	$\|SB_{final} - SB_i\|$ =	0.00	0.00	0.27
		O_2	SO_2	CO_2
Run 3 Span	SB_{final} =	0.00	0.16	-0.27
	SB_i =	0.00	0.00	0.00
	$\|SB_{final} - SB_i\|$ =	0.00	0.16	0.27

Performance Specification is:

D ± 3% of CS or $|C_{S\ post\text{-}run} - C_{S\ pre\text{-}run}| \leq 0.5$ ppmv Or 0.5 % volume

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
Effluent Gas Concentration

$C_{Gas} = (C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ **Eq. 7E-5**

		O_2	SO_2	CO_2
Run 1	C_{Avg} =	8.83	186.01	17.71
	C_0 =	0.002	0.583	0.059
	C_{MA} =	10.1	152.2	25.07
	C_M =	10.134	152.02	25.024
	$(C_{Avg} - C_0)$ =	8.828	185.427	17.651
	$(C_M - C_0)$ =	10.132	151.437	24.965
	$(C_{MA} / (C_M - C_0)$ =	0.99684	1.00504	1.00421
	$(C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ =	8.80	186.36	17.73

		O_2	SO_2	CO_2
Run 2	C_{Avg} =	8.71	188.96	17.87
	C_0 =	0.002	0.51	-0.002
	C_{MA} =	10.1	152.2	25.07
	C_M =	10.1645	152.02	25.024
	$(C_{Avg} - C_0)$ =	8.708	188.45	17.872
	$(C_M - C_0)$ =	10.1625	151.51	25.026
	$(C_{MA} / (C_M - C_0)$ =	0.99385	1.00456	1.00176
	$(C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ =	8.65	189.31	17.90

TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
Effluent Gas Concentration

		O_2	SO_2	CO_2
Run 3	C_{Avg} =	8.63	193.98	17.94
	C_O =	0.002	0.437	0.059
	C_{MA} =	10.1	152.2	25.07
	C_M =	10.195	152.386	24.963
	$(C_{Avg} - C_O)$ =	8.628	193.543	17.881
	$(C_M - C_O)$ =	10.193	151.949	24.904
	$(C_{MA} / (C_M - C_O)$ =	0.99088	1.00166	1.00667
	$(C_{Avg} - C_O) \times (C_{MA} / (C_M - C_O))$ =	8.55	193.86	18.00

RUN LOG

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	7:53:00 AM		9.16	181.46	17.45
12/1/2006	7:53:30 AM		9.16	180.73	17.45
12/1/2006	7:54:00 AM		9.04	180.43	17.58
12/1/2006	7:54:30 AM		9.1	181.02	17.7
12/1/2006	7:55:00 AM		9.04	182.19	17.58
12/1/2006	7:55:30 AM		9.04	114.09	17.45
12/1/2006	7:56:00 AM		3.18	3.07	6.47
12/1/2006	7:56:30 AM		0.06	-0.15	0.12
12/1/2006	7:57:00 AM	Linearity Check	0	-0.3	0.12
12/1/2006	7:57:30 AM	Linearity Check	0	0	0.12
12/1/2006	7:58:00 AM	Linearity Check	0.06	0	10.62
12/1/2006	7:58:30 AM	Linearity Check	-0.06	0	35.89
12/1/2006	7:59:00 AM	Linearity Check	-0.12	0	44.56
12/1/2006	7:59:30 AM	Linearity Check	-0.12	-0.15	45.41
12/1/2006	8:00:00 AM	Linearity Check	7.45	-0.44	19.41
12/1/2006	8:00:30 AM	Linearity Check	10.13	-0.3	9.15
12/1/2006	8:01:00 AM	Linearity Check	10.2	-0.44	8.67
12/1/2006	8:01:30 AM	Linearity Check	6.04	-0.15	15.75
12/1/2006	8:02:00 AM	Linearity Check	0.12	-0.15	24.66
12/1/2006	8:02:30 AM	Linearity Check	-0.06	-0.15	25.02
12/1/2006	8:03:00 AM	Linearity Check	1.04	-0.3	24.78
12/1/2006	8:03:30 AM	Linearity Check	18.62	-0.59	11.72
12/1/2006	8:04:00 AM	Linearity Check	20.27	-0.44	14.04
12/1/2006	8:04:30 AM	Linearity Check	21.24	-0.44	17.21
12/1/2006	8:05:00 AM	Linearity Check	21.24	87.14	17.45
12/1/2006	8:05:30 AM	Linearity Check	3.85	128.59	8.67
12/1/2006	8:06:00 AM	Linearity Check	-0.06	151.73	9.52
12/1/2006	8:06:30 AM	Linearity Check	-0.06	151.14	9.89
12/1/2006	8:07:00 AM	Linearity Check	-0.06	154.51	10.01
12/1/2006	8:07:30 AM	Linearity Check	0.06	20.21	11.47
12/1/2006	8:08:00 AM	Linearity Check	-0.06	225.98	12.94
12/1/2006	8:08:30 AM	Linearity Check	-0.06	262.59	17.45
12/1/2006	8:09:00 AM	Linearity Check	-0.06	267.87	17.82
12/1/2006	8:09:30 AM	Linearity Check	-0.06	269.18	17.82
12/1/2006	8:10:00 AM	Linearity Check	1.28	169.45	17.58
12/1/2006	8:10:30 AM	Linearity Check	5.19	8.49	8.05
12/1/2006	8:11:00 AM	Linearity Check	0.06	1.46	0.36
12/1/2006	8:11:30 AM	- ZERO	-0.06	1.17	0
12/1/2006	8:12:00 AM	- ZERO	-0.06	0.73	0
12/1/2006	8:12:30 AM	- ZERO	-0.06	0.44	0
12/1/2006	8:13:00 AM	- ZERO	-0.06	0.44	12.08
12/1/2006	8:13:30 AM	- ZERO	-0.06	0.73	23.56
12/1/2006	8:14:00 AM	- ZERO	-0.06	0.29	24.9
12/1/2006	8:14:30 AM	- Span	-0.12	0.44	24.9
12/1/2006	8:15:00 AM	- Span	-0.06	0.14	25.02
12/1/2006	8:15:30 AM	- Span	8.3	0	12.45
12/1/2006	8:16:00 AM	- Span	10.2	-0.15	8.79
12/1/2006	8:16:30 AM	- Span	10.2	41.74	8.79
12/1/2006	8:17:00 AM	- Span	2.08	148.94	9.52
12/1/2006	8:17:30 AM	- Span	0	150.41	9.89

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	8:18:00 AM	- Span	-0.06	152.31	9.89
12/1/2006	8:18:30 AM	- Span	-0.06	151.14	10.01
12/1/2006	8:19:00 AM	- Span	0.8	178.53	10.37
12/1/2006	8:19:30 AM	- Span	8.12	182.63	16.72
12/1/2006	8:20:00 AM	- Span	8.73	182.92	17.58
12/1/2006	8:20:30 AM	- Span	8.79	181.02	17.58
12/1/2006	8:21:00 AM	- Span	8.79	182.63	17.58
12/1/2006	8:21:30 AM	- Span	8.91	181.02	17.58
12/1/2006	8:22:00 AM	- Span	8.85	182.92	17.58
12/1/2006	8:22:30 AM	- Span	8.97	182.34	17.58
12/1/2006	8:23:00 AM	- Span	8.97	182.63	17.58
12/1/2006	8:23:30 AM	- Span	8.97	182.92	17.58
12/1/2006	8:24:00 AM	- Span	8.91	183.07	17.7
12/1/2006	8:24:30 AM	- Span	8.91	182.48	17.58
12/1/2006	8:25:00 AM	- Span	8.91	182.63	17.58
12/1/2006	8:25:30 AM	- Span	8.97	183.07	17.7
12/1/2006	8:26:00 AM	- Span	8.91	183.8	17.58
12/1/2006	8:26:30 AM	- Span	8.91	183.65	17.58
12/1/2006	8:27:00 AM	- Span	8.91	182.48	17.58
12/1/2006	8:27:30 AM	- Span	9.04	181.16	17.45
12/1/2006	8:28:00 AM	- Span	8.97	180.58	17.58
12/1/2006	8:28:30 AM	- Span	8.97	181.9	17.7
12/1/2006	8:29:00 AM	- Span	8.97	181.9	17.7
12/1/2006	8:29:30 AM	- Span	8.91	181.75	17.7
12/1/2006	8:30:00 AM	- Span	8.79	182.19	17.82
12/1/2006	8:30:30 AM	- Span	8.73	182.19	17.7
12/1/2006	8:31:00 AM	- Span	8.79	183.07	17.7
12/1/2006	8:31:30 AM	- Span	8.73	184.39	17.7
12/1/2006	8:32:00 AM	- Span	8.73	184.83	17.7
12/1/2006	8:32:30 AM	- Span	8.73	183.36	17.82
12/1/2006	8:33:00 AM	- Span	8.73	182.63	17.7
12/1/2006	8:33:30 AM	- Span	8.79	181.9	17.7
12/1/2006	8:34:00 AM	- Span	8.79	182.92	17.7
12/1/2006	8:34:30 AM	- Span	8.79	184.39	17.7
12/1/2006	8:35:00 AM	- Span	8.85	183.8	17.58
12/1/2006	8:35:30 AM	- Span	8.91	182.78	17.7
12/1/2006	8:36:00 AM	- Span	8.85	183.51	17.7
12/1/2006	8:36:30 AM	- Span	8.85	184.97	17.7
12/1/2006	8:37:00 AM	- Span	8.79	184.68	17.58
12/1/2006	8:37:30 AM	- Span	8.91	183.8	17.58
12/1/2006	8:38:00 AM	- Span	8.79	183.51	17.7
12/1/2006	8:38:30 AM	- Span	8.85	183.95	17.58
12/1/2006	8:39:00 AM	- Span	8.85	184.83	17.58
12/1/2006	8:39:30 AM	- Span	8.85	185.7	17.58
12/1/2006	8:40:00 AM	- Span	8.91	185.41	17.45
12/1/2006	8:40:30 AM	- Span	8.91	184.83	17.58
12/1/2006	8:41:00 AM	- Span	8.97	184.53	17.45
12/1/2006	8:41:30 AM	- Span	9.04	184.53	17.45
12/1/2006	8:42:00 AM	- Span	9.1	184.24	17.33
12/1/2006	8:42:30 AM	- Span	9.04	184.24	17.45

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	8:43:00 AM	- Span	9.1	184.09	17.45
12/1/2006	8:43:30 AM	- Span	9.1	183.21	17.45
12/1/2006	8:44:00 AM	- Span	9.04	183.65	17.45
12/1/2006	8:44:30 AM	- Span	8.91	184.24	17.45
12/1/2006	8:45:00 AM	- Span	8.97	183.8	17.58
12/1/2006	8:45:30 AM	- Span	8.91	183.36	17.45
12/1/2006	8:46:00 AM	- Span	8.97	183.51	17.45
12/1/2006	8:46:30 AM	- Span	8.91	183.95	17.7
12/1/2006	8:47:00 AM	- Span	8.79	184.09	17.7
12/1/2006	8:47:30 AM	- Span	8.85	184.24	17.7
12/1/2006	8:48:00 AM	- Span	8.79	184.83	17.7
12/1/2006	8:48:30 AM	- Span	8.79	184.09	17.7
12/1/2006	8:49:00 AM	- Span	8.73	184.68	17.7
12/1/2006	8:49:30 AM	- Span	8.73	185.12	17.7
12/1/2006	8:50:00 AM	- Span	8.73	184.53	17.7
12/1/2006	8:50:30 AM	- Span	8.85	183.8	17.45
12/1/2006	8:51:00 AM	- Span	8.85	183.51	17.58
12/1/2006	8:51:30 AM	- Span	9.1	183.36	17.33
12/1/2006	8:52:00 AM	- Span	9.22	183.21	17.33
12/1/2006	8:52:30 AM	- Span	9.16	183.65	17.45
12/1/2006	8:53:00 AM	- Span	9.1	183.8	17.45
12/1/2006	8:53:30 AM	- Span	8.97	183.95	17.58
12/1/2006	8:54:00 AM	- Span	8.97	183.21	17.58
12/1/2006	8:54:30 AM	- Span	8.85	184.24	17.7
12/1/2006	8:55:00 AM	- Span	8.73	184.53	17.82
12/1/2006	8:55:30 AM	- Span	8.67	183.95	17.7
12/1/2006	8:56:00 AM	- Span	8.67	184.68	17.82
12/1/2006	8:56:30 AM	- Span	8.67	184.68	17.7
12/1/2006	8:57:00 AM	- Span	8.61	185.41	17.7
12/1/2006	8:57:30 AM	- Span	8.61	185.27	17.7
12/1/2006	8:58:00 AM	- Span	8.67	185.12	17.7
12/1/2006	8:58:30 AM	- Span	8.73	185.56	17.7
12/1/2006	8:59:00 AM	- Span	8.73	184.97	17.7
12/1/2006	8:59:30 AM	- Span	8.73	185.85	17.58
12/1/2006	9:00:00 AM	- Span	8.85	186.44	17.45
12/1/2006	9:00:30 AM	Run 1 - 1	8.85	186.14	17.45
12/1/2006	9:01:00 AM	Run 1 - 1	8.85	186	17.58
12/1/2006	9:01:30 AM	Run 1 - 1	8.91	185.12	17.58
12/1/2006	9:02:00 AM	Run 1 - 1	8.97	184.83	17.45
12/1/2006	9:02:30 AM	Run 1 - 1	8.97	185.12	17.45
12/1/2006	9:03:00 AM	Run 1 - 1	8.91	185.41	17.58
12/1/2006	9:03:30 AM	Run 1 - 1	8.91	184.97	17.58
12/1/2006	9:04:00 AM	Run 1 - 1	8.85	185.27	17.58
12/1/2006	9:04:30 AM	Run 1 - 1	8.91	185.85	17.58
12/1/2006	9:05:00 AM	Run 1 - 1	8.85	186	17.58
12/1/2006	9:05:30 AM	Run 1 - 1	8.79	186	17.7
12/1/2006	9:06:00 AM	Run 1 - 1	8.73	185.27	17.82
12/1/2006	9:06:30 AM	Run 1 - 1	8.79	185.56	17.58
12/1/2006	9:07:00 AM	Run 1 - 1	8.73	185.85	17.7
12/1/2006	9:07:30 AM	Run 1 - 1	8.73	185.12	17.7

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	9:08:00 AM	Run 1 - 1	8.67	185.56	17.7
12/1/2006	9:08:30 AM	Run 1 - 1	8.73	185.27	17.7
12/1/2006	9:09:00 AM	Run 1 - 1	8.73	185.12	17.7
12/1/2006	9:09:30 AM	Run 1 - 1	8.73	185.56	17.7
12/1/2006	9:10:00 AM	Run 1 - 1	8.73	185.7	17.7
12/1/2006	9:10:30 AM	Run 1 - 1	8.73	186.73	17.58
12/1/2006	9:11:00 AM	Run 1 - 1	8.73	186.58	17.7
12/1/2006	9:11:30 AM	Run 1 - 1	8.73	186.29	17.58
12/1/2006	9:12:00 AM	Run 1 - 1	8.73	186.44	17.7
12/1/2006	9:12:30 AM	Run 1 - 1	8.85	185.85	17.58
12/1/2006	9:13:00 AM	Run 1 - 1	8.91	186	17.58
12/1/2006	9:13:30 AM	Run 1 - 1	8.85	186	17.58
12/1/2006	9:14:00 AM	Run 1 - 1	8.91	186	17.58
12/1/2006	9:14:30 AM	Run 1 - 1	8.91	186	17.58
12/1/2006	9:15:00 AM	Run 1 - 1	9.04	186	17.58
12/1/2006	9:15:30 AM	Run 1 - 1	9.1	185.56	17.58
12/1/2006	9:16:00 AM	Run 1 - 1	8.97	185.85	17.58
12/1/2006	9:16:30 AM	Run 1 - 1	9.04	185.56	17.58
12/1/2006	9:17:00 AM	Run 1 - 1	9.1	185.41	17.58
12/1/2006	9:17:30 AM	Run 1 - 1	9.04	184.83	17.58
12/1/2006	9:18:00 AM	Run 1 - 1	8.97	184.39	17.7
12/1/2006	9:18:30 AM	Run 1 - 1	8.91	184.83	17.7
12/1/2006	9:19:00 AM	Run 1 - 1	8.85	184.97	17.82
12/1/2006	9:19:30 AM	Run 1 - 1	8.73	185.85	17.7
12/1/2006	9:20:00 AM	Run 1 - 1	8.73	185.12	17.82
12/1/2006	9:20:30 AM	Run 1 - 1	8.73	184.68	17.82
12/1/2006	9:21:00 AM	Run 1 - 1	8.73	183.95	17.7
12/1/2006	9:21:30 AM	Run 1 - 1	8.79	183.95	17.7
12/1/2006	9:22:00 AM	Run 1 - 1	8.85	184.53	17.7
12/1/2006	9:22:30 AM	Run 1 - 1	8.79	185.56	17.7
12/1/2006	9:23:00 AM	Run 1 - 1	8.91	185.12	17.7
12/1/2006	9:23:30 AM	Run 1 - 1	8.91	184.68	17.7
12/1/2006	9:24:00 AM	Run 1 - 1	8.91	184.53	17.7
12/1/2006	9:24:30 AM	Run 1 - 1	8.85	185.41	17.7
12/1/2006	9:25:00 AM	Run 1 - 1	8.85	185.12	17.7
12/1/2006	9:25:30 AM	Run 1 - 1	8.79	184.83	17.7
12/1/2006	9:26:00 AM	Run 1 - 1	8.79	185.56	17.82
12/1/2006	9:26:30 AM	Run 1 - 1	8.73	186.29	17.82
12/1/2006	9:27:00 AM	Run 1 - 1	8.67	186.58	17.82
12/1/2006	9:27:30 AM	Run 1 - 1	8.85	185.85	17.7
12/1/2006	9:28:00 AM	Run 1 - 1	8.85	186.58	17.7
12/1/2006	9:28:30 AM	Run 1 - 1	8.85	186.44	17.82
12/1/2006	9:29:00 AM	Run 1 - 1	8.91	186.14	17.7
12/1/2006	9:29:30 AM	Run 1 - 1	8.85	186	17.7
12/1/2006	9:30:00 AM	Run 1 - 1	8.73	186	17.82
12/1/2006	9:30:30 AM	Run 1 - 1	8.73	186.88	17.7
12/1/2006	9:31:00 AM	Run 1 - 1	8.67	187.75	17.7
12/1/2006	9:31:30 AM	Run 1 - 1	8.67	187.75	17.82
12/1/2006	9:32:00 AM	Run 1 - 1	8.67	188.49	17.7
12/1/2006	9:32:30 AM	Run 1 - 1	8.67	188.49	17.82

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	9:33:00 AM	Run 1 - 1	8.73	187.32	17.82
12/1/2006	9:33:30 AM	Run 1 - 1	8.67	187.9	17.7
12/1/2006	9:34:00 AM	Run 1 - 1	8.73	189.22	17.7
12/1/2006	9:34:30 AM	Run 1 - 1	8.73	189.51	17.7
12/1/2006	9:35:00 AM	Run 1 - 1	8.73	188.78	17.7
12/1/2006	9:35:30 AM	Run 1 - 1	8.73	188.93	17.7
12/1/2006	9:36:00 AM	Run 1 - 1	8.79	189.22	17.7
12/1/2006	9:36:30 AM	Run 1 - 1	8.79	189.22	17.7
12/1/2006	9:37:00 AM	Run 1 - 1	8.85	189.37	17.7
12/1/2006	9:37:30 AM	Run 1 - 1	8.85	189.37	17.7
12/1/2006	9:38:00 AM	Run 1 - 1	8.85	188.93	17.58
12/1/2006	9:38:30 AM	Run 1 - 1	8.85	188.93	17.7
12/1/2006	9:39:00 AM	Run 1 - 1	8.91	188.34	17.7
12/1/2006	9:39:30 AM	Run 1 - 1	8.97	187.9	17.45
12/1/2006	9:40:00 AM	Run 1 - 1	9.1	187.02	17.45
12/1/2006	9:40:30 AM	Run 1 - 1	9.22	186.58	17.45
12/1/2006	9:41:00 AM	Run 1 - 1	9.22	185.85	17.33
12/1/2006	9:41:30 AM	Run 1 - 1	9.28	184.97	17.45
12/1/2006	9:42:00 AM	Run 1 - 1	9.22	184.83	17.45
12/1/2006	9:42:30 AM	Run 1 - 1	9.1	184.97	17.58
12/1/2006	9:43:00 AM	Run 1 - 1	9.04	185.56	17.7
12/1/2006	9:43:30 AM	Run 1 - 1	8.85	185.41	17.82
12/1/2006	9:44:00 AM	Run 1 - 1	8.85	185.12	17.82
12/1/2006	9:44:30 AM	Run 1 - 1	8.73	185.27	17.94
12/1/2006	9:45:00 AM	Run 1 - 1	8.73	185.12	17.82
12/1/2006	9:45:30 AM	Run 1 - 1	8.61	185.12	17.94
12/1/2006	9:46:00 AM	Run 1 - 1	8.67	185.7	17.82
12/1/2006	9:46:30 AM	Run 1 - 1	8.61	185.41	17.82
12/1/2006	9:47:00 AM	Run 1 - 1	8.61	184.97	17.94
12/1/2006	9:47:30 AM	Run 1 - 1	8.61	184.83	17.94
12/1/2006	9:48:00 AM	Run 1 - 1	8.67	185.7	17.94
12/1/2006	9:48:30 AM	Run 1 - 1	8.67	186.29	17.82
12/1/2006	9:49:00 AM	Run 1 - 1	8.73	186.58	17.82
12/1/2006	9:49:30 AM	Run 1 - 1	8.73	186.58	17.82
12/1/2006	9:50:00 AM	Run 1 - 1	8.79	186.14	17.7
12/1/2006	9:50:30 AM	Run 1 - 1	8.85	185.85	17.7
12/1/2006	9:51:00 AM	Run 1 - 1	8.97	185.85	17.7
12/1/2006	9:51:30 AM	Run 1 - 1	8.97	186.14	17.58
12/1/2006	9:52:00 AM	Run 1 - 1	9.04	185.7	17.58
12/1/2006	9:52:30 AM	Run 1 - 1	9.1	184.53	17.58
12/1/2006	9:53:00 AM	Run 1 - 1	9.1	184.09	17.58
12/1/2006	9:53:30 AM	Run 1 - 1	8.97	185.41	17.7
12/1/2006	9:54:00 AM	Run 1 - 1	8.91	185.56	17.7
12/1/2006	9:54:30 AM	Run 1 - 1	8.91	185.27	17.82
12/1/2006	9:55:00 AM	Run 1 - 1	8.73	184.97	17.82
12/1/2006	9:55:30 AM	Run 1 - 1	8.73	185.41	17.82
12/1/2006	9:56:00 AM	Run 1 - 1	8.73	185.27	17.94
12/1/2006	9:56:30 AM	Run 1 - 1	8.67	185.27	17.82
12/1/2006	9:57:00 AM	Run 1 - 1	8.67	184.97	17.94
12/1/2006	9:57:30 AM	Run 1 - 1	8.61	184.97	17.94

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	9:58:00 AM	Run 1 - 1	8.61	184.97	17.94
12/1/2006	9:58:30 AM	Run 1 - 1	8.67	186.44	17.94
12/1/2006	9:59:00 AM	Run 1 - 1	8.73	187.02	17.82
12/1/2006	9:59:30 AM	Run 1 - 1	8.79	186.58	17.82
12/1/2006	10:00:00 AM	Run 1 - 1	8.79	185.7	17.7
12/1/2006	10:00:30 AM		8.91	130.93	17.58
12/1/2006	10:01:00 AM		3.3	5.86	7.2
12/1/2006	10:01:30 AM		0.06	1.32	0.24
12/1/2006	10:02:00 AM	- ZERO	0	1.02	0
12/1/2006	10:02:30 AM	- ZERO	0	0.88	0
12/1/2006	10:03:00 AM	- ZERO	0	0.44	0
12/1/2006	10:03:30 AM	- ZERO	0	0.73	0
12/1/2006	10:04:00 AM	- ZERO	-0.06	0.44	13.67
12/1/2006	10:04:30 AM	- ZERO	-0.12	0.58	24.05
12/1/2006	10:05:00 AM	- Span	-0.06	0.29	25.02
12/1/2006	10:05:30 AM	- Span	-0.06	0.14	25.02
12/1/2006	10:06:00 AM	- Span	6.41	0	16.11
12/1/2006	10:06:30 AM	- Span	10.13	0	8.91
12/1/2006	10:07:00 AM	- Span	10.26	0	8.67
12/1/2006	10:07:30 AM	- Span	10.2	14.06	8.67
12/1/2006	10:08:00 AM	- Span	4.27	147.92	9.28
12/1/2006	10:08:30 AM	- Span	-0.06	151.58	10.01
12/1/2006	10:09:00 AM	- Span	-0.06	152.31	9.89
12/1/2006	10:09:30 AM	- Span	2.32	183.65	11.84
12/1/2006	10:10:00 AM	- Span	8.24	184.97	17.58
12/1/2006	10:10:30 AM	- Span	8.49	186.88	17.82
12/1/2006	10:11:00 AM	- Span	8.61	186.44	17.7
12/1/2006	10:11:30 AM	- Span	8.67	187.32	17.7
12/1/2006	10:12:00 AM	- Span	8.61	186.58	17.82
12/1/2006	10:12:30 AM	- Span	8.67	186	17.7
12/1/2006	10:13:00 AM	- Span	8.73	186.88	17.7
12/1/2006	10:13:30 AM	- Span	8.79	187.46	17.7
12/1/2006	10:14:00 AM	- Span	8.73	187.75	17.82
12/1/2006	10:14:30 AM	- Span	8.79	187.75	17.82
12/1/2006	10:15:00 AM	- Span	8.79	187.9	17.7
12/1/2006	10:15:30 AM	- Span	8.79	187.32	17.7
12/1/2006	10:16:00 AM	- Span	8.73	187.46	17.82
12/1/2006	10:16:30 AM	- Span	8.73	188.63	17.82
12/1/2006	10:17:00 AM	- Span	8.85	188.19	17.7
12/1/2006	10:17:30 AM	- Span	8.85	188.05	17.7
12/1/2006	10:18:00 AM	- Span	8.79	187.9	17.82
12/1/2006	10:18:30 AM	- Span	8.79	188.19	17.82
12/1/2006	10:19:00 AM	- Span	8.85	187.75	17.82
12/1/2006	10:19:30 AM	- Span	8.91	186.44	17.7
12/1/2006	10:20:00 AM	- Span	8.85	187.17	17.82
12/1/2006	10:20:30 AM	- Span	8.85	187.32	17.7
12/1/2006	10:21:00 AM	- Span	8.85	187.17	17.7
12/1/2006	10:21:30 AM	- Span	8.91	187.46	17.7
12/1/2006	10:22:00 AM	- Span	8.97	187.32	17.58
12/1/2006	10:22:30 AM	- Span	8.97	186.73	17.7

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	10:23:00 AM	- Span	8.91	186.29	17.7
12/1/2006	10:23:30 AM	- Span	8.85	186.73	17.7
12/1/2006	10:24:00 AM	- Span	8.85	186.44	17.7
12/1/2006	10:24:30 AM	- Span	8.73	186.58	17.94
12/1/2006	10:25:00 AM	- Span	8.67	187.02	17.82
12/1/2006	10:25:30 AM	- Span	8.55	187.02	17.82
12/1/2006	10:26:00 AM	- Span	8.67	187.32	17.94
12/1/2006	10:26:30 AM	- Span	8.67	187.32	17.82
12/1/2006	10:27:00 AM	- Span	8.67	187.17	17.82
12/1/2006	10:27:30 AM	- Span	8.79	187.17	17.7
12/1/2006	10:28:00 AM	- Span	8.91	186.29	17.58
12/1/2006	10:28:30 AM	- Span	8.97	186.14	17.7
12/1/2006	10:29:00 AM	- Span	9.04	185.56	17.7
12/1/2006	10:29:30 AM	- Span	9.04	186	17.7
12/1/2006	10:30:00 AM	- Span	8.97	186.14	17.7
12/1/2006	10:30:30 AM	- Span	8.91	186.58	17.82
12/1/2006	10:31:00 AM	- Span	8.79	187.75	17.82
12/1/2006	10:31:30 AM	- Span	8.73	187.17	17.94
12/1/2006	10:32:00 AM	- Span	8.73	186.88	17.94
12/1/2006	10:32:30 AM	- Span	8.67	186.58	18.07
12/1/2006	10:33:00 AM	- Span	8.55	187.75	18.07
12/1/2006	10:33:30 AM	- Span	8.49	188.34	17.94
12/1/2006	10:34:00 AM	- Span	8.49	187.75	17.94
12/1/2006	10:34:30 AM	- Span	8.43	187.75	17.94
12/1/2006	10:35:00 AM	- Span	8.43	188.93	17.94
12/1/2006	10:35:30 AM	- Span	8.49	188.93	17.94
12/1/2006	10:36:00 AM	- Span	8.55	188.93	17.82
12/1/2006	10:36:30 AM	- Span	8.67	188.49	17.82
12/1/2006	10:37:00 AM	- Span	8.79	187.75	17.82
12/1/2006	10:37:30 AM	- Span	8.85	187.75	17.7
12/1/2006	10:38:00 AM	Run 2 - 1	9.04	187.61	17.7
12/1/2006	10:38:30 AM	Run 2 - 1	9.04	187.46	17.58
12/1/2006	10:39:00 AM	Run 2 - 1	9.04	187.32	17.7
12/1/2006	10:39:30 AM	Run 2 - 1	8.85	188.49	17.82
12/1/2006	10:40:00 AM	Run 2 - 1	8.79	188.34	17.82
12/1/2006	10:40:30 AM	Run 2 - 1	8.79	188.05	17.82
12/1/2006	10:41:00 AM	Run 2 - 1	8.73	188.19	17.94
12/1/2006	10:41:30 AM	Run 2 - 1	8.73	187.61	17.82
12/1/2006	10:42:00 AM	Run 2 - 1	8.79	187.9	17.82
12/1/2006	10:42:30 AM	Run 2 - 1	8.79	187.61	17.82
12/1/2006	10:43:00 AM	Run 2 - 1	8.73	187.32	17.82
12/1/2006	10:43:30 AM	Run 2 - 1	8.73	187.46	17.82
12/1/2006	10:44:00 AM	Run 2 - 1	8.73	187.02	17.82
12/1/2006	10:44:30 AM	Run 2 - 1	8.73	187.17	17.7
12/1/2006	10:45:00 AM	Run 2 - 1	8.73	187.17	17.82
12/1/2006	10:45:30 AM	Run 2 - 1	8.73	187.17	17.7
12/1/2006	10:46:00 AM	Run 2 - 1	8.73	187.17	17.82
12/1/2006	10:46:30 AM	Run 2 - 1	8.85	186.29	17.7
12/1/2006	10:47:00 AM	Run 2 - 1	8.85	186.73	17.82
12/1/2006	10:47:30 AM	Run 2 - 1	8.79	186.88	17.82

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	10:48:00 AM	Run 2 - 1	8.73	186.44	17.82
12/1/2006	10:48:30 AM	Run 2 - 1	8.67	186.88	17.82
12/1/2006	10:49:00 AM	Run 2 - 1	8.67	187.32	17.82
12/1/2006	10:49:30 AM	Run 2 - 1	8.73	187.17	17.94
12/1/2006	10:50:00 AM	Run 2 - 1	8.67	187.61	17.82
12/1/2006	10:50:30 AM	Run 2 - 1	8.67	187.32	17.82
12/1/2006	10:51:00 AM	Run 2 - 1	8.73	186.44	17.82
12/1/2006	10:51:30 AM	Run 2 - 1	8.73	187.17	17.82
12/1/2006	10:52:00 AM	Run 2 - 1	8.73	188.78	17.82
12/1/2006	10:52:30 AM	Run 2 - 1	8.79	188.05	17.7
12/1/2006	10:53:00 AM	Run 2 - 1	8.85	187.02	17.7
12/1/2006	10:53:30 AM	Run 2 - 1	8.91	186.29	17.7
12/1/2006	10:54:00 AM	Run 2 - 1	8.79	186.58	17.82
12/1/2006	10:54:30 AM	Run 2 - 1	8.79	187.61	17.82
12/1/2006	10:55:00 AM	Run 2 - 1	8.79	187.9	17.82
12/1/2006	10:55:30 AM	Run 2 - 1	8.55	188.34	18.07
12/1/2006	10:56:00 AM	Run 2 - 1	8.49	187.75	18.07
12/1/2006	10:56:30 AM	Run 2 - 1	8.55	187.61	17.94
12/1/2006	10:57:00 AM	Run 2 - 1	8.49	188.49	18.07
12/1/2006	10:57:30 AM	Run 2 - 1	8.55	189.07	17.94
12/1/2006	10:58:00 AM	Run 2 - 1	8.49	189.07	18.07
12/1/2006	10:58:30 AM	Run 2 - 1	8.55	189.07	18.07
12/1/2006	10:59:00 AM	Run 2 - 1	8.67	188.05	17.82
12/1/2006	10:59:30 AM	Run 2 - 1	8.67	188.34	17.94
12/1/2006	11:00:00 AM	Run 2 - 1	8.73	188.49	17.82
12/1/2006	11:00:30 AM	Run 2 - 1	8.73	189.07	17.7
12/1/2006	11:01:00 AM	Run 2 - 1	8.79	188.34	17.82
12/1/2006	11:01:30 AM	Run 2 - 1	8.79	188.78	17.7
12/1/2006	11:02:00 AM	Run 2 - 1	8.79	188.93	17.82
12/1/2006	11:02:30 AM	Run 2 - 1	8.85	188.34	17.82
12/1/2006	11:03:00 AM	Run 2 - 1	8.85	187.17	17.7
12/1/2006	11:03:30 AM	Run 2 - 1	8.91	187.75	17.7
12/1/2006	11:04:00 AM	Run 2 - 1	8.85	188.34	17.82
12/1/2006	11:04:30 AM	Run 2 - 1	8.79	188.49	17.7
12/1/2006	11:05:00 AM	Run 2 - 1	8.85	188.34	17.7
12/1/2006	11:05:30 AM	Run 2 - 1	8.79	188.19	17.7
12/1/2006	11:06:00 AM	Run 2 - 1	8.73	188.05	17.82
12/1/2006	11:06:30 AM	Run 2 - 1	8.79	188.05	17.82
12/1/2006	11:07:00 AM	Run 2 - 1	8.73	188.34	17.94
12/1/2006	11:07:30 AM	Run 2 - 1	8.79	188.19	17.82
12/1/2006	11:08:00 AM	Run 2 - 1	8.73	187.32	17.82
12/1/2006	11:08:30 AM	Run 2 - 1	8.73	187.02	17.82
12/1/2006	11:09:00 AM	Run 2 - 1	8.73	187.61	17.94
12/1/2006	11:09:30 AM	Run 2 - 1	8.73	187.9	17.82
12/1/2006	11:10:00 AM	Run 2 - 1	8.79	188.19	17.82
12/1/2006	11:10:30 AM	Run 2 - 1	8.67	187.61	17.82
12/1/2006	11:11:00 AM	Run 2 - 1	8.73	187.9	17.82
12/1/2006	11:11:30 AM	Run 2 - 1	8.79	187.75	17.82
12/1/2006	11:12:00 AM	Run 2 - 1	8.79	187.75	17.82
12/1/2006	11:12:30 AM	Run 2 - 1	8.73	188.93	17.82

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	11:13:00 AM	Run 2 - 1	8.79	188.49	17.82
12/1/2006	11:13:30 AM	Run 2 - 1	8.79	188.93	17.82
12/1/2006	11:14:00 AM	Run 2 - 1	8.79	189.22	17.82
12/1/2006	11:14:30 AM	Run 2 - 1	8.67	189.66	17.94
12/1/2006	11:15:00 AM	Run 2 - 1	8.61	190.39	17.94
12/1/2006	11:15:30 AM	Run 2 - 1	8.61	190.1	17.94
12/1/2006	11:16:00 AM	Run 2 - 1	8.61	189.95	17.94
12/1/2006	11:16:30 AM	Run 2 - 1	8.67	190.24	17.82
12/1/2006	11:17:00 AM	Run 2 - 1	8.73	189.81	17.82
12/1/2006	11:17:30 AM	Run 2 - 1	8.79	189.81	17.7
12/1/2006	11:18:00 AM	Run 2 - 1	8.79	189.51	17.82
12/1/2006	11:18:30 AM	Run 2 - 1	8.73	189.95	17.82
12/1/2006	11:19:00 AM	Run 2 - 1	8.67	190.39	17.94
12/1/2006	11:19:30 AM	Run 2 - 1	8.67	191.27	17.94
12/1/2006	11:20:00 AM	Run 2 - 1	8.67	191.42	17.94
12/1/2006	11:20:30 AM	Run 2 - 1	8.61	190.83	17.94
12/1/2006	11:21:00 AM	Run 2 - 1	8.67	191.12	17.94
12/1/2006	11:21:30 AM	Run 2 - 1	8.61	191.12	17.94
12/1/2006	11:22:00 AM	Run 2 - 1	8.67	190.98	17.94
12/1/2006	11:22:30 AM	Run 2 - 1	8.67	191.71	17.94
12/1/2006	11:23:00 AM	Run 2 - 1	8.67	190.98	17.82
12/1/2006	11:23:30 AM	Run 2 - 1	8.67	190.68	17.94
12/1/2006	11:24:00 AM	Run 2 - 1	8.73	190.98	17.94
12/1/2006	11:24:30 AM	Run 2 - 1	8.73	190.24	17.94
12/1/2006	11:25:00 AM	Run 2 - 1	8.61	191.12	17.82
12/1/2006	11:25:30 AM	Run 2 - 1	8.61	190.98	17.94
12/1/2006	11:26:00 AM	Run 2 - 1	8.67	191.12	17.94
12/1/2006	11:26:30 AM	Run 2 - 1	8.67	190.24	17.94
12/1/2006	11:27:00 AM	Run 2 - 1	8.61	190.68	17.94
12/1/2006	11:27:30 AM	Run 2 - 1	8.55	191.27	17.94
12/1/2006	11:28:00 AM	Run 2 - 1	8.55	190.39	17.94
12/1/2006	11:28:30 AM	Run 2 - 1	8.55	190.24	17.94
12/1/2006	11:29:00 AM	Run 2 - 1	8.55	190.54	18.07
12/1/2006	11:29:30 AM	Run 2 - 1	8.55	190.39	17.94
12/1/2006	11:30:00 AM	Run 2 - 1	8.49	191.12	17.94
12/1/2006	11:30:30 AM	Run 2 - 1	8.55	190.98	18.07
12/1/2006	11:31:00 AM	Run 2 - 1	8.55	191.12	18.07
12/1/2006	11:31:30 AM	Run 2 - 1	8.55	190.83	17.94
12/1/2006	11:32:00 AM	Run 2 - 1	8.55	190.98	18.07
12/1/2006	11:32:30 AM	Run 2 - 1	8.61	190.83	17.94
12/1/2006	11:33:00 AM	Run 2 - 1	8.67	190.68	17.94
12/1/2006	11:33:30 AM	Run 2 - 1	8.67	190.24	17.94
12/1/2006	11:34:00 AM	Run 2 - 1	8.61	190.24	17.94
12/1/2006	11:34:30 AM	Run 2 - 1	8.61	191.42	18.07
12/1/2006	11:35:00 AM	Run 2 - 1	8.67	190.98	17.94
12/1/2006	11:35:30 AM	Run 2 - 1	8.61	190.98	18.07
12/1/2006	11:36:00 AM	Run 2 - 1	8.61	191.42	17.94
12/1/2006	11:36:30 AM	Run 2 - 1	8.61	191.42	17.94
12/1/2006	11:37:00 AM	Run 2 - 1	8.67	191.42	17.94
12/1/2006	11:37:30 AM	Run 2 - 1	8.61	191.71	17.94

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	11:38:00 AM		8.61	191.56	17.94
12/1/2006	11:38:30 AM		7.51	31.63	16.36
12/1/2006	11:39:00 AM		0.73	2.34	2.2
12/1/2006	11:39:30 AM	- ZERO	0	1.17	0.24
12/1/2006	11:40:00 AM	- ZERO	-0.06	0.88	0.12
12/1/2006	11:40:30 AM	- ZERO	0	0.73	0.12
12/1/2006	11:41:00 AM	- ZERO	-0.06	0.73	3.9
12/1/2006	11:41:30 AM	- ZERO	-0.12	0.58	20.75
12/1/2006	11:42:00 AM	- ZERO	-0.06	0.44	24.9
12/1/2006	11:42:30 AM	- Span	-0.06	0.29	25.02
12/1/2006	11:43:00 AM	- Span	-0.06	0.29	24.9
12/1/2006	11:43:30 AM	- Span	16.67	0.14	18.43
12/1/2006	11:44:00 AM	- Span	21.18	0	17.33
12/1/2006	11:44:30 AM	- Span	21.3	-0.15	17.58
12/1/2006	11:45:00 AM	- Span	14.65	0	12.82
12/1/2006	11:45:30 AM	- Span	10.26	-0.15	8.79
12/1/2006	11:46:00 AM	- Span	10.2	-0.15	8.67
12/1/2006	11:46:30 AM	- Span	10.2	27.09	8.67
12/1/2006	11:47:00 AM	- Span	2.99	148.36	9.28
12/1/2006	11:47:30 AM	- Span	-0.06	150.99	9.89
12/1/2006	11:48:00 AM	- Span	-0.06	150.7	10.01
12/1/2006	11:48:30 AM	- Span	-0.06	157.15	10.01
12/1/2006	11:49:00 AM	- Span	5.19	188.49	14.28
12/1/2006	11:49:30 AM	- Span	8.67	189.37	17.7
12/1/2006	11:50:00 AM	- Span	8.67	190.24	17.82
12/1/2006	11:50:30 AM	- Span	8.67	189.37	17.94
12/1/2006	11:51:00 AM	- Span	8.67	190.54	17.94
12/1/2006	11:51:30 AM	- Span	8.61	190.83	17.94
12/1/2006	11:52:00 AM	- Span	8.55	191.42	17.94
12/1/2006	11:52:30 AM	- Span	8.55	191.12	18.07
12/1/2006	11:53:00 AM	- Span	8.55	192.15	17.94
12/1/2006	11:53:30 AM	- Span	8.55	191.86	18.07
12/1/2006	11:54:00 AM	- Span	8.55	191.71	18.07
12/1/2006	11:54:30 AM	- Span	8.49	191.71	18.07
12/1/2006	11:55:00 AM	- Span	8.55	191.12	18.07
12/1/2006	11:55:30 AM	- Span	8.55	191.12	17.94
12/1/2006	11:56:00 AM	- Span	8.61	191.12	17.94
12/1/2006	11:56:30 AM	- Span	8.61	191.71	17.94
12/1/2006	11:57:00 AM	- Span	8.61	192.3	17.82
12/1/2006	11:57:30 AM	- Span	8.67	191.56	17.82
12/1/2006	11:58:00 AM	- Span	8.67	192.3	17.82
12/1/2006	11:58:30 AM	- Span	8.67	192	17.82
12/1/2006	11:59:00 AM	- Span	8.73	192.59	17.7
12/1/2006	11:59:30 AM	- Span	8.73	192.59	17.7
12/1/2006	12:00:00 PM	- Span	8.73	191.12	17.7
12/1/2006	12:00:30 PM	- Span	8.79	190.68	17.7
12/1/2006	12:01:00 PM	- Span	8.85	190.83	17.7
12/1/2006	12:01:30 PM	- Span	8.91	190.24	17.7
12/1/2006	12:02:00 PM	- Span	8.91	189.95	17.7
12/1/2006	12:02:30 PM	- Span	8.97	189.22	17.7

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	12:03:00 PM	- Span	8.91	188.93	17.7
12/1/2006	12:03:30 PM	- Span	8.97	189.07	17.7
12/1/2006	12:04:00 PM	- Span	8.91	188.49	17.7
12/1/2006	12:04:30 PM	- Span	8.73	189.22	17.94
12/1/2006	12:05:00 PM	- Span	8.73	188.93	17.82
12/1/2006	12:05:30 PM	- Span	8.73	188.19	17.7
12/1/2006	12:06:00 PM	- Span	8.79	187.75	17.82
12/1/2006	12:06:30 PM	- Span	8.73	187.17	17.82
12/1/2006	12:07:00 PM	- Span	8.73	187.32	17.94
12/1/2006	12:07:30 PM	- Span	8.73	188.19	17.94
12/1/2006	12:08:00 PM	- Span	8.67	188.05	17.94
12/1/2006	12:08:30 PM	- Span	8.49	189.22	18.07
12/1/2006	12:09:00 PM	- Span	8.36	189.81	18.19
12/1/2006	12:09:30 PM	- Span	8.36	190.83	18.07
12/1/2006	12:10:00 PM	Run 3 - 1	8.36	192	18.07
12/1/2006	12:10:30 PM	Run 3 - 1	8.3	191.42	17.94
12/1/2006	12:11:00 PM	Run 3 - 1	8.3	191.71	18.07
12/1/2006	12:11:30 PM	Run 3 - 1	8.36	192.3	17.94
12/1/2006	12:12:00 PM	Run 3 - 1	8.55	192	17.94
12/1/2006	12:12:30 PM	Run 3 - 1	8.61	192	17.94
12/1/2006	12:13:00 PM	Run 3 - 1	8.61	192.88	17.94
12/1/2006	12:13:30 PM	Run 3 - 1	8.67	193.47	17.94
12/1/2006	12:14:00 PM	Run 3 - 1	8.79	193.47	17.7
12/1/2006	12:14:30 PM	Run 3 - 1	8.73	193.61	17.94
12/1/2006	12:15:00 PM	Run 3 - 1	8.79	193.03	17.82
12/1/2006	12:15:30 PM	Run 3 - 1	8.73	193.17	17.82
12/1/2006	12:16:00 PM	Run 3 - 1	8.79	193.03	17.7
12/1/2006	12:16:30 PM	Run 3 - 1	8.79	193.47	17.82
12/1/2006	12:17:00 PM	Run 3 - 1	8.85	193.61	17.82
12/1/2006	12:17:30 PM	Run 3 - 1	8.85	193.17	17.82
12/1/2006	12:18:00 PM	Run 3 - 1	8.85	192.3	17.82
12/1/2006	12:18:30 PM	Run 3 - 1	8.85	191.42	17.82
12/1/2006	12:19:00 PM	Run 3 - 1	8.91	191.12	17.82
12/1/2006	12:19:30 PM	Run 3 - 1	8.85	191.71	17.7
12/1/2006	12:20:00 PM	Run 3 - 1	8.91	191.42	17.7
12/1/2006	12:20:30 PM	Run 3 - 1	9.04	190.54	17.58
12/1/2006	12:21:00 PM	Run 3 - 1	9.04	189.07	17.58
12/1/2006	12:21:30 PM	Run 3 - 1	9.04	188.34	17.58
12/1/2006	12:22:00 PM	Run 3 - 1	8.97	187.61	17.7
12/1/2006	12:22:30 PM	Run 3 - 1	8.97	188.34	17.7
12/1/2006	12:23:00 PM	Run 3 - 1	8.97	187.9	17.82
12/1/2006	12:23:30 PM	Run 3 - 1	8.85	188.34	17.82
12/1/2006	12:24:00 PM	Run 3 - 1	8.73	188.19	17.82
12/1/2006	12:24:30 PM	Run 3 - 1	8.67	188.05	17.82
12/1/2006	12:25:00 PM	Run 3 - 1	8.61	187.61	18.07
12/1/2006	12:25:30 PM	Run 3 - 1	8.61	188.49	17.94
12/1/2006	12:26:00 PM	Run 3 - 1	8.55	188.34	18.07
12/1/2006	12:26:30 PM	Run 3 - 1	8.55	188.78	17.94
12/1/2006	12:27:00 PM	Run 3 - 1	8.55	189.37	17.94
12/1/2006	12:27:30 PM	Run 3 - 1	8.49	189.37	18.07

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	12:28:00 PM	Run 3 - 1	8.55	188.63	18.07
12/1/2006	12:28:30 PM	Run 3 - 1	8.55	189.22	17.94
12/1/2006	12:29:00 PM	Run 3 - 1	8.67	189.51	17.94
12/1/2006	12:29:30 PM	Run 3 - 1	8.55	189.81	17.94
12/1/2006	12:30:00 PM	Run 3 - 1	8.61	191.12	17.82
12/1/2006	12:30:30 PM	Run 3 - 1	8.73	190.98	17.7
12/1/2006	12:31:00 PM	Run 3 - 1	8.67	191.12	17.94
12/1/2006	12:31:30 PM	Run 3 - 1	8.55	191.56	17.94
12/1/2006	12:32:00 PM	Run 3 - 1	8.43	193.03	18.07
12/1/2006	12:32:30 PM	Run 3 - 1	8.43	193.32	18.07
12/1/2006	12:33:00 PM	Run 3 - 1	8.36	193.47	18.19
12/1/2006	12:33:30 PM	Run 3 - 1	8.3	194.35	18.31
12/1/2006	12:34:00 PM	Run 3 - 1	8.24	194.35	18.31
12/1/2006	12:34:30 PM	Run 3 - 1	8.3	195.08	18.19
12/1/2006	12:35:00 PM	Run 3 - 1	8.36	195.22	18.19
12/1/2006	12:35:30 PM	Run 3 - 1	8.36	195.22	18.07
12/1/2006	12:36:00 PM	Run 3 - 1	8.43	195.52	18.07
12/1/2006	12:36:30 PM	Run 3 - 1	8.55	195.96	17.94
12/1/2006	12:37:00 PM	Run 3 - 1	8.61	196.54	17.82
12/1/2006	12:37:30 PM	Run 3 - 1	8.61	196.54	17.94
12/1/2006	12:38:00 PM	Run 3 - 1	8.67	196.25	17.94
12/1/2006	12:38:30 PM	Run 3 - 1	8.73	196.69	17.94
12/1/2006	12:39:00 PM	Run 3 - 1	8.85	196.25	17.7
12/1/2006	12:39:30 PM	Run 3 - 1	8.85	195.96	17.82
12/1/2006	12:40:00 PM	Run 3 - 1	8.79	195.37	17.82
12/1/2006	12:40:30 PM	Run 3 - 1	8.85	195.37	17.7
12/1/2006	12:41:00 PM	Run 3 - 1	8.91	194.35	17.7
12/1/2006	12:41:30 PM	Run 3 - 1	8.91	194.49	17.7
12/1/2006	12:42:00 PM	Run 3 - 1	8.85	194.2	17.82
12/1/2006	12:42:30 PM	Run 3 - 1	8.91	193.03	17.82
12/1/2006	12:43:00 PM	Run 3 - 1	8.91	192.59	17.82
12/1/2006	12:43:30 PM	Run 3 - 1	8.85	192.44	17.82
12/1/2006	12:44:00 PM	Run 3 - 1	8.79	191.86	17.82
12/1/2006	12:44:30 PM	Run 3 - 1	8.73	192.3	17.82
12/1/2006	12:45:00 PM	Run 3 - 1	8.73	192.73	17.82
12/1/2006	12:45:30 PM	Run 3 - 1	8.67	193.17	17.94
12/1/2006	12:46:00 PM	Run 3 - 1	8.55	192.44	17.94
12/1/2006	12:46:30 PM	Run 3 - 1	8.55	192.44	17.94
12/1/2006	12:47:00 PM	Run 3 - 1	8.61	191.42	17.94
12/1/2006	12:47:30 PM	Run 3 - 1	8.61	191.71	17.94
12/1/2006	12:48:00 PM	Run 3 - 1	8.55	192.59	17.94
12/1/2006	12:48:30 PM	Run 3 - 1	8.55	193.47	17.94
12/1/2006	12:49:00 PM	Run 3 - 1	8.55	193.47	17.94
12/1/2006	12:49:30 PM	Run 3 - 1	8.55	193.03	18.07
12/1/2006	12:50:00 PM	Run 3 - 1	8.49	193.32	18.07
12/1/2006	12:50:30 PM	Run 3 - 1	8.43	195.08	18.07
12/1/2006	12:51:00 PM	Run 3 - 1	8.49	195.52	17.94
12/1/2006	12:51:30 PM	Run 3 - 1	8.55	195.52	17.94
12/1/2006	12:52:00 PM	Run 3 - 1	8.55	195.08	18.07
12/1/2006	12:52:30 PM	Run 3 - 1	8.49	195.66	18.07

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	12:53:00 PM	Run 3 - 1	8.55	196.4	18.07
12/1/2006	12:53:30 PM	Run 3 - 1	8.61	196.98	18.07
12/1/2006	12:54:00 PM	Run 3 - 1	8.61	197.57	17.94
12/1/2006	12:54:30 PM	Run 3 - 1	8.61	196.98	18.07
12/1/2006	12:55:00 PM	Run 3 - 1	8.61	196.69	18.07
12/1/2006	12:55:30 PM	Run 3 - 1	8.61	196.84	17.94
12/1/2006	12:56:00 PM	Run 3 - 1	8.67	197.27	18.07
12/1/2006	12:56:30 PM	Run 3 - 1	8.49	197.71	18.19
12/1/2006	12:57:00 PM	Run 3 - 1	8.43	199.18	18.19
12/1/2006	12:57:30 PM	Run 3 - 1	8.43	199.62	18.19
12/1/2006	12:58:00 PM	Run 3 - 1	8.43	199.91	18.07
12/1/2006	12:58:30 PM	Run 3 - 1	8.43	199.76	18.07
12/1/2006	12:59:00 PM	Run 3 - 1	8.55	199.33	18.07
12/1/2006	12:59:30 PM	Run 3 - 1	8.73	198.74	17.94
12/1/2006	1:00:00 PM	Run 3 - 1	8.73	198.59	17.94
12/1/2006	1:00:30 PM	Run 3 - 1	8.67	198.89	17.94
12/1/2006	1:01:00 PM	Run 3 - 1	8.67	198.59	17.94
12/1/2006	1:01:30 PM	Run 3 - 1	8.73	198.74	17.94
12/1/2006	1:02:00 PM	Run 3 - 1	8.73	198.59	17.94
12/1/2006	1:02:30 PM	Run 3 - 1	8.67	197.57	17.82
12/1/2006	1:03:00 PM	Run 3 - 1	8.67	198.15	17.94
12/1/2006	1:03:30 PM	Run 3 - 1	8.67	197.57	17.94
12/1/2006	1:04:00 PM	Run 3 - 1	8.73	197.71	17.94
12/1/2006	1:04:30 PM	Run 3 - 1	8.67	197.57	17.94
12/1/2006	1:05:00 PM	Run 3 - 1	8.61	197.42	18.07
12/1/2006	1:05:30 PM	Run 3 - 1	8.67	196.98	17.94
12/1/2006	1:06:00 PM	Run 3 - 1	8.61	196.54	17.94
12/1/2006	1:06:30 PM	Run 3 - 1	8.61	196.54	17.94
12/1/2006	1:07:00 PM	Run 3 - 1	8.49	197.71	17.94
12/1/2006	1:07:30 PM	Run 3 - 1	8.49	198.15	18.07
12/1/2006	1:08:00 PM	Run 3 - 1	8.49	197.57	18.07
12/1/2006	1:08:30 PM	Run 3 - 1	8.49	197.27	18.19
12/1/2006	1:09:00 PM	Run 3 - 1	8.43	196.69	18.07
12/1/2006	1:09:30 PM	Run 3 - 1	8.49	197.57	18.07
12/1/2006	1:10:00 PM		8.49	198.15	18.07
12/1/2006	1:10:30 PM		7.69	23.28	14.28
12/1/2006	1:11:00 PM		0.67	1.9	1.46
12/1/2006	1:11:30 PM	- ZERO	0	1.02	0.12
12/1/2006	1:12:00 PM	- ZERO	0	0.58	0.12
12/1/2006	1:12:30 PM	- ZERO	0	0.44	0.12
12/1/2006	1:13:00 PM	- ZERO	0	0.88	0
12/1/2006	1:13:30 PM	- ZERO	-0.06	0.44	16.84
12/1/2006	1:14:00 PM	- ZERO	-0.06	0.44	24.54
12/1/2006	1:14:30 PM	- Span	-0.06	0.14	24.78
12/1/2006	1:15:00 PM	- Span	-0.06	0	24.9
12/1/2006	1:15:30 PM	- Span	4.27	0	18.68
12/1/2006	1:16:00 PM	- Span	10.07	0	8.91
12/1/2006	1:16:30 PM	- Span	10.2	-0.15	8.79
12/1/2006	1:17:00 PM	- Span	10.13	77.91	8.67
12/1/2006	1:17:30 PM	- Span	1.59	150.55	9.4

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	1:18:00 PM	- Span	-0.06	152.31	9.89
12/1/2006	1:18:30 PM	- Span	-0.06	161.83	10.01
12/1/2006	1:19:00 PM	- Span	5.62	196.84	14.77
12/1/2006	1:19:30 PM	- Span	8.61	196.98	17.82
12/1/2006	1:20:00 PM	- Span	8.67	197.57	17.94
12/1/2006	1:20:30 PM	- Span	8.73	196.25	17.94
12/1/2006	1:21:00 PM	- Span	8.67	198.59	18.07
12/1/2006	1:21:30 PM	- Span	8.61	196.84	18.07
12/1/2006	1:22:00 PM	- Span	8.55	198.15	18.07
12/1/2006	1:22:30 PM	- Span	8.49	197.86	18.07
12/1/2006	1:23:00 PM	- Span	8.43	197.42	18.07
12/1/2006	1:23:30 PM	- Span	8.36	198.74	17.94
12/1/2006	1:24:00 PM	- Span	8.36	198.74	17.94
12/1/2006	1:24:30 PM	- Span	8.43	198.45	17.94
12/1/2006	1:25:00 PM	- Span	8.43	199.03	17.82
12/1/2006	1:25:30 PM	- Span	8.43	199.03	17.94
12/1/2006	1:26:00 PM	- Span	8.49	198.01	17.94
12/1/2006	1:26:30 PM	- Span	8.61	198.01	17.82
12/1/2006	1:27:00 PM	- Span	8.61	197.71	17.82
12/1/2006	1:27:30 PM	- Span	8.67	197.86	17.82
12/1/2006	1:28:00 PM	- Span	8.61	198.45	17.94
12/1/2006	1:28:30 PM	- Span	8.61	199.33	17.82
12/1/2006	1:29:00 PM	- Span	8.61	200.06	17.94
12/1/2006	1:29:30 PM	- Span	8.55	199.76	17.94
12/1/2006	1:30:00 PM	- Span	8.43	199.33	17.94
12/1/2006	1:30:30 PM	- Span	8.36	199.91	17.94
12/1/2006	1:31:00 PM	- Span	8.36	199.62	18.07
12/1/2006	1:31:30 PM	- Span	8.36	199.76	18.07
12/1/2006	1:32:00 PM	- Span	8.36	200.35	18.19
12/1/2006	1:32:30 PM	- Span	8.36	200.64	18.07
12/1/2006	1:33:00 PM	- Span	8.36	200.2	18.07
12/1/2006	1:33:30 PM	- Span	8.49	199.47	18.07
12/1/2006	1:34:00 PM	- Span	8.43	200.35	18.07
12/1/2006	1:34:30 PM	- Span	8.49	201.23	18.07
12/1/2006	1:35:00 PM	- Span	8.49	201.81	18.07
12/1/2006	1:35:30 PM	- Span	8.43	202.11	18.07
12/1/2006	1:36:00 PM	- Span	8.36	202.84	18.19
12/1/2006	1:36:30 PM	- Span	8.36	203.87	18.07
12/1/2006	1:37:00 PM	- Span	8.36	204.01	18.19
12/1/2006	1:37:30 PM	- Span	8.24	204.45	18.31
12/1/2006	1:38:00 PM	- Span	8.3	206.79	18.31
12/1/2006	1:38:30 PM	- Span	8.3	206.5	18.19
12/1/2006	1:39:00 PM	- Span	8.36	206.06	18.07
12/1/2006	1:39:30 PM	- Span	8.49	205.92	17.94
12/1/2006	1:40:00 PM	- Span	8.55	205.48	17.94
12/1/2006	1:40:30 PM	- Span	8.61	205.92	17.82
12/1/2006	1:41:00 PM	- Span	8.73	205.92	17.7
12/1/2006	1:41:30 PM	- Span	8.85	205.18	17.7
12/1/2006	1:42:00 PM	- Span	8.97	204.45	17.7
12/1/2006	1:42:30 PM	- Span	8.97	204.3	17.7

LabView Run Log
Polk Acid Plant

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
12/1/2006	1:43:00 PM	- Span	9.04	203.43	17.58
12/1/2006	1:43:30 PM	- Span	9.1	202.25	17.7
12/1/2006	1:44:00 PM	- Span	9.1	202.25	17.7
12/1/2006	1:44:30 PM	- Span	8.97	201.67	17.82
12/1/2006	1:45:00 PM	- Span	8.85	201.52	17.94
12/1/2006	1:45:30 PM	- Span	8.73	201.96	17.82
12/1/2006	1:46:00 PM	- Span	8.61	202.11	17.94
12/1/2006	1:46:30 PM	- Span	8.67	199.91	17.82
12/1/2006	1:47:00 PM	- Span	8.49	99.29	17.94
12/1/2006	1:47:30 PM	- Span	4.21	6.15	6.59
12/1/2006	1:48:00 PM	- Span	0.06	1.17	0.24
12/1/2006	1:48:30 PM	- Span	0	1.02	0
12/1/2006	1:49:00 PM	- Span	0	0.73	0
12/1/2006	1:49:30 PM	- Span	0	0.73	0
12/1/2006	1:50:00 PM	- Span	0	0.58	0
12/1/2006	1:50:30 PM	- Span	0	0.44	0
12/1/2006	1:51:00 PM	- Span	0	0.29	0
12/1/2006	1:51:30 PM	- Span	0	0.14	0
12/1/2006	1:52:00 PM	- Span	-0.06	0.14	0
12/1/2006	1:52:30 PM	- Span	0	0.14	0.12

CALIBRATION GAS CERTIFICATIONS

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-58671-002

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM022018 **Certification Date:** 12Oct2006 **Exp. Date:** 11Oct2009

Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.0	%	+/- 1%	Direct NIST and NMi
OXYGEN	20.9	%	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K001509	13.93 %	CARBON DIOXIDE
NTRM 2659	04Jul2008	K004610	20.85 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	20Sep2006	GC-TCD
MTI/M200/170927	20Sep2006	GC-TCD

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

Date: 12Oct2006	Response Unit:AREA	
Z1 = 0.00000	R1 = 643255.0	T1 = 826324.0
R2 = 643437.0	Z2 = 0.00000	T2 = 826277.0
Z3 = 0.00000	T3 = 826351.0	R3 = 643355.0
Avg. Concentration	18.00	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999988	1675
Constants:	A = -2.66089E-02
B = 2.1778E-05	C =
D =	E =

OXYGEN

Date: 12Oct2006	Response Unit:AREA	
Z1 = 0.00000	R1 = 536285.0	T1 = 649300.0
R2 = 636625.0	Z2 = 0.00000	T2 = 649027.0
Z3 = 0.00000	T3 = 648522.0	R3 = 537922.0
Avg. Concentration:	20.90	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999998	2659
Constants:	A = 1.9132E-02
B = 3.8059E-05	C =
D =	E =

APPROVED BY: _____
JOHN C. FITZ

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-58671-001

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: AAL20064 **Certification Date:** 12Oct2006 **Exp. Date:** 11Oct2009
Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	8.96	%	+/- 1%	Direct NIST and NMi
OXYGEN	10.1	%	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K001509	13.93 %	CARBON DIOXIDE
NTRM 2658	02Oct2010	ALM065248	9.930 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	20Sep2006	GC-TCD
MTI/M200/170927	20Sep2006	GC-TCD

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

Date: 12Oct2006	Response Unit:AREA	
Z1 = 0.00000	R1 = 643432.0	T1 = 412481.0
R2 = 643593.0	Z2 = 0.00000	T2 = 412322.0
Z3 = 0.00000	T3 = 412407.0	R3 = 643560.0
Avg. Concentration:	8.960	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999988	1675
Constants:	A = -2.56089E-02
B = 2.1778E-05	C =
D =	E =

OXYGEN

Date: 12Oct2006	Response Unit:AREA	
Z1 = 0.00000	R1 = 255181.0	T1 = 263879.0
R2 = 255371.0	Z2 = 0.00000	T2 = 263727.0
Z3 = 0.00000	T3 = 263736.0	R3 = 254821.0
Avg. Concentration:	10.10	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999998	2658
Constants:	A = 1.9132E-02
B = 3.8059E-05	C =
D =	E =

APPROVED BY: JOHN C. FITZ

BL501

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: E-N06925
Project No.: 05-27508-004

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; *Procedure G-1; September, 1997.*

Cylinder Number: ALM042687 **Certification Date:** 07Feb2005 **Exp. Date:** 07Feb2008
Cylinder Pressure*:** 1850 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	25.07 %	+/- 1%	Direct NIST and NMI
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997

Product certified at +/- 1% analytical accuracy is directly traceable to NIST or NMi standards

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2300	01Jan2008	ALM049147	23.34 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/10893	26Jan2005	THERMAL CONDUCTIVITY

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis ***Second Triad Analysis*** ***Calibration Curve***

CARBON DIOXIDE

Date: 07Feb2005	Response Unit:AREA	
Z1 = 0.00000	R1 = 1214000.	T1 = 1303809.
R2 = 1213747.	Z2 = 0.00000	T2 = 1304206.
Z3 = 0.00000	T3 = 1304309.	R3 = 1214512.
Avg. Concentration:	25.07 %	

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999999	
Constants:	A = -.025098732
B = 1.94E-05	C = 0
D = 0	E = 0

APPROVED BY: _____

DAVID BABCOCK

BL502

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.. E-N06925
Project No.. 05-27508-005

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM016344 **Certification Date:** 07Feb2005 **Exp. Date:** 07Feb2008
Cylinder Pressure*:** 1850 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	45.10 %	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997
Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2300	01Jan2008	ALM049142	23.34 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN:3400/10693	26Jan2005	THERMAL CONDUCTIVITY

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

CARBON DIOXIDE

Date: 07Feb2005	Response Units:MV	
Z1 = 0.00000	R1 = 1214000.	T1 = 2344788.
R2 = 1213747.	Z2 = 0.00000	T2 = 2345040.
Z3 = 0.00000	T3 = 2345069.	R3 = 1214512.
Avg. Concentration:	45.10 %	

Second Triad Analysis

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4

r = .999999

Constants:	A = -.025098732
B = 1.94E-05	C = 0
D = 0	E = 0

APPROVED BY: _____

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-52729-001

Customer

TAMPA ELECTRIC COMPANY

5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM009682 **Certification Date:** 27Jun2006 **Exp. Date:** 26Jun2008
Cylinder Pressure*:** 1999 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.21	%	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	152.2	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Prot

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K012148	13.93 %	CARBON DIOXIDE
NTRM 0260	02Oct2006	ALM057284	266.6 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000928781	08Jun2006	FTIR
FTIR//000928781	08Jun2006	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

Date: 20Jun2006	Response Unit:%	
Z1=-0.00878	R1=13.97749	T1=10.24188
R2=13.98411	Z2=-0.00769	T2=10.24781
Z3=-0.00535	T3=10.25074	R3=13.99919
Avg. Concentration:	10.21	%

Z1=0.00000	R1=0.00000	T1=0.00000
R2=0.00000	Z2=0.00000	T2=0.00000
Z3=0.00000	T3=0.00000	R3=0.00000
Avg. Concentration:	0.000	

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=9.99997E-1	
Constants:	A=0.00000E+0
B=9.73447E-1	C=3.63400E-3
D=1.70000E-5	E=0.00000E+0

SULFUR DIOXIDE *

Date: 20Jun2006	Response Unit:PPM	
Z1=-0.03225	R1=266.0084	T1=151.8536
R2=266.1603	Z2=-0.01621	T2=151.9421
Z3=0.01808	T3=152.0154	R3=266.2468
Avg. Concentration:	152.2	PPM

Date: 27Jun2006	Response Unit: PPM	
Z1=-0.05180	R1=265.8178	T1=151.7932
R2=265.9785	Z2=-0.04659	T2=151.8102
Z3=0.06517	T3=151.8972	R3=266.0725
Avg. Concentration:	152.2	PPM

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=9.99998E-1	
Constants:	A=0.00000E+0
B=9.98458E-1	C=1.00000E-5
D=0.00000E+0	E=0.00000E+0

APPROVED BY: Michael A. Kuhns

Michael A. Kuhns

RDOCX 8

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-22406-002

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM029767 **Certification Date:** 27Dec2004 **Exp. Date:** 27Dec2006
Cylinder Pressure*:** 1939 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	17.97	%	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	269	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997. Product certified at +/- 1% analytical accuracy is directly traceable to NIST or NMi standards

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Protocols

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1805	04Jul2008	K005053	17.87 %	CARBON DIOXIDE
NTRM 0280	02Oct2008	ALM057251	266.6 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MKS Online/2030/MG-09-149	16Dec2004	FTIR
MKS Online/2030/MG-09-149	17Dec2004	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

Date: 20Dec2004	Response Unit:%	
Z1 = -0.00101	R1 = 17.93724	T1 = 17.94741
R2 = 17.86229	Z2 = 0.00020	T2 = 17.95372
Z3 = 0.00274	T3 = 17.96675	R3 = 17.88171
Avg. Concentration:	17.97	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.999945E-1

Constants:	A = 0.00000E+0
B = 9.274625-1	C = 1.315206-2
D = 0.00000E+0	E = 0.00000E-0

SULFUR DIOXIDE *

Date: 20Dec2004	Response Unit:PPM	
Z1 = 0.00226	R1 = 266.3641	T1 = 268.7267
R2 = 266.4207	Z2 = 0.04133	T2 = 268.8201
Z3 = 0.04774	T3 = 268.8676	R3 = 266.5224
Avg. Concentration:	269.0	PPM

Date: 27Dec2004	Response Unit: PPM	
Z1 = 0.00046	R1 = 266.1719	T1 = 268.7561
R2 = 266.1933	Z2 = 0.03686	T2 = 268.8017
Z3 = 0.05315	T3 = 268.8620	R3 = 266.4709
Avg. Concentration:	269.1	PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.999974E-1

Constants:	A = 0.00000E+0
B = 9.79118E-1	C = 1.20000E-5
D = 0.00000E+0	E = 0.00000E+0

APPROVED BY: _____

APPENDIX O

FUEL ANALYSIS

SYNTHETIC GAS ANALYSIS – DECEMBER 1, 2006

UNIT 1 STACK TEST 12/01/06
CT & ACID PLANT

Calibration Standard Check

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
True Value	14.70	1.010	2.99	0.1040	45.20	36.00	N.A.
Std. 1	14.94	1.022	3.00	0.1011	45.28	35.66	N.A.
Std. 2	14.77	0.991	2.95	0.1049	45.28	35.90	N.A.
Std. 3	14.69	0.999	2.95	0.1048	45.31	35.95	N.A.
Avg.	14.80	1.004	2.97	0.1036	45.29	35.84	N.A.

Clean Syngas Sampled @ 0915 12/01/06

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.32	0.880	3.79	0.0293	47.24	33.74	N.A.
2nd Bomb	14.34	0.850	3.83	0.0287	46.90	34.05	N.A.
Avg.	14.33	0.87	3.81	0.0290	47.07	33.90	N.A.

Clean Syngas Sampled @ 1020 12/01/06

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.50	0.850	3.87	0.0275	47.12	33.63	N.A.
2nd Bomb	14.47	0.860	3.96	0.0323	46.89	33.79	N.A.
Avg.	14.49	0.86	3.92	0.0299	47.01	33.71	N.A.

Clean Syngas Sampled @ 1140 12/01/06

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.44	0.850	3.97	0.0304	46.78	33.96	N.A.
2nd Bomb	14.48	0.860	3.94	< 0.0050	47.03	33.69	N.A.
Avg.	14.46	0.86	3.96	0.0304	46.91	33.83	N.A.

Clean Syngas Sampled @ 1255 12/01/06

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.56	0.870	3.67	0.0272	47.16	33.74	N.A.
2nd Bomb	14.53	0.860	4.02	0.0299	47.13	33.43	N.A.
Avg.	14.55	0.87	3.85	0.0286	47.15	33.59	N.A.

Average for All Syngas Samples Using all Results

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
Avg.	14.46	0.86	3.88	0.0293	47.03	33.75	0

Mole Wt.	21.65

HHV	BTU/SCF	260.5

HHV	BTU/Lb	4565

TECO TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID: Polk GC**

Facility: Polk Power Station **Analysis Date: 12/1/2006**

Source: Unit 1

CALCULATION OF DENSITY AND HEATING VALUE @ 60°F and 30 in Hg

Component	% Volume	Molecular Wt.	Density * (lb/ft^3)	% volume x Density	weight %	Component Gross Btu/lb	Weight Fract. Btu	Gross * Heating Value (Btu/SCF)	Volume Fract. Btu
Hydrogen	33.7540	2.016	0.0053	0.00179	3.1313	61100	1913.21	325.0	109.7006
Oxygen	0.8600	32.000	0.0846	0.00073	1.2735	0	0.00	0.0	0
Argon	0.0000	39.948	0.1065	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	3.8813	28.016	0.0744	0.00289	5.0543	0	0.00	0.0	0
CO2	14.4550	44.010	0.1170	0.01691	29.6022	0	0.00	0.0	0
CO	47.0313	28.010	0.0740	0.03480	60.9170	4347	2648.06	322.0	151.4406
COS	0.0000	60.070	0.1602	0.00000	0.0000	0	0.00	0.0	0
Methane	0.0293	16.041	0.0424	0.00001	0.0218	23879	5.20	1013.0	0.297098
Ethane	0.000	30.067	0.0803	0.00000	0.0000	22320	0.00	1792.0	0
Ethylene	0.000	28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.000	44.092	0.1196	0.00000	0.0000	21661	0.00	2590.0	0
propylene	0.000	42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.000	58.118	0.1582	0.00000	0.0000	21257	0.00	3363.0	0
n-butane	0.000	58.118	0.1582	0.00000	0.0000	21308	0.00	3370.0	0
Isobutene	0.000	56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.000	72.144	0.1904	0.00000	0.0000	21052	0.00	4008.0	0
n-pentane		72.144	0.1904	0.00000	0.0000	21091	0.00	4016.0	0
n-hexane		86.169	0.2274	0.00000	0.0000	20940	0.00	4762.0	0
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0

Total: 100.01

Average Density	0.05713
Specific Gravity	0.74682

100.0000

Gross Heating Value			
Btu/lb	**4566**	**Btu/SCF**	**261.44**
Net Heating Values			
Btu/lb	**4276**	**Btu/SCF**	**244**

* Density (lb/ft^3) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Hanbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H_2 x 8.94)

TECO
TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID: Polk GC**

Facility: Polk Power Station **Analysis Date: 12/1/2006**

Source: Unit 1

CALCULATION OF F FACTORS

						Weight Percents			
Component	**Mol. Wt.**	**C Factor**	**H Factor**	**% volume**	**Fract. Wt.**	**Carbon**	**Hydrogen**	**Nitrogen**	**Oxygen**
Hydrogen	2.016	0	1	33.754	68.0481		3.1528793		
Oxygen	32.000	0	0	0.860	27.5200				1.2750861
Argon	39.948	0	0	0.000	0.0000				
Nitrogen	28.016	0	0	3.881	108.7371			5.038123867	
CO2	44.010	0.272273	0	14.455	636.1646	8.02537132			21.428658
CO	28.010	0.42587	0	47.031	1317.3453	25.9936803			35.077766
COS	60.070	0.1998	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	0.029	0.4705	0.01634838	0.0054495		
Ethane	30.067	0.8	0.2	0.000	0.0000	0	0		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.000	0.0000	0	0		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
n-butane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-pentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-hexane	86.169	0.83721	0.16279	0.000	0.0000	0	0		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.01087	2158.2856	34.0354	3.16	5.038123867	57.78151

CALCULATED VALUES		
O2 F Factor (dry), Fd	**8255**	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
O2 F Factor (wet), Fw	**9590**	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
Moisture F Factor	**1335**	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
Combust. Moisture	**13.92**	volume % water in flue gas @ 0% excess air
CO2 F Factor, Fc	**2393**	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
Carbon Dioxide	**28.98**	volume % CO2 in flue gas @ 0% O2
Predicted Fo Factor	**0.72**	EPA Method 3a Fo value

APPENDIX P

PLANT OPERATIONS DATA

IGCC

IGCC Operations Data

Plant Information Source: polk-1pisrv
Start Time: 12/1/2006 9:00
End Time: 12/1/2006 13:20
Time Interval: 1 Min

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
Run Average:	174.995426	6653.63375	80.8493319	3.80882985
01-Dec-06 09:00:00	174.470459	6633.5249	74.2104568	3.79977226
01-Dec-06 09:01:00	174.686264	6632.97461	74.2362137	3.79914117
01-Dec-06 09:02:00	174.623215	6654.13818	74.377121	3.79851031
01-Dec-06 09:03:00	174.195465	6687.87305	74.377121	3.79787922
01-Dec-06 09:04:00	174.495041	6696.52637	74.377121	3.79724813
01-Dec-06 09:05:00	175.543274	6675.56445	74.377121	3.79661703
01-Dec-06 09:06:00	175.009918	6658.86816	74.377121	3.79598594
01-Dec-06 09:07:00	175.660873	6649.70117	74.377121	3.79535484
01-Dec-06 09:08:00	173.732758	6727.37646	74.5942841	3.79472399
01-Dec-06 09:09:00	173.983841	6726.27637	74.4352951	3.79409289
01-Dec-06 09:10:00	175.104111	6637.52148	74.6406174	3.7934618
01-Dec-06 09:11:00	174.183777	6620.97559	74.8459396	3.79283071
01-Dec-06 09:12:00	174.256973	6650.60742	74.8572388	3.79219961
01-Dec-06 09:13:00	175.714584	6667.93799	74.690239	3.79156852
01-Dec-06 09:14:00	175.500656	6645.60693	74.690239	3.79093766
01-Dec-06 09:15:00	174.813995	6636.17773	74.9863434	3.79030657
01-Dec-06 09:16:00	175.45488	6630.8916	74.8842392	3.78967547
01-Dec-06 09:17:00	175.473633	6678.96191	74.782135	3.78904438
01-Dec-06 09:18:00	174.117706	6699.03223	74.7004471	3.78841329
01-Dec-06 09:19:00	173.548721	6613.25195	74.8025513	3.78778219
01-Dec-06 09:20:00	175.353867	6619.07129	74.9046555	3.78715134
01-Dec-06 09:21:00	174.683823	6608.38867	74.9930878	3.78652024
01-Dec-06 09:22:00	174.967224	6634.0957	74.6928253	3.78588915
01-Dec-06 09:23:00	174.950867	6681.8335	74.8480911	3.78525805
01-Dec-06 09:24:00	175.874084	6675.61035	75.0033569	3.78462696
01-Dec-06 09:25:00	175.08316	6668.45996	75.4140854	3.78399587
01-Dec-06 09:26:00	175.33316	6611.37109	75.5133591	3.78336501
01-Dec-06 09:27:00	175.970901	6652.23145	75.6126251	3.78273392
01-Dec-06 09:28:00	176.21405	6729.38086	75.3464203	3.78210282
01-Dec-06 09:29:00	175.446335	6698.58545	75.5904541	3.78147173
01-Dec-06 09:30:00	175.013901	6665.95117	75.400589	3.78084064
01-Dec-06 09:31:00	174.331848	6656.75342	75.4958115	3.78020954
01-Dec-06 09:32:00	174.416641	6623.43457	75.5910339	3.77957845
01-Dec-06 09:33:00	175.672333	6702.88965	75.6862564	3.77894759

IGCC Operations Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	ºF	% H2O
01-Dec-06 09:34:00	176.294952	6673.76855	75.7814789	3.7783165
01-Dec-06 09:35:00	175.424057	6668.73779	75.8767014	3.7776854
01-Dec-06 09:36:00	174.500305	6591.61279	75.9719315	3.77705431
01-Dec-06 09:37:00	174.139038	6647.99023	76.0671539	3.77642322
01-Dec-06 09:38:00	174.692871	6784.71143	76.1623764	3.77579212
01-Dec-06 09:39:00	174.04837	6625.97803	76.2575989	3.77516127
01-Dec-06 09:40:00	174.132462	6627.45313	76.3528214	3.77453017
01-Dec-06 09:41:00	175.186462	6628.92773	76.4480438	3.77389908
01-Dec-06 09:42:00	175.559494	6638.46875	76.5432663	3.77326798
01-Dec-06 09:43:00	175.404602	6694.0332	76.6384888	3.77263689
01-Dec-06 09:44:00	175.073883	6695.1084	76.7337112	3.7720058
01-Dec-06 09:45:00	174.729004	6622.76758	76.8289337	3.77137494
01-Dec-06 09:46:00	174.97998	6616.48193	76.7063751	3.77074385
01-Dec-06 09:47:00	174.819992	6626.12109	76.6423874	3.77011275
01-Dec-06 09:48:00	175.444366	6745.46582	76.7963791	3.76948166
01-Dec-06 09:49:00	175.045135	6705.61182	76.9503784	3.76885056
01-Dec-06 09:50:00	175.351212	6665.16309	77.1043701	3.76821947
01-Dec-06 09:51:00	175.378784	6633.62842	76.9001541	3.76758862
01-Dec-06 09:52:00	176.151001	6691.69824	76.9619598	3.76695752
01-Dec-06 09:53:00	175.837341	6669.56299	77.0237579	3.76632643
01-Dec-06 09:54:00	175.158234	6682.53125	77.085556	3.76569533
01-Dec-06 09:55:00	175.908722	6673.51709	77.1473618	3.76506424
01-Dec-06 09:56:00	175.522827	6631.53223	77.5302048	3.76443315
01-Dec-06 09:57:00	174.798233	6662.13281	77.6175842	3.76380229
01-Dec-06 09:58:00	174.989777	6680.95459	77.7049713	3.7631712
01-Dec-06 09:59:00	174.569443	6610.58887	77.7923508	3.7625401
01-Dec-06 10:00:00	173.824265	6602.146	77.8797302	3.76190901
01-Dec-06 10:01:00	175.880081	6628.8252	77.9671173	3.76127791
01-Dec-06 10:02:00	174.617599	6606.71387	78.0544968	3.76064682
01-Dec-06 10:03:00	173.902237	6674.54639	78.0973969	3.76001596
01-Dec-06 10:04:00	175.076828	6697.57764	77.942131	3.75938487
01-Dec-06 10:05:00	176.251419	6692.61523	77.8273697	3.75875378
01-Dec-06 10:06:00	175.900208	6643.79834	77.9151611	3.75812268
01-Dec-06 10:07:00	174.423355	6612.64209	78.0029526	3.75799751
01-Dec-06 10:08:00	174.984787	6699.10547	78.090744	3.75863123
01-Dec-06 10:09:00	174.549683	6717.06738	78.1785355	3.75926495
01-Dec-06 10:10:00	174.158325	6631.79883	78.2663269	3.75989866
01-Dec-06 10:11:00	173.802612	6614.40771	78.3541183	3.76053238
01-Dec-06 10:12:00	175.396835	6693.94336	78.4595108	3.7611661
01-Dec-06 10:13:00	175.774124	6678.521	78.7520981	3.76179981

IGCC Operations Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
01-Dec-06 10:14:00	175.164658	6669.9834	79.0551147	3.76243353
01-Dec-06 10:15:00	174.409866	6634.89111	78.7625351	3.76306725
01-Dec-06 10:16:00	174.380371	6615.72266	78.8510666	3.76370096
01-Dec-06 10:17:00	175.964539	6650.37354	78.9534531	3.76433468
01-Dec-06 10:18:00	175.233047	6690.43359	79.0558319	3.7649684
01-Dec-06 10:19:00	175.34024	6683.375	79.1582184	3.76560211
01-Dec-06 10:20:00	175.758209	6653.13281	79.2606049	3.76623583
01-Dec-06 10:21:00	176.176178	6642.6792	79.3629837	3.76686931
01-Dec-06 10:22:00	175.823196	6649.47266	79.438942	3.76750302
01-Dec-06 10:23:00	174.768204	6646.74902	79.8723755	3.76813674
01-Dec-06 10:24:00	174.280014	6677.98633	79.9958801	3.76877046
01-Dec-06 10:25:00	174.66124	6668.36523	79.9958801	3.76940417
01-Dec-06 10:26:00	175.042465	6631.39795	79.9958801	3.77003789
01-Dec-06 10:27:00	175.039276	6641.55469	79.9958801	3.77067161
01-Dec-06 10:28:00	175.185181	6711.24219	80.4167938	3.77130532
01-Dec-06 10:29:00	174.4254	6689.63379	80.5707855	3.77193904
01-Dec-06 10:30:00	174.717865	6629.04492	80.3089981	3.77257276
01-Dec-06 10:31:00	176.086319	6678.13135	80.6421051	3.77320647
01-Dec-06 10:32:00	175.233276	6642.08643	80.6728516	3.77384019
01-Dec-06 10:33:00	175.464035	6652.52441	80.703598	3.77447391
01-Dec-06 10:34:00	175.554123	6683.47266	80.7343521	3.77510762
01-Dec-06 10:35:00	174.419556	6653.24609	80.7650986	3.77574134
01-Dec-06 10:36:00	174.823593	6610.0083	80.795845	3.77637506
01-Dec-06 10:37:00	174.97818	6659.17383	80.8265991	3.77700877
01-Dec-06 10:38:00	175.497498	6704.27539	80.8573456	3.77764249
01-Dec-06 10:39:00	174.966171	6679.7998	80.888092	3.77827621
01-Dec-06 10:40:00	174.744202	6634.69824	80.9188461	3.77890992
01-Dec-06 10:41:00	175.244003	6634.08691	80.7578049	3.7795434
01-Dec-06 10:42:00	175.211884	6613.70557	80.6862793	3.78017712
01-Dec-06 10:43:00	174.360413	6658.31836	80.8402786	3.78081083
01-Dec-06 10:44:00	174.834122	6684.75146	80.8171768	3.78144455
01-Dec-06 10:45:00	175.459229	6656.16699	80.8995056	3.78207827
01-Dec-06 10:46:00	174.82164	6620.96582	80.7974014	3.78271198
01-Dec-06 10:47:00	176.260101	6612.45898	80.6952896	3.7833457
01-Dec-06 10:48:00	175.39415	6703.854	80.6513672	3.78397942
01-Dec-06 10:49:00	175.075943	6726.73486	80.7545929	3.78461313
01-Dec-06 10:50:00	174.757751	6616.78955	80.8578186	3.78524685
01-Dec-06 10:51:00	174.009521	6597.09082	81.22612	3.78588057
01-Dec-06 10:52:00	174.522217	6620.0957	81.1234512	3.78651428
01-Dec-06 10:53:00	175.098267	6643.10059	81.0207901	3.787148

IGCC Operations Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
01-Dec-06 10:54:00	175.125275	6666.10547	80.960907	3.78778172
01-Dec-06 10:55:00	175.647583	6647.56445	81.1148987	3.78841543
01-Dec-06 10:56:00	174.793747	6634.06494	81.2688904	3.78904915
01-Dec-06 10:57:00	174.767303	6672.82813	81.4228821	3.78968287
01-Dec-06 10:58:00	175.684357	6755.67676	81.5512695	3.79031658
01-Dec-06 10:59:00	174.207428	6689.42773	81.4491653	3.7909503
01-Dec-06 11:00:00	175.216537	6643.66846	81.3470612	3.79158378
01-Dec-06 11:01:00	174.65535	6607.96094	81.255127	3.79221749
01-Dec-06 11:02:00	175.027557	6623.54492	81.4582367	3.79285121
01-Dec-06 11:03:00	175.015701	6656.08496	81.6613388	3.79348493
01-Dec-06 11:04:00	175.694763	6682.85547	81.8644409	3.79411864
01-Dec-06 11:05:00	176.081589	6673.21387	81.8745956	3.79475236
01-Dec-06 11:06:00	175.471848	6649.7583	81.2988663	3.79538608
01-Dec-06 11:07:00	175.446167	6633.98486	81.5306778	3.79601979
01-Dec-06 11:08:00	174.823456	6694.38916	81.4695816	3.79665351
01-Dec-06 11:09:00	174.735641	6696.58691	81.3674774	3.79728723
01-Dec-06 11:10:00	175.189362	6666.3584	81.2653732	3.79792094
01-Dec-06 11:11:00	175.573318	6652.6875	81.3506851	3.79855466
01-Dec-06 11:12:00	174.888168	6643.39844	81.4734802	3.79918838
01-Dec-06 11:13:00	174.831711	6634.10938	81.5962677	3.79982209
01-Dec-06 11:14:00	174.698639	6649.78467	81.7190628	3.80045581
01-Dec-06 11:15:00	175.809662	6640.01953	81.8418503	3.80108953
01-Dec-06 11:16:00	175.347748	6650.58154	81.6449738	3.80172324
01-Dec-06 11:17:00	175.021118	6652.77539	81.8745956	3.80235696
01-Dec-06 11:18:00	175.22464	6719.68799	81.8745956	3.80299067
01-Dec-06 11:19:00	174.535721	6653.41162	82.2903824	3.80362439
01-Dec-06 11:20:00	174.003342	6614.42676	82.4443741	3.80425787
01-Dec-06 11:21:00	173.831985	6600.29102	82.263443	3.80489159
01-Dec-06 11:22:00	174.297012	6615.95459	82.3862305	3.8055253
01-Dec-06 11:23:00	175.898697	6690.06689	82.5090256	3.80615902
01-Dec-06 11:24:00	175.419968	6715.75098	82.631813	3.80679274
01-Dec-06 11:25:00	174.933762	6684.13281	82.7546082	3.80742645
01-Dec-06 11:26:00	174.551926	6595.64063	82.6548309	3.80806017
01-Dec-06 11:27:00	174.430969	6613.21631	82.6548309	3.80869389
01-Dec-06 11:28:00	176.102219	6719.97852	82.6473007	3.8093276
01-Dec-06 11:29:00	175.910095	6742.00684	82.6730576	3.80996132
01-Dec-06 11:30:00	175.717987	6649.75635	82.1877213	3.81059504
01-Dec-06 11:31:00	175.317245	6604.49072	82.1877213	3.81122875
01-Dec-06 11:32:00	174.530167	6617.63818	82.4418106	3.81186247
01-Dec-06 11:33:00	174.126724	6639.08887	82.2878189	3.81249619

IGCC Operations Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
01-Dec-06 11:34:00	174.78157	6624.23975	82.2946396	3.8131299
01-Dec-06 11:35:00	175.719498	6688.48682	82.6001205	3.81376362
01-Dec-06 11:36:00	175.20488	6642.10156	82.7677612	3.81439734
01-Dec-06 11:37:00	175.106369	6628.63525	82.6137695	3.81503105
01-Dec-06 11:38:00	173.977173	6676.42578	82.5280685	3.81566477
01-Dec-06 11:39:00	173.856934	6634.60645	82.6301727	3.81629848
01-Dec-06 11:40:00	174.095276	6616.63916	82.7322769	3.81693196
01-Dec-06 11:41:00	175.01796	6619.0835	82.7893982	3.81756568
01-Dec-06 11:42:00	175.883087	6621.52783	82.6666107	3.8181994
01-Dec-06 11:43:00	174.65834	6647.84326	82.5438156	3.81883311
01-Dec-06 11:44:00	175.009552	6688.1416	82.4210281	3.81946683
01-Dec-06 11:45:00	174.306992	6631.27539	82.298233	3.82010055
01-Dec-06 11:46:00	174.654129	6599.19092	82.1877213	3.82073426
01-Dec-06 11:47:00	174.855621	6609.69678	82.4923782	3.82136798
01-Dec-06 11:48:00	175.015121	6687.83154	82.3908234	3.8220017
01-Dec-06 11:49:00	175.583664	6721.72949	82.2892761	3.82263541
01-Dec-06 11:50:00	175.163727	6693.23193	82.1877213	3.82326913
01-Dec-06 11:51:00	174.072845	6630.17578	82.2184677	3.82390285
01-Dec-06 11:52:00	174.967377	6612.60547	82.2492142	3.82453656
01-Dec-06 11:53:00	174.340302	6629.65625	82.2799683	3.82517028
01-Dec-06 11:54:00	174.277267	6610.4668	82.3107147	3.825804
01-Dec-06 11:55:00	174.566483	6621.00879	82.3414612	3.82643771
01-Dec-06 11:56:00	174.530273	6649.70117	82.3722076	3.82707143
01-Dec-06 11:57:00	174.494049	6611.21094	82.4029541	3.82770514
01-Dec-06 11:58:00	174.346756	6691.64355	82.4337082	3.82833886
01-Dec-06 11:59:00	174.452866	6644.86133	82.4644547	3.82897258
01-Dec-06 12:00:00	174.822098	6620.51953	82.4952011	3.82960606
01-Dec-06 12:01:00	174.934052	6622.53662	82.5008392	3.83023977
01-Dec-06 12:02:00	175.418106	6630.6001	82.9755707	3.83087349
01-Dec-06 12:03:00	174.90921	6639.87305	82.8882599	3.83150721
01-Dec-06 12:04:00	174.92691	6698.12109	83.2400131	3.83214092
01-Dec-06 12:05:00	175.101166	6643.30273	83.3940048	3.83277464
01-Dec-06 12:06:00	174.488739	6607.31299	83.2210159	3.83340836
01-Dec-06 12:07:00	175.3004	6627.24805	83.4102097	3.83404207
01-Dec-06 12:08:00	176.263153	6706.2959	83.3663101	3.83467579
01-Dec-06 12:09:00	175.413681	6717.01904	83.3224182	3.83530951
01-Dec-06 12:10:00	174.971405	6642.05273	83.2785187	3.83594322
01-Dec-06 12:11:00	174.779617	6622.65283	83.2346268	3.83657694
01-Dec-06 12:12:00	174.990997	6666.1167	83.1907272	3.83721066
01-Dec-06 12:13:00	175.643555	6669.88086	83.1468353	3.83784437

IGCC Operations Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
01-Dec-06 12:14:00	175.363327	6643.99365	83.2759399	3.83847809
01-Dec-06 12:15:00	174.789627	6631.12256	83.2066422	3.8391118
01-Dec-06 12:16:00	174.116028	6646.93896	83.3606415	3.83974552
01-Dec-06 12:17:00	174.503296	6646.25	83.2913437	3.84037924
01-Dec-06 12:18:00	174.765152	6721.78467	83.2223816	3.84101295
01-Dec-06 12:19:00	174.289841	6664.04053	83.42659	3.84164643
01-Dec-06 12:20:00	174.007843	6595.29834	83.6307907	3.84228015
01-Dec-06 12:21:00	174.753738	6608.86523	83.6917191	3.84291387
01-Dec-06 12:22:00	175.057129	6642.96631	83.5377274	3.84354758
01-Dec-06 12:23:00	174.988098	6657.26709	83.1270828	3.8441813
01-Dec-06 12:24:00	176.064255	6704.80713	82.8139572	3.84481502
01-Dec-06 12:25:00	174.494003	6623.25146	82.8139572	3.84544873
01-Dec-06 12:26:00	174.997711	6624.74951	82.991394	3.84608245
01-Dec-06 12:27:00	176.119949	6628.95947	83.1882553	3.84671617
01-Dec-06 12:28:00	175.307114	6683.43018	83.43293	3.84734988
01-Dec-06 12:29:00	174.619278	6702.95508	83.6776047	3.8479836
01-Dec-06 12:30:00	174.896545	6642.28223	83.9222794	3.84861732
01-Dec-06 12:31:00	174.702057	6628.4707	84.1669617	3.84925103
01-Dec-06 12:32:00	176.013367	6659.91943	84.3877792	3.84988475
01-Dec-06 12:33:00	176.049393	6683.41162	84.4893341	3.85051847
01-Dec-06 12:34:00	175.065475	6635.76758	84.590889	3.85115218
01-Dec-06 12:35:00	175.198059	6629.21631	84.6578903	3.8517859
01-Dec-06 12:36:00	174.601578	6598.59082	84.694252	3.85241961
01-Dec-06 12:37:00	173.834351	6595.35352	84.8482437	3.85305333
01-Dec-06 12:38:00	175.593872	6761.47754	84.981842	3.85368705
01-Dec-06 12:39:00	175.578094	6680.38623	84.5241394	3.85432053
01-Dec-06 12:40:00	175.220947	6668.94629	84.0664368	3.85495424
01-Dec-06 12:41:00	174.948273	6603.1084	83.7636108	3.85558796
01-Dec-06 12:42:00	174.358307	6590.67822	84.0664368	3.85622168
01-Dec-06 12:43:00	173.931458	6616.45557	84.5012589	3.85685539
01-Dec-06 12:44:00	173.441116	6671.01758	84.9589615	3.85748911
01-Dec-06 12:45:00	174.217834	6631.92969	85.2475967	3.85812283
01-Dec-06 12:46:00	175.613678	6629.14307	85.1331253	3.85875654
01-Dec-06 12:47:00	175.456223	6622.24951	85.287117	3.85939026
01-Dec-06 12:48:00	175.410156	6672.80225	85.4411087	3.86002398
01-Dec-06 12:49:00	175.491211	6737.35889	85.595108	3.86065769
01-Dec-06 12:50:00	175.302536	6673.64258	85.2491226	3.86129141
01-Dec-06 12:51:00	175.00853	6659.93164	84.7909012	3.86192513
01-Dec-06 12:52:00	174.967667	6645.22803	84.6839828	3.86255884
01-Dec-06 12:53:00	174.131165	6634.11768	84.6839828	3.86319256

IGCC Operations Data

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
01-Dec-06 12:54:00	174.578201	6625.5249	84.5952606	3.86382627
01-Dec-06 12:55:00	175.372025	6660.30371	84.7815094	3.86445999
01-Dec-06 12:56:00	176.013367	6648.59424	84.7892075	3.86509371
01-Dec-06 12:57:00	174.448975	6621.36279	84.9432068	3.86572742
01-Dec-06 12:58:00	174.090698	6699.06836	85.5052795	3.86636114
01-Dec-06 12:59:00	174.610733	6657.95117	85.4334106	3.86699462
01-Dec-06 13:00:00	174.717117	6610.52539	85.4950104	3.86762834
01-Dec-06 13:01:00	175.748611	6620.06885	85.5042191	3.86826205
01-Dec-06 13:02:00	175.213684	6601.28711	85.3000107	3.86889577
01-Dec-06 13:03:00	174.136185	6616.83936	85.0958023	3.86952949
01-Dec-06 13:04:00	174.006882	6674.3457	84.9971008	3.8701632
01-Dec-06 13:05:00	174.290543	6649.06299	84.9971008	3.87079692
01-Dec-06 13:06:00	174.758163	6623.78027	85.2948227	3.87143064
01-Dec-06 13:07:00	175.047455	6617.2915	85.3447266	3.87206435
01-Dec-06 13:08:00	174.830963	6680.33301	85.4214096	3.87269807
01-Dec-06 13:09:00	175.122986	6715.47754	85.4980927	3.87333179
01-Dec-06 13:10:00	174.658798	6638.01465	85.5747681	3.8739655
01-Dec-06 13:11:00	174.669601	6629.50977	85.5085297	3.87459922
01-Dec-06 13:12:00	174.370392	6603.40186	85.5155411	3.87523293
01-Dec-06 13:13:00	175.394821	6657.3042	85.4124603	3.87586665
01-Dec-06 13:14:00	175.693634	6671.67871	85.7191925	3.87650037
01-Dec-06 13:15:00	175.992447	6684.94141	86.0259247	3.87713408
01-Dec-06 13:16:00	176.158966	6624.24902	86.3326492	3.8777678
01-Dec-06 13:17:00	176.187775	6660.03564	86.448143	3.87840152
01-Dec-06 13:18:00	175.853073	6694.70313	85.9899139	3.879035
01-Dec-06 13:19:00	174.915909	6668.76514	85.7164993	3.87966871
01-Dec-06 13:20:00	175.416946	6595.62793	86.1822968	3.88030243

SULFURIC ACID PLANT

Ops Run 1

Start Time: 12/1/2006 9:00
Stop Time: 12/1/2006 10:16
Interval: 1m

PI Tag	1SRGFI487	1SRGAI446b
PI Desriptor	Acid Flow	Acid Concentration
Tag Units	Gallons	%
01-Dec-06 09:00:00	27.78502464	93.46537018
01-Dec-06 09:01:00	28.21019173	93.46440125
01-Dec-06 09:02:00	27.30363846	93.46343231
01-Dec-06 09:03:00	27.74376678	93.48878479
01-Dec-06 09:04:00	26.32045364	93.53107452
01-Dec-06 09:05:00	25.4934082	93.51403046
01-Dec-06 09:06:00	25.05070877	93.49699402
01-Dec-06 09:07:00	23.44331169	93.47994995
01-Dec-06 09:08:00	23.06603813	93.47263336
01-Dec-06 09:09:00	21.71669769	93.48336792
01-Dec-06 09:10:00	21.56954765	93.49411011
01-Dec-06 09:11:00	20.98880005	93.50484467
01-Dec-06 09:12:00	20.64504814	93.51558685
01-Dec-06 09:13:00	19.20642853	93.52632904
01-Dec-06 09:14:00	18.51779556	93.5370636
01-Dec-06 09:15:00	16.84566498	93.54780579
01-Dec-06 09:16:00	16.32238579	93.55854034
01-Dec-06 09:17:00	16.25473404	93.56928253
01-Dec-06 09:18:00	15.3859396	93.56995392
01-Dec-06 09:19:00	15.08987713	93.55193329
01-Dec-06 09:20:00	15.58015728	93.53390503
01-Dec-06 09:21:00	16.24164581	93.5158844
01-Dec-06 09:22:00	16.61151695	93.49786377
01-Dec-06 09:23:00	16.17938805	93.4932251
01-Dec-06 09:24:00	16.89535141	93.51346588
01-Dec-06 09:25:00	17.78787613	93.53369904
01-Dec-06 09:26:00	18.1586647	93.54548645
01-Dec-06 09:27:00	19.26957703	93.54159546
01-Dec-06 09:28:00	19.75726318	93.53770447
01-Dec-06 09:29:00	19.57340813	93.53381348
01-Dec-06 09:30:00	21.62596893	93.52992249
01-Dec-06 09:31:00	21.8271389	93.52603149
01-Dec-06 09:32:00	22.465168	93.51528168
01-Dec-06 09:33:00	23.99054718	93.49177551
01-Dec-06 09:34:00	24.92076683	93.46826935
01-Dec-06 09:35:00	25.34622765	93.46255493

Ops Run 1

PI Tag	1SRGFI487	1SRGAI446b
PI Desriptor	Acid Flow	Acid Concentration
Tag Units	Gallons	%
01-Dec-06 09:36:00	26.06377983	93.48987579
01-Dec-06 09:37:00	27.87441063	93.47788239
01-Dec-06 09:38:00	28.12085152	93.42681885
01-Dec-06 09:39:00	28.41798973	93.43437958
01-Dec-06 09:40:00	28.63371849	93.44194031
01-Dec-06 09:41:00	28.64352798	93.44950104
01-Dec-06 09:42:00	28.61082458	93.45706177
01-Dec-06 09:43:00	28.77627182	93.4646225
01-Dec-06 09:44:00	28.40077972	93.47218323
01-Dec-06 09:45:00	28.09085274	93.47974396
01-Dec-06 09:46:00	28.31199455	93.48730469
01-Dec-06 09:47:00	28.50691032	93.49289703
01-Dec-06 09:48:00	28.59101486	93.49484253
01-Dec-06 09:49:00	28.65052223	93.4967804
01-Dec-06 09:50:00	27.66983414	93.49871826
01-Dec-06 09:51:00	27.88570786	93.50066376
01-Dec-06 09:52:00	26.84090042	93.50260162
01-Dec-06 09:53:00	26.51586342	93.50454712
01-Dec-06 09:54:00	26.07448006	93.50648499
01-Dec-06 09:55:00	25.29698753	93.50843048
01-Dec-06 09:56:00	23.51574326	93.51036835
01-Dec-06 09:57:00	22.8305912	93.51231384
01-Dec-06 09:58:00	21.59775925	93.51425171
01-Dec-06 09:59:00	23.51412964	93.5161972
01-Dec-06 10:00:00	19.68430328	93.51813507
01-Dec-06 10:01:00	18.87592697	93.52008057
01-Dec-06 10:02:00	17.57759285	93.52201843
01-Dec-06 10:03:00	12.52952671	93.52396393
01-Dec-06 10:04:00	25.03555489	93.52590179
01-Dec-06 10:05:00	18.85072708	93.52784729
01-Dec-06 10:06:00	17.41357803	93.5300293
01-Dec-06 10:07:00	17.33560181	93.5326767
01-Dec-06 10:08:00	17.02531433	93.5353241
01-Dec-06 10:09:00	16.19791603	93.5379715
01-Dec-06 10:10:00	17.89147568	93.54061127
01-Dec-06 10:11:00	16.56319237	93.54325867
01-Dec-06 10:12:00	16.99263	93.54590607
01-Dec-06 10:13:00	17.93761253	93.54855347
01-Dec-06 10:14:00	16.9590435	93.55120087
01-Dec-06 10:15:00	17.81960487	93.5430603

Ops Run 1

PI Tag	1SRGFI487	1SRGAI446b
PI Desriptor	Acid Flow	Acid Concentration
Tag Units	Gallons	%
01-Dec-06 10:16:00	17.58545113	93.51488495

Ops Run 2

Start Time: 12/1/2006 10:45
Stop Time: 12/1/2006 11:57
Interval: 1m

PI Tag	1SRGFI487	1SRGAI446b
PI Desriptor	Acid Flow	Acid Concentration
Tag Units	Gallons	%
01-Dec-06 10:45:00	24.81376076	93.49940491
01-Dec-06 10:46:00	22.89592934	93.50131226
01-Dec-06 10:47:00	22.39478683	93.51085663
01-Dec-06 10:48:00	19.93430901	93.52039337
01-Dec-06 10:49:00	20.27495766	93.52993011
01-Dec-06 10:50:00	19.91744614	93.53947449
01-Dec-06 10:51:00	17.54257393	93.54901123
01-Dec-06 10:52:00	15.76693058	93.55854797
01-Dec-06 10:53:00	17.40314102	93.56251526
01-Dec-06 10:54:00	17.51663208	93.55686951
01-Dec-06 10:55:00	15.8992281	93.55121613
01-Dec-06 10:56:00	16.36616135	93.54556274
01-Dec-06 10:57:00	14.41671467	93.53990936
01-Dec-06 10:58:00	15.16575336	93.53425598
01-Dec-06 10:59:00	15.83239174	93.5286026
01-Dec-06 11:00:00	17.52677345	93.52294922
01-Dec-06 11:01:00	16.08989334	93.51730347
01-Dec-06 11:02:00	16.55682564	93.51165009
01-Dec-06 11:03:00	17.40995026	93.5059967
01-Dec-06 11:04:00	18.0328064	93.50034332
01-Dec-06 11:05:00	19.1630497	93.49468994
01-Dec-06 11:06:00	19.24752808	93.48903656
01-Dec-06 11:07:00	19.30465698	93.48339081
01-Dec-06 11:08:00	21.30342293	93.47773743
01-Dec-06 11:09:00	22.13223076	93.47208405
01-Dec-06 11:10:00	23.21401215	93.46643066
01-Dec-06 11:11:00	23.57389832	93.46077728
01-Dec-06 11:12:00	24.00601196	93.45965576
01-Dec-06 11:13:00	25.48270798	93.46634674
01-Dec-06 11:14:00	26.53207397	93.47303772
01-Dec-06 11:15:00	26.79130936	93.4797287
01-Dec-06 11:16:00	27.18885994	93.48642731
01-Dec-06 11:17:00	27.77987671	93.49311829
01-Dec-06 11:18:00	28.35927582	93.49980927
01-Dec-06 11:19:00	28.644104	93.50650024
01-Dec-06 11:20:00	28.51919937	93.51319122

Ops Run 2

PI Tag	1SRGFI487	1SRGAI446b
PI Desriptor	Acid Flow	Acid Concentration
Tag Units	Gallons	%
01-Dec-06 11:21:00	28.37153244	93.51651001
01-Dec-06 11:22:00	28.29162216	93.51397705
01-Dec-06 11:23:00	28.53301239	93.51145172
01-Dec-06 11:24:00	28.68195534	93.50892639
01-Dec-06 11:25:00	28.33005905	93.50640106
01-Dec-06 11:26:00	28.58103561	93.5038681
01-Dec-06 11:27:00	27.98178291	93.50134277
01-Dec-06 11:28:00	28.30842972	93.49881744
01-Dec-06 11:29:00	27.58072853	93.49629211
01-Dec-06 11:30:00	27.33546066	93.49375916
01-Dec-06 11:31:00	27.68540001	93.49123383
01-Dec-06 11:32:00	26.34355164	93.4887085
01-Dec-06 11:33:00	26.12300491	93.48618317
01-Dec-06 11:34:00	25.06778526	93.48365021
01-Dec-06 11:35:00	24.06972504	93.48112488
01-Dec-06 11:36:00	23.51172638	93.47859955
01-Dec-06 11:37:00	22.74806786	93.47607422
01-Dec-06 11:38:00	24.20674706	93.47722626
01-Dec-06 11:39:00	21.73978424	93.48474884
01-Dec-06 11:40:00	23.1600399	93.49227142
01-Dec-06 11:41:00	15.42840385	93.49978638
01-Dec-06 11:42:00	18.66775322	93.50730896
01-Dec-06 11:43:00	17.12492752	93.51483154
01-Dec-06 11:44:00	15.49215794	93.5223465
01-Dec-06 11:45:00	15.16769886	93.52954102
01-Dec-06 11:46:00	15.07560921	93.53612518
01-Dec-06 11:47:00	14.57235909	93.54271698
01-Dec-06 11:48:00	16.19573021	93.54930115
01-Dec-06 11:49:00	16.36071396	93.55588531
01-Dec-06 11:50:00	16.49975586	93.54155731
01-Dec-06 11:51:00	15.58853817	93.52974701
01-Dec-06 11:52:00	15.35196209	93.5707016
01-Dec-06 11:53:00	16.36379242	93.56061554
01-Dec-06 11:54:00	18.06073952	93.55052185
01-Dec-06 11:55:00	16.72803497	93.54043579
01-Dec-06 11:56:00	18.81069946	93.5303421
01-Dec-06 11:57:00	19.83800507	93.52025604

Ops Run 3

Start Time: 12/1/2006 12:21
Stop Time: 12/1/2006 13:32
Interval: 1m

PI Tag	1SRGFI487	1SRGAI446b
PI Desriptor	Acid Flow	Acid Concentration
Tag Units	Gallons	%
01-Dec-06 12:21:00	26.54945564	93.49086761
01-Dec-06 12:22:00	25.19431114	93.49350739
01-Dec-06 12:23:00	24.24565887	93.49614716
01-Dec-06 12:24:00	22.80313301	93.49803162
01-Dec-06 12:25:00	22.75828362	93.49861145
01-Dec-06 12:26:00	22.10820198	93.49919128
01-Dec-06 12:27:00	20.77284241	93.49977112
01-Dec-06 12:28:00	18.99655151	93.5063324
01-Dec-06 12:29:00	19.28838539	93.52399445
01-Dec-06 12:30:00	15.91479206	93.537323
01-Dec-06 12:31:00	16.9459362	93.54315186
01-Dec-06 12:32:00	16.83309555	93.54828644
01-Dec-06 12:33:00	16.1206665	93.55219269
01-Dec-06 12:34:00	15.37219906	93.55609894
01-Dec-06 12:35:00	15.17158985	93.56001282
01-Dec-06 12:36:00	15.81984901	93.56391907
01-Dec-06 12:37:00	15.24163055	93.55861664
01-Dec-06 12:38:00	16.76564789	93.53620148
01-Dec-06 12:39:00	17.13660049	93.51995087
01-Dec-06 12:40:00	15.7085638	93.51512909
01-Dec-06 12:41:00	15.51271057	93.51031494
01-Dec-06 12:42:00	17.26226044	93.50549316
01-Dec-06 12:43:00	17.39624405	93.50067902
01-Dec-06 12:44:00	17.804142	93.49585724
01-Dec-06 12:45:00	18.58090973	93.49103546
01-Dec-06 12:46:00	18.83090019	93.48622131
01-Dec-06 12:47:00	20.51719666	93.48139954
01-Dec-06 12:48:00	22.39820099	93.47658539
01-Dec-06 12:49:00	23.038517	93.47176361
01-Dec-06 12:50:00	24.13442993	93.44772339
01-Dec-06 12:51:00	25.30501366	93.43882751
01-Dec-06 12:52:00	26.69705772	93.48272705
01-Dec-06 12:53:00	26.84956932	93.48361969
01-Dec-06 12:54:00	28.03206253	93.48451233
01-Dec-06 12:55:00	27.90480804	93.48540497
01-Dec-06 12:56:00	28.63759232	93.48629761

Ops Run 3

PI Tag	1SRGFI487	1SRGAI446b
PI Desriptor	Acid Flow	Acid Concentration
Tag Units	Gallons	%
01-Dec-06 12:57:00	28.75903893	93.48719025
01-Dec-06 12:58:00	28.92666435	93.48808289
01-Dec-06 12:59:00	28.66518211	93.48897552
01-Dec-06 13:00:00	28.90792084	93.48986816
01-Dec-06 13:01:00	28.16115189	93.4907608
01-Dec-06 13:02:00	28.71001625	93.49165344
01-Dec-06 13:03:00	28.66949844	93.51124573
01-Dec-06 13:04:00	28.29980469	93.53730011
01-Dec-06 13:05:00	28.68383217	93.51535797
01-Dec-06 13:06:00	27.99263954	93.4934082
01-Dec-06 13:07:00	27.95467758	93.47146606
01-Dec-06 13:08:00	27.81062317	93.46382904
01-Dec-06 13:09:00	26.01124954	93.4827652
01-Dec-06 13:10:00	25.93829155	93.50170135
01-Dec-06 13:11:00	25.59587479	93.48405457
01-Dec-06 13:12:00	25.18997192	93.43802643
01-Dec-06 13:13:00	24.30197716	93.45662689
01-Dec-06 13:14:00	23.38766861	93.47522736
01-Dec-06 13:15:00	22.1136837	93.49382782
01-Dec-06 13:16:00	22.16335869	93.51242828
01-Dec-06 13:17:00	29.52200317	93.53102112
01-Dec-06 13:18:00	18.22222137	93.54092407
01-Dec-06 13:19:00	17.28057098	93.53466797
01-Dec-06 13:20:00	18.38953781	93.52841187
01-Dec-06 13:21:00	17.45567131	93.52214813
01-Dec-06 13:22:00	15.32042503	93.51589203
01-Dec-06 13:23:00	16.06765747	93.51211548
01-Dec-06 13:24:00	16.5723896	93.51295471
01-Dec-06 13:25:00	15.15758228	93.51378632
01-Dec-06 13:26:00	15.86031723	93.51461792
01-Dec-06 13:27:00	15.58404827	93.51545715
01-Dec-06 13:28:00	14.35834789	93.51628876
01-Dec-06 13:29:00	16.65799332	93.51712036
01-Dec-06 13:30:00	14.79674625	93.51795959
01-Dec-06 13:31:00	20.45280075	93.5187912
01-Dec-06 13:32:00	19.95116997	93.5196228

APPENDIX Q

VISIBLE EMISSIONS OBSERVATIONS

IGCC

TAMPA ELECTRIC
A TECO ENERGY COMPANY

VISIBLE EMISSION OBSERVATION

E-496 R 10/85

SOURCE NAME	SOURCE LOCATION
Polk Power Station	Polk Co FL

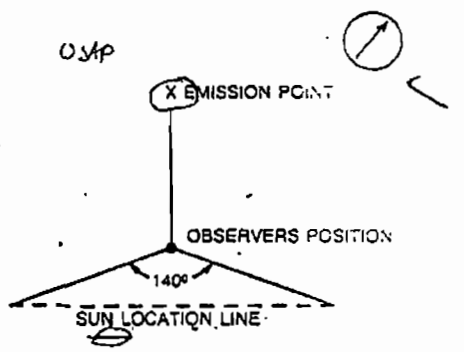
OBSERVATION DATE	START TIME	STOP TIME
12/1/2006	10:10	10:40

TYPE OF FACILITY: HRSG - firing synthetic gas

DISTANCE FROM OBSERVER: ~1200'

SKY CONDITIONS/PLUME BACKGROUND: Overcast / wh. to gray

SOURCE LAYOUT SKETCH — DRAW NORTH ARROW



AVERAGE OPACITY: 0

WIND SPEED (EST.)	WIND DIRECTION (EST.)
moderate ~10 mph	~ENE

OBSERVER'S NAME (PRINT): K.A. McDarby

OBSERVER'S SIGNATURE: K.A. McDarby — DATE: 1-DEC-2006

COMMENTS: SG ~70°

COPY OF VISIBLE EMISSIONS CERTIFICATION CARD

re-certified 8/15/2006 ETA-Tampa

EASTERN TECHNICAL ASSOCIATES

RAY MCDARBY

met the specifications of Federal Reference Method 9 and qualifies as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, NC. This certificate is valid for six months from date of issue and expires on the date below

DATE OF SCHOOL	EXPIRATION DATE	LAST LECTURE
2/14/06	8/15/06	TMPEC4

CERT. NUMBER 337141 — TRAINING MANAGER — BEARER

SEC. MIN	0	15	30	45	SEC MIN	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

SULFURIC ACID PLANT

TAMPA ELECTRIC
A TECO ENERGY COMPANY

VISIBLE EMISSION OBSERVATION

E-496 R 10/85

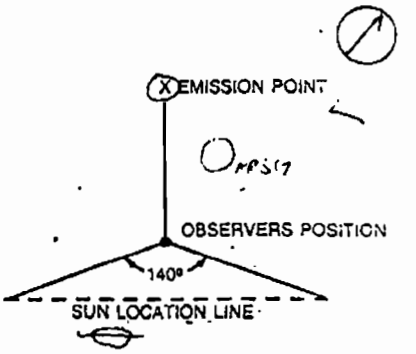
SOURCE NAME	SOURCE LOCATION	OBSERVATION DATE	START TIME	STOP TIME
Polk Power Station	Polk Co. FL	12/1/2006	10:10	10:40

TYPE OF FACILITY: Sulfuric Acid Plant

DISTANCE FROM OBSERVER: ~1,500'

SKY CONDITIONS/PLUME BACKGROUND: Clear / white + gray

SOURCE LAYOUT SKETCH — DRAW NORTH ARROW



SUN-O- WIND→

AVERAGE OPACITY: 0

WIND SPEED (EST.)	WIND DIRECTION (EST.)
moderate ~20 mph	~ENE

OBSERVER'S NAME (PRINT): R. A. McDarby

OBSERVER'S SIGNATURE: R A McDarby — DATE: 1-DEC-2006

COMMENTS: SR ~74

COPY OF VISIBLE EMISSIONS CERTIFICATION CARD

re-certified 8/15/2006 ETA-Tampa

EASTERN TECHNICAL ASSOCIATES

RAY McDARBY

met the specifications of Federal Reference Method 9 and qualifies as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, NC. This certificate is valid for six months from date of issue and expires on the date below.

2/14/06 — DATE OF SCHOOL — 8/15/06 EXPIRATION DATE — TMP504 LAST LECTURE

337141 CERT. NUMBER — Michael A. Langford TRAINING MANAGER — R A McDarby BEARER

SEC. MIN	0	15	30	45	SEC MIN	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

APPENDIX R

CHAIN OF CUSTODY

Trigon Engineering Consultants, Inc. *Chain of Custody* **Sampler's Signature** _____

Company: TECO City, State: Polk Co. Florida Contact: David Smith	Laboratory: TECO Project No. 0416-06-170 Purchase Order No. _____	No. of Containers 8	Sampling Methods: 8

Sample Description		Sample ID	Date	Time	Sample Disposition and Remarks
Unit 1	Run 1	6120-01	12/01/06		80% IPA → SO_3 catch
	Run 1	6120-02	12/01/06		3% H_2O_2 → SO_2 catch
	Run 2	6120-03	12/01/06		80% IPA → SO_3 catch
	Run 2	6120-04	12/01/06		3% H_2O_2 → SO_2 catch
	Run 3	6120-05	12/01/06		80% IPA → SO_3 catch
	Run 3	6120-06	12/01/06		3% H_2O_2 → SO_2 catch
Reagent Blank		6120-07	12/01/06		80% IPA blank
Reagent Blank		6120-08	12/01/06		3% H_2O_2 blank

Relinquished By: _____	Date/Time 12/01/06 / 1425	Received By: _____	Date/Time 1-DEC-06 / 14:25
Relinquished By: _____	Date/Time ___/___	Received By: _____	Date/Time ___/___
Received for Laboratory By: _____	Date/Time ___/___	Analyze for the Following Compounds: _____	

TECO
TAMPA ELECTRIC

ANALYSIS REQUEST & CHAIN OF CUSTODY

ENVIRONMENTAL SERVICES

5012 CAUSEWAY BLVD., TAMPA, FL, 33619 PHONE (813)228-4111

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	REQUIRED ANALYSIS	DUE DATE
Polk Acid SAP		Polk	RMB	
SAMPLER'S PRINTED NAME	SAMPLER'S SIGNATURE		H_2SO_4	☐ EMAIL RESULTS
Scott Given	Scott Given			☐ FAX RESULTS
P.O. NUMBER	CONTRACT NO	SITE		☐ MAIL RESULTS
CLIENT NAME	CLIENT PHONE	CLIENT FAX		
CLIENT EMAIL	CLIENT ADDRESS		PRESERVATIVE	NUMBER OF COOLERS SUBMITTED PER SHIPMENT

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLING DATE	SAMPLING TIME	* MATRIX	NUMBER OF CONTAINERS SUBMITTED	REMARKS
RunI	SAP Acid Mist	12/1/06	10:40		1	
RunII	" " "	12/1/06	12:30		1	
RunIII	" " "	12/1/06	1:30		1	
80% Blank	80% IPA				1	

* GW - GROUND WATER SW - SURFACE WATER DW - DRINKING WATER WW - WASTE WATER C - COAL O - OIL SO - SOLID/SOIL SL - SLUDGE W - WASTE SAMPLE A - AIR

CONTAINERS/SEALS INTACT ☐ Yes ☐ No

ON ICE/ 4°C ☐ Yes ☐ No

SAMPLE TRANSFERS

RELINQUISHED BY:	RECEIVED BY:	DATE	TIME
PERSON'S NAME: Scott Given / Scott Given	PERSON'S NAME: Sam Sott	12-1-06	1610
FACILITY NAME:	FACILITY NAME: CSWY/LAB		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		
PERSON'S NAME	PERSON'S NAME		
FACILITY NAME:	FACILITY NAME:		
PERSON'S NAME	PERSON'S NAME		
FACILITY NAME:	FACILITY NAME:		

TRIAL BURN # 2

Appendices S through AA

APPENDIX S

IGCC CEMS DATA
SO_2, NO_X, CO_2, STACK FLOW

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 13:49	36.2	19	12.63	817.3	8.6
01/18/2007 13:50	35.98	19.1	12.73	803.3	8.6
01/18/2007 13:51	36.45	19	12.774	808.1	8.6
01/18/2007 13:52	36.73	18.1	12.171	809.1	8.6
01/18/2007 13:53	36.86	18	11.951	809.5	8.6
01/18/2007 13:54	37.35	18.5	12.307	822.8	8.6
01/18/2007 13:55	38.21	18.8	12.552	839.7	8.6
01/18/2007 13:56	39.14	18.6	12.405	831	8.6
01/18/2007 13:57	39.69	17.6	11.795	805.5	8.6
01/18/2007 13:58	37.4	17.5	11.532	805.2	8.6
01/18/2007 13:59	36.03	18.1	12.073	811.5	8.6
01/18/2007 14:00	37.42	18	11.984	804	8.6
01/18/2007 14:01	38.3	18.2	12.151	826.4	8.6
01/18/2007 14:02	38.55	18.1	12.084	838.6	8.6
01/18/2007 14:03	39.38	18	12.04	813.4	8.6
01/18/2007 14:04	40.35	18.5	12.284	830.3	8.6
01/18/2007 14:05	40.65	18.9	12.53	807.4	8.6
01/18/2007 14:06	40.5	19.2	12.827	815.1	8.6
01/18/2007 14:07	38.23	17.5	11.906	802.5	8.6
01/18/2007 14:08	36.02	18.4	12.129	811	8.6
01/18/2007 14:09	36.84	18.7	12.488	821	8.6
01/18/2007 14:10	38.07	19.1	12.696	829.5	8.6
01/18/2007 14:11	39.47	19	12.696	830.2	8.6
01/18/2007 14:12	39.65	18.4	12.385	815.8	8.6
01/18/2007 14:13	38.58	18.2	12.085	827.7	8.6
01/18/2007 14:14	37.08	18.6	12.419	819.6	8.6
01/18/2007 14:15	37.19	19.2	12.84	826.3	8.6
01/18/2007 14:16	38.55	19.4	12.921	800.6	8.6
01/18/2007 14:17	38.6	18.4	12.45	816	8.6
01/18/2007 14:18	36.97	18	11.94	805.6	8.6
01/18/2007 14:19	37.7	18.8	12.429	810.6	8.6
01/18/2007 14:20	38.54	19.1	12.754	833.1	8.6
01/18/2007 14:21	38.98	19.3	12.994	791.4	8.6
01/18/2007 14:22	38.62	19	12.84	808.3	8.6
01/18/2007 14:23	37.95	19.3	12.891	818.6	8.6
01/18/2007 14:24	37.6	19.2	12.906	815.8	8.6
01/18/2007 14:25	38.37	19.4	13.028	822.5	8.6
01/18/2007 14:26	39.54	19.3	12.941	823.5	8.6
01/18/2007 14:27	39.03	17.8	12.007	819.8	8.6
01/18/2007 14:28	37.06	18.4	12.254	804.4	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 14:29	36.63	19	12.793	806.6	8.6
01/18/2007 14:30	36.13	19.2	12.823	812.9	8.6
01/18/2007 14:31	36.5	19.4	12.941	816.5	8.6
01/18/2007 14:32	36.55	18.6	12.685	799.5	8.6
01/18/2007 14:33	36.55	18.3	12.187	850.9	8.6
01/18/2007 14:34	36.45	18.8	12.623	828.4	8.6
01/18/2007 14:35	37.56	19.3	12.868	814.1	8.6
01/18/2007 14:36	38.87	19.4	12.989	821.2	8.6
01/18/2007 14:37	38.31	18.4	12.438	817.5	8.6
01/18/2007 14:38	35.98	17.8	11.828	823.3	8.6
01/18/2007 14:39	35.75	18.6	12.341	824.6	8.6
01/18/2007 14:40	36.85	19.1	12.834	835.2	8.6
01/18/2007 14:41	38.04	19.3	12.971	809.2	8.6
01/18/2007 14:42	38.82	19.2	12.848	818.9	8.6
01/18/2007 14:43	39.5	19.2	12.883	829.8	8.6
01/18/2007 14:44	39.44	19.2	12.97	827.8	8.6
01/18/2007 14:45	39.27	19.4	13.078	824.2	8.6
01/18/2007 14:46	39.51	19.6	13.091	822.6	8.6
01/18/2007 14:47	36.66	18.3	12.318	819.2	8.6
01/18/2007 14:48	34.75	18.9	12.522	809.8	8.6
01/18/2007 14:49	35.92	19.3	12.999	811.3	8.6
01/18/2007 14:50	36.87	19.6	13.191	825.4	8.6
01/18/2007 14:51	37.71	19.6	13.141	826.9	8.6
01/18/2007 14:52	37.98	18.8	12.652	826.2	8.6
01/18/2007 14:53	36.51	18.5	12.307	808.2	8.6
01/18/2007 14:54	35.88	19	12.701	810.6	8.6
01/18/2007 14:55	35.96	19.3	12.954	839.4	8.6
01/18/2007 14:56	37.21	19.4	13.015	840.4	8.6
01/18/2007 14:57	37.65	18.5	12.504	832.7	8.6
01/18/2007 14:58	37.07	17.9	11.94	824.1	8.6
01/18/2007 14:59	37.82	18.9	12.605	816.3	8.6
01/18/2007 15:00	38.2	19.2	12.954	829	8.6
01/18/2007 15:01	37.98	19.5	13.123	823.2	8.6
01/18/2007 15:02	37.26	19.6	13.168	823.4	8.6
01/18/2007 15:03	37.02	19.7	13.258	812.9	8.6
01/18/2007 15:04	37.12	19.9	13.371	818.5	8.6
01/18/2007 15:05	37.23	20	13.551	798.1	8.6
01/18/2007 15:06	37.93	19.7	13.273	827.9	8.6
01/18/2007 15:07	37.6	18.6	12.591	819	8.6
01/18/2007 15:08	35.91	19.4	12.963	820.4	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 15:09	35.62	19.6	13.258	819.1	8.6
01/18/2007 15:10	35.4	19.6	13.303	819.6	8.6
01/18/2007 15:11	35.8	19.7	13.253	825.1	8.6
01/18/2007 15:12	35.87	18.9	12.707	818.6	8.6
01/18/2007 15:13	35.34	18.3	12.243	830.5	8.6
01/18/2007 15:14	35.73	19	12.715	825.6	8.6
01/18/2007 15:15	36.69	19.2	12.928	810.5	8.6
01/18/2007 15:16	38.23	19.6	13.068	831.5	8.6
01/18/2007 15:17	37.44	18.6	12.641	801.9	8.6
01/18/2007 15:18	35.47	17.8	11.851	818.2	8.6
01/18/2007 15:19	35.73	18.6	12.386	812.4	8.6
01/18/2007 15:20	36.63	19	12.761	815.5	8.6
01/18/2007 15:21	37.72	19.4	13.031	827.6	8.6
01/18/2007 15:22	38.11	18.9	12.759	821.7	8.6
01/18/2007 15:23	39.22	19.3	12.943	826	8.6
01/18/2007 15:24	38.66	19.9	13.416	832.2	8.6
01/18/2007 15:25	37.71	19.8	13.359	822.1	8.6
01/18/2007 15:26	37.19	19.9	13.37	820.7	8.6
01/18/2007 15:27	35.53	18.6	12.611	816	8.6
01/18/2007 15:28	33.78	19	12.625	815.7	8.6
01/18/2007 15:29	34.17	19.6	13.258	824.4	8.6
01/18/2007 15:30	35.23	19.6	13.247	830.5	8.6
01/18/2007 15:31	36.52	19.8	13.331	835.4	8.6
01/18/2007 15:32	36.4	19.1	12.852	825.2	8.6
01/18/2007 15:33	36.26	18.4	12.33	814.6	8.6
01/18/2007 15:34	35.4	19	12.728	813.3	8.6
01/18/2007 15:35	35.27	19.5	13.112	813.5	8.6
01/18/2007 15:36	36.15	19.7	13.241	815.9	8.6
01/18/2007 15:37	36.56	19.1	12.919	828	8.6
01/18/2007 15:38	36.22	18.2	12.107	823.6	8.6
01/18/2007 15:39	35.36	18.9	12.634	820.3	8.6
01/18/2007 15:40	36.26	19.4	13.09	819.6	8.6
01/18/2007 15:41	36.11	19.5	13.146	822.1	8.6
01/18/2007 15:42	35.65	19.4	13.157	827.8	8.6
01/18/2007 15:43	35.26	19.4	13.09	829.4	8.6
01/18/2007 15:44	35.92	19.4	13.034	830.1	8.6
01/18/2007 15:45	36.69	19.5	13.146	821.3	8.6
01/18/2007 15:46	37.89	19.7	13.222	825.4	8.6
01/18/2007 15:47	37.13	18.3	12.374	819.3	8.6
01/18/2007 15:48	34.51	18.8	12.571	838.6	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 15:49	34.28	19.4	13.022	838.3	8.6
01/18/2007 15:50	35.16	19.5	13.177	804.1	8.6
01/18/2007 15:51	35.66	19.5	13.129	809.6	8.6
01/18/2007 15:52	35.66	18.9	12.763	811.5	8.6
01/18/2007 15:53	34.83	18.4	12.299	836.2	8.6
01/18/2007 15:54	34.8	18.9	12.636	814.3	8.6
01/18/2007 15:55	35.5	19.5	13.071	826.5	8.6
01/18/2007 15:56	36.52	19.4	13.037	821.8	8.6
01/18/2007 15:57	36.74	18.9	12.66	826.3	8.6
01/18/2007 15:58	35.36	18	12.062	831.3	8.6
01/18/2007 15:59	35.17	18.9	12.626	811.8	8.6
01/18/2007 16:00	36.22	19.2	12.977	815.1	8.6
01/18/2007 16:01	36.66	19.3	13.009	837.2	8.6
01/18/2007 16:02	36.81	19.2	12.908	823.4	8.6
01/18/2007 16:03	36.39	19.3	13.011	827.5	8.6
01/18/2007 16:04	35.26	19.6	13.157	826.7	8.6
01/18/2007 16:05	35.25	19.7	13.303	817.4	8.6
01/18/2007 16:06	36.7	19.7	13.27	815.3	8.6
01/18/2007 16:07	35.97	18.5	12.429	822.7	8.6
01/18/2007 16:08	33.81	18.7	12.523	814.2	8.6
01/18/2007 16:09	34.48	19	12.745	825.5	8.6
01/18/2007 16:10	35.75	19.2	12.862	822.2	8.6
01/18/2007 16:11	36.51	19.2	12.855	818.5	8.6
01/18/2007 16:12	36.73	18.7	12.63	820.6	8.6
01/18/2007 16:13	35.25	18	11.973	829.3	8.6
01/18/2007 16:14	35.15	18.8	12.518	830.1	8.6
01/18/2007 16:15	35.85	19	12.83	823.6	8.6
01/18/2007 16:16	36.53	19.4	12.934	823.9	8.6
01/18/2007 16:17	36.82	18.8	12.602	822.6	8.6
01/18/2007 16:18	35.79	17.9	11.873	814.2	8.6
01/18/2007 16:19	35.39	18.4	12.288	828.1	8.6
01/18/2007 16:20	35.08	18.9	12.684	823.2	8.6
01/18/2007 16:21	34.69	19.2	12.896	834.1	8.6
01/18/2007 16:22	35.05	19.1	12.786	851.1	8.6
01/18/2007 16:23	36.01	19.1	12.779	846.2	8.6
01/18/2007 16:24	36.22	19.3	13.056	839.9	8.6
01/18/2007 16:25	36.54	19.5	13.112	852.4	8.6
01/18/2007 16:26	38.04	19.4	13.047	851.6	8.6
01/18/2007 16:27	36.99	18.1	12.205	824.6	8.6
01/18/2007 16:28	34.95	18.5	12.262	825.1	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 16:29	34.62	19	12.619	825.3	8.6
01/18/2007 16:30	35.7	19.1	12.752	845.8	8.6
01/18/2007 16:31	37.02	18.9	12.608	842.5	8.6
01/18/2007 16:32	37.61	18.3	12.29	819.5	8.6
01/18/2007 16:33	37.3	17.8	11.795	814.6	8.6
01/18/2007 16:34	36.89	18.6	12.34	831.1	8.6
01/18/2007 16:35	37.12	18.6	12.474	827.2	8.6
01/18/2007 16:36	37.98	18.8	12.519	835.1	8.6
01/18/2007 16:37	37.71	18.1	12.125	814.2	8.6
01/18/2007 16:38	36.67	17.3	11.497	825	8.6
01/18/2007 16:39	36.88	18	11.917	828.9	8.6
01/18/2007 16:40	38.29	18.5	12.367	814.3	8.6
01/18/2007 16:41	39.24	19	12.678	822	8.6
01/18/2007 16:42	39.62	18.8	12.631	815.5	8.6
01/18/2007 16:43	38.56	19	12.726	821.1	8.6
01/18/2007 16:44	37.38	19.4	12.988	808.9	8.6
01/18/2007 16:45	36.91	19.8	13.326	824.6	8.6
01/18/2007 16:46	37.42	19.8	13.233	816.8	8.6
01/18/2007 16:47	36.59	18.3	12.405	816	8.6
01/18/2007 16:48	34.99	18.5	12.218	842.8	8.6
01/18/2007 16:49	35.31	19	12.722	835.1	8.6
01/18/2007 16:50	35.68	19.1	12.825	826.9	8.6
01/18/2007 16:51	36.35	19	12.696	824.9	8.6
01/18/2007 16:52	35.85	18.5	12.452	828.1	8.6
01/18/2007 16:53	35.05	18.1	12.04	821.7	8.6
01/18/2007 16:54	35.33	18.7	12.547	816.6	8.6
01/18/2007 16:55	36.27	19	12.785	815.6	8.6
01/18/2007 16:56	37.79	19.4	13.027	820.3	8.6
01/18/2007 16:57	37.87	19	12.808	800.5	8.6
01/18/2007 16:58	36.06	17.8	11.895	823.5	8.6
01/18/2007 16:59	34.84	18.6	12.458	820.6	8.6
01/18/2007 17:00	35.52	19.1	12.732	819.6	8.6
01/18/2007 17:01	35.76	19.2	12.917	815	8.6
01/18/2007 17:02	35.96	19	12.686	810.5	8.6
01/18/2007 17:03	36.46	19.1	12.864	813	8.6
01/18/2007 17:04	36.74	19.3	12.977	826	8.6
01/18/2007 17:05	37.97	19.4	13.11	830.6	8.6
01/18/2007 17:06	38.54	19.2	12.853	822.9	8.6
01/18/2007 17:07	37	18.2	12.318	819	8.6
01/18/2007 17:08	34.76	18.5	12.252	790.8	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 17:09	34.71	19.2	12.869	807	8.6
01/18/2007 17:10	35.77	19	12.864	834.7	8.6
01/18/2007 17:11	36.37	19.1	12.789	830.2	8.6
01/18/2007 17:12	37.52	18.8	12.663	823	8.6
01/18/2007 17:13	37.09	18.2	12.14	822	8.6
01/18/2007 17:14	35.92	18.9	12.568	822.8	8.6
01/18/2007 17:15	36.15	19.4	13.065	834.1	8.6
01/18/2007 17:16	36.47	19.6	13.152	839.6	8.6
01/18/2007 17:17	37.15	18.9	12.786	817.1	8.6
01/18/2007 17:18	36.15	18	12.029	830.4	8.7
01/18/2007 17:19	36.16	18.6	12.41	830.2	8.7
01/18/2007 17:20	36.94	19.2	12.885	825.9	8.7
01/18/2007 17:21	37.18	19.3	12.877	806.3	8.7
01/18/2007 17:22	36.93	19.1	12.819	810.6	8.7
01/18/2007 17:23	36.49	19.1	12.769	829.1	8.7
01/18/2007 17:24	35.96	19.5	13.099	823.6	8.7
01/18/2007 17:25	36.04	19.6	13.188	846.4	8.6
01/18/2007 17:26	37.68	19.7	13.225	843.7	8.6
01/18/2007 17:27	37.67	18.3	12.416	832.6	8.6
01/18/2007 17:28	36.39	18.4	12.162	813	8.6
01/18/2007 17:29	36.94	19	12.676	810.8	8.6
01/18/2007 17:30	37.33	19.2	12.808	828.7	8.6
01/18/2007 17:31	37.69	19.1	12.763	803	8.6
01/18/2007 17:32	37.75	18.7	12.56	826.8	8.6
01/18/2007 17:33	36.81	18.1	12.084	818.3	8.6
01/18/2007 17:34	36.55	18.8	12.498	819.9	8.7
01/18/2007 17:35	36.98	19.3	12.941	822.9	8.6
01/18/2007 17:36	38.23	19.3	12.886	839.6	8.6
01/18/2007 17:37	38.39	18.6	12.492	839.7	8.6
01/18/2007 17:38	37.39	17.5	11.74	824.4	8.6
01/18/2007 17:39	35.05	18.2	11.984	812.8	8.6
01/18/2007 17:40	34.92	18.9	12.555	830.5	8.6
01/18/2007 17:41	35.67	19.2	12.797	832.7	8.6
01/18/2007 17:42	36.53	19.1	12.81	823.2	8.6
01/18/2007 17:43	37.26	18.9	12.728	817	8.6
01/18/2007 17:44	37.59	19.5	13.134	814.3	8.6
01/18/2007 17:45	38.19	19.6	13.303	822.3	8.6
01/18/2007 17:46	38	19.8	13.258	839.7	8.6
01/18/2007 17:47	36.95	18.7	12.58	831.5	8.6
01/18/2007 17:48	34.19	18.2	12.107	832.2	8.6

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
01/18/2007 17:49	34.23	19	12.608	826.1	8.6
01/18/2007 17:50	35.53	19	12.73	812.2	8.6
01/18/2007 17:51	35.76	19.2	12.785	814	8.6
01/18/2007 17:52	35.84	18.8	12.696	820.4	8.6
01/18/2007 17:53	35.14	17.9	11.94	825.3	8.6
01/18/2007 17:54	34.83	18.4	12.207	822.1	8.6
01/18/2007 17:55	34.93	18.9	12.585	822.3	8.7
01/18/2007 17:56	35.74	19.1	12.752	827.7	8.6
01/18/2007 17:57	37.13	18.4	12.336	827.3	8.6
01/18/2007 17:58	37.45	17.2	11.451	818.5	8.6
01/18/2007 17:59	37.21	18	11.884	825.3	8.6
01/18/2007 18:00	38.68	18.8	12.521	822.6	8.6
01/18/2007 18:01	39.26	19.1	12.741	806.6	8.6
01/18/2007 18:02	38.53	19.1	12.774	842.5	8.6
01/18/2007 18:03	37.47	19.3	12.962	839.4	8.6

APPENDIX T

SULFURIC ACID MIST TEST DATA – IGCC

FIELD DATA SHEETS

EPA Method 1
Determination of Sampling Ports and Points

Client TECO City/State Tampa FL

Sampling Location Polk Unit 1 Date 1/17/07

Sampling Location Dimensions, in inches:

From Far Wall to Outside of Port	241
Nipple Length	13
Depth of Duct	228
Width (Rectangular Duct)	-

Equivalent Diameter Calculation (DE):

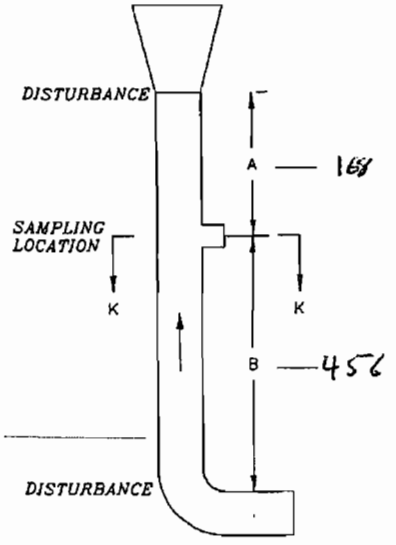
$$DE = \frac{2 \times \text{Length} \times \text{Width}}{\text{Length} + \text{Width}} = \frac{2(\ -\ )(\ -\ )}{(\ -\ +\ -\ )} = -$$

Distance to Ports From Nearest Flow Disturbance:

	Upstream - A	Downstream - B
Dimensions in Inches	168	456
Duct Diameters	0.737	2.0

Stack Area, in Square Feet 283.529

Calculations By [redacted]



Schematic of Sampling Location

Location of Traverse Points in Circular Stacks

	4	6	8	10	12
1	6.7	4.4	3.2	2.6	2.1
2	25.0	14.6	10.5	8.2	6.7
3	75.0	29.6	19.4	14.6	11.8
4	93.3	70.4	32.3	22.6	17.7
5		85.4	67.7	34.2	25.0
6		95.6	80.6	65.8	35.6
7			89.5	77.4	64.4
8			96.8	85.4	75.0
9				91.8	82.3
10				97.4	88.2
11					93.3
12					97.9

Location of Traverse Points in Rectangular Stacks

	2	3	4	5	6	7	8
1	25.0	16.7	12.5	10.0	8.3	7.1	6.3
2	75.0	50.0	37.5	30.0	25.0	21.4	18.8
3		83.3	62.5	50.0	41.7	35.7	31.3
4			87.5	70.0	58.3	50.0	43.8
5				90.0	75.0	64.3	56.3
6					91.7	78.6	68.8
7						92.9	81.3
8							93.8
9							
10							
11							
12							

Point No.	% of Stack ID	Stack ID, in.	Distance From Inside Wall, in.	Nipple Length, in.	Distance From Outside of Port, in.
1	2.1	228	4.79	13	17.79
2	6.7		15.28		28.28
3	11.8		26.9		39.90
4	17.7		40.36		53.36
5	25.0		57		70.00
6	35.6		81.17		94.17

Stack Diameter = 12 - 24 inches Relocate to 0.50 inches from stack wall

Stack Diameter > 24 inches Relocate to 1.00 inches from stack wall

Audited by [redacted] Date: 1/19/07

TRIGON

EPA Method 2

Determination of Stack Gas Velocity, Volumetric Flow Rate and Cyclonic Flow

Client Teco
Sampling Location Unit 1
Run Date 1-18-07
Barometric Pressure, in. Hg 30.09
Static Pressure, in. H_2O -1.2
Pitot Tube Coefficient .84

City, State Tampa, FL
Operators LER S'
Time 0845
Pitot Tube I.D. No. 200.108
Date Calibrated 1-5-07
Leak Check, in. H_2O <0.1 @ +9.7/-6.4

Field Data

Traverse Point Number	Velocity Head Δp Inches H_2O		Stack Temperature °F		Cyclonic Flow Determination			
					Δp, at 0° Reference		Angle Which Yields a Null Δp	
1	1.5		310					
2	1.5		310					
3	1.5		310					
4	1.5		310					
5	1.4		308					
6	1.4		311					
		SPOT		Vel	Flow	before	Run	
						LER		
						1-18-07		
Averages	1.47		309.8					

Stack Temperature, Dry, °F (A) —
Stack Temperature, Wet °F (B) —
Difference (A - B) —
Preliminary Percent Moisture —

Comments

Audited by LER Date: 1/19/07

TRIGON

EPA Methods 4 and 8 - Moisture Determination and Sample Recovery - Data Analysis

Client Name TECO
City/State Tampa FL
Sampling Location Unit 1
Clean-Up Box Number 1
Chain of Custody: Date Received 1-19-07

Project Number 046-06-121
Sample Date 1/18/07
Samples Recovered By IRO
Recovery Date 1/18/07
Received By JDS Locked? ✓

Equipment Documentation

Run Number	1	2	3	
Sample ID Number	6121-01	6121-02	6121-03	6121-
Sample Box Number	6 of 3	4 of 3	8 of 3	
Probe Number	200.108	200.109	200.108	

Analysis of Moisture and Sample Recovery - Sulfuric Acid

Reagent Recovery Container #	6121-01	6121-02	6121-03	
Impinger Absorbing Solution	80% IPA	80% IPA	80% IPA	
Description of Reagent	clear	clear	clear	
Reagent Level Marked?	✓	✓	✓	
Final Volume, ml	64	62	64	
Initial Volume, ml	100	100	100	
Net Condensed Volume, ml	-36	-38	-36	
80% Isopropanol Rinse?	✓	✓	✓	
Dilute to 250 ml in Isopropanol?	✓	✓	✓	

Analysis of Moisture and Sample Recovery - Sulfur Dioxide

Reagent Recovery Container #	6121-01	6121-02	6121-03	
Impinger Absorbing Solution	3% H_2O_2	3% H_2O_2	3% H_2O_2	
Description of Reagent	Clear	Clear	clear	
Reagent Level Marked?	✓	✓	✓	
Final Volume, ml	255	260	255	
Initial Volume, ml	200	200	200	
Net Condensed Volume, ml	55	60	55	
Distilled Water Rinse?	✓	✓	✓	
Dilute to 1000 ml in DI Water?	✓	✓	✓	

Analysis of Moisture Recovery

Silica Gel Recovery Container #	6121-01	6121-02	6121-03	
Percent Silica Gel Spent	30	40	50	
Final Weight, g	220.2	214.6	216.8	
Initial Weight, g	200	200	200	
Net Absorbed Water, g	20.2	14.6	16.8	
Total Moisture Collected, ml	75.2 - 36 = 39.2	74.6 - 38 = 36.6	71.8 - 36 = 35.8	

Reagent Blanks

Absorbing Reagent Blank	80% IPA	Rinsing Reagent Blank	DI
Absorbing Blank Identification #	6121-05	Rinsing Blank Identification #	6121-05
Absorbing Reagent Blank	3% H_2O_2	Rinsing Reagent Blank	—
Absorbing Blank Identification #	6121-05	Rinsing Blank Identification #	—

JBR

TRIGON

Isokinetic Field Data Sheet - EPA Method 8

Client Teco | Run Number 1
City/State Tampa FL | Date 1-18-07
Sampling Location Unit 1 | Operators SM LER

Bar. Press., In. Hg ~~30.09~~ 30.06 | 1.847 NOMOGRAPH SET-UP: K Factor ~~1.206~~ 1.167 | LEAK CHECKS
Static Press., In. H_2O -1.2 | ΔH @ ~~1.91~~ .971 Y = ~~.949~~ .945 | Avg. Δ P 1.47 | Pre-Test 0.006 @ 15 In. Hg.
Meter Box No. 300 ~~.992~~ .945 | Meter Temp. 71 | Ref. Δ P | Post-Test 0.005 @ 8 In. Hg.
Sample Box No. 3 | Stack Temp. 315 | Desired Nozzle .207 | Pre-Test Pitot <0.1 @ ~~9~~ 6 In. H_2O
Probe/Pitot No. 200 108 | Pitot Coeff. 0.84 | Nozzle No. Stc. 205 | Post-Test Pitot <0.1 @ ~~9~~ 6 In. H_2O
Probe Temp. Setting 250 | % Moisture 3 | Nozzle Calibration .201 .201 .200
Sample ID No. 6121 - 01 | C Factor | Nozzle Diameter .201 | Observer
Filter No. N/A | Start Time 13.49 | End Time 1456 | Agency

Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading Δ P In. H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp. °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
A 1	0	~~585.540~~ ~~533.700~~	1.3	1.52	1.50	76	4	310	252	NA	62
2	2.5	587.21	1.5	1.75	1.75	76	4	310	255		60
3	5	~~589~~ 13	1.5	1.75	1.75	77	4	310	258		58
4	7.5	691.0	1.4	1.63	1.60	78	4	309	256		54
5	10	692.72	1.6	1.87	~~2.00~~ 1.90	79	4	310	254		52
6	12.5	694.52	1.3	1.52	1.50	80	5	308	256		52
B 1	15	696.38	1.2	1.40	1.40	80	5	308	255		52
2	17.5	698.10	1.3	1.52	1.50	81	5	310	257		56
3	20	699.84	1.4	1.63	1.60	82	5	310	254		55
4	22.5	601.72	1.5	1.75	1.75	81	5	310	254		53
5	25	603.07	1.4	1.63	1.60	81	5	310	255		53
6	27.5	605.22	1.2	1.40	1.40	81	5	310	252		52
C 1	30	606.88	1.5	1.75	~~1.75~~ 1.90	80	5	309	255		56
2	32.5	608.74	1.6	~~2.00~~ 1.87	~~2.00~~ 1.90	81	5	310	256		54
3	35	610.60	1.5	1.75	1.75	82	5	310	254		54
4	37.5	612.61	1.5	1.75	1.75	82	5	310	253		53
5	40	614.46	1.4	1.63	1.60	82	5	310	254		54
6	42.5	616.32	1.3	1.52	1.50	82	5	309	254		54
D 1	45	618.01	1.6	~~2.00~~ 1.87	~~2.00~~ 1.90	80	5	309	254		56
2	47.5	619.96	1.5	1.75	1.75	82	5	310	253		52
3	50	621.84	1.6	~~2.00~~ 1.87	~~2.00~~ 1.90	82	5	310	252		53
4	52.5	623.81	1.7	1.99	2.00	83	5	310	253		54
5	55	625.91	1.6	1.87	1.90	83	5	310	252		54
6	57.5	627.52	1.2	1.40	1.40	83	5	309	253		55
	60	629.643	—	—	—	—	—	—	—	—	—
		44.101 ✓	1.44 ✓		1.681 ✓	80.6 ✓	✓	309.6 ✓			

Comments:

Isokinetic Check: 99.5

Audited by: ~~LER~~ Date: 1/19/07

TRIG

Isokinetic Field Data Sheet - EPA Method 8

Client: TECO | Run Number: 2
City/State: Tampa FL. | Date: 1/18/07
Sampling Location: Unit 1 | Operators: SM LER

Bar. Press., In. Hg: 30.06 | NOMOGRAPH SET-UP: K Factor: 1.27 | LEAK CHECKS
Static Press., In. H_2O: -1.2 | ΔH @ 1.847 Y = .971 | Avg. Δ P: 1.47 | Pre-Test: .002 @ 15 In. Hg.
Meter Box No.: 360.045 | Meter Temp.: 82 | Ref. Δ P: — | Post-Test: 0.001 @ 8 In. Hg.
Sample Box No.: 3 | Stack Temp.: 310 | Desired Nozzle: .204 | Pre-Test Pitot <0.1 @ 14.5 In. H_2O
Probe/Pitot No.: 300.109 | Pitot Coeff.: 0.84 | Nozzle No.: 300.211 | Post-Test Pitot <0.1 @ 14.5 In. H_2O
Probe Temp. Setting: 250 | % Moisture: 3 | Nozzle Calibration: .204, .204, .205
Sample ID No.: 6121-07 | C Factor: — | Nozzle Diameter: .204 | Observer: —
Filter No.: NA | Start Time: 1527 | End Time: 1634 | Agency: —

	Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading Δ P In. H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp. °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp Temp °F
D	1	1520	630.283	1.3	1.65	1.65	82	4	313	253	NA	60
	2	2.5	621.96	1.4	1.78	1.80	82	4	312	254	|	56
	3	5	633.79	1.4	1.78	1.80	82	4	312	256	|	55
	4	7.5	635.46	1.5	1.91	1.90	82	4	311	254	|	54
	5	10	637.67	1.5	1.91	1.90	83	4	311	255	|	54
	6	12.5	639.51	1.3	1.65	1.65	82	4	310	253	|	53
C	1	15	641.32	1.3	1.65	1.65	81	4	310	251	|	52
	2	17.5	643.12	1.3	1.65	1.65	81	4	311	250	|	52
	3	20	644.92	1.4	1.78	1.80	81	4	311	253	|	52
	4	22.5	646.79	1.4	1.78	1.80	81	4	310	254	|	53
	5	25	648.67	1.3	1.65	1.65	80	4	310	255	|	53
	6	27.5	650.46	1.5	1.91	1.90	80	4	310	254	|	54
B	1	30	652.36	1.4	1.78	1.80	79	4	311	254	|	54
	2	32.5	654.23	1.3	1.65	1.65	79	4	310	253	|	53
	3	35	656.07	1.4	1.78	1.80	79	4	310	254	|	54
	4	37.5	658.01	1.3	1.65	1.65	79	4	310	255	|	53
	5	40	659.84	1.3	1.65	1.65	79	4	310	256	|	54
	6	42.5	661.58	1.2	1.53	1.55	79	4	309	255	|	54
A	1	45	663.33	1.2	1.53	1.55	78	4	308	254	|	56
	2	47.5	665.09	1.4	1.78	1.80	78	4	310	253	|	55
	3	50	666.94	1.4	1.78	1.80	78	4	310	254	|	54
	4	52.5	668.79	1.5	1.91	1.90	78	4	309	254	|	54
	5	55	670.68	1.4	1.78	1.80	79	4	310	255	|	53
	6	57.5	672.60	1.6	2.04	2.00	79	4	310	255	|	53
		60	674.555								V	
							80.0		310.3	was		
			44.352	1.38		1.754	765		309.9			

Comments: _____

Isokinetic Check: 100.0

Audited by: LER Date: 1/19/07

Isokinetic Field Data Sheet - EPA Method 8

Client Tec 6 — Run Number 3
City/State Tampa FL. — Date 1/18/07
Sampling Location Unit 1 — Operators SM LER

Bar. Press., In. Hg 30.00 — NOMOGRAPH SET-UP: K Factor 1.19 — LEAK CHECKS
Static Press., In. H_2O -1.2 — ΔH @ 1.817 Y = .971 — Avg. Δ P 1.47 — Pre-Test .002 @ 12 In. Hg.
Meter Box No. 306.045 — Meter Temp. 78 — Ref. Δ P — Post-Test 0.002 @ 9 In. Hg.
Sample Box No. 3 — Stack Temp. 310 — Desired Nozzle .204 — Pre-Test Pitot <0.1 @ 55-68 In. H_2O
Probe/Pitot No. 700.108 — Pitot Coeff. 0.84 — Nozzle No. 300.205 — Post-Test Pitot <0.1 @ 61-72 In. H_2O
Probe Temp. Setting 250 — % Moisture 3 — Nozzle Calibration .201 .201 .202
Sample ID No. 6121-03 — C Factor — Nozzle Diameter .201 — Observer —
Filter No. N/A — Start Time 1655 — End Time 1803 — Agency —

Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading Δ P In. H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp. °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
A 1	0	675.464	1.5	1.80	1.80	77	4	310	253	NA	60
2	2.5	677.41	1.4	1.68	1.70	78	4	310	254		55
3	5	679.76	1.4	1.68	1.70	79	4	310	253		54
4	7.5	681.97	1.4	1.68	1.70	79	4	310	254		52
5	10	682.79	1.5	1.80	1.80	79	4	316	252		52
6	12.5	684.67	1.5	1.80	1.80	79	4	310	252		52
B 1	15	686.54	1.3	1.56	1.55	78	4	309	251		53
2	17.5	688.32	1.2	1.44	1.45	78	4	310	254		52
3	20	690.08	1.3	1.56	1.55	79	4	310	253		52
4	22.5	691.82	1.3	1.56	1.55	79	4	310	252		52
5	25	693.61	1.4	1.68	1.70	79	4	310	253		53
6	27.5	695.33	1.4	1.68	1.70	79	4	310	253		52
C 1	30	697.17	1.4	1.68	1.70	77	4	309	251		54
2	32.5	699.05	1.5	1.80	1.80	77	4	310	252		53
3	35	700.90	1.4	1.68	1.80	77	4	310	253		54
4	37.5	702.75	1.3	1.56	1.60	78	4	310	252		54
5	40	704.60	1.5	1.80	1.80	78	4	310	254		53
6	42.5	706.48	1.4	1.70	1.70	78	4	310	253		53
D 1	45	708.31	1.4	1.70	1.70	77	4	310	254		55
2	47.5	710.19	1.5	1.80	1.80	77	4	316	253		53
3	50	712.08	1.6	1.91	1.90	77	4	310	251		52
4	52.5	713.96	1.4	1.70	1.70	77	4	310	251		53
5	55	715.71	1.4	1.70	1.70	77	4	310	253		54
6	57.5	717.49	1.6	1.91	1.90	77	4	310	254		53
	60	719.388									
		43.984	1.42		1.713	77.9		309.9			

Comments: _____

Isokinetic Check: 100.5

Audited by: LER Date: 1/19/07

TRIGON

CALCULATED DATA

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 1
Date: 01/18/07

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.201 inches
Barometric Pressure, P_b:	30.09 "Hg	Nozzle Area, A_n:	0.0002203 ft^2
Stack Pressure, P_s:	30.00 "Hg	Average Orifice Meter, ΔH:	1.681 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	44.101 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	80.6 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	309.6 °F
	11.4 % O_2	Average $\sqrt{\Delta p}$:	1.199 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	39.2 ml
	79.8 % N_2	Meter Box Y:	0.971 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	1.848 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	42.236 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.042 %
$FDA = 1.0 - B_{ws}$	0.958 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \% CO))$	29.86 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.37 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	80.49 ft/second
$Q_s = v_s \times A_s \times 60$	1369255.2 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	902458.2 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 60)$	100.4 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.08
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	3.6

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	4.491E-07	lb/dscf
F_c-factor =	2310	dscf/mmBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01179	lb/mmBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	24.3183	lb/hr

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 2
Date: 01/18/07

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.204 inches
Barometric Pressure, P_b:	30.06 "Hg	Nozzle Area, A_n:	0.000227 ft^2
Stack Pressure, P_s:	29.97 "Hg	Average Orifice Meter, ΔH:	1.754 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	44.352 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	80.0 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	310.3 °F
	11.8 % O_2	Average $\sqrt{\Delta p}$:	1.172 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	36.6 ml
	79.4 % N_2	Meter Box Y:	0.971 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	1.725 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	42.484 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.039 %
$FDA = 1.0 - B_{ws}$	0.961 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.88 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.42 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	78.66 ft/second
$Q_s = v_s \times A_s \times 60$	1338182.3 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	882943.1 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	100.2 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.08
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	4.5

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	5.581E-07 lb/dscf
F_c-factor =	2310 dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01465 lb/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	29.5667 lb/hr

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 3
Date: 01/18/07

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.201 inches
Barometric Pressure, P_b:	30.06 "Hg	Nozzle Area, A_n:	0.00022034 ft^2
Stack Pressure, P_s:	29.97 "Hg	Average Orifice Meter, ΔH:	1.713 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	43.984 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	77.9 °F
Gas Analysis:	8.8 % CO_2	Average Stack Temp., T_s:	309.9 °F
	11.8 % O_2	Average √Δp:	1.190 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	35.8 ml
	79.4 % N_2	Meter Box Y:	0.971 *dimensionless*

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	1.688 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	42.294 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.038 %
$FDA = 1.0 - B_{ws}$	0.962 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.88 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.42 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	79.82 ft/second
$Q_s = v_s \times A_s \times 60$	1357841.6 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	897010.4 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 6$	101.1 %

Data from Laboratory Analysis:	**H_2SO_4**
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.08
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	4.6

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	5.731E-07	lb/dscf
F_c-factor =	2310	dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01504	lb/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	30.8435	lb/hr

LABORATORY ANALYSIS

TECO TAMPA ELECTRIC

Laboratory Services

5012 Causeway Blvd * Tampa Fl. 33619 * Ph (813)630-7378 * Fax (813)630-7360 * DOH #E54272

Report For:

Report Date: 02/15/2007

Laboratory ID: AA86400

Location Code: TE_PPS_1_SAM_SYNGAS

Sample Information

Description: Polk No. 1 Acid Mist Comp on Syngas

Project Account Code:

Sample Collection Method:

Sampled By: TRIGON

Date and Time Collected: 01/18/2007 6:00:00 PM

Date of Sample Receipt: 01/19/2007

Laboratory Results

PARAMETER	Result	Units	MDL	Qualifier Code	Test Method	Analyst	Analysis Date & Time	Lower Limit	Upper Limit	Violation Check
Normality of BaCl2 * 2H2O	0.00975		0.0001			MM	11/08/2006 11:00:00 AM			
SO3 emission rate, lbs/hr	0.06	lbs/hr			EPA - RM8	RAM	01/31/2007 7:41:00 AM			
SO3, Avg. of Blank Titrations	0.08	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #1, Avg. of Titrations	3.6	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #2, Avg. of Titrations	4.5	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #3, Avg. of Titrations	4.6	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Volume of Contained Sample	500	milliliters	1		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Volume of Sample Aliquot	100	milliliters	0.1		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			

Comments

All results calculated on a wet to wet basis, unless otherwise indicated.

Data Qualifier Codes Explanation:

Subcontracted Laboratories:

Robert Dorey,
Manager, Laboratory Services

CALIBRATION DATA

QUALITY ASSURANCE AND EQUIPMENT CALIBRATION PROCEDURES

General. Field or laboratory test equipment purchased or fabricated by Trigon Engineering Consultants is assigned a unique, permanent identification number. New items for which calibration is required are calibrated before initial field use. Equipment whose calibration status may change with use or with time is inspected in the field before testing begins, and again upon return from field use. When an item of equipment is found to be out of calibration, it is adjusted and recalibrated or retired from service. Trigon's equipment is periodically recalibrated, regardless of the outcome of these regular inspections.

Calibrations are conducted in accordance with United States Environmental Protection Agency (US EPA) specifications. Trigon follows the calibration procedures outlined in EPA Reference Methods found in the Code of Federal Regulations (Volume 40, Part 60) and those recommended in the Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III (EPA/600/R-94/038c). When the Reference Methods do not detail procedures, Trigon uses methods such as those prescribed by the American Society for Testing and Materials (ASTM).

Data obtained during calibrations are recorded on standardized forms, which are verified for completeness and accuracy by the Quality Assurance Manager. Data reduction and subsequent calculations are performed using Trigon's Air Quality Data System. Calibration calculations are performed by an environmental scientist, independently audited by the Project Manager, and reviewed by the Quality Assurance Manager for verification of data. Copies of calibration data are included in the test or project report.

Inspection and Maintenance. An effective preventative maintenance program is necessary to ensure equipment performance quality prior to, during, and following the source test. Equipment returning from the field is inspected before it is returned to storage. During the course of these inspections, items are cleaned, repaired, reconditioned, and recalibrated when necessary.

Equipment that is transported to the field for a test project is inspected again prior to being packed. Trigon performs these quality assurance checks prior to departure for the project site to detect equipment problems, which may occur during periods of storage. Trigon transports adequate back-up equipment to the project site so as to minimize delays in the test schedule.

Calibration. Source sampling equipment that requires calibration include nozzles, pitot tubes, thermometers, flow meters, dry gas meters, and barometers. The following sections briefly describe the calibration procedures followed by Trigon.

Nozzles. Probe nozzles are uniquely and permanently identified at the time of purchase or fabrication, and are calibrated before initial field use and prior to the source test. The inside diameter of the nozzle is measured to the nearest 0.001 inch using a precision jeweled micrometer. Three measurements are made using different diameters. If the difference between the high and the low measurements do not exceed 0.004 inch, the average of the three measurements is used. If the difference exceeds this amount, or when the nozzle becomes nicked, dented, or corroded, the nozzle is reshaped, sharpened, and recalibrated. Regardless of usage, nozzles are inspected on a yearly basis.

Pitot Tubes. Trigon Type S pitot tubes have been constructed and calibrated using those recommendations in accordance with EPA Reference Method 2, Calibration Procedures 2 and 2a. Trigon Type S pitot tubes C_p coefficients have been determined according Calibration Procedure 2a. Trigon standard pitot tubes have been assigned a C_p coefficient of 0.99 according to Calibration Procedure 2. Pitot tubes are visually inspected prior to field use. If the inspection indicates damage, the calibration is rechecked. Regardless of usage, Trigon pitot tubes are inspected and recalibrated on a yearly basis.

Dry Gas Meter and Orifice. Console metering systems receive a full calibration at the time of purchase and annually, thereafter. Post-test calibrations are performed after the source test. If the calibration factor, γ (gamma), deviates by less than five percent from the initial value, the test data is deemed acceptable. If γ deviates by more than five percent, the meter is recalibrated and the meter coefficient (initial or recalibrated) that yields the lowest sample volume for the test runs is used. Standard practice at Trigon is to recalibrate the dry gas meter when the γ is found to be outside the range of $0.98 \leq \gamma \leq 1.02$.

Barometer. Field barometers are compared to a reference mercury barometer and are deemed acceptable when they agree to within $\pm$ 0.1 inches Hg. The barometric pressure is corrected for pressure and temperature. Prior to and following the field test the field barometer is verified against the reference barometer.

Thermometers. New thermometers, pyrometers and thermocouples purchased or fabricated by Trigon are calibrated using the procedures described by US EPA Test Protocol. Calibration tolerance limits are as follow:

Impinger Temperature Gauge	±1°C or 2°F
Dry Gas Meter Temperature Gauge	±3°C or 5.4°F
Stack Thermocouples	±1.5% of absolute temperature

Thermometers and thermocouples are inspected and calibrated prior to and following the field test. Regardless of usage, Trigon thermometers and thermocouples are inspected and recalibrated on a yearly basis.

Laboratory Equipment. Trigon Engineering Consultants has a written quality assurance document that covers calibration and maintenance of laboratory equipment. This includes calibration of the analytical balance against Class S weights. Calibration of thermometers, barometers, and wet test meters are traceable to NIST. A copy of our quality assurance document may be obtained by written request.

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Is hereby granting a Louisiana Environmental Laboratory Accreditation to:

Trigon Engineering Consultants, Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Agency Interest No. 91040

According to the Louisiana Administrative Code, Title 33, Part I, Subpart 3, LABORATORY ACCREDITATION, the State of Louisiana formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed in the attachment.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part I, Subpart 3 requirements and acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part I. Please contact the Department of Environmental Quality, Louisiana Environmental Laboratory Accreditation Program (LELAP) to verify the laboratory's scope of accreditation and accreditation status. Accreditation by the State of Louisiana is not an endorsement or a guarantee of validity of the data generated by the laboratory, and does not constitute an endorsement of the suitability of the listed methods for any specific application.

To be accredited initially and maintain accreditation, the laboratory agrees to participate in two single-blind, single-concentration PT studies, where available, per year for each field of testing for which it seeks accreditation or maintains accreditation as required in LAC 33:I.4711.

Melvin C. Mitchel Sr., Accreditation Officer
Louisiana Environmental Laboratory Accreditation Program

Certificate Number: 04036
Expiration Date: June 30, 2007
Issued On: July 1, 2006

Louisiana Environmental Laboratory
LELAP
Accreditation Program

Laboratory Scope of Accreditation

Organization

04036 (704) 598-1049
Trigon Engineering Consultants Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Louisiana Stack Testing Program Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
1238	Method 13B 40 CFR 60 App. A	Fluoride	Accredited	7/1/2003	STATE	LA
1248	Method 1A 40 CFR 60 App. A	Traverse Points	Accredited	7/1/2003	STATE	LA
1253	Method 204 40 CFR 51 App. M	Criteria for and Verification of a Permanent or Temporary Total Enclosure	Accredited	7/1/2003	STATE	LA
1262	Method 22 40 CFR 60 App. A	Visible emissions from coke oven batteries	Accredited	7/1/2003	STATE	LA
1294	Method 315 40 CFR 63 App. A	Particulate and Methylene Chloride Extractable Matter (MCEM)	Accredited	7/1/2003	STATE	LA
1757	Method 10 40 CFR 60 App. A (Sample Only)	Carbon monoxide	Accredited	7/1/2003	STATE	LA
1793	Method 12 40 CFR 60 App. A (Sample Only)	Lead	Accredited	7/1/2003	STATE	LA
1857	Method 26 40 CFR 60 App. A (Sample Only)	Hydrochloric acid (Hydrogen chloride (gas only))	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Bromine (Br2)	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Chlorine	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrochloric acid (Hydrogen chloride (gas only))	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrogen Bromide (HBr)	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrogen fluoride (Hydrofluoric acid)	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Antimony	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Arsenic	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Barium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Beryllium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Cadmium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Chromium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Cobalt	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Copper	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Lead	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Manganese	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Mercury	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Nickel	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Phosphorus total	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Selenium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Silver	Accredited	7/1/2003	STATE	LA

Issue Date: July 1, 2006
Expiration Date: June 30, 2007

Print Date 6/14/2006 4:06:54 PM

Louisiana Environmental Laboratory
LELAP
Accreditation Program

Laboratory Scope of Accreditation

Organization

04036 (704) 598-1049
Trigon Engineering Consultants Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Louisiana Stack Testing Program Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Thallium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Zinc	Accredited	7/1/2003	STATE	LA
1951	Method 6C 40 CFR 60 App. A (Sample Only)	Sulfur dioxide	Accredited	7/1/2003	STATE	LA
1963	Method 7E 40 CFR 60 App. A (Sample Only)	Nitrogen Oxides	Accredited	7/1/2003	STATE	LA
1967	Method 9 40 CFR 60 App. A (Sample Only)	Opacity	Accredited	7/1/2003	STATE	LA
1971	NCASI Vents (Sample Only)	Chlorine	Accredited	7/1/2003	STATE	LA
1971	NCASI Vents (Sample Only)	Chlorine dioxide res. disinfectant	Accredited	7/1/2003	STATE	LA
2035	Alcoa Method 4075A	Gaseous Fluoride	Accredited	7/1/2003	STATE	LA
2035	Alcoa Method 4075A	Particulate Flouride	Accredited	7/1/2003	STATE	LA
2043	Alcoa RM 4075A TF	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2044	Alcoa RM 4076TF-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2045	Alcoa RM 4076-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2046	Alcoa RM 913C-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2047	Alcoa RM 914F-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2048	Alcoa RM 4076D-92	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA

Air and Emissions Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
703	EPA 202	Condensible Particulate Matter	Accredited	7/7/2002	STATE	
762	RM 1	Stack traverses	Accredited	7/7/2002	STATE	
776	RM 17	Particulates	Accredited	7/7/2002	STATE	
779	RM 2	Stack gas velocity volume flow rate	Accredited	7/7/2002	STATE	
780	RM 20	SO2 NOX O2 CO2 from stationary gas turbines	Accredited	7/7/2002	STATE	
787	RM 25A	VOC's	Accredited	7/7/2002	STATE	
798	RM 2A	Volume flow rate through small pipes and ducts	Accredited	7/7/2002	STATE	LA
800	RM 2C	Stack gas velocity volume flow rate in small stacks/ducts	Accredited	7/7/2002	STATE	LA
801	RM 2D	Volume flow rate in small pipes and ducts	Accredited	7/7/2002	STATE	LA
803	RM 3	Carbon dioxide oxygen dry molecular weight	Accredited	7/7/2002	STATE	LA
804	RM 3A	Carbon dioxide oxygen	Accredited	7/7/2002	STATE	LA

Louisiana Environmental Laboratory
LELAP
Accreditation Program

Laboratory Scope of Accreditation

Organization

04036 (704) 598-1049
Trigon Engineering Consultants Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Air and Emissions Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
805	RM 3B	Carbon dioxide oxygen carbon monoxide	Accredited	7/7/2002	STATE	LA
807	RM 4	Moisture content	Accredited	7/7/2002	STATE	LA
808	RM 5	Particulates	Accredited	7/7/2002	STATE	LA
816	RM 6	Sulfur dioxide	Accredited	7/7/2002	STATE	LA
826	RM 8	Sulfuric acid mist sulfur dioxide	Accredited	7/7/2002	STATE	
2035	Alcoa Method 4075A	Gaseous Fluoride	Accredited	7/1/2003	STATE	LA
2035	Alcoa Method 4075A	Particulate Flouride	Accredited	7/1/2003	STATE	LA

Issue Date: July 1, 2006
Expiration Date: June 30, 2007

Print Date 6/14/2006 4:06:54 PM

Meter Console Information	
Console Number:	300.045
Dry Gas Meter Number:	009421
Calibration Date:	12/27/2006
Expiration Date:	12/27/2007

Calibration Condition	
Time:	
Barometric Pressure (P_b):	29.20
Calibration Technician:	JAJ
Wet Test Meter ID:	11088.00
Wet Test Meter Verification Date:	8/1/2006

Pass Positive Leak Check?	Yes
Pass Negative Leak Check?	Yes

		Console Meter						Wet Test Meter						Run Time			
DGM Orifice Setting	Vacuum Setting	Meter Initial Volume	Meter Final Volume	Sample Volume	Outlet Temp. Initial	Outlet Temp. Final	Outlet Temp. Average	Wet Test Initial Volume	Wet Test Final Volume	Wet Test Volume	Wet Test Temp. Initial	Wet Test Temp. Final	Wet Test Temp. Average	Minutes	Seconds	hundreds	Elapsed
(P_m)	(2-4 in Hg)	(V_{di})	(V_{df})	(V_m)	(T_{di})	(T_{df})	(T_d)	(V_{wi})	(V_{wf})	(V_w)	(T_{wi})	(T_{wf})	(T_w)				Θ
in. H_2O	in Hg	cubic feet	cubic feet	cubic feet	°F	°F	°F	cubic feet	cubic feet	cubic feet	°F	°F	°F				minutes
0.5	3.0	440.5	445.715	5.215	69	71	70.0	4	9	5.000	67	67	67.0	12.0	10.0	84.0	12.175
1.0	3.0	446	451.21	5.210	71	73	72.0	4	9	5.000	67	67	67.0	8.0	53.0	79.0	8.8912
1.5	3.0	451.5	461.935	10.435	73	76	74.5	1	11	10.000	67	67	67.0	14.0	44.0	96.0	14.743
2.0	3.0	462.2	472.645	10.445	77	81	79.0	1	11	10.000	67	67	67.0	12.0	58.0	30.0	12.97
3.0	3.0	473	483.464	10.464	80	83	81.5	1	11	10.000	67	67	67.0	10.0	41.0	6.0	10.684
4.0	3.0	483.8	494.24	10.440	83	86	84.5	1	11	10.000	67	67	67.0	9.0	16.0	50.0	9.2717

DGM Orifice Setting	DGM Factor	DGM Factor	Orifice Meter	Orifice Meter
(P_m)	γ_i	$\Delta\gamma$	$\Delta H_@$	$\Delta\Delta H_@$
in. H_2O			in. H_2O	in. H_2O
0.5	0.963	-0.008	1.697	-0.149
1	0.966	-0.005	1.803	-0.043
1.5	0.968	-0.003	1.851	0.004
2	0.974	0.003	1.894	0.047
3	0.975	0.004	1.919	0.072
4	0.980	0.009	1.916	0.069
	0.971	γ Average	1.847	ΔH@ Average

Meter Box Thermocouple Calibration:

Test Points	30	50	75	90	120
Reading	31	51	75	90	120

$\gamma = V_w * P_b * (T_d + 460) / V_d * (P_b + \Delta H/13.6) * (T_w + 460)$

$\Delta H_@ = ((0.0319 * \Delta H) / (P_b * (T_d + 460))) * (((T_w + 460) * \theta) / V_w)^2$

Note: For Calibration Factor γ, the ratio of the calibration meter to dry gas meter, acceptable tolerance of individual values from the average is ±0.02.

Note: For $\Delta H_@$, orifice pressure differential that equates to 0.75 cfm (0.0212 m3/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2 inches (5.1mm) H2O.

TEMPERATURE SENSOR CALIBRATION FORM
NIST REFERENCE THERMOMETER TRANSFER CALIBRATION

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	NIST Reference Instrument Temperature Degrees F	Transfer Instrument Temperature Degrees F	Temperature Difference Calculation Percent, %
-30 to 120 Deg. F Thermometer Serial Number F96-247					
100.022	1	Water Bath	32	32	0.00
	2	Water Bath	70	71	-0.19
	3	Water Bath	140	140	0.00
-5 to 400 Deg. C Thermometer Serial Number U38717					
100.024	1	Water Bath	80	26 Deg. C	0.22
	2	Water Bath	140	60 Deg. C	0.00
	3	Water Bath	200	92 Deg. C	0.36
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-124997 CEM					
100.025	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	500	0.00
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000338 Blue Team					
300.380	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	502	-0.21
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000347 Gold Team					
300.381	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	501	-0.10
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-148889 Grey Team					
100.026	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	250	0.00
	3	Tegam Calibrator	500	500	0.00
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-148841					
100.027	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	252	-0.28
	3	Tegam Calibrator	500	500	0.00
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000335 Lab					
300.382	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	250	0.00
	3	Tegam Calibrator	500	501	-0.10

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
NIST REFERENCE THERMOMETER TRANSFER CALIBRATION

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	NIST Reference Instrument Temperature Degrees F	Transfer Instrument Temperature Degrees F	Temperature Difference Calculation Percent, %
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000331					
300.383	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	250	0.00
	3	Tegam Calibrator	500	499	0.10
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-225752					
100.040	1	Tegam Calibrator	32	31	0.20
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	499	0.10

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM

THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Omega HH-25 KF Dry Bulb - CEM					
100.025	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Oil Bath	375	375	0.00
Omega HH-25 KF Wet Bulb - CEM					
100.025	1	Water Bath	65	65	0.00
	2	Water Bath	135	134	0.17
	3	Oil Bath	374	374	0.00
Omega HH501 BK Dry Bulb - Blue Team					
300.380	1	Water Bath	65	65	0.00
	2	Water Bath	136	135	0.17
	3	Oil Bath	376	375	0.12
Omega HH501 BK Wet Bulb - Blue Team					
300.380	1	Water Bath	65	65	0.00
	2	Water Bath	134	135	-0.17
	3	Oil Bath	373	375	-0.24
Omega HH501 BK Dry Bulb - Gold Team					
300.381	1	Water Bath	65	65	0.00
	2	Water Bath	134	135	-0.17
	3	Oil Bath	375	375	0.00
Omega HH501 BK Wet Bulb - Gold Team					
300.381	1	Water Bath	65	65	0.00
	2	Water Bath	136	135	0.17
	3	Oil Bath	377	376	0.12
Omega HH-25 KF Dry Bulb - Grey Team					
100.026	1	Water Bath	64	65	-0.19
	2	Water Bath	134	135	-0.17
	3	Water Bath	374	375	-0.12
Omega HH-25 KF Wet Bulb - Grey Team					
100.026	1	Water Bath	65	65	0.00
	2	Water Bath	134	135	-0.17
	3	Water Bath	374	375	-0.12

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Omega HH501 BK Dry Bulb - Lab					
300.382	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	374	375	-0.12
Omega HH501 BK Wet Bulb - Lab					
300.382	1	Water Bath	65	65	0.00
	2	Water Bath	135	136	-0.17
	3	Water Bath	374	375	-0.12
Omega HH501 BK Dry Bulb					
300.383	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	375	375	0.00
Omega HH501 BK Wet Bulb					
300.383	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	375	375	0.00
Omega HH-25 KF Dry Bulb					
100.040	1	Water Bath	64	65	-0.19
	2	Water Bath	135	135	0.00
	3	Water Bath	375	376	-0.12
Omega HH-25 KF Wet Bulb					
100.040	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	376	375	0.12
High Temperature					
100.015	1	Water Bath	148	148	0.00
	2	Muffle Furnace	305	301	0.52
	3	Muffle Furnace	550	546	0.40
	4	Muffle Furnace	975	973	0.14

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM

THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1.12.2007
Ambient Temperature, Deg. F: 64
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Umbilical Adaptor #1					
300.030	1	Water Bath	33	33	0.00
	2	Water Bath	60	62	-0.38
	3	Water Bath	135	135	0.00
Umbilical Adaptor #2					
300.031	1	Water Bath	34	34	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	135	135	0.00
Umbilical Adaptor #3					
300.032	1	Water Bath	34	34	0.00
	2	Water Bath	61	62	-0.19
	3	Water Bath	132	132	0.00
Umbilical Adaptor #4					
300.042	1	Water Bath	33	34	-0.20
	2	Water Bath	62	62	0.00
	3	Water Bath	136	136	0.00
Umbilical Adaptor #5					
300.317	1	Water Bath	33	33	0.00
	2	Water Bath	60	60	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #6					
300.044	1	Water Bath	33	33	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #7					
300.134	1	Water Bath	33	33	0.00
	2	Water Bath	61	62	-0.19
	3	Water Bath	134	133	0.17
Umbilical Adaptor #8					
300.135	1	Water Bath	33	33	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	135	135	0.00

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1.16.2007
Ambient Temperature, Deg. F: 70
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
DGM Inlet/Outlet					
300.035	1	Ambient Air	35	35	0.00
	2	Ambient Air	65	65	0.00
	3	Ambient Air	83	84	-0.18
DGM Inlet/Outlet		Ambient Air			
300.045	1	Ambient Air	36	36	0.00
	2	Ambient Air	68	69	-0.19
	3	Ambient Air	86	86	0.00
DGM Inlet/Outlet					
300.200	1	Ambient Air	34	35	-0.20
	2	Ambient Air	67	69	-0.38
	3	Ambient Air	84	85	-0.18
DGM Inlet/Outlet					
300.214	1	Ambient Air	35	36	-0.20
	2	Ambient Air	64	65	-0.19
	3	Ambient Air	84	86	-0.37
DGM Inlet/Outlet					
300.241	1	Ambient Air	34	35	-0.20
	2	Ambient Air	65	65	0.00
	3	Ambient Air	83	84	-0.18
DGM Inlet/Outlet					
300.310	1	Ambient Air	35	35	0.00
	2	Ambient Air	66	65	0.19
	3	Ambient Air	86	86	0.00
DGM Inlet/Outlet					
300.321	1	Ambient Air	36	36	0
	2	Ambient Air	66	65	0.19
	3	Ambient Air	85	85	0
DGM Inlet/Outlet					
300.388	1	Ambient Air	35	36	-0.20
	2	Ambient Air	64	65	-0.19
	3	Ambient Air	84	85	-0.18

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1/5/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
8' Probe					
200.041	1	Water Bath	66	66	0.00
	2	Water Bath	160	156	0.65
	3	Oil Bath	370	371	-0.12
8' Probe					
200.045	1	Water Bath	66	66	0.00
	2	Water Bath	161	160	0.16
	3	Oil Bath	380	380	0.00
8' Probe					
200.108	1	Water Bath	65	65	0.00
	2	Water Bath	157	159	-0.32
	3	Oil Bath	375	374	0.12
8' Probe					
200.109	1	Water Bath	65	65	0.00
	2	Water Bath	161	160	0.16
	3	Oil Bath	377	375	0.24
9' Probe					
200.363	1	Water Bath	67	66	0.19
	2	Water Bath	165	160	0.80
	3	Oil Bath	361	366	-0.61
9' Probe					
200.101	1	Water Bath	67	66	0.19
	2	Water Bath	156	157	-0.16
	3	Oil Bath	366	371	-0.61

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TYPE "S" PITOT TUBE CALIBRATION FORM

Date: 01/05/07

Calibrator: JAJ

Specifications:

A.) Pitot tube assembly must be level.

B.) If pitot tube is damaged explain under comments section.

C.) $Z = A \sin \gamma$ (<0.125) and $W = A \sin \theta$ (<0.03125)

D.) α <10° and β <5°

Probes w/ Pitot Tubes

I.D. Length	α1°	α2°	β1°	β2°	γ°	θ°	Z, in.	W, in.	A	PA, in.	PB, in.	Dt, in.	Pass/Fail
200.021 2'	2.0	1.0	1.0	0.0	1.0	0.0	0.018	0.00000	1.040	0.520	0.520	0.338	Pass
200.063 2'	1.0	2.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.935	0.468	0.467	0.371	Pass
200.569 2'	1.0	2.0	3.0	2.0	3.0	1.0	0.049	0.01639	0.939	0.470	0.469	0.373	Pass
200.074 2'	1.0	0.0	0.0	0.0	1.0	0.0	0.016	0.00000	0.928	0.464	0.464	0.370	Pass
200.669 2'	1.0	2.0	3.0	2.0	3.0	0.0	0.048	0.00000	0.924	0.462	0.462	0.371	Pass
200.300 2'	1.0	0.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.631	0.316	0.315	0.244	Pass
200.004 3'	2.0	2.0	2.0	2.0	3.0	1.0	0.050	0.01682	0.964	0.482	0.482	0.373	Pass
200.005 3'	0.0	2.0	0.0	0.0	1.0	0.0	0.016	0.00000	0.928	0.464	0.464	0.380	Pass
200.015 3'	2.0	1.0	1.0	1.0	1.0	0.0	0.016	0.00000	0.927	0.464	0.463	0.367	Pass
200.017 3'	1.0	1.0	1.0	2.0	1.0	0.0	0.017	0.00000	0.995	0.498	0.497	0.373	Pass
200.066 3'	1.0	1.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.983	0.492	0.491	0.368	Pass
200.075 3'	1.0	1.0	1.0	0.0	1.0	0.0	0.016	0.00000	0.913	0.457	0.456	0.373	Pass
200.076 3'	1.0	1.0	1.0	1.0	2.0	1.0	0.032	0.01604	0.919	0.460	0.459	0.355	Pass
200.079 3'	1.0	1.0	2.0	1.0	2.0	1.0	0.032	0.01585	0.908	0.454	0.454	0.372	Pass
200.080 3'	1.0	2.0	1.0	1.0	0.0	1.0	0.000	0.01222	0.700	0.350	0.350	0.120	Pass
200.297 3'	2.0	2.0	1.0	1.0	0.0	0.0	0.000	0.00000	0.868	0.434	0.434	0.240	Pass
200.008 5'	0.0	1.0	0.0	1.0	1.0	0.0	0.016	0.00000	0.929	0.465	0.464	0.384	Pass
200.034 5'	0.0	1.0	1.0	2.0	0.0	0.0	0.000	0.00000	0.991	0.496	0.495	0.376	Pass
200.056 5'	2.0	1.0	3.0	1.0	2.0	0.0	0.031	0.00000	0.878	0.439	0.439	0.385	Pass
200.061 5'	2.0	1.0	3.0	1.0	2.0	1.0	0.020	0.00995	0.570	0.285	0.285	0.251	Pass
200.104 5'	1.0	1.0	2.0	1.0	2.0	1.0	0.035	0.01726	0.989	0.495	0.494	0.366	Pass
200.105 5'	1.0	1.0	1.0	1.0	0.0	0.0	0.000	0.00000	0.932	0.466	0.466	0.386	Pass
200.106 5'	2.0	0.0	1.0	3.0	1.0	0.0	0.016	0.00000	0.919	0.460	0.459	0.383	Pass
200.107 5'	1.0	0.0	2.0	1.0	0.0	1.0	0.000	0.01613	0.924	0.462	0.462	0.277	Pass
200.024 6'	1.0	0.0	1.0	2.0	1.0	0.0	0.010	0.00000	0.556	0.278	0.278	0.376	Pass
200.113 7'	1.0	1.0	1.0	1.0	2.0	0.0	0.029	0.00000	0.829	0.415	0.414	0.375	Pass
200.115 7'	2.0	0.0	0.0	2.0	2.0	1.0	0.032	0.01620	0.928	0.464	0.464	0.376	Pass
200.114 7'	2.0	0.0	0.0	2.0	3.0	0.0	0.048	0.00000	0.919	0.460	0.459	0.363	Pass
200.399 7'	4.0	4.0	2.0	3.0	1.0	1.0	0.016	0.01555	0.891	0.446	0.445	0.388	Pass
200.010 7'	2.0	2.0	1.0	1.0	2.0	1.0	0.033	0.01646	0.943	0.472	0.471	0.376	Pass
200.011 7'	1.0	1.0	2.0	0.0	1.0	0.0	0.016	0.00000	0.925	0.463	0.462	0.379	Pass
200.012 7'	2.0	1.0	1.0	2.0	1.0	0.0	0.016	0.00000	0.941	0.471	0.470	0.361	Pass
200.093 7'	0.0	1.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.931	0.466	0.465	0.386	Pass
200.094 7'	1.0	1.0	2.0	1.0	1.0	0.0	0.016	0.00000	0.925	0.463	0.462	0.385	Pass
200.041 8'	2.0	1.0	2.0	1.0	1.0	0.0	0.017	0.00000	1.000	0.500	0.500	0.376	Pass
200.045 8'	0.0	0.0	0.0	0.0	2.0	0.0	0.035	0.00000	1.000	0.500	0.500	0.378	Pass
200.108 8'	0.0	0.0	1.0	1.0	0.5	0.0	0.008	0.00000	0.934	0.467	0.467	0.379	Pass
200.109 8'	0.0	0.0	0.5	0.5	0.5	1.0	0.008	0.01632	0.935	0.468	0.467	0.375	Pass
200.363 9'	1.0	1.0	0.0	1.0	1.0	0.0	0.005	0.00000	0.300	0.150	0.150	0.379	Pass
200.101 9'	1.0	1.0	1.0	1.0	2.0	0.0	0.027	0.00000	0.779	0.390	0.389	0.384	Pass
200.013 10'	0.0	1.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.914	0.457	0.457	0.374	Pass
200.014 10'	2.0	0.0	2.0	2.0	2.0	0.0	0.032	0.00000	0.926	0.463	0.463	0.379	Pass
200.050 12'	0.0	1.0	1.0	1.0	2.0	1.0	0.033	0.01642	0.941	0.471	0.470	0.363	Pass
200.051 12'	1.0	1.0	2.0	2.0	1.0	0.0	0.017	0.00000	0.968	0.484	0.484	0.379	Pass
200.052 12'	1.0	1.0	1.0	2.0	1.0	0.0	0.016	0.00000	0.895	0.448	0.447	0.371	Pass
200.053 12'	2.0	1.0	1.0	2.0	2.0	0.0	0.031	0.00000	0.895	0.448	0.447	0.356	Pass
200.098 14'	1.0	1.0	2.0	2.0	1.0	1.0	0.016	0.01639	0.939	0.470	0.469	0.382	Pass
200.099 14'	2.0	2.0	1.0	1.0	1.0	1.0	0.016	0.01621	0.929	0.465	0.464	0.386	Pass
200.091 17'	1.0	1.0	1.0	2.0	0.0	0.0	0.000	0.00000	0.974	0.487	0.487	0.373	Pass
200.092 17'	2.0	1.0	1.0	1.0	0.0	0.0	0.000	0.00000	0.932	0.466	0.466	0.376	Pass
200.110 17'	1.0	0.0	1.0	2.0	1.0	1.0	0.016	0.01649	0.945	0.473	0.472	0.376	Pass
200.111 17'	1.0	1.0	2.0	2.0	2.0	1.0	0.033	0.01627	0.932	0.466	0.466	0.362	Pass

Comments: Pitot tubes required only minor maintenance & reconditioning

APEX INSTRUMENTS WET TEST METER AUDIT USING BELL PROVER

BELL PROVER ID# 157

3-POINT ENGLISH UNITS

Wet Test Meter Information	
Model Number	AL-20
Serial Number	11088

Calibration Conditions			
Date	Time	17-Aug-06	14:00
Barometric Pressure		29.75	in Hg
Calibration Technician		WCC	
Calibration Meter Gamma		1.0000	unitless

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

Calibration Data

Run Time	Wet Test Meter						Bell Prover				
Elapsed	ΔH	Volume Initial	Volume Final	Sample Volume	Outlet Temp Initial	Outlet Temp Final	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Pressure ΔH
(Θ)	(P_{wtm})	(V_{wti})	(V_{wtf})	(V_m)	(t_{wti})	(t_{wtf})	(Vbp_i)	(Vbp_f)	(t_{bpi})	(t_{bpf})	(P_{bp})
min	in H_2O	cubic feet	cubic feet	cubic feet	°F	°F	cubic feet	cubic feet	°F	°F	in H_2O
3.00	0.000	5775.155	5776.163	1.008	80.5	80.5	0.000	1.000	81.5	81.5	3.00
3.00	0.000	5776.163	5777.170	1.007	80.5	80.5	1.000	2.000	81.5	81.5	3.00
6.00	0.000	5777.170	5779.188	2.017	80.5	80.5	0.000	2.000	81.5	81.5	3.00

Results

Standardized Data				Final Results	
				Calibration Factor	
Wet Test Meter		Bell Prover		Value	Variation
(Vw_{std})	(Qw_{std})	($V_{bp(std)}$)	($Q_{bp(std)}$)	(Y)	(δY)
cubic feet	cfm	cubic feet	cfm		
0.9786	0.326	0.9767	0.326	0.9981	0.000
0.9786	0.326	0.9767	0.326	0.9981	0.000
1.9596	0.327	1.9534	0.326	0.9968	-0.001
				0.9977	Y Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

Note: For $\Delta H_@$, orifice pressure differential that equates to 0.75cfm (0.0212m^3/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is +-0.2inches (5.1mm) H_2O

I certify that the above Wet Test Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using Bell Prover #157, which is traceable to the National Bureau of Standards (N.I.S.T).

Signature _____ Date 8/17/06

TECO Tampa, Florida

Polk Unit 1 — Trigon Project No. 046-06-121

SUMMARY OF RESULTS
EPA Methods 1 through 4
Moisture, Isokinetic and Quality Assurance Determinations

Run Number		1	2	3	Average
Sample Identification		6121-01	6121-02	6121-03	----
Date:		1/18/2007	1/18/2007	1/18/2007	----
θ	Net Time of Test, minutes	60.0	60.0	60.0	----
	Sample Time, 24-hour clock	1349-1456	1527-1634	1655-1803	----
P_{bar}	Barometric Pressure, in. Hg	30.06	30.06	30.06	30.06
P_g	Static Pressure, in. Hg	-0.088	-0.088	-0.088	-0.088
P_S	Stack Pressure, Absolute, in. Hg	29.972	29.972	29.972	29.972
V_M	Actual Meter Volume Sampled, cu. ft.	44.101	44.352	43.984	44.146
ΔH	Avg. Delta H, in. H_20	1.68	1.75	1.71	1.72
T_M	Avg. Gas Meter Temp., Deg. F	80.6	80.0	77.9	79.5
V_{STD}	Volume Sampled at Stand. Cond., cu. ft.	42.192	42.487	42.295	42.325
V_C	Volume of Water Collected, ml	39.2	36.6	35.8	37.2
V_{WC}	Volume of Water Vapor at Std. Cond.,SCF	1.85	1.72	1.69	1.75
B_{WS}	Moisture Content of Gas Stream	0.042	0.039	0.038	0.040
P_{MV}	Percent Moisture in Stack	4.2	3.9	3.8	4.0
M_{FD}	Mole Fraction of Dry Gas	0.958	0.961	0.962	0.960
$\%O_2$	Percent Oxygen, Dry	11.75	11.78	11.76	11.76
%CO.	Percent Carbon Dioxide, Dry	8.81	8.78	8.80	8.80
%CO	Percent Carbon Monoxide, Dry	0.00	0.00	0.00	0.00
M_d	Mole. Wt. Stack Gas, Dry Basis, lb/lb mole	29.880	29.876	29.878	29.878
M_S	Mole. Wt. Stack Gas, Wet Basis, lb/lb mole	29.382	29.413	29.423	29.406
Cp	Pitot Tube Constant	0.84	0.84	0.84	0.84
ΔPS	Avg. Sqrt. Delta P, in. H20	1.199	1.172	1.190	1.187
T_S	Avg. Stack Temp., Deg. F	309.6	310.3	309.9	309.9
V_S	Avg. Stack Velocity, ft/sec	80.5	78.7	79.8	79.7
A	Area Stack, ft^2	283.53	283.53	283.53	283.53
Q_{SD}	Gas Volume Flow, Dry Std. Cond. CFM	901790	883049	897071	893970
Q_A	Actual Gas Volume Flow, CFM	1369569	1338229	1357851	1355217
Q_{SW}	Gas Volume Flow, Wet Std. Cond., CFM	941244	918869	932827	930980
D_n	Sample Nozzle Diameter, inches	0.201	0.204	0.201	0.202
A_n	Area of Nozzle, ft^2	0.00022	0.00023	0.00022	0.00022

SUMMARY OF RESULTS
EPA Methods 1 through 4
Moisture, Isokinetic and Quality Assurance Determinations

Run Number		1	2	3	Average
I	Percent Isokinetic	100.4	100.2	101.2	100.6
Mb #	Meter Box Number	300.045	300.045	300.045	300.045
ΔH@	ΔH@ of Meter Box	1.85	1.85	1.85	1.85
Y_{qa}	Alt. Method 5 Posttest Calibration (ALT-009)	0.97	0.98	0.98	0.97
Y	Meter Factor	0.97	0.97	0.97	0.97

APPENDIX U

SULFURIC ACID MIST TEST DATA – SULFURIC ACID PLANT

FIELD DATA SHEETS

ISOKINETIC FIELD DATA SHEET

WKC FGHP

Plant	Polk SAP	Run No.	1	Dry Gas Meter Volume	
Location	Acid Plant	Nozzle I.D. No.	[illegible] 74	Final	922.906 Ft.³
Date	11/8/07	Nozzle Diameter	0.489	Initial	874.21 Ft.³
Method No.	RM8	Pitot Tube No.	PTO5	Net	47.796 Ft.³
Box Operator	SEG	Pitot Tube (C_p)	.84		
Probe Operator	GDB	Probe Length	9'	Equipment Leak Checks	
Time - Start:	1:46 End: 2:59	Probe Liner Material	Glass	Initial	0 CFM @ 15 "Hg
Sampling Time	64	Pressure	Pb ("Hg) 30.81 Pg ("H2O) .6	Final	0 CFM @ 15 "H2O
Min \ Pt	4	Assumed Moisture (%)	0	Pitot Tube	OK @ 2 "H2O
Meter Box No	MB06	Filter Holder No.	1		
Pyrometer No	PY10	Comments		Moisture Determination	
Barometer No		Start	Imp#1 20 Imp#2 10 Imp#3 10	Impinger	-22 ml
Meter Cal. (ΔH)	1.877	Finish	Imp#1 136 Imp#2 128 Imp#3 114	Silica Gel	18.5 gm
Meter Cal. (ΔY)	0.992	O_2 6.78	CO_2 20.08	Total	-3.5

Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	Stack Temp. Ts (°F)	Meter Temp (°F)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
1	1:46	874.21	158	76	.03	1.81	217		62	9
2	1:50	877.16	159	75	.03	1.41	219		58	9
3	1:54	879.73	159	76	.0203	1.14	242		64	7
4	1:58	882.05	160	76	.011	.61	245		66	4
5	2:02	883.32	160	77	.0345	1.92	246		66	8
6	2:06	886.84	160	78	.0395	2.20	245		62	9
29 7	2:10	889.87	159	78	.0485	2.70	240		61	12
32 8	2:14	893.23	158	79	.0500	2.79	243		63	14
	2:18	896.728								
1 1	2:27	899.49	159	78	.03	1.67	240		64	7
4 2	2:31	902.21	157	78	.029	1.62	240		63	7
12 3	2:35	905.34	160	78	.039	2.17	235		63	10
16 4	2:39	908.67	160	79	.0440	2.45	230		63	13
20 5	2:43	911.90	162	80	.04	2.23	229		62	12
24 6	2:47	915.43	163	80	.049	2.64	200		63	13
28 7	2:51	918.75	162	80	.0405	2.25	225		64	13
32 8	2:55	922.066	161	80	.042	2.34	220		64	13
	2:59									

Quality Assurance / Quality Control Information

Console Operator Signature: [signature] Date: 11/8/07

Complete: ✓ Legible: ✓ Accurate: ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: [signature] Title: SET Date: 22-JAN-07

ISOKINETIC FIELD DATA SHEET

Plant	Polk SAP	Run No	2	Dry Gas Meter Volume	
Location	Acid Plant	Nozzle ID No	74	Final	971.188 Ft³
Date	1/18/07	Nozzle Diameter	.489	Initial	922.375 Ft³
Method No.	M8	Pilot Tube No.		Net	~~47.796~~ 48.813 Ft
Box Operator	SEC	Pilot Tube (C_p)	0.84		
Probe Operator	GDB	Probe Length	1'	Equipment Leak Checks	
Time - Start	3:19 End 4:26	Probe Liner Material	Glass	Initial	0 CFM @ 15 "Hg
Sampling Time	64 min	Pressure	Pb ("Hg): 30.11 Pg ("H2O): .6	Final	0 CFM @ 11 "H2O
Min \ Pt	4	Assumed Moisture (%)	0	Pitot Tube	OKE2 "H2O
Meter Box No.	MBU6	Filter Holder No.	2		
Pyrometer No	PY10	Comments		Moisture Determination	
Barometer No.		Start	Imp#1 200 Imp#2 100 Imp#3 100	Impinger	-16.0 ml
Meter Cal. (Δ H)	1.877	Finish	Imp#1 142 Imp#2 128 Imp#3 114	Silica Gel	16.5 gm
Meter Cal. (Δ Y)	0.992	O_2 6.31	CO_2 20.4	Total	0.5

Traverse Point No	Clock Time	Gas Sample Volume 922 (Ft³) .375	Stack Temp. Ts (F)	Meter Temp (F)	Δ P (In H_2O)	Δ H (In H_2O)	Probe Temp (F)	Filter Box Temp Tm (F)	Last Imp Temp (F)	Vacuum (In Hg)
4 1	3:19	925.00	159	82	.0245	1.38	227		68	6
8 2	3:23	927.703	159	83	.0285	1.60	240		62	6
12 3	3:27	930.416	160	83	.0275	1.54	236		59	6
16 4	3:31	933.22	162	83	.0285	1.60	236		61	6
20 5	3:35	935.38	164	83	.017	.95	237		61	4
24 6	3:39	938.93	161	84	.05	2.81	237		61	10
28 7	3:43	942.49	159	84	.046	2.59	235		61	10
32 8	3:47	946.0045	157	84	.048	2.71	231		63	10
	3:51									
36 1	3:54	948.55	158	84	.023	1.30	227		68	5
40 2	3:58	951.420	159	85	.0325	1.84	233		63	6
44 3	4:02	954.32	156	84	.036	2.04	230		63	7
48 4	4:06	957.745	158	85	.045	2.55	280		63	9
52 5	4:10	960.99	159	84	.038	2.14	226		63	9
56 6	4:14	964.33	160	85	.0425	2.40	229		64	9
60 7	4:18	967.70	159	85	.044	2.48	233		64	9
64 8	4:22	971.188	158	85	.046	2.60	226		64	9
	4:26									

Quality Assurance / Quality Control Information

Console Operator Signature: [signature] Date 1/18/07

Complete. ✓ Legible: ✓ Accurate ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: [signature] Title SET Date 22-JAN-07

ISOKINETIC FIELD DATA SHEET

Plant	PAC SAP	Run No	3	Dry Gas Meter Volume	
Location	Acid Plant	Nozzle I.D. No.	74	Final	1020.8 Ft.³
Date	11/18/07	Nozzle Diameter	.489	Initial	971.492 Ft.³
Method No.	RM 8	Pitot Tube No		Net	49.308 Ft.³
Box Operator	SEG	Pitot Tube (C_p)	0.84		
Probe Operator	BDB	Probe Length	6'	Equipment Leak Checks	
Time - Start:	7:41 End: 5:46	Probe Liner Material	Glass	Initial	0 CFM @ 15 "Hg
Sampling Time	64	Pressure	Pb ("Hg): 29.1 Pg ("H2O): .6	Final	0 CFM @ 13 "H2O
Min.\ Pt.	4	Assumed Moisture (%)	0	Pitot Tube	OK e2 "H2O
Meter Box No	MB#6	Filter Holder No.	3		
Pyrometer No.	P410	Comments		Moisture Determination	
Barometer No.		Start	Imp#1 200 Imp#2 100 Imp#3 100	Impinger	-18 ml
Meter Cal. (Δ H)	1.877	Finish	Imp#1 142 Imp#2 128 Imp#3 112	Silica Gel	14.9 gm
Meter Cal. (Δ Y)	0.992	O_2 6.48	CO_2 20.46	Total	-3.1

Traverse Point No	Clock Time	Gas Sample Volume (Ft³)	Stack Temp. Ts (°F)	Meter Temp (°F)	Δ P (In. H2O)	Δ H (In. H2O)	Probe Temp (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)
	[redacted]	971.492	[redacted]	[redacted]			[redacted]			
4 1	4:49	974.69	158	84	.0375	2.12	160		57	11
8 2	4:45	977.87	156	84	.0360	2.04	166		54	11
12 3	4:49	980.73	157	84	.0285	1.61	170		58	8
16 4	4:53	983.44	160	84	.0280	1.58	169		59	8
20 5	4:57	986.81	162	84	.045	2.52	169		60	11
24 6	5:01	990.08	159	84	.04	2.25	171		60	11
28 7	5:05	993.380	158	84	.0425	2.40	173		61	11
32 8	5:09	996.680	156	84	.0420	2.38	171		61	11
	[redacted] 5:13						[redacted]			
36 1	5:18	999.07	156	83	.0225	1.27	170		63	6
40 2	5:22	1001.92	157	83	.0325	1.83	173		62	8
44 3	5:26	1004.87	155	83	.0335	1.90	173		58	9
48 4	5:30	1007.92	156	83	.036	2.04	168		59	10
52 5	5:34	1011.12	158	83	.039	2.20	171		60	10
56 6	5:38	1014.30	159	83	.039	2.19	170		60	11
60 7	5:42	1017.53	156	83	.04	2.26	171		60	11
64 8	5:46	1020.80	157	82	.042	2.37	169		60	11

Quality Assurance / Quality Control Information

Console Operator Signature: [signature] Date: 11/18/07

Complete: ✓ Legible: ✓ Accurate: ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: [signature] Title: SET Date: 22-JAN-08

CALCULATED DATA

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 1
Date: 01/18/07

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.489 inches
Barometric Pressure, P_b:	30.11 "Hg	Nozzle Area, A_n:	0.00130412 ft^2
Stack Pressure, P_s:	30.18 "Hg	Average Orifice Meter, ΔH:	1.996 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	47.796 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	77.9 °F
Gas Analysis:	20.0 % CO_2	Average Stack Temp., T_s:	159.8 °F
	6.4 % O_2	Average $\sqrt{\Delta p}$:	0.187 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	0.0 ml
	73.6 % N_2	Meter Box Y:	0.992 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.000 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	47.061 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.000 %
$FDA = 1.0 - B_{ws}$	1.000 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	31.46 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.46 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	10.84 ft/second
$Q_s = v_s \times A_s \times 60$	18394.5 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	15807.7 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 60)$	100.9 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.1
Volume Titrant Sample, V_t	3.4
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	500

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1540.22792	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.7948295	%
Tons of Acid Produced During The Test Period,	P_{st}	11.0911878	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	15807.7	dscf/mln
Total Sampling Time During Test Period,	θ	64	minutes

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$ 3.695E-07 lbs/dscf

Calculated H_2SO_4 Emission Rate, E= **0.03371** lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 2
Date: 01/18/07

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.489 inches
Barometric Pressure, P_b:	30.11 "Hg	Nozzle Area, A_n:	0.00130412 ft^2
Stack Pressure, P_s:	30.18 "Hg	Average Orifice Meter, ΔH:	2.033 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	48.813 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	83.9 °F
Gas Analysis:	20.0 % CO_2	Average Stack Temp., T_s:	159.3 °F
	6.4 % O_2	Average √Δp:	0.188 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	0.5 ml
	73.6 % N_2	Meter Box Y:	0.992 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.024 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	47.537 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.000 %
$FDA = 1.0 - B_{ws}$	1.000 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \% CO))$	31.46 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.45 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	10.90 ft/second
$Q_s = v_s \times A_s \times 60$	18490.3 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	15896.6 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	101.3 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.00975
Volume Titrant Blank, V_{tb}	0.1
Volume Titrant Sample, V_t	4.7
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	500

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1424.375239	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.79254554	%
Tons of Acid Produced During The Test Period,	P_{st}	10.25668238	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	15896.6	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes
$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$		5.100E-07	lbs/dscf

Calculated H_2SO_4 Emission Rate, E= 0.05058 lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

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40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 3
Date: 01/18/07

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.489 inches
Barometric Pressure, P_b:	30.11 "Hg	Nozzle Area, A_n:	0.00130412 ft^2
Stack Pressure, P_s:	30.18 "Hg	Average Orifice Meter, ΔH:	2.060 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	49.308 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	83.4 °F
Gas Analysis:	20.0 % CO_2	Average Stack Temp., T_s:	157.5 °F
	6.4 % O_2	Average $\sqrt{\Delta p}$:	0.190 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	8.1 ml
	73.6 % N_2	Meter Box Y:	0.992 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.382 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	48.066 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.008 %
$FDA = 1.0 - B_{ws}$	0.992 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	31.46 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.35 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	11.04 ft/second
$Q_s = v_s \times A_s \times 60$	18733.4 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	16032.0 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	101.6 %

Data from Laboratory Analysis: H_2SO_4

Normality of Barium Chloride titrant, N	0.00975 meq/ml
Volume Titrant Blank, V_{tb}	0.1 ml
Volume Titrant Sample, V_t	7.8 ml
Volume of Sample Aliquot, V_a	100 ml
Total Volume of Solution, V_{soln}	500 ml

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1375.448462	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.79010068	%
Tons of Acid Produced During The Test Period,	P_{st}	9.904110853	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	16032.0	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$ 8.442E-07 lbs/dscf

Calculated H_2SO_4 Emission Rate, E= **0.08746** lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

LABORATORY ANALYSIS

TECO TAMPA ELECTRIC

Laboratory Services

5012 Causeway Blvd * Tampa Fl. 33619 * Ph (813)630-7378 * Fax (813)630-7360 * DOH #E54272

Report For:

Report Date: 02/15/2007

Laboratory ID: AA86401

Location Code: TE_PPS_SAP_RM6

Sample Information

Description: Polk Sulfuric Acid Plant Reference Method 6

Project Account Code:

Sample Collection Method:

Sampled By: ASG

Date and Time Collected: 01/18/2007 6:00:00 PM

Date of Sample Receipt: 01/19/2007

Laboratory Results

PARAMETER	Result	Units	MDL	Qualifier Code	Test Method	Analyst	Analysis Date & Time	Lower Limit	Upper Limit	Violation Check
Normality of BaCl2 * 2H2O	0.00975		0.0001			MM	11/08/2006 11:00:00 AM			
SO3, Avg. of Blank Titrations	0.1	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #1, Avg. of Titrations	3.4	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #2, Avg. of Titrations	4.7	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Run #3, Avg. of Titrations	7.8	milliliters	0.01		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Volume of Contained Sample	500	milliliters	1		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			
SO3, Volume of Sample Aliquot	100	milliliters	0.1		EPA - Meth.8	MM	01/19/2007 7:30:00 AM			

Comments

All results calculated on a wet to wet basis, unless otherwise indicated.

Data Qualifier Codes Explanation:

Subcontracted Laboratories:

Robert Dorey,
Manager, Laboratory Services

CALIBRATION DATA

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SUMMARY OF EQUIPMENT CALIBRATIONS

EQUIPMENT	CAL DATE	METHOD	RESULTS
CONSOLE (MB 06)		USEPA RM 5	
INITIAL	01/02/2007	(ORIFICE)	0.992
POST TEST	01/25/2007		0.973
NOZZLE (SN74)			
INITIAL	01/02/2007	CALIPER	0.489
POST TEST	01/25/2007	MEASUREMENTS	0.490
PYROMETER (PY 10)	01/03/2007	ASTM THERMOMETER	$\pm$ 2° F
PITOT TUBE (PT 05)	01/03/2007	USEPA RM 2	C_p = 0.84
BAROMETER (BR 07)	01/10/2007	NWS COMPARISON	$\pm$ 0.1" Hg

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USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
Quarterly Calibration

Environmental Services
Air Services Group

Red Team

Manufacturer: Thermo Anderson
Model Number: MST-C1
Instrument Code Number: ^MB06
LabWorks Sample Number:

Calibration Date: 01/02/2007
Barometric Pressure: 30.2 "Hg
Theoretical Critical Vacuum: 14.25 "Hg
Calibrated By: gdb

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH "H_2O	Time Minutes	Initial Volume ft^3	Final Volume ft^3	Total Volume ft^3	Initial Temperatures Inlet °F	Initial Temperatures Outlet °F	Final Tempertures Inlet °F	Final Tempertures Outlet °F
0.67	15	863.200	870.055	6.855	74	74	75	74
1.20	15	838.700	847.836	9.136	78	75	79	75
2.00	15	804.100	815.677	11.577	75	67	80	71
3.80	15	820.700	836.588	15.888	81	71	88	74

Critical Orifice Readings

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures Initial °F	Final °F	Average °F
48	0.3455	23.0	72	72	72.0
55	0.4592	21.2	72	72	72.0
63	0.5877	19.5	72	72	72.0
73	0.8022	16.5	72	72	72.0

CALCULATED DATA

Dry Gas Meter Volume Corrected $Vm_{(std)}$, ft^3	Critical Orifice Volume Corrected $Vcr_{(std)}$, ft^3	Critical Orifice Volume Nominal $Vcr_{(std)}$, ft^3	Calibration Y Value (ratio)	QA/QC ± 0.02	Calibration ΔHα Value "H_2O	QA/QC ± 0.2
6.847	6.786	6.776	0.991	-0.001	1.837	-0.040
9.094	9.019	9.006	0.992	-0.001	1.854	-0.023
11.622	11.542	11.527	0.993	0.001	1.899	0.022
15.863	15.755	15.734	0.993	0.001	1.917	0.041
		Averages:	**0.992**		**1.877**	

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval: 9-Jan-07

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USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
POST - TEST CALIBRATION CHECK

Manufacturer: Thermo Anderson
Model Number: MST
Instrument Code Number: MB06
LabWorks Sample Number:
Associated Test: POLK SAP 1-18-07

Calibration Date: 01/25/2007
Barometric Pressure: 30.09 "Hg
Theoretical Critical Vacuum: 14.19 "Hg
Calibrated By: SEG
Team: RED

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH "H_2O	Time Minutes	Initial Volume ft^3	Final Volume ft^3	Total Volume ft^3	Initial Temperatures Inlet °F	Initial Temperatures Outlet °F	Final Tempertures Inlet °F	Final Tempertures Outlet °F
2	10	93.241	101.153	7.912	77	74	77	74
2	10	101.153	109.063	7.910	77	74	77	74
2	10	109.063	116.978	7.915	77	74	77	74

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures Initial °F	Final °F	Average °F
63	0.5877	20.0	72	72	72.0
63	0.5877	20.0	72	72	72.0
63	0.5877	20.0	72	72	72.0

CALCULATED DATA

Dry Gas Meter Volume Corrected $Vm_{(std)}$, ft^3	Critical Orifice Volume Corrected $Vcr_{(std)}$, ft^3	Critical Orifice Volume Nominal $Vcr_{(std)}$, ft^3	Calibration Y Value (ratio)	QA/QC ± 0.02	Calibration ΔHα Value "H_2O	QA/QC ± 0.2
7.881	7.667	7.684	0.973	0.000	1.898	0.000
7.879	7.667	7.684	0.973	0.000	1.898	0.000
7.884	7.667	7.684	0.973	0.000	1.898	0.000
		Averages:	**0.973**		**1.898**	
		Prior Y:	**0.992**			
		% Difference:	**1.93%**			

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval: 

Date: 25-Jan-07

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QUARTERLY NOZZLE CALIBRATIONS

Shared Resource

STEEL NOZZLE SET

Calibration Date: 01/02/2007 Responsible Party: **SEG**

Nozzle I.D.	Nozzle Diameter, D_n (cm)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
^*SN01*	0.290	0.295	0.295	0.002	0.115
^*SN04*	0.324	0.322	0.320	0.002	0.127
^*SN05*	0.380	0.380	0.380	0.000	0.150
^*SN06*	0.498	0.500	0.500	0.001	0.197
^*SN09*	0.690	0.695	0.690	0.002	0.272
^*SN10*	0.750	0.755	0.755	0.002	0.297
^*SN12*	0.988	0.985	0.985	0.001	0.388
^*SN15*	0.420	0.422	0.422	0.001	0.166
^*SN16*	0.508	0.505	0.505	0.001	0.199
^*SN19*	0.720	0.718	0.715	0.002	0.283
^*SN22*	0.930	0.928	0.930	0.001	0.366
^*SN30*	0.795	0.790	0.795	0.002	0.312
^*SN36*	0.480	0.478	0.475	0.002	0.188
^*SN37*	0.539	0.534	0.539	0.002	0.212
^*SN38*	0.633	0.638	0.635	0.002	0.250
^*SN46*	0.485	0.483	0.483	0.001	0.190
^*SN47*	0.515	0.518	0.518	0.001	0.204
^*SN48*	0.644	0.640	0.642	0.002	0.253
^*SN50*	0.784	0.788	0.788	0.002	0.310
^*SN58*	0.613	0.619	0.619	0.002	0.243
^*SN68*	0.625	0.630	0.631	0.002	0.248
^*SN69*	0.952	0.950	0.950	0.001	0.374
^*SN70*	1.565	1.565	1.565	0.000	0.616
^*SN71*	1.560	1.560	1.560	0.000	0.614
^*SN72*	0.950	0.950	0.948	0.001	0.374
^*SN73*	1.280	1.280	1.282	0.001	0.504
^*SN74*	1.243	1.242	1.243	0.000	0.489

Data Notations: All micometer readings are converted from cm to inches by multiplying by 0.393700787. Maximum Difference must be $\leq$ 0.004".

QA/QC Review by:  9-Jan-07

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POST TEST NOZZLE CALIBRATION

Shared Resource

Calibration Date: 01/25/2007
Calibration Personnel: SEG
Test Designation: POLK SAP 1-18-07

Nozzle Identifier	Nozzle Diameter, D_n (cm)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
SN 74	1.245	1.245	1.240	0.002	0.490

Data Notations: All micometer readings are converted from cm to inches by multiplying by 0.393700787. Maximum Difference must be $\leq$ 0.004".

Quarterly (pre-test) value for nozzle ID SN 74 was 0.489

Difference (Pre-test/Post-test) is: -0.001

QA/QC Review by:  25-Jan-07

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Environmental Services
Air Services Group

Red Team

Pyrometer Calibration

Pyrometer Under Test

Pyrometer Number: ^PY10
Labworks Sample # 0
Calibration Date: 01/03/2007

Calibrator Information

Calibrator Type/Manufacturer: Hart Scientific
Calibrator Serial Number: AOA024
Date of Last Calibration: 07/11/2006
Calibration Personnel (Typed and Signature): gdb

Calibration Data

Calibration Point	Reference Temperature	Pyrometer Indication	Difference
1	400	400	0
2	212	210	2
3	32	32	0

Reference temperatures must encompass the expected range of measurement. These three points should be ~ 32 degrees, ~212 degrees, and ~ 400 degrees Farenheit.
Difference is calculated as follows:

(reference temperature) – (pyrometer indication)

Qaulity Control Data

Calibration Point	Difference
1	Pass
2	Pass
3	Pass

Reviewer: 

9-Jan-07

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PITOT TUBE CALIBRATION DATA SHEET

Environmental Services
Air Services Group

Pitot Tube ID # PT05
Calibration Date 01/03/2007 Operating Quarter/Year: 07-Jan Red Team
Openings Damaged? ☐ Y ☑ N Repaired? ☐ Y ☑ N ☐ N/A

Labworks #: 0

Alpha and Beta Angle Determinations

α_1	0.5	degrees	*Pass*
α_2	1.6	degrees	*Pass*
β_1	1.8	degrees	*Pass*
β_2	1.9	degrees	*Pass*

Gamma, Theta, A, Z, and W Determination

ψ	0.4	degrees	
A	2.31	cm	
Z	0.016	cm	*Pass*
o	1.2	degrees	
W	0.048	cm	*Pass*

Acceptable Limits:
Dt 0.48 < Dt > 0.95 cm
α < 10 degrees
(α_1 measured across top impact openings)
(α_2 measured across bottom impact openings)
β_1 < 5 degrees (alongside top impact openings)
β_2 < 5 degrees (alongside bottom impact openings)
Z < 0.32 cm (Asinψ)
W < 0.08 cm (Asino)
A distance between tips
o angle of plane on side of pitots
ψ angle between tips

NOTES

All measurements are taken in accordance with the requirements of 40 CFR 60, Appendix A - Test Methods, Method 2, "Determination of stack gas velocity and volumetric flow rate (Type S pitot tube)". Measurement details are found in EPA/600/4-77/027b, "Quality Assurance Handbook for Air Pollution Measurement Systems: Stationary Source Specific Methods", sub-section 3.1.1, Procuement of Apparatus and Supplies.

Comments: REMOVABLE

Calibrated by: GDB

Quality Assurance Review / Approval: 5-Jan-07

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Environmental Services
Air Services Group

BAROMETER CALIBRATION

Blue Team

Instrument Number: ^BR07
Calibration Date: 01/10/2007
Calibration Personnel: SEG
Labworks #:

Time	Barometer Reading Inches Mercury	Reference Reading Inches Mercury	Difference "Hg
8:30	30.32	30.34	-0.02
9:30	30.32	30.36	-0.04
10:30	30.35	30.39	-0.04
		Average Difference:	-0.033

Note: Barometric readings must agree within ± 0.1 "Hg.
Current Reference is National Weather Service, TIA.
Current Conditions at Tampa International Airport

Comments (Note any adjustments):
Adjusted barometer to bring into reference range of +/-0.1"Hg.

QA/QC Review by:  Date: 16-Jan-07

APPENDIX V

INSTRUMENTAL REFERENCE METHOD TEST DATA – IGCC

OXYGEN, CARBON DIOXIDE, CARBON MONOXIDE DATA

Run averages corrected for bias
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

Run	O2 OT %	CO2 OT %	CO ppm
1	11.746	8.807	3.508
2	11.777	8.782	3.519
3	11.763	8.803	3.862

Calibration Error Test at Run 1 . STRATA Version 2.01

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	7:55:10	0.018	0.059	-0.247
1/18/2007	7:56:09	0.018	0.134	0.033
1/18/2007	7:57:09	0.02	0.079	0.245
1/18/2007	7:58:09	0.06	0.08	0.068
1/18/2007	7:59:09	20.741	16.143	-0.579
1/18/2007	8:00:09	21.818	17.485	-1.939
1/18/2007	8:01:09	12.723	10.064	-1.983
1/18/2007	8:02:09	5.64	4.559	-0.792
1/18/2007	8:03:09	0.031	0.082	8.626
1/18/2007	8:04:09	0.028	0.07	14.82
1/18/2007	8:05:09	0.027	0.069	15.171
1/18/2007	8:06:09	0.027	0.069	15.491
1/18/2007	8:07:09	0.026	0.069	16.15
1/18/2007	8:08:10	0.027	0.069	15.717
1/18/2007	8:09:10	0.025	0.144	15.837
1/18/2007	8:10:10	0.096	0.091	15.993
1/18/2007	8:11:10	0.146	0.14	13.881
1/18/2007	8:12:09	0.026	0.089	9.529

Calibration Error Test at Run 1

Operator: Ian DeVivi

Plant Name: TECO Polk Plant

Location: Unit 1

Reference Cylinder Numbers

	Zero	Low-range	Mid-range	High-range
O2 OT	CC-136551		CC-107096	CC-250656
CO2 OT	CC-136551		CC-107096	CC-250656
CO	CC-136551		CC-165111	CC-150548

Date/Time	1/18/2007	8:12:40	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Avg	0.02	0.079	0.046
Zero Error%	0.1	0.4	0.3
Low Ref Cyl			
Low Avg			
Low Error%			
Mid Ref Cyl	12.5	9.81	9.28
Mid Avg	12.441	9.951	9.086
Mid Error%	0.2	0.7	1.2
High Ref Cyl	21.9	17.7	15.9
High Avg	21.86	17.492	15.961
High Error%	0.2	1	0.4

Initial System Bias Check for Run 1
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

Reference Cylinder Numbers

	Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time	1/18/2007	8:32:15	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Cal	0.02	0.079	0.046
Zero Avg	0.02	0.109	0.131
Zero Bias%	0	0.2	0.5
Zero Drift%			
Span Ref Cyl	12.5	9.81	9.28
Span Cal	12.441	9.951	9.086
Span Avg	12.3	9.885	9.023
Span Bias%	0.6	0.3	0.4
Span Drift%			

Test Run 1 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT %	CO2 OT %	CO ppm
Begin calculating run averages				
1/18/2007	13:50:45	11.546	8.932	3.524
1/18/2007	13:51:45	11.52	8.894	3.252
1/18/2007	13:52:45	11.469	8.926	3.472
1/18/2007	13:53:45	11.511	8.917	3.93
1/18/2007	13:54:46	11.523	8.923	3.667
1/18/2007	13:55:46	11.512	8.913	3.584
1/18/2007	13:56:46	11.448	8.919	3.713
1/18/2007	13:57:46	11.425	9.008	3.893
1/18/2007	13:58:46	11.478	8.951	4.057
1/18/2007	13:59:46	11.497	8.934	3.84
1/18/2007	14:00:46	11.521	8.928	3.661
1/18/2007	14:01:46	11.509	8.927	3.508
1/18/2007	14:02:46	11.523	8.914	3.234
1/18/2007	14:03:46	11.528	8.921	3.35
1/18/2007	14:04:46	11.547	8.906	3.377
1/18/2007	14:05:46	11.559	8.906	3.41
1/18/2007	14:06:45	11.471	8.89	3.38
1/18/2007	14:07:45	11.505	8.908	3.48
1/18/2007	14:08:45	11.544	8.899	2.984
1/18/2007	14:09:45	11.567	8.888	3.124
1/18/2007	14:10:45	11.553	8.953	3.295
1/18/2007	14:11:46	11.512	8.914	3.343
1/18/2007	14:12:46	11.513	8.908	3.3
1/18/2007	14:13:46	11.542	8.91	3.331
1/18/2007	14:14:46	11.57	8.908	3.296
1/18/2007	14:15:46	11.578	8.904	3.185
1/18/2007	14:16:46	11.525	8.871	3.225
1/18/2007	14:17:46	11.479	8.892	3.521
1/18/2007	14:18:45	11.542	8.87	3.143
1/18/2007	14:19:45	11.536	8.888	3.24
1/18/2007	14:20:45	11.552	8.885	3.459
1/18/2007	14:21:45	11.559	8.865	3.365
1/18/2007	14:22:45	11.554	8.916	3.242
1/18/2007	14:23:46	11.565	8.927	3.365
1/18/2007	14:24:46	11.57	8.91	3.322
1/18/2007	14:25:46	11.574	8.896	3.294
1/18/2007	14:26:46	11.479	8.901	3.416
1/18/2007	14:27:46	11.512	8.903	3.677
1/18/2007	14:28:46	11.549	8.911	3.538
1/18/2007	14:29:45	11.563	8.881	3.453
1/18/2007	14:30:45	11.557	8.883	3.159
1/18/2007	14:31:45	11.514	8.883	3.293
1/18/2007	14:32:45	11.495	8.883	3.339
1/18/2007	14:33:45	11.558	8.863	3.128
1/18/2007	14:34:45	11.566	8.873	2.899

Test Run 1 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	14:35:46	11.557	8.952	3.146
1/18/2007	14:36:46	11.514	8.905	3.23
1/18/2007	14:37:46	11.486	8.904	3.444
1/18/2007	14:38:46	11.535	8.907	3.563
1/18/2007	14:39:46	11.556	8.908	3.104
1/18/2007	14:40:46	11.551	8.926	3.375
1/18/2007	14:41:46	11.554	8.926	3.262
1/18/2007	14:42:45	11.549	8.914	3.171
1/18/2007	14:43:45	11.567	8.905	3.113
1/18/2007	14:44:45	11.567	8.917	3.192
1/18/2007	14:45:45	11.581	8.913	3.291
1/18/2007	14:46:46	11.501	8.906	3.22
1/18/2007	14:47:46	11.531	8.912	3.506
1/18/2007	14:48:46	11.572	8.967	3.454
1/18/2007	14:49:46	11.592	8.888	3.15
Average of Test Run		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	14:49:46	11.532	8.909	3.375

Test Run 1 End

Final System Bias Check for Run 1 . STRATA Version 2.01

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	14:51:23	8.482	5.451	2.906
1/18/2007	14:52:23	0.006	0.281	1.125
1/18/2007	14:53:22	-0.012	0.247	-0.14
1/18/2007	14:54:22	-0.019	0.236	-0.16
1/18/2007	14:55:23	3.734	2.85	-0.388
1/18/2007	14:56:23	12.225	9.852	-1.311
1/18/2007	14:57:23	12.243	9.913	-1.871
1/18/2007	14:58:23	12.248	9.93	-1.837
1/18/2007	14:59:23	3.093	2.95	-0.557
1/18/2007	15:00:23	-0.004	0.278	6.069
1/18/2007	15:01:23	-0.015	0.248	8.242
1/18/2007	15:02:23	-0.018	0.235	8.301
1/18/2007	15:03:23	-0.021	0.228	8.676
1/18/2007	15:04:22	-0.023	0.219	8.601
1/18/2007	15:05:22	-0.023	0.219	8.665

Final System Bias Check for Run 1

Operator:	Ian DeVivi
Plant Name:	TECO Polk Plant
Location:	Unit 1

	Reference Cylinder Numbers	
	Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time	1/18/2007	15:05:51	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Cal	0.02	0.079	0.046
Zero Avg	-0.018	0.238	-0.107
Zero Bias%	0.2	0.8	1
Zero Drift%	-0.2	0.6	-1.5
Span Ref Cyl	12.5	9.81	9.28
Span Cal	12.441	9.951	9.086
Span Avg	12.245	9.924	8.795
Span Bias%	0.8	0.1	1.8
Span Drift%	-0.2	0.2	-1.4
Ini Zero Avg	0.02	0.109	0.131
Ini Span Avg	12.3	9.885	9.023
Run Avg	11.532	8.909	3.375
Co	0.001	0.174	0.012
Cm	12.273	9.904	8.909
Correct Avg	11.746	8.807	3.508

Test Run 2 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT %	CO2 OT %	CO ppm
1/18/2007	15:06:51	-0.024	0.211	8.825
1/18/2007	15:07:52	10.604	7.864	7.229
1/18/2007	15:08:52	11.538	8.836	3.753
1/18/2007	15:09:52	11.569	8.827	3.147
1/18/2007	15:10:52	11.554	8.845	3.276
1/18/2007	15:11:52	11.5	8.841	3.245
1/18/2007	15:12:52	11.455	8.867	3.574
1/18/2007	15:13:52	11.519	8.856	3.544
1/18/2007	15:14:52	11.513	8.865	3.449
1/18/2007	15:15:52	11.54	8.866	3.206
1/18/2007	15:16:52	11.491	8.853	3.235
1/18/2007	15:17:52	11.44	8.87	3.42
1/18/2007	15:18:52	11.492	8.875	3.506
1/18/2007	15:19:52	11.511	8.87	3.441
1/18/2007	15:20:52	11.537	8.872	3.447
1/18/2007	15:21:51	11.527	8.85	3.119
1/18/2007	15:22:51	11.54	8.87	3.211
1/18/2007	15:23:51	11.568	8.865	3.152
1/18/2007	15:24:51	11.573	8.866	3.122
1/18/2007	15:25:51	11.582	8.861	2.985
1/18/2007	15:26:51	11.505	8.859	2.998
1/18/2007	15:27:52	11.534	8.863	3.038
Begin calculating run averages				
1/18/2007	15:29:13	11.562	8.875	3.02
1/18/2007	15:30:13	11.579	8.863	2.963
1/18/2007	15:31:13	11.551	8.872	2.893
1/18/2007	15:32:13	11.48	8.88	3.022
1/18/2007	15:33:13	11.503	8.869	3.363
1/18/2007	15:34:12	11.538	8.88	3.192
1/18/2007	15:35:12	11.559	8.875	3.067
1/18/2007	15:36:12	11.569	8.873	2.965
1/18/2007	15:37:12	11.464	8.885	3.088
1/18/2007	15:38:13	11.483	8.891	3.751
1/18/2007	15:39:13	11.522	8.891	3.578
1/18/2007	15:40:13	11.548	8.882	3.172
1/18/2007	15:41:12	11.557	8.886	3.095
1/18/2007	15:42:12	11.572	8.869	2.916
1/18/2007	15:43:12	11.56	8.871	2.734
1/18/2007	15:44:12	11.554	8.888	2.934
1/18/2007	15:45:13	11.574	8.886	3.145
1/18/2007	15:46:13	11.546	8.883	3.088
1/18/2007	15:47:13	11.471	8.894	3.273
1/18/2007	15:48:12	11.531	8.895	3.566
1/18/2007	15:49:12	11.556	8.894	3.299
1/18/2007	15:50:12	11.557	8.889	3.049
1/18/2007	15:51:12	11.554	8.895	2.945

Test Run 2 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	15:52:13	11.496	8.884	3.269
1/18/2007	15:53:13	11.501	8.897	3.375
1/18/2007	15:54:13	11.534	8.899	3.151
1/18/2007	15:55:12	11.548	8.895	3.395
1/18/2007	15:56:12	11.563	8.89	3.235
1/18/2007	15:57:12	11.471	8.902	3.134
1/18/2007	15:58:12	11.496	8.896	3.572
1/18/2007	15:59:13	11.53	8.918	3.448
1/18/2007	16:00:13	11.572	8.907	3.206
1/18/2007	16:01:13	11.568	8.921	2.908
1/18/2007	16:02:12	11.537	8.939	3.181
1/18/2007	16:03:12	11.566	8.927	3.19
1/18/2007	16:04:12	11.572	8.928	3.02
1/18/2007	16:05:12	11.582	8.923	3.068
1/18/2007	16:06:13	11.564	8.903	2.884
1/18/2007	16:07:13	11.472	8.923	3.104
1/18/2007	16:08:13	11.533	8.899	3.497
1/18/2007	16:09:12	11.531	8.92	2.991
1/18/2007	16:10:12	11.554	8.9	2.681
1/18/2007	16:11:12	11.539	8.906	3.002
1/18/2007	16:12:12	11.471	8.902	3.16
1/18/2007	16:13:13	11.492	8.908	3.428
1/18/2007	16:14:13	11.512	8.917	3.284
1/18/2007	16:15:13	11.548	8.903	3.136
1/18/2007	16:16:12	11.551	8.908	3.136
1/18/2007	16:17:12	11.477	8.899	3.042
1/18/2007	16:18:12	11.473	8.901	3.382
1/18/2007	16:19:12	11.532	8.9	3.363
1/18/2007	16:20:13	11.569	8.888	2.859
1/18/2007	16:21:13	11.566	8.899	2.729
1/18/2007	16:22:13	11.535	8.901	2.793
1/18/2007	16:23:12	11.539	8.91	3.208
1/18/2007	16:24:12	11.555	8.894	3.29
1/18/2007	16:25:12	11.562	8.891	2.91
1/18/2007	16:26:12	11.555	8.868	2.85
1/18/2007	16:27:13	11.458	8.891	2.917
1/18/2007	16:28:13	11.493	8.903	3.643
Average of Test Run		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	16:28:13	11.533	8.896	3.143

Test Run 2 End

Final System Bias Check for Run 2 . STRATA Version 2.01

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	16:29:35	8.889	6.318	3.33
1/18/2007	16:30:35	0.008	0.302	1.317
1/18/2007	16:31:35	-0.013	0.262	-0.383
1/18/2007	16:32:34	-0.019	0.246	-0.401
1/18/2007	16:33:34	-0.022	0.24	-0.393
1/18/2007	16:34:34	-0.024	0.238	-0.49
1/18/2007	16:35:34	-0.025	0.23	-0.41
1/18/2007	16:36:35	-0.027	0.23	-0.407
1/18/2007	16:37:35	0.441	0.355	-0.408
1/18/2007	16:38:35	12.083	9.657	-0.852
1/18/2007	16:39:35	12.238	9.889	-1.872
1/18/2007	16:40:35	10.888	9.019	-2.015
1/18/2007	16:41:35	0.026	0.342	1.559
1/18/2007	16:42:34	-0.015	0.256	7.651
1/18/2007	16:43:34	-0.02	0.236	8.574

Final System Bias Check for Run 2

Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

	Reference Cylinder Numbers	
	Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time	1/18/2007	16:43:51	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Cal	0.02	0.079	0.046
Zero Avg	-0.027	0.23	-0.4
Zero Bias%	0.2	0.8	2.8
Zero Drift%	0	0	-1.8
Span Ref Cyl	12.5	9.81	9.28
Span Cal	12.441	9.951	9.086
Span Avg	12.241	9.897	8.612
Span Bias%	0.8	0.3	3
Span Drift%	0	-0.1	-1.1
Ini Zero Avg	-0.018	0.238	-0.107
Ini Span Avg	12.245	9.924	8.795
Run Avg	11.533	8.896	3.143
Co	-0.023	0.234	-0.254
Cm	12.243	9.91	8.704
Correct Avg	11.777	8.782	3.519

Test Run 3 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT %	CO2 OT %	CO ppm
1/18/2007	16:44:52	0.733	0.582	8.581
1/18/2007	16:45:52	11.428	8.694	6.504
1/18/2007	16:46:52	11.458	8.837	3.343
Begin calculating run averages				
1/18/2007	16:47:55	11.488	8.863	3.245
1/18/2007	16:48:55	11.503	8.877	3.406
1/18/2007	16:49:55	11.52	8.869	3.386
1/18/2007	16:50:55	11.517	8.872	3.232
1/18/2007	16:51:55	11.474	8.879	3.068
1/18/2007	16:52:54	11.459	8.88	3.456
1/18/2007	16:53:55	11.507	8.886	3.38
1/18/2007	16:54:55	11.546	8.872	3.068
1/18/2007	16:55:55	11.541	8.887	3.088
1/18/2007	16:56:55	11.514	8.876	3.224
1/18/2007	16:57:55	11.464	8.88	3.185
1/18/2007	16:58:55	11.494	8.899	3.381
1/18/2007	16:59:55	11.535	8.899	3.42
1/18/2007	17:00:54	11.532	8.901	3.295
1/18/2007	17:01:54	11.546	8.88	3.125
1/18/2007	17:02:55	11.535	8.891	3.203
1/18/2007	17:03:55	11.557	8.883	3.101
1/18/2007	17:04:55	11.56	8.883	2.975
1/18/2007	17:05:55	11.541	8.896	3.176
1/18/2007	17:06:55	11.46	8.898	3.316
1/18/2007	17:07:54	11.499	8.892	3.657
1/18/2007	17:08:54	11.538	8.898	3.377
1/18/2007	17:09:55	11.549	8.901	2.897
1/18/2007	17:10:55	11.555	8.892	2.581
1/18/2007	17:11:55	11.511	8.89	3.051
1/18/2007	17:12:55	11.474	8.895	3.403
1/18/2007	17:13:55	11.512	8.908	3.659
1/18/2007	17:14:54	11.543	8.904	3.379
1/18/2007	17:15:54	11.554	8.906	3.174
1/18/2007	17:16:55	11.512	8.906	3.143
1/18/2007	17:17:55	11.451	8.94	3.553
1/18/2007	17:18:55	11.515	8.932	3.571
1/18/2007	17:19:55	11.53	8.947	3.405
1/18/2007	17:20:55	11.553	8.936	3.304
1/18/2007	17:21:54	11.529	8.943	3.267
1/18/2007	17:22:54	11.533	8.938	3.511
1/18/2007	17:23:54	11.551	8.934	3.297
1/18/2007	17:24:55	11.557	8.921	3.075
1/18/2007	17:25:55	11.556	8.92	3.019
1/18/2007	17:26:55	11.461	8.907	3.043
1/18/2007	17:27:55	11.487	8.908	3.565
1/18/2007	17:28:55	11.525	8.909	3.426

Test Run 3 Begin. STRATA Version 2.01
Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	17:29:54	11.543	8.901	3.297
1/18/2007	17:30:54	11.533	8.91	3.484
1/18/2007	17:31:55	11.508	8.902	3.435
1/18/2007	17:32:55	11.467	8.919	3.405
1/18/2007	17:33:55	11.517	8.921	3.659
1/18/2007	17:34:55	11.55	8.912	3.322
1/18/2007	17:35:55	11.555	8.906	3.165
1/18/2007	17:36:54	11.524	8.895	3.194
1/18/2007	17:37:54	11.44	8.918	3.381
1/18/2007	17:38:55	11.506	8.916	3.486
1/18/2007	17:39:55	11.549	8.908	3.372
1/18/2007	17:40:55	11.529	8.924	3.214
1/18/2007	17:41:55	11.534	8.914	3.365
1/18/2007	17:42:55	11.547	8.89	3.098
1/18/2007	17:43:54	11.565	8.906	3.187
1/18/2007	17:44:54	11.583	8.894	3.21
1/18/2007	17:45:55	11.577	8.91	3.038
1/18/2007	17:46:55	11.479	8.913	3.181
Average of Test Run		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	17:46:55	11.522	8.903	3.276

Test Run 3 End

Final System Bias Check for Run 3 . STRATA Version 2.01

		O2 OT	CO2 OT	CO
		%	%	ppm
1/18/2007	17:48:20	1.523	1.054	2.737
1/18/2007	17:49:20	-0.01	0.259	-0.141
1/18/2007	17:50:20	-0.017	0.242	-0.453
1/18/2007	17:51:20	9.82	7.644	-0.733
1/18/2007	17:52:20	12.25	9.894	-1.807
1/18/2007	17:53:20	6.801	5.839	-1.578
1/18/2007	17:54:20	-0.003	0.289	4.144
1/18/2007	17:55:21	-0.017	0.248	8.316
1/18/2007	17:56:21	-0.021	0.233	8.41

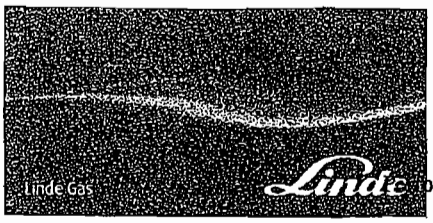
Final System Bias Check for Run 3

Operator: Ian DeVivi
Plant Name: TECO Polk Plant
Location: Unit 1

	Reference Cylinder Numbers	
	Zero	Span
O2 OT	CC-136551	CC-107096
CO2 OT	CC-136551	CC-107096
CO	CC-136551	CC-165111

Date/Time	1/18/2007	17:56:25	PASSED
Analyte	O2 OT	CO2 OT	CO
Units	%	%	ppm
Zero Ref Cyl	0	0	0
Zero Cal	0.02	0.079	0.046
Zero Avg	-0.014	0.251	-0.547
Zero Bias%	0.1	0.9	3.7
Zero Drift%	0.1	0.1	-0.9
Span Ref Cyl	12.5	9.81	9.28
Span Cal	12.441	9.951	9.086
Span Avg	12.249	9.89	8.459
Span Bias%	0.8	0.3	3.9
Span Drift%	0	0	-1
Ini Zero Avg	-0.027	0.23	-0.4
Ini Span Avg	12.241	9.897	8.612
Run Avg	11.522	8.903	3.276
Co	-0.02	0.241	-0.474
Cm	12.245	9.893	8.536
Correct Avg	11.763	8.803	3.862

CALIBRATION GAS CERTIFICATIONS



Certificate of Analysis

EPA Protocol

HiQ® Certificate

formed according to EPA-600/R-97/121 Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	13968		**Blend Tolerance:**	5 % Relative
EPA 13 - 18 PPM CO/N2		A31	**Blend Type:**	GRAVIMETRIC
Production #:	100121715		**Cyl. Pressure:**	2000 psig
Lot #:	30499G6060DC		**Balance Gas:**	Nitrogen
Cylinder #:	CC150548		**CGA:**	350
Expiration Date:	7/19/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 *months*		**Confidence:**	95 %

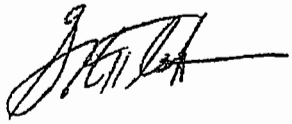
CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	13 to 18	15.9 +/- 0.18 ppm	07/19/2006
7727-37-9	Nitrogen		Balance	07/19/2006

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC180333 , NTRM	10.17 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/19/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Greg Eccleston



Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

MFD/HOLOX LTD
4236 STATESVILLE RD
CHARLOTTE NC 28269-4298
USA
704-596-6262

Material:	6132 EPA CO/N2 3-9.9 PPM A31	**Blend Tolerance:**	5 % Relative
Production #:	100065596	**Store/Use Temp:**	35 to 90 F
Lot #:	02499D3040GD	**Blend Type:**	EPA Protocol
Cylinder #:	CC165111	**Cyl. Pressure:**	2000 psig
Expiration Date:	11/16/2009	**Balance Gas:**	Nitrogen
Shelf Life:	36 *months*	**CGA:**	350
		Analytical Accuracy:	1.00 % Relative

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	9	9.28 +/- 0.1 ppm	11/16/2006
7727-37-9	Nitrogen		Balance	11/16/2006
630-08-0	Carbon Monoxide	9	9.26 +/- 0.18 ppm	04/15/2003
7727-37-9	Nitrogen		Balance	04/15/2003

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC180333 , NTRM	10.17 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
MCTa FTIR	AET0600294	FTIR	11/16/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report reviewed by Greg Eccleston

Linde Gas LLC
6055 Rockside Woods Blvd.
Independence, OH 44131
USA
Phone: (216) 642-6600
Fax: (216) 642-6615
www.us.lindegas.com

HQ Analysis Certificate

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18224		**Blend Tolerance:**	5 % Relative
EPA 10-15% O2/8-12% CO2/N2		A31	**Blend Type:**	EPA Protocol
Production #:	100118070		**Cyl. Pressure:**	2000 psig
Lot #:	30499E6010CC		**Balance Gas:**	Nitrogen
Cylinder #:	CC107096		**CGA:**	590
Expiration Date:	5/8/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
7782-44-7	Oxygen	10 to 15	12.5 +/- 0.09 %	05/08/2006
124-38-9	Carbon Dioxide	8 to 12	9.81 +/- 0.09 %	05/08/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	112347 , GMIS	10.01 %	05/02/2009
124-38-9	Carbon Dioxide	HO2290685Y , GMIS	14.01 %	05/02/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	05/08/2006
HORIBA MODEL VIA-510 CO2	4285416002	NDIR	05/08/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

HiQ Analysis Certificate

Certificate of Analysis

EPA Protocol

HiQ® Certificate formed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18225		**Blend Tolerance:**	5 % Relative
EPA 20-25% O2/16-20% CO2/N2		A31	**Blend Type:**	EPA Protocol
Production #:	100124043		**Cyl. Pressure:**	2000 psig
Lot #:	30499H6210DC		**Balance Gas:**	Nitrogen
Cylinder #:	CC250656		**CGA:**	590
Expiration Date:	8/25/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
124-38-9	Carbon Dioxide	18	17.7 +/- 0.17 %	08/25/2006
7782-44-7	Oxygen	22	21.9 +/- 0.2 %	08/25/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	AT9284 , GMIS	21.04 %	03/17/2009
124-38-9	Carbon Dioxide	CC234661 , GMIS	18.11 %	03/29/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	05/24/2005
HORIBA MODEL VIA-510 CO2	4285416002	NDIR	11/22/2005

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

HiQ certificate

NATIONAL SPECIALTY GASES

P. O. Box 12013
Research Triangle Park, N.C. 27709
Phone 919/544-3772

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS MIXTURE

Customer:	National Welders, Charlotte, NC	Reference #	88-94904
NSG PO#	4704164	Certification Date:	12/28/04
Customer PO#		Expiration Date:	12/28/07
Cylinder #	CC50737	Pressure, psig*	2000

ANALYTICAL INFORMATION

METHOD: This standard was analyzed according to EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards: Procedure G1 (September 1997)

ANALYZED CYLINDER

Components	Certified Concentration	Analytical Accuracy**
Carbon Monoxide	29.8 ppm	+/-1%

Balance - Nitrogen

REFERENCE STANDARD

Type/SRM Sample #	Cylinder #	Concentration	
GMIS (Traceable to SRM # 1678c)	CC67177	50.2 ppm	CO/N2

INSTRUMENTATION

Instrument/Model/Serial #	Last Date Calibrated	Analytical Method
Rosemount 880A CO 00172	12/06/04	Non-dispersive Infrared

Analyst: Jeremy Kenworthy

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, National Specialty Gases shall have no liability in excess of established charge for this service. Assayed at National Specialty Gases, 630 United Drive, Durham, NC 27713 (919) 544-3772

*Do not use this standard when cylinder pressure is below 150 psig.

**Analytical accuracy includes typical known error sources which, at least, include precision of the analytical instrument. NSG 020149L

Certificate of Analysis

EPA Protocol

HiQ® Certificate

Performed according to EPA-600/R-97/121 Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	13970		**Blend Tolerance:**	5 % Relative
EPA 43 - 47 PPM CO/N2		A31	**Blend Type:**	GRAVIMETRIC
Production #:	100121717		**Cyl. Pressure:**	2000 psig
Lot #:	30499G6060DB		**Balance Gas:**	Nitrogen
Cylinder #:	CC149754		**CGA:**	350
Expiration Date:	7/19/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

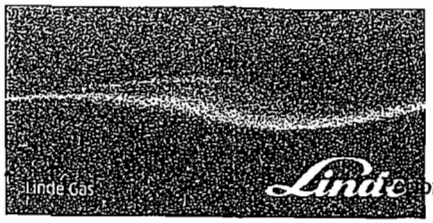
CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	43 to 47	46.3 +/- 0.3 ppm	07/19/2006
7727-37-9	Nitrogen		Balance	07/19/2006

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC179892 , NTRM	49.33 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/19/2006

All analyses are performed under controlled environmental conditions. This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Greg Eccleston



Certificate of Analysis

EPA Protocol

HiQ® Certificate

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18246		**Blend Tolerance:**	5 % Relative
EPA 60 PPM CO/N2 (+/-2%)		A31	**Blend Type:**	EPA Protocol
Production #:	100118386		**Cyl. Pressure:**	2000 psig
Lot #:	30499E6050DD		**Balance Gas:**	Nitrogen
Cylinder #:	CC174902		**CGA:**	350
Expiration Date:	7/12/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	60	61.7 ppm	07/12/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC179892 , NTRM	49.33 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/12/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	6198 EPA CO/N2 100-999 PPM A31	**Blend Tolerance:**	5 % Relative
Production #:	100117213	**Blend Type:**	EPA Protocol
Lot #:	30499D6060DD	**Cyl. Pressure:**	2000 psig
Cylinder #:	CC237798	**Balance Gas:**	Nitrogen
Expiration Date:	4/18/2009	**CGA:**	350
Shelf Life:	36 months	**Analytical Accuracy:**	1.00 % Relative
		Confidence:	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	100	101 +/- 0.7 ppm	04/18/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC179992 NTRM	99.49 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	04/18/2006

All analyses are performed under controlled environmental conditions. This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

No Analysis Certificate

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	2179		**Blend Tolerance:**	5 % Relative
MISC 3 COMPONENT EPA		A31	**Blend Type:**	EPA Protocol
Production #:	100115060		**Cyl. Pressure:**	2000 psig
Lot #:	30499B6100DB		**Balance Gas:**	Nitrogen
Cylinder #:	CC7551		**CGA:**	590
Expiration Date:	2/21/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	100	101 +/- 0.7 ppm	02/21/2006
7782-44-7	Oxygen	11	11.0 +/- 0.08 %	02/14/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	CC73289 , NTRM	9.90 %	06/13/2009
630-08-0	Carbon Monoxide	CC179992 , NTRM	99.49 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	02/14/2006
HORIBA MODEL VIA-510 CO	4345887002	NDIR	02/21/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

FTIQ Analysis Certificate

NATIONAL SPECIALTY GASES

P. O. Box 12013
Research Triangle Park, N.C. 27709
Phone 919/544-3772

CERTIFICATE OF ANALYSIS

CERTIFIED MIXTURE

Customer: National Welders
Charlotte, NC

Reference #: 88-99088
Cylinder #: CC85291
Order #: 5031323
Date Reported: 8/8/2005
Expiration Date: 8/8/2008

Component	Specification	Concentration / *Cert. Accuracy	Analytical Method
Oxygen	12%	12.0% +/- 2%	Paramagnetic
Carbon Dioxide	10%	10.0% +/- 2%	Non-Dispersive Infrared
Balance - Nitrogen			

Analyst Carolyn S. Williams

* CERTIFICATION ACCURACY IS A PERCENTAGE (+/-) OF THE COMPONENT

NSG020149K

APPENDIX W

INSTRUMENTAL REFERENCE METHOD TEST DATA – SULFURIC ACID PLANT

SULFUR DIOXIDE, OXYGEN, CARBON DIOXIDE SUMMARY

Polk Acid Plant - Report			
RUN 1			
01/18/2007	**13:37:07**		
Linearity Check - Calibration Error	O2	SO2	CO22
Analyzer Range	25	300	50
Units	%	%	%
Mid Level Certified Value (PPM or %)	6.04	152.2	25.07
High Level Certified Value (PPM or %)	13.7	269	45.1
Zero Level Observed	-0.047	0.004	-0.002
Mid Level Observed	6.118	152.084	24.78
High Level Observed	13.87	269.293	45.045
% Difference from Zero to Target	-0.19	0	0
% Difference from Mid to Target	0.31	-0.04	-0.58
% Difference from High to Target	0.68	0.1	-0.11
Analyzer Range	25	300	50
Units	%	%	%
Actual Zero From Linearity	-0.047	0.004	-0.002
Actual Span From Linearity	6.118	152.084	24.78
Initial Readings			
Zero	-0.047	2.788	-0.002
Span	6.057	153.988	25.024
Final Readings			
Zero	-0.047	1.762	-0.002
Span	6.057	154.574	25.024
Run Results			
Raw Results	6.4	159.82	20.04
Corrected Results (ppmv)	6.38	157.75	20.08

Polk Acid Plant - Report			
RUN 2			
01/18/2007	**15:14:28**		
Analyzer Range	25	300	50
Zero	-0.047	1.762	-0.002
Span	6.057	154.574	25.024
Final Readings			
Zero	-0.047	1.323	-0.002
Span	6.057	154.867	25.024
Run Results			
Raw Results	6.33	163.4	20.36
Corrected Results (ppmv)	6.31	160.82	20.4

Polk Acid Plant - Report			
RUN 3			
01/18/2007	**16:38:44**		
Analyzer Range	25	300	50
Units	%	%	%
Zero	-0.047	1.323	-0.002
Span	6.057	154.867	25.024
Final Readings			
Zero	-0.047	1.03	-0.002
Span	6.057	155.014	25.024
Run Results			
Raw Results	6.5	156.54	20.42
Corrected Results (ppmv)	6.48	153.78	20.46

QUALITY ASSURANCE ACTIVITIES

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

SULFURIC ACID PLANT
Analyzer Calibration Error

ACE = $((C_{Dir} - C_V) / CS) \times 100$ **Eq. 7E-1**

		O_2	SO_2	CO_2
Low-level gas	C_{Dir} =	n/a	n/a	n/a
	C_V =	n/a	n/a	n/a
	CS =	n/a	n/a	n/a
	$C_{Dir} - C_V$ =	n/a	n/a	n/a
	$(C_{Dir} - C_V) / CS$ =	n/a	n/a	n/a
	$((C_{Dir} - C_V) / CS) \times 100$ =	n/a	n/a	n/a

		O_2	SO_2	CO_2
Mid-level gas	C_{Dir} =	6.118	152.084	24.78
	C_V =	6.04	152.2	25.07
	CS =	13.7	269	45.1
	$C_{Dir} - C_V$ =	0.078	-0.116	-0.29
	$(C_{Dir} - C_V) / CS$ =	0.00569	-0.00043	-0.00643
	$((C_{Dir} - C_V) / CS) \times 100$ =	0.57	-0.04	-0.64

		O_2	SO_2	CO_2
High-level gas	C_{Dir} =	13.87	269.293	45.045
	C_V =	13.7	269	45.1
	CS =	13.7	269	45.1
	$C_{Dir} - C_V$ =	0.17	0.293	-0.055
	$(C_{Dir} - C_V) / CS$ =	0.01241	0.00109	-0.00122
	$((C_{Dir} - C_V) / CS) \times 100$ =	1.24	0.11	-0.12

Performance Specification is:

ACE ± 2% or $|C_{Dir} - C_V| \leq 0.5$ ppm or 0.5 % volume

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
System Bias Calculations

SB = $((C_S - C_{Dir}) / CS) \times 100$ **Eq. 7E-2**

		O_2	SO_2	CO_2
Initial Zero	C_S =	-0.047	2.788	-0.002
	C_{Dir} =	-0.047	0.004	-0.002
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	0.000	2.784	0.000
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.01035	0.00000
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	1.03	0.00

		O_2	SO_2	CO_2
Initial Span	C_S =	6.057	153.988	25.024
	C_{Dir} =	6.118	152.084	24.78
	CS =	20.9	269	45.1
	$(C_S - C_{Dir})$ =	-0.061	1.904	0.244
	$(C_S - C_{Dir}) / CS$ =	-0.00292	0.00708	0.00541
	$((C_S - C_{Dir}) / CS) \times 100$ =	-0.29	0.71	0.54

		O_2	SO_2	CO_2
Run 1 Post Run Zero	C_S =	-0.047	1.762	-0.002
	C_{Dir} =	-0.047	0.004	-0.002
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	0.000	1.758	0.000
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.00654	0.00000
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	0.65	0.00

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
System Bias Calculations

		O_2	SO_2	CO_2
Run 1 Post Run Span	C_S =	6.057	154.574	25.024
	C_{Dir} =	6.118	152.084	24.78
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	-0.061	2.490	0.244
	$(C_S - C_{Dir}) / CS$ =	-0.00445	0.00926	0.00541
	$((C_S - C_{Dir}) / CS) \times 100$ =	-0.45	0.93	0.54

		O_2	SO_2	CO_2
Run 2 Post Run Zero	C_S =	-0.047	1.323	-0.002
	C_{Dir} =	-0.047	0.004	-0.002
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	0.000	1.319	0.000
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.00490	0.00000
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	0.49	0.00

		O_2	SO_2	CO_2
Run 2 Post Run Span	C_S =	6.057	154.867	25.024
	C_{Dir} =	6.118	152.084	24.78
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	-0.061	2.783	0.244
	$(C_S - C_{Dir}) / CS$ =	-0.00445	0.01035	0.00541
	$((C_S - C_{Dir}) / CS) \times 100$ =	-0.45	1.03	0.54

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
System Bias Calculations

		O_2	SO_2	CO_2
Run 3 Post Run Zero	C_S =	-0.047	1.03	-0.002
	C_{Dir} =	-0.047	0.004	-0.002
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	0.000	1.026	0.000
	$(C_S - C_{Dir}) / CS$ =	0.00000	0.00381	0.00000
	$((C_S - C_{Dir}) / CS) \times 100$ =	0.00	0.38	0.00

		O_2	SO_2	CO_2
Run 3 Post Run Span	C_S =	6.057	155.014	25.024
	C_{Dir} =	6.118	152.084	24.78
	CS =	13.7	269	45.1
	$(C_S - C_{Dir})$ =	-0.061	2.930	0.244
	$(C_S - C_{Dir}) / CS$ =	-0.00445	0.01089	0.00541
	$((C_S - C_{Dir}) / CS) \times 100$ =	-0.45	1.09	0.54

Performance Specification is:
SB ± 5% or $|C_S - Cdir| \leq 0.5$ ppm or 0.5 % volume

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
Drift Assessment Calculations

$D = |SB_{final} - SB_i|$ Eq. 7E-4

		O_2	SO_2	CO_2
Run 1 Zero	SB_{final} =	0.00	0.65	0.00
	SB_i =	0.00	1.03	0.00
	$\|SB_{final} - SB_i\|$ =	0.00	0.38	0.00
		O_2	SO_2	CO_2
Run 1 Span	SB_{final} =	-0.45	0.93	0.54
	SB_i =	-0.29	0.71	0.54
	$\|SB_{final} - SB_i\|$ =	0.15	0.22	0.00
		O_2	SO_2	CO_2
Run 2 Zero	SB_{final} =	0.00	0.49	0.00
	SB_i =	0.00	0.65	0.00
	$\|SB_{final} - SB_i\|$ =	0.00	0.16	0.00
		O_2	SO_2	CO_2
Run 2 Span	SB_{final} =	-0.45	1.03	0.54
	SB_i =	-0.45	0.93	0.54
	$\|SB_{final} - SB_i\|$ =	0.00	0.11	0.00
		O_2	SO_2	CO_2
Run 3 Zero	SB_{final} =	0.00	0.38	0.00
	SB_i =	0.00	0.49	0.00
	$\|SB_{final} - SB_i\|$ =	0.00	0.11	0.00
		O_2	SO_2	CO_2
Run 3 Span	SB_{final} =	-0.45	1.09	0.54
	SB_i =	-0.45	1.03	0.54
	$\|SB_{final} - SB_i\|$ =	0.00	0.05	0.00

Performance Specification is:

D **± 3% of CS or $|C_{S\ post\text{-}run} - C_{S\ pre\text{-}run}| \leq$ 0.5 ppmv 0r 0.5 % volume**

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
Effluent Gas Concentration

$C_{Gas} = (C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ **Eq. 7E-5**

		O_2	SO_2	CO_2
Run 1	C_{Avg} =	6.4	159.82	20.04
	C_O =	-0.047	2.275	-0.002
	C_{MA} =	6.04	152.2	25.07
	C_M =	6.057	154.281	25.024
	$(C_{Avg} - C_0)$ =	6.447	157.545	20.042
	$(C_M - C_0)$ =	6.104	152.006	25.026
	$(C_{MA} / (C_M - C_0))$ =	0.98952	1.00128	1.00176
	$(C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ =	6.38	157.75	20.08

		O_2	SO_2	CO_2
Run 2	C_{Avg} =	6.33	163.4	20.36
	C_O =	-0.047	1.5425	-0.002
	C_{MA} =	6.04	152.2	25.07
	C_M =	6.057	154.721	25.024
	$(C_{Avg} - C_0)$ =	6.377	161.858	20.362
	$(C_M - C_0)$ =	6.104	153.178	25.026
	$(C_{MA} / (C_M - C_0))$ =	0.98952	0.99362	1.00176
	$(C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ =	6.31	160.82	20.40

TECO
TAMPA ELECTRIC

POLK POWER STATION
EMISSIONS UNIT ID 004
INSTRUMENTAL REFERENCE METHOD QUALITY ASSURANCE CALCULATIONS

COMBINED CYCLE COMBUSTION TURBINE - CT1A
Effluent Gas Concentration

		O_2	SO_2	CO_2
Run 3	C_{Avg} =	6.5	156.54	20.42
	C_O =	-0.047	1.1765	-0.002
	C_{MA} =	6.04	152.2	25.07
	C_M =	6.057	154.941	25.024
	$(C_{Avg} - C_0)$ =	6.547	155.364	20.422
	$(C_M - C_0)$ =	6.104	153.764	25.026
	$(C_{MA} / (C_M - C_0)$ =	0.98952	0.98983	1.00176
	$(C_{Avg} - C_0) \times (C_{MA} / (C_M - C_0))$ =	6.48	153.78	20.46

RUN LOG

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	7:58:00 AM		21.32	-2.93	0
01/18/2007	7:58:30 AM		21.32	-3.07	0
01/18/2007	7:59:00 AM		21.26	-3.07	0
01/18/2007	7:59:30 AM		21.32	-3.07	0
01/18/2007	8:00:00 AM		21.26	-2.93	0
01/18/2007	8:00:30 AM		21.32	-2.78	0
01/18/2007	8:01:00 AM		11.12	-2.78	0.85
01/18/2007	8:01:30 AM		6.18	-2.93	0
01/18/2007	8:02:00 AM		6.18	-2.78	-0.12
01/18/2007	8:02:30 AM		16.68	-3.07	0
01/18/2007	8:03:00 AM		21.2	-2.78	0
01/18/2007	8:03:30 AM		21.07	-2.78	-0.12
01/18/2007	8:04:00 AM		21.01	-3.07	0
01/18/2007	8:04:30 AM		6.55	-2.78	-0.12
01/18/2007	8:05:00 AM		6.18	-0.14	-0.12
01/18/2007	8:05:30 AM	Linearity Check	6.18	0	-0.12
01/18/2007	8:06:00 AM	Linearity Check	6.18	0	0
01/18/2007	8:06:30 AM	Linearity Check	6.12	0	-0.12
01/18/2007	8:07:00 AM	Linearity Check	6.12	-0.14	0
01/18/2007	8:07:30 AM	Linearity Check	10.88	-0.14	0
01/18/2007	8:08:00 AM	Linearity Check	13.93	-0.14	0
01/18/2007	8:08:30 AM	Linearity Check	13.87	-0.14	-0.12
01/18/2007	8:09:00 AM	Linearity Check	13.81	26.23	-0.12
01/18/2007	8:09:30 AM	Linearity Check	1.72	233.84	10.5
01/18/2007	8:10:00 AM	Linearity Check	-0.05	265.63	17.58
01/18/2007	8:10:30 AM	Linearity Check	-0.05	268.56	17.94
01/18/2007	8:11:00 AM	Linearity Check	-0.05	269	17.94
01/18/2007	8:11:30 AM	Linearity Check	-0.05	269	18.07
01/18/2007	8:12:00 AM	Linearity Check	0.2	129.08	17.21
01/18/2007	8:12:30 AM	Linearity Check	-0.05	144.32	9.64
01/18/2007	8:13:00 AM	Linearity Check	-0.05	150.03	10.01
01/18/2007	8:13:30 AM	Linearity Check	-0.05	150.47	10.01
01/18/2007	8:14:00 AM	Linearity Check	-0.05	150.18	10.01
01/18/2007	8:14:30 AM	Linearity Check	-0.05	151.2	10.01
01/18/2007	8:15:00 AM	Linearity Check	7.52	26.52	7.32
01/18/2007	8:15:30 AM	Linearity Check	20.89	1.91	0.12
01/18/2007	8:16:00 AM	Linearity Check	11.06	0.59	18.92
01/18/2007	8:16:30 AM	Linearity Check	1.85	0.44	40.04
01/18/2007	8:17:00 AM	Linearity Check	-0.11	0.3	45.53
01/18/2007	8:17:30 AM	Linearity Check	-0.11	0.44	45.66
01/18/2007	8:18:00 AM	Linearity Check	-0.17	0.44	45.17
01/18/2007	8:18:30 AM	Linearity Check	9.66	0.3	25.39
01/18/2007	8:19:00 AM	Linearity Check	19.06	0.15	4.76
01/18/2007	8:19:30 AM	Linearity Check	20.83	0.15	0.12
01/18/2007	8:20:00 AM	Linearity Check	12.65	0.3	12.69
01/18/2007	8:20:30 AM	Linearity Check	0.56	0.3	23.93
01/18/2007	8:21:00 AM	Linearity Check	-0.11	0.15	24.9
01/18/2007	8:21:30 AM	Linearity Check	-0.11	0.15	24.9
01/18/2007	8:22:00 AM	Linearity Check	10.76	228.71	12.57
01/18/2007	8:22:30 AM	Linearity Check	6.12	163.66	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	8:23:00 AM	Linearity Check	7.16	63.59	5.12
01/18/2007	8:23:30 AM	Linearity Check	6.12	38.68	0.12
01/18/2007	8:24:00 AM	- ZERO	6.12	25.94	0
01/18/2007	8:24:30 AM	- ZERO	6.12	19.64	0
01/18/2007	8:25:00 AM	- ZERO	6.06	16.27	0
01/18/2007	8:25:30 AM	- ZERO	6.06	12.9	0
01/18/2007	8:26:00 AM	- ZERO	6.06	11.14	0
01/18/2007	8:26:30 AM	- ZERO	6.06	10.11	0
01/18/2007	8:27:00 AM	- ZERO	6.06	8.5	0
01/18/2007	8:27:30 AM	- ZERO	5.51	7.33	1.22
01/18/2007	8:28:00 AM	- ZERO	0.81	6.74	20.14
01/18/2007	8:28:30 AM	- ZERO	-0.05	6.3	24.66
01/18/2007	8:29:00 AM	- Span	-0.11	5.57	24.78
01/18/2007	8:29:30 AM	- ZERO	-0.05	5.28	24.78
01/18/2007	8:30:00 AM	- Span	-0.11	4.69	25.02
01/18/2007	8:30:30 AM	- ZERO	-0.11	4.4	25.02
01/18/2007	8:31:00 AM	- ZERO	-0.05	31.06	25.02
01/18/2007	8:31:30 AM	- ZERO	0.32	89.52	13.55
01/18/2007	8:32:00 AM	- ZERO	-0.05	116.19	10.01
01/18/2007	8:32:30 AM	- ZERO	-0.05	126.15	10.01
01/18/2007	8:33:00 AM	- ZERO	-0.05	130.69	10.01
01/18/2007	8:33:30 AM	- ZERO	-0.05	135.82	10.01
01/18/2007	8:34:00 AM	- ZERO	-0.05	139.19	10.01
01/18/2007	8:34:30 AM	- Span	-0.05	140.95	10.01
01/18/2007	8:35:00 AM	- Span	-0.05	142.27	10.01
01/18/2007	8:35:30 AM	- Span	-0.05	142.41	9.89
01/18/2007	8:36:00 AM	- Span	-0.05	144.32	9.89
01/18/2007	8:36:30 AM	- Span	-0.05	145.05	9.89
01/18/2007	8:37:00 AM	- Span	-0.05	148.86	10.01
01/18/2007	8:37:30 AM	- Span	-0.05	150.47	9.89
01/18/2007	8:38:00 AM	- Span	-0.05	150.33	9.89
01/18/2007	8:38:30 AM	- Span	-0.05	150.33	9.89
01/18/2007	8:39:00 AM	- Span	-0.05	159.26	9.89
01/18/2007	8:39:30 AM	- Span	3.49	219.33	16.6
01/18/2007	8:40:00 AM	- Span	5.02	229.44	20.38
01/18/2007	8:40:30 AM	- Span	4.96	235.74	20.51
01/18/2007	8:41:00 AM	- Span	4.71	238.67	20.63
01/18/2007	8:41:30 AM	- Span	4.47	241.02	21
01/18/2007	8:42:00 AM		4.35	244.53	21.12
01/18/2007	8:42:30 AM		4.1	245.41	21.36
01/18/2007	8:43:00 AM		3.86	248.2	21.36
01/18/2007	8:43:30 AM		3.74	253.18	21.48
01/18/2007	8:44:00 AM		3.68	256.69	21.61
01/18/2007	8:44:30 AM		3.62	259.18	21.48
01/18/2007	8:45:00 AM		3.68	262.26	21.48
01/18/2007	8:45:30 AM		3.68	266.66	21.24
01/18/2007	8:46:00 AM		3.74	270.17	21.12
01/18/2007	8:46:30 AM		3.86	273.69	21
01/18/2007	8:47:00 AM		3.92	277.5	20.87
01/18/2007	8:47:30 AM		4.04	280.87	20.63

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	8:48:00 AM		4.16	281.6	20.51
01/18/2007	8:48:30 AM		4.35	282.04	20.38
01/18/2007	8:49:00 AM		4.47	281.31	20.26
01/18/2007	8:49:30 AM		4.59	281.45	20.26
01/18/2007	8:50:00 AM		4.71	281.75	20.26
01/18/2007	8:50:30 AM		4.78	280.57	20.26
01/18/2007	8:51:00 AM		4.78	279.4	20.38
01/18/2007	8:51:30 AM		4.78	278.23	20.51
01/18/2007	8:52:00 AM		4.71	277.2	20.38
01/18/2007	8:52:30 AM		4.71	152.23	20.63
01/18/2007	8:53:00 AM		11.92	54.95	4.27
01/18/2007	8:53:30 AM		13.81	31.06	0.12
01/18/2007	8:54:00 AM		13.81	21.39	0.12
01/18/2007	8:54:30 AM		13.81	18.32	0
01/18/2007	8:55:00 AM		13.81	15.68	0
01/18/2007	8:55:30 AM		13.14	0.74	0.97
01/18/2007	8:56:00 AM		11	178.46	5.25
01/18/2007	8:56:30 AM		11.12	45.86	6.22
01/18/2007	8:57:00 AM		13.81	21.83	0.12
01/18/2007	8:57:30 AM		13.81	17.59	0
01/18/2007	8:58:00 AM		13.87	12.16	0
01/18/2007	8:58:30 AM		13.87	10.85	0
01/18/2007	8:59:00 AM		13.87	39.86	0
01/18/2007	8:59:30 AM		2.64	113.26	7.81
01/18/2007	9:00:00 AM		0.01	134.65	10.01
01/18/2007	9:00:30 AM		0.01	139.48	9.89
01/18/2007	9:01:00 AM		-0.05	143.88	9.89
01/18/2007	9:01:30 AM		-0.05	146.96	9.89
01/18/2007	9:02:00 AM		-0.05	147.98	10.01
01/18/2007	9:02:30 AM		-0.05	148.71	10.01
01/18/2007	9:03:00 AM		-0.05	149.45	9.89
01/18/2007	9:03:30 AM		0.38	218.45	10.37
01/18/2007	9:04:00 AM		4.23	255.67	19.16
01/18/2007	9:04:30 AM		4.78	259.77	20.26
01/18/2007	9:05:00 AM		4.71	262.26	20.38
01/18/2007	9:05:30 AM		4.71	262.11	20.51
01/18/2007	9:06:00 AM		4.59	261.09	20.75
01/18/2007	9:06:30 AM		4.53	262.7	20.87
01/18/2007	9:07:00 AM		4.35	263.14	21.12
01/18/2007	9:07:30 AM		4.1	264.46	21.12
01/18/2007	9:08:00 AM		3.98	266.22	21
01/18/2007	9:08:30 AM		3.92	267.53	21
01/18/2007	9:09:00 AM		3.92	268.85	21
01/18/2007	9:09:30 AM		3.92	270.17	21
01/18/2007	9:10:00 AM		3.98	271.93	20.87
01/18/2007	9:10:30 AM		4.04	272.81	20.75
01/18/2007	9:11:00 AM		4.1	272.52	20.75
01/18/2007	9:11:30 AM		4.1	273.69	20.63
01/18/2007	9:12:00 AM		4.29	274.13	20.51
01/18/2007	9:12:30 AM		4.35	274.86	20.38

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	9:13:00 AM		4.41	275.59	20.38
01/18/2007	9:13:30 AM		4.53	276.47	20.26
01/18/2007	9:14:00 AM		4.59	274.57	20.14
01/18/2007	9:14:30 AM		4.78	271.93	20.02
01/18/2007	9:15:00 AM		4.96	271.2	19.9
01/18/2007	9:15:30 AM		5.02	269.88	19.9
01/18/2007	9:16:00 AM		5.08	268.27	19.9
01/18/2007	9:16:30 AM		5.08	264.9	20.02
01/18/2007	9:17:00 AM		5.02	262.41	20.02
01/18/2007	9:17:30 AM		4.96	260.65	20.14
01/18/2007	9:18:00 AM		4.84	258.89	20.26
01/18/2007	9:18:30 AM		4.84	258.01	20.26
01/18/2007	9:19:00 AM		4.65	256.99	20.38
01/18/2007	9:19:30 AM		4.47	256.11	20.51
01/18/2007	9:20:00 AM		4.35	255.96	20.51
01/18/2007	9:20:30 AM		4.35	255.08	20.63
01/18/2007	9:21:00 AM		4.35	254.93	20.63
01/18/2007	9:21:30 AM		4.29	254.5	20.75
01/18/2007	9:22:00 AM		4.29	253.62	20.75
01/18/2007	9:22:30 AM		4.35	253.03	20.51
01/18/2007	9:23:00 AM		4.41	252.44	20.38
01/18/2007	9:23:30 AM		4.47	252.15	20.38
01/18/2007	9:24:00 AM		4.59	251.57	20.26
01/18/2007	9:24:30 AM		4.71	250.54	20.26
01/18/2007	9:25:00 AM		4.71	250.25	20.26
01/18/2007	9:25:30 AM		4.78	249.95	20.26
01/18/2007	9:26:00 AM		4.84	249.66	20.14
01/18/2007	9:26:30 AM		4.84	249.22	20.26
01/18/2007	9:27:00 AM		4.84	248.63	20.38
01/18/2007	9:27:30 AM		4.78	247.9	20.38
01/18/2007	9:28:00 AM		4.78	247.9	20.26
01/18/2007	9:28:30 AM		4.71	247.17	20.26
01/18/2007	9:29:00 AM		4.78	245.7	20.38
01/18/2007	9:29:30 AM		4.65	245.85	20.51
01/18/2007	9:30:00 AM		4.71	245.56	20.51
01/18/2007	9:30:30 AM		4.59	246	20.63
01/18/2007	9:31:00 AM		4.47	246.88	20.87
01/18/2007	9:31:30 AM		4.29	249.07	21.12
01/18/2007	9:32:00 AM		4.04	251.57	21.24
01/18/2007	9:32:30 AM		3.98	254.2	21.36
01/18/2007	9:33:00 AM		3.8	257.57	21.36
01/18/2007	9:33:30 AM		3.68	260.8	21.36
01/18/2007	9:34:00 AM		3.74	264.17	21.12
01/18/2007	9:34:30 AM		3.8	265.78	21
01/18/2007	9:35:00 AM		3.92	268.12	21
01/18/2007	9:35:30 AM		3.98	271.49	21
01/18/2007	9:36:00 AM		4.04	273.83	20.87
01/18/2007	9:36:30 AM		4.1	276.33	21
01/18/2007	9:37:00 AM		4.16	278.52	20.87
01/18/2007	9:37:30 AM		4.16	280.87	20.87

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	9:38:00 AM		4.16	282.77	20.75
01/18/2007	9:38:30 AM		4.29	284.82	20.63
01/18/2007	9:39:00 AM		4.35	285.7	20.63
01/18/2007	9:39:30 AM		4.41	284.68	20.51
01/18/2007	9:40:00 AM		4.53	284.38	20.38
01/18/2007	9:40:30 AM		4.59	284.38	20.38
01/18/2007	9:41:00 AM		4.53	284.24	20.63
01/18/2007	9:41:30 AM		4.53	284.09	20.63
01/18/2007	9:42:00 AM		4.47	284.53	20.75
01/18/2007	9:42:30 AM		4.35	283.65	20.75
01/18/2007	9:43:00 AM		4.23	282.19	20.87
01/18/2007	9:43:30 AM		4.1	285.12	20.87
01/18/2007	9:44:00 AM		4.04	285.85	21
01/18/2007	9:44:30 AM		4.04	285.41	20.87
01/18/2007	9:45:00 AM		4.04	284.82	20.87
01/18/2007	9:45:30 AM		4.1	284.82	20.87
01/18/2007	9:46:00 AM		4.1	285.56	20.87
01/18/2007	9:46:30 AM		4.1	286	20.87
01/18/2007	9:47:00 AM		4.1	287.31	21
01/18/2007	9:47:30 AM		4.04	288.19	21
01/18/2007	9:48:00 AM		4.35	287.75	20.87
01/18/2007	9:48:30 AM		4.59	284.24	20.75
01/18/2007	9:49:00 AM		4.78	281.16	20.75
01/18/2007	9:49:30 AM		4.96	277.06	20.75
01/18/2007	9:50:00 AM		5.2	274.86	20.75
01/18/2007	9:50:30 AM		5.32	271.64	20.63
01/18/2007	9:51:00 AM		5.32	268.27	20.63
01/18/2007	9:51:30 AM		5.63	264.46	20.51
01/18/2007	9:52:00 AM		5.75	259.92	20.51
01/18/2007	9:52:30 AM		5.94	254.5	20.51
01/18/2007	9:53:00 AM		6.12	249.66	20.38
01/18/2007	9:53:30 AM		6.36	243.65	20.26
01/18/2007	9:54:00 AM		6.79	236.62	20.02
01/18/2007	9:54:30 AM		6.91	230.17	20.14
01/18/2007	9:55:00 AM		7.22	223.87	20.02
01/18/2007	9:55:30 AM		7.52	217.28	20.02
01/18/2007	9:56:00 AM		7.77	210.1	19.9
01/18/2007	9:56:30 AM		8.01	204.1	19.9
01/18/2007	9:57:00 AM		8.01	198.97	20.02
01/18/2007	9:57:30 AM		7.77	194.86	20.14
01/18/2007	9:58:00 AM		7.77	191.5	20.14
01/18/2007	9:58:30 AM		7.83	187.1	20.14
01/18/2007	9:59:00 AM		7.77	182.7	20.14
01/18/2007	9:59:30 AM		7.77	178.02	20.14
01/18/2007	10:00:00 AM		7.89	173.62	20.02
01/18/2007	10:00:30 AM		7.83	170.1	20.14
01/18/2007	10:01:00 AM		7.83	167.03	20.02
01/18/2007	10:01:30 AM		7.89	164.24	20.02
01/18/2007	10:02:00 AM		7.95	160.29	19.9
01/18/2007	10:02:30 AM		7.95	157.8	19.9

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	10:03:00 AM		7.95	156.04	19.9
01/18/2007	10:03:30 AM		8.07	153.26	19.77
01/18/2007	10:04:00 AM		8.13	150.76	19.77
01/18/2007	10:04:30 AM		8.13	149.01	19.77
01/18/2007	10:05:00 AM		8.19	146.37	19.65
01/18/2007	10:05:30 AM		8.19	144.03	19.77
01/18/2007	10:06:00 AM		8.25	142.41	19.65
01/18/2007	10:06:30 AM		8.19	141.24	19.77
01/18/2007	10:07:00 AM		8.07	139.34	19.77
01/18/2007	10:07:30 AM		8.13	138.31	19.65
01/18/2007	10:08:00 AM		8.13	136.85	19.53
01/18/2007	10:08:30 AM		8.13	135.82	19.53
01/18/2007	10:09:00 AM		8.13	135.09	19.41
01/18/2007	10:09:30 AM		8.13	133.33	19.41
01/18/2007	10:10:00 AM		8.38	131.72	19.29
01/18/2007	10:10:30 AM		8.25	130.99	19.41
01/18/2007	10:11:00 AM		8.25	130.55	19.41
01/18/2007	10:11:30 AM		8.19	129.08	19.41
01/18/2007	10:12:00 AM		8.19	127.62	19.41
01/18/2007	10:12:30 AM		8.19	127.62	19.41
01/18/2007	10:13:00 AM		8.07	127.03	19.41
01/18/2007	10:13:30 AM		8.01	126.44	19.41
01/18/2007	10:14:00 AM		8.13	125.42	19.41
01/18/2007	10:14:30 AM		8.13	124.98	19.41
01/18/2007	10:15:00 AM		8.13	124.39	19.41
01/18/2007	10:15:30 AM		8.13	124.1	19.53
01/18/2007	10:16:00 AM		8.07	123.66	19.53
01/18/2007	10:16:30 AM		8.01	123.37	19.65
01/18/2007	10:17:00 AM		7.95	122.78	19.65
01/18/2007	10:17:30 AM		7.89	122.34	19.53
01/18/2007	10:18:00 AM		7.77	122.2	19.65
01/18/2007	10:18:30 AM		7.58	122.34	19.65
01/18/2007	10:19:00 AM		7.52	123.37	19.77
01/18/2007	10:19:30 AM		7.58	123.51	19.65
01/18/2007	10:20:00 AM		7.64	123.81	19.53
01/18/2007	10:20:30 AM		7.71	123.37	19.53
01/18/2007	10:21:00 AM		7.77	123.07	19.41
01/18/2007	10:21:30 AM		7.89	123.22	19.41
01/18/2007	10:22:00 AM		7.89	123.22	19.41
01/18/2007	10:22:30 AM		7.95	122.93	19.41
01/18/2007	10:23:00 AM		7.95	123.22	19.29
01/18/2007	10:23:30 AM		7.89	122.93	19.29
01/18/2007	10:24:00 AM		7.95	122.34	19.16
01/18/2007	10:24:30 AM		8.01	123.07	19.16
01/18/2007	10:25:00 AM		8.01	122.78	19.29
01/18/2007	10:25:30 AM		8.07	121.9	19.29
01/18/2007	10:26:00 AM		8.07	121.9	19.29
01/18/2007	10:26:30 AM		8.07	121.02	19.41
01/18/2007	10:27:00 AM		8.01	121.46	19.41
01/18/2007	10:27:30 AM		8.01	122.34	19.41

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	10:28:00 AM		7.95	122.34	19.41
01/18/2007	10:28:30 AM		7.95	121.46	19.41
01/18/2007	10:29:00 AM		7.89	121.32	19.41
01/18/2007	10:29:30 AM		7.95	120.58	19.29
01/18/2007	10:30:00 AM		7.95	121.32	19.41
01/18/2007	10:30:30 AM		7.77	120.73	19.41
01/18/2007	10:31:00 AM		7.64	120.88	19.53
01/18/2007	10:31:30 AM		7.64	120.73	19.53
01/18/2007	10:32:00 AM		7.52	121.02	19.65
01/18/2007	10:32:30 AM		7.46	121.76	19.53
01/18/2007	10:33:00 AM		7.46	122.49	19.53
01/18/2007	10:33:30 AM		7.46	122.78	19.41
01/18/2007	10:34:00 AM		7.46	122.93	19.41
01/18/2007	10:34:30 AM		7.58	122.34	19.41
01/18/2007	10:35:00 AM		7.58	122.05	19.41
01/18/2007	10:35:30 AM		7.71	121.76	19.41
01/18/2007	10:36:00 AM		7.77	121.9	19.29
01/18/2007	10:36:30 AM		7.77	121.9	19.29
01/18/2007	10:37:00 AM		7.77	121.76	19.29
01/18/2007	10:37:30 AM		7.83	121.76	19.16
01/18/2007	10:38:00 AM		7.77	122.05	19.29
01/18/2007	10:38:30 AM		7.89	121.76	19.16
01/18/2007	10:39:00 AM		7.89	121.76	19.29
01/18/2007	10:39:30 AM		7.95	122.05	19.16
01/18/2007	10:40:00 AM		8.01	121.17	19.16
01/18/2007	10:40:30 AM		7.95	120.44	19.16
01/18/2007	10:41:00 AM		7.95	121.02	19.16
01/18/2007	10:41:30 AM		7.95	121.17	19.16
01/18/2007	10:42:00 AM		7.89	120.88	19.29
01/18/2007	10:42:30 AM		7.77	121.32	19.29
01/18/2007	10:43:00 AM		7.71	120.58	19.41
01/18/2007	10:43:30 AM		7.71	120.88	19.29
01/18/2007	10:44:00 AM		7.71	120.73	19.29
01/18/2007	10:44:30 AM		7.71	120.58	19.41
01/18/2007	10:45:00 AM		7.64	121.02	19.29
01/18/2007	10:45:30 AM		7.64	120.88	19.41
01/18/2007	10:46:00 AM		7.64	120.44	19.41
01/18/2007	10:46:30 AM	travers - 1	7.64	120.29	19.41
01/18/2007	10:47:00 AM	travers - 1	7.64	120.58	19.41
01/18/2007	10:47:30 AM	travers - 1	7.64	120.73	19.41
01/18/2007	10:48:00 AM	travers - 1	7.58	121.46	19.41
01/18/2007	10:48:30 AM	travers - 1	7.4	121.61	19.41
01/18/2007	10:49:00 AM	travers - 1	7.46	122.05	19.29
01/18/2007	10:49:30 AM	travers - 1	7.64	121.46	19.16
01/18/2007	10:50:00 AM	travers - 1	7.83	120.88	19.04
01/18/2007	10:50:30 AM	travers - 1	7.83	120.58	19.04
01/18/2007	10:51:00 AM	travers - 1	7.77	121.32	19.29
01/18/2007	10:51:30 AM	travers - 1	7.71	121.76	19.29
01/18/2007	10:52:00 AM	travers - 1	7.58	122.34	19.53
01/18/2007	10:52:30 AM	travers - 1	7.34	123.51	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	10:53:00 AM	travers - 1	7.09	124.69	19.9
01/18/2007	10:53:30 AM	travers - 1	6.97	126.3	19.9
01/18/2007	10:54:00 AM	travers - 1	6.91	126.44	19.9
01/18/2007	10:54:30 AM	travers - 1	6.79	127.91	19.77
01/18/2007	10:55:00 AM	travers - 1	6.79	128.06	19.77
01/18/2007	10:55:30 AM	Run Paused	6.85	128.5	19.77
01/18/2007	10:56:00 AM	Run Paused	6.85	118.97	19.77
01/18/2007	10:56:30 AM	Run Paused	14.6	27.84	9.76
01/18/2007	10:57:00 AM	Run Paused	20.83	80.73	0.36
01/18/2007	10:57:30 AM	Run Paused	9.9	129.52	14.77
01/18/2007	10:58:00 AM	Run Paused	7.16	130.4	19.41
01/18/2007	10:58:30 AM	travers - 1	7.09	130.55	19.53
01/18/2007	10:59:00 AM	travers - 1	7.09	132.89	19.65
01/18/2007	10:59:30 AM	travers - 1	7.16	134.21	19.41
01/18/2007	11:00:00 AM	travers - 1	7.22	135.67	19.53
01/18/2007	11:00:30 AM	travers - 1	7.22	135.23	19.53
01/18/2007	11:01:00 AM	travers - 1	7.22	135.38	19.53
01/18/2007	11:01:30 AM	travers - 1	7.22	135.38	19.53
01/18/2007	11:02:00 AM	travers - 1	7.22	135.97	19.77
01/18/2007	11:02:30 AM	travers - 1	7.16	136.99	19.65
01/18/2007	11:03:00 AM	travers - 1	7.09	137.87	19.65
01/18/2007	11:03:30 AM	travers - 1	7.03	139.34	19.65
01/18/2007	11:04:00 AM	travers - 1	7.09	139.63	19.77
01/18/2007	11:04:30 AM	travers - 1	7.09	138.9	19.77
01/18/2007	11:05:00 AM	travers - 1	7.03	139.34	19.77
01/18/2007	11:05:30 AM	travers - 1	6.97	139.63	19.9
01/18/2007	11:06:00 AM	travers - 1	6.91	140.66	19.9
01/18/2007	11:06:30 AM	travers - 1	6.85	141.39	20.14
01/18/2007	11:07:00 AM	travers - 1	6.67	141.83	20.14
01/18/2007	11:07:30 AM	Run Paused	6.61	142.85	20.14
01/18/2007	11:08:00 AM	Run Paused	6.61	143.44	20.14
01/18/2007	11:08:30 AM	Run Paused	6.55	81.9	20.14
01/18/2007	11:09:00 AM	Run Paused	6	15.39	5.98
01/18/2007	11:09:30 AM	Run Paused	10.45	14.36	0.24
01/18/2007	11:10:00 AM	Run Paused	9.78	131.57	10.5
01/18/2007	11:10:30 AM	Run Paused	6.91	141.83	19.16
01/18/2007	11:11:00 AM	travers - 1	6.79	144.61	19.77
01/18/2007	11:11:30 AM	travers - 1	6.85	146.22	19.77
01/18/2007	11:12:00 AM	travers - 1	6.91	146.52	19.77
01/18/2007	11:12:30 AM	travers - 1	6.85	146.52	19.9
01/18/2007	11:13:00 AM	travers - 1	6.79	148.71	19.9
01/18/2007	11:13:30 AM	travers - 1	6.91	148.13	19.65
01/18/2007	11:14:00 AM	travers - 1	6.97	148.27	19.65
01/18/2007	11:14:30 AM	travers - 1	7.03	148.42	19.65
01/18/2007	11:15:00 AM	travers - 1	7.09	148.71	19.65
01/18/2007	11:15:30 AM	travers - 1	7.09	147.98	19.65
01/18/2007	11:16:00 AM	travers - 1	7.22	148.42	19.53
01/18/2007	11:16:30 AM	travers - 1	7.22	148.27	19.65
01/18/2007	11:17:00 AM	travers - 1	7.16	148.27	19.77
01/18/2007	11:17:30 AM	Run Paused	7.09	148.27	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	11:18:00 AM	travers - 1	7.03	148.27	19.77
01/18/2007	11:18:30 AM	travers - 1	6.85	148.57	20.02
01/18/2007	11:19:00 AM	travers - 1	6.61	149.74	20.26
01/18/2007	11:19:30 AM	travers - 1	6.48	150.62	20.26
01/18/2007	11:20:00 AM	travers - 1	6.36	151.2	20.26
01/18/2007	11:20:30 AM	travers - 1	6.36	151.94	20.38
01/18/2007	11:21:00 AM	Run Paused	6.36	152.67	20.26
01/18/2007	11:21:30 AM	Run Paused	9.05	27.69	13.67
01/18/2007	11:22:00 AM	Run Paused	13.57	37.36	1.1
01/18/2007	11:22:30 AM	Run Paused	9.05	143.88	12.45
01/18/2007	11:23:00 AM	Run Paused	6.85	149.89	19.41
01/18/2007	11:23:30 AM	travers - 1	6.97	150.33	19.53
01/18/2007	11:24:00 AM	travers - 1	7.22	150.33	19.41
01/18/2007	11:24:30 AM	travers - 1	7.34	150.03	19.29
01/18/2007	11:25:00 AM	travers - 1	7.4	150.33	19.41
01/18/2007	11:25:30 AM	travers - 1	7.46	150.03	19.41
01/18/2007	11:26:00 AM	travers - 1	7.46	150.62	19.41
01/18/2007	11:26:30 AM	travers - 1	7.52	149.45	19.41
01/18/2007	11:27:00 AM	travers - 1	7.4	149.89	19.41
01/18/2007	11:27:30 AM	travers - 1	7.34	149.89	19.53
01/18/2007	11:28:00 AM	travers - 1	7.22	150.03	19.53
01/18/2007	11:28:30 AM	travers - 1	7.03	149.59	19.77
01/18/2007	11:29:00 AM	travers - 1	6.91	150.33	19.9
01/18/2007	11:29:30 AM	travers - 1	6.85	150.18	19.9
01/18/2007	11:30:00 AM	travers - 1	6.73	150.18	20.02
01/18/2007	11:30:30 AM	travers - 1	6.67	151.35	20.26
01/18/2007	11:31:00 AM	travers - 1	6.67	152.23	20.26
01/18/2007	11:31:30 AM	travers - 1	6.55	152.52	20.26
01/18/2007	11:32:00 AM	travers - 2	6.61	152.08	20.26
01/18/2007	11:32:30 AM		6.48	153.26	20.14
01/18/2007	11:33:00 AM		6.48	154.43	20.14
01/18/2007	11:33:30 AM		6.48	154.87	20.02
01/18/2007	11:34:00 AM		5.39	122.34	14.89
01/18/2007	11:34:30 AM		0.01	150.91	10.01
01/18/2007	11:35:00 AM		-0.05	153.26	10.13
01/18/2007	11:35:30 AM		-0.05	153.26	10.01
01/18/2007	11:36:00 AM		-0.05	141.39	10.01
01/18/2007	11:36:30 AM		3.19	16.71	5.12
01/18/2007	11:37:00 AM		6	7.48	0.12
01/18/2007	11:37:30 AM		6.06	4.99	0
01/18/2007	11:38:00 AM		6.06	108.13	0.12
01/18/2007	11:38:30 AM		6.97	146.52	15.26
01/18/2007	11:39:00 AM		7.03	150.03	19.65
01/18/2007	11:39:30 AM		6.97	151.2	19.77
01/18/2007	11:40:00 AM		6.97	154.28	19.65
01/18/2007	11:40:30 AM		6.91	154.13	19.77
01/18/2007	11:41:00 AM		6.85	153.84	19.77
01/18/2007	11:41:30 AM		6.85	153.55	19.77
01/18/2007	11:42:00 AM		6.85	153.7	19.9
01/18/2007	11:42:30 AM		6.79	153.99	19.9

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	11:43:00 AM		6.67	154.57	20.02
01/18/2007	11:43:30 AM		6.61	154.87	20.02
01/18/2007	11:44:00 AM		6.61	154.57	20.02
01/18/2007	11:44:30 AM		6.61	154.43	20.02
01/18/2007	11:45:00 AM		6.61	154.87	19.9
01/18/2007	11:45:30 AM		6.67	155.16	19.9
01/18/2007	11:46:00 AM		6.85	154.72	19.9
01/18/2007	11:46:30 AM		6.85	154.43	19.77
01/18/2007	11:47:00 AM		6.85	153.7	19.77
01/18/2007	11:47:30 AM	Traverse2 - 1	6.91	153.55	19.77
01/18/2007	11:48:00 AM	Traverse2 - 1	6.97	153.26	19.65
01/18/2007	11:48:30 AM	Traverse2 - 1	6.97	153.7	19.65
01/18/2007	11:49:00 AM	Traverse2 - 1	6.97	152.96	19.53
01/18/2007	11:49:30 AM	Traverse2 - 1	7.03	152.67	19.53
01/18/2007	11:50:00 AM	Traverse2 - 1	7.16	152.52	19.53
01/18/2007	11:50:30 AM	Traverse2 - 1	7.09	152.67	19.65
01/18/2007	11:51:00 AM	Traverse2 - 1	6.97	152.82	19.65
01/18/2007	11:51:30 AM	Traverse2 - 1	6.91	152.82	19.77
01/18/2007	11:52:00 AM	Traverse2 - 1	6.85	152.23	19.77
01/18/2007	11:52:30 AM	Traverse2 - 1	6.85	152.08	19.77
01/18/2007	11:53:00 AM	Traverse2 - 1	6.79	152.52	19.77
01/18/2007	11:53:30 AM	Traverse2 - 1	6.79	152.52	19.77
01/18/2007	11:54:00 AM	Traverse2 - 1	6.97	151.64	19.53
01/18/2007	11:54:30 AM	Traverse2 - 1	7.03	150.91	19.53
01/18/2007	11:55:00 AM	Traverse2 - 1	7.03	150.62	19.53
01/18/2007	11:55:30 AM	Traverse2 - 1	7.03	150.18	19.53
01/18/2007	11:56:00 AM	Traverse2 - 1	7.03	150.18	19.65
01/18/2007	11:56:30 AM	Traverse2 - 1	7.03	150.03	19.65
01/18/2007	11:57:00 AM	Traverse2 - 1	7.09	150.47	19.53
01/18/2007	11:57:30 AM	Traverse2 - 1	7.03	150.03	19.53
01/18/2007	11:58:00 AM	Traverse2 - 1	7.03	149.3	19.65
01/18/2007	11:58:30 AM	Traverse2 - 1	6.97	149.45	19.65
01/18/2007	11:59:00 AM	Traverse2 - 1	6.91	149.3	19.65
01/18/2007	11:59:30 AM	Traverse2 - 1	6.79	149.89	19.77
01/18/2007	12:00:00 PM	Traverse2 - 1	6.67	150.33	19.9
01/18/2007	12:00:30 PM	Traverse2 - 1	6.67	151.2	19.77
01/18/2007	12:01:00 PM	Traverse2 - 1	6.61	151.94	19.9
01/18/2007	12:01:30 PM	Traverse2 - 1	6.55	152.82	20.02
01/18/2007	12:02:00 PM	Traverse2 - 1	6.61	153.26	19.9
01/18/2007	12:02:30 PM	Traverse2 - 1	6.55	153.4	19.9
01/18/2007	12:03:00 PM	Traverse2 - 1	6.48	153.99	19.9
01/18/2007	12:03:30 PM	Traverse2 - 1	6.42	154.87	19.9
01/18/2007	12:04:00 PM	Traverse2 - 1	6.55	155.75	19.9
01/18/2007	12:04:30 PM	Traverse2 - 1	6.61	155.89	19.77
01/18/2007	12:05:00 PM	Traverse2 - 1	6.73	155.75	19.53
01/18/2007	12:05:30 PM		6.85	155.31	19.53
01/18/2007	12:06:00 PM		6.91	137.87	19.16
01/18/2007	12:06:30 PM		0.62	153.55	10.74
01/18/2007	12:07:00 PM	- ZERO	-0.05	154.72	10.01
01/18/2007	12:07:30 PM	- Span	-0.05	155.75	9.89

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	12:08:00 PM	- Span	-0.05	154.28	10.01
01/18/2007	12:08:30 PM	- Span	-0.05	151.06	10.01
01/18/2007	12:09:00 PM	- Span	2.82	15.68	5.86
01/18/2007	12:09:30 PM	- Span	6	6.3	0.12
01/18/2007	12:10:00 PM	- ZERO	6.06	4.25	0
01/18/2007	12:10:30 PM	- ZERO	6.06	2.93	0.12
01/18/2007	12:11:00 PM	- ZERO	4.71	2.93	4.51
01/18/2007	12:11:30 PM	- ZERO	0.5	2.2	21.61
01/18/2007	12:12:00 PM	- ZERO	-0.05	2.06	25.02
01/18/2007	12:12:30 PM	- Span	-0.05	2.06	24.9
01/18/2007	12:13:00 PM	- Span	-0.05	113.26	25.02
01/18/2007	12:13:30 PM	- Span	6.18	147.69	20.14
01/18/2007	12:14:00 PM	- Span	6.61	152.67	19.65
01/18/2007	12:14:30 PM	- Span	6.67	153.11	19.65
01/18/2007	12:15:00 PM	- Span	6.67	153.11	19.77
01/18/2007	12:15:30 PM	- Span	6.73	154.57	19.77
01/18/2007	12:16:00 PM	- Span	6.73	156.04	19.65
01/18/2007	12:16:30 PM	- Span	6.73	155.6	19.9
01/18/2007	12:17:00 PM	- Span	6.73	155.6	19.9
01/18/2007	12:17:30 PM	- Span	6.73	155.31	19.77
01/18/2007	12:18:00 PM	- Span	6.73	155.31	19.77
01/18/2007	12:18:30 PM	- Span	6.67	155.45	19.77
01/18/2007	12:19:00 PM	- Span	6.67	155.01	19.77
01/18/2007	12:19:30 PM	- Span	6.67	154.87	19.77
01/18/2007	12:20:00 PM	- Span	6.73	155.01	19.65
01/18/2007	12:20:30 PM	- Span	6.73	154.57	19.77
01/18/2007	12:21:00 PM	- Span	6.67	155.01	19.65
01/18/2007	12:21:30 PM	- Span	6.73	155.75	19.65
01/18/2007	12:22:00 PM	- Span	6.67	155.45	19.77
01/18/2007	12:22:30 PM	- Span	6.73	154.43	19.65
01/18/2007	12:23:00 PM	- Span	6.73	154.43	19.65
01/18/2007	12:23:30 PM	- Span	6.67	154.72	19.77
01/18/2007	12:24:00 PM	- Span	6.73	154.72	19.65
01/18/2007	12:24:30 PM	- Span	6.79	154.28	19.65
01/18/2007	12:25:00 PM	- Span	6.79	153.55	19.65
01/18/2007	12:25:30 PM	- Span	6.79	154.28	19.77
01/18/2007	12:26:00 PM	- Span	6.79	153.7	19.65
01/18/2007	12:26:30 PM	- Span	6.85	153.26	19.77
01/18/2007	12:27:00 PM	- Span	6.73	153.55	19.9
01/18/2007	12:27:30 PM	- Span	6.61	153.99	19.9
01/18/2007	12:28:00 PM	- Span	6.55	154.43	19.9
01/18/2007	12:28:30 PM	- Span	6.48	155.16	20.02
01/18/2007	12:29:00 PM	- Span	6.42	155.45	20.02
01/18/2007	12:29:30 PM	- Span	6.42	154.57	20.02
01/18/2007	12:30:00 PM	- Span	6.42	154.87	20.02
01/18/2007	12:30:30 PM	- Span	6.55	155.16	19.77
01/18/2007	12:31:00 PM	- Span	6.61	155.6	19.9
01/18/2007	12:31:30 PM	- Span	6.67	155.01	19.9
01/18/2007	12:32:00 PM	- Span	6.67	154.57	19.77
01/18/2007	12:32:30 PM	- Span	6.67	154.57	19.9

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	12:33:00 PM	- Span	6.61	155.75	20.02
01/18/2007	12:33:30 PM	- Span	6.48	157.36	20.14
01/18/2007	12:34:00 PM	- Span	6.42	158.09	20.02
01/18/2007	12:34:30 PM	- Span	6.3	159.12	20.14
01/18/2007	12:35:00 PM	- Span	6.24	159.12	20.14
01/18/2007	12:35:30 PM	- Span	6.12	160.58	20.14
01/18/2007	12:36:00 PM	- Span	6.12	161.61	20.14
01/18/2007	12:36:30 PM	- Span	6.18	163.07	20.14
01/18/2007	12:37:00 PM	- Span	6.24	162.93	20.14
01/18/2007	12:37:30 PM	- Span	6.24	163.07	20.14
01/18/2007	12:38:00 PM	- Span	6.36	162.78	20.02
01/18/2007	12:38:30 PM	- Span	6.42	163.36	19.9
01/18/2007	12:39:00 PM	- Span	6.42	164.1	19.9
01/18/2007	12:39:30 PM	- Span	6.48	164.39	19.9
01/18/2007	12:40:00 PM	- Span	6.55	164.39	19.77
01/18/2007	12:40:30 PM	- Span	6.55	164.39	19.77
01/18/2007	12:41:00 PM	- Span	6.55	164.54	19.9
01/18/2007	12:41:30 PM	- Span	6.55	165.56	20.02
01/18/2007	12:42:00 PM	- Span	6.55	165.56	19.9
01/18/2007	12:42:30 PM	- Span	6.55	165.56	20.02
01/18/2007	12:43:00 PM	- Span	6.42	166.59	20.02
01/18/2007	12:43:30 PM	- Span	6.36	166.15	20.02
01/18/2007	12:44:00 PM	- Span	6.3	166.3	19.9
01/18/2007	12:44:30 PM	- Span	6.48	165.71	19.77
01/18/2007	12:45:00 PM	- Span	6.61	165.71	19.77
01/18/2007	12:45:30 PM	- Span	6.61	165.27	19.9
01/18/2007	12:46:00 PM	- Span	6.61	165.27	19.9
01/18/2007	12:46:30 PM	- Span	6.67	164.54	19.9
01/18/2007	12:47:00 PM	- Span	6.67	164.68	19.9
01/18/2007	12:47:30 PM	- Span	6.55	165.27	20.14
01/18/2007	12:48:00 PM	- Span	6.42	164.39	20.14
01/18/2007	12:48:30 PM	- Span	6.42	165.12	20.14
01/18/2007	12:49:00 PM	- Span	6.42	164.54	20.02
01/18/2007	12:49:30 PM	- Span	6.36	164.1	20.14
01/18/2007	12:50:00 PM	- Span	6.48	163.36	20.14
01/18/2007	12:50:30 PM	- Span	6.48	162.78	20.14
01/18/2007	12:51:00 PM	- Span	6.42	163.22	20.26
01/18/2007	12:51:30 PM	- Span	6.36	163.8	20.38
01/18/2007	12:52:00 PM	- Span	6.24	164.1	20.38
01/18/2007	12:52:30 PM	- Span	6.24	164.1	20.26
01/18/2007	12:53:00 PM	- Span	6.12	164.68	20.26
01/18/2007	12:53:30 PM	- Span	6.18	165.42	20.14
01/18/2007	12:54:00 PM	- Span	6.24	165.42	20.02
01/18/2007	12:54:30 PM	- Span	6.18	165.56	20.14
01/18/2007	12:55:00 PM	- Span	6.24	165.86	20.14
01/18/2007	12:55:30 PM	- Span	6.3	166.44	20.02
01/18/2007	12:56:00 PM	- Span	6.42	165.12	19.77
01/18/2007	12:56:30 PM	- Span	6.61	163.95	19.65
01/18/2007	12:57:00 PM	- Span	6.67	164.24	19.77
01/18/2007	12:57:30 PM	- Span	6.61	164.54	19.77

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	12:58:00 PM	- Span	6.67	164.39	19.65
01/18/2007	12:58:30 PM	- Span	6.73	163.95	19.53
01/18/2007	12:59:00 PM	- Span	6.73	163.51	19.53
01/18/2007	12:59:30 PM	- Span	6.67	162.93	19.65
01/18/2007	1:00:00 PM	- Span	6.73	162.63	19.53
01/18/2007	1:00:30 PM	- Span	6.73	162.93	19.65
01/18/2007	1:01:00 PM	- Span	6.73	162.19	19.65
01/18/2007	1:01:30 PM	- Span	6.73	161.31	19.65
01/18/2007	1:02:00 PM	- Span	6.67	160.73	19.77
01/18/2007	1:02:30 PM	- Span	6.67	160.29	19.77
01/18/2007	1:03:00 PM	- Span	6.61	160.87	19.77
01/18/2007	1:03:30 PM	- Span	6.48	161.46	19.9
01/18/2007	1:04:00 PM	- Span	6.67	160.87	19.53
01/18/2007	1:04:30 PM	- Span	6.85	158.82	19.53
01/18/2007	1:05:00 PM	- Span	7.03	157.06	19.53
01/18/2007	1:05:30 PM	- Span	6.97	156.33	19.65
01/18/2007	1:06:00 PM	- Span	6.97	156.48	19.65
01/18/2007	1:06:30 PM	- Span	6.97	156.48	19.77
01/18/2007	1:07:00 PM	- Span	6.85	156.48	19.9
01/18/2007	1:07:30 PM	- Span	6.67	156.77	19.77
01/18/2007	1:08:00 PM	- Span	6.73	156.19	19.9
01/18/2007	1:08:30 PM	- Span	6.67	155.45	19.77
01/18/2007	1:09:00 PM	- Span	6.67	155.75	19.65
01/18/2007	1:09:30 PM	- Span	6.67	155.31	19.65
01/18/2007	1:10:00 PM	- Span	6.67	155.31	19.77
01/18/2007	1:10:30 PM	- Span	6.61	155.75	19.9
01/18/2007	1:11:00 PM	- Span	6.42	156.19	20.02
01/18/2007	1:11:30 PM	- Span	6.3	157.21	20.14
01/18/2007	1:12:00 PM	- Span	6.3	157.94	20.02
01/18/2007	1:12:30 PM	- Span	6.24	158.38	20.14
01/18/2007	1:13:00 PM	- Span	6.18	158.68	20.02
01/18/2007	1:13:30 PM	- Span	6.24	158.97	20.02
01/18/2007	1:14:00 PM	- Span	6.36	158.68	19.9
01/18/2007	1:14:30 PM	- Span	6.48	158.53	19.77
01/18/2007	1:15:00 PM	- Span	6.61	159.12	19.65
01/18/2007	1:15:30 PM	- Span	6.73	158.97	19.65
01/18/2007	1:16:00 PM	- Span	6.79	159.26	19.53
01/18/2007	1:16:30 PM	- Span	6.79	158.97	19.65
01/18/2007	1:17:00 PM	- Span	6.85	159.12	19.65
01/18/2007	1:17:30 PM	- Span	6.73	159.85	19.65
01/18/2007	1:18:00 PM	- Span	6.79	159.85	19.65
01/18/2007	1:18:30 PM	- Span	6.79	159.26	19.53
01/18/2007	1:19:00 PM	- Span	6.73	158.53	19.53
01/18/2007	1:19:30 PM	- Span	6.73	157.65	19.53
01/18/2007	1:20:00 PM	- Span	6.73	157.65	19.53
01/18/2007	1:20:30 PM	- Span	6.73	158.24	19.65
01/18/2007	1:21:00 PM	- Span	6.79	157.5	19.65
01/18/2007	1:21:30 PM	- Span	6.85	156.33	19.65
01/18/2007	1:22:00 PM	- Span	6.85	155.75	19.65
01/18/2007	1:22:30 PM	- Span	6.91	155.16	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	1:23:00 PM	- Span	6.85	155.16	19.65
01/18/2007	1:23:30 PM	- Span	6.79	154.72	19.65
01/18/2007	1:24:00 PM	- Span	6.91	153.84	19.41
01/18/2007	1:24:30 PM	- Span	6.91	153.11	19.53
01/18/2007	1:25:00 PM	- Span	6.91	152.52	19.65
01/18/2007	1:25:30 PM	- Span	6.85	152.23	19.9
01/18/2007	1:26:00 PM	- Span	6.67	152.96	20.02
01/18/2007	1:26:30 PM	- Span	6.55	152.82	20.02
01/18/2007	1:27:00 PM	- Span	6.42	152.96	20.14
01/18/2007	1:27:30 PM	- Span	6.24	153.4	20.26
01/18/2007	1:28:00 PM	- Span	6.12	154.72	20.26
01/18/2007	1:28:30 PM	- Span	6.06	155.75	20.26
01/18/2007	1:29:00 PM	- Span	6.06	155.75	20.14
01/18/2007	1:29:30 PM	- Span	6.12	155.01	20.26
01/18/2007	1:30:00 PM	- Span	6.24	155.31	20.02
01/18/2007	1:30:30 PM	- Span	6.3	155.75	20.02
01/18/2007	1:31:00 PM	- Span	6.36	156.48	20.02
01/18/2007	1:31:30 PM	- Span	6.42	156.04	19.9
01/18/2007	1:32:00 PM	- Span	6.61	156.04	19.77
01/18/2007	1:32:30 PM	- Span	6.73	155.31	19.65
01/18/2007	1:33:00 PM	- Span	6.73	155.31	19.65
01/18/2007	1:33:30 PM	- Span	6.79	155.89	19.41
01/18/2007	1:34:00 PM	- Span	6.85	155.6	19.29
01/18/2007	1:34:30 PM	- Span	6.91	154.87	19.29
01/18/2007	1:35:00 PM	- Span	7.03	154.13	19.41
01/18/2007	1:35:30 PM	- Span	7.03	153.4	19.41
01/18/2007	1:36:00 PM	- Span	7.03	152.67	19.41
01/18/2007	1:36:30 PM	- Span	6.97	152.23	19.53
01/18/2007	1:37:00 PM	- Span	6.91	151.64	19.65
01/18/2007	1:37:30 PM	Run 1 - 1	6.79	152.23	19.77
01/18/2007	1:38:00 PM	Run 1 - 1	6.61	152.82	19.9
01/18/2007	1:38:30 PM	Run 1 - 1	6.48	153.4	20.02
01/18/2007	1:39:00 PM	Run 1 - 1	6.3	154.13	20.14
01/18/2007	1:39:30 PM	Run 1 - 1	6.18	155.16	20.14
01/18/2007	1:40:00 PM	Run 1 - 1	6.18	155.45	20.02
01/18/2007	1:40:30 PM	Run 1 - 1	6.12	155.16	20.14
01/18/2007	1:41:00 PM	Run 1 - 1	6.12	156.33	20.14
01/18/2007	1:41:30 PM	Run 1 - 1	6.18	157.06	20.14
01/18/2007	1:42:00 PM	Run 1 - 1	6.24	157.36	20.14
01/18/2007	1:42:30 PM	Run 1 - 1	6.24	157.21	20.14
01/18/2007	1:43:00 PM	Run 1 - 1	6.36	157.21	19.9
01/18/2007	1:43:30 PM	Run 1 - 1	6.42	157.94	19.9
01/18/2007	1:44:00 PM	Run 1 - 1	6.61	158.09	19.77
01/18/2007	1:44:30 PM	Run 1 - 1	6.79	157.8	19.65
01/18/2007	1:45:00 PM	Run 1 - 1	6.85	157.36	19.65
01/18/2007	1:45:30 PM	Run 1 - 1	6.91	156.63	19.53
01/18/2007	1:46:00 PM	Run 1 - 1	6.91	156.04	19.65
01/18/2007	1:46:30 PM	Run 1 - 1	6.91	156.92	19.53
01/18/2007	1:47:00 PM	Run 1 - 1	6.85	157.36	19.77
01/18/2007	1:47:30 PM	Run 1 - 1	6.85	157.36	19.65

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	1:48:00 PM	Run 1 - 1	6.85	156.33	19.65
01/18/2007	1:48:30 PM	Run 1 - 1	6.85	155.75	19.77
01/18/2007	1:49:00 PM	Run 1 - 1	6.73	156.19	19.77
01/18/2007	1:49:30 PM	Run 1 - 1	6.55	157.21	20.02
01/18/2007	1:50:00 PM	Run 1 - 1	6.48	157.5	20.02
01/18/2007	1:50:30 PM	Run 1 - 1	6.42	157.65	20.14
01/18/2007	1:51:00 PM	Run 1 - 1	6.3	157.5	20.26
01/18/2007	1:51:30 PM	Run 1 - 1	6.18	157.5	20.26
01/18/2007	1:52:00 PM	Run 1 - 1	6.12	159.26	20.26
01/18/2007	1:52:30 PM	Run 1 - 1	6	160.73	20.38
01/18/2007	1:53:00 PM	Run 1 - 1	5.94	160.87	20.51
01/18/2007	1:53:30 PM	Run 1 - 1	5.94	161.17	20.38
01/18/2007	1:54:00 PM	Run 1 - 1	6.06	161.02	20.26
01/18/2007	1:54:30 PM	Run 1 - 1	6.18	161.17	20.02
01/18/2007	1:55:00 PM	Run 1 - 1	6.24	161.46	20.02
01/18/2007	1:55:30 PM	Run 1 - 1	6.36	162.34	19.77
01/18/2007	1:56:00 PM	Run 1 - 1	6.48	162.34	19.77
01/18/2007	1:56:30 PM	Run 1 - 1	6.55	161.02	19.77
01/18/2007	1:57:00 PM	Run 1 - 1	6.61	160.73	19.77
01/18/2007	1:57:30 PM	Run 1 - 1	6.61	161.46	19.9
01/18/2007	1:58:00 PM	Run 1 - 1	6.73	161.46	19.77
01/18/2007	1:58:30 PM	Run 1 - 1	6.67	161.9	19.77
01/18/2007	1:59:00 PM	Run 1 - 1	6.61	161.02	19.65
01/18/2007	1:59:30 PM	Run 1 - 1	6.73	159.85	19.65
01/18/2007	2:00:00 PM	Run 1 - 1	6.79	158.53	19.65
01/18/2007	2:00:30 PM	Run 1 - 1	6.79	158.38	19.65
01/18/2007	2:01:00 PM	Run 1 - 1	6.85	158.38	19.77
01/18/2007	2:01:30 PM	Run 1 - 1	6.85	157.5	19.65
01/18/2007	2:02:00 PM	Run 1 - 1	6.85	156.19	19.77
01/18/2007	2:02:30 PM	Run 1 - 1	6.85	155.16	19.77
01/18/2007	2:03:00 PM	Run 1 - 1	6.67	154.87	19.9
01/18/2007	2:03:30 PM	Run 1 - 1	6.61	155.45	19.9
01/18/2007	2:04:00 PM	Run 1 - 1	6.55	155.31	20.02
01/18/2007	2:04:30 PM	Run 1 - 1	6.55	155.31	19.9
01/18/2007	2:05:00 PM	Run 1 - 1	6.42	154.28	20.14
01/18/2007	2:05:30 PM	Run 1 - 1	6.42	154.28	20.14
01/18/2007	2:06:00 PM	Run 1 - 1	6.36	154.72	20.14
01/18/2007	2:06:30 PM	Run 1 - 1	6.3	155.45	20.14
01/18/2007	2:07:00 PM	Run 1 - 1	6.24	155.45	20.26
01/18/2007	2:07:30 PM	Run 1 - 1	6.18	155.6	20.14
01/18/2007	2:08:00 PM	Run 1 - 1	6.18	155.01	20.14
01/18/2007	2:08:30 PM	Run 1 - 1	6.06	155.6	20.26
01/18/2007	2:09:00 PM	Run 1 - 1	6.12	156.63	20.14
01/18/2007	2:09:30 PM	Run 1 - 1	6.18	156.48	20.14
01/18/2007	2:10:00 PM	Run 1 - 1	6.3	156.19	20.02
01/18/2007	2:10:30 PM	Run 1 - 1	6.42	156.77	19.9
01/18/2007	2:11:00 PM	Run 1 - 1	6.48	156.77	19.77
01/18/2007	2:11:30 PM	Run 1 - 1	6.61	156.48	19.77
01/18/2007	2:12:00 PM	Run 1 - 1	6.85	155.75	19.65
01/18/2007	2:12:30 PM	Run 1 - 1	6.79	156.33	19.77

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	2:13:00 PM	Run 1 - 1	6.73	156.48	19.77
01/18/2007	2:13:30 PM	Run 1 - 1	6.67	156.33	19.77
01/18/2007	2:14:00 PM	Run 1 - 1	6.61	156.04	19.9
01/18/2007	2:14:30 PM	Run 1 - 1	6.61	156.04	19.9
01/18/2007	2:15:00 PM	Run 1 - 1	6.61	156.48	19.9
01/18/2007	2:15:30 PM	Run 1 - 1	6.55	157.06	20.02
01/18/2007	2:16:00 PM	Run 1 - 1	6.55	157.5	20.14
01/18/2007	2:16:30 PM	Run 1 - 1	6.42	157.06	20.38
01/18/2007	2:17:00 PM	Run 1 - 1	6.3	157.5	20.51
01/18/2007	2:17:30 PM	Run 1 - 1	6.12	159.12	20.51
01/18/2007	2:18:00 PM	Run 1 - 1	6	160.87	20.63
01/18/2007	2:18:30 PM	Run 1 - 1	5.87	161.9	20.63
01/18/2007	2:19:00 PM	Run 1 - 1	5.75	162.63	20.63
01/18/2007	2:19:30 PM	Run 1 - 1	5.75	163.07	20.63
01/18/2007	2:20:00 PM	Run 1 - 1	5.75	163.8	20.51
01/18/2007	2:20:30 PM	Run 1 - 1	5.81	165.56	20.38
01/18/2007	2:21:00 PM	Run 1 - 1	5.87	166.3	20.26
01/18/2007	2:21:30 PM	Run 1 - 1	6	166.73	20.26
01/18/2007	2:22:00 PM	Run 1 - 1	6.18	166.73	20.14
01/18/2007	2:22:30 PM	Run 1 - 1	6.3	166.15	20.02
01/18/2007	2:23:00 PM	Run 1 - 1	6.48	166.44	19.9
01/18/2007	2:23:30 PM	Run 1 - 1	6.73	165.86	19.65
01/18/2007	2:24:00 PM	Run 1 - 1	6.85	165.12	19.53
01/18/2007	2:24:30 PM	Run 1 - 1	6.91	164.83	19.53
01/18/2007	2:25:00 PM	Run 1 - 1	6.97	164.39	19.65
01/18/2007	2:25:30 PM	Run 1 - 1	6.91	163.8	19.65
01/18/2007	2:26:00 PM	Run 1 - 1	6.85	162.93	19.9
01/18/2007	2:26:30 PM	Run 1 - 1	6.79	163.22	19.9
01/18/2007	2:27:00 PM	Run 1 - 1	6.73	162.63	20.02
01/18/2007	2:27:30 PM	Run 1 - 1	6.61	163.22	20.14
01/18/2007	2:28:00 PM	Run 1 - 1	6.42	163.66	20.26
01/18/2007	2:28:30 PM	Run 1 - 1	6.24	164.1	20.38
01/18/2007	2:29:00 PM	Run 1 - 1	5.94	164.1	20.63
01/18/2007	2:29:30 PM	Run 1 - 1	5.81	165.42	20.63
01/18/2007	2:30:00 PM	Run 1 - 1	5.75	165.86	20.63
01/18/2007	2:30:30 PM	Run 1 - 1	5.69	166.44	20.63
01/18/2007	2:31:00 PM	Run 1 - 1	5.69	166.73	20.75
01/18/2007	2:31:30 PM	Run 1 - 1	5.75	166.88	20.63
01/18/2007	2:32:00 PM	Run 1 - 1	5.81	166.3	20.63
01/18/2007	2:32:30 PM	Run 1 - 1	5.87	167.61	20.51
01/18/2007	2:33:00 PM	Run 1 - 1	5.94	168.05	20.38
01/18/2007	2:33:30 PM	Run 1 - 1	6	167.61	20.26
01/18/2007	2:34:00 PM	Run 1 - 1	6.18	167.91	20.14
01/18/2007	2:34:30 PM	Run 1 - 1	6.3	167.61	20.02
01/18/2007	2:35:00 PM	Run 1 - 1	6.36	167.17	20.02
01/18/2007	2:35:30 PM	Run 1 - 1	6.42	167.03	19.9
01/18/2007	2:36:00 PM	Run 1 - 1	6.61	166.15	19.9
01/18/2007	2:36:30 PM	Run 1 - 1	6.61	165.27	19.9
01/18/2007	2:37:00 PM	Run 1 - 1	6.61	164.83	20.02
01/18/2007	2:37:30 PM		6.61	165.27	19.9

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	2:38:00 PM		6	126.74	19.41
01/18/2007	2:38:30 PM		0.32	153.4	10.74
01/18/2007	2:39:00 PM	- Span	-0.05	155.01	10.01
01/18/2007	2:39:30 PM	- Span	-0.05	155.6	10.13
01/18/2007	2:40:00 PM	- Span	-0.05	141.1	10.01
01/18/2007	2:40:30 PM	- Span	3.19	7.33	5.12
01/18/2007	2:41:00 PM	- Span	6	2.2	0.12
01/18/2007	2:41:30 PM	- ZERO	6.06	1.76	0.12
01/18/2007	2:42:00 PM	- ZERO	6.06	1.76	0
01/18/2007	2:42:30 PM	- ZERO	1.36	1.47	18.07
01/18/2007	2:43:00 PM	- ZERO	-0.05	1.18	24.78
01/18/2007	2:43:30 PM	- Span	-0.05	1.18	25.02
01/18/2007	2:44:00 PM	- Span	-0.11	83.96	25.15
01/18/2007	2:44:30 PM	- Span	5.32	155.01	21.12
01/18/2007	2:45:00 PM	- Span	6.12	157.8	20.51
01/18/2007	2:45:30 PM	- Span	6.06	159.7	20.51
01/18/2007	2:46:00 PM	Run 2 - 1	6.06	160.58	20.51
01/18/2007	2:46:30 PM	Run 2 - 1	6.06	160.58	20.51
01/18/2007	2:47:00 PM	Run 2 - 1	6	161.46	20.63
01/18/2007	2:47:30 PM	Run 2 - 1	6.06	161.17	20.38
01/18/2007	2:48:00 PM	Run 2 - 1	6.18	160.87	20.38
01/18/2007	2:48:30 PM	Run 2 - 1	6.18	162.34	20.38
01/18/2007	2:49:00 PM	Run 2 - 1	6.3	162.78	20.26
01/18/2007	2:49:30 PM	Run 2 - 1	6.42	163.07	20.14
01/18/2007	2:50:00 PM	Run 2 - 1	6.48	162.63	20.14
01/18/2007	2:50:30 PM	Run 2 - 1	6.48	162.34	20.14
01/18/2007	2:51:00 PM		6.55	162.34	20.14
01/18/2007	2:51:30 PM		6.48	163.07	20.14
01/18/2007	2:52:00 PM		6.42	163.36	20.14
01/18/2007	2:52:30 PM		6.42	163.8	20.14
01/18/2007	2:53:00 PM		6.36	163.07	20.26
01/18/2007	2:53:30 PM		6.36	163.51	20.14
01/18/2007	2:54:00 PM		6.36	164.39	20.14
01/18/2007	2:54:30 PM		6.36	164.24	20.26
01/18/2007	2:55:00 PM		6.36	164.24	20.26
01/18/2007	2:55:30 PM		6.42	164.1	20.14
01/18/2007	2:56:00 PM		6.48	163.95	20.14
01/18/2007	2:56:30 PM		6.42	163.51	20.26
01/18/2007	2:57:00 PM		6.48	163.51	20.26
01/18/2007	2:57:30 PM		6.48	164.39	20.14
01/18/2007	2:58:00 PM		6.42	164.68	20.26
01/18/2007	2:58:30 PM		6.48	163.95	20.26
01/18/2007	2:59:00 PM		6.36	163.36	20.26
01/18/2007	2:59:30 PM		6.36	163.51	20.26
01/18/2007	3:00:00 PM		6.3	164.39	20.26
01/18/2007	3:00:30 PM		6.24	164.24	20.26
01/18/2007	3:01:00 PM		6.24	164.54	20.26
01/18/2007	3:01:30 PM		6.24	164.39	20.38
01/18/2007	3:02:00 PM		6.3	164.39	20.26
01/18/2007	3:02:30 PM		6.36	164.1	20.26

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	3:03:00 PM		6.36	164.68	20.26
01/18/2007	3:03:30 PM		6.36	164.54	20.26
01/18/2007	3:04:00 PM		6.42	163.8	20.14
01/18/2007	3:04:30 PM		6.48	162.93	20.02
01/18/2007	3:05:00 PM		6.55	162.63	20.14
01/18/2007	3:05:30 PM		6.48	162.49	20.14
01/18/2007	3:06:00 PM		6.55	162.93	20.02
01/18/2007	3:06:30 PM		6.61	162.78	20.02
01/18/2007	3:07:00 PM		6.61	161.75	20.02
01/18/2007	3:07:30 PM		6.55	159.85	20.02
01/18/2007	3:08:00 PM		6.61	160.14	20.02
01/18/2007	3:08:30 PM		6.61	160.14	20.14
01/18/2007	3:09:00 PM		6.55	160.14	20.14
01/18/2007	3:09:30 PM		6.55	159.7	20.14
01/18/2007	3:10:00 PM		6.55	159.56	20.14
01/18/2007	3:10:30 PM		6.42	159.26	20.14
01/18/2007	3:11:00 PM		6.3	158.82	20.38
01/18/2007	3:11:30 PM		6.24	159.41	20.38
01/18/2007	3:12:00 PM		6.12	159.85	20.51
01/18/2007	3:12:30 PM		6.06	159.41	20.63
01/18/2007	3:13:00 PM		6	160	20.63
01/18/2007	3:13:30 PM		5.87	161.17	20.51
01/18/2007	3:14:00 PM		5.94	161.61	20.38
01/18/2007	3:14:30 PM	Run 2 - 1	6.06	161.46	20.26
01/18/2007	3:15:00 PM	Run 2 - 1	6.12	161.46	20.26
01/18/2007	3:15:30 PM	Run 2 - 1	6.24	161.46	20.26
01/18/2007	3:16:00 PM	Run 2 - 1	6.36	160.73	20.14
01/18/2007	3:16:30 PM	Run 2 - 1	6.36	160.43	20.14
01/18/2007	3:17:00 PM	Run 2 - 1	6.42	160.29	20.14
01/18/2007	3:17:30 PM	Run 2 - 1	6.42	161.61	20.14
01/18/2007	3:18:00 PM	Run 2 - 1	6.48	161.75	20.02
01/18/2007	3:18:30 PM	Run 2 - 1	6.55	161.61	20.14
01/18/2007	3:19:00 PM	Run 2 - 1	6.55	161.02	20.02
01/18/2007	3:19:30 PM	Run 2 - 1	6.67	161.02	19.9
01/18/2007	3:20:00 PM	Run 2 - 1	6.73	160	19.9
01/18/2007	3:20:30 PM	Run 2 - 1	6.85	158.97	19.9
01/18/2007	3:21:00 PM	Run 2 - 1	6.85	158.68	19.9
01/18/2007	3:21:30 PM	Run 2 - 1	6.85	157.8	19.9
01/18/2007	3:22:00 PM	Run 2 - 1	6.79	158.09	20.02
01/18/2007	3:22:30 PM	Run 2 - 1	6.73	158.09	20.02
01/18/2007	3:23:00 PM	Run 2 - 1	6.73	157.21	20.02
01/18/2007	3:23:30 PM	Run 2 - 1	6.73	156.77	20.02
01/18/2007	3:24:00 PM	Run 2 - 1	6.73	156.33	20.02
01/18/2007	3:24:30 PM	Run 2 - 1	6.61	156.48	20.14
01/18/2007	3:25:00 PM	Run 2 - 1	6.55	156.77	20.26
01/18/2007	3:25:30 PM	Run 2 - 1	6.42	157.06	20.26
01/18/2007	3:26:00 PM	Run 2 - 1	6.48	157.65	20.26
01/18/2007	3:26:30 PM	Run 2 - 1	6.36	157.21	20.38
01/18/2007	3:27:00 PM	Run 2 - 1	6.36	157.06	20.26
01/18/2007	3:27:30 PM	Run 2 - 1	6.36	156.33	20.38

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	3:28:00 PM	Run 2 - 1	6.36	157.21	20.26
01/18/2007	3:28:30 PM	Run 2 - 1	6.3	157.65	20.38
01/18/2007	3:29:00 PM	Run 2 - 1	6.18	158.53	20.38
01/18/2007	3:29:30 PM	Run 2 - 1	6.18	158.97	20.38
01/18/2007	3:30:00 PM	Run 2 - 1	6.18	159.26	20.26
01/18/2007	3:30:30 PM	Run 2 - 1	6.24	159.26	20.26
01/18/2007	3:31:00 PM	Run 2 - 1	6.24	160.14	20.38
01/18/2007	3:31:30 PM	Run 2 - 1	6.18	161.31	20.26
01/18/2007	3:32:00 PM	Run 2 - 1	6.18	161.9	20.38
01/18/2007	3:32:30 PM	Run 2 - 1	6.24	161.9	20.38
01/18/2007	3:33:00 PM	Run 2 - 1	6.24	162.93	20.38
01/18/2007	3:33:30 PM	Run 2 - 1	6.24	162.93	20.26
01/18/2007	3:34:00 PM	Run 2 - 1	6.36	162.78	20.14
01/18/2007	3:34:30 PM	Run 2 - 1	6.42	163.07	20.14
01/18/2007	3:35:00 PM	Run 2 - 1	6.42	162.78	20.26
01/18/2007	3:35:30 PM	Run 2 - 1	6.48	162.49	20.14
01/18/2007	3:36:00 PM	Run 2 - 1	6.61	161.75	20.14
01/18/2007	3:36:30 PM	Run 2 - 1	6.61	161.61	20.26
01/18/2007	3:37:00 PM	Run 2 - 1	6.55	162.34	20.26
01/18/2007	3:37:30 PM	Run 2 - 1	6.48	162.19	20.38
01/18/2007	3:38:00 PM	Run 2 - 1	6.48	162.34	20.38
01/18/2007	3:38:30 PM	Run 2 - 1	6.36	163.36	20.38
01/18/2007	3:39:00 PM	Run 2 - 1	6.24	162.93	20.51
01/18/2007	3:39:30 PM	Run 2 - 1	6.24	163.36	20.38
01/18/2007	3:40:00 PM	Run 2 - 1	6.24	163.95	20.38
01/18/2007	3:40:30 PM	Run 2 - 1	6.24	163.22	20.38
01/18/2007	3:41:00 PM	Run 2 - 1	6.24	162.93	20.38
01/18/2007	3:41:30 PM	Run 2 - 1	6.24	162.63	20.38
01/18/2007	3:42:00 PM	Run 2 - 1	6.3	161.61	20.26
01/18/2007	3:42:30 PM	Run 2 - 1	6.36	161.75	20.26
01/18/2007	3:43:00 PM	Run 2 - 1	6.3	162.49	20.38
01/18/2007	3:43:30 PM	Run 2 - 1	6.36	162.49	20.38
01/18/2007	3:44:00 PM	Run 2 - 1	6.42	161.61	20.26
01/18/2007	3:44:30 PM	Run 2 - 1	6.48	160.58	20.26
01/18/2007	3:45:00 PM	Run 2 - 1	6.42	160.73	20.26
01/18/2007	3:45:30 PM	Run 2 - 1	6.42	161.31	20.26
01/18/2007	3:46:00 PM	Run 2 - 1	6.36	160.87	20.26
01/18/2007	3:46:30 PM	Run 2 - 1	6.36	160.43	20.51
01/18/2007	3:47:00 PM	Run 2 - 1	6.24	161.17	20.51
01/18/2007	3:47:30 PM	Run 2 - 1	6.18	161.31	20.63
01/18/2007	3:48:00 PM	Run 2 - 1	6.12	161.9	20.51
01/18/2007	3:48:30 PM	Run 2 - 1	6.06	162.05	20.51
01/18/2007	3:49:00 PM	Run 2 - 1	6	162.49	20.51
01/18/2007	3:49:30 PM	Run 2 - 1	6	162.63	20.51
01/18/2007	3:50:00 PM	Run 2 - 1	6.24	161.61	20.38
01/18/2007	3:50:30 PM	Run 2 - 1	6.3	161.61	20.26
01/18/2007	3:51:00 PM	Run 2 - 1	6.3	161.61	20.26
01/18/2007	3:51:30 PM	Run 2 - 1	6.3	162.34	20.38
01/18/2007	3:52:00 PM	Run 2 - 1	6.36	162.63	20.38
01/18/2007	3:52:30 PM	Run 2 - 1	6.3	163.22	20.51

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	3:53:00 PM	Run 2 - 1	6.18	164.1	20.63
01/18/2007	3:53:30 PM	Run 2 - 1	6.12	164.68	20.51
01/18/2007	3:54:00 PM	Run 2 - 1	6.12	164.68	20.51
01/18/2007	3:54:30 PM	Run 2 - 1	6.12	164.39	20.51
01/18/2007	3:55:00 PM	Run 2 - 1	6.18	165.12	20.38
01/18/2007	3:55:30 PM	Run 2 - 1	6.18	164.39	20.51
01/18/2007	3:56:00 PM	Run 2 - 1	6.3	164.1	20.51
01/18/2007	3:56:30 PM	Run 2 - 1	6.24	164.24	20.51
01/18/2007	3:57:00 PM	Run 2 - 1	6.24	164.68	20.51
01/18/2007	3:57:30 PM	Run 2 - 1	6.24	165.27	20.51
01/18/2007	3:58:00 PM	Run 2 - 1	6.24	166	20.38
01/18/2007	3:58:30 PM	Run 2 - 1	6.3	166.15	20.38
01/18/2007	3:59:00 PM	Run 2 - 1	6.24	166.59	20.38
01/18/2007	3:59:30 PM	Run 2 - 1	6.3	166.15	20.38
01/18/2007	4:00:00 PM	Run 2 - 1	6.36	166.15	20.26
01/18/2007	4:00:30 PM	Run 2 - 1	6.42	166.3	20.26
01/18/2007	4:01:00 PM	Run 2 - 1	6.36	166.59	20.38
01/18/2007	4:01:30 PM	Run 2 - 1	6.42	167.61	20.38
01/18/2007	4:02:00 PM	Run 2 - 1	6.42	166.73	20.51
01/18/2007	4:02:30 PM	Run 2 - 1	6.3	166.59	20.51
01/18/2007	4:03:00 PM	Run 2 - 1	6.24	166.73	20.75
01/18/2007	4:03:30 PM	Run 2 - 1	6.06	167.61	20.75
01/18/2007	4:04:00 PM	Run 2 - 1	6.12	169.08	20.63
01/18/2007	4:04:30 PM	Run 2 - 1	6.06	169.52	20.75
01/18/2007	4:05:00 PM	Run 2 - 1	6.06	169.96	20.75
01/18/2007	4:05:30 PM	Run 2 - 1	6.12	169.52	20.75
01/18/2007	4:06:00 PM	Run 2 - 1	6.18	169.08	20.75
01/18/2007	4:06:30 PM	Run 2 - 1	6.24	169.52	20.63
01/18/2007	4:07:00 PM	Run 2 - 1	6.18	169.66	20.75
01/18/2007	4:07:30 PM	Run 2 - 1	6.12	170.98	20.87
01/18/2007	4:08:00 PM	Run 2 - 1	6.06	171.57	20.75
01/18/2007	4:08:30 PM	Run 2 - 1	6.06	171.28	20.63
01/18/2007	4:09:00 PM	Run 2 - 1	6	171.72	20.63
01/18/2007	4:09:30 PM	Run 2 - 1	6.18	172.01	20.63
01/18/2007	4:10:00 PM	Run 2 - 1	6.24	172.01	20.51
01/18/2007	4:10:30 PM	Run 2 - 1	6.36	171.13	20.51
01/18/2007	4:11:00 PM	Run 2 - 1	6.36	171.42	20.51
01/18/2007	4:11:30 PM	Run 2 - 1	6.3	170.98	20.51
01/18/2007	4:12:00 PM	Run 2 - 1	6.42	170.4	20.51
01/18/2007	4:12:30 PM	Run 2 - 1	6.36	170.84	20.63
01/18/2007	4:13:00 PM	Run 2 - 1	6.36	171.13	20.51
01/18/2007	4:13:30 PM	Run 2 - 1	6.36	171.13	20.51
01/18/2007	4:14:00 PM	Run 2 - 1	6.36	169.96	20.63
01/18/2007	4:14:30 PM	Run 2 - 2	6.42	169.81	20.51
01/18/2007	4:15:00 PM		6.42	169.52	20.51
01/18/2007	4:15:30 PM		6.36	168.93	20.51
01/18/2007	4:16:00 PM		6.42	128.2	20.63
01/18/2007	4:16:30 PM		0.99	153.84	12.21
01/18/2007	4:17:00 PM	- Span	-0.05	154.57	10.13
01/18/2007	4:17:30 PM	- Span	-0.05	154.13	10.13

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	4:18:00 PM	- Span	-0.05	156.04	10.01
01/18/2007	4:18:30 PM	- Span	-0.05	119.12	10.01
01/18/2007	4:19:00 PM	- Span	3.62	5.72	4.39
01/18/2007	4:19:30 PM	- Span	6	1.76	0.12
01/18/2007	4:20:00 PM	- ZERO	6.06	4.25	0.12
01/18/2007	4:20:30 PM	- ZERO	3.19	1.47	11.11
01/18/2007	4:21:00 PM	- ZERO	0.14	0.88	23.68
01/18/2007	4:21:30 PM	- Span	-0.05	0.88	24.9
01/18/2007	4:22:00 PM	- Span	-0.05	42.35	25.02
01/18/2007	4:22:30 PM	- Span	4.47	158.97	22.34
01/18/2007	4:23:00 PM	- Span	6.42	162.34	20.51
01/18/2007	4:23:30 PM	- Span	6.42	161.9	20.51
01/18/2007	4:24:00 PM	- Span	6.48	161.75	20.38
01/18/2007	4:24:30 PM	- Span	6.42	162.34	20.38
01/18/2007	4:25:00 PM	- Span	6.42	163.22	20.51
01/18/2007	4:25:30 PM	- Span	6.48	161.31	20.38
01/18/2007	4:26:00 PM	- Span	6.55	161.46	20.38
01/18/2007	4:26:30 PM	- Span	6.61	161.46	20.38
01/18/2007	4:27:00 PM	- Span	6.55	161.31	20.38
01/18/2007	4:27:30 PM	- Span	6.61	161.9	20.38
01/18/2007	4:28:00 PM	- Span	6.55	161.31	20.38
01/18/2007	4:28:30 PM	- Span	6.55	161.02	20.38
01/18/2007	4:29:00 PM	- Span	6.55	161.61	20.38
01/18/2007	4:29:30 PM	- Span	6.42	160.87	20.51
01/18/2007	4:30:00 PM	- Span	6.36	160.73	20.63
01/18/2007	4:30:30 PM	- Span	6.36	160.73	20.75
01/18/2007	4:31:00 PM	- Span	6.24	161.31	20.75
01/18/2007	4:31:30 PM	- Span	6.24	161.9	20.75
01/18/2007	4:32:00 PM	- Span	6.3	162.78	20.63
01/18/2007	4:32:30 PM	- Span	6.3	162.78	20.63
01/18/2007	4:33:00 PM	- Span	6.24	162.78	20.63
01/18/2007	4:33:30 PM	- Span	6.36	162.49	20.38
01/18/2007	4:34:00 PM	- Span	6.55	162.19	20.14
01/18/2007	4:34:30 PM	- Span	6.61	161.61	20.14
01/18/2007	4:35:00 PM	- Span	6.67	161.61	20.14
01/18/2007	4:35:30 PM	- Span	6.85	160.73	20.14
01/18/2007	4:36:00 PM	- Span	6.97	159.85	20.02
01/18/2007	4:36:30 PM	- Span	6.97	158.97	20.14
01/18/2007	4:37:00 PM	- Span	6.97	157.94	20.02
01/18/2007	4:37:30 PM	- Span	6.97	158.38	20.02
01/18/2007	4:38:00 PM	- Span	7.03	158.09	20.02
01/18/2007	4:38:30 PM	- Span	6.97	157.21	20.14
01/18/2007	4:39:00 PM	Run 3 - 1	6.97	157.21	20.02
01/18/2007	4:39:30 PM	Run 3 - 1	6.91	157.21	20.02
01/18/2007	4:40:00 PM	Run 3 - 1	6.91	155.89	20.02
01/18/2007	4:40:30 PM	Run 3 - 1	6.85	155.01	20.02
01/18/2007	4:41:00 PM	Run 3 - 1	6.85	154.43	20.14
01/18/2007	4:41:30 PM	Run 3 - 1	6.85	153.84	20.02
01/18/2007	4:42:00 PM	Run 3 - 1	6.85	152.08	20.14
01/18/2007	4:42:30 PM	Run 3 - 1	6.85	151.64	20.14

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	4:43:00 PM	Run 3 - 1	6.79	152.08	20.26
01/18/2007	4:43:30 PM	Run 3 - 1	6.67	152.08	20.38
01/18/2007	4:44:00 PM	Run 3 - 1	6.61	152.67	20.38
01/18/2007	4:44:30 PM	Run 3 - 1	6.55	152.23	20.38
01/18/2007	4:45:00 PM	Run 3 - 1	6.42	152.52	20.51
01/18/2007	4:45:30 PM	Run 3 - 1	6.42	152.23	20.51
01/18/2007	4:46:00 PM	Run 3 - 1	6.42	152.38	20.51
01/18/2007	4:46:30 PM	Run 3 - 1	6.3	153.11	20.51
01/18/2007	4:47:00 PM	Run 3 - 1	6.24	153.4	20.51
01/18/2007	4:47:30 PM	Run 3 - 1	6.18	154.13	20.51
01/18/2007	4:48:00 PM	Run 3 - 1	6.3	153.26	20.51
01/18/2007	4:48:30 PM	Run 3 - 1	6.36	152.96	20.26
01/18/2007	4:49:00 PM	Run 3 - 1	6.42	153.11	20.14
01/18/2007	4:49:30 PM	Run 3 - 1	6.48	153.4	20.14
01/18/2007	4:50:00 PM	Run 3 - 1	6.61	152.82	20.02
01/18/2007	4:50:30 PM	Run 3 - 1	6.61	152.96	20.14
01/18/2007	4:51:00 PM	Run 3 - 1	6.61	152.82	20.14
01/18/2007	4:51:30 PM	Run 3 - 1	6.67	152.38	20.14
01/18/2007	4:52:00 PM	Run 3 - 1	6.79	152.82	20.02
01/18/2007	4:52:30 PM	Run 3 - 1	6.85	152.23	20.02
01/18/2007	4:53:00 PM	Run 3 - 1	6.73	151.2	20.14
01/18/2007	4:53:30 PM	Run 3 - 1	6.73	150.76	20.14
01/18/2007	4:54:00 PM	Run 3 - 1	6.73	151.5	20.02
01/18/2007	4:54:30 PM	Run 3 - 1	6.61	151.35	20.14
01/18/2007	4:55:00 PM	Run 3 - 1	6.61	151.5	20.14
01/18/2007	4:55:30 PM	Run 3 - 1	6.55	151.06	20.26
01/18/2007	4:56:00 PM	Run 3 - 1	6.55	150.76	20.26
01/18/2007	4:56:30 PM	Run 3 - 1	6.3	151.2	20.63
01/18/2007	4:57:00 PM	Run 3 - 1	6.18	152.23	20.63
01/18/2007	4:57:30 PM	Run 3 - 1	6.12	153.7	20.63
01/18/2007	4:58:00 PM	Run 3 - 1	6.06	154.43	20.51
01/18/2007	4:58:30 PM	Run 3 - 1	6	154.28	20.63
01/18/2007	4:59:00 PM	Run 3 - 1	5.94	154.43	20.63
01/18/2007	4:59:30 PM	Run 3 - 1	6	154.43	20.63
01/18/2007	5:00:00 PM	Run 3 - 1	6.06	155.16	20.51
01/18/2007	5:00:30 PM	Run 3 - 1	6.18	155.6	20.26
01/18/2007	5:01:00 PM	Run 3 - 1	6.18	155.75	20.38
01/18/2007	5:01:30 PM	Run 3 - 1	6.36	154.87	20.26
01/18/2007	5:02:00 PM	Run 3 - 1	6.42	154.43	20.26
01/18/2007	5:02:30 PM	Run 3 - 1	6.42	155.16	20.26
01/18/2007	5:03:00 PM	Run 3 - 1	6.42	156.77	20.26
01/18/2007	5:03:30 PM	Run 3 - 1	6.48	157.21	20.02
01/18/2007	5:04:00 PM	Run 3 - 1	6.67	156.19	20.02
01/18/2007	5:04:30 PM	Run 3 - 1	6.67	155.45	20.14
01/18/2007	5:05:00 PM	Run 3 - 1	6.73	156.04	20.02
01/18/2007	5:05:30 PM	Run 3 - 1	6.73	156.19	20.02
01/18/2007	5:06:00 PM	Run 3 - 1	6.79	156.48	20.02
01/18/2007	5:06:30 PM	Run 3 - 1	6.67	156.04	20.14
01/18/2007	5:07:00 PM	Run 3 - 1	6.61	155.75	20.26
01/18/2007	5:07:30 PM	Run 3 - 1	6.48	156.04	20.38

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	5:08:00 PM	Run 3 - 1	6.42	156.33	20.38
01/18/2007	5:08:30 PM	Run 3 - 1	6.3	157.36	20.51
01/18/2007	5:09:00 PM	Run 3 - 1	6.12	158.38	20.75
01/18/2007	5:09:30 PM	Run 3 - 1	6.06	159.41	20.75
01/18/2007	5:10:00 PM	Run 3 - 1	6.06	159.85	20.75
01/18/2007	5:10:30 PM	Run 3 - 1	6.06	159.56	20.75
01/18/2007	5:11:00 PM	Run 3 - 1	6.06	160.43	20.75
01/18/2007	5:11:30 PM	Run 3 - 1	6	161.31	20.75
01/18/2007	5:12:00 PM	Run 3 - 1	6	161.75	20.87
01/18/2007	5:12:30 PM	Run 3 - 1	6	162.19	20.87
01/18/2007	5:13:00 PM	Run 3 - 1	5.94	162.78	20.87
01/18/2007	5:13:30 PM	Run 3 - 1	5.94	163.51	20.87
01/18/2007	5:14:00 PM	Run 3 - 1	6	165.12	20.75
01/18/2007	5:14:30 PM	Run 3 - 1	6	165.86	20.63
01/18/2007	5:15:00 PM	Run 3 - 1	6.18	165.86	20.51
01/18/2007	5:15:30 PM	Run 3 - 1	6.36	165.42	20.51
01/18/2007	5:16:00 PM	Run 3 - 1	6.48	164.83	20.26
01/18/2007	5:16:30 PM	Run 3 - 1	6.61	164.24	20.38
01/18/2007	5:17:00 PM	Run 3 - 1	6.73	163.8	20.38
01/18/2007	5:17:30 PM	Run 3 - 1	6.79	163.36	20.26
01/18/2007	5:18:00 PM	Run 3 - 1	6.85	162.19	20.26
01/18/2007	5:18:30 PM	Run 3 - 1	6.91	162.19	20.26
01/18/2007	5:19:00 PM	Run 3 - 1	6.91	161.46	20.26
01/18/2007	5:19:30 PM	Run 3 - 1	6.85	161.31	20.38
01/18/2007	5:20:00 PM	Run 3 - 1	6.85	160.58	20.26
01/18/2007	5:20:30 PM	Run 3 - 1	6.85	160.43	20.38
01/18/2007	5:21:00 PM	Run 3 - 1	6.73	160.29	20.38
01/18/2007	5:21:30 PM	Run 3 - 1	6.61	159.85	20.63
01/18/2007	5:22:00 PM	Run 3 - 1	6.48	159.7	20.87
01/18/2007	5:22:30 PM	Run 3 - 1	6.36	160.43	20.87
01/18/2007	5:23:00 PM	Run 3 - 1	6.24	160.29	21
01/18/2007	5:23:30 PM	Run 3 - 1	6.12	160.43	21
01/18/2007	5:24:00 PM	Run 3 - 1	6.12	160.14	20.87
01/18/2007	5:24:30 PM	Run 3 - 1	6.12	160.43	21
01/18/2007	5:25:00 PM	Run 3 - 1	6.06	159.26	21
01/18/2007	5:25:30 PM	Run 3 - 1	6.18	159.85	20.75
01/18/2007	5:26:00 PM	Run 3 - 1	6.24	160.43	20.75
01/18/2007	5:26:30 PM	Run 3 - 1	6.36	159.7	20.75
01/18/2007	5:27:00 PM	Run 3 - 1	6.3	160.14	20.75
01/18/2007	5:27:30 PM	Run 3 - 1	6.42	159.85	20.63
01/18/2007	5:28:00 PM	Run 3 - 1	6.42	159.12	20.63
01/18/2007	5:28:30 PM	Run 3 - 1	6.42	159.7	20.51
01/18/2007	5:29:00 PM	Run 3 - 1	6.48	160.14	20.51
01/18/2007	5:29:30 PM	Run 3 - 1	6.55	159.12	20.38
01/18/2007	5:30:00 PM	Run 3 - 1	6.67	157.8	20.38
01/18/2007	5:30:30 PM	Run 3 - 1	6.85	157.5	20.26
01/18/2007	5:31:00 PM	Run 3 - 1	6.85	156.92	20.26
01/18/2007	5:31:30 PM	Run 3 - 1	6.85	156.33	20.26
01/18/2007	5:32:00 PM	Run 3 - 1	6.91	156.04	20.26
01/18/2007	5:32:30 PM	Run 3 - 1	6.85	155.45	20.26

LOG

Date	Time	Status	O2 (%)	SO2 (%)	CO22 (%)
01/18/2007	5:33:00 PM	Run 3 - 1	6.79	154.87	20.38
01/18/2007	5:33:30 PM	Run 3 - 1	6.85	155.45	20.38
01/18/2007	5:34:00 PM	Run 3 - 1	6.79	155.31	20.38
01/18/2007	5:34:30 PM	Run 3 - 1	6.79	154.28	20.38
01/18/2007	5:35:00 PM	Run 3 - 1	6.73	153.55	20.38
01/18/2007	5:35:30 PM	Run 3 - 1	6.79	152.38	20.38
01/18/2007	5:36:00 PM	Run 3 - 1	6.85	152.52	20.38
01/18/2007	5:36:30 PM	Run 3 - 1	6.85	152.82	20.51
01/18/2007	5:37:00 PM	Run 3 - 1	6.79	152.52	20.51
01/18/2007	5:37:30 PM	Run 3 - 1	6.79	151.64	20.51
01/18/2007	5:38:00 PM	Run 3 - 1	6.73	151.35	20.63
01/18/2007	5:38:30 PM	Run 3 - 1	6.48	152.23	20.87
01/18/2007	5:39:00 PM		6.36	153.99	21
01/18/2007	5:39:30 PM		6.18	133.92	20.87
01/18/2007	5:40:00 PM		0.56	155.01	11.72
01/18/2007	5:40:30 PM	- ZERO	-0.05	155.31	10.01
01/18/2007	5:41:00 PM	- Span	-0.05	155.6	10.01
01/18/2007	5:41:30 PM	- Span	-0.05	124.69	10.01
01/18/2007	5:42:00 PM	- Span	3.62	5.28	4.51
01/18/2007	5:42:30 PM	- ZERO	6	1.47	0.12
01/18/2007	5:43:00 PM	- ZERO	6.06	0.88	0.12
01/18/2007	5:43:30 PM	- ZERO	5.14	1.03	2.56
01/18/2007	5:44:00 PM	- ZERO	0.56	0.59	21.36
01/18/2007	5:44:30 PM	- ZERO	-0.05	0.74	24.9
01/18/2007	5:45:00 PM	- Span	-0.11	0.74	25.02
01/18/2007	6:19:00 PM		19.79	0.3	0
01/18/2007	6:19:30 PM		19.85	0.15	0
01/18/2007	6:20:00 PM		19.79	0.15	0
01/18/2007	6:20:30 PM		19.79	0.15	0
01/18/2007	6:21:00 PM		19.79	0.3	0
01/18/2007	6:21:30 PM		19.79	0.15	0

CALIBRATION GAS CERTIFICATIONS

GR304

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-57183-001

Customer

TAMPA ELECTRIC COMPANY

5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM017173 **Certification Date:** 22Sep2006 **Exp. Date:** 21Sep2009
Cylinder Pressure*:** 1200 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
OXYGEN	6.04 %	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2658	02Oct2006	ALM065248	9.930 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
BECKMAN/755/2002571	11Sep2006	PARAMAGNETIC

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

OXYGEN

Date: 21Sep2006	Response Unit:VOLTS	
Z1 = 0.00050	R1 = 0.95870	T1 = 0.58510
R2 = 0.95890	Z2 = 0.00040	T2 = 0.58420
Z3 = 0.00070	T3 = 0.58430	R3 = 0.95840
Avg. Concentration:	6.040	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999993712	2658
Constants:	A = -.010468
B = 10.365340	C =
D =	E =

Special Notes: RECERT OF CYL ALM017173

APPROVED BY: JESSICA BRAY

GR505

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-32815-003

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1: September, 1997.

Cylinder Number: AAL16025 **Certification Date:** 05Jul2005 **Exp. Date:** 04Jul2008
Cylinder Pressure*:** 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
OXYGEN	13.7 %	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2350	01Feb2008	1A2377	23.91 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
BECKMAN/755/2002671	15Jun2005	PARAMAGNETIC

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

OXYGEN

Date: 05Jul2005	Response Unit:VOLTS	
Z1 = 0.00160	R1 = 0.96210	T1 = 0.56070
R2 = 0.96250	Z2 = 0.00180	T2 = 0.55990
Z3 = 0.00180	T3 = 0.55990	R3 = 0.96250
Avg. Concentration:	13.70	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 0.999983	2350
Constants:	A = -4.2598E-02
B = 2.4648E+01	C =
D =	E =

APPROVED BY: Joe Smith
JOE SMITH

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-52729-001

Customer

TAMPA ELECTRIC COMPANY

5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM009682 **Certification Date:** 27Jun2006 **Exp. Date:** 26Jun2008
Cylinder Pressure*:** 1999 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.21	%	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	152.2	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Prot

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K012148	13.93 %	CARBON DIOXIDE
NTRM 0260	02Oct2006	ALM057284	266.6 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000928781	08Jun2006	FTIR
FTIR//000928781	08Jun2006	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

Date: 20Jun2006	Response Unit:%	
Z1 = -0.00878	R1 = 13.97749	T1 = 10.24188
R2 = 13.98411	Z2 = -0.00769	T2 = 10.24781
Z3 = -0.00535	T3 = 10.25074	R3 = 13.99919
Avg. Concentration:	10.21	%

Z1 = 0.00000	R1 = 0.00000	T1 = 0.00000
R2 = 0.00000	Z2 = 0.00000	T2 = 0.00000
Z3 = 0.00000	T3 = 0.00000	R3 = 0.00000
Avg. Concentration:	0.000	

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 9.99997E-1	
Constants:	A = 0.00000E+0
B = 9.73447E-1	C = 3.63400E-3
D = 1.70000E-5	E = 0.00000E+0

SULFUR DIOXIDE *

Date: 20Jun2006	Response Unit:PPM	
Z1 = -0.03225	R1 = 266.0084	T1 = 151.8536
R2 = 266.1603	Z2 = -0.01621	T2 = 151.9421
Z3 = 0.01808	T3 = 152.0154	R3 = 266.2468
Avg. Concentration:	152.2	PPM

Date: 27Jun2006	Response Unit: PPM	
Z1 = -0.05180	R1 = 265.8178	T1 = 151.7932
R2 = 265.9785	Z2 = -0.04659	T2 = 151.8102
Z3 = 0.06517	T3 = 151.8972	R3 = 266.0725
Avg. Concentration:	152.2	PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 9.99998E-1	
Constants:	A = 0.00000E+0
B = 9.98458E-1	C = 1.00000E-5
D = 0.00000E+0	E = 0.00000E+0

APPROVED BY: Michael A. Kuhns

Michael A. Kuhns

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-67073-002

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM029767 **Certification Date:** 18Dec2006 **Exp. Date:** 17Dec2008
Cylinder Pressure*:** 1297 PSIG **Prev Certification Date:** 27Dec2004

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.00	%	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	269	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Not

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K012148	13.93 %	CARBON DIOXIDE
NTRM 0260	01May2008	ALM040460	254.4 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000928781	22Nov2006	FTIR
FTIR//000928781	15Dec2006	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis | **Second Triad Analysis** | **Calibration Curve**

CARBON DIOXIDE

Date: 24Dec2004	Response Unit:%	
Z1 = 0.00000	R1 = 0.00000	T1 = 0.00000
R2 = 0.00000	Z2 = 0.00000	T2 = 0.00000
Z3 = 0.00000	T3 = 0.00000	R3 = 0.00000
Avg. Concentration:	17.97	%

Date: 18Dec2006	Response Unit: %	
Z1 = 0.00106	R1 = 13.83801	T1 = 17.90717
R2 = 13.84798	Z2 = 0.00117	T2 = 17.92890
Z3 = 0.00389	T3 = 17.94814	R3 = 13.85742
Avg. Concentration:	18.03	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4		
r = 9.99994E-1		
Constants:	A = 0.00000E+0	
B = 9.13972E-1	C = 1.20020E-2	
D = 0.00000E+0	E = 0.00000E+0	

SULFUR DIOXIDE *

Date: 24Dec2004	Response Unit:PPM	
Z1 = 0.00000	R1 = 0.00000	T1 = 0.00000
R2 = 0.00000	Z2 = 0.00000	T2 = 0.00000
Z3 = 0.00000	T3 = 0.00000	R3 = 0.00000
Avg. Concentration:	269.1	PPM

Date: 18Dec2006	Response Unit: PPM	
Z1 = 0.00262	R1 = 255.4631	T1 = 270.2870
R2 = 255.5427	Z2 = 0.02165	T2 = 270.3383
Z3 = 0.05771	T3 = 270.3840	R3 = 255.8316
Avg. Concentration:	269.1	PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4		
r = 9.99999E-1		
Constants:	A = 0.00000E+0	
B = 9.96541E-1	C = 3.40000E-5	
D = 0.00000E+0	E = 0.00000E+0	

APPROVED BY: Michael A. Kuhns

Michael A. Kuhns

BL501

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: E-N06925
Project No.: 05-27508-004

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM042687 **Certification Date:** 07Feb2005 **Exp. Date:** 07Feb2008
Cylinder Pressure*:** 1850 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	25.07 %	+/- 1%	Direct NIST and NMI
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997

Product certified to +/- 1% analytical accuracy is directly traceable to NIST or NMI standards

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2300	01Jan2008	ALM049147	23.34 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/10883	26Jan2005	THERMAL CONDUCTIVITY

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis ***Second Triad Analysis*** ***Calibration Curve***

CARBON DIOXIDE

Date: 07Feb2005	Response Unit:AREA	
Z1 = 0.00000	R1 = 1214000.	T1 = 1303809.
R2 = 1213747.	Z2 = 0.00000	T2 = 1304206
Z3 = 0.00000	T3 = 1304309.	R3 = 1214512
Avg. Concentration:	25.07 %	

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999999	
Constants:	A = -.025098732
B = 1.94E-05	C = 0
D = 0	E = 0

APPROVED BY: _____

DAVID BABCOCK

BL502

RATA CLASS

Scott Specialty Gases

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

Dual-Analyzed Calibration Standard

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.. E-N06925
Project No. 05-27508-005

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; *Procedure G-1; September, 1997.*

Cylinder Number: ALM016344 **Certification Date:** 07Feb2005 **Exp. Date:** 07Feb2008
Cylinder Pressure*:** 1850 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	45.10 %	+/- 1%	Direct NIST and NMI
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997

Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2300	01Jan2008	ALM049142	23.34 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/10693	26Jan2005	THERMAL CONDUCTIVITY

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

Date: 07Feb2005	Response Units:MV	
Z1 = 0.00000	R1 = 1214000.	T1 = 2344788.
R2 = 1213747.	Z2 = 0.00000	T2 = 2345040.
Z3 = 0.00000	T3 = 2345069.	R3 = 1214512.
Avg. Concentration:	45.10	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999999	
Constants:	A = -.025098732
B = 1.94E-05	C = 0
D = 0	E = 0

APPROVED BY: _____

APPENDIX X

FUEL ANALYSIS

SYNTHETIC GAS ANALYSIS – NOVEMBER 8, 2006

UNIT 1 STACK TEST 01/18/07
CT & ACID PLANT

Calibration Standard Check

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
True Value	**15.00**	**1.020**	**3.02**	**0.1000**	**44.86**	**36.00**	**N.A.**
Std. 1	15.25	1.020	3.02	0.1014	44.96	35.65	N.A.
Std. 2	15.07	1.010	2.95	0.1034	44.85	36.02	N.A.
Std. 3	15.00	1.020	2.98	0.0997	44.81	36.09	N.A.
Avg.	**15.11**	**1.017**	**2.98**	**0.1015**	**44.87**	**35.92**	**N.A.**

Clean Syngas Sampled @ 1355 01/18/07

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.44	0.849	3.94	0.0280	47.34	33.40	N.A.
2nd Bomb	14.50	0.850	4.41	0.0282	46.81	33.40	N.A.
Avg.	**14.47**	**0.85**	**4.18**	**0.0281**	**47.08**	**33.40**	**N.A.**

Clean Syngas Sampled @ 1555 01/18/07

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.44	0.832	3.8	0.0287	47.38	33.52	N.A.
2nd Bomb	14.42	0.841	4.25	0.0281	47.40	33.06	N.A.
Avg.	**14.43**	**0.84**	**4.03**	**0.0284**	**47.39**	**33.29**	**N.A.**

Clean Syngas Sampled @ 1715 01/18/07

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
1st Bomb	14.48	0.854	3.48	0.0277	48.01	33.18	N.A.
2nd Bomb	14.07	0.873	5.22	0.0261	46.88	32.96	N.A.
Avg.	**14.28**	**0.86**	**4.35**	**0.0269**	**47.45**	**33.07**	**N.A.**

Average for All Syngas Samples Using all Results

	% CO2	% O2	% N2	% CH4	% CO	Calc. % H2	% H2S/COS
Avg.	**14.39**	**0.85**	**4.18**	**0.0278**	**47.30**	**33.25**	**0**

TECO TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID: Polk GC**

Facility: Polk Power Station **Analysis Date: 01/18/2007**

Source: Unit 1

CALCULATION OF DENSITY AND HEATING VALUE @ 60°F and 30 in Hg

Component	% Volume	Molecular Wt.	Density * (lb/ft^3)	% volume x Density	weight %	Component Gross Btu/lb	Weight Fract. Btu	Gross * Heating Value (Btu/SCF)	Volume Fract. Btu
Hydrogen	33.2530	2.016	0.0053	0.00176	3.0678	61100	1874.44	325.0	108.0723
Oxygen	0.8498	32.000	0.0846	0.00072	1.2515	0	0.00	0.0	0
Argon	0.0000	39.948	0.1065	0.00000	0.0000	0	0.00	0.0	0
Nitrogen	4.1833	28.016	0.0744	0.00311	5.4177	0	0.00	0.0	0
CO2	14.3917	44.010	0.1170	0.01684	29.3103	0	0.00	0.0	0
CO	47.3033	28.010	0.0740	0.03500	60.9322	4347	2648.72	322.0	152.3167
COS	0.0000	60.070	0.1602	0.00000	0.0000	0	0.00	0.0	0
Methane	0.0278	16.041	0.0424	0.00001	0.0205	23879	4.90	1013.0	0.281614
Ethane	0.000	30.067	0.0803	0.00000	0.0000	22320	0.00	1792.0	0
Ethylene	0.000	28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.000	44.092	0.1196	0.00000	0.0000	21661	0.00	2590.0	0
propylene	0.000	42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.000	58.118	0.1582	0.00000	0.0000	21257	0.00	3363.0	0
n-butane	0.000	58.118	0.1582	0.00000	0.0000	21308	0.00	3370.0	0
Isobutene	0.000	56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.000	72.144	0.1904	0.00000	0.0000	21052	0.00	4008.0	0
n-pentane		72.144	0.1904	0.00000	0.0000	21091	0.00	4016.0	0
n-hexane		86.169	0.2274	0.00000	0.0000	20940	0.00	4762.0	0
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0
Total:	100.01				100.0000				

Average Density	0.05745
Specific Gravity	0.75096

Gross Heating Value			
Btu/lb	4528	Btu/SCF	260.67
Net Heating Values			
Btu/lb	4243	Btu/SCF	244

* Density (lb/ft^3) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Hanbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H_2 x 8.94)

TECO
TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID: Polk GC**

Facility: Polk Power Station **Analysis Date: 01/18/2007**

Source: Unit 1

CALCULATION OF F FACTORS

						Weight Percents			
Component	**Mol. Wt.**	**C Factor**	**H Factor**	**% volume**	**Fract. Wt.**	**Carbon**	**Hydrogen**	**Nitrogen**	**Oxygen**
Hydrogen	2.016	0	1	33.253	67.0381		3.0889964		
Oxygen	32.000	0	0	0.850	27.1941				1.2530577
Argon	39.948	0	0	0.000	0.0000				
Nitrogen	28.016	0	0	4.183	117.2003			5.400381372	
CO2	44.010	0.272273	0	14.392	633.3773	7.94626176			21.217426
CO	28.010	0.42587	0	47.303	1324.9664	26.0002625			35.086648
COS	60.070	0.1998	0	0.000	0.0000	0			0
Methane	16.041	0.75	0.25	0.028	0.4459	0.01541109	0.005137		
Ethane	30.067	0.8	0.2	0.000	0.0000	0	0		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.000	0.0000	0	0		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
n-butane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-pentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-hexane	86.169	0.83721	0.16279	0.000	0.0000	0	0		
H2S	34.076	0	0.0586923	0.000	0.0000	0	0		
Totals				100.00897	2170.2220	33.9619353	3.09	5.400381372	57.557132

CALCULATED VALUES		
O2 F Factor (dry), Fd	**8283**	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
O2 F Factor (wet), Fw	**9601**	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
Moisture F Factor	**1319**	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
Combust. Moisture	**13.74**	volume % water in flue gas @ 0% excess air
CO2 F Factor, Fc	**2408**	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
Carbon Dioxide	**29.07**	volume % CO2 in flue gas @ 0% O2
Predicted Fo Factor	**0.72**	EPA Method 3a Fo value

APPENDIX Y

PLANT OPERATIONS DATA

IGCC

Plant Information

Plant Information Source: polk-1pisrv
Start Time: 01/18/2007 13:49
End Time: 01/18/2007 18:03
Time Interval: 1 Min

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
Run Average:	180.052477	6822.07003	75.7639348	4.643568
18-Jan-07 13:49:00	181.437057	6777.04053	71.6138687	4.67468023
18-Jan-07 13:50:00	177.651001	6825.29443	72.0222855	4.67682362
18-Jan-07 13:51:00	179.979736	6826.34277	72.2511139	4.67896748
18-Jan-07 13:52:00	181.124115	6839.76074	72.4200821	4.68111086
18-Jan-07 13:53:00	181.05687	6835.06836	72.5890427	4.68325472
18-Jan-07 13:54:00	180.117599	6797.77881	72.7580109	4.6853981
18-Jan-07 13:55:00	179.915573	6857.22363	72.6530228	4.68754148
18-Jan-07 13:56:00	180.266785	6928.5918	72.884964	4.68968534
18-Jan-07 13:57:00	180.617996	6882.20703	73.1169052	4.69182873
18-Jan-07 13:58:00	180.63533	6844.47168	73.3488464	4.69397259
18-Jan-07 13:59:00	179.949799	6830.78613	73.2444077	4.69611597
18-Jan-07 14:00:00	179.958649	6863.78125	73.4497299	4.69825935
18-Jan-07 14:01:00	180.79805	6812.8125	73.6550598	4.70040321
18-Jan-07 14:02:00	179.775925	6836.28027	73.7508774	4.7025466
18-Jan-07 14:03:00	179.374954	6808.4126	74.1216278	4.70469046
18-Jan-07 14:04:00	179.956757	6810.24609	74.2368851	4.70683384
18-Jan-07 14:05:00	180.01059	6896.44043	74.3521423	4.70281839
18-Jan-07 14:06:00	180.436554	6853.6499	74.4673996	4.69869852
18-Jan-07 14:07:00	181.390518	6815.11035	74.5826645	4.69457817
18-Jan-07 14:08:00	180.956009	6816.57715	74.6979218	4.6904583
18-Jan-07 14:09:00	179.68924	6796.8501	74.813179	4.68633842
18-Jan-07 14:10:00	179.459305	6877.34863	74.9284363	4.68221855
18-Jan-07 14:11:00	180.468277	6852.09961	74.6560211	4.6780982
18-Jan-07 14:12:00	180.447357	6820.66992	74.55336	4.67397833
18-Jan-07 14:13:00	179.709808	6789.24023	74.4506989	4.66985846
18-Jan-07 14:14:00	179.689926	6776.19385	74.5488281	4.66573858
18-Jan-07 14:15:00	178.863998	6868.45215	75.0288849	4.66161823
18-Jan-07 14:16:00	179.943649	6918.70996	75.1309891	4.65749836
18-Jan-07 14:17:00	181.157166	6820.87939	75.2330933	4.65337849
18-Jan-07 14:18:00	181.032532	6819.85449	75.3441467	4.64925861
18-Jan-07 14:19:00	179.707458	6811.05273	75.4951019	4.64513826
18-Jan-07 14:20:00	179.854614	6787.18115	75.8922729	4.64101839
18-Jan-07 14:21:00	179.725952	6815.19922	75.6414261	4.63689852
18-Jan-07 14:22:00	179.200394	6831.2583	75.7954254	4.63277864
18-Jan-07 14:23:00	180.103348	6800.05029	75.6291351	4.62865829
18-Jan-07 14:24:00	180.819122	6784.69629	75.752739	4.62453842
18-Jan-07 14:25:00	180.376724	6872.28809	75.8763351	4.62335348
18-Jan-07 14:26:00	180.862152	6840.22217	75.999939	4.62221861
18-Jan-07 14:27:00	180.957809	6831.22021	76.1235352	4.62108326
18-Jan-07 14:28:00	178.302414	6817.21875	76.247139	4.61994839
18-Jan-07 14:29:00	181.012299	6789.82373	76.8425751	4.61881304

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
18-Jan-07 14:30:00	178.959061	6862.97949	76.7245178	4.61767769
18-Jan-07 14:31:00	179.829529	6840.00244	76.5705261	4.61654282
18-Jan-07 14:32:00	180.749542	6854.83057	76.7327881	4.61540747
18-Jan-07 14:33:00	181.037811	6762.70801	76.5794296	4.61427259
18-Jan-07 14:34:00	180.772858	6786.43604	76.4260635	4.61313725
18-Jan-07 14:35:00	180.008636	6873.79102	76.2726974	4.61200237
18-Jan-07 14:36:00	179.573532	6872.32324	76.6353073	4.61086702
18-Jan-07 14:37:00	180.015686	6804.99658	77.1011047	4.60973215
18-Jan-07 14:38:00	179.920242	6818.20898	76.8733749	4.6085968
18-Jan-07 14:39:00	178.990875	6788.30029	76.8733749	4.60746193
18-Jan-07 14:40:00	179.778076	6837.20996	76.8733749	4.60632658
18-Jan-07 14:41:00	180.346237	6857.98779	76.8733749	4.60519123
18-Jan-07 14:42:00	179.836731	6807.75244	76.8733749	4.60405636
18-Jan-07 14:43:00	179.504639	6767.93115	76.6654816	4.60292101
18-Jan-07 14:44:00	179.711304	6777.0249	76.8194809	4.60178614
18-Jan-07 14:45:00	179.690857	6865.33496	77.1865005	4.60065079
18-Jan-07 14:46:00	180.209808	6840.92676	76.9675674	4.59951591
18-Jan-07 14:47:00	180.660721	6815.77686	77.1203079	4.59838057
18-Jan-07 14:48:00	179.378769	6777.68604	77.0119705	4.59724569
18-Jan-07 14:49:00	180.315704	6791.78613	77.0485153	4.59611034
18-Jan-07 14:50:00	180.582443	6847.76025	76.9281311	4.59497547
18-Jan-07 14:51:00	180.44751	6867.28906	77.0307922	4.59384012
18-Jan-07 14:52:00	180.709869	6838.83447	77.133461	4.59270477
18-Jan-07 14:53:00	180.56517	6812.97168	77.332962	4.5915699
18-Jan-07 14:54:00	179.848953	6802.50928	77.2224274	4.59043455
18-Jan-07 14:55:00	179.17691	6870.72363	76.8066483	4.58929968
18-Jan-07 14:56:00	179.632263	6888.72168	76.6526489	4.58816433
18-Jan-07 14:57:00	179.951965	6805.99268	76.633934	4.58702946
18-Jan-07 14:58:00	179.554489	6788.2876	76.8181229	4.58589411
18-Jan-07 14:59:00	179.55101	6759.72949	77.0023117	4.58475924
18-Jan-07 15:00:00	179.851196	6772.19678	77.1865005	4.58362389
18-Jan-07 15:01:00	180.06012	6791.79004	77.3706894	4.58248901
18-Jan-07 15:02:00	180.666412	6826.45313	77.7254715	4.58135366
18-Jan-07 15:03:00	181.047089	6789.94434	77.5804214	4.58021879
18-Jan-07 15:04:00	179.051971	6787.0874	77.7765045	4.57908344
18-Jan-07 15:05:00	179.56633	6855.00537	77.6212463	4.57794809
18-Jan-07 15:06:00	180.602478	6835.54688	77.2481003	4.57681322
18-Jan-07 15:07:00	179.621857	6789.83398	77.480896	4.57567787
18-Jan-07 15:08:00	179.415573	6762.25977	77.3787994	4.58121252
18-Jan-07 15:09:00	179.061142	6769.07568	77.2766953	4.58697701
18-Jan-07 15:10:00	180.323608	6813.34473	77.2043915	4.59274197
18-Jan-07 15:11:00	180.105438	6834.24512	77.3577576	4.59850645
18-Jan-07 15:12:00	180.102448	6837.41162	77.5111237	4.60427094
18-Jan-07 15:13:00	180.099442	6802.48584	77.6644821	4.61003542
18-Jan-07 15:14:00	180.522552	6791.34619	77.8058929	4.61580038
18-Jan-07 15:15:00	179.700577	6888.55811	77.6005707	4.62156487
18-Jan-07 15:16:00	180.200378	6904.33594	77.3952484	4.62732935
18-Jan-07 15:17:00	180.665436	6833.90625	77.1899261	4.63309383

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
18-Jan-07 15:18:00	179.080475	6828.98926	77.4844666	4.63885832
18-Jan-07 15:19:00	180.952866	6830.30518	77.2070313	4.64462328
18-Jan-07 15:20:00	180.83667	6807.7041	77.4739532	4.65038776
18-Jan-07 15:21:00	179.382095	6791.73779	77.2218552	4.65615225
18-Jan-07 15:22:00	179.63446	6819.58545	77.4677734	4.66191673
18-Jan-07 15:23:00	179.563187	6763.18262	77.4534225	4.66768169
18-Jan-07 15:24:00	178.991531	6787.23682	77.7614059	4.67344618
18-Jan-07 15:25:00	179.586533	6887.09033	78.5955353	4.67921066
18-Jan-07 15:26:00	180.335617	6815.02539	78.376358	4.67866564
18-Jan-07 15:27:00	180.669754	6809.3291	78.299675	4.6779027
18-Jan-07 15:28:00	180.094193	6823.62988	78.2229919	4.67714024
18-Jan-07 15:29:00	180.863983	6832.00049	78.1463089	4.6763773
18-Jan-07 15:30:00	180.172836	6832.72314	77.7023773	4.67561436
18-Jan-07 15:31:00	180.614944	6855.55029	77.5483856	4.67485189
18-Jan-07 15:32:00	180.02417	6811.63916	77.6048431	4.67408895
18-Jan-07 15:33:00	179.622223	6802.83887	77.7588425	4.67332649
18-Jan-07 15:34:00	180.803543	6786.57666	77.6157761	4.67256355
18-Jan-07 15:35:00	180.862762	6854.99121	77.8794708	4.67180061
18-Jan-07 15:36:00	180.948212	6908.75342	78.003334	4.67103815
18-Jan-07 15:37:00	180.213226	6850.70117	77.7991257	4.67027521
18-Jan-07 15:38:00	179.831223	6808.55908	77.5949173	4.66951275
18-Jan-07 15:39:00	179.861252	6792.48291	77.4996185	4.66874981
18-Jan-07 15:40:00	180.338531	6799.21436	77.1467209	4.66798687
18-Jan-07 15:41:00	179.894714	6825.71973	77.0697174	4.66722441
18-Jan-07 15:42:00	180.016144	6813.43848	76.9927216	4.66646147
18-Jan-07 15:43:00	180.046387	6764.66797	76.9157257	4.66569901
18-Jan-07 15:44:00	178.552658	6779.15137	76.9193192	4.66493607
18-Jan-07 15:45:00	178.665329	6869.53809	77.021431	4.6641736
18-Jan-07 15:46:00	180.379822	6849.25488	77.1235352	4.66341066
18-Jan-07 15:47:00	180.627609	6821.01318	77.1269836	4.66264772
18-Jan-07 15:48:00	180.341599	6797.40039	76.9717102	4.66188526
18-Jan-07 15:49:00	180.769241	6780.42041	76.560257	4.66112232
18-Jan-07 15:50:00	180.503525	6860.56494	76.8539352	4.66035986
18-Jan-07 15:51:00	180.567078	6862.76367	76.7925339	4.65959692
18-Jan-07 15:52:00	181.249069	6845.71338	76.7311401	4.65883398
18-Jan-07 15:53:00	180.551147	6827.48682	76.6697464	4.65807152
18-Jan-07 15:54:00	179.940491	6785.70654	76.6083527	4.65730858
18-Jan-07 15:55:00	179.054779	6819.89111	76.5824966	4.65654612
18-Jan-07 15:56:00	180.057983	6857.66992	76.6851654	4.65578318
18-Jan-07 15:57:00	179.648117	6837.79688	76.7878265	4.65502024
18-Jan-07 15:58:00	179.859146	6793.51709	76.8477097	4.65425777
18-Jan-07 15:59:00	179.496521	6766.66016	76.693718	4.65349483
18-Jan-07 16:00:00	179.919342	6785.36768	76.8552628	4.65273237
18-Jan-07 16:01:00	179.340591	6801.93848	76.6999969	4.65196943
18-Jan-07 16:02:00	178.342865	6790.61914	76.2599716	4.65120697
18-Jan-07 16:03:00	180.430923	6797.03955	76.4139633	4.65044403
18-Jan-07 16:04:00	180.366684	6789.51611	76.5526199	4.64968109
18-Jan-07 16:05:00	181.629379	6906.45264	76.3998795	4.64891863

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
18-Jan-07 16:06:00	181.672104	6854.24756	76.247139	4.64815569
18-Jan-07 16:07:00	178.836823	6792.39063	76.0943985	4.64739323
18-Jan-07 16:08:00	179.598801	6795.3833	75.941658	4.64663029
18-Jan-07 16:09:00	179.197357	6800.65234	76.2266083	4.64586735
18-Jan-07 16:10:00	179.61615	6872.6875	76.1513214	4.64510489
18-Jan-07 16:11:00	179.734116	6872.82617	76.0486603	4.64434195
18-Jan-07 16:12:00	180.506195	6843.4917	75.9459915	4.64357948
18-Jan-07 16:13:00	180.24231	6787.50537	75.8433304	4.64281654
18-Jan-07 16:14:00	179.528366	6791.06689	75.7406693	4.6420536
18-Jan-07 16:15:00	180.791962	6871.30762	75.6380081	4.64129114
18-Jan-07 16:16:00	179.779358	6934.36719	75.7513657	4.6405282
18-Jan-07 16:17:00	179.50621	6800.17773	75.9079285	4.63976574
18-Jan-07 16:18:00	179.537643	6771.76904	75.6713638	4.6390028
18-Jan-07 16:19:00	180.901093	6790.83643	75.7331696	4.63824034
18-Jan-07 16:20:00	179.947266	6805.86963	75.7949677	4.6374774
18-Jan-07 16:21:00	180.145386	6795.5293	75.8567734	4.63671446
18-Jan-07 16:22:00	181.233246	6824.29297	75.9185715	4.635952
18-Jan-07 16:23:00	180.628967	6796.9751	75.706749	4.63518906
18-Jan-07 16:24:00	180.663788	6784.09912	75.8416214	4.63442659
18-Jan-07 16:25:00	179.982803	6857.80029	75.7184296	4.63366365
18-Jan-07 16:26:00	179.263596	6833.45654	75.9859924	4.63441372
18-Jan-07 16:27:00	179.043854	6798.73438	76.063942	4.63524342
18-Jan-07 16:28:00	179.623703	6817.01123	76.1418991	4.63607359
18-Jan-07 16:29:00	179.545013	6823.97803	76.2198563	4.63690329
18-Jan-07 16:30:00	178.937134	6830.94482	75.846756	4.63773298
18-Jan-07 16:31:00	179.58342	6839.92871	75.8192062	4.63856268
18-Jan-07 16:32:00	180.160538	6838.18701	75.6835175	4.63939285
18-Jan-07 16:33:00	179.283432	6799.13574	75.7850723	4.64022255
18-Jan-07 16:34:00	179.552673	6786.58301	75.8866272	4.64105225
18-Jan-07 16:35:00	179.980164	6860.25098	75.7724075	4.64188194
18-Jan-07 16:36:00	180.137711	6947.56787	75.7748947	4.64271164
18-Jan-07 16:37:00	180.223114	6844.94824	75.7851563	4.64354181
18-Jan-07 16:38:00	179.508347	6815.0127	75.7902908	4.64437151
18-Jan-07 16:39:00	180.594681	6797.77881	75.7572556	4.64520121
18-Jan-07 16:40:00	180.506638	6820.10352	75.8056946	4.6460309
18-Jan-07 16:41:00	179.692551	6789.51025	75.7440948	4.64686108
18-Jan-07 16:42:00	179.301727	6817.10303	75.6773605	4.64769077
18-Jan-07 16:43:00	179.691833	6804.95947	75.8313599	4.64852047
18-Jan-07 16:44:00	179.788513	6807.26953	75.7281723	4.64935017
18-Jan-07 16:45:00	181.199066	6893.40918	75.5807953	4.65018034
18-Jan-07 16:46:00	180.923096	6882.26221	75.460495	4.65101004
18-Jan-07 16:47:00	181.252777	6843.39404	75.3401947	4.65183973
18-Jan-07 16:48:00	180.527054	6811.45605	75.2198944	4.65181398
18-Jan-07 16:49:00	180.07666	6835.97607	75.0995941	4.65167522
18-Jan-07 16:50:00	179.433884	6824.60156	75.065979	4.65153646
18-Jan-07 16:51:00	179.59169	6871.82959	75.2538528	4.65139771
18-Jan-07 16:52:00	180.360733	6830.23145	75.3062439	4.65125895
18-Jan-07 16:53:00	180.003418	6735.85596	75.2448502	4.65112019

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
18-Jan-07 16:54:00	180.197922	6808.35693	75.1834488	4.65098143
18-Jan-07 16:55:00	179.804504	6821.84033	75.1220551	4.65084314
18-Jan-07 16:56:00	180.751587	6900.50928	75.0606613	4.65070438
18-Jan-07 16:57:00	179.019043	6822.77734	75.0114059	4.65056562
18-Jan-07 16:58:00	178.433182	6799.12646	75.1320953	4.65042686
18-Jan-07 16:59:00	179.584778	6779.74414	75.2527847	4.65028811
18-Jan-07 17:00:00	179.519943	6783.74268	75.3734741	4.65014935
18-Jan-07 17:01:00	179.941101	6798.26807	75.4941711	4.65001059
18-Jan-07 17:02:00	181.763062	6851.13379	75.6148605	4.64987183
18-Jan-07 17:03:00	179.689621	6791.81006	75.4786682	4.64973307
18-Jan-07 17:04:00	180.374115	6779.49072	75.328949	4.64959431
18-Jan-07 17:05:00	180.082092	6864.17236	75.59095	4.64945555
18-Jan-07 17:06:00	179.406265	6843.36523	75.5712738	4.64931679
18-Jan-07 17:07:00	179.502243	6785.83398	75.5161362	4.6491785
18-Jan-07 17:08:00	178.420822	6807.66113	75.4609985	4.64903975
18-Jan-07 17:09:00	179.763535	6782.15869	75.4058609	4.64890099
18-Jan-07 17:10:00	179.97467	6831.88037	75.3507233	4.64876223
18-Jan-07 17:11:00	180.966522	6886.14893	75.2955856	4.64862347
18-Jan-07 17:12:00	180.394302	6841.08398	75.240448	4.64848471
18-Jan-07 17:13:00	181.073242	6825.35303	75.1853104	4.64834595
18-Jan-07 17:14:00	180.812073	6807.69775	75.1301727	4.64820719
18-Jan-07 17:15:00	180.100342	6852.35791	75.0750351	4.64806843
18-Jan-07 17:16:00	180.149841	6901.39404	75.0198975	4.64792967
18-Jan-07 17:17:00	180.993988	6823.28174	75.2480316	4.64779091
18-Jan-07 17:18:00	180.340897	6781.64453	75.1453705	4.64765215
18-Jan-07 17:19:00	179.954681	6766.45557	75.0427094	4.64751339
18-Jan-07 17:20:00	178.584213	6787.05371	75.2691879	4.64737511
18-Jan-07 17:21:00	179.046997	6765.43799	75.1925049	4.64723635
18-Jan-07 17:22:00	179.839935	6820.78809	75.1158218	4.64709759
18-Jan-07 17:23:00	180.601669	6778.63818	75.0391388	4.64695883
18-Jan-07 17:24:00	180.829178	6822.27295	75.0854874	4.64682007
18-Jan-07 17:25:00	180.096741	6901.78271	75.2394791	4.64668131
18-Jan-07 17:26:00	179.671005	6847.83398	75.0033569	4.64654255
18-Jan-07 17:27:00	179.615768	6812.84277	75.1715622	4.64640379
18-Jan-07 17:28:00	179.90036	6789.80322	74.8610306	4.64626503
18-Jan-07 17:29:00	179.230209	6752.28564	74.8728943	4.64612627
18-Jan-07 17:30:00	179.59201	6794.0166	75.1245651	4.64598751
18-Jan-07 17:31:00	180.115204	6830.07764	75.2595444	4.64584875
18-Jan-07 17:32:00	179.651169	6809.47607	75.1042786	4.64571047
18-Jan-07 17:33:00	181.21373	6807.27588	74.7419968	4.64557171
18-Jan-07 17:34:00	180.978302	6805.07568	74.8972626	4.64543295
18-Jan-07 17:35:00	180.742859	6864.0957	74.690239	4.64529419
18-Jan-07 17:36:00	179.29776	6884.81641	74.690239	4.64515543
18-Jan-07 17:37:00	179.136978	6799.6123	74.690239	4.64501667
18-Jan-07 17:38:00	179.453568	6785.67822	74.690239	4.64487791
18-Jan-07 17:39:00	181.460098	6816.84619	74.3549957	4.64473915
18-Jan-07 17:40:00	180.946503	6862.68115	74.2528915	4.64460039
18-Jan-07 17:41:00	180.289902	6782.146	74.1507874	4.64446163

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
18-Jan-07 17:42:00	179.382599	6796.18994	74.3587646	4.64432287
18-Jan-07 17:43:00	180.220871	6782.07275	74.2363663	4.64418411
18-Jan-07 17:44:00	179.331131	6787.08057	74.1139755	4.64404535
18-Jan-07 17:45:00	181.188995	6900.10986	73.9915848	4.64390707
18-Jan-07 17:46:00	179.915817	6832.31299	73.869194	4.64376831
18-Jan-07 17:47:00	180.27153	6780.48779	73.7611465	4.64362955
18-Jan-07 17:48:00	179.759216	6771.19873	74.0605545	4.64349079
18-Jan-07 17:49:00	179.192596	6761.90918	73.8541031	4.64335203
18-Jan-07 17:50:00	180.389725	6826.6748	73.6476517	4.64321327
18-Jan-07 17:51:00	181.065125	6861.14111	73.4412003	4.64307451
18-Jan-07 17:52:00	179.252182	6796.13184	73.60215	4.64293575
18-Jan-07 17:53:00	180.710175	6832.90137	73.4455872	4.64279699
18-Jan-07 17:54:00	180.453064	6826.71924	73.5212555	4.64265823
18-Jan-07 17:55:00	181.37912	6874.71484	73.6986923	4.64251947
18-Jan-07 17:56:00	181.033966	6953.51611	73.4795074	4.64238071
18-Jan-07 17:57:00	179.930115	6815.36719	73.5857773	4.64224243
18-Jan-07 17:58:00	178.969864	6770.64453	73.6986923	4.64210367
18-Jan-07 17:59:00	179.130829	6804.42773	73.7508774	4.64196491
18-Jan-07 18:00:00	179.365784	6764.45313	73.3769455	4.64182615
18-Jan-07 18:01:00	179.546173	6788.97852	73.2993088	4.64168739
18-Jan-07 18:02:00	180.959579	6839.58057	73.2216797	4.64154863
18-Jan-07 18:03:00	180.483566	6779.48193	73.144043	4.64140987

SULFURIC ACID PLANT

Ops Run 1

Polk Power Station

Acid Plant

Run No. 1

Start	Jan-18-2007 1:37:00 PM
End	Jan-18-2007 2:37:00 PM
Interval	1m

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A Inlet Converter	SA PROD CLR ACID OUT FLOW Product Acid Flow	SA FINAL TOWER ACID CONC Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
	8.723260082	**1238.51348**	**93.80122551**
18-Jan-07 13:37:00	8.773928642	27.26086235	93.71781158
18-Jan-07 13:38:00	8.711556435	20.16388512	93.73345184
18-Jan-07 13:39:00	8.649184227	22.52708435	93.73262024
18-Jan-07 13:40:00	8.586812019	25.96585274	93.67735291
18-Jan-07 13:41:00	8.555253983	25.78673363	93.70661163
18-Jan-07 13:42:00	8.580018997	25.50248718	93.73587799
18-Jan-07 13:43:00	8.701479912	25.5593586	93.75906372
18-Jan-07 13:44:00	8.824579239	24.5785923	93.75517273
18-Jan-07 13:45:00	8.854716301	24.55545044	93.75128174
18-Jan-07 13:46:00	8.884853363	23.9530468	93.75060272
18-Jan-07 13:47:00	8.858370781	21.72422028	93.76425934
18-Jan-07 13:48:00	8.831888199	19.19555473	93.77791595
18-Jan-07 13:49:00	8.746949196	17.18718529	93.7915802
18-Jan-07 13:50:00	8.661020279	18.80977821	93.80523682
18-Jan-07 13:51:00	8.575090408	17.15021896	93.81889343
18-Jan-07 13:52:00	8.58265686	9.214301109	93.83255005
18-Jan-07 13:53:00	8.590224266	5.07805109	93.84620667
18-Jan-07 13:54:00	8.656559944	12.02893543	93.86141205
18-Jan-07 13:55:00	8.723891258	13.26462173	93.8835144
18-Jan-07 13:56:00	8.791222572	11.33843708	93.90561676
18-Jan-07 13:57:00	8.858553886	12.80968666	93.92095947
18-Jan-07 13:58:00	8.883562088	12.48088741	93.90621185
18-Jan-07 13:59:00	8.880360603	14.09997845	93.8914566
18-Jan-07 14:00:00	8.826105118	12.9258213	93.87670898
18-Jan-07 14:01:00	8.714713097	12.62161638	93.86195374
18-Jan-07 14:02:00	8.679998398	14.51176929	93.84719849
18-Jan-07 14:03:00	8.845283699	14.99649048	93.83245087
18-Jan-07 14:04:00	8.655039787	17.23777008	93.81769562
18-Jan-07 14:05:00	8.624191284	17.04543877	93.80294037
18-Jan-07 14:06:00	8.592656136	17.49536133	93.78819275
18-Jan-07 14:07:00	8.561120033	16.46214104	93.7734375
18-Jan-07 14:08:00	8.610125542	18.35634995	93.76063538
18-Jan-07 14:09:00	8.660496712	18.40565872	93.75562286
18-Jan-07 14:10:00	8.710867882	20.84628677	93.75061035
18-Jan-07 14:11:00	8.761238098	20.64054489	93.74559784
18-Jan-07 14:12:00	8.811609268	21.58944511	93.74058533
18-Jan-07 14:13:00	8.816527367	21.54782295	93.73557281
18-Jan-07 14:14:00	8.821445465	21.47445869	93.7305603
18-Jan-07 14:15:00	8.74382019	23.15139198	93.72554779
18-Jan-07 14:16:00	8.664796829	20.71321869	93.72053528
18-Jan-07 14:17:00	8.585772514	23.03228188	93.71552277
18-Jan-07 14:18:00	8.603130341	23.4849472	93.71051025
18-Jan-07 14:19:00	8.620487213	23.31295967	93.70549774
18-Jan-07 14:20:00	8.637844086	23.10102463	93.70785522
18-Jan-07 14:21:00	8.655201912	24.11206436	93.74307251
18-Jan-07 14:22:00	8.752827644	22.82151222	93.77828979
18-Jan-07 14:23:00	8.850452423	25.07057381	93.80913544
18-Jan-07 14:24:00	8.948078156	23.59930229	93.82248688

18-Jan-07 14:25:00	8.95962429	23.5420742	93.83583069
18-Jan-07 14:26:00	8.910031319	24.22231293	93.84918213
18-Jan-07 14:27:00	8.789643288	24.4573822	93.86252594
18-Jan-07 14:28:00	8.669255257	22.90867424	93.87587738
18-Jan-07 14:29:00	8.548867226	23.0666523	93.87779236
18-Jan-07 14:30:00	8.523786545	23.9881382	93.85066986
18-Jan-07 14:31:00	8.500320435	23.9051857	93.8992691
18-Jan-07 14:32:00	8.555853844	23.78456116	93.86209869
18-Jan-07 14:33:00	8.666646004	22.326231	93.87773895
18-Jan-07 14:34:00	8.845179558	23.42074394	93.88623047
18-Jan-07 14:35:00	8.935972214	24.11455917	93.86288452
18-Jan-07 14:36:00	8.964964867	25.77875519	93.85494995
18-Jan-07 14:37:00	8.932157516	24.20674706	93.89582825

Ops Run 2

Polk Power Station

Acid Plant

Run No. 2

Start	Jan-18-2007 3:14:00 PM
End	Jan-18-2007 4:14:00 PM
Interval	1m

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A	SA PROD CLR ACID OUT FLOW	SA FINAL TOWER ACID CONC
	Inlet Converter	Product Acid Flow	Acid Concentration
UNITS	AVG. %	TOTAL GAL	AVG. %
Average	**8.253863026**	**1317.565655**	**93.786021**
18-Jan-07 15:14:00	8.611713409	18.19468307	93.81713867
18-Jan-07 15:15:00	0.491996527	19.07899475	93.78877258
18-Jan-07 15:16:00	0.305632144	19.6541481	93.76040649
18-Jan-07 15:17:00	1.264229298	18.64557266	93.73204041
18-Jan-07 15:18:00	7.200760365	18.78254128	93.72019196
18-Jan-07 15:19:00	8.370409966	21.06273079	93.7591095
18-Jan-07 15:20:00	8.599586487	21.81538391	93.70677948
18-Jan-07 15:21:00	8.595314026	21.59692383	93.67552185
18-Jan-07 15:22:00	8.591041565	22.34549904	93.72666168
18-Jan-07 15:23:00	8.586769104	23.18616486	93.72692871
18-Jan-07 15:24:00	8.582496643	23.29233742	93.72719574
18-Jan-07 15:25:00	8.539040565	23.96549797	93.72746277
18-Jan-07 15:26:00	8.506134987	22.19926071	93.7277298
18-Jan-07 15:27:00	8.517388344	23.10691071	93.72799683
18-Jan-07 15:28:00	8.528641701	24.69391441	93.72826385
18-Jan-07 15:29:00	8.539896011	23.8584938	93.73170471
18-Jan-07 15:30:00	8.578842163	24.09835243	93.74927521
18-Jan-07 15:31:00	8.622407913	25.06279182	93.7668457
18-Jan-07 15:32:00	8.646059036	23.71296501	93.78440857
18-Jan-07 15:33:00	8.669711113	23.78590965	93.80197906
18-Jan-07 15:34:00	8.69336319	22.24692535	93.81954956
18-Jan-07 15:35:00	8.704203606	23.05459023	93.83712006
18-Jan-07 15:36:00	8.703059196	23.27900696	93.85468292
18-Jan-07 15:37:00	8.701913834	23.19428062	93.86806488
18-Jan-07 15:38:00	8.700769424	23.55304146	93.86279297
18-Jan-07 15:39:00	8.676170349	23.09034348	93.85751343
18-Jan-07 15:40:00	8.629630089	22.83707619	93.85223389
18-Jan-07 15:41:00	8.583088875	23.24434662	93.84696198
18-Jan-07 15:42:00	8.575968742	22.91619492	93.84168243
18-Jan-07 15:43:00	8.605724335	24.63017082	93.83641052
18-Jan-07 15:44:00	8.64434433	26.4765625	93.83113098
18-Jan-07 15:45:00	8.691256523	25.47376823	93.82585144
18-Jan-07 15:46:00	8.708228111	26.25392914	93.82057953
18-Jan-07 15:47:00	8.695257187	25.12504959	93.80342865
18-Jan-07 15:48:00	8.682287216	24.35501289	93.75920105
18-Jan-07 15:49:00	8.669317245	26.10894394	93.8032608
18-Jan-07 15:50:00	8.656346321	24.82056999	93.73754883
18-Jan-07 15:51:00	8.652576447	25.03166389	93.76600647
18-Jan-07 15:52:00	8.68725872	23.63864517	93.74650574
18-Jan-07 15:53:00	8.749304771	25.67834663	93.72701263
18-Jan-07 15:54:00	8.798561096	25.39846611	93.70751953
18-Jan-07 15:55:00	8.785107613	24.59548187	93.69374847
18-Jan-07 15:56:00	8.724952698	23.58881378	93.70546722
18-Jan-07 15:57:00	8.692547798	24.73843956	93.71718597
18-Jan-07 15:58:00	8.711017609	22.41628075	93.72890472
18-Jan-07 15:59:00	8.751120567	24.00570679	93.74062347
18-Jan-07 16:00:00	8.755912781	21.84301186	93.75234985
18-Jan-07 16:01:00	8.725395203	21.19373131	93.7640686
18-Jan-07 16:02:00	8.711788177	21.73589325	93.77578735
18-Jan-07 16:03:00	8.715094566	19.17164993	93.7875061

18-Jan-07 16:04:00	8.718400955	17.94050407	93.79922485
18-Jan-07 16:05:00	8.713706017	16.67744827	93.81076813
18-Jan-07 16:06:00	8.701011658	16.98095703	93.82151031
18-Jan-07 16:07:00	8.694875717	14.23188782	93.83224487
18-Jan-07 16:08:00	8.740653992	17.45080948	93.84298706
18-Jan-07 16:09:00	8.792592049	12.98478699	93.85372162
18-Jan-07 16:10:00	8.807470322	12.87972641	93.86446381
18-Jan-07 16:11:00	8.790233612	13.55677986	93.87520599
18-Jan-07 16:12:00	8.777403831	13.86528873	93.88594055
18-Jan-07 16:13:00	8.799020767	12.44225502	93.89668274
18-Jan-07 16:14:00	8.820637703	12.720191	93.9074173

Polk Power Station

Acid Plant

Run No. 3

Start	Jan-18-2007 4:38:00 PM
End	Jan-18-2007 5:38:00 PM
Interval	1m

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A	SA PROD CLR ACID OUT FLOW	SA FINAL TOWER ACID CONC
	Inlet Converter	Product Acid Flow	Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
Average	**8.641542325**	**1265.052129**	**93.79841826**
18-Jan-07 16:38:00	8.754687309	24.1359787	93.76309967
18-Jan-07 16:39:00	8.7115345	24.41686821	93.77189636
18-Jan-07 16:40:00	8.634983063	23.89207649	93.78068542
18-Jan-07 16:41:00	8.558433533	23.86766434	93.78948212
18-Jan-07 16:42:00	8.516088486	24.5595417	93.79827881
18-Jan-07 16:43:00	8.507949829	25.64723587	93.80706787
18-Jan-07 16:44:00	8.499812126	25.38169479	93.81501007
18-Jan-07 16:45:00	8.498428345	24.84002495	93.81867981
18-Jan-07 16:46:00	8.503798485	25.59339714	93.82234955
18-Jan-07 16:47:00	8.509168625	24.87428856	93.82601929
18-Jan-07 16:48:00	8.533288002	25.81416512	93.82968903
18-Jan-07 16:49:00	8.57494545	25.49937439	93.83335876
18-Jan-07 16:50:00	8.616603851	25.76708221	93.8370285
18-Jan-07 16:51:00	8.658261299	26.11922836	93.84069824
18-Jan-07 16:52:00	8.699918747	25.67964745	93.84023285
18-Jan-07 16:53:00	8.701288223	26.04335213	93.81634521
18-Jan-07 16:54:00	8.664969444	24.64255142	93.79244995
18-Jan-07 16:55:00	8.623409271	24.6503334	93.76855469
18-Jan-07 16:56:00	8.576608658	25.80988503	93.74466705
18-Jan-07 16:57:00	8.529807091	24.24565887	93.72431183
18-Jan-07 16:58:00	8.511238098	25.98790359	93.72167969
18-Jan-07 16:59:00	8.519078255	25.14238358	93.71904755
18-Jan-07 17:00:00	8.526918411	23.96827888	93.72676086
18-Jan-07 17:01:00	8.57469368	24.55529785	93.77950287
18-Jan-07 17:02:00	8.662402153	25.4346714	93.75537109
18-Jan-07 17:03:00	8.720365524	22.20782852	93.73124695
18-Jan-07 17:04:00	8.750501633	21.58080482	93.71191406
18-Jan-07 17:05:00	8.737757683	22.70477867	93.71974945
18-Jan-07 17:06:00	8.684898376	22.10534286	93.72759247
18-Jan-07 17:07:00	8.63203907	21.56857491	93.73542786
18-Jan-07 17:08:00	8.610652924	20.81369972	93.74327087
18-Jan-07 17:09:00	8.57287693	19.4421978	93.75110626
18-Jan-07 17:10:00	8.522562027	19.3272953	93.75894165
18-Jan-07 17:11:00	8.504481316	15.91479206	93.76678467
18-Jan-07 17:12:00	8.528559685	18.49615479	93.77748871
18-Jan-07 17:13:00	8.592076302	16.56672859	93.80255127
18-Jan-07 17:14:00	8.655592918	13.59569073	93.8276062
18-Jan-07 17:15:00	8.719109535	13.38557053	93.85266876
18-Jan-07 17:16:00	8.755599022	14.06716347	93.87772369
18-Jan-07 17:17:00	8.766806602	14.32721901	93.90278625
18-Jan-07 17:18:00	8.778013229	12.76143742	93.92246246
18-Jan-07 17:19:00	8.789219856	13.58246136	93.91521454
18-Jan-07 17:20:00	8.754959106	13.46144772	93.90796661
18-Jan-07 17:21:00	8.675229073	13.83693981	93.90071869
18-Jan-07 17:22:00	8.622013092	12.24547577	93.89347076
18-Jan-07 17:23:00	8.595309258	12.80190468	93.88622284
18-Jan-07 17:24:00	8.568605423	13.5616436	93.87897491
18-Jan-07 17:25:00	8.55868721	14.72022152	93.87172699
18-Jan-07 17:26:00	8.605863571	16.28833961	93.86447906
18-Jan-07 17:27:00	8.693349838	17.82143593	93.85723114
18-Jan-07 17:28:00	8.780836105	18.04128456	93.84998322

18-Jan-07 17:29:00	8.831254959	16.54061127	93.83249664
18-Jan-07 17:30:00	8.844607353	19.37309074	93.76863098
18-Jan-07 17:31:00	8.82972908	19.92652702	93.76295471
18-Jan-07 17:32:00	8.786622047	20.24382973	93.75728607
18-Jan-07 17:33:00	8.755149841	19.3617382	93.7516098
18-Jan-07 17:34:00	8.735312462	20.04261017	93.74594116
18-Jan-07 17:35:00	8.692777634	21.25166512	93.74026489
18-Jan-07 17:36:00	8.627544403	21.73005676	93.73458862
18-Jan-07 17:37:00	8.594164848	21.35845566	93.72891998
18-Jan-07 17:38:00	8.592638969	23.42852592	93.72324371

APPENDIX Z

VISIBLE EMISSIONS OBSERVATIONS

IGCC

TAMPA ELECTRIC
A TECO ENERGY COMPANY

VISIBLE EMISSION OBSERVATION

E-49B R 10/85

SOURCE NAME	SOURCE LOCATION
UNIT 1	~~HOOT~~ POLK

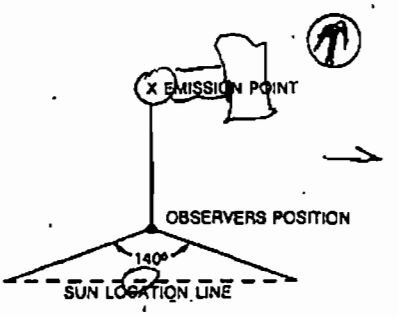
OBSERVATION DATE	START TIME	STOP TIME
01-18-07	1530	1600

TYPE OF FACILITY: POWER PLANT

DISTANCE FROM OBSERVER: 120 MS

SKY CONDITIONS/PLUME BACKGROUND: CLOUDY / WHITE

SOURCE LAYOUT SKETCH — DRAW NORTH ARROW



SUN → WIND →

AVERAGE OPACITY -

WIND SPEED (EST.)	WIND DIRECTION (EST.)
~ 0-5	~ W

OBSERVER'S NAME (PRINT): JORGE A. VARELA

OBSERVER'S SIGNATURE: [signature] — DATE: 1-18-07

COMMENTS

COPY OF VISIBLE EMISSIONS CERTIFICATION CARD

SEC. MIN	0	15	30	45	SEC MIN	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

VISIBLE EMISSIONS EVALUATOR

This is to certify that

Jorge Varino

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

342385	*Orlando, Florida*	*August 9, 2006*
Certificate Number	Location	Date of Issue

Thomas Hoel
President

Michael W. Lunsford
Director of Training

SULFURIC ACID PLANT

TAMPA ELECTRIC
A TECO ENERGY COMPANY

VISIBLE EMISSION OBSERVATION

E-498 R 10/85

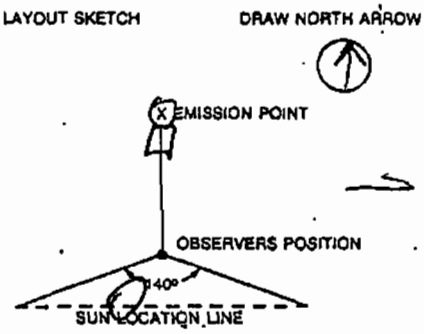
SOURCE NAME	SOURCE LOCATION	OBSERVATION DATE	START TIME	STOP TIME
ACID STACK	POLK POWER STATION	01-08-07	1330	1600

TYPE OF FACILITY: ACID PLANT

DISTANCE FROM OBSERVER: 120 MTS

SKY CONDITIONS/PLUME BACKGROUND: CLOUDY / WHITE

SOURCE LAYOUT SKETCH



AVERAGE OPACITY -

WIND SPEED (EST.): ~ 0-5

WIND DIRECTION (EST.): ~ W

OBSERVER'S NAME (PRINT): JORGE A. VARGO

OBSERVER'S SIGNATURE:

DATE: 1-18-07

COMMENTS

COPY OF VISIBLE EMISSIONS CERTIFICATION CARD

SEC. MIN	0	15	30	45	SEC MIN	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

VISIBLE EMISSIONS EVALUATOR

This is to certify that

Jorge Varino

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

342385	*Orlando, Florida*	*August 9, 2006*
Certificate Number	Location	Date of Issue

Thomas Hoel
President

Michael W. Lunsford
Director of Training

APPENDIX AA

CHAIN OF CUSTODY

TECO
TAMPA ELECTRIC

ANALYSIS REQUEST & CHAIN OF CUSTODY

ENVIRONMENTAL SERVICES

5012 CAUSEWAY BLVD., TAMPA, FL 33619 PHONE (813)228-4111

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
POLK ACID PLANT		POLK
SAMPLER'S PRINTED NAME: JORGE A. VARINO	SAMPLER'S SIGNATURE: [signature]	
P.O. NUMBER	CONTRACT NO.	SITE
CLIENT NAME	CLIENT PHONE	CLIENT FAX
CLIENT EMAIL	CLIENT ADDRESS	

REQUIRED ANALYSIS: 8 Hg

DUE DATE:

☐ EMAIL RESULTS
☐ FAX RESULTS
☐ MAIL RESULTS

PRESERVATIVE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLING DATE	SAMPLING TIME	* MATRIX	NUMBER OF CONTAINERS SUBMITTED						REMARKS
RUI	80% IPP FILTER	1/19/07		A	1						
RUN 2	↓	↓		↓	1						
RUN 3	↓	↓		↓	1						
BLANK	↓	↓		↓	1						

* GW - GROUND WATER SW - SURFACE WATER DW - DRINKING WATER WW - WASTE WATER C - COAL O - OIL SO - SOLID/SOIL SL - SLUDGE W - WASTE SAMPLE A - AIR

CONTAINERS/SEALS INTACT ☐ Yes ☐ No

ON ICE/ 4°C ☑ Yes ☐ No

SAMPLE TRANSFERS

RELINQUISHED BY:	RECEIVED BY:	DATE	TIME
PERSON'S NAME: [signature] FACILITY NAME: CWT	PERSON'S NAME: [signature] FACILITY NAME:	1/19/07	
PERSON'S NAME: FACILITY NAME:	PERSON'S NAME: FACILITY NAME:		
PERSON'S NAME: FACILITY NAME:	PERSON'S NAME: FACILITY NAME:		
PERSON'S NAME: FACILITY NAME:	PERSON'S NAME: FACILITY NAME:		

Trigon Engineering Consultants, Inc. — *Chain of Custody* — Sampler's Signature: _____

Company: TECO	Laboratory: TECO	No. of Containers: 6	Sampling Methods: M8
City, State: Tampa FL	Project No. 046-06-121		
Contact: David Smith	Purchase Order No.		

Sample Description		Sample ID	Date	Time	Sample Disposition and Remarks
Unit 1	Run 1	6121-01	1/18/07		80% IPA, 3% H_2O_2
	Run 2	6121-02	1/18/07		" "
	Run 3	6121-03	1/18/07		" "
Blanks		6121-05	1/18/07		80% IPA Blank, 3% H_2O_2 blank

Relinquished By:	Date/Time: 18:57 / 1/18/07	Received By:	Date/Time: 1-18-07 / 1900
Relinquished By:	Date/Time: /	Received By:	Date/Time: /
Received for Laboratory By:	Date/Time: /	Analyze for the Following Compounds:	
	/		

TRIAL BURN # 4

Appendices BB through KK

APPENDIX BB

IGCC CEMS DATA
SO_2, NO_X, CO_2, STACK FLOW

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
03/23/2007 10:11	35.5	19	13.002	817.9	9.0
03/23/2007 10:12	35.25	19.5	13.298	813.2	9.0
03/23/2007 10:13	35.08	19.5	13.366	807.2	9.0
03/23/2007 10:14	35.9	19.5	13.344	811.4	9.0
03/23/2007 10:15	36.87	19.3	13.179	806.7	9.0
03/23/2007 10:16	38.03	19.1	13.045	818.4	9.0
03/23/2007 10:17	38.7	18.9	12.933	802.8	9.0
03/23/2007 10:18	39.43	19.1	12.979	800.5	9.0
03/23/2007 10:19	39.94	19.5	13.23	818	9.0
03/23/2007 10:20	40.55	19.8	13.469	813.9	9.0
03/23/2007 10:21	40.56	20.1	13.685	821	9.0
03/23/2007 10:22	40.6	20.2	13.822	821.9	9.0
03/23/2007 10:23	40.37	20.1	13.73	817.6	9.0
03/23/2007 10:24	40.35	20.1	13.764	816.2	9.0
03/23/2007 10:25	40.12	20	13.662	831.5	9.0
03/23/2007 10:26	39.13	20	13.64	826.5	9.0
03/23/2007 10:27	38.09	20.4	13.97	815.6	9.0
03/23/2007 10:28	37.26	20	13.708	811.6	9.0
03/23/2007 10:29	37.55	20.1	13.716	816	9.0
03/23/2007 10:30	38.24	19.5	13.281	812.2	9.0
03/23/2007 10:31	36.63	19	12.899	805.5	9.0
03/23/2007 10:32	36.7	19.3	13.184	812.4	9.0
03/23/2007 10:33	37.62	19.6	13.321	811	9.0
03/23/2007 10:34	38.58	19.8	13.5	821.5	9.0
03/23/2007 10:35	38.9	19.7	13.48	823.2	9.0
03/23/2007 10:36	39.57	19.6	13.423	817.2	9.0
03/23/2007 10:37	39.69	19.7	13.469	812.6	9.0
03/23/2007 10:38	40.28	20.1	13.723	814.1	9.0
03/23/2007 10:39	39.48	20.1	13.768	817	9.0
03/23/2007 10:40	40.3	20.2	13.787	818.7	9.0
03/23/2007 10:41	39.81	20.5	14.097	831.4	9.0
03/23/2007 10:42	38.62	20.7	14.228	825.5	9.0
03/23/2007 10:43	37.93	20.9	14.393	825.8	9.0
03/23/2007 10:44	37.68	20.9	14.276	818.2	9.0
03/23/2007 10:45	37.3	20.8	14.254	810.2	9.0
03/23/2007 10:46	36.84	20.6	14.106	808.5	9.0
03/23/2007 10:47	36.4	20.4	13.97	814	9.0
03/23/2007 10:48	35.86	20.4	13.958	808.3	9.0
03/23/2007 10:49	36.1	20.1	13.787	812.4	9.0
03/23/2007 10:50	36.74	19.6	13.451	820.1	9.0

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
03/23/2007 10:51	35.11	19.2	13.013	817.3	9.0
03/23/2007 10:52	34.96	19.7	13.4	810.9	9.0
03/23/2007 10:53	36.07	19.6	13.446	805.6	9.0
03/23/2007 10:54	37.02	19.4	13.264	808.2	9.0
03/23/2007 10:55	37.89	19.6	13.378	812.8	9.0
03/23/2007 10:56	38.22	19.8	13.503	818.8	9.0
03/23/2007 10:57	38.89	19.7	13.48	807	9.0
03/23/2007 10:58	40.31	20	13.639	792.2	9.0
03/23/2007 10:59	40.4	20.1	13.673	825.4	9.0
03/23/2007 11:00	40.35	20.4	13.963	824.5	9.0
03/23/2007 11:01	39.94	20.9	14.365	827.6	9.0
03/23/2007 11:02	39.68	20.7	14.228	827.1	9.0
03/23/2007 11:03	38.97	21.1	14.559	811.2	9.0
03/23/2007 11:04	38.48	21.1	14.548	812.8	9.0
03/23/2007 11:05	37.49	20.9	14.411	818.2	9.0
03/23/2007 11:06	37.08	20.7	14.26	825.1	9.0
03/23/2007 11:07	36.06	20.9	14.398	824.4	9.0
03/23/2007 11:08	35.65	21.2	14.606	827.2	9.0
03/23/2007 11:09	35.85	21	14.357	825.9	9.0
03/23/2007 11:10	36.09	20.2	13.977	820.5	9.0
03/23/2007 11:11	34.77	19.4	13.252	825.4	9.0
03/23/2007 11:12	34.35	19.7	13.412	825.6	9.0
03/23/2007 11:13	35.35	20	13.685	819.6	9.0
03/23/2007 11:14	36.29	19.6	13.375	820.7	9.0
03/23/2007 11:15	37.1	19.6	13.309	819.5	9.1
03/23/2007 11:16	37.96	19.7	13.401	813.3	9.0
03/23/2007 11:17	38.71	19.7	13.585	828.1	9.0
03/23/2007 11:18	38.97	20	13.67	841.9	9.0
03/23/2007 11:19	39.53	20.1	13.742	827.9	9.0
03/23/2007 11:20	39.87	20.3	13.964	808.2	9.0
03/23/2007 11:21	39.96	20.7	14.26	809.1	9.0
03/23/2007 11:22	39.72	21	14.444	812.6	9.0
03/23/2007 11:23	38.95	21.3	14.71	810.9	9.0
03/23/2007 11:24	38.64	21.2	14.629	818.5	9.0
03/23/2007 11:25	37.85	21.4	14.721	830	9.0
03/23/2007 11:26	37.09	21.2	14.64	831.1	9.0
03/23/2007 11:27	35.67	21	14.519	821.2	9.0
03/23/2007 11:28	35.17	20.8	14.266	809.8	9.0
03/23/2007 11:29	36.32	20.4	13.947	835.1	9.0
03/23/2007 11:30	37.46	20.1	13.742	826.9	9.0

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
03/23/2007 11:31	35.7	19.3	13.264	808.2	9.0
03/23/2007 11:32	34.77	19.8	13.469	811.4	9.0
03/23/2007 11:33	35.4	19.7	13.468	829.5	9.0
03/23/2007 11:34	36.03	20	13.605	831.6	9.0
03/23/2007 11:35	36.74	19.7	13.537	816.8	9.0
03/23/2007 11:36	37.64	19.7	13.377	811.5	9.0
03/23/2007 11:37	38.72	20.1	13.67	810.2	9.0
03/23/2007 11:38	39.22	20.6	14.059	809.6	9.0
03/23/2007 11:39	39.39	20.5	14.18	808	9.0
03/23/2007 11:40	39.39	20.7	14.294	812.5	9.0
03/23/2007 11:41	38.58	20.8	14.398	817.8	9.0
03/23/2007 11:42	38.23	20.8	14.382	820	9.0
03/23/2007 11:43	38.28	20.9	14.375	845.1	9.0
03/23/2007 11:44	37.96	21.2	14.493	825.6	9.0
03/23/2007 11:45	37.35	21.4	14.63	819.9	9.0
03/23/2007 11:46	36.51	20.8	14.231	805.1	9.0
03/23/2007 11:47	35.88	20.8	14.218	832.6	9.0
03/23/2007 11:48	35.89	20.7	14.197	827.2	9.0
03/23/2007 11:49	36.24	20.2	13.856	844.6	9.0
03/23/2007 11:50	37.09	19.9	13.651	834	9.0
03/23/2007 11:51	36.56	19.3	13.149	817.6	9.0
03/23/2007 11:52	36.3	19.9	13.468	814.6	9.0
03/23/2007 11:53	37.48	20.4	14.01	812.9	9.0
03/23/2007 11:54	36.75	20.3	13.995	816.9	9.0
03/23/2007 11:55	36.44	20.7	14.166	809.9	9.0
03/23/2007 11:56	36.56	20.7	14.318	811.2	9.0
03/23/2007 11:57	36.6	20.4	14.087	805.6	9.0
03/23/2007 11:58	36.1	20.7	14.214	814.1	9.0
03/23/2007 11:59	35.9	21	14.502	813.8	9.0
03/23/2007 12:00	35.29	21	14.502	810.5	9.0
03/23/2007 12:01	34.78	21.1	14.605	818.6	9.0
03/23/2007 12:02	34.56	21	14.524	801	9.0
03/23/2007 12:03	34.65	21.1	14.47	808.4	9.0
03/23/2007 12:04	34.56	20.9	14.407	821.8	9.0
03/23/2007 12:05	35.08	20.5	14.026	828.1	9.0
03/23/2007 12:06	35.16	20	13.768	813.2	9.0
03/23/2007 12:07	35.52	20	13.643	798.1	8.9
03/23/2007 12:08	35	20.2	13.719	804.8	9.0
03/23/2007 12:09	35.6	20.3	13.878	810.3	9.0
03/23/2007 12:10	35.78	20	13.764	814	9.0

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
03/23/2007 12:11	34.88	19	13.047	825.9	9.0
03/23/2007 12:12	34.9	19.4	13.195	821.1	9.0
03/23/2007 12:13	36.43	19.8	13.492	811.7	9.0
03/23/2007 12:14	37.04	19.9	13.583	822.9	9.0
03/23/2007 12:15	37.17	19.8	13.552	804.4	9.0
03/23/2007 12:16	37.86	20.2	13.807	818.7	9.0
03/23/2007 12:17	38.1	20.3	13.991	808.2	9.0
03/23/2007 12:18	37.93	20.7	14.26	817.4	9.0
03/23/2007 12:19	37.43	21	14.444	800.1	9.0
03/23/2007 12:20	36.63	21.2	14.64	811.1	9.0
03/23/2007 12:21	36.25	21.2	14.71	823.8	8.9
03/23/2007 12:22	35.34	21.1	14.582	818.1	9.0
03/23/2007 12:23	34.88	20.9	14.456	822	8.9
03/23/2007 12:24	34.18	21.1	14.513	819.6	9.0
03/23/2007 12:25	34.38	20.9	14.463	822.2	9.0
03/23/2007 12:29	32.8	19.4	13.282	807.4	8.9
03/23/2007 12:30	34.57	19.5	13.383	798.2	8.9
03/23/2007 12:31	34.4	18.6	12.763	811.9	8.9
03/23/2007 12:32	33.88	19.2	13.064	827.1	8.9
03/23/2007 12:33	34.7	19.6	13.508	813.7	8.9
03/23/2007 12:34	35.18	19.7	13.461	804.9	8.9
03/23/2007 12:35	36.21	19.6	13.45	812.6	8.9
03/23/2007 12:36	36.46	19.8	13.646	811.7	8.9
03/23/2007 12:37	37.36	20	13.822	833.6	8.9
03/23/2007 12:38	37.47	20.1	13.834	815.4	8.9
03/23/2007 12:39	37.78	20.3	13.995	810.6	8.9
03/23/2007 12:40	37.23	20.6	14.226	801.2	8.9
03/23/2007 12:41	36.47	20.9	14.398	796.7	8.9
03/23/2007 12:42	36.01	21.1	14.548	818.6	8.9
03/23/2007 12:43	35.69	21.2	14.64	812.6	8.9
03/23/2007 12:44	35.07	20.7	14.329	800.5	8.9
03/23/2007 12:45	35.08	20.5	14.203	795.7	8.9
03/23/2007 12:46	34.31	20.6	14.203	811.1	8.9
03/23/2007 12:47	33.3	20.7	14.294	812.2	8.9
03/23/2007 12:48	33.43	20.7	14.234	821.4	8.9
03/23/2007 12:49	34.87	20.4	14.029	815.6	8.9
03/23/2007 12:50	35.74	20	13.731	807.4	8.9
03/23/2007 12:51	34.61	19	13.004	806.9	8.9
03/23/2007 12:52	33.99	19	13.055	809	8.9
03/23/2007 12:53	34.38	19.3	13.278	799.2	8.9

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
03/23/2007 12:54	35.26	19.7	13.592	801.3	8.9
03/23/2007 12:55	35.37	20.3	13.961	802.8	9.0
03/23/2007 12:56	36.24	20.3	14.041	810.9	8.9
03/23/2007 12:57	36.43	20.3	14.018	818.5	9.0
03/23/2007 12:58	36.67	20.4	14.099	822.1	8.9
03/23/2007 12:59	36.6	20.5	14.18	818.6	9.0
03/23/2007 13:00	36.1	20.4	14.156	812.6	9.0
03/23/2007 13:01	35.91	20.4	14.087	808.6	8.9
03/23/2007 13:02	36.25	20.5	14.145	806.3	8.9
03/23/2007 13:03	35.55	20.8	14.329	809.7	8.9
03/23/2007 13:04	34.94	21.1	14.548	833.3	8.9
03/23/2007 13:05	34.58	20.9	14.478	828.8	8.9
03/23/2007 13:06	34.16	20.3	14.099	825.5	8.9
03/23/2007 13:07	34.27	20.6	14.168	815.6	8.9
03/23/2007 13:08	34.25	20.3	14.061	812.5	8.9
03/23/2007 13:09	35.52	20.2	13.914	820.1	9.0
03/23/2007 13:10	36.92	20.2	13.91	815.8	8.9
03/23/2007 13:11	35.83	19.6	13.49	809.6	8.9
03/23/2007 13:12	35.46	20.1	13.83	804	8.9
03/23/2007 13:13	35.74	20.6	14.202	822.3	9.0
03/23/2007 13:14	35.51	20.6	14.271	824.5	8.9
03/23/2007 13:15	35.4	20.7	14.26	821	8.9
03/23/2007 13:16	35.44	20.9	14.421	813.2	8.9
03/23/2007 13:17	35.74	20.8	14.352	812.3	8.9
03/23/2007 13:18	35.32	20.8	14.398	806.1	8.9
03/23/2007 13:19	35.28	20.9	14.472	795.2	8.9
03/23/2007 13:20	35.18	21	14.49	804.2	8.9
03/23/2007 13:21	34.55	21.1	14.617	807.9	8.9
03/23/2007 13:22	34.88	21.2	14.606	809	8.9
03/23/2007 13:23	35.16	21.3	14.744	803.7	8.9
03/23/2007 13:24	35.67	21.2	14.686	808	8.9
03/23/2007 13:25	35.25	20.8	14.41	815.3	8.9
03/23/2007 13:26	35.17	20.6	14.306	797.5	8.9
03/23/2007 13:27	34.4	20.8	14.329	793.4	8.9
03/23/2007 13:28	34.22	21	14.49	826.1	8.9
03/23/2007 13:29	34.03	21.2	14.64	814.3	8.9
03/23/2007 13:30	34.88	20.5	14.108	800.8	8.9
03/23/2007 13:31	33.94	19.7	13.695	777.9	8.9
03/23/2007 13:32	32.89	20	13.632	800.1	8.9
03/23/2007 13:33	33.91	20.4	14.11	805.9	9.0

Date Time	SO21	NOX1	PC1NOXC1	FLO1	CO21
03/23/2007 13:34	34.69	20.2	13.948	806.3	8.9
03/23/2007 13:35	35.06	20.5	14.145	805.7	9.0
03/23/2007 13:36	35.99	20.5	14.226	806.2	8.9
03/23/2007 13:37	36	20.4	14.099	804.2	9.0
03/23/2007 13:38	36.77	20.5	14.145	800.3	8.9
03/23/2007 13:39	36.37	20.8	14.398	806.9	8.9
03/23/2007 13:40	36.27	21	14.467	815.5	8.9
03/23/2007 13:41	36.39	21.4	14.698	808.5	8.9
03/23/2007 13:42	36.36	21.8	15.078	802.3	9.0
03/23/2007 13:43	35.38	21.6	14.94	801.1	9.0
03/23/2007 13:44	35.24	21.5	14.964	793.9	8.9
03/23/2007 13:45	34.97	21.3	14.732	822.2	8.9
03/23/2007 13:46	34.72	20.8	14.409	819.4	8.9
03/23/2007 13:47	34.53	20.8	14.364	812.9	9.0
03/23/2007 13:48	34.41	20.8	14.329	814.7	9.0
03/23/2007 13:49	34.18	20.7	14.329	821.5	9.0
03/23/2007 13:50	35.24	20.1	13.894	812.1	9.0
03/23/2007 13:51	34.62	19.2	13.161	822.3	9.0
03/23/2007 13:52	33.39	19.4	13.278	827.5	9.0
03/23/2007 13:53	34.06	19.8	13.457	818	9.0
03/23/2007 13:54	34.39	19.6	13.469	820.4	9.0
03/23/2007 13:55	34.85	19.1	13.104	808.8	9.0
03/23/2007 13:56	35.2	19	12.99	785	9.0
03/23/2007 13:57	35.89	19	12.995	808.4	9.0
03/23/2007 13:58	36.67	19.2	13.161	802.8	9.0
03/23/2007 13:59	36.6	18.9	13.007	815	9.0
03/23/2007 14:00	37.29	18.9	12.925	802	9.0
03/23/2007 14:01	37.12	19.3	13.281	792.7	9.0
03/23/2007 14:02	35.77	19.2	13.266	791.8	8.9
03/23/2007 14:03	35.93	19.1	13.177	800.4	9.0
03/23/2007 14:04	35.71	19.2	13.223	813.1	8.9
03/23/2007 14:05	35.49	19.2	13.269	814.7	8.9
03/23/2007 14:06	34.78	18.6	12.802	816.3	8.9
03/23/2007 14:07	34.77	18.8	12.854	813.4	8.9
03/23/2007 14:08	34.07	18.7	12.785	812.5	8.9
03/23/2007 14:09	34.41	18.6	12.717	795.7	8.9
03/23/2007 14:10	34.91	18.3	12.533	813.5	8.9
03/23/2007 14:11	34.04	17.4	11.795	819	8.9

APPENDIX CC

SULFURIC ACID MIST TEST DATA – IGCC

FIELD DATA SHEETS

Isokinetic Field Data Sheet - EPA Method 8

Client TECO | Run Number 1
City/State Polk, FL | Date 3/23/07
Sampling Location Unit #1 Outlet | Operators (T)

Bar. Press., In. Hg 30.00 | NOMOGRAPH SET-UP: K Factor 1.185 | LEAK CHECKS
Static Press., In. H_2O -1.20 | ΔH @ 1.933 Y = 0.973 | Avg. Δ P 1.40 | Pre-Test 0.002 @ 15 In. Hg.
Meter Box No. 300.388 | Meter Temp. 78 | Ref. Δ P — | Post-Test 0.001 @ 5 In. Hg.
Sample Box No. 3 | Stack Temp. 320 | Desired Nozzle .208 | Pre-Test Pitot <0.1 @ 5.4 In. H_2O
Probe/Pitot No. 200,108 | Pitot Coeff. 0.84 | Nozzle No. 300.028 | Post-Test Pitot <0.1 @ 5.6 In. H_2O
Probe Temp. Setting 250 | % Moisture 4 | Nozzle Calibration .200, .200, .200
Sample ID No. 7015-01 | C Factor — | Nozzle Diameter 0.200 | Observer —
Filter No. — | Start Time 1010 | End Time 1115 | Agency —

Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading Δ P In. H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp. °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
1	0	384.350	1.40	1.65	1.65	74	1	324	253	|	68
2	2.5	386.11	1.50	1.77	1.75	75	1	323	255	|	59
3	5	387.88	1.50	1.77	1.75	75	1	323	254	|	58
4	7.5	389.66	1.60	1.89	1.90	76	1	324	250	|	56
5	10	391.52	1.70	2.01	2.00	76	1	325	249	|	57
6	12.5	353.54	1.60	1.89	1.90	77	1	324	248	|	58
1	15	395.29	1.60	1.87	1.90	78	2	310	247	|	58
2	17.5	396.99	1.30	1.54	1.55	78	2	323	246	|	59
3	20	398.80	1.50	1.77	1.75	79	2	324	246	|	59
4	22.5	400.55	1.70	2.01	2.00	80	2	323	247	|	60
5	25	402.37	1.50	1.77	1.75	81	2	324	249	|	61
6	27.5	404.01	1.40	1.65	1.65	81	2	323	249	|	63
1	30	405.76	1.50	1.77	1.75	81	2	310	243	|	67
2	32.5	407.61	1.50	1.77	1.75	81	2	321	243	|	61
3	35	409.51	1.50	1.77	1.75	81	2	323	244	|	61
4	37.5	411.74	1.50	1.77	1.75	82	2	325	245	|	62
5	40	412.95	1.30	1.54	1.55	82	2	330	246	|	63
6	42.5	414.35	1.30	1.54	1.55	84	2	293 05	244	|	64
1	45	416.41	1.30	1.54	1.55	84	2	310	245	|	65
2	47.5	418.39	1.50	1.77	1.75	85	2	323	245	|	65
3	50	417.81	1.70	2.01	2.00	85	2	324	246	|	65
4	52.5	421.72	1.50	1.77	1.75	86	2	326	248	|	66
5	55	423.67	1.50	1.77	1.75	86	2	324	247	|	65
6	57.5	425.52	1.50	1.77	1.75	86	2	324	246	|	65
	1:00	427.435	—	—	—	—	—	—	—	—	—
		43.085 ✓	1.496 ✓		1.758 ✓	80.5 ✓		321.5 ✓			

Comments: —

Isokinetic Check: 98.2

Audited by: MQG Date: 3/28/07

TRIGON

Isokinetic Field Data Sheet - EPA Method 8

Client TECO | Run Number 2
City/State Polk / FL | Date 3/23/07
Sampling Location Unit #2 Outlet | Operators (B)

Bar. Press., In. Hg 30.01 | *NOMOGRAPH SET-UP: K Factor* 1.025 | *LEAK CHECKS*
Static Press., In. H_2O -1.10 | ΔH @ 1.923 Y = 0.923 | Avg. Δ P 1.50 | Pre-Test 0.006 @ 15 In. Hg.
Meter Box No. 3DD.388 | Meter Temp. 88 | Ref. Δ P — | Post-Test 0.001 @ 5 In. Hg.
Sample Box No. 3 | Stack Temp. 320 | Desired Nozzle .204 | Pre-Test Pitot <0.1 @ 5.8 In. H_2O
Probe/Pitot No. 200.109 | Pitot Coeff. 0.84 | Nozzle No. 300.130 | Post-Test Pitot <0.1 @ 5.2 In. H_2O
Probe Temp. Setting 250 | % Moisture 4 | Nozzle Calibration 0.192, 0.192, 0.197
Sample ID No. 7015-02 | C Factor — | Nozzle Diameter 0.192 | Observer —
Filter No. — | Start Time 1144 | End Time 1249 | Agency —

Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading ΔP, In. H_2O	Orifice Setting ΔH, Inches H_2O Ideal	Orifice Setting ΔH, Inches H_2O Actual	Dry Gas Meter Temp. °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
1	0	427.700	1.50	1.538	1.55	84	1	325	248		66
2	2.5	429.45	1.40	1.435	1.45	84	1	324	245		61
3	5	431.22	1.30	1.33	1.35	84	1	325	240		60
4	7.5	432.82	1.30	1.33	1.35	85	1	325	240		60
5	10	434.13	1.40	1.435	1.45	84	1	323	238		60
6	12.5	435.79	1.40	1.43	1.45	84	1	323	235		60
1	15	437.31	1.40	1.43	1.45	85	1	310	234		62
2	17.5	438.90	1.40	1.43	1.45	85	1	325	230		60
3	20	440.43	1.50	1.54	1.55	85	1	324	230		59
4	22.5	442.13	1.30	1.33	1.35	85	1	325	230		61
5	25	443.70	1.30	1.33	1.35	85	1	324	234		62
6	27.5	445.32	1.40	1.43	1.45	86	1	324	238		63
1	30	446.84	1.30	1.33	1.35	86	1	320	230		64
2	32.5	448.72	1.30	1.33	1.35	87	1	321	230		64
3	35	450.13	1.30	1.33	1.35	87	1	324	230		62
4	37.5	451.51	1.40	1.43	1.45	87	1	323	230		63
5	40	453.13	1.40	1.43	1.45	87	1	324	230		62
6	42.5	454.78	1.40	1.43	1.45	88	1	323	230		64
1	45	456.26	1.50	1.54	1.55	88	1	304	230		66
2	47.5	457.83	1.40	1.43	1.45	88	1	325	239		65
3	50	459.48	1.50	1.54	1.55	88	1	325	246		64
4	52.5	461.53	1.50	1.54	1.55	89	1	324	248		64
5	55	462.89	1.50	1.54	1.55	89	1	325	249		64
6	57.5	464.27	1.50	1.54	1.55	89	1	310	249		62
	1:00	466.118									
		38.418									
		~~38.180~~ 38.418	1.40 ✓		1.450	89.2 ✓		321.9 ✓			

Comments: _____

Isokinetic Check: ~~98.2~~ 97.6

Audited by: WDB Date: 3/26/07

TRIGON

Isokinetic Field Data Sheet - EPA Method 8

Client: TECO | Run Number: 3
City/State: Polk FL | Date: 3/23/07
Sampling Location: Unit 1 | Operators: JAS

Bar. Press., In. Hg: 30.03 | NOMOGRAPH SET-UP: K Factor: 1.004 | LEAK CHECKS
Static Press., In. H_2O: -1.10 | ΔH @ 1.933 Y = 0.973 | Avg. ΔP: 1.40 | Pre-Test: 0.003 @ 15 In. Hg.
Meter Box No.: 300.388 | Meter Temp.: 88 | Ref. ΔP: — | Post-Test: 0.001 @ 5 In. Hg.
Sample Box No.: 3 | Stack Temp.: 320 | Desired Nozzle: .207 | Pre-Test Pitot <0.1 @ 5.8 In. H_2O
Probe/Pitot No.: 300.108 | Pitot Coeff.: 0.84 | Nozzle No.: 300.368 | Post-Test Pitot <0.1 @ 5.0 In. H_2O
Probe Temp. Setting: 250 | % Moisture: 4 | Nozzle Calibration: 0.191, 0.191, 0.191
Sample ID No.: 7015-03 | C Factor: — | Nozzle Diameter: .191 | Observer: —
Filter No.: — | Start Time: 1312 | End Time: 1417 | Agency: —

Sample Point	Clock Time	Dry Gas Meter Cubic Feet	Pitot Reading ΔP In. H_2O	Orifice Setting ΔH Inches H_2O Ideal	Orifice Setting ΔH Inches H_2O Actual	Dry Gas Meter Temp. °F	Pump Vacuum Inches Hg	Stack Temp °F	Probe Temp °F	Filter Box °F	Imp. Temp °F
1	0	466.300	1.60	1.60	1.60	88	1	325	252		68
2	2.5	467.88	1.60	1.60	1.60	90	1	324	251		60
3	5	469.83	1.60	1.60	1.60	91	1	324	250		54
4	7.5	471.36	1.60	1.60	1.60	92	1	324	249		53
5	10	472.16	1.50	1.50	1.50	92	1	323	248		53
6	12.5	475.11	1.50	1.50	1.50	91	1	324	249		53
1	15	476.61	1.60	1.60	1.60	91	1	324	249		54
2	17.5	478.37	1.60	1.60	1.60	91	1	323	250		56
3	20	480.11	1.70	1.70	1.70	91	1	321	253		58
4	22.5	481.85	1.70	1.70	1.70	92	1	324	250		59
5	25	483.81	1.70	1.70	1.70	91	1	323	251		60
6	27.5	485.37	1.70	1.70	1.70	91	1	324	248		61
1	30	487.19	1.40	1.40	1.40	91	1	306	247		62
2	32.5	488.78	1.40	1.40	1.40	91	1	323	250		62
3	35	490.43	1.40	1.40	1.40	91	1	323	251		62
4	37.5	491.98	1.40	1.40	1.40	91	1	324	250		64
5	40	493.59	1.50	1.50	1.50	91	1	324	251		64
6	42.5	495.21	1.50	1.50	1.50	90	1	324	251		63
1	45	496.84	1.50	1.50	1.50	90	1	310	252		63
2	47.5	498.63	1.50	1.50	1.50	90		321	250		64
3	50	500.17	1.50	1.50	1.50	90	2	323	251		64
4	52.5	501.27	1.50	1.50	1.50	90	2	324	250		64
5	55	503.49	1.50	1.50	1.50	91	2	323	251		63
6	57.5	505.13	1.50	1.50	1.50	91	2	324	250		63
	1:00	506.845									
		40.545	1.542		1.547	90.8		322.2			

Comments: —

Isokinetic Check: 99.3

Audited by: AJQS Date: 3/24/07

TRIGON

EPA Methods 4 and 8 - Moisture Determination and Sample Recovery - Data Analysis

Client Name TECO
City/State Tampa FL
Sampling Location Unit 2
Clean-Up Box Number 1
Chain of Custody: Date Received 3/23/07

Project Number 046-07-015
Sample Date ~~3/16/07~~ 3/23/07
Samples Recovered By ETD
Recovery Date ~~3/16/07~~ 3/23/07
Received By TECO Locked? ✓

Equipment Documentation

Run Number	1	2	3	
Sample ID Number	7015-01	7015-02	7015-03	
Sample Box Number	3	3	3	
Probe Number	200, 108	200, 109	200, 108	

Analysis of Moisture and Sample Recovery - Sulfuric Acid

Reagent Recovery Container #	7015-01	7015-02	7015-03	
Impinger Absorbing Solution	80% IPA	80% IPA	80% IPA	
Description of Reagent	clear	clear	clear	
Reagent Level Marked?	✓	✓	✓	
Final Volume, ml	65	68	108	
Initial Volume, ml	100	100	100	
Net Condensed Volume, ml	-35	-32	8	
80% Isopropanol Rinse?	✓	✓	✓	
Dilute to 250 ml in Isopropanol?	✓	✓	✓	

Analysis of Moisture and Sample Recovery - Sulfur Dioxide

Reagent Recovery Container #	7015-01	7015-02	7015-03	
Impinger Absorbing Solution	3% H_2O_2	3% H_2O_2	3% H_2O_2	
Description of Reagent	clear	clear	clear	
Reagent Level Marked?	✓	✓	✓	
Final Volume, ml	260	255	227	
Initial Volume, ml	200	200	200	
Net Condensed Volume, ml	60	55	27	
Distilled Water Rinse?	✓	✓	✓	
Dilute to 1000 ml in DI Water?	✓	✓	✓	

Analysis of Moisture Recovery

Silica Gel Recovery Container #	—	—	—	
Percent Silica Gel Spent	20	25	30	
Final Weight, g	225.7	221.8	215.5	
Initial Weight, g	200	200	200	
Net Absorbed Water, g	25.7	21.8	15.5	
Total Moisture Collected, ml	85.7-35=50.7	76.8-32=44.8	50.2	

Reagent Blanks

Absorbing Reagent Blank	3% H_2O_2	Rinsing Reagent Blank	
Absorbing Blank Identification #	7015-04	Rinsing Blank Identification #	
Absorbing Reagent Blank	80% IPA	Rinsing Reagent Blank	
Absorbing Blank Identification #	7015-04	Rinsing Blank Identification #	

Run 1: 15 min purge @ ΔH=1.75
Run 2: 15 min purge @ ΔH= 1.45
Run 3: 15 min purge @ ΔH= 1.55

PASSED QA

TRIGON

CALCULATED DATA

TECO
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Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: IGCC
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 1
Date: 03/23/07

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.200 inches
Barometric Pressure, P_b:	30.00 "Hg	Nozzle Area, A_n:	0.0002182 ft^2
Stack Pressure, P_s:	29.91 "Hg	Average Orifice Meter, ΔH:	1.758 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	43.085 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	80.5 °F
Gas Analysis:	9.0 % CO_2	Average Stack Temp., T_s:	321.5 °F
	11.8 % O_2	Average $\sqrt{\Delta p}$:	1.222 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	50.7 ml
	79.2 % N_2	Meter Box Y:	0.973 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	2.390 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	41.235 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.055 %
$FDA = 1.0 - B_{ws}$	0.945 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.91 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.25 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460) / (M_s \times P_s)})$	82.94 ft/second
$Q_s = v_s \times A_s \times 60$	1410878.7 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	900801.3 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 60)$	99.2 %

Data from Laboratory Analysis:

	H_2SO_4
Normality of Barium Chloride titrant, N	0.01018
Volume Titrant Blank, V_{tb}	0.01
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	3.7

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	4.937E-07 lb/dscf
F_c-factor =	2310 dscf/mmBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01272 lb/mmBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	26.6838 lb/hr

TECO
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Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: IGCC
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 2
Date: 03/23/07

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.192 inches
Barometric Pressure, P_b:	30.01 "Hg	Nozzle Area, A_n:	0.000201 ft^2
Stack Pressure, P_s:	29.93 "Hg	Average Orifice Meter, ΔH:	1.450 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	38.418 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	86.2 °F
Gas Analysis:	9.0 % CO_2	Average Stack Temp., T_s:	321.9 °F
	11.9 % O_2	Average $\sqrt{\Delta p}$:	1.181 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	44.8 ml
	79.2 % N_2	Meter Box Y:	0.973 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	2.112 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	36.372 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.055 %
$FDA = 1.0 - B_{ws}$	0.945 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \% CO))$	29.91 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.26 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	80.14 ft/second
$Q_s = v_s \times A_s \times 60$	1363310.7 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	870386.5 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	98.2 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.01018
Volume Titrant Blank, V_{tb}	0.01
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	4.2

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)} =$	6.354E-07 lb/dscf
F_c-factor =	2310 dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2) =$	0.01636 lb/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60 =$	33.1804 lb/hr

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Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: IGCC
Sampling Location: Stack
Operating Conditions: Full Load
Run Number: 3
Date: 03/23/07

Sample Time, θ:	60 minutes	Nozzle Diameter, D_n:	0.191 inches
Barometric Pressure, P_b:	30.03 "Hg	Nozzle Area, A_n:	0.00019896 ft^2
Stack Pressure, P_s:	29.95 "Hg	Average Orifice Meter, ΔH:	1.542 "H_2O
Effective Stack Area, A_s:	283.529 ft^2	Sample Volume, V_m:	40.545 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	90.8 °F
Gas Analysis:	8.9 % CO_2	Average Stack Temp., T_s:	322.2 °F
	11.9 % O_2	Average √Δp:	1.241 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	50.5 ml
	79.2 % N_2	Meter Box Y:	0.973 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	2.381 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	38.103 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.059 %
$FDA = 1.0 - B_{ws}$	0.941 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	29.90 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	29.20 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	84.29 ft/second
$Q_s = v_s \times A_s \times 60$	1433899.1 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	911918.4 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 6$	99.2 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.01018
Volume Titrant Blank, V_{tb}	0.01
Volume Titrant Sample, V_t	500
Volume of Sample Aliquot, V_a	100
Total Volume of Solution, V_{soln}	7.4

Calculated Concentration and Emission Rate Data:

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / V_{m(std)}$ =	1.069E-06 lb/dscf
F_c-factor =	2310 dscf/MMBtu
$E_{H2SO4} = C_{H2SO4} \times F_c\text{-factor} \times (100/\%CO_2)$ =	0.02780 lb/MMBtu
$E_{H2SO4} = C_{H2SO4} \times Q_{s(std)} \times 60$ =	58.4676 lb/hr

LABORATORY ANALYSIS

TECO TAMPA ELECTRIC

Laboratory Services

5012 Causeway Blvd * Tampa Fl. 33619 * Ph (813)630-7378 * Fax (813)630-7360 * DOH #E54272

Report For:

Report Date: 5/1/2007

Laboratory ID: **AA87419**

Location Code: TE_PPS_1_SAM_SYNGAS

Sample Information

Description **Polk No. 1 Acid Mist Comp on Syngas**

Project Account Code:

Sample Collection Method:

Sampled By:

Date and Time Collected: **3/26/2007 12:00:00 AM**

Date of Sample Receipt: **3/26/2007**

Laboratory Results

PARAMETER	Result	Units	MDL	Qualifier Code	Test Method	Analyst	Analysis Date & Time	Lower Limit	Upper Limit	Violation Check
Normality of BaCl2 * 2H2O	0.01018		0.0001			MM	3/12/2007 7:30:00 AM			
SO3 emission rate, lbs/hr	39	lbs/hr			EPA - RM8					
SO3, Avg. of Blank Titrations	0.01	milliliters	0.01	I	EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Run #1, Avg. of Titrations	3.7	milliliters	0.01		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Run #2, Avg. of Titrations	4.2	milliliters	0.01		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Run #3, Avg. of Titrations	7.4	milliliters	0.01		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Volume of Contained Sample	500	milliliters	1		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Volume of Sample Aliquot	100	milliliters	0.1		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			

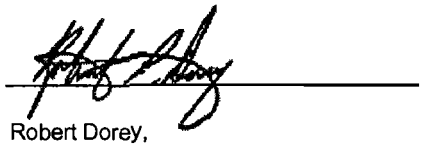
Comments

All results calculated on a wet to wet basis, unless otherwise indicated.

Data Qualifier Codes Explanation:

I - The reported value is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit (PQL). PQL = 4 x MDL.

Should there be any questions regarding this report, please contact:



Robert Dorey,
Manager, Laboratory Services
(813) 630-7878

CALIBRATION DATA

QUALITY ASSURANCE AND EQUIPMENT CALIBRATION PROCEDURES

General. Field or laboratory test equipment purchased or fabricated by Trigon Engineering Consultants is assigned a unique, permanent identification number. New items for which calibration is required are calibrated before initial field use. Equipment whose calibration status may change with use or with time is inspected in the field before testing begins, and again upon return from field use. When an item of equipment is found to be out of calibration, it is adjusted and recalibrated or retired from service. Trigon's equipment is periodically recalibrated, regardless of the outcome of these regular inspections.

Calibrations are conducted in accordance with United States Environmental Protection Agency (US EPA) specifications. Trigon follows the calibration procedures outlined in EPA Reference Methods found in the Code of Federal Regulations (Volume 40, Part 60) and those recommended in the Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III (EPA/600/R-94/038c). When the Reference Methods do not detail procedures, Trigon uses methods such as those prescribed by the American Society for Testing and Materials (ASTM).

Data obtained during calibrations are recorded on standardized forms, which are verified for completeness and accuracy by the Quality Assurance Manager. Data reduction and subsequent calculations are performed using Trigon's Air Quality Data System. Calibration calculations are performed by an environmental scientist, independently audited by the Project Manager, and reviewed by the Quality Assurance Manager for verification of data. Copies of calibration data are included in the test or project report.

Inspection and Maintenance. An effective preventative maintenance program is necessary to ensure equipment performance quality prior to, during, and following the source test. Equipment returning from the field is inspected before it is returned to storage. During the course of these inspections, items are cleaned, repaired, reconditioned, and recalibrated when necessary.

Equipment that is transported to the field for a test project is inspected again prior to being packed. Trigon performs these quality assurance checks prior to departure for the project site to detect equipment problems, which may occur during periods of storage. Trigon transports adequate back-up equipment to the project site so as to minimize delays in the test schedule.

Calibration. Source sampling equipment that requires calibration includes nozzles, pitot tubes, thermometers, flow meters, dry gas meters, and barometers. The following sections briefly describe the calibration procedures followed by Trigon.

Nozzles. Probe nozzles are uniquely and permanently identified at the time of purchase or fabrication, and are calibrated before initial field use and prior to the source test. The inside diameter of the nozzle is measured to the nearest 0.001 inch using a precision jeweled micrometer. Three measurements are made using different diameters. If the difference between the high and the low measurements do not exceed 0.004 inch, the average of the three measurements is used. If the difference exceeds this amount, or when the nozzle becomes nicked, dented, or corroded, the nozzle is reshaped, sharpened, and recalibrated. Regardless of usage, nozzles are inspected on a yearly basis.

Pitot Tubes. Trigon Type S pitot tubes have been constructed and calibrated using those recommendations in accordance with EPA Reference Method 2, Calibration Procedures 2 and 2a. Trigon Type S pitot tubes C_p coefficients have been determined according Calibration Procedure 2a. Trigon standard pitot tubes have been assigned a C_p coefficient of 0.99 according to Calibration Procedure 2. Pitot tubes are visually inspected prior to field use. If the inspection indicates damage, the calibration is rechecked. Regardless of usage, Trigon pitot tubes are inspected and recalibrated on a yearly basis.

Dry Gas Meter and Orifice. Console metering systems receive a full calibration at the time of purchase and annually, thereafter. Post-test calibrations are performed after the source test. If the calibration factor, γ (gamma), deviates by less than five percent from the initial value, the test data is deemed acceptable. If γ deviates by more than five percent, the meter is recalibrated and the meter coefficient (initial or recalibrated) that yields the lowest sample volume for the test runs is used. Standard practice at Trigon is to recalibrate the dry gas meter when the γ is found to be outside the range of $0.98 \leq \gamma \leq 1.02$.

Barometer. Field barometers are compared to a reference mercury barometer and are deemed acceptable when they agree to within $\pm$ 0.1 inches Hg. The barometric pressure is corrected for pressure and temperature. Prior to and following the field test the field barometer is verified against the reference barometer.

Thermometers. New thermometers, pyrometers and thermocouples purchased or fabricated by Trigon are calibrated using the procedures described by US EPA Test Protocol. Calibration tolerance limits are as follow:

Impinger Temperature Gauge	±1°C or 2°F
Dry Gas Meter Temperature Gauge	±3°C or 5.4°F
Stack Thermocouples	±1.5% of absolute temperature

Thermometers and thermocouples are inspected and calibrated prior to and following the field test. Regardless of usage, Trigon thermometers and thermocouples are inspected and recalibrated on a yearly basis.

Laboratory Equipment. Trigon Engineering Consultants has a written quality assurance document that covers calibration and maintenance of laboratory equipment. This includes calibration of the analytical balance against Class S weights. Calibration of thermometers, barometers, and wet test meters are traceable to NIST. A copy of our quality assurance document may be obtained by written request.

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Is hereby granting a Louisiana Environmental Laboratory Accreditation to:

Trigon Engineering Consultants, Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Agency Interest No. 91040

According to the Louisiana Administrative Code, Title 33, Part I, Subpart 3, LABORATORY ACCREDITATION, the State of Louisiana formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed in the attachment.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part I, Subpart 3 requirements and acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part I. Please contact the Department of Environmental Quality, Louisiana Environmental Laboratory Accreditation Program (LELAP) to verify the laboratory's scope of accreditation and accreditation status. Accreditation by the State of Louisiana is not an endorsement or a guarantee of validity of the data generated by the laboratory, and does not constitute an endorsement of the suitability of the listed methods for any specific application.

To be accredited initially and maintain accreditation, the laboratory agrees to participate in two single-blind, single-concentration PT studies, where available, per year for each field of testing for which it seeks accreditation or maintains accreditation as required in LAC 33:I.4711.

Melvin C. Mitchell Sr., Accreditation Officer
Louisiana Environmental Laboratory Accreditation Program

Certificate Number: 04036
Expiration Date: June 30, 2007
Issued On: July 1, 2006

Louisiana Environmental Laboratory
LELAP
Accreditation Program

Laboratory Scope of Accreditation

Organization

04036 (704) 598-1049

Trigon Engineering Consultants Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Louisiana Stack Testing Program Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
1238	Method 13B 40 CFR 60 App. A	Fluoride	Accredited	7/1/2003	STATE	LA
1248	Method 1A 40 CFR 60 App. A	Traverse Points	Accredited	7/1/2003	STATE	LA
1253	Method 204 40 CFR 51 App. M	Criteria for and Verification of a Permanent or Temporary Total Enclosure	Accredited	7/1/2003	STATE	LA
1262	Method 22 40 CFR 60 App. A	Visible emissions from coke oven batteries	Accredited	7/1/2003	STATE	LA
1294	Method 315 40 CFR 63 App. A	Particulate and Methylene Chloride Extractable Matter (MCEM)	Accredited	7/1/2003	STATE	LA
1757	Method 10 40 CFR 60 App. A (Sample Only)	Carbon monoxide	Accredited	7/1/2003	STATE	LA
1793	Method 12 40 CFR 60 App. A (Sample Only)	Lead	Accredited	7/1/2003	STATE	LA
1857	Method 26 40 CFR 60 App. A (Sample Only)	Hydrochloric acid (Hydrogen chloride (gas only))	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Bromine (Br2)	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Chlorine	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrochloric acid (Hydrogen chloride (gas only))	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrogen Bromide (HBr)	Accredited	7/1/2003	STATE	LA
1859	Method 26A 40 CFR 60 App. A (Sample Only)	Hydrogen fluoride (Hydrofluoric acid)	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Antimony	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Arsenic	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Barium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Beryllium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Cadmium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Chromium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Cobalt	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Copper	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Lead	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Manganese	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Mercury	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Nickel	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Phosphorus total	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Selenium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Silver	Accredited	7/1/2003	STATE	LA

Issue Date: July 1, 2006
Expiration Date: June 30, 2007

Louisiana Environmental Laboratory
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Trigon Engineering Consultants Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Louisiana Stack Testing Program Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Thallium	Accredited	7/1/2003	STATE	LA
1861	Method 29 40 CFR 60 App. A (Sample Only)	Zinc	Accredited	7/1/2003	STATE	LA
1951	Method 6C 40 CFR 60 App. A (Sample Only)	Sulfur dioxide	Accredited	7/1/2003	STATE	LA
1963	Method 7E 40 CFR 60 App. A (Sample Only)	Nitrogen Oxides	Accredited	7/1/2003	STATE	LA
1967	Method 9 40 CFR 60 App. A (Sample Only)	Opacity	Accredited	7/1/2003	STATE	LA
1971	NCASI Vents (Sample Only)	Chlorine	Accredited	7/1/2003	STATE	LA
1971	NCASI Vents (Sample Only)	Chlorine dioxide res. disinfectant	Accredited	7/1/2003	STATE	LA
2035	Alcoa Method 4075A	Gaseous Fluoride	Accredited	7/1/2003	STATE	LA
2035	Alcoa Method 4075A	Particulate Flouride	Accredited	7/1/2003	STATE	LA
2043	Alcoa RM 4075A TF	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2044	Alcoa RM 4076TF-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2045	Alcoa RM 4076-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2046	Alcoa RM 913C-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2047	Alcoa RM 914F-94	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA
2048	Alcoa RM 4076D-92	Particulate and Gaseous Fluorides	Accredited	7/1/2003	STATE	LA

Air and Emissions Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
703	EPA 202	Condensible Particulate Matter	Accredited	7/7/2002	STATE	
762	RM 1	Stack traverses	Accredited	7/7/2002	STATE	
776	RM 17	Particulates	Accredited	7/7/2002	STATE	
779	RM 2	Stack gas velocity volume flow rate	Accredited	7/7/2002	STATE	
780	RM 20	SO2 NOX O2 CO2 from stationary gas turbines	Accredited	7/7/2002	STATE	
787	RM 25A	VOC`s	Accredited	7/7/2002	STATE	
798	RM 2A	Volume flow rate through small pipes and ducts	Accredited	7/7/2002	STATE	LA
800	RM 2C	Stack gas velocity volume flow rate in small stacks/ducts	Accredited	7/7/2002	STATE	LA
801	RM 2D	Volume flow rate in small pipes and ducts	Accredited	7/7/2002	STATE	LA
803	RM 3	Carbon dioxide oxygen dry molecular weight	Accredited	7/7/2002	STATE	LA
804	RM 3A	Carbon dioxide oxygen	Accredited	7/7/2002	STATE	LA

Issue Date: July 1, 2006
Expiration Date: June 30, 2007

Print Date 6/14/2006 4:06:54 PM

Louisiana Environmental Laboratory
LELAP
Accreditation Program

Laboratory Scope of Accreditation

Organization

04036 (704) 598-1049
Trigon Engineering Consultants Inc.
6200 Harris Technology Blvd.
Charlotte, NC 28269

Air and Emissions Certification

Method Code	Method Ref	Analyte	Status	Date Effective	Type	AA
805	RM 3B	Carbon dioxide oxygen carbon monoxide	Accredited	7/7/2002	STATE	LA
807	RM 4	Moisture content	Accredited	7/7/2002	STATE	LA
808	RM 5	Particulates	Accredited	7/7/2002	STATE	LA
816	RM 6	Sulfur dioxide	Accredited	7/7/2002	STATE	LA
826	RM 8	Sulfuric acid mist sulfur dioxide	Accredited	7/7/2002	STATE	
2035	Alcoa Method 4075A	Gaseous Fluoride	Accredited	7/1/2003	STATE	LA
2035	Alcoa Method 4075A	Particulate Flouride	Accredited	7/1/2003	STATE	LA

Meter Console Information	
Console Number:	300.388
Dry Gas Meter Number:	977111
Calibration Date:	12/26/2006
Expiration Date:	12/26/2007

Calibration Condition	
Time:	
Barometric Pressure (P_b):	28.89
Calibration Technician:	JAJ
Wet Test Meter ID:	11088.00
Wet Test Meter Verification Date:	8/1/2006

Pass Positive Leak Check?	Yes
Pass Negative Leak Check?	Yes

		Console Meter						Wet Test Meter						Run Time			
DGM Orifice Setting	Vacuum Setting	Meter Initial Volume	Meter Final Volume	Sample Volume	Outlet Temp. Initial	Outlet Temp. Final	Outlet Temp. Average	Wet Test Initial Volume	Wet Test Final Volume	Wet Test Volume	Wet Test Temp. Initial	Wet Test Temp. Final	Wet Test Temp. Average	Minutes	Seconds	hundreds	Elapsed
(P_m)	(2-4 in Hg)	(V_{di})	(V_{df})	(V_m)	(T_{di})	(T_{df})	(T_d)	(V_{wi})	(V_{wf})	(V_w)	(T_{wi})	(T_{wf})	(T_w)				Θ
in. H_2O	in Hg	cubic feet	cubic feet	cubic feet	°F	°F	°F	cubic feet	cubic feet	cubic feet	°F	°F	°F				minutes
0.5	3.0	203.6	208.786	5.186	68	70	69.0	0	5	5.000	67	67	67.0	12.0	59.0	5.0	12.984
1.0	3.0	209.2	214.398	5.198	70	73	71.5	0	5	5.000	67	67	67.0	9.0	9.0	77.0	9.1577
1.5	3.0	214.6	224.981	10.381	73	76	74.5	1	11	10.000	67	67	67.0	15.0	0.0	55.0	15.006
2.0	3.0	235	245.426	10.426	78	80	79.0	1	11	10.000	67	67	67.0	13.0	6.0	9.0	13.101
3.0	3.0	245.6	256.024	10.424	80	82	81.0	1	11	10.000	67	67	67.0	10.0	33.0	77.0	10.558
4.0	3.0	256.4	266.843	10.443	82	83	82.5	1	11	10.000	67	67	67.0	9.0	13.0	21.0	9.2188

DGM Orifice Setting	DGM Factor	DGM Factor	Orifice Meter	Orifice Meter
(P_m)	γ_i	$\Delta\gamma$	$\Delta H_@$	$\Delta\Delta H_@$
in. H_2O			in. H_2O	in. H_2O
0.5	0.967	-0.006	1.955	0.022
1	0.968	-0.005	1.936	0.003
1.5	0.973	0.001	1.938	0.005
2	0.976	0.003	1.953	0.020
3	0.977	0.005	1.896	-0.037
4	0.976	0.003	1.922	-0.011

0.973 γ Average 1.933 ΔH@ Average

Meter Box Thermocouple Calibration:

Test Points	30	50	75	90	120
Reading	31	52	77	91	122

$\gamma = V_w * P_b * (T_d + 460) / V_d * (P_b + \Delta H/13.6) * (T_w + 460)$

$\Delta H_@ = ((0.0319 * \Delta H) / (P_b * (T_d + 460))) * (((T_w + 460) * \theta) / V_w)^2$

Note: For Calibration Factor γ, the ratio of the calibration meter to dry gas meter, acceptable tolerance of individual values from the average is ±0.02.

Note: For $\Delta H_@$, orifice pressure differential that equates to 0.75 cfm (0.0212 m3/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2 inches (5.1mm) H2O.

ISOKINETIC CONSOLE CALIBRATION DATA SHEET

Client:	Tampa Electric Co.	**City, State/Location:**	Tampa, Florida	**Project No:**	046-07-015
Date:	03/29/07	**Baro. Press., in. Hg:**	29.547	**Calibrator Initials:**	ITD
Console #:	300.388	**Dry Gas Meter No.:**	977111	**Wet Test Meter No.:**	600.002

Initial Settings, Volumes and Temperatures									
Isokinetic Console						Wet Test Meter		Time	
Orifice Meter, Δ H	Dry Gas Meter Vacuum, Volume and Temperature					Meter Volume	Meter Temp.	*θ* minutes	*Yi*
in. H2O	Vacuum In. Hg	Volume (Vd) ft³	Initial °F	Final °F	Average (td) °F	(Vw) ft³	(tw) °F		
1.60	2.0	10.19	77.0	77.0	77.0	10.0	65.0	14.70	1.000
1.60	2.0	10.19	77.0	78.0	77.5	10.0	65.0	14.80	1.001
1.60	2.0	10.19	78.0	78.0	78.0	10.0	65.0	14.78	1.002

Y= 1.00

Example Calculation:

$$\frac{Vw\ Pb\ (td + 460)}{Vd\ (Pb + (\Delta H/13.6))(tw + 460)}$$

Where:

Vw = Gas volume of wet test meter, cubic feet
Vd = Gas volume of dry gas meter, cubic feet
tw = Temperature of wet test meter, degrees Fahrenheit
td = Average temperature of dry gas meter, degrees Fahrenheit
ΔH = Pressure differential across orifice meter, inches water
Yi = Ratio of accuracy of wet test meter to dry gas meter for each replicate
Y = Average ratio of accuracy of wet test meter to dry gas meter for all replicates;
tolerance = pretest Y ± 0.05 Y
Pb = Barometric pressure, inches mercury
θ = Time of calibration run, minutes

Davis inotek
CALIBRATION LABORATORY

Certificate of Calibration

364707

Instrument Identification

Company ID: 208880

TRIGON ENGINEERING CONSULT.
6200 HARRIS TECHNOLOGY BLVD.
CHARLOTTE. NC 28269

Instrument ID: **108623**
Manufacturer: TEGAM
Description: THERMOCOUPLE THERMOMETER

Model Number: 840A
Serial Number: T-207319

ACCURACY: MFR. SPECIFICATIONS

Certificate Information

Reason For Service: CALIBRATION
Type of Cal: NORMAL
As Found Condition: OUT OF TOLERANCE
As Left Condition: IN TOLERANCE, ADJUSTED
Procedure: NA17-20ST-95 DIGITAL THERMOMETERS
Remarks:

Technician: MIKE DELL
Cal Date: 10/16/2006
Cal. Due Date: 10/16/2007
Temperature: 23.0 C
Humidity: 39.0 %

The instrument listed on this certification has been calibrated against standards traceable to the National Institute of Standards and Technology (NIST) or other recognized national metrology institutes, derived from ratio type measurments, or compared to nationally or internationally recognized consensus standards.

A test uncertainty ratio (T.U.R.) of 4:1 [K=2, approx. 95% Confidence Level] was maintained unless otherwise stated.

Davis Inotek Instruments Calibration Laboratory is certified to ISO 9001:2000 by Eagle Registrations (certificate # 3046). Lab Operations meet the requirements of ANSI/NCSL Z540-1-1994, ISO 10012, 10CFR50 AppxB, and 10CFR21.

ISO/IEC 17025-2005 accredited calibrations are per ACLASS certificate # AC-1131 within the scope for which the lab is accredited.
All results contained within this certification relate only to item(s) calibrated. Any number of factors may cause the calibration item to drift out of calibration before the instrument's calibration interval has expired.

Approved By: _____
Dwain Cox, Lab Manager

Calibration Standards

NIST Traceable#	Inst. ID#	Description	Model	Cal Date	Date Due
1006037187	06-0001	DIGITAL MULTIMETER	3458A OPT 002	08/02/2006	8/2/2007
1006038100	06-0208	CALIBRATOR	5520A W/SC600	07/15/2004	10/25/2006
1006033557	06-0284	ICE POINT CELL	TRC III	02/10/2006	2/10/2007

Davis inotek
CALIBRATION LABORATORY

Certificate of Calibration

364707

✓ In Tolerance ✗ Out of Tolerance

Calibration Data

Range	Nominal	As Found		As Left		Min	Max
TEMPERATURE IN °C							
SOURCE T1, TYPE K	-130.0	-129.3	✗	-130.1	✓	-130.5	-129.5
	-100.0	-99.5	✓	-100.1	✓	-100.5	-99.5
	0.0	0.5	✗	-0.1	✓	-0.3	0.3
	200.0	200.6	✗	199.9	✓	199.7	200.3
	500.0	500.9	✗	499.9	✓	499.7	500.3
	1000.0	1001.5	✗	999.9	✓	999.6	1000.4
INPUT T2, TYPE K	-130.0	-130.0	✓	-129.9	✓	-130.5	-129.5
	-100.0	-99.7	✓	-99.8	✓	-100.5	-99.5
	0.0	0.0	✓	-0.1	✓	-0.3	0.3
	200.0	200.0	✓	199.9	✓	199.7	200.3
	500.0	499.8	✓	499.9	✓	499.7	500.3
	1000.0	999.8	✓	999.8	✓	999.6	1000.4
SOURCE T1, TYPE J	-150.0	-149.5	✓	-150.1	✓	-150.5	-149.5
	0.0	0.5	✗	0.0	✓	-0.3	0.3
	750.0	750.9	✗	750.0	✓	749.7	750.3
INPUT T2, TYPE J	-150.0	-150.2	✓	-149.8	✓	-150.5	-149.5
	0.0	-0.1	✓	-0.1	✓	-0.3	0.3
	750.0	749.7	✓	749.8	✓	749.7	750.3
SOURCE T1, TYPE T	-150.0	-149.0	✗	-149.8	✓	-150.5	-149.5
	0.0	0.6	✗	-0.1	✓	-0.3	0.3
	350.0	350.7	✗	349.9	✓	349.7	350.3
INPUT T2, TYPE T	-150.0	-150.0	✓	-150.1	✓	-150.5	-149.5
	0.0	-0.1	✓	0.0	✓	-0.3	0.3
	350.0	349.7	✓	349.9	✓	349.7	350.3

End of Datasheet

TEMPERATURE SENSOR CALIBRATION FORM
NIST REFERENCE THERMOMETER TRANSFER CALIBRATION

Tolerance: +/- 1.5% of Absolute Temperature

Barometric Pressure, In. Hg: 29.44
Date: 01/16/2007
Reference Instrument Serial No.: 2890
Ambient Temperature, Deg. F: 68
Reference Instrument Serial No.: 2775
Calibrated By: JAJ
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	NIST Reference Instrument Temperature Degrees F	Transfer Instrument Temperature Degrees F	Temperature Difference Calculation Percent, %
-30 to 120 Deg. F Thermometer Serial Number F96-247					
100.022	1	Water Bath	32	32	0.00
	2	Water Bath	70	71	-0.19
	3	Water Bath	140	140	0.00
-5 to 400 Deg. C Thermometer Serial Number U38717					
100.024	1	Water Bath	80	26 Deg. C	0.22
	2	Water Bath	140	60 Deg. C	0.00
	3	Water Bath	200	92 Deg. C	0.36
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-124997 CEM					
100.025	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	500	0.00
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000338 Blue Team					
300.380	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	502	-0.21
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000347 Gold Team					
300.381	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	501	-0.10
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-148889 Grey Team					
100.026	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	250	0.00
	3	Tegam Calibrator	500	500	0.00
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-148841					
100.027	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	252	-0.28
	3	Tegam Calibrator	500	500	0.00
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000335 Lab					
300.382	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	250	0.00
	3	Tegam Calibrator	500	501	-0.10

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
NIST REFERENCE THERMOMETER TRANSFER CALIBRATION

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	NIST Reference Instrument Temperature Degrees F	Transfer Instrument Temperature Degrees F	Temperature Difference Calculation Percent, %
-120 to 2000 Deg. F Omega HH501 BK Pyrometer Serial Number 00000331					
300.383	1	Tegam Calibrator	32	32	0.00
	2	Tegam Calibrator	250	250	0.00
	3	Tegam Calibrator	500	499	0.10
-120 to 2000 Deg. F Omega HH25 KF Pyrometer Serial Number T-225752					
100.040	1	Tegam Calibrator	32	31	0.20
	2	Tegam Calibrator	250	251	-0.14
	3	Tegam Calibrator	500	499	0.10

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Omega HH-25 KF Dry Bulb - CEM					
100.025	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Oil Bath	375	375	0.00
Omega HH-25 KF Wet Bulb - CEM					
100.025	1	Water Bath	65	65	0.00
	2	Water Bath	135	134	0.17
	3	Oil Bath	374	374	0.00
Omega HH501 BK Dry Bulb - Blue Team					
300.380	1	Water Bath	65	65	0.00
	2	Water Bath	136	135	0.17
	3	Oil Bath	376	375	0.12
Omega HH501 BK Wet Bulb - Blue Team					
300.380	1	Water Bath	65	65	0.00
	2	Water Bath	134	135	-0.17
	3	Oil Bath	373	375	-0.24
Omega HH501 BK Dry Bulb - Gold Team					
300.381	1	Water Bath	65	65	0.00
	2	Water Bath	134	135	-0.17
	3	Oil Bath	375	375	0.00
Omega HH501 BK Wet Bulb - Gold Team					
300.381	1	Water Bath	65	65	0.00
	2	Water Bath	136	135	0.17
	3	Oil Bath	377	376	0.12
Omega HH-25 KF Dry Bulb - Grey Team					
100.026	1	Water Bath	64	65	-0.19
	2	Water Bath	134	135	-0.17
	3	Water Bath	374	375	-0.12
Omega HH-25 KF Wet Bulb - Grey Team					
100.026	1	Water Bath	65	65	0.00
	2	Water Bath	134	135	-0.17
	3	Water Bath	374	375	-0.12

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 01/16/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Omega HH501 BK Dry Bulb - Lab					
300.382	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	374	375	-0.12
Omega HH501 BK Wet Bulb - Lab					
300.382	1	Water Bath	65	65	0.00
	2	Water Bath	135	136	-0.17
	3	Water Bath	374	375	-0.12
Omega HH501 BK Dry Bulb					
300.383	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	375	375	0.00
Omega HH501 BK Wet Bulb					
300.383	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	375	375	0.00
Omega HH-25 KF Dry Bulb					
100.040	1	Water Bath	64	65	-0.19
	2	Water Bath	135	135	0.00
	3	Water Bath	375	376	-0.12
Omega HH-25 KF Wet Bulb					
100.040	1	Water Bath	65	65	0.00
	2	Water Bath	135	135	0.00
	3	Water Bath	376	375	0.12
High Temperature					
100.015	1	Water Bath	148	148	0.00
	2	Muffle Furnace	305	301	0.52
	3	Muffle Furnace	550	546	0.40
	4	Muffle Furnace	975	973	0.14

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1.12.2007
Ambient Temperature, Deg. F: 64
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Umbilical Adaptor #1					
300.030	1	Water Bath	33	33	0.00
	2	Water Bath	60	62	-0.38
	3	Water Bath	135	135	0.00
Umbilical Adaptor #2					
300.031	1	Water Bath	34	34	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	135	135	0.00
Umbilical Adaptor #3					
300.032	1	Water Bath	34	34	0.00
	2	Water Bath	61	62	-0.19
	3	Water Bath	132	132	0.00
Umbilical Adaptor #4					
300.042	1	Water Bath	33	34	-0.20
	2	Water Bath	62	62	0.00
	3	Water Bath	136	136	0.00
Umbilical Adaptor #5					
300.317	1	Water Bath	33	33	0.00
	2	Water Bath	60	60	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #6					
300.044	1	Water Bath	33	33	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #7					
300.134	1	Water Bath	33	33	0.00
	2	Water Bath	61	62	-0.19
	3	Water Bath	134	133	0.17
Umbilical Adaptor #8					
300.135	1	Water Bath	33	33	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	135	135	0.00

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1.12.2007
Ambient Temperature, Deg. F: 64
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Umbilical Adaptor #9					
300.207	1	Water Bath	34	34	0.00
	2	Water Bath	60	60	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #10					
300.208	1	Water Bath	37	37	0.00
	2	Water Bath	60	60	0.00
	3	Water Bath	135	135	0.00
Umbilical Adaptor #11					
300.216	1	Water Bath	34	34	0.00
	2	Water Bath	60	60	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #12					
300.217	1	Water Bath	35	35	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	135	135	0.00
Umbilical Adaptor #13					
300.264	1	Water Bath	33	33	0.00
	2	Water Bath	60	60	0.00
	3	Water Bath	135	135	0.00
Umbilical Adaptor #14					
300.295	1	Water Bath	37	37	0.00
	2	Water Bath	60	60	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #15					
300.296	1	Water Bath	34	34	0.00
	2	Water Bath	60	60	0.00
	3	Water Bath	134	134	0.00
Umbilical Adaptor #16					
300.320	1	Water Bath	34	33	0.20
	2	Water Bath	60	60	0.00
	3	Water Bath	135	135	0.00

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1.12.2007
Ambient Temperature, Deg. F: 64
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
Umbilical Adaptor #17					
300.319	1	Water Bath	33	33	0.00
	2	Water Bath	62	61	0.19
	3	Water Bath	135	135	0.00
Umbilical Adaptor #18					
300.318	1	Water Bath	33	33	0.00
	2	Water Bath	62	61	0.19
	3	Water Bath	135	135	0.00
Umbilical Adaptor #19					
300.043	1	Water Bath	34	34	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	133	133	0.00
Umbilical Adaptor #20					
300.345	1	Water Bath	34	34	0.00
	2	Water Bath	61	61	0.00
	3	Water Bath	135	135	0.00
Umbilical Adaptor #21					
300.346	1	Water Bath	33	33	0.00
	2	Water Bath	62	63	-0.19
	3	Water Bath	134	134	0.00

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1.16.2007
Ambient Temperature, Deg. F: 70
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
DGM Inlet/Outlet					
300.035	1	Ambient Air	35	35	0.00
	2	Ambient Air	65	65	0.00
	3	Ambient Air	83	84	-0.18
DGM Inlet/Outlet		Ambient Air			
300.045	1	Ambient Air	36	36	0.00
	2	Ambient Air	68	69	-0.19
	3	Ambient Air	86	86	0.00
DGM Inlet/Outlet					
300.200	1	Ambient Air	34	35	-0.20
	2	Ambient Air	67	69	-0.38
	3	Ambient Air	84	85	-0.18
DGM Inlet/Outlet					
300.214	1	Ambient Air	35	36	-0.20
	2	Ambient Air	64	65	-0.19
	3	Ambient Air	84	86	-0.37
DGM Inlet/Outlet					
300.241	1	Ambient Air	34	35	-0.20
	2	Ambient Air	65	65	0.00
	3	Ambient Air	83	84	-0.18
DGM Inlet/Outlet					
300.310	1	Ambient Air	35	35	0.00
	2	Ambient Air	66	65	0.19
	3	Ambient Air	86	86	0.00
DGM Inlet/Outlet					
300.321	1	Ambient Air	36	36	0
	2	Ambient Air	66	65	0.19
	3	Ambient Air	85	85	0
DGM Inlet/Outlet					
300.388	1	Ambient Air	35	36	-0.20
	2	Ambient Air	64	65	-0.19
	3	Ambient Air	84	85	-0.18

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1.16.2007
Ambient Temperature, Deg. F: 70
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
DGM Inlet/Outlet					
300.390	1	Ambient Air	35	35	0.00
	2	Ambient Air	65	65	0.00
	3	Ambient Air	85	85	0.00
DGM Inlet/Outlet					
300.392	1	Ambient Air	35	36	-0.20
	2	Ambient Air	67	69	-0.38
	3	Ambient Air	85	85	0.00
Last Annual Cal. Data					
DGM Body Bimetallic Thermometer					
400.030	1	Water Bath	34	34	0.00
	2	Water Bath	64	64	0.00
	3	Water Bath	121	120	0.17
DGM Body Thermocouple					
400.032	1	Water Bath	34	34	0.00
	2	Water Bath	66	67	-0.19
	3	Water Bath	94	94	0.00
DGM Inlet/Outlet					
400.050	1	Water Bath	33	34	-0.20
	2	Water Bath	68	68	0.00
	3	Water Bath	108	109	-0.18

Source = Type of calibration system used.

TEMPERATURE SENSOR CALIBRATION FORM
THERMOCOUPLES

Tolerance: +/- 1.5% of Absolute Temperature

Date: 1/5/2007
Ambient Temperature, Deg. F: 68
Calibrated By: JAJ

Barometric Pressure, In. Hg: 29.44
Reference Instrument Serial No.: 2890
Reference Instrument Serial No.: 2775
Tegam NIST Calibrator Serial No.: T-207319

Thermocouple ID No.	Reference Point	Source	Reference Thermometer Temperature Degrees F	Thermocouple Potentiometer Temperature Degrees F	Temperature Difference Calculation Percent, %
8' Probe					
200.041	1	Water Bath	66	66	0.00
	2	Water Bath	160	156	0.65
	3	Oil Bath	370	371	-0.12
8' Probe					
200.045	1	Water Bath	66	66	0.00
	2	Water Bath	161	160	0.16
	3	Oil Bath	380	380	0.00
8' Probe					
200.108	1	Water Bath	65	65	0.00
	2	Water Bath	157	159	-0.32
	3	Oil Bath	375	374	0.12
8' Probe					
200.109	1	Water Bath	65	65	0.00
	2	Water Bath	161	160	0.16
	3	Oil Bath	377	375	0.24
9' Probe					
200.363	1	Water Bath	67	66	0.19
	2	Water Bath	165	160	0.80
	3	Oil Bath	361	366	-0.61
9' Probe					
200.101	1	Water Bath	67	66	0.19
	2	Water Bath	156	157	-0.16
	3	Oil Bath	366	371	-0.61

Source = Type of calibration system used.

Temperature Difference Calculation:

$$\frac{\text{(Ref. Temp. Deg. F + 460) - (Test Temp. Deg. F + 460)}}{\text{Ref. Temp. Deg. F + 460}} \times 100 = <1.5\%$$

TYPE "S" PITOT TUBE CALIBRATION FORM

Date: 01/05/07

Calibrator: JAJ

Specifications:

A.) Pitot tube assembly must be level.

B.) If pitot tube is damaged explain under comments section.

C.) $Z = A \sin \gamma$ (<0.125) and $W = A \sin \theta$ (<0.03125)

D.) $\alpha < 10°$ and $\beta < 5°$

Probes w/ Pitot Tubes

I.D. Length	α1°	α2°	β1°	β2°	γ°	θ°	Z, in.	W, in.	A	PA, in.	PB, in.	Dt, in.	Pass/Fail
200.021 2'	2.0	1.0	1.0	0.0	1.0	0.0	0.018	0.00000	1.040	0.520	0.520	0.338	Pass
200.063 2'	1.0	2.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.935	0.468	0.467	0.371	Pass
200.569 2'	1.0	2.0	3.0	2.0	3.0	1.0	0.049	0.01639	0.939	0.470	0.469	0.373	Pass
200.074 2'	1.0	0.0	0.0	0.0	1.0	0.0	0.016	0.00000	0.928	0.464	0.464	0.370	Pass
200.669 2'	1.0	2.0	3.0	2.0	3.0	0.0	0.048	0.00000	0.924	0.462	0.462	0.371	Pass
200.300 2'	1.0	0.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.631	0.316	0.315	0.244	Pass
200.004 3'	2.0	2.0	2.0	2.0	3.0	1.0	0.050	0.01682	0.964	0.482	0.482	0.373	Pass
200.005 3'	0.0	2.0	0.0	0.0	1.0	0.0	0.016	0.00000	0.928	0.464	0.464	0.380	Pass
200.015 3'	2.0	1.0	1.0	1.0	1.0	0.0	0.016	0.00000	0.927	0.464	0.463	0.367	Pass
200.017 3'	1.0	1.0	1.0	2.0	1.0	0.0	0.017	0.00000	0.995	0.498	0.497	0.373	Pass
200.066 3'	1.0	1.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.983	0.492	0.491	0.368	Pass
200.075 3'	1.0	1.0	1.0	0.0	1.0	0.0	0.016	0.00000	0.913	0.457	0.456	0.373	Pass
200.076 3'	1.0	1.0	1.0	1.0	2.0	1.0	0.032	0.01604	0.919	0.460	0.459	0.355	Pass
200.079 3'	1.0	1.0	2.0	1.0	2.0	1.0	0.032	0.01585	0.908	0.454	0.454	0.372	Pass
200.080 3'	1.0	2.0	1.0	1.0	0.0	1.0	0.000	0.01222	0.700	0.350	0.350	0.120	Pass
200.297 3'	2.0	2.0	1.0	1.0	0.0	0.0	0.000	0.00000	0.868	0.434	0.434	0.240	Pass
200.008 5'	0.0	1.0	0.0	1.0	1.0	0.0	0.016	0.00000	0.929	0.465	0.464	0.384	Pass
200.034 5'	0.0	1.0	1.0	2.0	0.0	0.0	0.000	0.00000	0.991	0.496	0.495	0.376	Pass
200.056 5'	2.0	1.0	3.0	1.0	2.0	0.0	0.031	0.00000	0.878	0.439	0.439	0.385	Pass
200.061 5'	2.0	1.0	3.0	1.0	2.0	1.0	0.020	0.00995	0.570	0.285	0.285	0.251	Pass
200.104 5'	1.0	1.0	2.0	1.0	2.0	1.0	0.035	0.01726	0.989	0.495	0.494	0.366	Pass
200.105 5'	1.0	1.0	1.0	1.0	0.0	0.0	0.000	0.00000	0.932	0.466	0.466	0.386	Pass
200.106 5'	2.0	0.0	1.0	3.0	1.0	0.0	0.016	0.00000	0.919	0.460	0.459	0.383	Pass
200.107 5'	1.0	0.0	2.0	1.0	0.0	1.0	0.000	0.01613	0.924	0.462	0.462	0.277	Pass
200.024 6'	1.0	0.0	1.0	2.0	1.0	0.0	0.010	0.00000	0.556	0.278	0.278	0.376	Pass
200.113 7'	1.0	1.0	1.0	1.0	2.0	0.0	0.029	0.00000	0.829	0.415	0.414	0.375	Pass
200.115 7'	2.0	0.0	0.0	2.0	2.0	1.0	0.032	0.01620	0.928	0.464	0.464	0.376	Pass
200.114 7'	2.0	0.0	0.0	2.0	3.0	0.0	0.048	0.00000	0.919	0.460	0.459	0.363	Pass
200.399 7'	4.0	4.0	2.0	3.0	1.0	1.0	0.016	0.01555	0.891	0.446	0.445	0.388	Pass
200.010 7'	2.0	2.0	1.0	1.0	2.0	1.0	0.033	0.01646	0.943	0.472	0.471	0.376	Pass
200.011 7'	1.0	1.0	2.0	0.0	1.0	0.0	0.016	0.00000	0.925	0.463	0.462	0.379	Pass
200.012 7'	2.0	1.0	1.0	2.0	1.0	0.0	0.016	0.00000	0.941	0.471	0.470	0.361	Pass
200.093 7'	0.0	1.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.931	0.466	0.465	0.386	Pass
200.094 7'	1.0	1.0	2.0	1.0	1.0	0.0	0.016	0.00000	0.925	0.463	0.462	0.385	Pass
200.041 8'	2.0	1.0	2.0	1.0	1.0	0.0	0.017	0.00000	1.000	0.500	0.500	0.376	Pass
200.045 8'	0.0	0.0	0.0	0.0	2.0	0.0	0.035	0.00000	1.000	0.500	0.500	0.378	Pass
200.108 8'	0.0	0.0	1.0	1.0	0.5	0.0	0.008	0.00000	0.934	0.467	0.467	0.379	Pass
200.109 8'	0.0	0.0	0.5	0.5	0.5	1.0	0.008	0.01632	0.935	0.468	0.467	0.375	Pass
200.363 9'	1.0	1.0	0.0	1.0	1.0	0.0	0.005	0.00000	0.300	0.150	0.150	0.379	Pass
200.101 9'	1.0	1.0	1.0	1.0	2.0	0.0	0.027	0.00000	0.779	0.390	0.389	0.384	Pass
200.013 10'	0.0	1.0	1.0	0.0	0.0	0.0	0.000	0.00000	0.914	0.457	0.457	0.374	Pass
200.014 10'	2.0	0.0	2.0	2.0	2.0	0.0	0.032	0.00000	0.926	0.463	0.463	0.379	Pass
200.050 12'	0.0	1.0	1.0	1.0	2.0	1.0	0.033	0.01642	0.941	0.471	0.470	0.363	Pass
200.051 12'	1.0	1.0	2.0	2.0	1.0	0.0	0.017	0.00000	0.968	0.484	0.484	0.379	Pass
200.052 12'	1.0	1.0	1.0	2.0	1.0	0.0	0.016	0.00000	0.895	0.448	0.447	0.371	Pass
200.053 12'	2.0	1.0	1.0	2.0	2.0	0.0	0.031	0.00000	0.895	0.448	0.447	0.356	Pass
200.098 14'	1.0	1.0	2.0	2.0	1.0	1.0	0.016	0.01639	0.939	0.470	0.469	0.382	Pass
200.099 14'	2.0	2.0	1.0	1.0	1.0	1.0	0.016	0.01621	0.929	0.465	0.464	0.386	Pass
200.091 17'	1.0	1.0	1.0	2.0	0.0	0.0	0.000	0.00000	0.974	0.487	0.487	0.373	Pass
200.092 17'	2.0	1.0	1.0	1.0	0.0	0.0	0.000	0.00000	0.932	0.466	0.466	0.376	Pass
200.110 17'	1.0	0.0	1.0	2.0	1.0	1.0	0.016	0.01649	0.945	0.473	0.472	0.376	Pass
200.111 17'	1.0	1.0	2.0	2.0	2.0	1.0	0.033	0.01627	0.932	0.466	0.466	0.362	Pass

Comments: Pitot tubes required only minor maintenance & reconditioning

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If you're not already using the accepted standard for water quality testing, here's an opportunity to evaluate samples of Whatman 934-AH.

Whatman grade 934-AH is a smooth-surfaced, high retention glass microfibre filter intended for routine filtrations and water quality testing. These filters are produced entirely from the highest grade of borosilicate glass microfibres, are binder free and will withstand temperatures over 500°C.

Whatman glass microfibre filters offer a special combination of advantages, providing high filtration speed with retention of extremely fine particulates.

So if you're not using Whatman 934-AH, here's an opportunity to start. Just write on your letterhead, specifying the diameter you require and mail to:

Whatman Inc.
9 Bridewell Place
Clifton, New Jersey 07014

For technical inquires on
Whatman Grade 934-AH
CALL TOLL FREE: (800) 922-0361
in New Jersey call (201) 773-5800

WHATMAN 934-AH

Availability: Circles — 100 per Box

CATALOG NUMBER	DIAMETER (CM)	PRICE/BOX
1827-021	2.1	$ 6.60
1827-024	2.4	7.30
1827-032	3.2	8.70
1827-037	3.7	9.45
1827-042	4.25	10.50
1827-055	5.5	13.85
1827-070	7.0	17.30
1827-090	9.0	22.85
1827-110	11.0	32.25
1827-125	12.5	39.60
1827-150	15.0	51.85

TECHNICAL CHARACTERISTIC

Weight (gsm)	
Thickness (mm)	0.
Retention (μm)	1
[1]Filtration Speed (sec/100 ml)	
DOP Penetration (0.3μm Particle)	0.02
Minimum Dry Tensil (g/1.5cm width)	3
Minimum Wet Burst (psi)	0.
Surface	Smoo

[1]Herzberg test at 10 cm hydrostatic head.

Whatman®

F:\GROUPS\METROLOG\Calculat\[1DOUBLESUS2005.XLS]Single Double Substitution — Spreadsheet updated 01/31/2005

DOUBLE SUBSTITUTION WORKSHEET

NC Test No:	NC0105W040
Company Name:	Trigon Engineering Consultants
Address:	6200 Harris Technology
City, State, ZIP	Charlotte, NC 28269
Representative:	Paul Jenkins
Metrologist:	Woodard

Initial Parameters

Date:	23 Feb 2005	
ID of Balance Used:	CC6 - g	Sartorius CC6 - g wts
Control Reading No:	4	
Balance Std Dev:(mg)	0.000544131	

Unknown Weight (X)

Description:	500 mg		
Nominal Mass(g):	0.5		
Serial:	none		
Assumed Density(g/cc):	7.95	Density Uncertainty(g/cc):	0.05

Air Density Data

Barometric Pressure:	754.88	mmHG
Temperature:	22.16	°C
Relative Humidity:	41.60	%
Calculated Air Density:	1.182638	mg/cm³

Environmental Standards Used

PTB200 (Sm Mass) sn R1730006
1560 Hart (Sm Mass) sn: 74211
HMP233 (Sm Mass) sn R1140031
0.001183 g/cm³

Standard(s) Used (S)

Weight ID	Mass (g)	Unc (mg)	Density (g/cm³)	Nominal (g)	Corr (mg)
500 mg np	0.50001942	0.00085	7.9247	0.5	0.01942
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
Summation Values:	0.50001942	0.00085	7.9247	0.5	0.01942

Sensitivity Weight Used (sw)

Weight ID	Mass (g)	Unc (mg)	Density (g/cm³)	Nominal (g)	Corr (mg)
10 mg NCDA 249	0.00998263	0.00043	7.95	0.01	-0.01737

Tare Weights (S)

Weight ID	Mass (g)	Unc (mg)	Density (g/cm³)	Nominal (g)	Corr (mg)
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
Summation Values:	0	0	1	0	0

Tare Weights (X)

Weight ID	Mass (g)	Unc (mg)	Density (g/cm³)	Nominal (g)	Corr (mg)
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
Summation Values:	0	0	1	0	0

Double Substitution Observations (x-s)

	First
O_1 (X)	-260
O_2 (S)	2
O_3 (S+sw)	99820
O_4 (X+sw)	99560
D: (mg)	-0.026098287

Validity Tests -> $|O_2-O_1-O_3+O_4|$
Reading Status (DS #1): 2 PASS

****** Calculated Mass Values ******		****** Calculated Mass Corrections ******			***** Expanded Uncertainties *****	
D Avg (mg):	-0.026098287				Calculated per NIST Tech Note 1297 (1994 edition)	
Mass of X (g):	0.4999931	Mass Corr of X:	-0.0069	mg	Mass Unc: 0.0024	mg
CM of $X_{vs\ 8.0}$ (g):	0.4999926	CM Corr of $X_{vs\ 8.0}$:	-0.0074	mg	CMx Unc: 0.0020	mg
Density (g/cm³ @ 20°C):	7.95				k: 2	95% CI

Unrounded Calculated values:

D Avg:	-2.60983E-05	g
Mass of X:	0.49999308	g
CM of $X_{vs\ 8.0}$:	0.499992609	g
Density of X:	7.95	g/cm³ @ 20°C

3/4 ASTM Class 4 Tol = 0.12 mg

Equations Used for Mass and Conventional Mass

F:\GROUPS\METROLOG\Calculat\[1DOUBLESUB2005.XLS]Single Double Substitution — Spreadsheet updated 01/31/2005

DOUBLE SUBSTITUTION WORKSHEET

NC Test No:	NC0105W040
Company Name:	Trigon Engineering Consultants
Address:	6200 Harris Technology
City, State, ZIP	Charlotte, NC 28269
Representative:	Paul Jenkins
Metrologist:	Woodard

Initial Parameters

Date:	23 Feb 2005	
ID of Balance Used:	CC6 - mg	Sartorius CC6 - mg wts
Control Reading No:	4	
Balance Std Dev:(mg)	0.000258042	

Unknown Weight (X)

Description:	100 mg		
Nominal Mass(g):	0.1		
Serial:	none		
Assumed Density(g/cc):	7.95	Density Uncertainty(g/cc):	0.05

Air Density Data

Barometric Pressure:	754.89	mmHG
Temperature:	22.10	°C
Relative Humidity:	41.70	%
Calculated Air Density:	1.182896	mg/cm³

Environmental Standards Used

PTB200 (Sm Mass) sn R1730006
1560 Hart (Sm Mass) sn: 74211
HMP233 (Sm Mass) sn R1140031
0.001183 g/cm³

Standard(s) Used (S)

Weight ID	Mass (g)	Unc (mg)	Density (g/cm³)	Nominal (g)	Corr (mg)
100 mg np	0.10000877	0.00063	7.9247	0.1	0.00877
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
Summation Values:	0.10000877	0.00063	7.9247	0.1	0.00877

Sensitivity Weight Used (sw)

Weight ID	Mass (g)	Unc (mg)	Density (g/cm³)	Nominal (g)	Corr (mg)
10 mg NCDA 249	0.00998263	0.00043	7.95	0.01	-0.01737

Tare Weights (S)

Weight ID	Mass (g)	Unc (mg)	Density (g/cm³)	Nominal (g)	Corr (mg)
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
Summation Values:	0	0	1	0	0

Tare Weights (X)

Weight ID	Mass (g)	Unc (mg)	Density (g/cm³)	Nominal (g)	Corr (mg)
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
Summation Values:	0	0	1	0	0

Double Substitution Observations (x-s)

Validity Tests -> $|O_2-O_1-O_3+O_4|$

	First	
O_1 (X)	-105	
O_2 (S)	5	
O_3 (S+sw)	99821	
O_4 (X+sw)	99713	
D: (mg)	-0.010899503	
Reading Status (DS #1):	2	PASS ✓

****** Calculated Mass Values ******		****** Calculated Mass Corrections ******			***** Expanded Uncertainties *****
D Avg (mg):	-0.010899503				Calculated per NIST Tech Note 1297 (1994 edition)
Mass of X (g):	0.09999782	Mass Corr of X:	-0.00218	mg	Mass Unc: 0.0012 mg
CM of $X_{vs\ 8.0}$ (g):	0.09999773	CM Corr of $X_{vs\ 8.0}$:	-0.00227	mg ✓	CMx Unc: 0.0010 mg
Density (g/cm³ @ 20°C):	7.95				k: 2 95% CI

3/4 ASTM Class 4 Tol = 0.075mg

Unrounded Calculated values:

D Avg:	-1.08995E-05 g
Mass of X:	0.099997821 g
CM of $X_{vs\ 8.0}$:	0.099997727 g
Density of X:	7.95 g/cm³ @ 20°C

Equations Used for Mass and Conventional Mass

APEX INSTRUMENTS WET TEST METER AUDIT USING BELL PROVER

BELL PROVER ID# 157

3-POINT ENGLISH UNITS

Wet Test Meter Information	
Model Number	AL-20
Serial Number	11088

Calibration Conditions			
Date	Time	17-Aug-06	14:00
Barometric Pressure		29.75	in Hg
Calibration Technician		WCC	
Calibration Meter Gamma		1.0000	unitless

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

Calibration Data

Run Time	Wet Test Meter						Bell Prover				
Elapsed	ΔH	Volume Initial	Volume Final	Sample Volume	Outlet Temp Initial	Outlet Temp Final	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Pressure ΔH
(Θ)	(P_{wm})	(V_{wi})	(V_{wf})	(V_m)	(t_{wi})	(t_{wf})	(Vbp_i)	(Vbp_f)	(t_{bpi})	(t_{bpf})	(P_{bp})
min	in H_2O	cubic feet	cubic feet	cubic feet	°F	°F	cubic feet	cubic feet	°F	°F	in H_2O
3.00	0.000	5775.155	5776.163	1.008	80.5	80.5	0.000	1.000	81.5	81.5	3.00
3.00	0.000	5776.163	5777.170	1.007	80.5	80.5	1.000	2.000	81.5	81.5	3.00
6.00	0.000	5777.170	5779.188	2.017	80.5	80.5	0.000	2.000	81.5	81.5	3.00

Results

Standardized Data				Final Results	
				Calibration Factor	
Wet Test Meter		Bell Prover		Value	Variation
($Vw_{(std)}$)	($Qw_{(std)}$)	($V_{bp(std)}$)	($Q_{bp(std)}$)	(Y)	(ΔY)
cubic feet	cfm	cubic feet	cfm		
0.9786	0.326	0.9767	0.326	0.9981	0.000
0.9786	0.326	0.9767	0.326	0.9981	0.000
1.9596	0.327	1.9534	0.326	0.9968	-0.001
				0.9977	Y Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

Note: For $\Delta H_@$, orifice pressure differential that equates to 0.75cfm (0.0212m^3/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is +-0.2inches (5.1mm) H_2O

I certify that the above Wet Test Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using Bell Prover #157, which is traceable to the National Bureau of Standards (N.I.S.T).

Signature _____ Date 8/17/06

PRE- ST / POST-TEST CALIBRATION ATA FORM

Client TECO City/State Tampa FL

Pre-test Date 3/2/07 Calibrator DD Post-test Date 3/26/07 Calibrator DD

Reference Thermometer 2890 Reference Barometer Lab

	Pre-test		Post-test	
	Temperature , ° F	Ref. Temp, ° F	Temperature ° F	Ref. Temp. ° F
Omega Red Team DB/WB #100.025				
Omega Green Team DB/WB #100.031				
Omega Blue Team DB/WB #100.017	67	68	67	68
Omega Gold Team DB/WB #100.032				
Omega Grey Team DB/WB #100.033				
Omega CEM DB/WB #100.026				
Dry Gas Meter #300.035				
Dry Gas Meter #300.045				
Dry Gas Meter #300.067				
Dry Gas Meter #300.100				
Dry Gas Meter #300.200				
Dry Gas Meter #300.214				
Dry Gas Meter #300-241				
Dry Gas Meter #300.248				
Dry Gas Meter ~~#300.310~~ 300.390	65	68	69	71
Dry Gas Meter ~~#300.021~~ 300.388	66	68	69	71
Dry Gas Meter Inlet/Outlet				
Umbilical Adaptor # 3 #300. 032	67	68	68	71
Umbilical Adaptor # 5 #300. 317	68	68	69	71
Umbilical Adaptor # #300.				
Umbilical Adaptor # #300.				
Umbilical Adaptor # #300.				
Umbilical Adaptor # #300.				
Probe #200. 108	67	69	69	70
Probe #200. 109	68	69	70	70
Probe #200.				
Probe #200.				
Probe #200.				
Probe #200.				
Pitot #200.				
Pitot #200.				
	Field Baro., in. Hg	Ref. Baro.,in Hg	Field Baro., in. Hg	Ref. Baro.,in Hg
Barometer Red Team #600.001	29.80			
Barometer Green Team #600.014				
Barometer Blue Team #600.010				
Barometer Gold Team #600.021(D)				
Barometer CEM #600.020(D)	29.63	29.68	29.50	29.54

Were safety checks performed during the pre-site reviews ☑ Yes ☐ No

Were post-test calibrations within the specified EPA Quality Assurance criteria? ☑ Yes ☐ No

TRIGON

APPENDIX DD

SULFURIC ACID MIST TEST DATA – SULFURIC ACID PLANT

FIELD DATA SHEETS

ISOKINETIC FIELD DATA SHEET

Plant	Polk	Run No.	1	Dry Gas Meter Volume	
Location	SAP	Nozzle I.D. No.	SN 74	Final	1025.065 Ft³
Date	3/23/07	Nozzle Diameter	.489	Initial	977.471 Ft³
Method No.	1/RM8	Pitot Tube No.	PT 05	Net	47.594 Ft³
Box Operator	SET	Pitot Tube (C_p)	.84		
Probe Operator	CB	Probe Length	8'	Equipment Leak Checks	
Time - Start:	10:10 End: 11:21	Probe Liner Material	Glass	Initial	0 CFM @ 15 "Hg
Sampling Time	64	Pressure	Pb ("Hg): 29.96 Pg ("H2O):	Final	0 CFM @ 12 "H2O
Min. \ Pt.	4	Assumed Moisture (%)	1	Pitot Tube	0 @ 2.5 "H2O
Meter Box No.	07	Filter Holder No.	1		
Pyrometer No.	09	Comments		Moisture Determination	
Barometer No.	08	Start	Imp#1 200 Imp#2 100 Imp#3 100	Impinger	-22 ml
Meter Cal (Δ H)	1.737	Finish	Imp#1 170 Imp#2 124 Imp#3 114	Silica Gel	21.3 gm
Meter Cal (Δ Y)	0.986	O_2 7.4	CO_2 18.8	Total	-0.7

	Traverse Point No.	Clock Time AST	Gas Sample Volume (Ft³)	Stack Temp. Ts (°F)	Meter Temp. (°F)	Δ P (In. H_2O)	Δ H (In H_2O)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In Hg)	Um
0	1	10:10	977.471	153	74	.025	1.29	200		68	6	200
4	2		980.09	154	74	.021	1.07	200		60	5	200
8	3		982.350	156	74	.020	1.01	196		56	5	200
12	4		984.61	159	74	.018	.91	196		56	4	200
16	5		986.755	161	75	.038	1.91	197		56	8	200
20	6		989.78	157	75	.039	1.98	200		54	8	200
24	7		992.88	156	75	.040	2.03	197		54	8	200
28	8		996.03	154	75	.042	2.14	196		55	9	200
32	END	10:43	999.287									
0	1	10:49	999.287	153	76	.030	1.53	196		62	6	200
4	2		1002.06	154	76	.034	1.73	191		58	7	200
8	3		1004.92	154	77	.035	1.79	193		58	8	200
12	4		1007.90	155	77	.038	1.941	197		58	8	200
16	5		1011.01	157	77	.048	2.44	194		60	10	205
20	6		1014.50	156	77	.049	2.50	192		60	11	206
24	7		1018.02	156	77	.049	2.50	195		61	11	205
28	8		1021.515	156	78	.048	2.45	190		63	11	206
32	END	11:21	1025.065									

Quality Assurance / Quality Control Information

Console Operator Signature: Scott A — Date: 3/23/07

Complete: ✓ Legible: ✓ Accurate: ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: [signature] Title: QA/QC Date: 3/28/2007

ISOKINETIC FIELD DATA SHEET

Plant	Pollc	Run No.	2	Dry Gas Meter Volume	
Location	SAP	Nozzle I.D. No.	SN 74	Final	1025.392 Ft.³
Date	3/23/07	Nozzle Diameter	.489	Initial	1025.687 Ft.³
Method No.	1 CMG	Pitot Tube No.	PT05	Net	49.705 Ft.³
Box Operator	SEG	Pitot Tube (C_p)	.84		
Probe Operator	GB	Probe Length	8'	Equipment Leak Checks	
Time - Start:	11:43 End: 12:53	Probe Liner Material	Glass	Initial	0 CFM @ 15 "Hg
Sampling Time	64	Pressure	Pb ("Hg): 29.90 Pg ("H2O):	Final	0 CFM @ 15 "H2O
Min.\Pt	4	Assumed Moisture (%)	1	Pitot Tube	0 @ 4 "H2O
Meter Box No.	07	Filter Holder No.	2		
Pyrometer No.	05	Comments		Moisture Determination	
Barometer No.	08	Start	Imp#1 200 Imp#2 100 Imp#3 100	Impinger	-35 ml
Meter Cal. (ΔH)	1.737	Finish	Imp#1 128 Imp#2 120 Imp#3 117	Silica Gel	24.4 gm
Meter Cal. (ΔY)	0.984	O_2 7.3	CO_2 18.8	Total	-10.1

	Traverse Point No.	Clock Time	Gas Sample Volume (Ft³)	Stack Temp Ts (°F)	Meter Temp. (°F)	Δ P (In. H_2O)	Δ H (In. H_2O)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (In. Hg)	UM
0	1	11:43	1025.687	154	78	.035	1.79	185		66	10	193
4	2		1028.54	154	78	.038	1.95	187		65	10	191
8	3		1031.70	156	77	.028	1.43	190		63	8	188
12	4		1034.39	158	78	.020	1.02	193		62	6	188
16	5		1036.85	161	78	.042	2.13	197		65	10	189
20	6		1039.98	156	78	.049	2.50	198		64	12	191
24	7		1043.465	156	78	.039	1.99	198		65	10	193
28	8		1046.66	155	78	.038	1.94	198		66	10	197
32	END	12:16	1049.255	~~[illegible]~~	~~79~~			~~199~~		~~66~~		~~198~~
0	1	12:20	1049.755	155	79	.025	1.28	190		68	6	200
4	2		1052.27	154	79	.038	1.95	197		68	10	198
8	3		1055.35	155	80	.037	1.90	198		66	10	196
12	4		1058.425	156	80	.043	2.20	194		65	10	194
16	5		1061.70	156	80	.043	2.20	197		67	11	195
20	6		1065.0	156	80	.049	2.51	192		66	13	195
24	7		1068.42	157	80	.049	2.51	193		67	13	195
28	8		1071.90	157	80	.049	2.51	196		67	13	196
32	End	12:53	1075.392									

Quality Assurance / Quality Control Information

Console Operator Signature: Scott [signature] Date: 3/23/07

Complete: ✓ Legible: ✓ Accurate: ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: [signature] Title: QA/QC Date: 3/30/2007

ISOKINETIC FIELD DATA SHEET

Plant	PolC	Run No.	3	Dry Gas Meter Volume	
Location	SAP	Nozzle I.D. No.	SN 74	Final	1125.961 Ft.³
Date	3/23/07	Nozzle Diameter	.484	Initial	1075.750 Ft.³
Method No.	RM8	Pitot Tube No.	NTO5	Net	50.211 Ft.³
Box Operator	SEQ	Pitot Tube (C_p)	.84		
Probe Operator	CB	Probe Length	8'	Equipment Leak Checks	
Time - Start:	13:12 End: 14:21	Probe Liner Material	Glass	Initial	0 CFM @ 15 "Hg
Sampling Time	64	Pressure	Pb ("Hg): 29.96 Pg ("H2O):	Final	0 CFM @ 17 "H2O
Min./ Pt.	4	Assumed Moisture (%)	1	Pitot Tube	OK "H2O
Meter Box No.	C7	Filter Holder No.	7	Moisture Determination	
Pyrometer No.	C9	Comments		Impinger	-15 ml
Barometer No.	C8	Start	Imp#1 200 Imp#2 100 Imp#3 100	Silica Gel	29.4 gm
Meter Cal. (ΔH)	1.737	Finish	Imp#1 116 Imp#2 125 Imp#3 114	Total	4.4
Meter Cal. (ΔY)	0.986	O_2 6.30	CO_2 14.40		

	Traverse Point No.	Clock Time	Gas Sample Volume (Ft^3)	Stack Temp Ts (°F)	Meter Temp. (°F)	Δ P (in H_2O)	Δ H (in. H_2O)	Probe Temp. (°F)	Filter Box Temp. Tm (°F)	Last Imp. Temp. (°F)	Vacuum (in. Hg)	UM
0	1	1:12	1075.750	150	81	.0245	1.27	191		68	8	195
4	2		1078.36	157	81	.029	1.49	195		67	8	193
8	3		1081.55	158	81	.0255	1.30	198		58	8	188
12	4		1083.665	160	81	.033	1.68	211		57	9	188
16	5		1086.50	158	82	.047	2.41	198		55	14	190
20	6		1089.96	156	81	.049	2.51	198		57	15	190
24	7		1093.42	157	82	.049	2.51	197		55	15	192
28	8		1096.91	156	81	.047	2.41	198		57	15	192
32	END	1:45	1100.410									
0	1	1:49	1100.410	150	81	.027	1.40	186		60	8	195
4	2		1103.02	150	81	.036	1.87	187		60	11	195
8	3		1106.08	155	82	.036	1.85	194		58	11	193
12	4		1109.150	158	81	.045	2.30	190		57	14	193
16	5		1112.785	159	82	.042	2.15	194		58	14	193
20	6		1115.80	160	82	.048	2.45	198		60	15	194
24	7		1119.27	157	82	.041	2.10	193		60	15	195
28	8		1122.615	156	83	.043	2.21	194		61	14	196
32	END	2:21	1125.961									

Quality Assurance / Quality Control Information

Console Operator Signature: Date: 03/23/07

Complete: ✓ Legible: ✓ Accurate: ✓ Project Scope: ✓ Reasonableness: ✓

Reviewer's Signature: Title: QA/QC Date: 3/28/2007

CALCULATED DATA

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 1
Date: 03/23/07

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.489 inches
Barometric Pressure, P_b:	29.90 "Hg	Nozzle Area, A_n:	0.00130412 ft^2
Stack Pressure, P_s:	29.97 "Hg	Average Orifice Meter,ΔH:	1.824 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	47.594 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	75.7 °F
Gas Analysis:	18.8 % CO_2	Average Stack Temp., T_s:	155.7 °F
	7.4 % O_2	Average $\sqrt{\Delta p}$:	0.187 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	0.0 ml
	73.8 % N_2	Meter Box Y:	0.986 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.000 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	46.431 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.000 %
$FDA = 1.0 - B_{ws}$	1.000 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%CO))$	31.30 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.30 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460)} / (M_s \times P_s))$	10.89 ft/second
$Q_s = v_s \times A_s \times 60$	18481.5 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	15877.7 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s \times 60)$	99.1 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.01018
Volume Titrant Blank, V_{tb}	0.05
Volume Titrant Sample, V_t	1.2
Volume of Sample Aliquot, V_a	10
Total Volume of Solution, V_{soln}	500

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1852.75628	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.5943635	%
Tons of Acid Produced During The Test Period,	P_{st}	13.3131909	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	15877.7	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes
$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$		1.363E-06	lbs/dscf
Calculated H_2SO_4 Emission Rate,	**E=**	**0.10402**	lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

TECO
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40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 2
Date: 03/23/07

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.489 inches
Barometric Pressure, P_b:	29.90 "Hg	Nozzle Area, A_n:	0.00130412 ft^2
Stack Pressure, P_s:	29.97 "Hg	Average Orifice Meter, ΔH:	1.987 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	49.702 ft^3
Pitot Coefficient, Cp:	0.84 *dimensionless*	Average Meter Temp., T_m:	78.8 °F
Gas Analysis:	18.8 % CO_2	Average Stack Temp., T_s:	156.0 °F
	7.3 % O_2	Average $\sqrt{\Delta p}$:	0.196 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	0.0 ml
	73.9 % N_2	Meter Box Y:	0.986 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.000 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	48.225 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.000 %
$FDA = 1.0 - B_{ws}$	1.000 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \%\ CO))$	31.30 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.30 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460) / (M_s \times P_s)})$	11.40 ft/second
$Q_s = v_s \times A_s \times 60$	19333.9 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	16601.6 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	98.4 %

Data from Laboratory Analysis:	H_2SO_4
Normality of Barium Chloride titrant, N	0.01018
Volume Titrant Blank, V_{tb}	0.05
Volume Titrant Sample, V_t	1.2
Volume of Sample Aliquot, V_a	10
Total Volume of Solution, V_{soln}	500

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1758.63546	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.59843198	%
Tons of Acid Produced During The Test Period,	P_{st}	12.6374243	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	16601.6	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)}$ = 1.312E-06 lbs/dscf

Calculated H_2SO_4 Emission Rate, E= **0.11032** lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

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Air Services Group

40 CFR 60, Appendix A - Test Methods
Reference Method 8
Test Calculations

Customer: Polk Power Station
Facility: Acid Plant
Sampling Location: Stack
Operating Conditions: Compliance Load
Run Number: 3
Date: 03/23/07

Sample Time, θ:	64 minutes	Nozzle Diameter, D_n:	0.489 inches
Barometric Pressure, P_b:	29.90 "Hg	Nozzle Area, A_n:	0.00130412 ft^2
Stack Pressure, P_s:	29.97 "Hg	Average Orifice Meter,ΔH:	1.995 "H_2O
Effective Stack Area, A_s:	28.274 ft^2	Sample Volume, V_m:	50.211 ft^3
Pitot Coefficient, Cp:	0.84 dimensionless	Average Meter Temp., T_m:	81.5 °F
Gas Analysis:	19.4 % CO_2	Average Stack Temp., T_s:	156.1 °F
	6.3 % O_2	Average $\sqrt{\Delta p}$:	0.196 "H_2O
	0.0 % CO	Condensate Volume, V_{lc}:	4.4 ml
	74.3 % N_2	Meter Box Y:	0.986 dimensionless

Data Calculated from Source Measurements:

$V_{w(std)} = 4.714E\text{-}02 \times V_{lc}$	0.207 scf
$V_{m(std)} = 17.647 \times V_m \times Y \times (P_b + (\Delta H / 13.6)) / (T_m + 460)$	48.478 dscf
$B_{ws} = V_{w(std)} / (V_{m(std)} + V_{w(std)})$	0.004 %
$FDA = 1.0 - B_{ws}$	0.996 %
$M_d = (0.44 \times \%CO_2) + (0.32 \times \%O_2) + (0.28 \times (\%N_2 + \% CO))$	31.36 lb./lb. mole
$M_s = (M_d \times FDA) + (18.0 \times B_{ws})$	31.30 lb./lb. mole
$v_s = 85.49 \times C_p \times (\sqrt{\Delta p}) \times (\sqrt{(T_s + 460) / (M_s \times P_s)})$	11.40 ft/second
$Q_s = v_s \times A_s \times 60$	19338.7 acf/minute
$Q_{s(std)} = Q_s \times FDA \times (528 / (T_s + 460)) \times (P_s / 29.92))$	16533.3 dscf/minute
$I = (T_s + 460) \times ((2.67E\text{-}03 \times V_{lc}) + (V_{m(std)} / 17.647)) \times 100 / (\theta \times P_s \times A_n \times v_s$	99.3 %

Data from Laboratory Analysis: H_2SO_4

Normality of Barium Chloride titrant, N	0.01018 meq/ml
Volume Titrant Blank, V_{tb}	0.05 ml
Volume Titrant Sample, V_t	0.7 ml
Volume of Sample Aliquot, V_a	10 ml
Total Volume of Solution, V_{soln}	500 ml

Data Calculated from Plant Operational Measurements:

Gallons of Acid Produced During The Test Period,	P_{gal}	1753.695748	gallons
Density of Water,	D	8.345	lbs/gallon
Specific Gravity of Sulfuric Acid,	SG	1.84	dimensonless
Average Concentration of Acid Produced,	C_{acid}	93.60069111	%
Tons of Acid Produced During The Test Period,	P_{st}	12.60223207	short tons
Volumeteric Flow Rate Through Stack ,	Q_{std}	16533.3	dscf/min
Total Sampling Time During Test Period,	θ	64	minutes

$C_{H2SO4} = 1.081E\text{-}04 \times (N \times (V_t - V_{tb}) \times (V_{soln} / V_a)) / Vm_{(std)} =$ 7.378E-07 lbs/dscf

Calculated H_2SO_4 Emission Rate, E= **0.06194** lbs H_2SO_4/ton of acid

Where;
Tons of Acid Produced, $P_{st} = (P_{gal} \times D \times SG \times C_{acid}) / 2000$
Emission Rate, $E = (Q_{std} \times \theta \times C_{sample}) / P_{st}$

LABORATORY ANALYSIS

TECO TAMPA ELECTRIC

Laboratory Services

5012 Causeway Blvd * Tampa Fl. 33619 * Ph (813)630-7378 * Fax (813)630-7360 * DOH #E54272

Report For:

Report Date: 5/1/2007

Laboratory ID: **AA87420**

Location Code: TE_PPS_SAP_COMP_SYNGAS

Sample Information

Description **Polk Sulfuric Acid Plant Compliance**

Project Account Code:

Sample Collection Method:

Sampled By:

Date and Time Collected: **3/26/2007 12:00:00 AM**

Date of Sample Receipt: **3/26/2007**

Laboratory Results

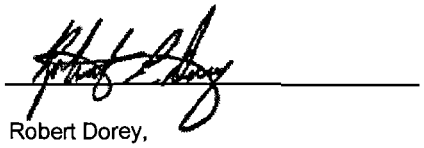
PARAMETER	Result	Units	MDL	Qualifier Code	Test Method	Analyst	Analysis Date & Time	Lower Limit	Upper Limit	Violation Check
Normality of BaCl2 * 2H2O	0.01018		0.0001			MM	3/12/2007 7:30:00 AM			
SO2 emission rate, lbs/ton of acid	3	lbs/ton acid			EPA - RM6C					
SO3 emission rate, lbs/ton of acid	0.09	lbs/ton acid			EPA - RM8					
SO3, Avg. of Blank Titrations	0.05	milliliters	0.01		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Run #1, Avg. of Titrations	1.2	milliliters	0.01		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Run #2, Avg. of Titrations	1.6	milliliters	0.01		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Run #3, Avg. of Titrations	0.7	milliliters	0.01		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Volume of Contained Sample	500	milliliters	1		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			
SO3, Volume of Sample Aliquot	10	milliliters	0.1		EPA - Meth.8	MM	3/26/2007 9:00:00 AM			

Comments

All results calculated on a wet to wet basis, unless otherwise indicated.

The endpoint was hard to detect using 100 ml aliquot of sample because the solution turned green when the indicator was added. Only at 10 ml of sample, was a clear endpoint detectable.

Should there be any questions regarding this report, please contact:



Robert Dorey,
Manager, Laboratory Services
(813) 630-7878

CALIBRATION DATA

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Environmental Services
Air Services Group

SUMMARY OF EQUIPMENT CALIBRATIONS

EQUIPMENT	CAL DATE	METHOD	RESULTS
CONSOLE (MB 07)		USEPA RM 5	
INITIAL	01/02/2007	(ORIFICE)	0.986
POST TEST	03/28/2007		0.980
NOZZLE (SN74)			
INITIAL	01/02/2007	CALIPER	0.489
POST TEST	03/28/2007	MEASUREMENTS	0.489
PYROMETER (PY 09)	01/03/2007	ASTM THERMOMETER	$\pm$ 2° F
PITOT TUBE (PT 05)	01/03/2007	USEPA RM 2	C_p = 0.84
BAROMETER (BR 07)	03/12/2007	NWS COMPARISON	$\pm$ 0.1" Hg

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USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
Quarterly Calibration

Environmental Services
Air Services Group

Blue Team

Manufacturer: Thermo Anderson
Model Number: MST-C1
Instrument Code Number: ^MB07
LabWorks Sample Number:

Calibration Date: 01/02/2007
Barometric Pressure: 30.2 "Hg
Theoretical Critical Vacuum: 14.25 "Hg
Calibrated By: gdb

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH	Time	Initial Volume	Final Volume	Total Volume	Initial Temperatures		Final Tempertures	
					Inlet	Outlet	Inlet	Outlet
"H_2O	Minutes	ft^3	ft^3	ft^3	°F	°F	°F	°F
0.60	15	917.600	924.500	6.900	79	76	79	77
1.15	15	935.400	944.582	9.182	77	75	79	75
1.90	15	904.100	915.909	11.809	80	75	82	76
3.45	15	884.800	900.781	15.981	80	69	80	75

Critical Orifice Readings

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures		
			Initial °F	Final °F	Average °F
48	0.3455	22.2	72	72	72.0
55	0.4592	20.7	72	72	72.0
63	0.5877	19.0	72	72	72.0
73	0.8022	16.1	72	72	72.0

CALCULATED DATA

Dry Gas Meter Volume Corrected $Vm_{(std)}$, ft^3	Critical Orifice Volume Corrected $Vcr_{(std)}$, ft^3	Critical Orifice Volume Nominal $Vcr_{(std)}$, ft^3	Calibration Y Value (ratio)	QA/QC ± 0.02	Calibration ΔHα Value "H_2O	QA/QC ± 0.2
6.846	6.786	6.776	0.991	0.005	1.634	-0.103
9.143	9.019	9.006	0.986	0.000	1.778	0.041
11.742	11.542	11.527	0.983	-0.003	1.787	0.050
16.017	15.755	15.734	0.984	-0.002	1.749	0.012
		Averages:	**0.986**		**1.737**	

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval: 9-Jan-07

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

USEPA Reference Method 5
Dry Gas Meter Calibration
Critical Orifice Method
POST - TEST CALIBRATION CHECK

Manufacturer: Thermo
Model Number: MST
Instrument Code Number: MB07
LabWorks Sample Number:
Associated Test: Polk SAP 03-23-07

Calibration Date: 03/28/2007
Barometric Pressure: 30.16 "Hg
Theoretical Critical Vacuum: 14.23 "Hg
Calibrated By: SEG
Team: BLUE

IMPORTANT

For valid test results, the Actual Vacuum should be 1 to 2 "Hg greater than the Theoretical Critical Vacuum Shown above. The Critical Orifice Coefficient, K', should be in English units.

IMPORTANT

Dry Gas Meter Readings

ΔH "H_2O	Time Minutes	Initial Volume ft^3	Final Volume ft^3	Total Volume ft^3	Initial Temperatures Inlet °F	Initial Temperatures Outlet °F	Final Tempertures Inlet °F	Final Tempertures Outlet °F
1.9	10	136.100	143.955	7.855	74	73	76	74
1.9	10	143.955	151.889	7.934	75	73	77	74
1.9	10	151.889	159.637	7.748	76	73	79	74

Critical Orifice Readings

Orifice Serial Number	K' Orifice Coefficient	Actual Vacuum "Hg	Ambient Temperatures Initial °F	Ambient Temperatures Final °F	Ambient Temperatures Average °F
63	0.5877	19.0	72	72	72.0
63	0.5877	19.0	72	72	72.0
63	0.5877	19.0	72	72	72.0

CALCULATED DATA

Dry Gas Meter Volume Corrected $Vm_{(std)}$, ft^3	Critical Orifice Volume Corrected $Vcr_{(std)}$, ft^3	Critical Orifice Volume Nominal $Vcr_{(std)}$, ft^3	Calibration Y Value (ratio)	QA/QC ± 0.02	Calibration ΔHα Value "H_2O	QA/QC ± 0.2
7.858	7.685	7.684	0.978	-0.002	1.803	0.002
7.930	7.685	7.684	0.969	-0.011	1.801	0.000
7.733	7.685	7.684	0.994	0.013	1.799	-0.002
		Averages:	**0.980**		**1.801**	
		Prior Y:	**0.986**			
		% Difference:	**0.59%**			

For Calibration Y, the ratio of the reading of the calibration orifice to the dry gas meter, acceptable tolerance from average is± 0.02.
For Calibration ΔHα, the acceptable tolerance of individual values from the average is + 0.2.

Review/Approval  Date: 29-Mar-07

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Environmental Services
Air Services Group

QUARTERLY NOZZLE CALIBRATIONS

Shared Resource

STEEL NOZZLE SET

Calibration Date: 01/02/2007 Responsible Party: **SEG**

Nozzle I.D.	Nozzle Diameter, D_n (cm)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
^SN01	0.290	0.295	0.295	0.002	0.115
^SN04	0.324	0.322	0.320	0.002	0.127
^SN05	0.380	0.380	0.380	0.000	0.150
^SN06	0.498	0.500	0.500	0.001	0.197
^SN09	0.690	0.695	0.690	0.002	0.272
^SN10	0.750	0.755	0.755	0.002	0.297
^SN12	0.988	0.985	0.985	0.001	0.388
^SN15	0.420	0.422	0.422	0.001	0.166
^SN16	0.508	0.505	0.505	0.001	0.199
^SN19	0.720	0.718	0.715	0.002	0.283
^SN22	0.930	0.928	0.930	0.001	0.366
^SN30	0.795	0.790	0.795	0.002	0.312
^SN36	0.480	0.478	0.475	0.002	0.188
^SN37	0.539	0.534	0.539	0.002	0.212
^SN38	0.633	0.638	0.635	0.002	0.250
^SN46	0.485	0.483	0.483	0.001	0.190
^SN47	0.515	0.518	0.518	0.001	0.204
^SN48	0.644	0.640	0.642	0.002	0.253
^SN50	0.784	0.788	0.788	0.002	0.310
^SN58	0.613	0.619	0.619	0.002	0.243
^SN68	0.625	0.630	0.631	0.002	0.248
^SN69	0.952	0.950	0.950	0.001	0.374
^SN70	1.565	1.565	1.565	0.000	0.616
^SN71	1.560	1.560	1.560	0.000	0.614
^SN72	0.950	0.950	0.948	0.001	0.374
^SN73	1.280	1.280	1.282	0.001	0.504
^SN74	1.243	1.242	1.243	0.000	0.489

Data Notations: All micometer readings are converted from cm to inches by multiplying by 0.393700787. Maximum Difference must be $\leq$ 0.004".

QA/QC Review by:  9-Jan-07

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

POST TEST NOZZLE CALIBRATION

Shared Resource

Calibration Date: 03/28/2007
Calibration Personnel: SEG
Test Designation: Polk SAP 03-23-07

Nozzle Identifier	Nozzle Diameter, D_n (in)			Maximum Difference, "	Average D_n, inches
	D_1	D_2	D_3		
^SN74	0.488	0.489	0.489	0.001	0.489

Quarterly (pre-test) value for nozzle ID ^SN74 was 0.489

Difference (Pre-test/Post-test) is: 0.000

QA/QC Review by:  Date: 29-Mar-07

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

Blue Team

Pyrometer Calibration

Pyrometer Under Test

Pyrometer Number: ^PY09
Labworks Sample # 0
Calibration Date: 01/03/2007

Calibrator Information

Calibrator Type/Manufacturer: Hart Scientific
Calibrator Serial Number: AOA024
Date of Last Calibration: 07/11/2006
Calibration Personnel (Typed and Signature): gdb

Calibration Data

Calibration Point	Reference Temperature	Pyrometer Indication	Difference
1	400	401	-1
2	212	213	-1
3	32	32	0

Reference temperatures must encompass the expected range of measurement. These three points should be ~ 32 degrees, ~212 degrees, and ~ 400 degrees Farenheit.
Difference is calculated as follows:

(reference temperature) – (pyrometer indication)

Qaulity Control Data

Calibration Point	Difference
1	Pass
2	Pass
3	Pass

Reviewer: 

9-Jan-07

TECO
TAMPA ELECTRIC

PITOT TUBE CALIBRATION DATA SHEET

Environmental Services
Air Services Group

Pitot Tube ID # PT05
Calibration Date 01/03/2007 Operating Quarter/Year: 07-Jan Red Team
Openings Damaged? ☐ Y ☑ N Repaired? ☐ Y ☑ N ☐ N/A

Labworks #: 0

Alpha and Beta Angle Determinations

α_1	0.5	degrees	*Pass*
α_2	1.6	degrees	*Pass*
β_1	1.8	degrees	*Pass*
β_2	1.9	degrees	*Pass*

Gamma, Theta, A, Z, and W Determination:

ψ	0.4	degrees	
A	2.31	cm	
Z	0.016	cm	*Pass*
o	1.2	degrees	
W	0.048	cm	*Pass*

Acceptable Limits:
Dt 0.48 < Dt > 0.95 cm
α < 10 degrees
(α_1 measured across top impact openings)
(α_2 measured across bottom impact openings)
β_1 < 5 degrees (alongside top impact openings)
β_2 < 5 degrees (alongside bottom impact openings)
Z < 0.32 cm (Asinψ)
W < 0.08 cm (Asino)
A distance between tips
o angle of plane on side of pitots
ψ angle between tips

NOTES

All measurements are taken in accordance with the requirements of 40 CFR 60, Appendix A - Test Methods, Method 2, "Determination of stack gas velocity and volumetric flow rate (Type S pitot tube)". Measurement details are found in EPA/600/4-77/027b, "Quality Assurance Handbook for Air Pollution Measurement Systems: Stationary Source Specific Methods", sub-section 3.1.1, Procuement of Apparatus and Supplies.

Comments: REMOVABLE

Calibrated by: GDB

Quality Assurance Review / Approval: 5-Jan-07

TECO
TAMPA ELECTRIC

Environmental Services
Air Services Group

BAROMETER CALIBRATION

Blue Team

Instrument Number: ^BR07
Calibration Date: 03/12/2007
Calibration Personnel: JAV
Labworks #:

Time	Barometer Reading Inches Mercury	Reference Reading Inches Mercury	Difference "Hg
7:30	30.3	30.23	0.07
8:30	30.3	30.26	0.04
9:30	30.30	30.27	0.03
		Average Difference:	0.05

Note: Barometric readings must agree within ± 0.1 "Hg.
Current Reference is National Weather Service, TIA.
Current Conditions at Tampa International Airport

Comments (Note any adjustments):

QA/QC Review by: Date:

APPENDIX EE

INSTRUMENTAL REFERENCE METHOD TEST DATA – IGCC

OXYGEN, CARBON DIOXIDE, CARBON MONOXIDE DATA

Calibration Error Test, Run 1 STRATA Version 2.01

	O2	CO2	CO
	%	%	ppm
03-23-2007 07:53:44	0.001	0.016	0.086
03-23-2007 07:54:44	0.003	0.016	0.319
03-23-2007 07:55:43	0.003	0.016	0.039
03-23-2007 07:56:43	18.556	15.429	-0.409
03-23-2007 07:57:44	21.902	17.702	-1.924
03-23-2007 07:58:44	20.789	14.818	-2.389
03-23-2007 07:59:44	16.261	9.721	-1.599
03-23-2007 08:00:44	3.360	1.856	3.894
03-23-2007 08:01:44	0.028	0.028	28.366
03-23-2007 08:02:43	0.014	0.025	30.267
03-23-2007 08:03:43	0.011	0.024	30.147
03-23-2007 08:04:43	0.010	0.021	30.430
03-23-2007 08:05:44	0.476	0.034	30.014
03-23-2007 08:06:44	0.012	0.021	21.318
03-23-2007 08:07:44	0.010	0.020	15.748

Calibration Error Test at Run 1

Operator: Ian DeVivi
Plant Name: TECO Polk Facility
Location: Unit [redacted]

Reference Cylinder Numbers

	Zero	Low-range	Mid-range	High-range
O2	CC-22856	CC-107096	CC-56969	CC-250656
CO2	CC-22856	CC-107096	CC-56969	CC-250656
CO	CC-22856	CC-150548	CC-150548	CC-120319

Date/Time 03-23-2007 08:08:04 PASSED

Analyte	O2	CO2	CO
Units	%	%	ppm
Zero Ref Cyl	0.000	0.000	0.000
Zero Avg	0.004	0.016	-0.009
Zero Error%	0.0%	0.1%	0.0%
Low Ref Cyl			
Low Avg			
Low Error%			
Mid Ref Cyl	12.600	9.940	15.900
Mid Avg	12.619	10.187	15.676
Mid Error%	0.1%	1.2%	0.7%
High Ref Cyl	21.900	17.700	30.600
High Avg	21.903	17.695	30.568
High Error%	0.0%	0.0%	0.1%

Calibration Error Test End

Initial System Bias Check, Run 1 STRATA Version 2.01

	O2	CO2	CO
	%	%	ppm
03-23-2007 08:10:27	9.590	0.052	1.164
03-23-2007 08:11:27	0.063	0.030	0.088
03-23-2007 08:12:27	6.437	5.475	0.382
03-23-2007 08:13:27	12.419	10.048	0.204
03-23-2007 08:14:27	12.436	10.098	-1.671
03-23-2007 08:15:27	1.830	1.187	1.032
03-23-2007 08:16:27	0.025	0.087	11.841
03-23-2007 08:17:27	0.011	0.062	14.667
03-23-2007 08:18:27	0.005	0.051	14.813
03-23-2007 08:19:27	0.002	0.045	15.000
03-23-2007 08:20:27	0.000	0.040	14.974

Initial System Bias Check for Run 1
Operator: Ian DeVivi
Plant Name: TECO Polk Facility
Location: Unit 1

	Reference Cylinder Numbers	
	Zero	Span
O2	CC-22856	CC-56969
CO2	CC-22856	CC-56969
CO	CC-22856	CC-150548

Date/Time	03-23-2007		08:20:48	PASSED
Analyte	O2	CO2	CO	
Units	%	%	ppm	
Zero Ref Cyl	0.000	0.000	0.000	
Zero Cal	0.004	0.016	-0.009	
Zero Avg	0.075	0.031	0.094	
Zero Bias%	0.3%	0.1%	0.3%	
Zero Drift%				
Span Ref Cyl	12.600	9.940	15.900	
Span Cal	12.619	10.187	15.676	
Span Avg	12.434	10.082	15.030	
Span Bias%	0.7%	0.5%	2.1%	
Span Drift%				

System Bias Check End

Test Run 1 STRATA Version 2.01

	O2	CO2	CO
	%	%	ppm
03-23-2007 10:03:39	11.586	9.098	3.807
03-23-2007 10:04:39	11.583	9.097	3.841
03-23-2007 10:05:40	11.581	9.095	4.053
03-23-2007 10:06:39	11.600	9.083	4.035
03-23-2007 10:07:39	11.580	9.098	3.720
03-23-2007 10:08:39	11.510	9.105	4.011
03-23-2007 10:09:40	11.521	9.118	4.427
03-23-2007 10:10:40	11.534	9.123	4.460
Begin calculating run averages			
03-23-2007 10:12:30	11.546	9.122	3.885
03-23-2007 10:13:30	11.556	9.128	4.129
03-23-2007 10:14:30	11.582	9.115	3.833
03-23-2007 10:15:29	11.590	9.113	3.658
03-23-2007 10:16:30	11.591	9.111	3.793
03-23-2007 10:17:30	11.610	9.113	4.057
03-23-2007 10:18:30	11.631	9.104	3.891
03-23-2007 10:19:29	11.622	9.118	3.743
03-23-2007 10:20:30	11.627	9.110	3.806
03-23-2007 10:21:30	11.637	9.106	3.720
03-23-2007 10:22:30	11.646	9.105	3.767
03-23-2007 10:23:29	11.639	9.094	3.545
03-23-2007 10:24:30	11.622	9.096	3.689
03-23-2007 10:25:30	11.599	9.116	3.470
03-23-2007 10:26:30	11.593	9.115	3.386
03-23-2007 10:27:30	11.600	9.098	3.856
03-23-2007 10:28:30	11.532	9.091	3.911
03-23-2007 10:29:30	11.533	9.105	4.158
03-23-2007 10:30:30	11.578	9.095	4.177
03-23-2007 10:31:30	11.575	9.100	3.912
03-23-2007 10:32:30	11.565	9.116	3.793
03-23-2007 10:33:30	11.574	9.113	3.913
03-23-2007 10:34:30	11.579	9.114	3.970
03-23-2007 10:35:30	11.575	9.120	3.909
03-23-2007 10:36:30	11.581	9.116	4.177
03-23-2007 10:37:29	11.600	9.119	4.060
03-23-2007 10:38:30	11.609	9.125	3.912
03-23-2007 10:39:30	11.643	9.100	3.570
03-23-2007 10:40:30	11.660	9.089	3.374
03-23-2007 10:41:30	11.671	9.088	3.308
03-23-2007 10:42:30	11.669	9.087	3.213
03-23-2007 10:43:30	11.656	9.087	3.511
03-23-2007 10:44:30	11.646	9.088	3.459
03-23-2007 10:45:30	11.663	9.078	3.466
03-23-2007 10:46:30	11.660	9.066	3.272
03-23-2007 10:47:30	11.632	9.075	3.470
03-23-2007 10:48:30	11.573	9.081	3.898
03-23-2007 10:49:30	11.576	9.089	4.025
03-23-2007 10:50:29	11.610	9.099	3.804
03-23-2007 10:51:30	11.608	9.104	3.769
03-23-2007 10:52:30	11.601	9.119	3.779
03-23-2007 10:53:30	11.587	9.132	3.981
03-23-2007 10:54:30	11.585	9.132	4.070
03-23-2007 10:55:30	11.586	9.143	4.066
03-23-2007 10:56:30	11.606	9.127	3.827
03-23-2007 10:57:30	11.629	9.107	3.568
03-23-2007 10:58:30	11.629	9.107	3.694
03-23-2007 10:59:30	11.650	9.091	3.575
03-23-2007 11:00:30	11.664	9.093	3.503
03-23-2007 11:01:29	11.667	9.083	3.097
03-23-2007 11:02:30	11.655	9.093	3.296
03-23-2007 11:03:30	11.642	9.092	3.548
03-23-2007 11:04:30	11.645	9.088	3.649
03-23-2007 11:05:29	11.644	9.085	3.508
03-23-2007 11:06:30	11.625	9.095	3.710
03-23-2007 11:07:30	11.618	9.100	3.813
03-23-2007 11:08:30	11.581	9.085	3.902
03-23-2007 11:09:29	11.578	9.107	4.044
03-23-2007 11:10:30	11.586	9.116	4.061
03-23-2007 11:11:30	11.610	9.102	3.843

Run Averages	O2	CO2	CO
	%	%	ppm
03-23-2007 11:11:30	11.611	9.104	3.747

Operator: Ian DeVivi
Plant Name: TECO Polk Facility
Location: Unit 1
Test Run 1 End

Final System Bias Check, Run 1 STRATA Version 2.01

	O2	CO2	CO
	%	%	ppm
03-23-2007 11:12:47	5.232	3.552	3.864
03-23-2007 11:13:46	0.012	0.103	1.761
03-23-2007 11:14:46	0.148	0.229	-0.418
03-23-2007 11:15:46	10.756	9.038	-0.651
03-23-2007 11:16:47	9.634	7.522	-1.564
03-23-2007 11:17:46	0.033	0.141	4.659
03-23-2007 11:18:46	-0.009	0.086	13.801

Final System Bias Check for Run 1

Operator: Ian DeVivi
Plant Name: TECO Polk Facility
Location: Unit 1

	Reference Cylinder Numbers	
	Zero	Span
O2	CC-22856	CC-56969
CO2	CC-22856	CC-56969
CO	CC-22856	CC-150548

Date/Time	03-23-2007		11:19:42	PASSED
Analyte	O2	CO2	CO	
Units	%	%	ppm	
Zero Ref Cyl	0.000	0.000	0.000	
Zero Cal	0.004	0.016	-0.009	
Zero Avg	-0.003	0.088	-0.135	
Zero Bias%	0.0%	0.4%	0.4%	
Zero Drift%	-0.3%	0.3%	-0.7%	
Span Ref Cyl	12.600	9.940	15.900	
Span Cal	12.619	10.187	15.676	
Span Avg	12.357	10.096	14.885	
Span Bias%	1.0%	0.5%	2.6%	
Span Drift%	-0.3%	0.1%	-0.5%	
Ini Zero Avg	0.075	0.031	0.094	
Ini Span Avg	12.434	10.082	15.030	
Run Avg	11.611	9.104	3.747	
Co	0.036	0.059	-0.021	
Cm	12.396	10.089	14.957	
Correct Avg	11.800	8.963	3.999	

System Bias Check End

Test Run 2 STRATA Version 2.01

	O2	CO2	CO
	%	%	ppm
03-23-2007 11:41:09	11.681	9.134	3.579
03-23-2007 11:42:08	11.679	9.131	3.480

Begin calculating run averages

03-23-2007 11:43:12	11.660	9.132	3.316
03-23-2007 11:44:12	11.646	9.137	3.403
03-23-2007 11:45:12	11.640	9.124	3.415
03-23-2007 11:46:12	11.637	9.126	3.481
03-23-2007 11:47:12	11.631	9.121	3.618
03-23-2007 11:48:12	11.609	9.118	3.471
03-23-2007 11:49:12	11.565	9.139	3.531
03-23-2007 11:50:12	11.596	9.142	3.655
03-23-2007 11:51:12	11.602	9.152	3.934
03-23-2007 11:52:12	11.590	9.164	3.837
03-23-2007 11:53:12	11.604	9.168	3.801
03-23-2007 11:54:13	11.612	9.168	3.691
03-23-2007 11:55:12	11.609	9.165	3.666
03-23-2007 11:56:12	11.624	9.167	3.654
03-23-2007 11:57:12	11.646	9.155	3.589
03-23-2007 11:58:12	11.666	9.143	3.515
03-23-2007 11:59:12	11.678	9.139	3.530
03-23-2007 12:00:12	11.680	9.133	3.356
03-23-2007 12:01:12	11.712	9.120	3.164
03-23-2007 12:02:12	11.691	9.121	3.169
03-23-2007 12:03:12	11.696	9.112	3.044
03-23-2007 12:04:12	11.673	9.114	3.113
03-23-2007 12:05:12	11.677	9.119	3.395
03-23-2007 12:06:12	11.679	9.125	3.495
03-23-2007 12:07:12	11.663	9.125	3.325
03-23-2007 12:08:12	11.622	9.132	3.438
03-23-2007 12:09:12	11.569	9.158	3.705
03-23-2007 12:10:12	11.611	9.152	3.680
03-23-2007 12:11:12	11.611	9.163	3.732
03-23-2007 12:12:12	11.603	9.165	3.984
03-23-2007 12:13:13	11.590	9.184	3.846
03-23-2007 12:14:12	11.621	9.168	3.789
03-23-2007 12:15:12	11.621	9.161	3.728
03-23-2007 12:16:12	11.660	9.143	3.611
03-23-2007 12:17:12	11.658	9.139	3.054
03-23-2007 12:18:12	11.653	9.147	3.261
03-23-2007 12:19:12	11.689	9.124	3.583
03-23-2007 12:20:12	11.704	9.120	3.169
03-23-2007 12:21:12	11.686	9.135	3.205
03-23-2007 12:22:12	11.696	9.123	3.334
03-23-2007 12:23:12	11.728	9.102	2.977
03-23-2007 12:24:12	11.683	9.122	3.034
03-23-2007 12:25:12	11.678	9.119	3.273
03-23-2007 12:26:12	11.658	9.134	3.236
03-23-2007 12:27:12	11.650	9.129	3.085
03-23-2007 12:28:12	11.615	9.134	3.355
03-23-2007 12:29:12	11.570	9.124	3.561
03-23-2007 12:30:12	11.606	9.128	3.661
03-23-2007 12:31:12	11.621	9.118	3.657
03-23-2007 12:32:12	11.626	9.130	3.614
03-23-2007 12:33:13	11.624	9.121	3.771
03-23-2007 12:34:12	11.594	9.145	3.674
03-23-2007 12:35:12	11.613	9.146	3.760
03-23-2007 12:36:12	11.647	9.136	3.676
03-23-2007 12:37:12	11.661	9.127	3.636
03-23-2007 12:38:12	11.673	9.117	3.426
03-23-2007 12:39:12	11.684	9.112	3.190
03-23-2007 12:40:12	11.676	9.105	3.049
03-23-2007 12:41:12	11.669	9.104	3.242
03-23-2007 12:42:12	11.689	9.098	3.115

Run Averages	O2	CO2	CO
	%	%	ppm
03-23-2007 12:42:12	11.644	9.135	3.471

Operator: Ian DeVivi
Plant Name: TECO Polk Facility
Location: Unit 1
Test Run 2 End

Final System Bias Check, Run 2 STRATA Version 2.01

	O2 %	CO2 %	CO ppm
03-23-2007 12:43:52	7.199	5.208	3.483
03-23-2007 12:44:52	0.018	0.128	2.299
03-23-2007 12:45:51	-0.012	0.095	-0.431
03-23-2007 12:46:52	-0.019	0.082	-0.497
03-23-2007 12:47:52	7.907	6.824	-0.662
03-23-2007 12:48:52	12.368	10.163	-1.512
03-23-2007 12:49:52	0.815	0.421	1.514
03-23-2007 12:50:52	-0.008	0.104	12.323
03-23-2007 12:51:51	-0.019	0.081	14.714*
03-23-2007 12:52:52	-0.021	0.072	14.778

Final System Bias Check for Run 2
Operator: Ian DeVivi
Plant Name: TECO Polk Facility
Location: Unit 1

	Reference Cylinder Numbers Zero	Span
O2	CC-22856	CC-56969
CO2	CC-22856	CC-56969
CO	CC-22856	CC-150548

Date/Time 03-23-2007 12:53:13 PASSED

Analyte	O2	CO2	CO
Units	%	%	ppm
Zero Ref Cyl	0.000	0.000	0.000
Zero Cal	0.004	0.016	-0.009
Zero Avg	-0.018	0.085	-0.514
Zero Bias%	0.1%	0.3%	1.6%
Zero Drift%	-0.1%	0.0%	-1.2%
Span Ref Cyl	12.600	9.940	15.900
Span Cal	12.619	10.187	15.676
Span Avg	12.336	10.142	14.896
Span Bias%	1.1%	0.2%	2.5%
Span Drift%	-0.1%	0.2%	0.0%
Ini Zero Avg	-0.003	0.088	-0.135
Ini Span Avg	12.357	10.096	14.885
Run Avg	11.644	9.135	3.471
Co	-0.010	0.086	-0.324
Cm	12.347	10.119	14.891
Correct Avg	11.884	8.965	3.967

System Bias Check End

Test Run 3 STRATA Version 2.01

	O2	CO2	CO
	%	%	ppm
03-23-2007 13:10:10	11.590	9.174	3.846
03-23-2007 13:11:09	11.620	9.167	3.875
Begin calculating run averages			
03-23-2007 13:12:26	11.623	9.151	3.598
03-23-2007 13:13:26	11.634	9.138	3.647
03-23-2007 13:14:25	11.627	9.151	3.881
03-23-2007 13:15:26	11.667	9.121	3.757
03-23-2007 13:16:26	11.679	9.130	3.363
03-23-2007 13:17:25	11.688	9.122	3.092
03-23-2007 13:18:25	11.730	9.057	3.232
03-23-2007 13:19:26	11.714	9.056	2.968
03-23-2007 13:20:26	11.693	9.059	2.807
03-23-2007 13:21:25	11.694	9.056	2.828
03-23-2007 13:22:25	11.686	9.068	2.921
03-23-2007 13:23:26	11.655	9.072	3.010
03-23-2007 13:24:26	11.634	9.064	3.322
03-23-2007 13:25:25	11.627	9.079	3.237
03-23-2007 13:26:26	11.624	9.096	3.530
03-23-2007 13:27:26	11.614	9.111	3.250
03-23-2007 13:28:26	11.573	9.115	3.576
03-23-2007 13:29:25	11.543	9.114	3.898
03-23-2007 13:30:26	11.590	9.115	3.786
03-23-2007 13:31:26	11.630	9.097	3.440
03-23-2007 13:32:26	11.621	9.104	3.310
03-23-2007 13:33:25	11.623	9.099	3.236
03-23-2007 13:34:25	11.616	9.110	3.551
03-23-2007 13:35:26	11.639	9.093	3.706
03-23-2007 13:36:26	11.663	9.066	3.554
03-23-2007 13:37:25	11.658	9.075	3.368
03-23-2007 13:38:25	11.682	9.063	3.386
03-23-2007 13:39:26	11.699	9.063	3.258
03-23-2007 13:40:26	11.705	9.053	3.172
03-23-2007 13:41:25	11.686	9.062	3.082
03-23-2007 13:42:25	11.672	9.054	3.199
03-23-2007 13:43:26	11.674	9.051	3.356
03-23-2007 13:44:26	11.645	9.069	3.332
03-23-2007 13:45:25	11.655	9.055	3.517
03-23-2007 13:46:25	11.652	9.058	3.590
03-23-2007 13:47:26	11.634	9.060	3.579
03-23-2007 13:48:26	11.606	9.054	3.965
03-23-2007 13:49:26	11.596	9.039	3.811
03-23-2007 13:50:25	11.614	9.042	3.474
03-23-2007 13:51:26	11.633	9.042	3.262
03-23-2007 13:52:26	11.633	9.054	3.549
03-23-2007 13:53:25	11.660	9.050	3.522
03-23-2007 13:54:25	11.667	9.038	3.251
03-23-2007 13:55:26	11.650	9.047	3.220
03-23-2007 13:56:26	11.630	9.050	3.550
03-23-2007 13:57:26	11.638	9.042	3.581
03-23-2007 13:58:25	11.640	9.038	3.450
03-23-2007 13:59:26	11.660	9.020	3.466
03-23-2007 14:00:26	11.662	9.026	3.466
03-23-2007 14:01:25	11.678	9.021	3.578
03-23-2007 14:02:25	11.682	9.027	3.518
03-23-2007 14:03:26	11.673	9.026	3.201
03-23-2007 14:04:26	11.649	9.031	3.172
03-23-2007 14:05:26	11.656	9.033	3.487
03-23-2007 14:06:26	11.637	9.031	3.367
03-23-2007 14:07:26	11.637	9.047	3.615
03-23-2007 14:08:25	11.617	9.041	3.695
03-23-2007 14:09:25	11.604	9.028	3.763
03-23-2007 14:10:26	11.626	9.038	3.524
03-23-2007 14:11:26	11.659	9.030	3.367

Run Averages	O2	CO2	CO
	%	%	ppm
03-23-2007 14:11:26	11.648	9.067	3.420

Operator: Ian DeVivi
Plant Name: TECO Polk Facility
Location: Unit 1
Test Run 3 End

Final System Bias Check, Run 3 STRATA Version 2.01

	O2	CO2	CO
	%	%	ppm
03-23-2007 14:12:34	9.364	6.798	3.414
03-23-2007 14:13:34	0.030	0.132	2.878
03-23-2007 14:14:34	-0.014	0.090	-0.018
03-23-2007 14:15:33	4.220	3.823	-0.568
03-23-2007 14:16:34	12.335	10.136	-1.449
03-23-2007 14:17:34	7.389	5.750	-1.579
03-23-2007 14:18:34	0.015	0.137	6.745
03-23-2007 14:19:34	-0.012	0.092	14.499

Final System Bias Check for Run 3
Operator: Ian DeVivi
Plant Name: TECO Polk Facility
Location: Unit 1

	Reference Cylinder Numbers	
	Zero	Span
O2	CC-22856	CC-56969
CO2	CC-22856	CC-56969
CO	CC-22856	CC-150548

Date/Time 03-23-2007 14:19:40 PASSED

Analyte	O2	CO2	CO
Units	%	%	ppm
Zero Ref Cyl	0.000	0.000	0.000
Zero Cal	0.004	0.016	-0.009
Zero Avg	-0.018	0.086	-0.357
Zero Bias%	0.1%	0.3%	1.1%
Zero Drift%	0.0%	0.0%	0.5%
Span Ref Cyl	12.600	9.940	15.900
Span Cal	12.619	10.187	15.676
Span Avg	12.342	10.145	14.938
Span Bias%	1.1%	0.2%	2.4%
Span Drift%	0.0%	0.0%	0.1%
Ini Zero Avg	-0.018	0.085	-0.514
Ini Span Avg	12.336	10.142	14.896
Run Avg	11.648	9.067	3.420
Co	-0.018	0.085	-0.435
Cm	12.339	10.144	14.917
Correct Avg	11.895	8.876	3.993

System Bias Check End

CALIBRATION GAS CERTIFICATIONS

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18224		**Blend Tolerance:**	5 % Relative
EPA 10-15% O2/8-12% CO2/N2		A31	**Blend Type:**	EPA Protocol
Production #:	100129195		**Cyl. Pressure:**	2000 psig
Lot #:	30499M6080DA		**Balance Gas:**	Nitrogen
Cylinder #:	CC56969		**CGA:**	590
Expiration Date:	12/13/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
124-38-9	Carbon Dioxide	10	9.94 +/- 0.1 %	12/13/2006
7782-44-7	Oxygen	12.5	12.6 +/- 0.1 %	12/13/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
124-38-9	Carbon Dioxide	CC233814 , GMIS	10.93 %	03/29/2009
7782-44-7	Oxygen	112347 , GMIS	10.01 %	05/02/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	12/13/2006
HORIBA MODEL VIA-510 CO2	4285416002	NDIR	12/13/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Linde Gas LLC

6055 Rockside Woods Blvd. Lance Crayton Phone: (216) 642-6600
Independence, OH 44131 Fax: (216) 642-6625
USA www.us.lindegas.com

HiQ Analysis Certificate

Certificate of Analysis

EPA Protocol

HiQ® Certificate

Linde Gas — Formed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18225		**Blend Tolerance:**	5 % Relative
EPA 20-25% O2/16-20% CO2/N2		A31	**Blend Type:**	EPA Protocol
Production #:	100124043		**Cyl. Pressure:**	2000 psig
Lot #:	30499H6210DC		**Balance Gas:**	Nitrogen
Cylinder #:	CC250656		**CGA:**	590
Expiration Date:	8/25/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
124-38-9	Carbon Dioxide	18	17.7 +/- 0.17 %	08/25/2006
7782-44-7	Oxygen	22	21.9 +/- 0.2 %	08/25/2006
7727-37-9	Nitrogen		Balance	

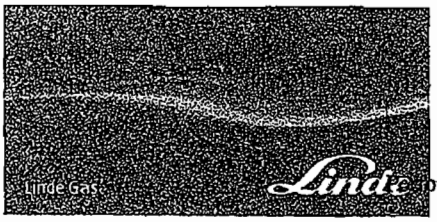
CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	AT9284 , GMIS	21.04 %	03/17/2009
124-38-9	Carbon Dioxide	CC234661 , GMIS	18.11 %	03/29/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	05/24/2005
HORIBA MODEL VIA-510 CO2	4285416002	NDIR	11/22/2005

All analyses are performed under controlled environmental conditions. This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

HiQ Certificate



Certificate of Analysis

EPA Protocol

Linde formerly according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	13968		**Blend Tolerance:**	5 % Relative
EPA 13 - 18 PPM CO/N2		A31	**Blend Type:**	GRAVIMETRIC
Production #:	100121715		**Cyl. Pressure:**	2000 psig
Lot #:	30499G6060DC		**Balance Gas:**	Nitrogen
Cylinder #:	CC150548		**CGA:**	350
Expiration Date:	7/19/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

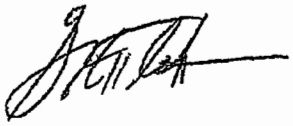
CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	13 to 18	15.9 +/- 0.18 ppm	07/19/2006
7727-37-9	Nitrogen		Balance	07/19/2006

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC180333 , NTRM	10.17 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	07/19/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Greg Eccleston



Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	18244	**Blend Tolerance:**	5 % Relative
EPA 30 PPM CO/N2 (+/-2%)	A31	**Blend Type:**	EPA Protocol
Production #:	100131756	**Cyl. Pressure:**	2000 psig
Lot #:	30499B7020CA1	**Balance Gas:**	Nitrogen
Cylinder #:	CC120319	**CGA:**	350
Expiration Date:	2/14/2010	**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months	**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	30	30.6 +/- 0.3 ppm	02/14/2007
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC195630 GMIS	25.48 ppm	06/16/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	02/14/2007

All analyses are performed under controlled environmental conditions. This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

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USA

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www.us.lindegas.com

The Analysis Certificate

APPENDIX FF

INSTRUMENTAL REFERENCE METHOD TEST DATA – SULFURIC ACID PLANT

SULFUR DIOXIDE, OXYGEN, CARBON DIOXIDE SUMMARY

Polk Acid Plant - Report			
RUN 1			
03/23/2007	**10:11:36**	**11:11:37**	
Analyzer Calibration Error (Eq 7E-1)	aO2	bCO2	fSO2
Analyzer Range	25	50	300
Units	%	%	PPM
Low Level Certified Value (PPM or %)			
Mid Level Certified Value (PPM or %)	10.6	25.07	147.3
High Level Certified Value (PPM or %)	20.9	45.1	269
Zero Level Observed	0.054	-0.001	0.317
Low Level Observed	-	-	-
Mid Level Observed	10.656	25.07	146.154
High Level Observed	20.971	44.989	267.325
Zero Calibration Error ACE	0.26	0	0.12
Low Level Calibration Error ACE	0	0	0
Mid Level Calibration Error ACE	0.27	0	-0.43
High Level Calibration Error ACE	0.34	-0.25	-0.62
Initial Readings			
Zero	0.032	0.111	1.373
Span	10.636	24.943	147.243
Final Readings			
Zero	-0.001	0.108	1.373
Span	10.655	25.05	147.338
System Bias (Eq 7E-2)			
Initial Zero Bias SB	-0.11	0.25	0.39
Initial Span Bias SB	-0.1	-0.28	0.4
Final Zero Bias SB	-0.26	0.24	0.39
Final Span Bias SB	0	-0.04	0.44
System Calibration Error (Eq 7E-3)			
Initial Zero SCE	0.15	0.25	0.51
Initial Span SCE	0.17	-0.28	-0.02
Final Zero SCE	0	0.24	0.51
Final Span SCE	0.26	-0.04	0.01
Drift Assessment (Eq 7E-4)			
Zero Drift D	0.15	0.01	0
Span Drift D	0.1	0.24	0.04
Effluent Gas Concentration (Eq 7E-5)			
Raw Results	6.76	19.21	229.98
Corrected Results (ppmv)	6.73	19.24	230.77

Polk Acid Plant - Report			
RUN 2			
03/23/2007	**11:43:44**	**12:43:44**	
Analyzer Calibration Error (Eq 7E-1)	aO2	bCO2	fSO2
Analyzer Range	25	50	300
Units	%	%	PPM
Low Level Certified Value (PPM or %)			
Mid Level Certified Value (PPM or %)	10.6	25.07	147.3
High Level Certified Value (PPM or %)	20.9	45.1	269
Zero Level Observed	0.054	-0.001	0.317
Low Level Observed	-	-	-
Mid Level Observed	10.656	25.07	146.154
High Level Observed	20.971	44.989	267.325
Zero Calibration Error ACE	0.26	0	0.12
Low Level Calibration Error ACE	0	0	0
Mid Level Calibration Error ACE	0.27	0	-0.43
High Level Calibration Error ACE	0.34	-0.25	-0.62
Initial Readings			
Zero	-0.001	0.108	1.373
Span	10.655	25.05	147.338
Final Readings			
Zero	0.016	0.121	1.373
Span	10.717	25.083	147.197
System Bias (Eq 7E-2)			
Initial Zero Bias SB	-0.26	0.24	0.39
Initial Span Bias SB	0	-0.04	0.44
Final Zero Bias SB	-0.18	0.27	0.39
Final Span Bias SB	0.29	0.03	0.39
System Calibration Error (Eq 7E-3)			
Initial Zero SCE	0	0.24	0.51
Initial Span SCE	0.26	-0.04	0.01
Final Zero SCE	0.08	0.27	0.51
Final Span SCE	0.56	0.03	-0.04
Drift Assessment (Eq 7E-4)			
Zero Drift D	0.08	0.03	0
Span Drift D	0.29	0.07	0.05
Effluent Gas Concentration (Eq 7E-5)			
Raw Results	6.76	19.1	235.79
Corrected Results (ppmv)	6.7	19.08	236.68

Polk Acid Plant - Report			
RUN 3			
03/23/2007	**13:12:40**	**14:12:40**	
Analyzer Calibration Error (Eq 7E-1)	aO2	bCO2	fSO2
Analyzer Range	25	50	300
Units	%	%	PPM
Low Level Certified Value (PPM or %)			
Mid Level Certified Value (PPM or %)	10.6	25.07	147.3
High Level Certified Value (PPM or %)	20.9	45.1	269
Zero Level Observed	0.054	-0.001	0.317
Low Level Observed	-	-	-
Mid Level Observed	10.656	25.07	146.154
High Level Observed	20.971	44.989	267.325
Zero Calibration Error ACE	0.26	0	0.12
Low Level Calibration Error ACE	0	0	0
Mid Level Calibration Error ACE	0.27	0	-0.43
High Level Calibration Error ACE	0.34	-0.25	-0.62
Initial Readings			
Zero	0.016	0.121	1.373
Span	10.717	25.083	147.197
Final Readings			
Zero	0.025	0.149	1.373
Span	10.699	25.009	147.896
System Bias (Eq 7E-2)			
Initial Zero Bias SB	-0.18	0.27	0.39
Initial Span Bias SB	0.29	0.03	0.39
Final Zero Bias SB	-0.14	0.33	0.39
Final Span Bias SB	0.21	-0.14	0.65
System Calibration Error (Eq 7E-3)			
Initial Zero SCE	0.08	0.27	0.51
Initial Span SCE	0.56	0.03	-0.04
Final Zero SCE	0.12	0.33	0.51
Final Span SCE	0.47	-0.14	0.22
Drift Assessment (Eq 7E-4)			
Zero Drift D	0.04	0.06	0
Span Drift D	0.08	0.17	0.26
Effluent Gas Concentration (Eq 7E-5)			
Raw Results	6.95	19.02	226.47
Corrected Results (ppmv)	6.87	19.01	226.83

RUN LOG

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	7:31:59 AM		21.14	0.05	1.03
03/23/2007	7:32:29 AM		21.14	0.05	0.86
03/23/2007	7:32:59 AM		21.14	0.06	0.85
03/23/2007	7:33:29 AM		21.11	0.05	0.85
03/23/2007	7:33:59 AM	Linearity Check	16.71	0.2	0.49
03/23/2007	7:34:29 AM	Linearity Check	0.22	0.01	0.31
03/23/2007	7:34:59 AM	Linearity Check	0.04	-0.01	0.32
03/23/2007	7:35:29 AM	Linearity Check	0.13	19.59	0.32
03/23/2007	7:35:59 AM	Linearity Check	-0.06	38.31	0.32
03/23/2007	7:36:29 AM	Linearity Check	-0.11	43.5	0.31
03/23/2007	7:36:59 AM	Linearity Check	-0.13	43.66	0.31
03/23/2007	7:37:29 AM	Linearity Check	-0.12	44.98	0.32
03/23/2007	7:37:59 AM	Linearity Check	-0.13	45.01	0.31
03/23/2007	7:38:29 AM	Linearity Check	1.74	36.52	0.14
03/23/2007	7:38:59 AM	Linearity Check	5.22	12.54	-0.05
03/23/2007	7:39:29 AM	Linearity Check	10.25	8.75	-0.04
03/23/2007	7:39:59 AM	Linearity Check	10.66	9.43	-0.04
03/23/2007	7:40:29 AM	Linearity Check	10.7	9.48	-0.05
03/23/2007	7:40:59 AM	Linearity Check	13.19	4.74	-0.05
03/23/2007	7:41:29 AM	Linearity Check	19.63	14.87	-0.05
03/23/2007	7:41:59 AM	Linearity Check	21.06	18.48	-0.05
03/23/2007	7:42:29 AM	Linearity Check	15.94	20.12	0.14
03/23/2007	7:42:59 AM	Linearity Check	0.09	26.04	0.14
03/23/2007	7:43:29 AM	Linearity Check	-0.06	25.07	0.14
03/23/2007	7:43:59 AM	Linearity Check	0.43	20.34	30.55
03/23/2007	7:44:29 AM	Linearity Check	0.15	11.89	244.93
03/23/2007	7:44:59 AM	Linearity Check	-0.05	17.95	264.5
03/23/2007	7:45:29 AM	Linearity Check	-0.05	18.3	266.26
03/23/2007	7:45:59 AM	Linearity Check	-0.05	18.32	268.02
03/23/2007	7:46:29 AM	Linearity Check	0.36	10.59	51.38
03/23/2007	7:46:59 AM	Linearity Check	0.05	6.79	138.04
03/23/2007	7:47:29 AM	Linearity Check	-0.03	10.04	144.38
03/23/2007	7:47:59 AM	Linearity Check	-0.03	10.17	145.87
03/23/2007	7:48:29 AM	- ZERO	3.35	11.93	137.71
03/23/2007	7:48:59 AM	- ZERO	3.27	11.44	143.86
03/23/2007	7:49:29 AM	- ZERO	0.02	10.21	144.38
03/23/2007	7:49:59 AM	- Span	-0.01	10.2	145.48
03/23/2007	7:50:29 AM	- Span	-0.01	10.19	147.13
03/23/2007	7:50:59 AM	- Span	-0.01	10.2	148.26
03/23/2007	7:51:29 AM	- Span	0.88	10.13	27.95
03/23/2007	7:51:59 AM	- Span	10.47	8.92	5.45
03/23/2007	7:52:29 AM	- Span	10.67	9.08	2.79
03/23/2007	7:52:59 AM	- ZERO	10.67	9.09	1.91
03/23/2007	7:53:29 AM	- ZERO	1.74	2.02	1.91
03/23/2007	7:53:59 AM	- ZERO	0.05	0.1	1.57
03/23/2007	7:54:29 AM	- ZERO	0.02	0.07	1.2
03/23/2007	7:54:59 AM	- ZERO	0.01	4.83	1.2
03/23/2007	7:55:29 AM	- ZERO	-0.05	21.61	1.03
03/23/2007	7:55:59 AM	- ZERO	-0.07	24.88	0.86
03/23/2007	7:56:29 AM	- Span	-0.06	24.95	0.85

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	7:56:59 AM	- Span	-0.07	24.97	17.53
03/23/2007	7:57:29 AM	- Span	3.9	22.31	187.86
03/23/2007	7:57:59 AM	- Span	7.05	19.09	203.75
03/23/2007	7:58:29 AM	- Span	6.98	19.13	207.61
03/23/2007	7:58:59 AM	- Span	6.95	19.15	206.21
03/23/2007	7:59:29 AM	- Span	7.02	19.06	205.96
03/23/2007	7:59:59 AM	- Span	7.14	18.93	204.98
03/23/2007	8:00:29 AM	- Span	7.16	18.92	203.93
03/23/2007	8:00:59 AM	- Span	7.33	18.79	202
03/23/2007	8:01:29 AM	- Span	7.38	18.78	199.71
03/23/2007	8:01:59 AM	- Span	7.39	18.81	197.94
03/23/2007	8:02:29 AM	- Span	7.41	18.81	196.52
03/23/2007	8:02:59 AM	Traverse - 1	7.41	18.84	195.11
03/23/2007	8:03:29 AM	Traverse - 1	7.29	18.98	195.17
03/23/2007	8:03:59 AM	Traverse - 1	7.05	19.09	194.95
03/23/2007	8:04:29 AM	Traverse - 1	7.08	19.03	194.77
03/23/2007	8:04:59 AM	Traverse - 1	7.06	19	193.19
03/23/2007	8:05:29 AM	Traverse - 1	7.07	18.97	193
03/23/2007	8:05:59 AM	Traverse - 1	7.22	18.78	191.42
03/23/2007	8:06:29 AM	Traverse - 1	7.46	18.64	189.13
03/23/2007	8:06:59 AM	Traverse - 1	7.49	18.69	187.54
03/23/2007	8:07:29 AM	Traverse - 1	7.47	18.76	187.2
03/23/2007	8:07:59 AM	Traverse - 1	7.39	18.81	187.01
03/23/2007	8:08:29 AM	Traverse - 1	7.28	18.9	187.72
03/23/2007	8:08:59 AM	Traverse - 1	7.17	18.95	187.55
03/23/2007	8:09:29 AM	Traverse - 1	7.07	19.01	188.6
03/23/2007	8:09:59 AM	Traverse - 1	7	19.04	187.72
03/23/2007	8:10:29 AM	Traverse - 1	6.9	19.08	189.13
03/23/2007	8:10:59 AM	Traverse - 1	6.8	19.11	190.37
03/23/2007	8:11:29 AM	Traverse - 1	6.72	19.16	191.24
03/23/2007	8:11:59 AM	Traverse - 1	6.68	19.17	191.77
03/23/2007	8:12:29 AM	Traverse - 1	6.57	19.32	192.65
03/23/2007	8:12:59 AM	Traverse - 1	6.46	19.44	194.34
03/23/2007	8:13:29 AM	Traverse - 1	6.31	19.56	197.73
03/23/2007	8:13:59 AM	Traverse - 1	6.23	19.58	200.39
03/23/2007	8:14:29 AM	Traverse - 1	6.16	19.61	202.86
03/23/2007	8:14:59 AM	Traverse - 1	6.08	19.63	205.68
03/23/2007	8:15:29 AM	Traverse - 1	6.11	19.56	208.67
03/23/2007	8:15:59 AM	Traverse - 1	6.31	19.35	210.8
03/23/2007	8:16:29 AM	Traverse - 1	6.41	19.33	212.38
03/23/2007	8:16:59 AM	Traverse - 1	6.6	19.21	214.13
03/23/2007	8:17:29 AM	Traverse - 1	6.84	19.03	214.49
03/23/2007	8:17:59 AM	Traverse - 1	6.98	18.98	214.33
03/23/2007	8:18:29 AM	Traverse - 1	7.03	18.97	214.13
03/23/2007	8:18:59 AM	Traverse - 1	7.21	18.82	213.96
03/23/2007	8:19:29 AM	Traverse - 1	7.31	18.78	213.44
03/23/2007	8:19:59 AM	Traverse - 1	7.36	18.81	212.53
03/23/2007	8:20:29 AM	Traverse - 1	7.44	18.79	209.94
03/23/2007	8:20:59 AM	Run Paused	7.49	18.71	207.63
03/23/2007	8:21:29 AM	Run Paused	7.53	18.76	59.18

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	8:21:59 AM	Run Paused	17.13	17.75	184.37
03/23/2007	8:22:29 AM	Run Paused	7.63	18.78	199.53
03/23/2007	8:22:59 AM	Traverse - 1	7.56	18.79	198.83
03/23/2007	8:23:29 AM	Traverse - 1	7.46	18.91	196.88
03/23/2007	8:23:59 AM	Traverse - 1	7.28	19.06	196.53
03/23/2007	8:24:29 AM	Traverse - 1	7.25	19	196.53
03/23/2007	8:24:59 AM	Traverse - 1	7.16	19.06	194.23
03/23/2007	8:25:29 AM	Traverse - 1	7.09	19.1	194.76
03/23/2007	8:25:59 AM	Traverse - 1	7.05	19.09	194.06
03/23/2007	8:26:29 AM	Traverse - 1	7.06	19.04	194.06
03/23/2007	8:26:59 AM	Traverse - 1	7.12	19.01	192.13
03/23/2007	8:27:29 AM	Traverse - 1	7.07	19.07	191.59
03/23/2007	8:27:59 AM	Traverse - 1	6.86	19.27	192.66
03/23/2007	8:28:29 AM	Traverse - 1	6.77	19.33	194.59
03/23/2007	8:28:59 AM	Traverse - 1	6.62	19.44	196.71
03/23/2007	8:29:29 AM	Traverse - 1	6.41	19.5	198.47
03/23/2007	8:29:59 AM	Traverse - 1	6.32	19.49	200.75
03/23/2007	8:30:29 AM	Traverse - 1	6.28	19.47	202.86
03/23/2007	8:30:59 AM	Traverse - 1	6.34	19.33	204.62
03/23/2007	8:31:29 AM	Traverse - 1	6.41	19.27	205.86
03/23/2007	8:31:59 AM	Traverse - 1	6.5	19.22	206.38
03/23/2007	8:32:29 AM	Traverse - 1	6.55	19.21	208.49
03/23/2007	8:32:59 AM	Traverse - 1	6.61	19.25	210.26
03/23/2007	8:33:29 AM	Traverse - 1	6.65	19.25	212.02
03/23/2007	8:33:59 AM	Traverse - 1	6.69	19.27	213.96
03/23/2007	8:34:29 AM	Traverse - 1	6.67	19.27	214.82
03/23/2007	8:34:59 AM	Traverse - 1	6.68	19.28	216.07
03/23/2007	8:35:29 AM	Traverse - 1	6.73	19.22	216.94
03/23/2007	8:35:59 AM	Traverse - 1	6.76	19.21	216.61
03/23/2007	8:36:29 AM	Traverse - 1	6.8	19.22	216.43
03/23/2007	8:36:59 AM	Traverse - 1	6.85	19.17	216.59
03/23/2007	8:37:29 AM	Traverse - 1	6.91	19.11	216.25
03/23/2007	8:37:59 AM	Traverse - 1	7.04	19.02	215.01
03/23/2007	8:38:29 AM	Traverse - 1	7.1	19.03	213.77
03/23/2007	8:38:59 AM	Traverse - 1	7.13	19.02	212.87
03/23/2007	8:39:29 AM	Traverse - 1	7.16	18.98	212.27
03/23/2007	8:39:59 AM	Traverse - 1	7.15	19	211.5
03/23/2007	8:40:29 AM		7.12	19.01	210.55
03/23/2007	8:40:59 AM		7.18	18.98	166.59
03/23/2007	8:41:29 AM		4.76	9.54	12.84
03/23/2007	8:41:59 AM		0.19	0.71	2.97
03/23/2007	8:42:29 AM	- ZERO	0.03	0.15	1.92
03/23/2007	8:42:59 AM	- ZERO	0.03	0.11	1.73
03/23/2007	8:43:29 AM	- ZERO	0	10.81	1.38
03/23/2007	8:43:59 AM	- ZERO	-0.05	23.53	1.21
03/23/2007	8:44:29 AM	- Span	-0.06	24.96	1.21
03/23/2007	8:44:59 AM	- Span	-0.06	25	1.02
03/23/2007	8:45:29 AM	- Span	6.33	16.27	0.85
03/23/2007	8:45:59 AM	- Span	10.62	9.22	0.66
03/23/2007	8:46:29 AM	- Span	10.68	9.17	1.35

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	8:46:59 AM	- Span	6.49	9.33	134.15
03/23/2007	8:47:29 AM	- Span	0.04	10.13	146.32
03/23/2007	8:47:59 AM		0	10.2	148.95
03/23/2007	8:48:29 AM		3.14	14.18	201.46
03/23/2007	8:48:59 AM		6.5	18.99	205.15
03/23/2007	8:49:29 AM		6.53	19.18	206.73
03/23/2007	8:49:59 AM		6.6	19.13	206.75
03/23/2007	8:50:29 AM		6.7	19.04	206.39
03/23/2007	8:50:59 AM		6.77	19.06	208.14
03/23/2007	8:51:29 AM		6.71	19.19	208.32
03/23/2007	8:51:59 AM		6.63	19.31	208.85
03/23/2007	8:52:29 AM		6.5	19.44	211.48
03/23/2007	8:52:59 AM		6.31	19.64	214.56
03/23/2007	8:53:29 AM		6.18	19.71	216.59
03/23/2007	8:53:59 AM		6.09	19.72	218.73
03/23/2007	8:54:29 AM		6.03	19.73	221.7
03/23/2007	8:54:59 AM		6.02	19.69	223.99
03/23/2007	8:55:29 AM		6.27	19.42	225.4
03/23/2007	8:55:59 AM		6.43	19.33	225.22
03/23/2007	8:56:29 AM		6.51	19.3	225.23
03/23/2007	8:56:59 AM		6.74	19.13	225.05
03/23/2007	8:57:29 AM		6.95	18.99	224.88
03/23/2007	8:57:59 AM		7.03	18.96	225.41
03/23/2007	8:58:29 AM		7.08	18.95	224.7
03/23/2007	8:58:59 AM		7.23	18.82	222.6
03/23/2007	8:59:29 AM		7.4	18.73	220.82
03/23/2007	8:59:59 AM		7.41	18.76	219.09
03/23/2007	9:00:29 AM		7.44	18.76	218.18
03/23/2007	9:00:59 AM		7.55	18.69	215.37
03/23/2007	9:01:29 AM		7.56	18.73	212.2
03/23/2007	9:01:59 AM		7.55	18.75	209.91
03/23/2007	9:02:29 AM		7.57	18.73	207.8
03/23/2007	9:02:59 AM		7.55	18.76	205.15
03/23/2007	9:03:29 AM		7.38	18.9	204.27
03/23/2007	9:03:59 AM		7.27	18.97	203.21
03/23/2007	9:04:29 AM		7.3	18.9	201.46
03/23/2007	9:04:59 AM		7.38	18.81	199.23
03/23/2007	9:05:29 AM		7.35	18.93	197.41
03/23/2007	9:05:59 AM		7.09	19.2	197.23
03/23/2007	9:06:29 AM		6.84	19.39	198.01
03/23/2007	9:06:59 AM		6.46	19.64	200.39
03/23/2007	9:07:29 AM		6.19	19.86	203.34
03/23/2007	9:07:59 AM		5.94	19.93	206.91
03/23/2007	9:08:29 AM		5.83	19.94	210.59
03/23/2007	9:08:59 AM		5.7	19.99	215.18
03/23/2007	9:09:29 AM		5.61	19.99	218.53
03/23/2007	9:09:59 AM		5.63	19.88	223.29
03/23/2007	9:10:29 AM		5.74	19.68	226.99
03/23/2007	9:10:59 AM		5.92	19.53	230.34
03/23/2007	9:11:29 AM		6.22	19.31	231.05

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	9:11:59 AM		6.5	19.14	232.28
03/23/2007	9:12:29 AM		6.67	19.17	234.04
03/23/2007	9:12:59 AM		6.73	19.21	236.15
03/23/2007	9:13:29 AM		6.81	19.13	238.09
03/23/2007	9:13:59 AM		6.92	19.12	237.04
03/23/2007	9:14:29 AM		6.95	19.15	236.68
03/23/2007	9:14:59 AM		7	19.13	236.16
03/23/2007	9:15:29 AM		7.01	19.12	234.39
03/23/2007	9:15:59 AM		6.95	19.15	233.16
03/23/2007	9:16:29 AM		6.97	19.14	231.22
03/23/2007	9:16:59 AM		7.05	19.05	228.06
03/23/2007	9:17:29 AM		7.16	18.97	226.64
03/23/2007	9:17:59 AM		7.16	19.01	223.47
03/23/2007	9:18:29 AM		7.12	19.04	221.53
03/23/2007	9:18:59 AM		7.18	18.99	218.92
03/23/2007	9:19:29 AM		7.17	19.03	217.13
03/23/2007	9:19:59 AM		7.12	19.07	216.95
03/23/2007	9:20:29 AM		7.13	19.06	215.54
03/23/2007	9:20:59 AM		7.11	19.1	214.14
03/23/2007	9:21:29 AM		6.9	19.3	214.12
03/23/2007	9:21:59 AM		6.79	19.32	213.97
03/23/2007	9:22:29 AM		6.75	19.3	213.86
03/23/2007	9:22:59 AM		6.72	19.3	213.61
03/23/2007	9:23:29 AM		6.7	19.28	213.07
03/23/2007	9:23:59 AM		6.8	19.17	211.76
03/23/2007	9:24:29 AM		7.02	18.99	210.26
03/23/2007	9:24:59 AM		7.06	19	211.14
03/23/2007	9:25:29 AM		7.08	19.03	211.85
03/23/2007	9:25:59 AM		7.02	19.06	211.68
03/23/2007	9:26:29 AM		7.03	19.09	212.37
03/23/2007	9:26:59 AM		6.86	19.25	213.44
03/23/2007	9:27:29 AM		6.71	19.33	214.31
03/23/2007	9:27:59 AM		6.62	19.33	215.54
03/23/2007	9:28:29 AM		6.59	19.38	216.42
03/23/2007	9:28:59 AM		6.53	19.43	216.43
03/23/2007	9:29:29 AM		6.48	19.47	218.01
03/23/2007	9:29:59 AM		6.45	19.47	219.06
03/23/2007	9:30:29 AM		6.39	19.5	221.53
03/23/2007	9:30:59 AM		6.28	19.55	223.11
03/23/2007	9:31:29 AM		6.23	19.53	225.23
03/23/2007	9:31:59 AM		6.26	19.49	227.87
03/23/2007	9:32:29 AM		6.22	19.52	229.28
03/23/2007	9:32:59 AM		6.25	19.5	230.53
03/23/2007	9:33:29 AM		6.42	19.35	231.58
03/23/2007	9:33:59 AM		6.53	19.31	232.27
03/23/2007	9:34:29 AM		6.56	19.38	232.64
03/23/2007	9:34:59 AM		6.52	19.44	234.04
03/23/2007	9:35:29 AM		6.52	19.42	235.29
03/23/2007	9:35:59 AM		6.46	19.44	237.03
03/23/2007	9:36:29 AM		6.52	19.41	238.09

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	9:36:59 AM		6.72	19.17	236.5
03/23/2007	9:37:29 AM		6.86	19.1	234.58
03/23/2007	9:37:59 AM		6.91	19.11	233.51
03/23/2007	9:38:29 AM		6.94	19.06	233.34
03/23/2007	9:38:59 AM		7.09	18.97	230.89
03/23/2007	9:39:29 AM		7.11	18.96	228.76
03/23/2007	9:39:59 AM		7.17	18.95	227.31
03/23/2007	9:40:29 AM		7.27	18.85	224.7
03/23/2007	9:40:59 AM		7.37	18.77	222.76
03/23/2007	9:41:29 AM		7.4	18.77	219.76
03/23/2007	9:41:59 AM		7.39	18.81	217.84
03/23/2007	9:42:29 AM		7.42	18.79	215.36
03/23/2007	9:42:59 AM		7.46	18.81	213.96
03/23/2007	9:43:29 AM		7.4	18.82	211.85
03/23/2007	9:43:59 AM		7.32	18.86	210.79
03/23/2007	9:44:29 AM		7.34	18.84	209.21
03/23/2007	9:44:59 AM		7.32	18.89	208.33
03/23/2007	9:45:29 AM		7.1	19.09	207.09
03/23/2007	9:45:59 AM		7.01	19.08	206.56
03/23/2007	9:46:29 AM		6.95	19.12	206.39
03/23/2007	9:46:59 AM		6.84	19.17	206.57
03/23/2007	9:47:29 AM		6.75	19.2	207.44
03/23/2007	9:47:59 AM		6.7	19.2	207.62
03/23/2007	9:48:29 AM		6.76	19.15	208.34
03/23/2007	9:48:59 AM		6.75	19.19	209.03
03/23/2007	9:49:29 AM		6.56	19.38	209.91
03/23/2007	9:49:59 AM		6.46	19.41	211.16
03/23/2007	9:50:29 AM		6.38	19.42	214.49
03/23/2007	9:50:59 AM		6.31	19.47	216.77
03/23/2007	9:51:29 AM		6.3	19.46	218.54
03/23/2007	9:51:59 AM		6.25	19.51	220.47
03/23/2007	9:52:29 AM		6.12	19.62	223.47
03/23/2007	9:52:59 AM		6.04	19.66	226.82
03/23/2007	9:53:29 AM		6.02	19.63	230.35
03/23/2007	9:53:59 AM		6.02	19.57	232.78
03/23/2007	9:54:29 AM		6.15	19.46	234.23
03/23/2007	9:54:59 AM		6.35	19.34	234.76
03/23/2007	9:55:29 AM		6.55	19.22	235.1
03/23/2007	9:55:59 AM		6.63	19.21	235.47
03/23/2007	9:56:29 AM		6.76	19.17	236.51
03/23/2007	9:56:59 AM		6.89	19.06	236.33
03/23/2007	9:57:29 AM		7	19.02	235.27
03/23/2007	9:57:59 AM		7.03	19.04	234.94
03/23/2007	9:58:29 AM		7.01	19.05	234.22
03/23/2007	9:58:59 AM		7.06	19.03	233.87
03/23/2007	9:59:29 AM		7.08	19.05	232.3
03/23/2007	9:59:59 AM		7.04	19.05	230.88
03/23/2007	10:00:29 AM		7.11	19	228.42
03/23/2007	10:00:59 AM		7.18	18.9	225.94
03/23/2007	10:01:29 AM		7.18	18.91	224.18

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	10:01:59 AM		7.17	18.94	222.95
03/23/2007	10:02:29 AM		7.22	18.91	221.72
03/23/2007	10:02:59 AM		7.19	18.94	219.91
03/23/2007	10:03:29 AM		7.17	18.97	218.19
03/23/2007	10:03:59 AM		7.12	19	217.47
03/23/2007	10:04:29 AM		7.1	18.98	217.49
03/23/2007	10:04:59 AM		7.02	19.06	216.6
03/23/2007	10:05:29 AM		6.85	19.18	216.07
03/23/2007	10:05:59 AM		6.72	19.17	216.43
03/23/2007	10:06:29 AM		6.72	19.17	216.07
03/23/2007	10:06:59 AM		6.66	19.2	215.9
03/23/2007	10:07:29 AM		6.62	19.21	217.3
03/23/2007	10:07:59 AM		6.61	19.19	217.31
03/23/2007	10:08:29 AM		6.56	19.25	217.78
03/23/2007	10:08:59 AM		6.51	19.33	220.83
03/23/2007	10:09:29 AM		6.41	19.42	221.72
03/23/2007	10:09:59 AM		6.34	19.43	221.71
03/23/2007	10:10:29 AM		6.25	19.49	223.29
03/23/2007	10:10:59 AM		6.16	19.54	226.47
03/23/2007	10:11:29 AM		6.17	19.52	227.71
03/23/2007	10:11:59 AM	Run 1 - 1	6.2	19.52	229.74
03/23/2007	10:12:29 AM	Run 1 - 1	6.2	19.55	231.76
03/23/2007	10:12:59 AM	Run 1 - 1	6.19	19.55	234.87
03/23/2007	10:13:29 AM	Run 1 - 1	6.28	19.47	236.87
03/23/2007	10:13:59 AM	Run 1 - 1	6.42	19.33	238.45
03/23/2007	10:14:29 AM	Run 1 - 1	6.54	19.31	239.32
03/23/2007	10:14:59 AM	Run 1 - 1	6.66	19.25	238.63
03/23/2007	10:15:29 AM	Run 1 - 1	6.82	19.15	238.28
03/23/2007	10:15:59 AM	Run 1 - 1	6.84	19.2	237.93
03/23/2007	10:16:29 AM	Run 1 - 1	6.86	19.22	239.33
03/23/2007	10:16:59 AM	Run 1 - 1	6.88	19.21	238.45
03/23/2007	10:17:29 AM	Run 1 - 1	6.86	19.21	238.28
03/23/2007	10:17:59 AM	Run 1 - 1	6.83	19.22	236.86
03/23/2007	10:18:29 AM	Run 1 - 1	6.85	19.2	235.99
03/23/2007	10:18:59 AM	Run 1 - 1	6.88	19.17	235.27
03/23/2007	10:19:29 AM	Run 1 - 1	6.87	19.16	234.75
03/23/2007	10:19:59 AM	Run 1 - 1	6.89	19.12	234.06
03/23/2007	10:20:29 AM	Run 1 - 1	7.03	18.99	232.11
03/23/2007	10:20:59 AM	Run 1 - 1	7.19	18.86	229.84
03/23/2007	10:21:29 AM	Run 1 - 1	7.28	18.87	226.83
03/23/2007	10:21:59 AM	Run 1 - 1	7.3	18.89	225.4
03/23/2007	10:22:29 AM	Run 1 - 1	7.33	18.85	223.47
03/23/2007	10:22:59 AM	Run 1 - 1	7.34	18.87	221.54
03/23/2007	10:23:29 AM	Run 1 - 1	7.29	18.94	220.83
03/23/2007	10:23:59 AM	Run 1 - 1	7.14	19.08	221.01
03/23/2007	10:24:29 AM	Run 1 - 1	7.03	19.13	221.01
03/23/2007	10:24:59 AM	Run 1 - 1	6.91	19.16	220.83
03/23/2007	10:25:29 AM	Run 1 - 1	6.8	19.21	220.3
03/23/2007	10:25:59 AM	Run 1 - 1	6.78	19.21	219.77
03/23/2007	10:26:29 AM	Run 1 - 1	6.73	19.26	219.77

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	10:26:59 AM	Run 1 - 1	6.58	19.34	219.96
03/23/2007	10:27:29 AM	Run 1 - 1	6.48	19.45	221.37
03/23/2007	10:27:59 AM	Run 1 - 1	6.39	19.53	223.11
03/23/2007	10:28:29 AM	Run 1 - 1	6.24	19.63	224.89
03/23/2007	10:28:59 AM	Run 1 - 1	6.03	19.78	228.06
03/23/2007	10:29:29 AM	Run 1 - 1	5.95	19.8	231.23
03/23/2007	10:29:59 AM	Run 1 - 1	5.87	19.78	234.92
03/23/2007	10:30:29 AM	Run 1 - 1	5.82	19.74	237.55
03/23/2007	10:30:59 AM	Run 1 - 1	5.89	19.63	239.32
03/23/2007	10:31:29 AM	Run 1 - 1	6.19	19.35	240.39
03/23/2007	10:31:59 AM	Run 1 - 1	6.4	19.31	240.91
03/23/2007	10:32:29 AM	Run 1 - 1	6.46	19.35	241.97
03/23/2007	10:32:59 AM	Run 1 - 1	6.53	19.31	243.38
03/23/2007	10:33:29 AM	Run 1 - 1	6.64	19.28	244.61
03/23/2007	10:33:59 AM	Run 1 - 1	6.63	19.27	245.67
03/23/2007	10:34:29 AM	Run 1 - 1	6.65	19.28	246.55
03/23/2007	10:34:59 AM	Run 1 - 1	6.78	19.17	245.5
03/23/2007	10:35:29 AM	Run 1 - 1	6.93	19.06	243.56
03/23/2007	10:35:59 AM	Run 1 - 1	7.01	19.05	242.14
03/23/2007	10:36:29 AM	Run 1 - 1	7.07	19.01	240.4
03/23/2007	10:36:59 AM	Run 1 - 1	7.19	18.92	238.09
03/23/2007	10:37:29 AM	Run 1 - 1	7.28	18.9	235.46
03/23/2007	10:37:59 AM	Run 1 - 1	7.33	18.91	232.81
03/23/2007	10:38:29 AM	Run 1 - 1	7.33	18.95	231.23
03/23/2007	10:38:59 AM	Run 1 - 1	7.34	18.92	229.46
03/23/2007	10:39:29 AM	Run 1 - 1	7.33	18.94	226.58
03/23/2007	10:39:59 AM	Run 1 - 1	7.32	18.97	223.99
03/23/2007	10:40:29 AM	Run 1 - 1	7.27	18.97	222.35
03/23/2007	10:40:59 AM	Run 1 - 1	7.29	19	219.77
03/23/2007	10:41:29 AM	Run 1 - 1	7.06	19.25	219.42
03/23/2007	10:41:59 AM	Run 1 - 1	6.84	19.31	219.42
03/23/2007	10:42:29 AM	Run 1 - 1	6.79	19.25	219.78
03/23/2007	10:42:59 AM	Run 1 - 1	6.73	19.27	219.25
03/23/2007	10:43:29 AM	Run 1 - 1	6.68	19.29	219.78
03/23/2007	10:43:59 AM	Run 1 - 1	6.67	19.26	219.44
03/23/2007	10:44:29 AM	Run 1 - 1	6.75	19.18	219.06
03/23/2007	10:44:59 AM	Run 1 - 1	6.8	19.11	218.72
03/23/2007	10:45:29 AM	Run 1 - 1	6.8	19.14	219.24
03/23/2007	10:45:59 AM	Run 1 - 1	6.82	19.1	220.48
03/23/2007	10:46:29 AM	Run 1 - 1	6.81	19.1	222.06
03/23/2007	10:46:59 AM	Run 1 - 1	6.79	19.15	222.07
03/23/2007	10:47:29 AM	Run 1 - 1	6.75	19.12	222.54
03/23/2007	10:47:59 AM	Run 1 - 1	6.79	19.1	222.58
03/23/2007	10:48:29 AM	Run 1 - 1	6.78	19.12	223.47
03/23/2007	10:48:59 AM	Run 1 - 1	6.77	19.15	224.01
03/23/2007	10:49:29 AM	Run 1 - 1	6.76	19.14	224.53
03/23/2007	10:49:59 AM	Run 1 - 1	6.76	19.17	226.29
03/23/2007	10:50:29 AM	Run 1 - 1	6.73	19.2	225.93
03/23/2007	10:50:59 AM	Run 1 - 1	6.68	19.22	226.81
03/23/2007	10:51:29 AM	Run 1 - 1	6.69	19.22	227.71

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	10:51:59 AM	Run 1 - 1	6.62	19.3	228.58
03/23/2007	10:52:29 AM	Run 1 - 1	6.41	19.51	230.7
03/23/2007	10:52:59 AM	Run 1 - 1	6.24	19.65	233.17
03/23/2007	10:53:29 AM	Run 1 - 1	6.08	19.69	235.63
03/23/2007	10:53:59 AM	Run 1 - 1	5.97	19.72	237.74
03/23/2007	10:54:29 AM	Run 1 - 1	5.91	19.75	240.57
03/23/2007	10:54:59 AM	Run 1 - 1	5.91	19.67	242.32
03/23/2007	10:55:29 AM	Run 1 - 1	6.11	19.46	243.04
03/23/2007	10:55:59 AM	Run 1 - 1	6.44	19.2	242.49
03/23/2007	10:56:29 AM	Run 1 - 1	6.6	19.16	242.67
03/23/2007	10:56:59 AM	Run 1 - 1	6.82	19.02	241.44
03/23/2007	10:57:29 AM	Run 1 - 1	7.05	18.9	240.74
03/23/2007	10:57:59 AM	Run 1 - 1	7.17	18.84	240.74
03/23/2007	10:58:29 AM	Run 1 - 1	7.23	18.86	240.39
03/23/2007	10:58:59 AM	Run 1 - 1	7.3	18.88	239.15
03/23/2007	10:59:29 AM	Run 1 - 1	7.33	18.91	237.04
03/23/2007	10:59:59 AM	Run 1 - 1	7.31	18.92	236.33
03/23/2007	11:00:29 AM	Run 1 - 1	7.33	18.93	234.22
03/23/2007	11:00:59 AM	Run 1 - 1	7.32	18.96	230.87
03/23/2007	11:01:29 AM	Run 1 - 1	7.22	19.08	228.93
03/23/2007	11:01:59 AM	Run 1 - 1	7.11	19.13	228.23
03/23/2007	11:02:29 AM	Run 1 - 1	7.1	19.09	226.76
03/23/2007	11:02:59 AM	Run 1 - 1	7.18	18.99	224.18
03/23/2007	11:03:29 AM	Run 1 - 1	7.15	19	222.58
03/23/2007	11:03:59 AM	Run 1 - 1	7.16	19.01	221.36
03/23/2007	11:04:29 AM	Run 1 - 1	7.14	19.01	219.6
03/23/2007	11:04:59 AM	Run 1 - 1	7.07	19.08	219.07
03/23/2007	11:05:29 AM	Run 1 - 1	6.87	19.26	220.66
03/23/2007	11:05:59 AM	Run 1 - 1	6.78	19.24	220.48
03/23/2007	11:06:29 AM	Run 1 - 1	6.73	19.24	220.13
03/23/2007	11:06:59 AM	Run 1 - 1	6.69	19.27	220.11
03/23/2007	11:07:29 AM	Run 1 - 1	6.66	19.26	220.47
03/23/2007	11:07:59 AM	Run 1 - 1	6.67	19.24	220.48
03/23/2007	11:08:29 AM	Run 1 - 1	6.64	19.29	221.18
03/23/2007	11:08:59 AM	Run 1 - 1	6.55	19.37	223.12
03/23/2007	11:09:29 AM	Run 1 - 1	6.44	19.37	225.41
03/23/2007	11:09:59 AM	Run 1 - 1	6.43	19.38	226.64
03/23/2007	11:10:29 AM	Run 1 - 1	6.4	19.38	228.93
03/23/2007	11:10:59 AM	Run 1 - 1	6.38	19.37	230.53
03/23/2007	11:11:29 AM	Run 1 - 1	6.48	19.24	231.58
03/23/2007	11:13:59 AM	- ZERO	0	0.13	1.91
03/23/2007	11:14:29 AM	- ZERO	-0.01	0.11	1.73
03/23/2007	11:14:59 AM	- ZERO	-0.04	12.74	1.74
03/23/2007	11:15:29 AM	- ZERO	-0.09	23.93	1.56
03/23/2007	11:15:59 AM	- Span	-0.08	25.05	1.36
03/23/2007	11:16:29 AM	- ZERO	-0.09	25.09	1.36
03/23/2007	11:16:59 AM	- ZERO	6.19	16.45	1.21
03/23/2007	11:17:29 AM	- ZERO	10.62	9.18	1.02
03/23/2007	11:17:59 AM	- Span	10.71	9.22	1.02
03/23/2007	11:18:29 AM	- Span	7.33	9.28	135.39

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	11:18:59 AM	- Span	0.03	10.13	147.73
03/23/2007	11:19:29 AM	- Span	-0.04	10.26	202.48
03/23/2007	11:19:59 AM	- Span	5.35	16.81	232.63
03/23/2007	11:20:29 AM	- Span	7	18.91	231.91
03/23/2007	11:20:59 AM	- Span	7.1	18.91	229.47
03/23/2007	11:21:29 AM	- Span	7.12	18.92	229.46
03/23/2007	11:21:59 AM	- Span	7.12	18.95	227.87
03/23/2007	11:22:29 AM	- Span	7.16	18.91	226.81
03/23/2007	11:22:59 AM	- Span	7.14	18.96	226.11
03/23/2007	11:23:29 AM	- Span	7.05	19	225.22
03/23/2007	11:23:59 AM	- Span	7.07	18.96	224.53
03/23/2007	11:24:29 AM	- Span	7.08	18.96	222.94
03/23/2007	11:24:59 AM	- Span	7.03	18.99	222.41
03/23/2007	11:25:29 AM	- Span	7.02	19	222.59
03/23/2007	11:25:59 AM	- Span	7.04	18.97	221.88
03/23/2007	11:26:29 AM	- Span	7.01	18.99	221.31
03/23/2007	11:26:59 AM	- Span	6.95	19.07	220.47
03/23/2007	11:27:29 AM	- Span	6.9	19.14	220.82
03/23/2007	11:27:59 AM	- Span	6.84	19.14	220.65
03/23/2007	11:28:29 AM	- Span	6.77	19.21	221.01
03/23/2007	11:28:59 AM	- Span	6.73	19.25	221.53
03/23/2007	11:29:29 AM	- Span	6.67	19.27	221.37
03/23/2007	11:29:59 AM	- Span	6.62	19.3	222.41
03/23/2007	11:30:29 AM	- Span	6.52	19.37	223.47
03/23/2007	11:30:59 AM	- Span	6.42	19.41	225.58
03/23/2007	11:31:29 AM	- Span	6.41	19.43	227.69
03/23/2007	11:31:59 AM	- Span	6.35	19.47	229.46
03/23/2007	11:32:29 AM	- Span	6.31	19.53	231.4
03/23/2007	11:32:59 AM	- Span	6.28	19.56	233.87
03/23/2007	11:33:29 AM	- Span	6.24	19.58	236.11
03/23/2007	11:33:59 AM	- Span	6.21	19.57	237.55
03/23/2007	11:34:29 AM	- Span	6.2	19.56	239.86
03/23/2007	11:34:59 AM	- Span	6.31	19.44	240.73
03/23/2007	11:35:29 AM	- Span	6.51	19.29	242.32
03/23/2007	11:35:59 AM	- Span	6.59	19.28	243.02
03/23/2007	11:36:29 AM	- Span	6.71	19.18	242.68
03/23/2007	11:36:59 AM	- Span	6.88	19.04	242.31
03/23/2007	11:37:29 AM	- Span	7.02	18.95	240.92
03/23/2007	11:37:59 AM	- Span	7.1	18.91	241.61
03/23/2007	11:38:29 AM	- Span	7.17	18.86	239.69
03/23/2007	11:38:59 AM	- Span	7.3	18.78	237.74
03/23/2007	11:39:29 AM	- Span	7.31	18.79	234.23
03/23/2007	11:39:59 AM	- Span	7.33	18.8	234.05
03/23/2007	11:40:29 AM	- Span	7.34	18.79	232.12
03/23/2007	11:40:59 AM	- Span	7.38	18.77	229.81
03/23/2007	11:41:29 AM	- Span	7.35	18.8	227.88
03/23/2007	11:41:59 AM	- Span	7.32	18.81	226.11
03/23/2007	11:42:29 AM	- Span	7.33	18.82	224.71
03/23/2007	11:42:59 AM	- Span	7.31	18.86	222.76
03/23/2007	11:43:29 AM	- Span	7.11	19.05	222.41

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	11:43:59 AM	Run 2 - 1	6.97	19.11	222.42
03/23/2007	11:44:29 AM	Run 2 - 1	6.95	19.08	221.54
03/23/2007	11:44:59 AM	Run 2 - 1	6.9	19.16	220.65
03/23/2007	11:45:29 AM	Run 2 - 1	6.71	19.32	220.65
03/23/2007	11:45:59 AM	Run 2 - 1	6.58	19.36	221.88
03/23/2007	11:46:29 AM	Run 2 - 1	6.44	19.44	222.95
03/23/2007	11:46:59 AM	Run 2 - 1	6.25	19.58	225.05
03/23/2007	11:47:29 AM	Run 2 - 1	6.13	19.63	227.87
03/23/2007	11:47:59 AM	Run 2 - 1	6.08	19.64	229.29
03/23/2007	11:48:29 AM	Run 2 - 1	6.02	19.68	231.75
03/23/2007	11:48:59 AM	Run 2 - 1	5.93	19.71	236.51
03/23/2007	11:49:29 AM	Run 2 - 1	5.95	19.64	239.67
03/23/2007	11:49:59 AM	Run 2 - 1	6.03	19.5	241.79
03/23/2007	11:50:29 AM	Run 2 - 1	6.13	19.45	243.55
03/23/2007	11:50:59 AM	Run 2 - 1	6.2	19.41	244.43
03/23/2007	11:51:29 AM	Run 2 - 1	6.4	19.21	246.39
03/23/2007	11:51:59 AM	Run 2 - 1	6.59	19.11	246.73
03/23/2007	11:52:29 AM	Run 2 - 1	6.67	19.09	247.59
03/23/2007	11:52:59 AM	Run 2 - 1	6.8	19.05	247.78
03/23/2007	11:53:29 AM	Run 2 - 1	6.97	18.93	247.95
03/23/2007	11:53:59 AM	Run 2 - 1	7.02	18.96	247.26
03/23/2007	11:54:29 AM	Run 2 - 1	7.03	18.97	247.25
03/23/2007	11:54:59 AM	Run 2 - 1	7.04	18.97	246.19
03/23/2007	11:55:29 AM	Run 2 - 1	7.07	18.95	244.96
03/23/2007	11:55:59 AM	Run 2 - 1	7.06	18.93	242.32
03/23/2007	11:56:29 AM	Run 2 - 1	7.06	18.96	241.07
03/23/2007	11:56:59 AM	Run 2 - 1	7.13	18.93	238.62
03/23/2007	11:57:29 AM	Run 2 - 1	7.17	18.91	235.8
03/23/2007	11:57:59 AM	Run 2 - 1	7.2	18.94	234.05
03/23/2007	11:58:29 AM	Run 2 - 1	7.17	18.95	231.76
03/23/2007	11:58:59 AM	Run 2 - 1	7.17	18.94	230.7
03/23/2007	11:59:29 AM	Run 2 - 1	7.13	18.96	229.64
03/23/2007	11:59:59 AM	Run 2 - 1	6.99	19.12	229.63
03/23/2007	12:00:29 PM	Run 2 - 1	6.96	19.08	228.4
03/23/2007	12:00:59 PM	Run 2 - 1	7.04	18.96	227.88
03/23/2007	12:01:29 PM	Run 2 - 1	7.07	18.96	226.47
03/23/2007	12:01:59 PM	Run 2 - 1	7.03	19.02	225.4
03/23/2007	12:02:29 PM	Run 2 - 1	6.99	19.05	224.53
03/23/2007	12:02:59 PM	Run 2 - 1	6.89	19.07	224.7
03/23/2007	12:03:29 PM	Run 2 - 1	6.85	19.11	225.06
03/23/2007	12:03:59 PM	Run 2 - 1	6.84	19.09	224.88
03/23/2007	12:04:29 PM	Run 2 - 1	6.88	19.04	225.06
03/23/2007	12:04:59 PM	Run 2 - 1	6.91	19.01	223.83
03/23/2007	12:05:29 PM	Run 2 - 1	6.89	19.01	223.82
03/23/2007	12:05:59 PM	Run 2 - 1	6.88	19.01	225.23
03/23/2007	12:06:29 PM	Run 2 - 1	6.87	19.04	225.06
03/23/2007	12:06:59 PM	Run 2 - 1	6.75	19.14	225.76
03/23/2007	12:07:29 PM	Run 2 - 1	6.57	19.25	228.04
03/23/2007	12:07:59 PM	Run 2 - 1	6.56	19.23	229.13
03/23/2007	12:08:29 PM	Run 2 - 1	6.51	19.27	229.99

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	12:08:59 PM	Run 2 - 1	6.43	19.3	231.23
03/23/2007	12:09:29 PM	Run 2 - 1	6.41	19.29	231.76
03/23/2007	12:09:59 PM	Run 2 - 1	6.43	19.26	233.51
03/23/2007	12:10:29 PM	Run 2 - 1	6.46	19.23	234.58
03/23/2007	12:10:59 PM	Run 2 - 1	6.48	19.21	235.64
03/23/2007	12:11:29 PM	Run 2 - 1	6.49	19.19	236.51
03/23/2007	12:11:59 PM	Run 2 - 1	6.51	19.23	237.56
03/23/2007	12:12:29 PM	Run 2 - 1	6.52	19.26	238.61
03/23/2007	12:12:59 PM	Run 2 - 1	6.51	19.24	239.68
03/23/2007	12:13:29 PM	Run 2 - 1	6.58	19.24	239.85
03/23/2007	12:13:59 PM	Run 2 - 1	6.58	19.26	241.07
03/23/2007	12:14:29 PM	Run 2 - 1	6.54	19.28	243.02
03/23/2007	12:14:59 PM	Run 2 - 1	6.58	19.23	242.32
03/23/2007	12:15:29 PM	Run 2 - 1	6.61	19.2	243.2
03/23/2007	12:15:59 PM	Run 2 - 1	6.61	19.23	243.38
03/23/2007	12:16:29 PM	Run 2 - 1	6.62	19.22	243.02
03/23/2007	12:16:59 PM	Run 2 - 1	6.64	19.19	242.84
03/23/2007	12:17:29 PM	Run 2 - 1	6.65	19.19	243.2
03/23/2007	12:17:59 PM	Run 2 - 1	6.64	19.17	243.9
03/23/2007	12:18:29 PM	Run 2 - 1	6.76	19.05	243.2
03/23/2007	12:18:59 PM	Run 2 - 1	6.93	18.87	241.26
03/23/2007	12:19:29 PM	Run 2 - 1	7	18.87	239.67
03/23/2007	12:19:59 PM	Run 2 - 1	7.05	18.86	239.46
03/23/2007	12:20:29 PM	Run 2 - 1	7.17	18.77	238.09
03/23/2007	12:20:59 PM	Run 2 - 1	7.26	18.73	236.16
03/23/2007	12:21:29 PM	Run 2 - 1	7.28	18.74	234.92
03/23/2007	12:21:59 PM	Run 2 - 1	7.32	18.74	234.05
03/23/2007	12:22:29 PM	Run 2 - 1	7.34	18.71	232.28
03/23/2007	12:22:59 PM	Run 2 - 1	7.33	18.72	231.04
03/23/2007	12:23:29 PM	Run 2 - 1	7.3	18.73	229.65
03/23/2007	12:23:59 PM	Run 2 - 1	7.28	18.72	227.52
03/23/2007	12:24:29 PM	Run 2 - 1	7.25	18.74	226.65
03/23/2007	12:24:59 PM	Run 2 - 1	7.2	18.77	225.78
03/23/2007	12:25:29 PM	Run 2 - 1	7.17	18.83	224.18
03/23/2007	12:25:59 PM	Run 2 - 1	7.05	18.93	224.53
03/23/2007	12:26:29 PM	Run 2 - 1	6.92	19.01	224.17
03/23/2007	12:26:59 PM	Run 2 - 1	6.74	19.15	225.74
03/23/2007	12:27:29 PM	Run 2 - 1	6.62	19.24	226.29
03/23/2007	12:27:59 PM	Run 2 - 1	6.51	19.27	227
03/23/2007	12:28:29 PM	Run 2 - 1	6.43	19.32	228.05
03/23/2007	12:28:59 PM	Run 2 - 1	6.37	19.38	228.76
03/23/2007	12:29:29 PM	Run 2 - 1	6.23	19.45	231.93
03/23/2007	12:29:59 PM	Run 2 - 1	6.16	19.46	234.05
03/23/2007	12:30:29 PM	Run 2 - 1	6.1	19.49	236.86
03/23/2007	12:30:59 PM	Run 2 - 1	6.07	19.47	238.97
03/23/2007	12:31:29 PM	Run 2 - 1	6.17	19.39	240.39
03/23/2007	12:31:59 PM	Run 2 - 1	6.27	19.25	241.79
03/23/2007	12:32:29 PM	Run 2 - 1	6.3	19.29	244.78
03/23/2007	12:32:59 PM	Run 2 - 1	6.26	19.36	247.24
03/23/2007	12:33:29 PM	Run 2 - 1	6.25	19.39	250.05

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	12:33:59 PM	Run 2 - 1	6.24	19.4	251.66
03/23/2007	12:34:29 PM	Run 2 - 1	6.21	19.41	252.71
03/23/2007	12:34:59 PM	Run 2 - 1	6.38	19.25	253.02
03/23/2007	12:35:29 PM	Run 2 - 1	6.59	19.08	252.88
03/23/2007	12:35:59 PM	Run 2 - 1	6.68	19.07	252.74
03/23/2007	12:36:29 PM	Run 2 - 1	6.78	18.96	252.71
03/23/2007	12:36:59 PM	Run 2 - 1	7.06	18.72	251.13
03/23/2007	12:37:29 PM	Run 2 - 1	7.22	18.65	249.06
03/23/2007	12:37:59 PM	Run 2 - 1	7.25	18.65	246.92
03/23/2007	12:38:29 PM	Run 2 - 1	7.33	18.58	245.84
03/23/2007	12:38:59 PM	Run 2 - 1	7.45	18.51	243.64
03/23/2007	12:39:29 PM	Run 2 - 1	7.43	18.56	242.14
03/23/2007	12:39:59 PM	Run 2 - 1	7.43	18.6	239.58
03/23/2007	12:40:29 PM	Run 2 - 1	7.4	18.65	236.86
03/23/2007	12:40:59 PM	Run 2 - 1	7.31	18.77	235.8
03/23/2007	12:41:29 PM	Run 2 - 1	7.11	18.93	234.57
03/23/2007	12:41:59 PM	Run 2 - 1	6.96	18.98	233.87
03/23/2007	12:42:29 PM	Run 2 - 1	6.87	19	232.63
03/23/2007	12:42:59 PM	Run 2 - 1	6.79	19.02	231.22
03/23/2007	12:43:29 PM	Run 2 - 1	6.73	19.08	231.22
03/23/2007	12:43:59 PM	Run 2 - 2	6.63	19.09	231.22
03/23/2007	12:44:29 PM		6.64	19.07	230.87
03/23/2007	12:44:59 PM		6.34	18.96	48.62
03/23/2007	12:45:29 PM		0.91	3.77	4.73
03/23/2007	12:45:59 PM	- ZERO	0	0.22	2.43
03/23/2007	12:46:29 PM	- ZERO	0.01	0.15	2.08
03/23/2007	12:46:59 PM	- ZERO	0.49	0.26	1.9
03/23/2007	12:47:29 PM	- ZERO	9.74	7.8	1.71
03/23/2007	12:47:59 PM	- Span	10.71	9.13	1.37
03/23/2007	12:48:29 PM	- ZERO	10.73	9.16	1.38
03/23/2007	12:48:59 PM	- ZERO	5.29	16.52	1.37
03/23/2007	12:49:29 PM	- ZERO	0.09	24.65	1.37
03/23/2007	12:49:59 PM	- Span	-0.08	25.07	1.2
03/23/2007	12:50:29 PM	- Span	-0.06	23.93	116.76
03/23/2007	12:50:59 PM	- Span	-0.03	11.63	147.04
03/23/2007	12:51:29 PM	- Span	-0.03	10.29	154.15
03/23/2007	12:51:59 PM	- Span	3.43	14.86	249
03/23/2007	12:52:29 PM	- Span	6.36	19.03	252.53
03/23/2007	12:52:59 PM	- Span	6.49	19.1	253.59
03/23/2007	12:53:29 PM	- Span	6.63	18.97	253.06
03/23/2007	12:53:59 PM	- Span	6.73	18.92	252.71
03/23/2007	12:54:29 PM	- Span	6.81	18.92	252
03/23/2007	12:54:59 PM	- Span	6.91	18.88	252.88
03/23/2007	12:55:29 PM	- Span	7	18.79	250.94
03/23/2007	12:55:59 PM	- Span	7.06	18.8	250.24
03/23/2007	12:56:29 PM	- Span	7.11	18.81	247.6
03/23/2007	12:56:59 PM	- Span	7.2	18.73	244.97
03/23/2007	12:57:29 PM	- Span	7.24	18.75	242.85
03/23/2007	12:57:59 PM	- Span	7.19	18.78	242.15
03/23/2007	12:58:29 PM	- Span	7.22	18.78	240.21

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	12:58:59 PM	- Span	7.18	18.8	237.74
03/23/2007	12:59:29 PM	- Span	7.09	18.85	236.52
03/23/2007	12:59:59 PM	- Span	7	18.92	235.28
03/23/2007	1:00:29 PM	- Span	7.01	18.91	234.39
03/23/2007	1:00:59 PM	- Span	6.96	18.95	232.81
03/23/2007	1:01:29 PM	- Span	6.9	18.99	232.1
03/23/2007	1:01:59 PM	- Span	6.87	19	231.4
03/23/2007	1:02:29 PM	- Span	6.85	19.04	230.17
03/23/2007	1:02:59 PM	- Span	6.83	19.05	230.03
03/23/2007	1:03:29 PM	- Span	6.79	19.1	229.64
03/23/2007	1:03:59 PM	- Span	6.62	19.22	231.23
03/23/2007	1:04:29 PM	- Span	6.52	19.31	232.98
03/23/2007	1:04:59 PM	- Span	6.39	19.39	234.05
03/23/2007	1:05:29 PM	- Span	6.29	19.44	235.98
03/23/2007	1:05:59 PM	- Span	6.24	19.42	237.39
03/23/2007	1:06:29 PM	- Span	6.24	19.41	238.63
03/23/2007	1:06:59 PM	- Span	6.25	19.37	240.21
03/23/2007	1:07:29 PM	- Span	6.36	19.21	240.73
03/23/2007	1:07:59 PM	- Span	6.65	18.99	240.04
03/23/2007	1:08:29 PM	- Span	6.8	18.95	239.5
03/23/2007	1:08:59 PM	- Span	6.84	18.96	240.57
03/23/2007	1:09:29 PM	- Span	6.96	18.91	241.28
03/23/2007	1:09:59 PM	- Span	7.08	18.83	240.91
03/23/2007	1:10:29 PM	- Span	7.13	18.83	239.16
03/23/2007	1:10:59 PM	- Span	7.09	18.83	238.98
03/23/2007	1:11:29 PM	- Span	7.18	18.76	238.46
03/23/2007	1:11:59 PM	- Span	7.26	18.71	236.35
03/23/2007	1:12:29 PM	- Span	7.27	18.76	234.25
03/23/2007	1:12:59 PM	Run 3 - 1	7.24	18.78	233.35
03/23/2007	1:13:29 PM	Run 3 - 1	7.29	18.79	232.11
03/23/2007	1:13:59 PM	Run 3 - 1	7.2	18.96	231.41
03/23/2007	1:14:29 PM	Run 3 - 1	7.07	19.03	231.72
03/23/2007	1:14:59 PM	Run 3 - 1	7.08	18.98	230.21
03/23/2007	1:15:29 PM	Run 3 - 1	7.05	18.99	228.95
03/23/2007	1:15:59 PM	Run 3 - 1	7.04	18.97	227.18
03/23/2007	1:16:29 PM	Run 3 - 1	7.07	18.95	226.12
03/23/2007	1:16:59 PM	Run 3 - 1	7.18	18.87	225.24
03/23/2007	1:17:29 PM	Run 3 - 1	7.25	18.86	224.36
03/23/2007	1:17:59 PM	Run 3 - 1	7.23	18.9	222.42
03/23/2007	1:18:29 PM	Run 3 - 1	7.2	18.92	222.24
03/23/2007	1:18:59 PM	Run 3 - 1	7.14	18.92	221.18
03/23/2007	1:19:29 PM	Run 3 - 1	7.08	18.93	221.37
03/23/2007	1:19:59 PM	Run 3 - 1	7.01	18.97	222.07
03/23/2007	1:20:29 PM	Run 3 - 1	7	18.96	221.54
03/23/2007	1:20:59 PM	Run 3 - 1	7.03	18.94	221.17
03/23/2007	1:21:29 PM	Run 3 - 1	6.98	18.95	220.66
03/23/2007	1:21:59 PM	Run 3 - 1	6.96	18.96	221.18
03/23/2007	1:22:29 PM	Run 3 - 1	6.98	18.92	222.24
03/23/2007	1:22:59 PM	Run 3 - 1	6.97	18.95	222.24
03/23/2007	1:23:29 PM	Run 3 - 1	6.92	18.99	222.24

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	1:23:59 PM	Run 3 - 1	6.84	19.04	222.59
03/23/2007	1:24:29 PM	Run 3 - 1	6.79	19.08	223.47
03/23/2007	1:24:59 PM	Run 3 - 1	6.75	19.12	224.88
03/23/2007	1:25:29 PM	Run 3 - 1	6.68	19.13	225.94
03/23/2007	1:25:59 PM	Run 3 - 1	6.65	19.12	227.05
03/23/2007	1:26:29 PM	Run 3 - 1	6.73	19.05	226.47
03/23/2007	1:26:59 PM	Run 3 - 1	6.8	19.02	226.82
03/23/2007	1:27:29 PM	Run 3 - 1	6.82	19.05	227
03/23/2007	1:27:59 PM	Run 3 - 1	6.86	19.04	228.23
03/23/2007	1:28:29 PM	Run 3 - 1	6.79	19.11	229.47
03/23/2007	1:28:59 PM	Run 3 - 1	6.63	19.29	231.94
03/23/2007	1:29:29 PM	Run 3 - 1	6.55	19.3	233.52
03/23/2007	1:29:59 PM	Run 3 - 1	6.56	19.28	234.05
03/23/2007	1:30:29 PM	Run 3 - 1	6.55	19.28	233.87
03/23/2007	1:30:59 PM	Run 3 - 1	6.56	19.27	234.93
03/23/2007	1:31:29 PM	Run 3 - 1	6.63	19.18	235.11
03/23/2007	1:31:59 PM	Run 3 - 1	6.77	19.1	235.28
03/23/2007	1:32:29 PM	Run 3 - 1	6.77	19.12	235.11
03/23/2007	1:32:59 PM	Run 3 - 1	6.81	19.12	235.81
03/23/2007	1:33:29 PM	Run 3 - 1	6.87	19.07	236
03/23/2007	1:33:59 PM	Run 3 - 1	6.9	19.06	235.63
03/23/2007	1:34:29 PM	Run 3 - 1	6.95	19.05	236.34
03/23/2007	1:34:59 PM	Run 3 - 1	6.98	19.05	235.28
03/23/2007	1:35:29 PM	Run 3 - 1	7.04	18.96	234.84
03/23/2007	1:35:59 PM	Run 3 - 1	7.09	18.96	234.05
03/23/2007	1:36:29 PM	Run 3 - 1	7.13	18.92	233.52
03/23/2007	1:36:59 PM	Run 3 - 1	7.23	18.84	232.28
03/23/2007	1:37:29 PM	Run 3 - 1	7.37	18.76	230.17
03/23/2007	1:37:59 PM	Run 3 - 1	7.37	18.77	229.3
03/23/2007	1:38:29 PM	Run 3 - 1	7.39	18.78	227
03/23/2007	1:38:59 PM	Run 3 - 1	7.42	18.74	225.23
03/23/2007	1:39:29 PM	Run 3 - 1	7.46	18.7	224
03/23/2007	1:39:59 PM	Run 3 - 1	7.44	18.7	223.48
03/23/2007	1:40:29 PM	Run 3 - 1	7.45	18.73	222.42
03/23/2007	1:40:59 PM	Run 3 - 1	7.43	18.73	220.47
03/23/2007	1:41:29 PM	Run 3 - 1	7.41	18.76	219.42
03/23/2007	1:41:59 PM	Run 3 - 1	7.26	18.93	219.24
03/23/2007	1:42:29 PM	Run 3 - 1	7.15	18.97	218.19
03/23/2007	1:42:59 PM	Run 3 - 1	7.09	18.96	218.01
03/23/2007	1:43:29 PM	Run 3 - 1	7.05	18.98	218.19
03/23/2007	1:43:59 PM	Run 3 - 1	7.02	19.01	217.01
03/23/2007	1:44:29 PM	Run 3 - 1	7.04	18.98	216.07
03/23/2007	1:44:59 PM	Run 3 - 1	6.94	19.04	216.07
03/23/2007	1:45:29 PM	Run 3 - 1	6.82	19.16	218.36
03/23/2007	1:45:59 PM	Run 3 - 1	6.63	19.27	220.47
03/23/2007	1:46:29 PM	Run 3 - 1	6.56	19.29	221.53
03/23/2007	1:46:59 PM	Run 3 - 1	6.44	19.36	222.83
03/23/2007	1:47:29 PM	Run 3 - 1	6.36	19.42	225.29
03/23/2007	1:47:59 PM	Run 3 - 1	6.29	19.43	226.11
03/23/2007	1:48:29 PM	Run 3 - 1	6.28	19.44	228.93

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	1:48:59 PM	Run 3 - 1	6.24	19.47	230.7
03/23/2007	1:49:29 PM	Run 3 - 1	6.2	19.49	232.81
03/23/2007	1:49:59 PM	Run 3 - 1	6.24	19.4	234.05
03/23/2007	1:50:29 PM	Run 3 - 1	6.41	19.2	235.81
03/23/2007	1:50:59 PM	Run 3 - 1	6.52	19.17	236.86
03/23/2007	1:51:29 PM	Run 3 - 1	6.71	19.04	237.57
03/23/2007	1:51:59 PM	Run 3 - 1	6.96	18.84	236.86
03/23/2007	1:52:29 PM	Run 3 - 1	7.14	18.81	235.98
03/23/2007	1:52:59 PM	Run 3 - 1	7.2	18.83	235.81
03/23/2007	1:53:29 PM	Run 3 - 1	7.29	18.81	235.63
03/23/2007	1:53:59 PM	Run 3 - 1	7.34	18.79	234.75
03/23/2007	1:54:29 PM	Run 3 - 1	7.36	18.81	233.17
03/23/2007	1:54:59 PM	Run 3 - 1	7.35	18.83	231.57
03/23/2007	1:55:29 PM	Run 3 - 1	7.31	18.83	230.52
03/23/2007	1:55:59 PM	Run 3 - 1	7.31	18.83	229.82
03/23/2007	1:56:29 PM	Run 3 - 1	7.28	18.86	228.41
03/23/2007	1:56:59 PM	Run 3 - 1	7.29	18.84	226.63
03/23/2007	1:57:29 PM	Run 3 - 1	7.28	18.84	224.7
03/23/2007	1:57:59 PM	Run 3 - 1	7.26	18.87	223.65
03/23/2007	1:58:29 PM	Run 3 - 1	7.13	18.95	223.82
03/23/2007	1:58:59 PM	Run 3 - 1	7	19.04	223.64
03/23/2007	1:59:29 PM	Run 3 - 1	6.93	19.02	222.6
03/23/2007	1:59:59 PM	Run 3 - 1	6.9	19.06	221.53
03/23/2007	2:00:29 PM	Run 3 - 1	6.88	19.09	222.06
03/23/2007	2:00:59 PM	Run 3 - 1	6.88	19.05	221.52
03/23/2007	2:01:29 PM	Run 3 - 1	6.91	19.01	221.02
03/23/2007	2:01:59 PM	Run 3 - 1	6.9	19	220.12
03/23/2007	2:02:29 PM	Run 3 - 1	6.95	19	220.11
03/23/2007	2:02:59 PM	Run 3 - 1	6.98	18.95	221.01
03/23/2007	2:03:29 PM	Run 3 - 1	6.93	18.98	222.05
03/23/2007	2:03:59 PM	Run 3 - 1	6.93	18.98	221.54
03/23/2007	2:04:29 PM	Run 3 - 1	6.94	18.94	222.07
03/23/2007	2:04:59 PM	Run 3 - 1	7.04	18.84	221.18
03/23/2007	2:05:29 PM	Run 3 - 1	7.11	18.82	220.83
03/23/2007	2:05:59 PM	Run 3 - 1	7.14	18.83	221
03/23/2007	2:06:29 PM	Run 3 - 1	7.17	18.8	220.83
03/23/2007	2:06:59 PM	Run 3 - 1	7.24	18.8	219.59
03/23/2007	2:07:29 PM	Run 3 - 1	7.18	18.9	219.73
03/23/2007	2:07:59 PM	Run 3 - 1	7.04	19.06	220.48
03/23/2007	2:08:29 PM	Run 3 - 1	7	19.09	220.31
03/23/2007	2:08:59 PM	Run 3 - 1	6.86	19.19	221.36
03/23/2007	2:09:29 PM	Run 3 - 1	6.73	19.29	223.28
03/23/2007	2:09:59 PM	Run 3 - 1	6.62	19.34	224.34
03/23/2007	2:10:29 PM	Run 3 - 1	6.51	19.37	225.94
03/23/2007	2:10:59 PM	Run 3 - 1	6.48	19.39	227.36
03/23/2007	2:11:29 PM	Run 3 - 1	6.41	19.38	227.87
03/23/2007	2:11:59 PM	Run 3 - 1	6.54	19.21	227.53
03/23/2007	2:12:29 PM	Run 3 - 1	6.62	19.15	227.52
03/23/2007	2:12:59 PM		6.67	19.16	154.96
03/23/2007	2:13:29 PM		2.17	7.72	8.27

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	2:13:59 PM		0.05	0.46	2.78
03/23/2007	2:14:29 PM	- ZERO	0	0.16	2.09
03/23/2007	2:14:59 PM	- ZERO	0	0.13	2.08
03/23/2007	2:15:29 PM	- ZERO	-0.06	19.53	1.72
03/23/2007	2:15:59 PM	- ZERO	-0.08	24.88	1.74
03/23/2007	2:16:29 PM	- Span	-0.09	25.04	1.56
03/23/2007	2:16:59 PM	- Span	0.11	25.02	1.36
03/23/2007	2:17:29 PM	- ZERO	9.43	11.42	1.2
03/23/2007	2:17:59 PM	- Span	10.69	9.23	1.02
03/23/2007	2:18:29 PM	- Span	10.71	9.2	4.38
03/23/2007	2:18:59 PM	- Span	6.09	9.5	142.64
03/23/2007	2:19:29 PM	- Span	0	10.2	148.79
03/23/2007	2:19:59 PM	- Span	-0.02	10.24	206.35
03/23/2007	2:20:29 PM	- Span	6.25	17.29	218.88
03/23/2007	2:20:59 PM	- Span	7.32	18.74	219.42
03/23/2007	2:21:29 PM	- Span	7.28	18.8	218.19
03/23/2007	2:21:59 PM	- Span	7.15	18.96	217.14
03/23/2007	2:22:29 PM	- Span	6.97	19.05	219.05
03/23/2007	2:22:59 PM	- Span	6.94	19	217.13
03/23/2007	2:23:29 PM	- Span	6.91	19.01	217.48
03/23/2007	2:23:59 PM	- Span	6.92	19.01	216.94
03/23/2007	2:24:29 PM	- Span	6.91	19.01	216.06
03/23/2007	2:24:59 PM	- Span	6.95	19.01	216.76
03/23/2007	2:25:29 PM	- Span	6.94	19.02	217.13
03/23/2007	2:25:59 PM	- Span	6.9	19.04	217.83
03/23/2007	2:26:29 PM	- Span	6.81	19.07	219.41
03/23/2007	2:26:59 PM	- Span	6.82	19.05	219.94
03/23/2007	2:27:29 PM	- Span	6.77	19.07	220.47
03/23/2007	2:27:59 PM	- Span	6.75	19.07	221.36
03/23/2007	2:28:29 PM	- Span	6.83	18.96	222.05
03/23/2007	2:28:59 PM	- Span	6.93	18.91	221.71
03/23/2007	2:29:29 PM	- Span	6.92	18.95	222.46
03/23/2007	2:29:59 PM	- Span	6.84	19.05	224.18
03/23/2007	2:30:29 PM	- Span	6.82	19.03	224.88
03/23/2007	2:30:59 PM	- Span	6.83	19.01	226.11
03/23/2007	2:31:29 PM	- Span	6.88	18.96	226.01
03/23/2007	2:31:59 PM	- Span	7.02	18.83	224.69
03/23/2007	2:32:29 PM	- Span	7.11	18.8	224.36
03/23/2007	2:32:59 PM	- Span	7.16	18.84	223.82
03/23/2007	2:33:29 PM	- Span	7.06	18.95	223.65
03/23/2007	2:33:59 PM	- Span	6.95	19.06	225.05
03/23/2007	2:34:29 PM	- Span	6.9	19.04	225.22
03/23/2007	2:34:59 PM	- Span	6.87	19.05	224.69
03/23/2007	2:35:29 PM	- Span	6.92	18.98	224.17
03/23/2007	2:35:59 PM	- Span	7.11	18.79	222.94
03/23/2007	2:36:29 PM	- Span	7.21	18.77	221.88
03/23/2007	2:36:59 PM	- Span	7.26	18.79	220.82
03/23/2007	2:37:29 PM	- Span	7.26	18.77	196.83
03/23/2007	2:37:59 PM	- Span	14.98	9.15	192.64
03/23/2007	2:38:29 PM	- Span	9.14	15.91	218.37

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	2:38:59 PM	- Span	7.26	18.77	218.01
03/23/2007	2:39:29 PM	- Span	7.28	18.76	216.42
03/23/2007	2:39:59 PM	- Span	7.3	18.74	215.89
03/23/2007	2:40:29 PM	- Span	7.27	18.77	213.96
03/23/2007	2:40:59 PM	- Span	7.27	18.77	214.13
03/23/2007	2:41:29 PM	- Span	7.28	18.75	214.13
03/23/2007	2:41:59 PM	- Span	7.27	18.79	214.13
03/23/2007	2:42:29 PM	- Span	7.18	18.85	213.78
03/23/2007	2:42:59 PM	- Span	7.07	18.93	214.49
03/23/2007	2:43:29 PM	- Span	7.02	18.93	214.49
03/23/2007	2:43:59 PM	- Span	6.95	18.96	214.49
03/23/2007	2:44:29 PM	- Span	6.89	18.97	214.48
03/23/2007	2:44:59 PM	- Span	6.96	18.88	214.66
03/23/2007	2:45:29 PM	- Span	7	18.79	214.3
03/23/2007	2:45:59 PM	- Span	7.03	18.83	214.49
03/23/2007	2:46:29 PM	- Span	6.95	18.94	215.01
03/23/2007	2:46:59 PM	- Span	6.89	18.99	216.6
03/23/2007	2:47:29 PM	- Span	6.87	18.99	217.3
03/23/2007	2:47:59 PM	- Span	6.82	18.98	218.73
03/23/2007	2:48:29 PM	- Span	6.86	18.93	218.98
03/23/2007	2:48:59 PM	- Span	6.96	18.87	219.6
03/23/2007	2:49:29 PM	- Span	6.94	18.88	220.12
03/23/2007	2:49:59 PM	- Span	6.93	18.93	220.31
03/23/2007	2:50:29 PM	- Span	6.95	18.9	220.31
03/23/2007	2:50:59 PM	- Span	6.97	18.9	221.71
03/23/2007	2:51:29 PM	- Span	6.87	18.93	222.94
03/23/2007	2:51:59 PM	- Span	6.77	19.05	224.01
03/23/2007	2:52:29 PM	- Span	6.79	19.03	224.7
03/23/2007	2:52:59 PM	- Span	6.81	18.97	224.18
03/23/2007	2:53:29 PM	- Span	6.91	18.91	224.52
03/23/2007	2:53:59 PM	- Span	6.94	18.93	224.17
03/23/2007	2:54:29 PM	- Span	7.05	18.93	224.18
03/23/2007	2:54:59 PM	- Span	7.01	18.99	223.83
03/23/2007	2:55:29 PM	- Span	6.91	19.14	224.35
03/23/2007	2:55:59 PM	- Span	6.86	19.15	224.72
03/23/2007	2:56:29 PM	- Span	6.84	19.11	225.44
03/23/2007	2:56:59 PM	- Span	6.8	19.12	225.59
03/23/2007	2:57:29 PM	- Span	6.82	19.11	225.59
03/23/2007	2:57:59 PM	- Span	6.97	18.93	224.71
03/23/2007	2:58:29 PM	- Span	7.08	18.87	222.95
03/23/2007	2:58:59 PM	- Span	11.34	13.52	215.83
03/23/2007	2:59:29 PM	- Span	7.32	18.54	222.43
03/23/2007	2:59:59 PM	- Span	7.16	18.86	222.94
03/23/2007	3:00:29 PM	- Span	7.18	18.85	221.54
03/23/2007	3:00:59 PM	- Span	7.13	18.96	222.6
03/23/2007	3:01:29 PM	- Span	7.13	18.92	221.54
03/23/2007	3:01:59 PM	- Span	7.23	18.83	220.13
03/23/2007	3:02:29 PM	- Span	7.27	18.85	220.66
03/23/2007	3:02:59 PM	- Span	7.23	18.88	218.91
03/23/2007	3:03:29 PM	- Span	7.26	18.88	217.84

LOG

Date	Time	Status	aO2 (%)	bCO2 (%)	fSO2 (PPM)
03/23/2007	3:03:59 PM	- Span	7.27	18.88	218.55
03/23/2007	3:04:29 PM	- Span	7.2	18.97	217.85
03/23/2007	3:04:59 PM	- Span	7.08	19.08	217.84
03/23/2007	3:05:29 PM	- Span	7.05	19.06	218.04
03/23/2007	3:05:59 PM	- Span	6.95	19.07	218.72
03/23/2007	3:06:29 PM	- Span	6.89	19.12	218.55
03/23/2007	3:06:59 PM	- Span	6.86	19.11	218.73
03/23/2007	3:07:29 PM	- Span	6.96	19.02	218.02
03/23/2007	3:07:59 PM	- Span	6.99	19.05	217.66
03/23/2007	3:08:29 PM	- Span	6.87	19.21	217.85
03/23/2007	3:08:59 PM	- Span	6.85	19.19	218.73
03/23/2007	3:09:29 PM	- Span	6.77	19.19	219.09
03/23/2007	3:09:59 PM	- Span	6.72	19.23	220.66
03/23/2007	3:10:29 PM	- Span	6.71	19.22	222.25
03/23/2007	3:10:59 PM	- Span	6.83	19.08	222.42
03/23/2007	3:11:29 PM	- Span	6.94	19.01	221.55
03/23/2007	3:11:59 PM	- Span	6.91	19.09	221.9
03/23/2007	3:12:29 PM	- Span	6.85	19.19	223.66
03/23/2007	3:12:59 PM	- Span	6.83	19.18	224.89
03/23/2007	3:13:29 PM	- Span	6.77	19.21	225.42
03/23/2007	3:13:59 PM	- Span	6.75	19.24	225.43
03/23/2007	3:14:29 PM	- Span	6.75	19.22	225.96

CALIBRATION GAS CERTIFICATIONS

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331 4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-77664-001

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM024378 **Certification Date:** 15Jan2007 **Exp. Date:** 14Jan2010
Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	9.02	%	+/- 1%	Direct NIST and NMi
OXYGEN	10.6	%	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K001509	13.93 %	CARBON DIOXIDE
NTRM 2658	02Oct2010	ALM065248	9.930 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	04Jan2007	GC-TCD
MTI/M200/170927	10Jan2007	GC-TCD

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Trial Analysis | Second Trial Analysis | Calibration Curve

CARBON DIOXIDE

Date: 15Jan2007	Response Unit:AREA	
Z1 = 0.00000	R1 = 643875.0	T1 = 414767.0
R2 = 644070.0	Z2 = 0.00000	T2 = 414351.0
Z3 = 0.00000	T3 = 414635.0	R3 = 643518.0
Avg. Concentration:	9.020	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999993	1675
Constants:	A = -1.68479E-02
B = 2.17919OE-05	C =
D =	E =

OXYGEN

Date: 15Jan2007	Response Unit:AREA	
Z1 = 0.00000	R1 = 256502.0	T1 = 272105.0
R2 = 256158.0	Z2 = 0.00000	T2 = 272154.0
Z3 = 0.00000	T3 = 272457.0	R3 = 255760.0
Avg. Concentration:	10.60	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999997	2658
Constants:	A = -4.1587E-03
B = 3.9006E-05	C =
D =	E =

APPROVED BY: JOHN C. FITZ

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-58671-002

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM022018 **Certification Date:** 12Oct2006 **Exp. Date:** 11Oct2009
Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.0	%	+/- 1%	Direct NIST and NMi
OXYGEN	20.9	%	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K001509	13.93 %	CARBON DIOXIDE
NTRM 2659	04Jul2008	K004610	20.85 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
MTI/M200/170927	20Sep2006	GC-TCD
MTI/M200/170927	20Sep2006	GC-TCD

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis | **Second Triad Analysis** | **Calibration Curve**

CARBON DIOXIDE

Date: 12Oct2006	Response Unit:AREA	
Z1 = 0.00000	R1 = 643255.0	T1 = 826324.0
R2 = 643437.0	Z2 = 0.00000	T2 = 826277.0
Z3 = 0.00000	T3 = 826351.0	R3 = 643355.0
Avg. Concentration	18.00	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999988	1675
Constants:	A = -2.56089E-02
B = 2.1778E-05	C =
D =	E =

OXYGEN

Date: 12Oct2006	Response Unit:AREA	
Z1 = 0.00000	R1 = 536285.0	T1 = 648300.0
R2 = 636629.0	Z2 = 0.00000	T2 = 649027.0
Z3 = 0.00000	T3 = 648622.0	R3 = 537922.0
Avg. Concentration:	20.90	%

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999998	2659
Constants:	A = 1.9132E-02
B = 3.8059E-05	C =
D =	E =

APPROVED BY: _____
JOHN C. FITZ

BL501

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: E-N06925
Project No.: 05-27508-004

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM042687 **Certification Date:** 07Feb2005 **Exp. Date:** 07Feb2008

Cylinder Pressure*:** 1850 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	25.07 %	+/- 1%	Direct NIST and NMI
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997

Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2300	01Jan2008	ALM049147	23.34 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/10893	26Jan2005	THERMAL CONDUCTIVITY

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

Date: 07Feb2005	Response Unit:AREA	
Z1 = 0.00000	R1 = 1214000.	T1 = 1303809.
R2 = 1213747.	Z2 = 0.00000	T2 = 1304206.
Z3 = 0.00000	T3 = 1304309.	R3 = 1214512.
Avg. Concentration:	25.07 %	

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = .999999	
Constants:	A = -.025098732
B = 1.94E-05	C = 0
D = 0	E = 0.

APPROVED BY: _____

DAVID BABCOCK

BL502

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET,TROY,MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.. E-N06925
Project No.. 05-27508-005

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM016344 Certification Date: 07Feb2005 Exp. Date: 07Feb2008
Cylinder Pressure***: 1850 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	45.10 %	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997

Product certified as +/- 1% analytical accuracy is directly traceable to NIST or NMI standards

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2300	01Jan2008	ALM045142	23.34 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/10693	26Jan2005	THERMAL CONDUCTIVITY

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

CARBON DIOXIDE

Date: 07Feb2005 Response Unit:MV

Z1 = 0.00000	R1 = 1214000.	T1 = 2344788.
R2 = 1213747.	Z2 = 0.00000	T2 = 2345040.
Z3 = 0.00000	T3 = 2345069.	R3 = 1214512.

Avg. Concentration: 45.10 %

Second Triad Analysis

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4

r = .999999

Constants:	A = -.025098732
B = 1.946-05	C = 0
D = 0	E = 0

APPROVED BY: _____

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-52729-001

Customer

TAMPA ELECTRIC COMPANY

5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM009682 **Certification Date:** 27Jun2006 **Exp. Date:** 26Jun2008
Cylinder Pressure*:** 1999 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.21	%	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	152.2	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Prot

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K012148	13.93 %	CARBON DIOXIDE
NTRM 0260	02Oct2006	ALM057284	266.6 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000928781	08Jun2006	FTIR
FTIR//000928781	08Jun2006	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

CARBON DIOXIDE

First Triad Analysis			Second Triad Analysis			Calibration Curve	
Date: 20Jun2006	Response Unit:%					Concentration=A+Bx+Cx2+Dx3+Ex4	
Z1=-0.00878	R1=13.97749	T1=10.24188	Z1=0.00000	R1=0.00000	T1=0.00000	r=9.99997E-1	
R2=13.98411	Z2=-0.00769	T2=10.24781	R2=0.00000	Z2=0.00000	T2=0.00000	Constants:	A=0.00000E+0
Z3=-0.00535	T3=10.25074	R3=13.99919	Z3=0.00000	T3=0.00000	R3=0.00000	B=9.73447E-1	C=3.63400E-3
Avg. Concentration:	10.21	%	Avg. Concentration:	0.000		D=1.70000E-5	E=0.00000E+0

SULFUR DIOXIDE *

Date: 20Jun2006	Response Unit:PPM		Date: 27Jun2006	Response Unit: PPM		Concentration=A+Bx+Cx2+Dx3+Ex4	
Z1=-0.03225	R1=265.0084	T1=151.8536	Z1=-0.05180	R1=265.8178	T1=151.7932	r=9.99998E-1	
R2=266.1603	Z2=-0.01621	T2=151.9421	R2=265.9785	Z2=-0.04669	T2=151.8102	Constants:	A=0.00000E+0
Z3=0.01808	T3=152.0154	R3=266.2468	Z3=0.06517	T3=151.8972	R3=266.0725	B=9.98458E-1	C=1.00000E-5
Avg. Concentration:	152.2	PPM	Avg. Concentration:	152.2	PPM	D=0.00000E+0	E=0.00000E+0

APPROVED BY: Michael A. Kuhns

Michael A. Kuhns

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

6141 EASTON ROAD, BLDG 1,PLUMSTEADVILLE,PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Interference Free™ Multi-Component EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
6141 EASTON ROAD, BLDG 1
PLUMSTEADVILLE,PA 18949-0310

P.O. No.: E-N06925
Project No.: 01-67073-002

Customer

TAMPA ELECTRIC COMPANY
CHARLES DUFENY
5010 CAUSEWAY BLVD
TAMPA FL 33619

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM029767 **Certification Date:** 18Dec2006 **Exp. Date:** 17Dec2008
Cylinder Pressure*:** 1297 PSIG **Prev Certification Date:** 27Dec2004

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	18.00	%	+/- 1%	Direct NIST and NMi
SULFUR DIOXIDE *	269	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

* This Protocol has been certified using corrected NIST SO2 standard values, per EPA guidance dated 7/24/96 and will not correlate with uncorrected Prot

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1675	04Jul2008	K012148	13.93 %	CARBON DIOXIDE
NTRM 0260	01May2008	ALM040460	254.4 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//000928781	22Nov2006	FTIR
FTIR//000928781	15Dec2006	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis | **Second Triad Analysis** | **Calibration Curve**

CARBON DIOXIDE

First Triad Analysis			Second Triad Analysis			Calibration Curve	
Date: 24Dec2004	Response Unit:%		Date: 18Dec2006	Response Unit: %		Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1 = 0.00000	R1 = 0.00000	T1 = 0.00000	Z1 = 0.00106	R1 = 13.83801	T1 = 17.90717	r = 9.99994E-1	
R2 = 0.00000	Z2 = 0.00000	T2 = 0.00000	R2 = 13.84798	Z2 = 0.00117	T2 = 17.92890	Constants:	A = 0.00000E+0
Z3 = 0.00000	T3 = 0.00000	R3 = 0.00000	Z3 = 0.00389	T3 = 17.94814	R3 = 13.85742	B = 9.13972E-1	C = 1.20020E-2
Avg. Concentration:	17.97	%	Avg. Concentration:	18.03	%	D = 0.00000E+0	E = 0.00000E+0

SULFUR DIOXIDE *

First Triad Analysis			Second Triad Analysis			Calibration Curve	
Date: 24Dec2004	Response Unit:PPM		Date: 18Dec2006	Response Unit: PPM		Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1 = 0.00000	R1 = 0.00000	T1 = 0.00000	Z1 = 0.00262	R1 = 255.4631	T1 = 270.2870	r = 9.99999E-1	
R2 = 0.00000	Z2 = 0.00000	T2 = 0.00000	R2 = 255.5427	Z2 = 0.02165	T2 = 270.3383	Constants:	A = 0.00000E+0
Z3 = 0.00000	T3 = 0.00000	R3 = 0.00000	Z3 = 0.06771	T3 = 270.3940	R3 = 255.8316	B = 9.96541E-1	C = 3.40000E-5
Avg. Concentration:	269.1	PPM	Avg. Concentration:	269.1	PPM	D = 0.00000E+0	E = 0.00000E+0

APPROVED BY: Michael A. Kuhns
Michael A. Kuhns

APPENDIX GG

FUEL ANALYSIS

Plant Information Source: polk-1pisrv
Start Time: 03/23/2007 10:11
End Time: 03/23/2007 14:11
Time Interval: 1 Min

Polk Unit 1 Mass Spectrophotometer

Tag Name:	1tsyai101a	1tsyai101b	1ashyi004	1ashyi005	1ashyi006	1ashyi007	1ashyi008	
Tag Explanation:	H2s	COS	CO	CO2	H2	N2	AR	
Tag Units:								
	0.026845	0.007507	45.72769	16.70598	32.19535	4.459772	0.938176	100.0613
23-Mar-07 10:11:00	272.5338	69.35527	45.89052	16.7745	32.3965	4.148263	0.91779	
23-Mar-07 10:12:00	272.5272	69.37156	45.32989	16.8182	32.39797	4.184923	0.970339	
23-Mar-07 10:13:00	272.5205	69.38784	45.03608	16.88545	32.39945	4.77344	0.997052	
23-Mar-07 10:14:00	272.5139	69.40413	45.01994	16.95269	32.40093	4.774654	0.996155	
23-Mar-07 10:15:00	272.5073	69.42041	45.0038	16.98556	32.4024	4.775868	0.995258	
23-Mar-07 10:16:00	274.6144	69.4367	44.98765	16.99553	32.40388	4.771659	0.994362	
23-Mar-07 10:17:00	277.0359	69.45298	45.07386	17.0055	32.40536	4.447463	0.965745	
23-Mar-07 10:18:00	277.0558	69.46927	45.23316	17.01546	32.40684	4.288966	0.945761	
23-Mar-07 10:19:00	277.0757	69.48555	45.29954	17.02543	32.40832	4.286325	0.94473	
23-Mar-07 10:20:00	277.0957	69.50184	45.29954	17.0354	32.40979	4.286325	0.9437	
23-Mar-07 10:21:00	277.1156	69.51812	45.29954	17.04537	32.41127	4.286325	0.94267	
23-Mar-07 10:22:00	277.1355	69.53441	45.29954	17.05533	32.41275	4.286325	0.941639	
23-Mar-07 10:23:00	277.1555	69.55069	45.68823	16.95817	32.41423	3.762087	0.940609	
23-Mar-07 10:24:00	275.9326	69.56698	46.04099	16.86589	32.4157	3.706013	0.939578	
23-Mar-07 10:25:00	274.6176	69.58326	46.04413	16.86559	32.41718	3.666389	0.938548	
23-Mar-07 10:26:00	274.6242	69.59955	46.04728	16.86529	32.41866	3.663747	0.937518	
23-Mar-07 10:27:00	274.6309	69.61584	46.05042	16.86499	32.42014	3.663747	0.936487	
23-Mar-07 10:28:00	274.6375	69.63212	46.05357	16.86469	32.42161	3.663747	0.935457	
23-Mar-07 10:29:00	274.6441	69.64841	46.05671	16.86439	32.42309	3.663747	0.934426	
23-Mar-07 10:30:00	274.6508	69.66469	46.05986	16.86409	32.42457	3.663747	0.933396	
23-Mar-07 10:31:00	274.6574	69.68098	46.063	16.86379	32.42604	3.663747	0.932366	
23-Mar-07 10:32:00	276.5574	69.69726	45.81796	16.86349	32.42752	4.304112	0.950289	
23-Mar-07 10:33:00	278.6579	69.71355	45.41473	16.86319	32.429	4.489944	0.979077	
23-Mar-07 10:34:00	278.6745	69.72983	45.3731	16.86289	32.43048	4.533891	0.978421	
23-Mar-07 10:35:00	278.6911	69.74612	45.33148	16.86259	32.43196	4.546975	0.977765	
23-Mar-07 10:36:00	278.7077	69.7624	45.28985	16.89672	32.43343	4.552343	0.977109	
23-Mar-07 10:37:00	278.7244	69.77869	45.24823	16.99478	32.43491	4.557711	0.976453	
23-Mar-07 10:38:00	278.741	69.79497	45.2066	17.06015	32.43639	4.563079	0.975797	
23-Mar-07 10:39:00	278.7576	69.81126	45.16497	17.06015	32.43787	4.568447	0.975141	
23-Mar-07 10:40:00	277.8693	69.82754	45.12335	17.06015	32.43934	4.573815	0.974485	
23-Mar-07 10:41:00	276.901	69.84383	45.08173	17.06015	32.44082	4.579183	0.973829	
23-Mar-07 10:42:00	276.8811	69.86011	45.05051	17.06015	32.4423	4.584551	0.973173	
23-Mar-07 10:43:00	276.8612	69.8764	45.05051	17.06015	32.44378	4.589919	0.972517	
23-Mar-07 10:44:00	276.8414	69.89268	45.39842	16.98955	32.44526	4.595287	0.958566	
23-Mar-07 10:45:00	276.8215	69.90897	46.04775	16.75124	32.44673	4.396314	0.913808	
23-Mar-07 10:46:00	276.8016	69.92525	45.96057	16.7453	32.44821	4.242378	0.915603	
23-Mar-07 10:47:00	276.7817	69.94154	45.87339	16.73936	32.44969	4.242378	0.917398	
23-Mar-07 10:48:00	277.9149	70.08475	45.80577	16.75631	32.45116	4.242378	0.919194	
23-Mar-07 10:49:00	279.1469	70.36367	45.76051	16.89306	32.43089	4.305656	0.920989	
23-Mar-07 10:50:00	279.1667	70.64258	45.71524	16.81066	32.24595	4.555498	0.922784	
23-Mar-07 10:51:00	279.1866	70.92149	45.66997	16.73788	32.0842	4.744102	0.924579	
23-Mar-07 10:52:00	279.2065	71.20039	45.6247	16.73788	32.09802	4.744102	0.926374	
23-Mar-07 10:53:00	279.2264	71.47931	45.57943	16.73788	32.11184	4.744102	0.92817	
23-Mar-07 10:54:00	279.2462	71.75822	45.53416	16.73788	32.12566	4.744102	0.929965	
23-Mar-07 10:55:00	279.2661	72.03712	45.45877	16.74154	32.13948	4.644788	0.932631	
23-Mar-07 10:56:00	278.4494	72.1946	45.30056	16.96127	32.1533	4.511867	0.986663	
23-Mar-07 10:57:00	277.5338	72.23064	45.17136	16.96127	32.16712	4.516819	0.986663	
23-Mar-07 10:58:00	277.5271	72.26666	45.17136	16.96127	32.18094	4.521772	0.986663	
23-Mar-07 10:59:00	277.5205	72.3027	45.17136	16.96127	32.19476	4.526725	0.986663	
23-Mar-07 11:00:00	277.5138	72.33873	45.17136	16.96127	32.20858	4.531679	0.986663	

Polk Unit 1 Mass Spectrophotometer

Tag Name:	1tsyai101a	1tsyai101b	1ashyi004	1ashyi005	1ashyi006	1ashyi007	1ashyi008
Tag Explanation:	H2s	COS	CO	CO2	H2	N2	AR
23-Mar-07 11:01:00	277.5072	72.37477	45.17136	16.96127	32.22241	4.536632	0.986663
23-Mar-07 11:02:00	277.5005	72.4108	45.17136	16.96127	32.23623	4.541584	0.986663
23-Mar-07 11:03:00	277.4939	72.44684	45.17136	16.96127	32.25005	4.546537	0.986663
23-Mar-07 11:04:00	276.3694	72.48286	45.22538	16.96127	32.26387	3.948219	0.986663
23-Mar-07 11:05:00	275.1711	72.51891	46.03564	16.86636	32.27769	3.661515	0.934612
23-Mar-07 11:06:00	275.1711	72.55493	45.98843	16.8791	32.29151	3.715018	0.925504
23-Mar-07 11:07:00	275.1711	72.59097	45.94122	16.91674	32.30533	3.715018	0.926821
23-Mar-07 11:08:00	275.1711	72.627	45.894	16.95437	32.31915	3.715018	0.928139
23-Mar-07 11:09:00	275.1711	72.66304	45.84679	16.89898	32.33297	4.110416	0.929457
23-Mar-07 11:10:00	275.1711	72.69907	45.81622	16.82271	32.30869	4.438877	0.930775
23-Mar-07 11:11:00	275.1711	72.73511	45.78624	16.80746	32.27678	4.50972	0.932092
23-Mar-07 11:12:00	278.8369	72.77113	45.75625	16.80746	32.24488	4.50972	0.93341
23-Mar-07 11:13:00	282.8116	72.80717	45.72626	16.80746	32.21297	4.50972	0.934728
23-Mar-07 11:14:00	282.9276	72.8432	45.69627	16.80746	32.18107	4.50972	0.936046
23-Mar-07 11:15:00	282.9897	72.87924	45.66629	16.80746	32.14916	4.50972	0.937363
23-Mar-07 11:16:00	282.9943	72.91527	45.6363	16.80746	32.11726	4.50972	0.938681
23-Mar-07 11:17:00	282.999	72.95131	45.43557	16.99696	32.1349	4.438027	0.965745
23-Mar-07 11:18:00	283.0036	72.98734	45.2123	17.06334	32.17213	4.391748	0.973288
23-Mar-07 11:19:00	283.0082	73.02338	45.17136	17.05771	32.20935	4.396552	0.97003
23-Mar-07 11:20:00	281.486	73.0594	45.17136	17.05208	32.24658	4.401354	0.966772
23-Mar-07 11:21:00	279.8607	73.09544	45.36625	17.04644	32.28381	4.178196	0.963514
23-Mar-07 11:22:00	279.87	73.13147	45.61503	17.04081	32.32104	3.995382	0.960256
23-Mar-07 11:23:00	279.8793	73.16751	45.67308	17.03517	32.35826	3.986047	0.956998
23-Mar-07 11:24:00	279.8886	73.20354	45.67308	17.02954	32.39549	3.976711	0.95374
23-Mar-07 11:25:00	279.8979	73.23958	45.67308	17.0239	32.40794	3.967376	0.950482
23-Mar-07 11:26:00	279.869	73.2756	45.67308	17.01827	32.40704	3.958041	0.947224
23-Mar-07 11:27:00	279.7994	73.31165	45.75925	16.91811	32.40614	3.866163	0.943966
23-Mar-07 11:28:00	278.7882	73.34767	45.89182	16.85968	32.40524	3.76778	0.942717
23-Mar-07 11:29:00	277.7488	73.38371	45.94043	16.86122	32.40434	3.763286	0.942717
23-Mar-07 11:30:00	277.7554	73.41974	45.94043	16.86276	32.40344	3.758793	0.942717
23-Mar-07 11:31:00	277.7621	73.45578	45.94043	16.8643	32.40254	3.754299	0.942717
23-Mar-07 11:32:00	277.7687	73.49181	45.94043	16.86584	32.40165	3.749806	0.942717
23-Mar-07 11:33:00	277.7753	73.52785	45.94043	16.86737	32.40075	3.745312	0.942717
23-Mar-07 11:34:00	277.782	73.56387	45.94043	16.86891	32.39985	3.740819	0.942717
23-Mar-07 11:35:00	277.7886	73.59991	45.94043	16.87045	32.39895	3.736325	0.942717
23-Mar-07 11:36:00	278.8121	73.63594	45.94043	16.87199	32.39805	3.891825	0.942717
23-Mar-07 11:37:00	279.9106	73.67198	45.76212	16.87353	32.39715	4.210625	0.942717
23-Mar-07 11:38:00	279.9272	73.70801	45.53758	16.87507	32.39625	4.191308	0.942717
23-Mar-07 11:39:00	279.9437	73.74405	45.53758	16.87661	32.39536	4.171991	0.942717
23-Mar-07 11:40:00	279.9602	73.78008	45.53758	16.87815	32.39445	4.080325	0.942717
23-Mar-07 11:41:00	279.9767	73.81612	45.69482	16.87969	32.39356	3.880044	0.942717
23-Mar-07 11:42:00	279.9933	73.85214	45.94775	16.88122	32.39266	3.867916	0.942717
23-Mar-07 11:43:00	280.0098	73.88818	45.94775	16.88276	32.39176	3.855788	0.942717
23-Mar-07 11:44:00	278.3015	73.92421	45.94775	16.8843	32.39086	3.84366	0.942717
23-Mar-07 11:45:00	276.4003	73.96025	45.94775	16.88584	32.38996	3.831532	0.942717
23-Mar-07 11:46:00	276.4003	73.99628	45.94775	16.88738	32.38906	3.821223	0.942717
23-Mar-07 11:47:00	276.4003	74.03232	45.94775	16.88892	32.38816	3.821223	0.942717
23-Mar-07 11:48:00	276.4003	74.06834	45.94775	16.89046	32.38726	3.821223	0.942717
23-Mar-07 11:49:00	276.4003	74.10439	45.87657	16.83045	32.33788	3.95764	0.942717
23-Mar-07 11:50:00	276.4003	74.14041	45.52063	16.57841	32.09454	5.10318	0.942717
23-Mar-07 11:51:00	276.4003	74.17645	45.23071	16.56754	31.89581	5.377666	0.942717
23-Mar-07 11:52:00	278.5752	74.20668	45.23478	16.55668	31.89581	5.377666	0.942717
23-Mar-07 11:53:00	280.908	74.23112	45.23886	16.60634	31.92741	5.029696	0.949741
23-Mar-07 11:54:00	280.9245	74.25555	45.24294	16.9458	32.13806	4.469436	0.990326
23-Mar-07 11:55:00	280.941	74.27999	45.24701	16.9396	32.32104	4.509387	0.990326
23-Mar-07 11:56:00	280.9576	74.30443	45.25109	16.9334	32.32414	4.535356	0.990326
23-Mar-07 11:57:00	280.9741	74.32887	45.25517	16.92721	32.32724	4.535356	0.990326

Polk Unit 1 Mass Spectrophotometer

Tag Name:	1tsyai101a	1tsyai101b	1ashyi004	1ashyi005	1ashyi006	1ashyi007	1ashyi008
Tag Explanation:	H2s	COS	CO	CO2	H2	N2	AR
23-Mar-07 11:58:00	280.9906	74.3533	45.25925	16.92101	32.33034	4.535356	0.990326
23-Mar-07 11:59:00	281.0071	74.37774	45.33256	16.91481	32.33344	4.385728	0.984739
23-Mar-07 12:00:00	280.5289	74.40218	45.94577	16.90862	32.33653	4.002653	0.935462
23-Mar-07 12:01:00	279.9737	74.42661	45.92873	16.90242	32.33963	3.966631	0.936064
23-Mar-07 12:02:00	279.9768	74.45105	45.91168	16.89622	32.34273	3.937304	0.936665
23-Mar-07 12:03:00	279.9799	74.47549	45.89464	16.89002	32.34583	3.932182	0.937266
23-Mar-07 12:04:00	279.983	74.49992	45.8776	16.88383	32.34893	3.92706	0.937867
23-Mar-07 12:05:00	279.9861	74.52436	45.86056	16.87763	32.35203	3.921938	0.938468
23-Mar-07 12:06:00	279.9892	74.5488	45.84352	16.87143	32.35513	3.916816	0.93907
23-Mar-07 12:07:00	279.9922	74.57323	45.82648	16.86524	32.35822	3.911694	0.939671
23-Mar-07 12:08:00	279.9953	74.59767	45.80944	16.85904	32.36132	3.906572	0.940272
23-Mar-07 12:09:00	279.9984	74.62211	46.06604	16.68477	32.36442	3.998674	0.940873
23-Mar-07 12:10:00	280.0015	74.64655	45.57512	16.50166	32.21276	4.967498	0.941474
23-Mar-07 12:11:00	280.0046	74.67097	45.5305	16.49251	32.05295	4.967498	0.942075
23-Mar-07 12:12:00	280.0077	74.69541	45.51148	16.49251	32.05944	4.967498	0.942677
23-Mar-07 12:13:00	280.0108	74.71985	45.49245	16.66031	32.0778	4.8513	0.963056
23-Mar-07 12:14:00	280.0139	74.74429	45.47343	16.84009	32.09616	4.538287	0.984847
23-Mar-07 12:15:00	280.017	74.76872	45.45441	16.85031	32.11453	4.535708	0.986663
23-Mar-07 12:16:00	278.5725	74.79316	45.43539	16.84512	32.13289	4.533129	0.986663
23-Mar-07 12:17:00	276.9873	74.8176	45.41637	16.83992	32.15126	4.53055	0.986663
23-Mar-07 12:18:00	276.9062	74.84203	45.39735	16.83473	32.16962	4.527971	0.986663
23-Mar-07 12:19:00	276.8753	74.86647	45.37833	16.82953	32.18798	4.525392	0.986663
23-Mar-07 12:20:00	276.8983	74.89091	45.35931	16.82434	32.20635	4.522813	0.986663
23-Mar-07 12:21:00	276.9034	74.91534	45.34028	16.81915	32.22471	4.375273	0.986663
23-Mar-07 12:22:00	276.8878	74.93978	45.94283	16.81396	32.24308	3.739693	0.947159
23-Mar-07 12:23:00	276.8723	74.96422	46.11897	16.80876	32.26144	3.73489	0.933869
23-Mar-07 12:24:00	274.8351	74.98866	46.11301	16.80357	32.2798	3.730087	0.931882
23-Mar-07 12:25:00	272.653	75.01309	46.10705	16.79838	32.29817	3.774895	0.929896
23-Mar-07 12:26:00	272.626	75.03753	46.10109	16.76834	32.31653	4.050219	0.927909
23-Mar-07 12:27:00	272.5989	75.06197	46.09513	16.72391	32.3349	4.03873	0.925922
23-Mar-07 12:28:00	272.5718	75.0864	46.08917	16.67948	32.35326	4.02724	0.923935
23-Mar-07 12:29:00	272.5448	75.11083	46.08321	16.66685	32.35033	4.015751	0.921949
23-Mar-07 12:30:00	272.5177	75.13527	46.07725	16.67693	32.3322	4.004262	0.919962
23-Mar-07 12:31:00	272.5258	75.15971	46.07129	16.68701	32.31406	4.023194	0.917975
23-Mar-07 12:32:00	274.7041	75.18414	45.88826	16.69709	32.29592	4.580203	0.94683
23-Mar-07 12:33:00	277.1735	75.20858	45.71587	16.70717	32.27778	4.385205	0.975885
23-Mar-07 12:34:00	277.1901	75.23302	45.72123	16.71725	32.25964	4.385205	0.976332
23-Mar-07 12:35:00	277.2067	75.25745	45.72659	16.72733	32.2415	4.385205	0.976778
23-Mar-07 12:36:00	277.2233	75.28189	45.73195	16.73741	32.22337	4.385205	0.977225
23-Mar-07 12:37:00	277.2399	75.30633	45.73731	16.74749	32.20523	4.385205	0.977672
23-Mar-07 12:38:00	277.2565	75.33076	45.74267	16.75756	32.18709	4.385205	0.978118
23-Mar-07 12:39:00	277.2731	75.3552	45.74803	16.76764	32.16895	4.385205	0.978565
23-Mar-07 12:40:00	275.1069	75.37964	45.75339	16.77772	32.15082	4.385205	0.979011
23-Mar-07 12:41:00	272.7725	75.40408	45.79466	16.7878	32.18304	3.893895	0.967812
23-Mar-07 12:42:00	272.7526	75.42851	45.93471	16.79788	32.35374	3.610795	0.935572
23-Mar-07 12:43:00	272.7327	75.45295	46.07476	16.80796	32.48177	3.568529	0.936292
23-Mar-07 12:44:00	272.7128	75.47739	46.16872	16.81804	32.48177	3.568529	0.937012
23-Mar-07 12:45:00	272.6929	75.50182	46.11124	16.80303	32.45076	3.568529	0.937732
23-Mar-07 12:46:00	272.6731	75.52626	46.05377	16.70557	32.31785	4.206236	0.938451
23-Mar-07 12:47:00	272.6532	75.5507	45.99629	16.62693	32.2077	4.396191	0.939171
23-Mar-07 12:48:00	273.4258	75.87023	45.93881	16.64244	32.2113	4.396191	0.939891
23-Mar-07 12:49:00	274.2897	76.48488	45.88133	16.65795	32.21491	4.396191	0.940611
23-Mar-07 12:50:00	274.2897	77.09952	45.83325	16.67346	32.21851	4.396191	0.94133
23-Mar-07 12:51:00	274.2897	77.71416	45.85631	16.68898	32.22211	4.396191	0.94205
23-Mar-07 12:52:00	274.2897	78.02824	45.87937	16.70449	32.22572	4.396191	0.94277
23-Mar-07 12:53:00	274.2897	78.04173	45.90243	16.72	32.22932	4.396191	0.94349
23-Mar-07 12:54:00	274.2897	78.05523	45.92548	16.73424	32.23293	4.203835	0.944209

Polk Unit 1 Mass Spectrophotometer

Tag Name:	1tsyai101a	1tsyai101b	1ashyi004	1ashyi005	1ashyi006	1ashyi007	1ashyi008
Tag Explanation:	H2s	COS	CO	CO2	H2	N2	AR
23-Mar-07 12:55:00	274.2897	78.06873	45.94854	16.73455	32.23653	4.065296	0.944929
23-Mar-07 12:56:00	274.2897	78.08222	45.9716	16.73486	32.24013	4.056798	0.945649
23-Mar-07 12:57:00	274.2788	78.09572	45.99466	16.73517	32.24374	4.048301	0.946369
23-Mar-07 12:58:00	274.2556	78.10922	46.01714	16.73548	32.24734	3.947081	0.947088
23-Mar-07 12:59:00	274.2325	78.12272	46.00516	16.73578	32.25094	3.867958	0.947808
23-Mar-07 13:00:00	274.2093	78.13622	45.99319	16.73609	32.25455	3.859955	0.948528
23-Mar-07 13:01:00	274.1861	78.14971	45.98121	16.7364	32.25815	3.851951	0.949248
23-Mar-07 13:02:00	274.1629	78.16321	45.96924	16.73671	32.26175	3.843948	0.949968
23-Mar-07 13:03:00	274.1397	78.1767	45.95726	16.73702	32.26536	3.835944	0.950687
23-Mar-07 13:04:00	272.9259	78.19021	45.94529	16.73733	32.26896	3.923465	0.951407
23-Mar-07 13:05:00	271.5497	78.2037	45.92788	16.73763	32.27256	4.094569	0.952127
23-Mar-07 13:06:00	271.5431	78.2172	45.90987	16.73794	32.27617	4.18012	0.952847
23-Mar-07 13:07:00	271.5364	78.2307	45.89186	16.73825	32.27977	4.18012	0.953566
23-Mar-07 13:08:00	271.5298	78.24419	45.87385	16.73856	32.28337	4.18012	0.954286
23-Mar-07 13:09:00	271.5232	78.2577	45.85584	16.73887	32.28698	4.18012	0.955006
23-Mar-07 13:10:00	271.5166	78.27119	45.83783	16.73918	32.29058	4.18012	0.955726
23-Mar-07 13:11:00	271.5099	78.28469	45.81981	16.73949	32.29419	4.18012	0.956445
23-Mar-07 13:12:00	272.8486	78.29819	45.8018	16.7398	32.29779	4.18012	0.957165
23-Mar-07 13:13:00	274.3933	78.31168	45.78379	16.7401	32.30139	4.416424	0.957885
23-Mar-07 13:14:00	274.4165	78.32518	45.44429	16.74041	32.305	4.762625	0.958605
23-Mar-07 13:15:00	274.4397	78.33868	45.32518	16.74072	32.3086	4.71541	0.959324
23-Mar-07 13:16:00	274.4629	78.35218	45.32518	16.74103	32.3122	4.685507	0.960044
23-Mar-07 13:17:00	274.4861	78.36568	45.32518	16.74134	32.31581	4.472732	0.960764
23-Mar-07 13:18:00	274.5092	78.37917	45.72214	16.74165	32.31941	4.041016	0.950677
23-Mar-07 13:19:00	274.5325	78.39267	45.95206	16.74195	32.32301	3.971374	0.934333
23-Mar-07 13:20:00	273.1486	78.40617	45.93528	16.74226	32.32662	3.971374	0.928068
23-Mar-07 13:21:00	271.5435	78.41967	45.9185	16.74257	32.33022	3.971374	0.928068
23-Mar-07 13:22:00	271.5236	78.43317	45.90173	16.74288	32.33382	3.971374	0.928068
23-Mar-07 13:23:00	271.5038	78.44666	45.88495	16.74319	32.33743	3.971374	0.928068
23-Mar-07 13:24:00	271.4839	78.46016	45.86818	16.7435	32.34103	3.971374	0.928068
23-Mar-07 13:25:00	271.464	78.47366	45.8514	16.74381	32.34464	4.061831	0.928068
23-Mar-07 13:26:00	271.4441	78.48715	45.83463	16.74412	32.34824	4.340477	0.930865
23-Mar-07 13:27:00	271.4242	78.50066	45.81785	16.74442	32.35184	4.161809	0.93628
23-Mar-07 13:28:00	269.5203	78.51415	45.80107	16.74473	32.35545	4.161809	0.941694
23-Mar-07 13:29:00	267.3682	78.52765	45.78429	16.74504	32.35905	4.161809	0.947108
23-Mar-07 13:30:00	267.2522	78.54115	45.11762	16.6567	32.10425	5.555023	0.952523
23-Mar-07 13:31:00	267.2296	78.55464	44.72723	16.5714	31.83299	5.806147	0.957937
23-Mar-07 13:32:00	267.307	78.56814	44.72073	16.59066	31.83941	5.806147	0.963352
23-Mar-07 13:33:00	267.3843	78.58164	44.71422	16.60992	31.84583	5.806147	0.968766
23-Mar-07 13:34:00	267.385	78.59514	44.70772	16.62919	31.85225	5.806147	0.971244
23-Mar-07 13:35:00	267.3038	78.60863	44.70121	16.64845	31.85868	5.806147	0.969316
23-Mar-07 13:36:00	265.7843	78.62213	45.20004	16.75679	32.04062	5.806147	0.967389
23-Mar-07 13:37:00	264.1539	78.63563	45.4618	16.939	32.37932	4.208283	0.965461
23-Mar-07 13:38:00	264.1539	78.64912	45.46898	16.93809	32.37962	4.201588	0.963534
23-Mar-07 13:39:00	264.1539	78.66263	45.47615	16.93719	32.37993	4.194894	0.961606
23-Mar-07 13:40:00	264.1539	78.67612	45.48332	16.93629	32.38023	4.1882	0.959679
23-Mar-07 13:41:00	264.1539	78.68962	45.4905	16.93538	32.38053	4.181505	0.957751
23-Mar-07 13:42:00	264.1539	78.70312	45.49767	16.93448	32.38083	4.174811	0.955824
23-Mar-07 13:43:00	264.1539	78.71661	45.50485	16.93357	32.38113	4.168117	0.953896
23-Mar-07 13:44:00	264.5832	78.73012	45.51202	16.93267	32.38144	4.161422	0.951969
23-Mar-07 13:45:00	265.0584	78.74361	45.60542	16.8807	32.38174	4.154727	0.950041
23-Mar-07 13:46:00	265.0584	78.75711	45.78505	16.70936	32.38204	4.132061	0.948114
23-Mar-07 13:47:00	265.0584	78.77061	45.89282	16.69702	32.38234	4.087034	0.946186
23-Mar-07 13:48:00	265.0584	78.7841	45.89282	16.68468	32.38264	4.059267	0.944259
23-Mar-07 13:49:00	265.0584	78.7976	45.89282	16.67234	32.34622	4.059267	0.943198
23-Mar-07 13:50:00	265.0584	78.8111	45.56932	16.66	32.16291	5.1745	0.945604
23-Mar-07 13:51:00	265.0584	78.8246	44.92233	16.64766	31.9796	5.725577	0.94801

Polk Unit 1 Mass Spectrophotometer

Tag Name:	1tsyai101a	1tsyai101b	1ashyi004	1ashyi005	1ashyi006	1ashyi007	1ashyi008
Tag Explanation:	H2s	COS	CO	CO2	H2	N2	AR
23-Mar-07 13:52:00	264.7558	78.8381	44.92233	16.63531	31.82989	5.725577	0.950415
23-Mar-07 13:53:00	264.4306	78.85159	44.92233	16.62297	31.82989	5.725577	0.952821
23-Mar-07 13:54:00	264.4273	78.86509	44.92233	16.61063	31.82989	5.725577	0.955227
23-Mar-07 13:55:00	264.424	78.87859	44.92233	16.59829	31.82989	5.725577	0.957633
23-Mar-07 13:56:00	264.4207	78.89209	44.92233	16.58595	31.82989	5.725577	0.960039
23-Mar-07 13:57:00	264.4174	78.90559	44.92233	16.57361	31.82989	5.725577	0.962445
23-Mar-07 13:58:00	264.4141	78.91908	45.10136	16.57032	31.86423	4.267821	0.964331
23-Mar-07 13:59:00	264.4108	78.94572	45.70028	16.69381	32.35386	4.256256	0.95895
23-Mar-07 14:00:00	262.504	78.98642	45.69057	16.81112	32.35926	4.244691	0.953569
23-Mar-07 14:01:00	260.3191	79.02711	45.68085	16.81112	32.36467	4.233126	0.948188
23-Mar-07 14:02:00	260.3026	79.06781	45.7134	16.81112	32.37007	4.221561	0.942806
23-Mar-07 14:03:00	260.286	79.10851	45.91497	16.81112	32.37547	3.94808	0.943277
23-Mar-07 14:04:00	260.2694	79.14921	46.07959	16.81112	32.38087	3.903169	0.943846
23-Mar-07 14:05:00	260.2528	79.1899	46.07959	16.81112	32.38628	3.892292	0.944415
23-Mar-07 14:06:00	260.2363	79.2306	46.07959	16.81112	32.39168	3.881413	0.944984
23-Mar-07 14:07:00	260.2197	79.27129	46.07959	16.81112	32.39708	3.870536	0.945554
23-Mar-07 14:08:00	261.7804	79.31199	46.03925	16.81112	32.40249	3.859658	0.946123
23-Mar-07 14:09:00	263.574	79.35268	45.77029	16.81112	32.40789	4.112999	0.946692
23-Mar-07 14:10:00	263.574	79.39338	45.51927	16.81112	32.4133	4.321665	0.947261
23-Mar-07 14:11:00	263.574	79.43407	45.51927	16.81112	32.4187	4.355907	0.947831

TECO
TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID: Polk Mass Spec**

Facility: Polk Power Station **Analysis Date: 03/23/2007**

Source: Unit 1

CALCULATION OF DENSITY AND HEATING VALUE @ 60°F and 30 in Hg

Component	% Volume	Molecular Wt.	Density * (lb/ft^3)	% volume x Density	weight %	Component Gross Btu/lb	Weight Fract. Btu	Gross * Heating Value (Btu/SCF)	Volume Fract. Btu
Hydrogen	32.1954	2.016	0.0053	0.00171	2.8705	61100	1753.87	325.0	104.6349
Oxygen	0.0000	32.000	0.0846	0.00000	0.0000	0	0.00	0.0	0
Argon	0.9382	39.948	0.1065	0.00100	1.6808	0	0.00	0.0	0
Nitrogen	4.4598	28.016	0.0744	0.00332	5.5818	0	0.00	0.0	0
CO2	16.7060	44.010	0.1170	0.01955	32.8811	0	0.00	0.0	0
CO	45.7277	28.010	0.0740	0.03384	56.9245	4347	2474.51	322.0	147.2432
COS	0.0075	60.070	0.1602	0.00001	0.0202	0	0.00	0.0	0
Methane	0.0000	16.041	0.0424	0.00000	0.0000	23879	0.00	1013.0	0
Ethane	0.000	30.067	0.0803	0.00000	0.0000	22320	0.00	1792.0	0
Ethylene	0.000	28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane	0.000	44.092	0.1196	0.00000	0.0000	21661	0.00	2590.0	0
propylene	0.000	42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane	0.000	58.118	0.1582	0.00000	0.0000	21257	0.00	3363.0	0
n-butane	0.000	58.118	0.1582	0.00000	0.0000	21308	0.00	3370.0	0
Isobutene	0.000	56.102	0.1480	0.00000	0.0000	20730	0.00	3068.0	0
Isopentane	0.000	72.144	0.1904	0.00000	0.0000	21052	0.00	4008.0	0
n-pentane		72.144	0.1904	0.00000	0.0000	21091	0.00	4016.0	0
n-hexane		86.169	0.2274	0.00000	0.0000	20940	0.00	4762.0	0
H2S	0.0268	34.076	0.0911	0.00002	0.0411	7100	2.92	647.0	0.173687
Total:	100.06				100.0000				

Average Density	0.05944
Specific Gravity	0.77705

Gross Heating Value			
Btu/lb	4231	Btu/SCF	252.05
Net Heating Values			
Btu/lb	3965	Btu/SCF	236

* Density (lb/ft^3) and Gross Heating Value (Btu/scf) data from Perry's Chemical Engineering Hanbook.

Net Heating Value (Lower Heating Value), Btu/lb, calculated as Gross Heating Value (Higher Heating Value) - 10.30 (%H_2 x 8.94)

TECO
TAMPA ELECTRIC

Coal Derived Gas and Heating Value Calculations

Customer: Tampa Electric Company **Sample ID: Polk Mass Spec**
Facility: Polk Power Station **Analysis Date: 03/23/2007**
Source: Unit 1

CALCULATION OF F FACTORS

						Weight Percents			
Component	**Mol. Wt.**	**C Factor**	**H Factor**	**% volume**	**Fract. Wt.**	**Carbon**	**Hydrogen**	**Nitrogen**	**Oxygen**
Hydrogen	2.016	0	1	32.195	64.9058		2.8914404		
Oxygen	32.000	0	0	0.000	0.0000				0
Argon	39.948	0	0	0.938	37.4783				
Nitrogen	28.016	0	0	4.460	124.9450			5.566078734	
CO2	44.010	0.272273	0	16.706	735.2302	8.91781507			23.811585
CO	28.010	0.42587	0	45.728	1280.8326	24.2996478			32.791715
COS	60.070	0.1998	0	0.008	0.4509	0.00401375			0.0053517
Methane	16.041	0.75	0.25	0.000	0.0000	0	0		
Ethane	30.067	0.8	0.2	0.000	0.0000	0	0		
Ethylene	28.051	0.85714	0.14286	0.000	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.000	0.0000	0	0		
Propene	42.077	0.85714	0.14286	0.000	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
n-butane	58.118	0.82759	0.17247	0.000	0.0000	0	0		
Isobutene	56.102	0.85714	0.14286	0.000	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-pentane	72.144	0.83333	0.16667	0.000	0.0000	0	0		
n-hexane	86.169	0.83721	0.16279	0.000	0.0000	0	0		
H2S	34.076	0	0.0586923	0.027	0.9148	0	0.0023918		
Totals				100.06132	2244.7575	33.2214766	2.89	5.566078734	56.608651

CALCULATED VALUES		
O2 F Factor (dry), Fd	**8532**	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
O2 F Factor (wet), Fw	**9852**	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
Moisture F Factor	**1320**	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
Combust. Moisture	**13.40**	volume % water in flue gas @ 0% excess air
CO2 F Factor, Fc	**2520**	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
Carbon Dioxide	**29.54**	volume % CO2 in flue gas @ 0% O2
Predicted Fo Factor	**0.71**	EPA Method 3a Fo value

APPENDIX HH

PLANT OPERATIONS DATA

IGCC

Plant Information

Plant Information Source: polk-1pisrv
Start Time: 03/23/2007 10:11
End Time: 03/23/2007 14:11
Time Interval: 1 Min

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
Run Average:	174.084166	6808.5461	78.1147054	0.26711215
23-Mar-07 10:11:00	174.623276	6861.56885	72.1259232	0.25812924
23-Mar-07 10:12:00	173.678406	6859.88232	72.245636	0.2582041
23-Mar-07 10:13:00	173.519897	6876.74951	72.3689346	0.25827897
23-Mar-07 10:14:00	174.775543	6889.09424	72.4922333	0.2583538
23-Mar-07 10:15:00	175.478058	6898.62793	72.2786407	0.25842866
23-Mar-07 10:16:00	175.8862	6867.00781	72.4469147	0.25850353
23-Mar-07 10:17:00	174.476624	6829.47852	72.6151962	0.25857839
23-Mar-07 10:18:00	174.436432	6820.34521	72.7834702	0.25865325
23-Mar-07 10:19:00	174.936234	6821.26172	73.3165512	0.25872809
23-Mar-07 10:20:00	174.759048	6803.52393	73.4377594	0.25880295
23-Mar-07 10:21:00	174.676041	6794.08789	73.4377594	0.25887781
23-Mar-07 10:22:00	175.106964	6797.021	73.4377594	0.25895268
23-Mar-07 10:23:00	174.748093	6771.01123	73.4377594	0.25902754
23-Mar-07 10:24:00	174.355606	6778.08594	73.3594818	0.25910237
23-Mar-07 10:25:00	174.464569	6816.91113	73.1982117	0.25917724
23-Mar-07 10:26:00	174.024811	6774.63721	73.3008728	0.2592521
23-Mar-07 10:27:00	174.830475	6798.97656	73.4035339	0.25932696
23-Mar-07 10:28:00	174.884125	6848.20947	73.5061951	0.25940183
23-Mar-07 10:29:00	174.589035	6851.08057	73.6088638	0.25947666
23-Mar-07 10:30:00	175.443588	6839.26221	73.711525	0.25955153
23-Mar-07 10:31:00	175.811951	6853.32666	73.5301514	0.25962639
23-Mar-07 10:32:00	176.08316	6877.62451	73.6841507	0.25970125
23-Mar-07 10:33:00	175.853516	6901.92188	73.9785995	0.25977612
23-Mar-07 10:34:00	175.763657	6890.32275	73.8233337	0.25985095
23-Mar-07 10:35:00	174.932541	6900.67529	73.5981979	0.25992581
23-Mar-07 10:36:00	174.933929	6867.52148	73.9087296	0.26000068
23-Mar-07 10:37:00	174.143341	6877.33008	73.9723511	0.26007554
23-Mar-07 10:38:00	175.129181	6896.17725	74.4305801	0.2601504
23-Mar-07 10:39:00	175.514236	6881.82813	74.734726	0.26022524
23-Mar-07 10:40:00	175.154221	6825.93994	74.8373871	0.2603001
23-Mar-07 10:41:00	175.548843	6799.88721	74.9400482	0.26037496
23-Mar-07 10:42:00	175.572845	6794.38721	75.0427094	0.26044983
23-Mar-07 10:43:00	174.91806	6801.56348	75.1453705	0.26052469
23-Mar-07 10:44:00	174.948105	6822.67627	75.2480316	0.26059952
23-Mar-07 10:45:00	175.582977	6847.24414	75.4179459	0.26067439
23-Mar-07 10:46:00	176.020233	6824.83984	75.5226974	0.26074925
23-Mar-07 10:47:00	176.163528	6812.07959	75.36203	0.26082411
23-Mar-07 10:48:00	175.033875	6831.14648	75.5138855	0.26089898
23-Mar-07 10:49:00	174.046631	6841.6582	75.665741	0.26097381
23-Mar-07 10:50:00	174.305664	6831.14648	75.8175964	0.26104867
23-Mar-07 10:51:00	174.482559	6814.646	76.1471481	0.26112354

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
23-Mar-07 10:52:00	173.848068	6807.43457	75.6856613	0.2611984
23-Mar-07 10:53:00	175.422531	6823.69092	75.6397171	0.26127326
23-Mar-07 10:54:00	175.386703	6834.20215	75.7423782	0.26134813
23-Mar-07 10:55:00	175.345856	6865.98145	75.845047	0.26142296
23-Mar-07 10:56:00	175.570297	6891.52686	76.2836685	0.26149783
23-Mar-07 10:57:00	175.487076	6906.74414	76.247139	0.26157269
23-Mar-07 10:58:00	174.860519	6859.25879	75.9442215	0.26164755
23-Mar-07 10:59:00	174.154785	6818.55762	76.0666122	0.26172242
23-Mar-07 11:00:00	174.323135	6833.83594	76.189003	0.26179725
23-Mar-07 11:01:00	175.817352	6854.61426	76.3113937	0.26187211
23-Mar-07 11:02:00	176.050903	6838.35791	76.4337845	0.26194698
23-Mar-07 11:03:00	175.367599	6816.72412	76.5561752	0.26202184
23-Mar-07 11:04:00	174.598068	6800.04004	76.2625351	0.2620967
23-Mar-07 11:05:00	174.63826	6830.90234	76.5397263	0.26217154
23-Mar-07 11:06:00	174.857071	6813.42383	76.2728043	0.2622464
23-Mar-07 11:07:00	174.187653	6795.08984	76.560257	0.26232126
23-Mar-07 11:08:00	174.535873	6841.53613	76.5243225	0.26239613
23-Mar-07 11:09:00	174.643692	6858.89209	76.6988525	0.26247099
23-Mar-07 11:10:00	173.769196	6849.90869	76.4935303	0.26254582
23-Mar-07 11:11:00	174.241394	6826.86865	76.2882004	0.26262069
23-Mar-07 11:12:00	174.876282	6854.24756	76.6167221	0.26269555
23-Mar-07 11:13:00	175.569702	6877.34814	77.0787048	0.26277041
23-Mar-07 11:14:00	176.178482	6892.50439	77.0299377	0.26284528
23-Mar-07 11:15:00	174.352005	6865.00342	76.8257294	0.26292011
23-Mar-07 11:16:00	174.054825	6829.9248	76.621521	0.26299497
23-Mar-07 11:17:00	173.693115	6834.56885	76.560257	0.26306984
23-Mar-07 11:18:00	174.128159	6841.91064	76.560257	0.2631447
23-Mar-07 11:19:00	175.376648	6860.87793	76.247139	0.26321957
23-Mar-07 11:20:00	175.851517	6867.32568	76.6895905	0.2632944
23-Mar-07 11:21:00	175.810669	6840.55811	76.8937988	0.26336926
23-Mar-07 11:22:00	175.544662	6839.33594	77.0980072	0.26344413
23-Mar-07 11:23:00	174.86525	6807.6792	77.0105286	0.26351899
23-Mar-07 11:24:00	175.25676	6769.42236	76.6999969	0.26359385
23-Mar-07 11:25:00	175.60347	6841.18359	76.2798843	0.26366869
23-Mar-07 11:26:00	175.115372	6831.80664	76.3412781	0.26374355
23-Mar-07 11:27:00	175.371811	6815.67285	76.4026718	0.26381841
23-Mar-07 11:28:00	175.187195	6871.50781	76.4640732	0.26389328
23-Mar-07 11:29:00	174.950867	6927.98682	76.5254669	0.26396814
23-Mar-07 11:30:00	175.3246	6853.75244	76.3113022	0.26404297
23-Mar-07 11:31:00	175.360626	6899.56592	76.4652939	0.26411784
23-Mar-07 11:32:00	175.84079	6889.23389	76.4402313	0.2641927
23-Mar-07 11:33:00	175.112579	6878.90186	76.6162643	0.26426756
23-Mar-07 11:34:00	174.667664	6868.00732	76.7690048	0.26434243
23-Mar-07 11:35:00	174.568314	6842.17432	76.8083572	0.26441726
23-Mar-07 11:36:00	174.549103	6842.72461	76.603035	0.26449212
23-Mar-07 11:37:00	175.497498	6842.01855	76.3977127	0.26456699
23-Mar-07 11:38:00	174.731293	6818.59766	76.3126297	0.26464185
23-Mar-07 11:39:00	174.213257	6816.96143	76.5582123	0.26471671

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
23-Mar-07 11:40:00	174.830261	6815.98828	76.8037949	0.26479158
23-Mar-07 11:41:00	174.653198	6830.93018	77.0493774	0.26486641
23-Mar-07 11:42:00	174.220078	6785.36084	77.2949677	0.26494128
23-Mar-07 11:43:00	175.548233	6819.10742	77.2019806	0.26501614
23-Mar-07 11:44:00	174.591858	6831.58057	77.3052063	0.265091
23-Mar-07 11:45:00	175.425888	6833.59717	77.408432	0.26516587
23-Mar-07 11:46:00	176.116623	6834.67188	77.2173004	0.2652407
23-Mar-07 11:47:00	175.217285	6808.41895	77.5252838	0.26531556
23-Mar-07 11:48:00	173.346008	6792.16504	77.7922058	0.26539043
23-Mar-07 11:49:00	173.709259	6869.31836	77.8065948	0.26546529
23-Mar-07 11:50:00	174.813385	6872.61816	77.6838074	0.26554015
23-Mar-07 11:51:00	175.930069	6867.81494	77.5610123	0.26561499
23-Mar-07 11:52:00	173.838547	6856.81445	77.4382248	0.26568985
23-Mar-07 11:53:00	174.80574	6865.3457	77.3154297	0.26576471
23-Mar-07 11:54:00	174.182693	6897.54053	77.1926422	0.26583958
23-Mar-07 11:55:00	175.620453	6888.20215	76.8733749	0.26591444
23-Mar-07 11:56:00	174.079437	6885.84326	77.1865005	0.26598927
23-Mar-07 11:57:00	174.939209	6845.81396	77.1865005	0.26606414
23-Mar-07 11:58:00	175.969772	6830.0835	77.6330795	0.266139
23-Mar-07 11:59:00	175.01857	6830.24219	77.7870712	0.26621386
23-Mar-07 12:00:00	174.173859	6813.33838	78.3260498	0.26628873
23-Mar-07 12:01:00	175.83522	6825.44482	78.3555908	0.26636356
23-Mar-07 12:02:00	175.323853	6808.43701	78.2534866	0.26643842
23-Mar-07 12:03:00	175.213837	6799.4043	78.1513824	0.26651329
23-Mar-07 12:04:00	174.262848	6773.95703	78.0492783	0.26658815
23-Mar-07 12:05:00	173.475327	6753.92383	77.9471741	0.26666301
23-Mar-07 12:06:00	174.601013	6789.51953	77.8450699	0.26673785
23-Mar-07 12:07:00	175.568863	6802.38086	78.2336578	0.26681271
23-Mar-07 12:08:00	175.404968	6827.19873	78.0214844	0.26688758
23-Mar-07 12:09:00	175.918854	6909.27881	78.2251434	0.26696244
23-Mar-07 12:10:00	175.452621	6848.51758	78.3778839	0.2670373
23-Mar-07 12:11:00	175.405807	6866.71436	78.2511063	0.26711214
23-Mar-07 12:12:00	175.585312	6868.49316	78.5731735	0.267187
23-Mar-07 12:13:00	175.628235	6867.20996	78.8032227	0.26726186
23-Mar-07 12:14:00	175.326401	6883.19043	79.0332718	0.26733673
23-Mar-07 12:15:00	175.094162	6856.44775	79.2633209	0.26741159
23-Mar-07 12:16:00	174.673111	6856.90576	79.0703506	0.26748642
23-Mar-07 12:17:00	174.769867	6860.20605	78.9034348	0.26756129
23-Mar-07 12:18:00	174.536392	6851.22363	78.7520981	0.26763615
23-Mar-07 12:19:00	174.243713	6817.21289	79.0190201	0.26771101
23-Mar-07 12:20:00	174.745468	6780.54492	79.3783417	0.26778588
23-Mar-07 12:21:00	175.129364	6819.7793	79.4490433	0.26786071
23-Mar-07 12:22:00	174.757095	6778.34473	79.1771011	0.26793557
23-Mar-07 12:23:00	174.395981	6770.24121	79.4822311	0.26801044
23-Mar-07 12:24:00	175.541992	6818.09277	79.7873688	0.2680853
23-Mar-07 12:25:00	176.292603	6814.20605	79.8509369	0.26816016
23-Mar-07 12:26:00	175.026215	6829.02002	79.3932343	0.26823503
23-Mar-07 12:27:00	175.691086	6820.87988	79.3376083	0.26830986

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
23-Mar-07 12:28:00	175.864838	6839.91016	79.1848679	0.26838472
23-Mar-07 12:29:00	175.991959	6894.22754	79.1324997	0.26845959
23-Mar-07 12:30:00	174.881134	6865.06445	79.4430313	0.26853445
23-Mar-07 12:31:00	175.445129	6843.27734	79.3783417	0.26860932
23-Mar-07 12:32:00	174.310135	6841.56055	79.3783417	0.26868415
23-Mar-07 12:33:00	175.526764	6851.97412	79.2844086	0.26875901
23-Mar-07 12:34:00	173.903397	6830.27295	79.0855789	0.26883388
23-Mar-07 12:35:00	174.389679	6836.92188	79.238327	0.26890874
23-Mar-07 12:36:00	174.823151	6837.02881	79.0652161	0.2689836
23-Mar-07 12:37:00	173.193604	6819.61182	79.3626862	0.26905844
23-Mar-07 12:38:00	174.301346	6813.18262	78.7625351	0.2691333
23-Mar-07 12:39:00	175.409103	6818.49951	78.7672501	0.26920816
23-Mar-07 12:40:00	175.409103	6816.99316	79.6763077	0.26928303
23-Mar-07 12:41:00	174.052246	6789.05225	79.3886108	0.26935789
23-Mar-07 12:42:00	174.846344	6813.59277	79.8207855	0.26943272
23-Mar-07 12:43:00	176.330765	6816.11279	80.2784882	0.26950759
23-Mar-07 12:44:00	175.418259	6841.23047	79.7420807	0.26958245
23-Mar-07 12:45:00	174.886932	6843.06396	79.9659348	0.26965731
23-Mar-07 12:46:00	175.296234	6822.89648	79.8611374	0.26973218
23-Mar-07 12:47:00	174.197571	6808.37598	79.7114182	0.26980701
23-Mar-07 12:48:00	173.663086	6834.26367	79.9958801	0.26988187
23-Mar-07 12:49:00	174.417252	6898.43262	80.5009079	0.26995674
23-Mar-07 12:50:00	173.144073	6819.99365	80.6221161	0.2700316
23-Mar-07 12:51:00	173.37822	6804.04297	80.1315613	0.27010646
23-Mar-07 12:52:00	173.280655	6801.59863	79.9958801	0.2701813
23-Mar-07 12:53:00	173.033905	6763.12793	79.9958801	0.27025616
23-Mar-07 12:54:00	173.565781	6750.78271	80.2204895	0.27033103
23-Mar-07 12:55:00	172.842499	6759.42627	80.0998001	0.27040589
23-Mar-07 12:56:00	172.745285	6741.23682	79.9791107	0.27048075
23-Mar-07 12:57:00	172.201157	6721.28955	79.8584137	0.27055559
23-Mar-07 12:58:00	173.03598	6736.25	79.7377243	0.27063045
23-Mar-07 12:59:00	173.202164	6752.82373	79.8325806	0.27070531
23-Mar-07 13:00:00	172.853897	6768.07764	80.0614319	0.27078018
23-Mar-07 13:01:00	173.224106	6767.08789	80.2902832	0.27085504
23-Mar-07 13:02:00	173.594315	6750.77051	80.5191345	0.27092987
23-Mar-07 13:03:00	173.611755	6767.56445	81.1302948	0.27100474
23-Mar-07 13:04:00	173.542114	6761.11084	81.3998718	0.2710796
23-Mar-07 13:05:00	172.425446	6747.98389	80.7786789	0.27115446
23-Mar-07 13:06:00	172.510757	6736.47021	80.1439285	0.27122933
23-Mar-07 13:07:00	172.852814	6739.99023	80.4502487	0.27130416
23-Mar-07 13:08:00	172.003235	6796.68506	80.7565613	0.27137902
23-Mar-07 13:09:00	173.890808	6908.30908	80.682724	0.27145389
23-Mar-07 13:10:00	173.104446	6833.54248	80.3325348	0.27152875
23-Mar-07 13:11:00	173.452469	6842.52637	80.3939285	0.27160361
23-Mar-07 13:12:00	173.938049	6836.6958	80.4553223	0.27167848
23-Mar-07 13:13:00	173.253647	6797.40625	80.5167236	0.27175331
23-Mar-07 13:14:00	172.20961	6778.13281	80.5781174	0.27182817
23-Mar-07 13:15:00	172.056519	6755.06055	80.7966461	0.27190304

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
23-Mar-07 13:16:00	172.043167	6726.87256	81.1466827	0.2719779
23-Mar-07 13:17:00	172.488937	6717.52197	80.7654037	0.27205276
23-Mar-07 13:18:00	172.849152	6711.51758	80.3841248	0.2721276
23-Mar-07 13:19:00	173.098068	6715.55127	80.0028381	0.27220246
23-Mar-07 13:20:00	172.527832	6715.64258	79.6629944	0.27227733
23-Mar-07 13:21:00	171.957611	6698.5918	79.5077286	0.27235219
23-Mar-07 13:22:00	172.334198	6687.13281	79.6914597	0.27242705
23-Mar-07 13:23:00	173.171692	6733.33496	79.7623215	0.27250189
23-Mar-07 13:24:00	173.825195	6752.40234	80.3089981	0.27257675
23-Mar-07 13:25:00	172.526184	6752.76904	80.2583771	0.27265161
23-Mar-07 13:26:00	172.364746	6745.89355	79.7115402	0.27272648
23-Mar-07 13:27:00	172.203308	6728.75146	80.0127792	0.27280134
23-Mar-07 13:28:00	172.04187	6771.92773	80.3038635	0.27287617
23-Mar-07 13:29:00	171.880447	6818.71631	79.9958801	0.27295104
23-Mar-07 13:30:00	170.848419	6804.78223	80.9300232	0.2730259
23-Mar-07 13:31:00	172.243973	6797.20117	80.9198456	0.27310076
23-Mar-07 13:32:00	173.027451	6794.81787	80.3500595	0.27317563
23-Mar-07 13:33:00	172.790619	6785.47656	80.5006332	0.27325046
23-Mar-07 13:34:00	171.97052	6763.58594	80.7059631	0.27332532
23-Mar-07 13:35:00	172.624908	6762.50439	80.9112854	0.27340019
23-Mar-07 13:36:00	172.517273	6749.15723	80.7990952	0.27347505
23-Mar-07 13:37:00	171.190491	6724.92871	81.0033112	0.27354991
23-Mar-07 13:38:00	171.367416	6714.47852	81.2075195	0.27362475
23-Mar-07 13:39:00	171.980301	6710.58252	80.9999313	0.27369961
23-Mar-07 13:40:00	171.860199	6712.04883	80.6893997	0.27377447
23-Mar-07 13:41:00	172.715714	6722.79248	80.8633804	0.27384934
23-Mar-07 13:42:00	171.630814	6693.7334	80.6951752	0.2739242
23-Mar-07 13:43:00	171.218384	6675.30762	81.0114059	0.27399904
23-Mar-07 13:44:00	171.483582	6710.21533	81.1129608	0.2740739
23-Mar-07 13:45:00	172.369186	6731.34863	81.2145081	0.27414876
23-Mar-07 13:46:00	173.024078	6732.5708	81.0396118	0.27422363
23-Mar-07 13:47:00	172.195496	6733.79297	80.8223114	0.27429849
23-Mar-07 13:48:00	172.035355	6744.42676	80.7433243	0.27437332
23-Mar-07 13:49:00	172.192047	6832.77832	80.8069153	0.27444819
23-Mar-07 13:50:00	171.474762	6755.52881	80.7555771	0.27452305
23-Mar-07 13:51:00	170.807678	6728.61865	80.9711685	0.27459791
23-Mar-07 13:52:00	171.329849	6701.7085	81.2483597	0.27467278
23-Mar-07 13:53:00	171.85202	6744.92822	81.2483597	0.27474761
23-Mar-07 13:54:00	172.47496	6763.70508	81.7206039	0.27482247
23-Mar-07 13:55:00	172.727127	6765.35498	81.7724915	0.27489734
23-Mar-07 13:56:00	172.40097	6766.68701	81.5682831	0.2749722
23-Mar-07 13:57:00	171.807861	6749.27002	81.3640747	0.27504706
23-Mar-07 13:58:00	172.189224	6731.47363	81.181076	0.27512193
23-Mar-07 13:59:00	171.974854	6691.32227	81.0258102	0.27519676
23-Mar-07 14:00:00	171.227859	6652.48828	80.6221161	0.27527162
23-Mar-07 14:01:00	170.765732	6691.35596	80.6221161	0.27534649
23-Mar-07 14:02:00	172.134567	6729.60059	81.0969315	0.27542135
23-Mar-07 14:03:00	173.415451	6731.55615	81.5589142	0.27549621

Plant Information

Tag Name:	1pwrji900	1TSYFI100	1tmsti922m	1tsyai202
Tag Explanation:	Unit Load	Fuel Flow	Inlet Temp	Satuator
Tag Units:	Mwe	KCFH	°F	% H2O
23-Mar-07 14:04:00	172.938766	6761.91162	81.8386688	0.27557105
23-Mar-07 14:05:00	172.83728	6765.57227	82.3263092	0.27564591
23-Mar-07 14:06:00	172.668594	6746.896	82.1107254	0.27572078
23-Mar-07 14:07:00	171.344788	6708.5293	82.0183258	0.27579564
23-Mar-07 14:08:00	170.43869	6701.85205	82.4341125	0.2758705
23-Mar-07 14:09:00	171.131927	6769.17773	82.3109131	0.27594534
23-Mar-07 14:10:00	171.347	6733.97656	82.72995	0.2760202
23-Mar-07 14:11:00	171.558365	6730.67676	82.2717209	0.27609506

SULFURIC ACID PLANT

Ops Run 1

Polk Power Station

Acid Plant

Run No. 1

Start	Mar-23-2007 10:11:00 AM
End	Mar-23-2007 11:11:00 AM
Interval	1m

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A	SA PROD CLR ACID OUT FLOW	SA FINAL TOWER ACID CONC
	Inlet Converter	Product Acid Flow	Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
	11.00288318	**1562.612139**	**93.59922440**
23-Mar-07 10:11:00	11.60481548	23.57019615	93.62029266
23-Mar-07 10:12:00	11.69064903	25.54195404	93.61654663
23-Mar-07 10:13:00	11.77648258	24.48758507	93.61280823
23-Mar-07 10:14:00	11.81615639	24.37256813	93.60906982
23-Mar-07 10:15:00	11.85583019	25.49859619	93.60532379
23-Mar-07 10:16:00	11.81081581	25.56388092	93.60158539
23-Mar-07 10:17:00	11.71434212	25.23140717	93.59784698
23-Mar-07 10:18:00	11.61786842	25.17433739	93.59410858
23-Mar-07 10:19:00	11.60645294	26.48916245	93.59176636
23-Mar-07 10:20:00	11.59647846	27.03785324	93.59203339
23-Mar-07 10:21:00	11.58650494	28.04792213	93.59230042
23-Mar-07 10:22:00	0.36790064	28.76848602	93.59256744
23-Mar-07 10:23:00	0.480056167	27.60498238	93.59283447
23-Mar-07 10:24:00	2.561876297	14.0042572	93.59310150
23-Mar-07 10:25:00	9.185714722	16.15798569	93.59336853
23-Mar-07 10:26:00	10.75839329	29.36075592	93.58741760
23-Mar-07 10:27:00	11.19018364	29.9010582	93.56990814
23-Mar-07 10:28:00	11.35897923	29.84718895	93.55959320
23-Mar-07 10:29:00	11.48276997	28.5731926	93.56266022
23-Mar-07 10:30:00	11.60656071	25.26415634	93.56571960
23-Mar-07 10:31:00	11.73035145	18.51535034	93.56877899
23-Mar-07 10:32:00	11.83645153	28.62121201	93.57183838
23-Mar-07 10:33:00	11.8465414	29.54989052	93.57490540
23-Mar-07 10:34:00	11.7393446	28.87089157	93.57796478
23-Mar-07 10:35:00	11.6521759	28.96006393	93.58102417
23-Mar-07 10:36:00	11.60220242	28.22723579	93.58408356
23-Mar-07 10:37:00	11.54123497	24.73691177	93.58493042
23-Mar-07 10:38:00	11.45985222	25.38186264	93.58166504
23-Mar-07 10:39:00	11.37846947	28.60670853	93.57839203
23-Mar-07 10:40:00	11.32512569	29.27991104	93.57512665
23-Mar-07 10:41:00	11.32385445	28.93600273	93.57185364
23-Mar-07 10:42:00	11.3225832	25.80988503	93.56858826
23-Mar-07 10:43:00	11.36114407	12.44392204	93.57648468
23-Mar-07 10:44:00	11.47368145	27.91731071	93.60511780
23-Mar-07 10:45:00	11.56872749	29.4236412	93.63375854
23-Mar-07 10:46:00	11.60548878	29.01316643	93.64759827
23-Mar-07 10:47:00	11.59432983	28.71265221	93.63394165
23-Mar-07 10:48:00	11.58317184	28.63949966	93.62028503
23-Mar-07 10:49:00	11.57201385	27.82758713	93.60662842
23-Mar-07 10:50:00	11.56085491	26.87950706	93.60368347
23-Mar-07 10:51:00	11.54969692	25.69833946	93.62065125
23-Mar-07 10:52:00	11.53853893	27.53793716	93.63761902
23-Mar-07 10:53:00	11.52737999	27.15361595	93.64943695
23-Mar-07 10:54:00	11.55323982	27.13071823	93.65169525
23-Mar-07 10:55:00	11.67481804	25.98887634	93.65396118
23-Mar-07 10:56:00	11.8229847	25.76974487	93.65621948
23-Mar-07 10:57:00	11.88345051	24.39011574	93.65848541
23-Mar-07 10:58:00	11.80574226	25.05111885	93.66074371

Ops Run 1

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A Inlet Converter	SA PROD CLR ACID OUT FLOW Product Acid Flow	SA FINAL TOWER ACID CONC Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
23-Mar-07 10:59:00	11.62339401	24.20674706	93.62913513
23-Mar-07 11:00:00	11.4780302	24.21360779	93.57320404
23-Mar-07 11:01:00	11.40135288	23.16837692	93.57633209
23-Mar-07 11:02:00	11.35124493	21.35789871	93.57945251
23-Mar-07 11:03:00	11.35048199	22.37123489	93.58257294
23-Mar-07 11:04:00	11.37108231	22.57491493	93.58570099
23-Mar-07 11:05:00	11.40879154	22.65808678	93.58882141
23-Mar-07 11:06:00	11.40459538	22.84641647	93.59194946
23-Mar-07 11:07:00	11.42394257	23.50459671	93.59506989
23-Mar-07 11:08:00	11.48701477	23.78332329	93.59819031
23-Mar-07 11:09:00	11.55008602	24.55072212	93.60131836
23-Mar-07 11:10:00	11.59749126	26.01389122	93.59468842
23-Mar-07 11:11:00	11.62608433	25.79111671	93.56993866

Polk Power Station

Acid Plant

Run No. 2

Start	Mar-23-2007 11:43:00 AM
End	Mar-23-2007 12:43:00 PM
Interval	1m

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A	SA PROD CLR ACID OUT FLOW	SA FINAL TOWER ACID CONC
	Inlet Converter	Product Acid Flow	Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
Average	**11.5476287**	**1490.386742**	**93.60129097**
23-Mar-07 11:43:00	11.31742477	23.5240345	93.64175415
23-Mar-07 11:44:00	11.30699825	22.90244675	93.61109161
23-Mar-07 11:45:00	11.32397652	22.84966469	93.59141541
23-Mar-07 11:46:00	11.38829231	23.25941086	93.59072113
23-Mar-07 11:47:00	11.46334362	21.01992798	93.59001923
23-Mar-07 11:48:00	11.55833244	21.68141747	93.58931732
23-Mar-07 11:49:00	11.67241478	19.43478775	93.58861542
23-Mar-07 11:50:00	11.78964424	20.72420502	93.58792114
23-Mar-07 11:51:00	11.84686565	21.78872108	93.58721924
23-Mar-07 11:52:00	11.85789013	21.51409912	93.58651733
23-Mar-07 11:53:00	11.78312016	21.92577934	93.58560944
23-Mar-07 11:54:00	11.68992424	21.83083534	93.58435059
23-Mar-07 11:55:00	11.56250954	24.4677906	93.58308411
23-Mar-07 11:56:00	11.46514893	24.31958961	93.58181763
23-Mar-07 11:57:00	11.42360306	25.41947556	93.58055878
23-Mar-07 11:58:00	11.39612565	26.47470856	93.5792923
23-Mar-07 11:59:00	11.40040493	25.23747444	93.57802582
23-Mar-07 12:00:00	11.40268421	27.05220032	93.57676697
23-Mar-07 12:01:00	11.40496349	26.77358246	93.57550049
23-Mar-07 12:02:00	11.43581963	28.53943062	93.57423401
23-Mar-07 12:03:00	11.48770142	28.69472694	93.57297516
23-Mar-07 12:04:00	11.48007107	28.98503113	93.57170868
23-Mar-07 12:05:00	11.49005699	29.28499413	93.5704422
23-Mar-07 12:06:00	11.53275776	25.12504959	93.56918335
23-Mar-07 12:07:00	11.55364609	17.76696014	93.56791687
23-Mar-07 12:08:00	11.53686142	29.01468468	93.56665802
23-Mar-07 12:09:00	11.54376221	28.90190315	93.56539154
23-Mar-07 12:10:00	11.59157372	28.57393456	93.56493378
23-Mar-07 12:11:00	11.63938618	28.65270424	93.56586456
23-Mar-07 12:12:00	11.66765022	24.03424072	93.56680298
23-Mar-07 12:13:00	11.66215038	19.4712677	93.56773376
23-Mar-07 12:14:00	11.65665054	11.57231331	93.56867218
23-Mar-07 12:15:00	11.6511507	28.44505692	93.56960297
23-Mar-07 12:16:00	11.64565086	28.46852875	93.60460663
23-Mar-07 12:17:00	11.64015007	28.28783607	93.64795685
23-Mar-07 12:18:00	11.63465023	28.18198013	93.60406494
23-Mar-07 12:19:00	11.62915039	25.48147583	93.58016205
23-Mar-07 12:20:00	11.62365055	14.49842834	93.59080505
23-Mar-07 12:21:00	11.59030056	28.99045372	93.60144043
23-Mar-07 12:22:00	11.50522995	29.52200317	93.61208344
23-Mar-07 12:23:00	11.43244267	28.11828613	93.62271881
23-Mar-07 12:24:00	11.38246918	26.27521515	93.63335419
23-Mar-07 12:25:00	11.35292339	16.72414398	93.64399719
23-Mar-07 12:26:00	11.36131573	27.84104347	93.65463257
23-Mar-07 12:27:00	11.36970901	27.15581322	93.66527557
23-Mar-07 12:28:00	11.40347004	26.88772202	93.67591095
23-Mar-07 12:29:00	11.48434448	27.76959038	93.68655396
23-Mar-07 12:30:00	11.56521797	17.58407784	93.68886566
23-Mar-07 12:31:00	11.64609241	21.26506805	93.67572784
23-Mar-07 12:32:00	11.7269659	25.94996452	93.6625824

Ops Run 2

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A	SA PROD CLR ACID OUT FLOW	SA FINAL TOWER ACID CONC
	Inlet Converter	Product Acid Flow	Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
23-Mar-07 12:33:00	11.78994846	26.14249039	93.64944458
23-Mar-07 12:34:00	11.78552341	24.75409698	93.63629913
23-Mar-07 12:35:00	11.74752808	24.48122025	93.62316132
23-Mar-07 12:36:00	11.76507664	24.22231293	93.6100235
23-Mar-07 12:37:00	11.7484436	24.91395569	93.60068512
23-Mar-07 12:38:00	11.66833305	22.83530807	93.59842682
23-Mar-07 12:39:00	11.55991554	23.30790138	93.59616852
23-Mar-07 12:40:00	11.42550087	22.08901024	93.59391022
23-Mar-07 12:41:00	11.34043026	22.23741341	93.59165192
23-Mar-07 12:42:00	11.28192997	24.09175491	93.58939362
23-Mar-07 12:43:00	11.31408215	23.04719734	93.58712769

Polk Power Station

Acid Plant

Run No. 3

Start	Mar-23-2007 1:12:00 PM
End	Mar-23-2007 2:12:00 PM
Interval	1m

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A	SA PROD CLR ACID OUT FLOW	SA FINAL TOWER ACID CONC
	Inlet Converter	Product Acid Flow	Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
Average	**11.42679694**	**1527.432178**	**93.60087698**
23-Mar-07 13:12:00	11.44211388	28.89164352	93.63243866
23-Mar-07 13:13:00	11.38351917	29.18109894	93.63452148
23-Mar-07 13:14:00	11.35071087	28.89482689	93.63661194
23-Mar-07 13:15:00	11.31790352	28.42444611	93.63869476
23-Mar-07 13:16:00	11.32595253	23.7203598	93.64077759
23-Mar-07 13:17:00	11.3850441	20.22225189	93.64286804
23-Mar-07 13:18:00	11.39801502	18.33895302	93.64495087
23-Mar-07 13:19:00	11.38401413	28.53792381	93.64219666
23-Mar-07 13:20:00	11.34048748	28.04338264	93.63046265
23-Mar-07 13:21:00	11.3550415	27.91930008	93.61872101
23-Mar-07 13:22:00	11.40654087	26.27487183	93.61029053
23-Mar-07 13:23:00	11.44268608	27.02072716	93.60758209
23-Mar-07 13:24:00	11.45031548	26.73064423	93.60487366
23-Mar-07 13:25:00	11.45794582	22.21255302	93.60217285
23-Mar-07 13:26:00	11.46557522	25.32022667	93.59946442
23-Mar-07 13:27:00	11.48519897	28.35578156	93.59594727
23-Mar-07 13:28:00	11.50380802	26.74344063	93.59104919
23-Mar-07 13:29:00	11.48219013	26.30211067	93.58614349
23-Mar-07 13:30:00	11.4605732	24.65079117	93.58123779
23-Mar-07 13:31:00	11.48269081	20.36038589	93.57633972
23-Mar-07 13:32:00	11.55279446	26.78999138	93.57143402
23-Mar-07 13:33:00	11.57530212	26.99504089	93.56653595
23-Mar-07 13:34:00	11.5751133	27.46776581	93.56163025
23-Mar-07 13:35:00	11.53572369	26.71651268	93.58078003
23-Mar-07 13:36:00	11.49633312	14.94201469	93.61517334
23-Mar-07 13:37:00	11.45694351	28.06932259	93.60412598
23-Mar-07 13:38:00	11.41755295	29.52058983	93.59307098
23-Mar-07 13:39:00	11.3724556	29.3286171	93.58208466
23-Mar-07 13:40:00	11.31675911	20.14831924	93.57121277
23-Mar-07 13:41:00	11.28055668	9.210410118	93.56034088
23-Mar-07 13:42:00	11.25379562	28.80292702	93.54946899
23-Mar-07 13:43:00	11.25799179	29.25740814	93.53859711
23-Mar-07 13:44:00	11.29629421	28.50826645	93.52772522
23-Mar-07 13:45:00	11.3734436	18.61619568	93.51685333
23-Mar-07 13:46:00	11.40828514	14.73578644	93.54933929
23-Mar-07 13:47:00	11.44312763	28.96168327	93.58722687
23-Mar-07 13:48:00	11.4938221	28.60370255	93.54698944
23-Mar-07 13:49:00	11.57189846	28.72189522	93.57920837
23-Mar-07 13:50:00	11.64997482	28.02733231	93.60012054
23-Mar-07 13:51:00	11.71592808	25.03555489	93.60152435
23-Mar-07 13:52:00	11.7163229	11.66764545	93.60292816
23-Mar-07 13:53:00	11.63964558	27.57567024	93.60432434
23-Mar-07 13:54:00	11.52673912	27.97111893	93.60572815
23-Mar-07 13:55:00	11.39014339	28.0177002	93.60713196
23-Mar-07 13:56:00	11.320714	25.6321907	93.60852814
23-Mar-07 13:57:00	11.27980614	19.35842514	93.60993195
23-Mar-07 13:58:00	11.28816414	29.14102936	93.61132813
23-Mar-07 13:59:00	11.29652214	29.46641541	93.61273193
23-Mar-07 14:00:00	11.30488014	29.27297211	93.61413574
23-Mar-07 14:01:00	11.32980633	27.85000992	93.61553192
23-Mar-07 14:02:00	11.38550186	21.94309425	93.61693573

Ops Run 3

PI TAG	1SRGAI455	1SRGFI487	1SRGAI446b
PI DESCRIPTOR	SA MAIN CPRSR OUT SO2 A	SA PROD CLR ACID OUT FLOW	SA FINAL TOWER ACID CONC
	Inlet Converter	Product Acid Flow	Acid Concentration
UNITS	AVG. %	TOTAL GAL.	AVG. %
23-Mar-07 14:03:00	11.42291069	13.0703907	93.61833954
23-Mar-07 14:04:00	11.42635918	29.35235214	93.61952209
23-Mar-07 14:05:00	11.42980671	27.79721832	93.62033844
23-Mar-07 14:06:00	11.43325424	28.42256355	93.62115479
23-Mar-07 14:07:00	11.42273331	28.49227333	93.62197876
23-Mar-07 14:08:00	11.38808441	27.72560883	93.6227951
23-Mar-07 14:09:00	11.35343456	13.2325201	93.62361145
23-Mar-07 14:10:00	11.35837936	11.61900711	93.6244278
23-Mar-07 14:11:00	11.43685532	28.01808929	93.62524414
23-Mar-07 14:12:00	11.5201273	27.20082664	93.62606049

APPENDIX II

VISIBLE EMISSIONS OBSERVATIONS

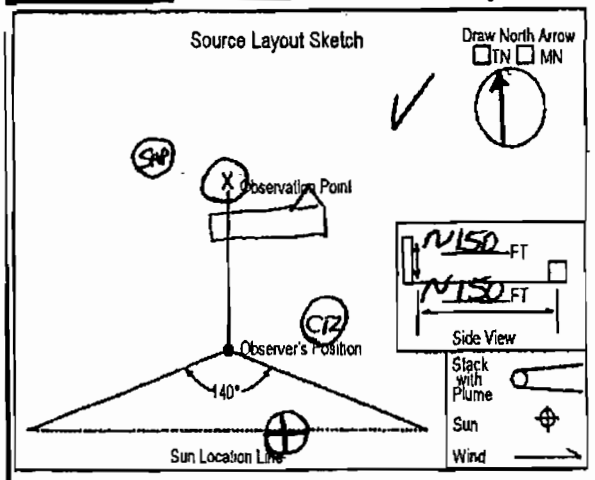
IGCC

EPA METHOD 9 (40 CFR 60 - Appendix A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME	TAMPA ELECTRIC COMPANY
LOCATION	POLK POWER STATION
LOCATION	9995 State Road 37 So
CITY / STATE / ZIP	Mulberry / Florida / 33860
E.U. #001 PROCESS EQUIPMENT	HRSG Unit 1 260 MW Combined Cycle CT
OPERATING MODE	NORMAL
CONTROL EQUIPMENT	NA
OPERATING MODE	NA
DESCRIBE EMISSION POINT	Stack Directly east Southeast of the Sulfuric Acid Plant
HEIGHT OF EMISSION POINT	~150'
HEIGHT OF EMISSION POINT RELATIVE TO OBSERVER	START ~100' END Same
DISTANCE TO EMISSION POINT	START ~150' END Same
DIRECTION TO EMISSION PT (DEGREES (0-360))	START ~20° END Same
VERTICAL ANGLE TO OBSERVATION POINT	START ~30° END Same
DIRECTION TO OBSERVATION POINT DEGREES (0-360))	START ~20° END Same
DISTANCE & DIRECTION TO OBSERVATION POINT FROM EMISSION POINT	START ~150 N END Same
DESCRIBE EMISSIONS	START None END Same
EMISSION COLOR	START None END Same
WATER DROPLET PLUME	ATTACHED ☐ DETACHED ☐ NONE ☑
DESCRIBE PLUME BACKGROUND	START Sky END Same
BACKGROUND COLOR	START Blue END Same
SKY CONDITIONS	START Scattered END Same
WIND SPEED	START ~10MPH END Same
WIND DIRECTION	START NNE END Same
AMBIENT TEMP	START 82°F END Same
WET BULB TEMP	
RH percent	47%

Source Layout Sketch

Draw North Arrow ☐TN ☐MN



ADDITIONAL INFORMATION

No interference from other emissions

OBSERVATION DATE	START TIME	END TIME
March 23, 2007	EDT 1:19pm	EDT 1:49pm

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	

OBSERVER'S NAME: Laurie Filardo

OBSERVER'S SIGNATURE: Laurie Filardo

ORGANIZATION: EASTERN TECHNICAL ASSOCIATES

CERTIFIED BY: LAURIE FILARDO

met the specifications of Federal Reference Method 9 and qualifies as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, NC. This certificate is valid for six months from date of issue and expires on the date below

2/14/2007	8/16/2007	TMPS07
DATE OF SCHOOL	EXPIRATION DATE	LAST LECTURE
348053	FIL002128	
CERT NUMBER	STUDENT ID NUMBER	BEARER

SULFURIC ACID PLANT

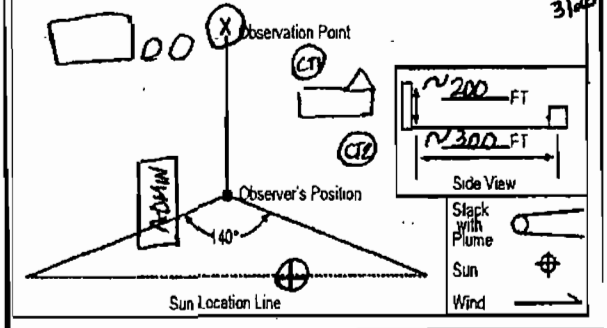
EPA METHOD 9 (40 CFR 60 - Appendix A)
VISIBLE EMISSION OBSERVATION FORM

E.U #004

COMPANY NAME	Tampa Electric Company
LOCATION	POLK POWER STATION
LOCATION	9995 State Road 37 So.
CITY / STATE / ZIP	Mulberry / Florida / 33860
PROCESS EQUIPMENT	Sulfuric Acid Plant
OPERATING MODE	NORMAL
CONTROL EQUIPMENT	NA
OPERATING MODE	NA
DESCRIBE EMISSION POINT	Spiral Stack just north of Admin. Bldg.
HEIGHT OF EMISSION POINT	~200'
HEIGHT OF EMISSION POINT RELATIVE TO OBSERVER	START END Same
DISTANCE TO EMISSION POINT	START ~300' END Same
DIRECTION TO EMISSION PT (DEGREES 0-360)	START 320° END Same
VERTICAL ANGLE TO OBSERVATION POINT	START ~20° END Same
DIRECTION TO OBSERVATION POINT (DEGREES (0-360))	START 320° END Same
DISTANCE & DIRECTION TO OBSERVATION POINT FROM EMISSION POINT	START ~300' NNW END Same
DESCRIBE EMISSIONS	START None END Same
EMISSION COLOR	START None END Same
WATER DROPLET PLUME	ATTACHED ☐ DETACHED ☐ NONE ☑
DESCRIBE PLUME BACKGROUND	START Sky END Same
BACKGROUND COLOR	START Blue END Same
SKY CONDITIONS	START Scattered END Same
WIND SPEED	START ~10 MPH END Same
WIND DIRECTION	START NNE END Same
AMBIENT TEMP	START ~82°F END Same
WET BULB TEMP	—
RH percent	~47%

Source Layout Sketch ✓

Draw North Arrow ☐TN ☐MN



ADDITIONAL INFORMATION

OBSERVATION DATE	START TIME	END TIME
March 23, 2007	EDT 1:19pm	EDT 1:49pm

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	
21	0	0	0	0	
22	0	0	0	0	
23	0	0	0	0	
24	0	0	0	0	
25	0	0	0	0	
26	0	0	0	0	
27	0	0	0	0	
28	0	0	0	0	
29	0	0	0	0	
30	0	0	0	0	

OBSERVER'S NAME Laurie Filardo

OBSERVER'S SIGN

ORGANIZATION

CERTIFIED BY

EASTERN TECHNICAL ASSOCIATES

LAURIE FILARDO

met the specifications of Federal Reference Method 9 and qualifies as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, NC. This certificate is valid for six months from date of issue and expires on the date below.

DATE OF SCHOOL	EXPIRATION DATE	LAST LECTURE
2/14/2007	8/16/2007	TMPS07
CERT NUMBER	**STUDENT ID NUMBER**	**BEARER**
348053	FIL002128	

APPENDIX JJ

CHAIN OF CUSTODY

Trigon Engineering Consultants, Inc. ***Chain of Custody*** **Sampler's Signature** _____

Company: TECO	Laboratory: TECO	No. of Containers: 8	Sampling Methods: 8
City, State: Tampa FL	Project No. 046-07-015		
Contact: David Smith	Purchase Order No.		

Sample Description	Sample ID	Date	Time	Sample Disposition and Remarks
Unit 1 Run 1	7015-01	3/23/07	1135	80% IPA + filter + H_2O_2 fraction
Run 2	7015-02	3/23/07	1310	80% IPA + filter + H_2O_2 fraction
Run 3	7015-03	3/23/07	1515	80% IPA + filter + H_2O_2 fraction
Blanks	7015-04	3/23/07	1135	80% IPA blank + 3% H_2O_2 blank

AA87419

100 mL each

Relinquished By:	Date/Time 3/23/07 1530	Received By:	Date/Time 3-23-07 1535
Relinquished By:	Date/Time 3/25/07 0845	Received By:	Date/Time 3/26/07 8:45
Received for Laboratory By:	Date/Time / /	Analyze for the Following Compounds:	

TECO
TAMPA ELECTRIC

ANALYSIS REQUEST & CHAIN OF CUSTODY

ENVIRONMENTAL SERVICES

5012 CAUSEWAY BLVD., TAMPA, FL, 33619 PHONE:(813)228-4111

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	REQUIRED ANALYSIS	DUE DATE
ACID PLANT				
SAMPLER'S PRINTED NAME: JORGE A SARINO	SAMPLER'S SIGNATURE			☐ EMAIL RESULTS
P.O. NUMBER	CONTRACT NO.	SITE		☐ FAX RESULTS
CLIENT NAME	CLIENT PHONE	CLIENT FAX		☐ MAIL RESULTS
CLIENT EMAIL	CLIENT ADDRESS		PRESERVATIVE	NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE ID	SAMPLE DESCRIPTION	SAMPLING DATE	SAMPLING TIME	* MATRIX	NUMBER OF CONTAINERS SUBMITTED	REMARKS
RUN 1	80% IPA & FILTER	3/2/07		A	1	AA87420
RUN 2		3		A	1	
RUN 3		↓		A	1	
BLANK				A	1	

GW- GROUND WATER SW- SURFACE WATER DW- DRINKING WATER WW- WASTE WATER C- COAL O- OIL SO- SOLID/SOIL SL- SLUDGE W- WASTE SAMPLE A- AIR

CONTAINERS/SEALS INTACT ☑ Yes ☐ No

ON ICE/ 4°C ☑ Yes ☐ No

SAMPLE TRANSFERS

RELINQUISHED BY:	RECEIVED BY:	DATE	TIME
PERSON'S NAME: [redacted]	PERSON'S NAME: [redacted]	3/2/07	8:45
FACILITY NAME: [redacted]	FACILITY NAME: [redacted]		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		
PERSON'S NAME:	PERSON'S NAME:		
FACILITY NAME:	FACILITY NAME:		

APPENDIX KK

PROJECT PARTICIPANTS

TEST PARTICIPANTS

ENVIRONMENTAL SERVICES, AIR SERVICES GROUP

Test Team

Charles Dufeny	Environmental Technician, Test Team Lead
Jorge Varino	Environmental Technician
Scott Given	Associate Technician
Gary Barber	Associate Technician
Laurie Filardo	Environmental Technician
Raymond A. McDarby	Senior Environmental Technician
David A. Smith	Coordinator, Air Services Group

TRIGON ENGINEERING CONSULTANTS, INC

Test Team

Ian DeVivi	Team Lead
Jamie Bell	Technician
Larry Reynolds	Technician

Process Data

John McDaniel	Senior Engineering Fellow - PPS
Raymond A. McDarby	Senior Environmental Technician

Fuel Analysis

Bret Nicholas	Senior Environmental Technician - PPS
Raymond A. McDarby	Senior Environmental Technician

Report Preparation

Joshua Ellwein	Engineer - Environmental
John McDaniel	Senior Engineering Fellow - PPS
Raymond A. McDarby	Senior Environmental Technician

Project Quality Objectives/Quality Control Review

Raymond A. McDarby	Senior Environmental Technician

TEST PARTICIPANTS (continued)

Test Coordination

Joshua Ellwein	Engineer - Environmental
David A. Smith	Coordinator, Air Services Group
Michael Perkins	Environmental Coordinator – PPS
Paul Jenkins	Program Manager – Trigon Engineering Consultants, Inc.