APPENDIX A

RESULTS AND CALCULATIONS

Appendix A.1

Emissions Summary

SUMMARY OF MERCURY EMISSION RATES and REMOVAL EFFICIENCIES - (unit 1)
SCRUBGRASS GENERATING STATION UNIT 1

Method/Component	Units	Unit 1 Inlet[1]				Unit 1 Baghouse Outlet[2]				Unit 1 Baghouse Removal Efficiency			
		1	2	3	avg	1	2	3	avg	1	2	3	avg
Ontario Hydro/ Hg													
Particle bound	*ug/dscm*	141.10	98.60	62.62	100.77	< 0.0043	< 0.0043	<0.0041	<0.0042				
	mg/hr	31163	21894	13735	22264	< 1.09	< 1.14	< 0.98	< 1.07	99.997%	99.995%	99.993%	99.99%
Oxidized, Hg^{2+}	*ug/dscm*	0.52	0.33	0.18	0.34	0.0495	0.0361	0.0298	0.0385				
	mg/hr	115	73	39	76	12.53	9.58	7.19	9.77	89.08%	86.81%	81.76%	85.88%
Elemental, Hg^{0}	*ug/dscm*	< 0.29	< 0.15	< 0.12	< 0.19	< 0.1205	< 0.1196	< 0.1141	< 0.1181				
	mg/hr	< 64	< 34	< 27	< 42	< 30.40	< 31.90	< 27.54	< 29.95	52.57%	6.03%	-1.59%	19.00%
Total, Hg	*ug/dscm*	< 141.91	< 99.08	< 62.92	< 101.30	< 0.17	< 0.16	< 0.15	< 0.1607				
	mg/hr	< 31341	< 22000	< 13801	< 22381	< 44	< 43	< 36	< 41	99.86%	99.81%	99.74%	99.80%

Method/Component	Units	Unit 1 Process Samples				Unit 2 Process Samples				Unit 1 Overall Process RE[3]			
		1	2	3	avg	1	2	3	avg	1	2	3	avg
Coal Samples													
Hg	*ug/g*	5.50E-01	5.20E-01	5.10E-01	5.27E-01	5.00E-01	4.20E-01	5.20E-01	4.80E-01	***99.75%***	***99.77%***	***99.80%***	***99.77%***
Hg rate	*mg/hr*	16711	17877	17504	17364	14978	13677	17504	15386				
Sulfur	*Wt%*	1.49	1.52	1.4	1.47	1.57	1.28	1.47	1.44				
Chlorine	*%*	0.06	0.06	0.06	0.06	0.07	0.06	0.06	0.06				
HHV	*Btu/lb*	8509	8520	7996	8342	8554	8520	7996	8357				
Lime Slurry													
Hg	*mg/L*	< 0.1	< 0.1	< 0.1	< 0.1000	< 0.1	< 0.1	<0.1	<0.1000				
Hg rate	*mg/hr*	< 668	< 834	< 665	< 722	<827	<1112	< 818	< 919				
Ammonia													
Hg	*mg/L*	<0.002	< 0.002	< 0.002	< 0.002	<0.002	< 0.002	<0.002	< 0.002				
Hg rate	*mg/hr*	< 1	<1	< 1	< 1	<1	<1	<1	<1				
Total Hg Feed Rate	*mg/hr*	< 17380	<18712	<18170	<18088	<15806	<14790	<18324	<16307				
Measure vs. Process		180%	118%	76%	124%								

1- With the exception of run 2, all reported values represent average of the paired trains.

2- Unit 1 Baghouse exhaust emissions calculated using ratio of Total Hg Feed Rates for Unit 1 and Unit 2, as determined from process sampling.
Unit 1 Baghouse Emission = $Hg^{Comb.\ Stack}$ x [(Total $Hg^{unit\ 1}$) / (Total $Hg^{unit\ 1}$ + Total $Hg^{unit\ 2}$)]

3- Unit 1 Overall RE% = [((Total $Hg^{unit\ 1}$ - $Hg^{outlet\ unit\ 1}$) / (Total $Hg^{unit\ 1}$)]

DISTRIBUTION OF SPECIATED MERCURY EMISSIONS AND REMOVAL EFFICIENCIES
SCRUBGRASS GENERATING STATION

Method/Component	Units	Unit 1 Inlet				Combined Outlet Stack				I/O Removal Efficiency			
		1	2	3	avg	1	2	3	avg	1	2	3	avg
Ontario Hydro/ Hg													
Particle bound	*mg/hr*	31163 99.4%	21894 99.5%	13735 99.5%	22264 99.5%	< 2.07 2.5%	< 2.04 2.6%	< 1.98 2.8%	< 2.03 2.6%	99.996%	99.994%	99.994%	99.99%
Oxidized, Hg^{2+}	*mg/hr*	115 0.4%	73 0.3%	39 0.3%	76 0.3%	23.93 28.5%	17.15 22.0%	14.44 20.1%	18.50 23.5%	86.14%	85.88%	84.26%	85.43%
Elemental, Hg^{0}	*mg/hr*	< 64 0.2%	< 34 0.2%	< 27 0.2%	< 42 0.2%	< 58.05 69.1%	< 57.11 73.2%	< 55.30 77.1%	< 56.82 73.1%	39.80%	-0.61%	12.34%	17.18%
Total, Hg	*mg/hr*	< 31341	< 22000	< 13801	< 22381	84	78	72	78	99.82%	99.79%	99.78%	99.80%

SUMMARY OF MERCURY EMISSION RATES
SCRUBGRASS GENERATING STATION

Method/Component	Units	Unit 1 Inlet[1]				Combined Outlet Stack				Unit 1 Baghouse Outlet[2,3]			
		1	2	3	avg	1	2	3	avg	1	2	3	avg
Ontario Hydro/ Hg													
Particle bound	*lb/hr*	6.78E-02	4.76E-02	2.99E-02	4.84E-02	4.51E-06	4.44E-06	4.30E-06	4.42E-06	2.36E-06	2.48E-06	2.14E-06	2.33E-06
	lb/MMBtu	1.31E-04	8.86E-05	5.69E-05	9.23E-05	4.02E-09	3.92E-09	3.73E-09	3.89E-09	4.15E-09	3.84E-09	3.54E-09	3.84E-09
Oxidized, Hg^{2+}	*lb/hr*	2.50E-04	1.58E-04	6.75E-05	1.58E-04	5.21E-05	3.73E-05	3.14E-05	4.03E-05	2.73E-05	2.08E-05	1.56E-05	2.12E-05
	lb/MMBtu	4.80E-07	2.94E-07	1.64E-07	3.13E-07	4.62E-08	3.31E-08	2.73E-08	3.55E-08	4.78E-08	3.23E-08	2.59E-08	3.53E-08
Elemental, Hg^{0}	*lb/hr*	1.39E-04	7.39E-05	5.90E-05	9.08E-05	1.26E-04	1.24E-04	1.20E-04	1.24E-04	6.62E-05	6.94E-05	5.99E-05	6.52E-05
	lb/MMBtu	2.68E-07	1.37E-07	1.12E-07	1.73E-07	1.13E-07	1.10E-07	1.04E-07	1.09E-07	1.16E-07	1.07E-07	9.90E-08	1.08E-07
Total, Hg	*lb/hr*	6.82E-02	4.79E-02	3.00E-02	4.87E-02	1.83E-04	1.66E-04	1.56E-04	1.68E-04	9.58E-05	9.27E-05	7.77E-05	8.87E-05
	lb/MMBtu	1.32E-04	8.90E-05	5.71E-05	9.28E-05	1.63E-07	1.47E-07	1.35E-07	1.48E-07	1.68E-07	1.44E-07	1.28E-07	1.47E-07

1- With the exception of run 2, all reported values represent average of the paired trains.

2- Unit 1 Baghouse outlet lb/hr emissions calculated using ratio of Total Hg Feed Rates for Unit 1 and Unit 2, as determined from process sampling
Unit 1 Baghouse Emission = $lb/hr^{Comb.\ Stack} \times [(Total\ Hg^{unit\ 1}) / (Total\ Hg^{unit\ 1} + Total\ Hg^{unit\ 2})]$

3- Unit 1 lb/MMBtu emission rates were calculated as follows:
$lb/hr^{Unit\ 1}$ / $MMBtu/hr^{Unit\ 1}$

SUMMARY OF MERCURY EMISSION RATES and REMOVAL EFFICIENCIES - (unit 1 and 2 combined)
SCRUBGRASS GENERATING STATION

Method/Component	Units	Unit 1 Inlet[1]				Combined Outlet Stack				I/O Removal Efficiency[2]			
		1	2	3	avg	1	2	3	avg	1	2	3	avg
Ontario Hydro/ Hg													
Particle bound	*ug/dscm*	141.10	98.60	62.62	100.77	< 0.0043	<0.0043	<0.0041	<0.0042				
	mg/hr	31163	21894	13735	22264	< 2.07	< 2.04	< 1.98	< 2.03	99.996%	99.994%	99.994%	99.99%
Oxidized, Hg^{2+}	*ug/dscm*	0.52	0.33	0.18	0.34	0.0495	0.0361	0.0298	0.0385				
	mg/hr	115	73	39	76	23.93	17.15	14.44	18.50	86.14%	85.88%	84.26%	85.43%
Elemental, Hg^{0}	*ug/dscm*	< 0.29	< 0.15	<0.12	< 0.19	<0.1205	<0.1196	<0.1141	<0.1181				
	mg/hr	< 64	< 34	< 27	< 42	<58.05	<57.11	<55.30	< 56.82	39.80%	-0.61%	12.34%	17.18%
Total, Hg	*ug/dscm*	< 141.91	< 99.08	< 62.92	< 101.30	< 0.17	< 0.16	< 0.15	<0.1607				
	mg/hr	< 31341	< 22000	< 13801	< 22381	<84	< 76	< 72	< 77	99.82%	99.79%	99.78%	99.80%

Method/Component	Units	Unit 1 Process Samples				Unit 2 Process Samples				Overall Process RE			
		1	2	3	avg	1	2	3	avg	1	2	3	avg
Coal Samples													
Hg	*ug/g*	5.50E-01	5.20E-01	5.10E-01	5.27E-01	5.00E-01	4.20E-01	5.20E-01	4.80E-01	***99.75%***	***99.77%***	***99.80%***	***99.77%***
Hg rate	*mg/hr*	16711	17877	17504	17364	14978	13677	17504	15386				
Sulfur	*Wt%*	1.49	1.52	1.4	1.47	1.57	1.28	1.47	1.44				
Chlorine	*%*	0.06	0.06	0.06	0.06	0.07	0.06	0.06	0.06				
HHV	*Btu/lb*	8509	8520	7996	8342	8554	8520	7996	8357				
Lime Slurry													
Hg	*mg/L*	<0.1	<0.1	<0.1	<0.1000	<0.1	<0.1	<0.1	<0.1000				
Hg rate	*mg/hr*	<668	<834	<665	< 722	<827	<1112	<818	<919				
Ammonia													
Hg	*mg/L*	< 0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002				
Hg rate	*mg/hr*	< 1	< 1	< 1	< 1	<1	<1	<1	<1				
Total Hg Feed Rate	*mg/hr*	< 17380	< 18712	< 18170	< 18088	<15806	< 14790	<18324	<16307				
Measure vs. Process		180%	118%	76%	124%								

1- With the exception of run 2, all reported values represent average of the paired trains.

2- I/O removal efficiecy calculated assuming same ratio of speciated components for Unit 2 as was measured for Unit 1.
I/O RE% = $[((Hg^{In\ unit\ 1} + (Total\ Hg^{unit\ 2} \times \%Hg^{In\ unit\ 1})) - Hg^{outlet}) / (Hg^{In\ unit\ 1} + (Total\ Hg^{unit\ 2} \times \%Hg^{In\ unit\ 1}))]$

Unit 1 &2 - A trains
COMBINED STACK EXHAUST OHM - Runs 1, 2 AND 3

Run No.	1	2	3	
Date:	16-Sep-99	17-Sep-99	17-Sep-99	
Start Time	11:01	08:25	13:53	
Stop Time	17:26	12:46	17:37	AVERAGES
Net Sampling Time, (minutes)	144.0	144.0	144.0	144.0
Volume of Gas Collected, (dscf)	81.589	85.091	90.638	85.773
Dry Mole Fraction	0.9157	0.9166	0.9172	0.9165
CO_2 Concentration, (percent dry)	13.10	14.00	14.10	13.73
O_2 Concentration, (percent dry)	7.30	6.80	6.90	7.00
CO and N_2, (percent dry)	79.60	79.20	79.00	79.27
Stack Pressure, (inches of mercury)	28.44	28.60	28.70	28.58
Average Stack Temperature, (°F)	313	314	319	315
Stack Gas Velocity, (actual feet per minute - afpm)	5,085	4,999	5,118	5067
Stack Flowrate, (actual cubic feet per minute - acfm)	461,534	453,698	464,519	459917
Stack Flowrate, (standard cubic feet per minute - scfm)	299,655	295,815	301,978	299,149
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	274,380	271,131	276,979	274163
F-Factor	9,780			
EMISSIONS				
Hg^{tp}				
total, ug	< 0.01	< 0.01	< 0.01	
Concentration, ug/dscf	0.0001	0.0001	0.0001	
Concentration, ug/dscm	0.0043	0.0041	0.0039	
Emission Rate, mg/hr	2.02	1.91	1.83	
Emission Rate, lb/hr	4.39E-06	4.16E-06	3.99E-06	
Emission Rate, lb/MMBtu	4.06E-09	3.76E-09	3.55E-09	
Hg^{2+} - (KCL)				
total, ug	0.10	0.10	0.079	
Concentration, ug/dscf	0.0012	0.0012	0.0009	
Concentration, ug/dscm	0.0433	0.0415	0.0308	
Emission Rate, mg/hr	20.18	19.12	14.48	
Emission Rate, lb/hr	4.39E-05	4.16E-05	3.15E-05	
Emission Rate, lb/MMBtu	4.06E-08	3.76E-08	2.81E-08	
Hg^{0}				
total, ug (HNO_3-H_2O_2)	< 0.25	< 0.25	< 0.25	
total, ug (KMnO4-H2SO4)	0.03	0.03	0.03	
total, ug	0.28	0.28	0.28	
Concentration, ug/dscf	0.0034	0.0033	0.0031	
Concentration, ug/dscm	0.1212	0.1162	0.1091	
Emission Rate, mg/hr	56.50	53.53	51.34	
Emission Rate, lb/hr	1.23E-04	1.16E-04	1.12E-04	
Emission Rate, lb/MMBtu	1.14E-07	1.05E-07	9.94E-08	
Hg^{total}				
total, ug	< 0.39	< 0.39	< 0.37	
Concentration, ug/dscf	0.0048	0.0046	0.0041	
Concentration, ug/dscm	0.1688	0.1618	0.1438	
Emission Rate, mg/hr	78.69	74.56	67.66	
Emission Rate, lb/hr	1.71E-04	1.62E-04	1.47E-04	
Emission Rate, lb/MMBtu	1.58E-07	1.46E-07	1.31E-07	

UNIT 1&2 - B TRAINS
COMBINED STACK EXHAUST OHM - Runs 1, 2 AND 3

Run No.	1	2	3	
Date:	16-Sep-99	17-Sep-99	17-Sep-99	
Start Time	11:01	08:25	13:53	
Stop Time	17:26	12:46	17:37	AVERAGES
Net Sampling Time, (minutes)	144.0	144.0	144.0	144.0
Volume of Gas Collected, (dscf)	82.497	80.383	83.046	81.975
Dry Mole Fraction	0.9133	0.9146	0.9172	0.9151
CO_2 Concentration, (percent dry)	13.20	13.20	13.20	13.20
O_2 Concentration, (percent dry)	7.20	7.20	7.00	7.13
CO and N_2, (percent dry)	79.60	79.60	79.80	79.67
Stack Pressure, (inches of mercury)	28.43	28.60	28.70	28.58
Average Stack Temperature, (°F)	313	314	316	314
Stack Gas Velocity, (actual feet per minute - afpm)	5,440	5,365	5,392	5399
Stack Flowrate, (actual cubic feet per minute - acfm)	493,740	486,951	489,432	490041
Stack Flowrate, (standard cubic feet per minute - scfm)	320,482	317,496	319,404	319,127
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	292,711	290,395	292,973	292026
F-factor	9,780			
EMISSIONS				
Hg^{tp}				
total, ug	< 0.01	< 0.01	< 0.01	
Concentration, ug/dscf	0.0001	0.0001	0.0001	
Concentration, ug/dscm	0.0043	0.0044	0.0043	
Emission Rate, mg/hr	2.13	2.17	2.12	
Emission Rate, lb/hr	4.63E-06	4.72E-06	4.61E-06	
Emission Rate, lb/MMBtu	3.99E-09	4.09E-09	3.90E-09	
Hg^{2+} - (KCL)				
total, ug	0.13	0.07	0.07	
Concentration, ug/dscf	0.0016	0.0009	0.0008	
Concentration, ug/dscm	0.0556	0.0307	0.0289	
Emission Rate, mg/hr	27.68	15.17	14.39	
Emission Rate, lb/hr	6.02E-05	3.30E-05	3.13E-05	
Emission Rate, lb/MMBtu	5.18E-08	2.86E-08	2.65E-08	
Hg^{0}				
total, ug (HNO_3-H_2O_2)	< 0.25	< 0.25	< 0.25	
total, ug (KMnO4-H2SO4)	0.03	0.03	0.03	
total, ug	0.28	0.28	0.28	
Concentration, ug/dscf	0.0034	0.0035	0.0034	
Concentration, ug/dscm	0.1198	0.1230	0.1191	
Emission Rate, mg/hr	59.61	60.69	59.27	
Emission Rate, lb/hr	1.30E-04	1.32E-04	1.29E-04	
Emission Rate, lb/MMBtu	1.12E-07	1.15E-07	1.09E-07	
Hg^{total}				
total, ug	< 0.42	< 0.36	< 0.36	
Concentration, ug/dscf	0.0051	0.0045	0.0043	
Concentration, ug/dscm	0.1798	0.1581	0.1522	
Emission Rate, mg/hr	89.41	78.03	75.78	
Emission Rate, lb/hr	1.95E-04	1.70E-04	1.65E-04	
Emission Rate, lb/MMBtu	1.67E-07	1.47E-07	1.40E-07	

UNIT 1 BOILER
B TRAINS- BAGHOUSE INLET OHM - Runs 1, 2 AND 3

Run No.	1	2	3	
Date:	16-Sep-99	17-Sep-99	17-Sep-99	
Start Time	11:00	08:25	13:55	
Stop Time	17:30	12:26	17:35	AVERAGES
Net Sampling Time, (minutes)	150.0	150.0	150.0	150.0
Volume of Gas Collected, (dscf)	77.091	83.153	80.628	80.291
Dry Mole Fraction	0.9129	0.9119	0.9144	0.9131
CO_2 Concentration, (percent dry)	13.20	14.10	14.90	14.07
O_2 Concentration, (percent dry)	7.20	6.70	6.30	6.73
CO and N_2, (percent dry)	79.60	79.20	78.80	79.20
Stack Pressure, (inches of mercury)	27.76	27.79	27.97	27.84
Average Stack Temperature, (°F)	319	321	325	322
Stack Gas Velocity, (actual feet per minute - afpm)	3,721	3,803	3,647	3724
Stack Flowrate, (actual cubic feet per minute - acfm)	223,241	228,180	218,829	223417
Stack Flowrate, (standard cubic feet per minute - scfm)	140,404	143,305	137,611	140,440
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	128,174	130,679	125,837	128230
F-Factor	9,780			
EMISSIONS				
Hg^{tp}				
total, ug	321.70	232.19	134.44	
Concentration, ug/dscf	4.1730	2.7923	1.6674	
Concentration, ug/dscm	147.3492	98.5966	58.8763	
Emission Rate, mg/hr	32092.34	21893.80	12589.32	
Emission Rate, lb/hr	6.98E-02	4.76E-02	2.74E-02	
Emission Rate, lb/MMBtu	1.37E-04	8.86E-05	5.15E-05	
Hg^{2+} - (KCL)				
total, ug	0.56	0.77	0.18	
Concentration, ug/dscf	0.0073	0.0093	0.0022	
Concentration, ug/dscm	0.2565	0.3270	0.0788	
Emission Rate, mg/hr	55.86	72.61	16.86	
Emission Rate, lb/hr	1.22E-04	1.58E-04	3.67E-05	
Emission Rate, lb/MMBtu	2.39E-07	2.94E-07	6.89E-08	
Hg^{0}				
total, ug (HNO_3-H_2O_2)	< 0.25	< 0.25	< 0.25	
total, ug (KMnO4-H2SO4)	0.08	0.11	0.03	
total, ug	0.33	0.36	0.28	
Concentration, ug/dscf	0.0043	0.0043	0.0035	
Concentration, ug/dscm	0.1521	0.1529	0.1226	
Emission Rate, mg/hr	33.12	33.95	26.22	
Emission Rate, lb/hr	7.21E-05	7.39E-05	5.71E-05	
Emission Rate, lb/MMBtu	1.42E-07	1.37E-07	1.07E-07	
Hg^{total}				
total, ug	< 322.59	< 233.32	< 134.90	
Concentration, ug/dscf	4.1846	2.8059	1.6731	
Concentration, ug/dscm	147.7578	99.0764	59.0777	
Emission Rate, mg/hr	32181.32	22000.35	12632.39	
Emission Rate, lb/hr	7.00E-02	4.79E-02	2.75E-02	
Emission Rate, lb/MMBtu	1.38E-04	8.90E-05	5.16E-05	

UNIT 1 BOILER
B TRAINS- BAGHOUSE INLET OHM - Run4

Run No.	4B
Date:	17-Sep-99
Start Time	18:48
Stop Time	22:00
Net Sampling Time, (minutes)	150.0
Volume of Gas Collected, (dscf)	81.312
Dry Mole Fraction	0.9161
CO_2 Concentration, (percent dry)	14.10
O_2 Concentration, (percent dry)	7.10
CO and N_2, (percent dry)	78.80
Stack Pressure, (inches of mercury)	27.87
Average Stack Temperature, (°F)	320
Stack Gas Velocity, (actual feet per minute - afpm)	3,570
Stack Flowrate, (actual cubic feet per minute - acfm)	214,209
Stack Flowrate, (standard cubic feet per minute - scfm)	135,049
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	123,714
	9,780
EMISSIONS	
Hg^{tp}	
total, ug	215.14
Concentration, ug/dscf	2.6459
Concentration, ug/dscm	93.4250
Emission Rate, mg/hr	19640
Emission Rate, lb/hr	4.27E-02
Emission Rate, lb/MMBtu	8.64E-05
Hg^{2+} - (KCL)	
total, ug	0.22
Concentration, ug/dscf	0.0027
Concentration, ug/dscm	0.0955
Emission Rate, mg/hr	20
Emission Rate, lb/hr	4.37E-05
Emission Rate, lb/MMBtu	8.84E-08
Hg^{0}	
total, ug (HNO_3-H_2O_2)	< 0.25
total, ug (KMnO4-H2SO4)	0.03
total, ug	0.28
Concentration, ug/dscf	0.0034
Concentration, ug/dscm	0.1216
Emission Rate, mg/hr	26
Emission Rate, lb/hr	5.56E-05
Emission Rate, lb/MMBtu	1.12E-07
Hg^{total}	
total, ug	< 215.64
Concentration, ug/dscf	2.6520
Concentration, ug/dscm	93.6421
Emission Rate, mg/hr	19685
Emission Rate, lb/hr	4.28E-02
Emission Rate, lb/MMBtu	8.66E-05

UNIT 1 BOILER
A TRAINS - BAGHOUSE INLET OHM - Runs 1, 3 AND 4

Run No.	1	3	4	
Date:	16-Sep-99	17-Sep-99	17-Sep-99	
Start Time	11:00	13:55	18:48	
Stop Time	17:30	17:35	22:00	AVERAGES
Net Sampling Time, (minutes)	150.0	150.0	150.0	150.0
Volume of Gas Collected, (dscf)	81.582	79.214	81.084	80.627
Dry Mole Fraction	0.9139	0.9198	0.9172	0.9170
CO_2 Concentration, (percent dry)	13.20	13.70	16.40	14.43
O_2 Concentration, (percent dry)	7.20	7.30	5.00	6.50
CO and N_2, (percent dry)	79.60	79.00	78.60	79.07
Stack Pressure, (inches of mercury)	27.76	27.97	27.87	27.87
Average Stack Temperature, (°F)	322	327	322	324
Stack Gas Velocity, (actual feet per minute - afpm)	3,840	3,812	3,782	3812
Stack Flowrate, (actual cubic feet per minute - acfm)	230,419	228,743	226,933	228698
Stack Flowrate, (standard cubic feet per minute - scfm)	144,360	143,480	142,705	143,515
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	131,932	131,972	130,885	131596
f-Factor	9,780			
EMISSIONS				
Hg^{tp}				
total, ug	311.58	148.86	169.52	
Concentration, ug/dscf	3.8192	1.8793	2.0907	
Concentration, ug/dscm	134.8572	66.3567	73.8213	
Emission Rate, mg/hr	30232.75	14880.59	16418.19	
Emission Rate, lb/hr	6.58E-02	3.24E-02	3.57E-02	
Emission Rate, lb/MMBtu	1.26E-04	6.23E-05	5.93E-05	
Hg^{2+} - (KCL)				
total, ug	1.79	0.62	0.26	
Concentration, ug/dscf	0.0219	0.0078	0.0032	
Concentration, ug/dscm	0.7747	0.2764	0.1132	
Emission Rate, mg/hr	173.68	61.98	25.18	
Emission Rate, lb/hr	3.78E-04	1.35E-04	5.48E-05	
Emission Rate, lb/MMBtu	7.22E-07	2.59E-07	9.09E-08	
Hg^{0}				
total, ug (HNO_3-H_2O_2)	< 0.25	< 0.25	< 0.25	
total, ug (KMnO4-H2SO4)	0.73	0.03	0.03	
total, ug	0.98	0.28	0.28	
Concentration, ug/dscf	0.0120	0.0035	0.0035	
Concentration, ug/dscm	0.4242	0.1248	0.1219	
Emission Rate, mg/hr	95.09	27.99	27.12	
Emission Rate, lb/hr	2.07E-04	6.09E-05	5.90E-05	
Emission Rate, lb/MMBtu	3.95E-07	1.17E-07	9.79E-08	
Hg^{total}				
total, ug	< 314.35	< 149.76	< 170.06	
Concentration, ug/dscf	3.8532	1.8906	2.0973	
Concentration, ug/dscm	136.0561	66.7579	74.0565	
Emission Rate, mg/hr	30501.53	14970.56	16470.49	
Emission Rate, lb/hr	6.64E-02	3.26E-02	3.58E-02	
Emission Rate, lb/MMBtu	1.27E-04	6.26E-05	5.94E-05	

UNIT 2 BOILER
Method 1-4 BAGHOUSE INLET - Runs 1, 2 AND 3

Run No.	1	2	3	
Date:	16-Sep-99	17-Sep-99	11-Aug-99	
Start Time	11:00	08:35	13:55	
Stop Time	17:30	12:05	17:15	AVERAGES
Net Sampling Time, (minutes)	159.0	180.0	200.0	179.7
Volume of Gas Collected, (dscf)	84.015	81.128	87.801	84.315
Dry Mole Fraction	0.9443	0.9280	0.9244	0.9323
CO_2 Concentration, (percent dry)	11.00	11.00	12.00	11.33
O_2 Concentration, (percent dry)	9.40	9.20	8.70	9.10
CO and N_2, (percent dry)	79.60	79.80	79.30	79.57
Stack Pressure, (inches of mercury)	27.64	27.79	27.89	27.78
Average Stack Temperature, (°F)	308	308	312	309
Stack Gas Velocity, (actual feet per minute - afpm)	3,868	3,922	3,994	3928
Stack Flowrate, (actual cubic feet per minute - acfm)	232,096	235,292	239,657	235682
Stack Flowrate, (standard cubic feet per minute - scfm)	147,430	150,272	152,814	150,172
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	139,219	139,460	141,268	139982
EMISSIONS				
Hg^{tp}				
total, ug	0.00	0.00	0.00	
Concentration, ug/dscf	0.0000	0.0000	0.0000	
Concentration, ug/dscm	0.0000	0.0000	0.0000	
Emission Rate, lb/hr	0.00E+00	0.00E+00	0.00E+00	
Emission Rate, lb/yr	0.00	0.00	0.00	
Hg^{2+} - (KCL)				
total, ug	0.00	0.00	0.00	
Concentration, ug/dscf	0.0000	0.0000	0.0000	
Concentration, ug/dscm	0.0000	0.0000	0.0000	
Emission Rate, lb/hr	0.00E+00	0.00E+00	0.00E+00	
Emission Rate, lb/yr	0.00	0.00	0.00	
Hg^{0}				
total, ug (HNO_3-H_2O_2)	0.00	0.00	0.00	
total, ug (KMnO4-H2SO4)	0.00	0.00	0.00	
total, ug	0.00	0.00	0.00	
Concentration, ug/dscf	0.0000	0.0000	0.0000	
Concentration, ug/dscm	0.0000	0.0000	0.0000	
Emission Rate, lb/hr	0.00E+00	0.00E+00	0.00E+00	
Emission Rate, lb/yr	0.00	0.00	0.00	
Hg^{total}				
total, ug	0.00	0.00	0.00	
Concentration, ug/dscf	0.0000	0.0000	0.0000	
Concentration, ug/dscm	0.0000	0.0000	0.0000	
Emission Rate, lb/hr	0.00E+00	0.00E+00	0.00E+00	
Emission Rate, lb/yr	0.00	0.00	0.00	

NA

Unit 1 inlet

Run #	1		2		3	
Train ID	a	b	a	b	a	b
DSCFM	131,932	128,174		130,679	131,972	125,837
AVG (a&b)	130,053		130,679		128,905	

Combined Exhaust Stack

Run #	1		2		3	
Train ID	a	b	a	b	a	b
DSCFM	274,380	292,711	271,131	290,395	276,979	292,973
AVG (a&b)	283,546		280,763		284,976	
overall AVG			**283,095**			

	1		2	3
Flow Ratio (1 vs Stack)	0.458667		0.461609	0.452335
HG input ratio[1] (unit 1 vs unit 2)	1.099587		1.265185	0.991622
Ratio (flow ratio x Hg ratio)	0.504344		0.58402	0.448545
		avg	0.512303	
HG input ratio[2] (unit 1 vs total)	***0.523716***		***0.558535***	***0.497897***
		avg	0.526716	

	Unit 2 inlet		
Run #	1	2	3
Train ID	NA	NA	NA
DSCFM	139,219	139,460	141,268

AVG (a&b)

	Unit 1 and 2 combined inlet flow rate			
Run #	1	2	3	
AVG inlet 1+ inlet 2	269,272	270,139	270,173	
				Difference
overall AVG		**269,861**		**-4.9%**

	1		2	3
Flow Ratio (1 vs 1+2)	0.481926		0.484245	0.47767
HG input ratio[1] (unit 1 vs unit 2)	1.099587		1.265185	0.991622
Ratio (flow ratio x Hg ratio)	0.529919		0.61266	0.473668
		avg	0.538749	
HG input ratio[2] (unit 1 vs total)	***0.523716***		***0 0.558535***	***0 0.497897***
		avg	0.526716	

Appendix A.2

Isokinetic Summary

UNIT 1 BOILER
A TRAINS - BAGHOUSE INLET OHM - Runs 1, 3 AND 4

Run No.	Cal. Check	1	3	4	
Date:		16-Sep-99	17-Sep-99	17-Sep-99	
Start Time		11:00	13:55	18:48	
Stop Time		17:30	17:35	22:00	AVERAGES
Nozzle Diameter, (inches)		0.217	0.216	0.216	0.216
Barometric Pressure, (inches of mercury)		28.55	28.80	28.85	28.73
Net Sampling Time, (minutes)		150.0	150.0	150.0	150.0
Volume Metered, (cubic feet)		88.664	86.458	88.355	87.826
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	75	82	82	80
Average ΔH, (inches of water)		1.22	1.24	1.20	1.22
Average ΔH, (inches of mercury)		0.0897	0.0912	0.0882	0.0897
Dry Gas Meter Calibration Factor (Y) Meterbox # 90338	0.974	0.974	0.974	0.974	0.974
Dry Gas Meter ΔH @	1.939	1.939	1.939	1.939	1.939
Volume of Gas Collected, (dscf)		81.582	79.214	81.084	80.627
Total Water Collected, (mL)		163.0	146.5	155.3	154.9
Volume of Water Vapor, (scf)		7.685	6.907	7.322	7.305
Moisture, (percent)		8.6	8.0	8.3	8.3
Dry Mole Fraction		0.9139	0.9198	0.9172	0.9170
CO_2 Concentration, (percent dry)		13.20	13.70	16.40	14.43
O_2 Concentration, (percent dry)		7.20	7.30	5.00	6.50
CO and N_2, (percent dry)		79.60	79.00	78.60	79.07
Dry Molecular Weight, (lb/lb mole)		30.40	30.48	30.82	30.57
Wet Molecular Weight, (lb/lb mole)		29.33	29.48	29.76	29.53
Excess Air at Stack, (percent)		52.1	53.9	31.7	45.9
Stack Area, (square inches) ID(inches) = 120X72		8640.0	8640.0	8640.0	8640.0
Static Pressure, (inches of water)		-10.71	-11.24	-13.38	-11.78
Stack Pressure, (inches of mercury)		27.76	27.97	27.87	27.87
Average Stack Temperature, (°F)		322	327	322	324
Average Sqroot of ΔP		0.8681	0.8645	0.8628	0.8651
SDE Average		24.276	24.252	24.128	24.219
Pitot Coefficient		0.88	0.88	0.88	0.88
Stack Gas Velocity, (actual feet per minute - afpm)		3,840	3,812	3,782	3812
Stack Flowrate, (actual cubic feet per minute - acfm)		230,419	228,743	226,933	228698
Stack Flowrate, (standard cubic feet per minute - scfm)		144,360	143,480	142,705	143,515
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		131,932	131,972	130,885	131596
Isokinetics, Percent		**96.7**	**94.4**	**97.4**	**96**
Meterbox Calibration Verifications					
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!				
Post Test: Y_{qa}		1.00	1.02	0.98	1.00
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		3%	5%	0%	3%

Calibration Check		
Time (min.)	DGM IN	DGM OUT
0		
2		
4		
6		
8		
10		
	#DIV/0!	

	RUN1							RUN3							RUN4						
Traverse Point	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F
1	0.64	0.8000	69	69	1.10	1.05	315	0.79	0.8888	78	76	1.30	1.14	311	0.78	0.8832	77	77	1.30	1.14	289
	0.87	0.9327	71	69	1.50	1.22	317	0.91	0.9539	80	76	1.50	1.22	314	0.81	0.9000	79	77	1.30	1.14	290
2	0.79	0.8888	72	69	1.40	1.18	306	0.98	0.9899	81	77	1.60	1.26	311	0.98	0.9899	79	78	1.60	1.26	305
	0.91	0.9539	72	69	1.50	1.22	305	0.89	0.9434	81	77	1.40	1.18	313	0.86	0.9274	80	78	1.40	1.18	322
3	0.34	0.5831	73	69	0.58	0.76	301	0.55	0.7416	82	77	0.90	0.95	307	0.57	0.7550	80	78	0.92	0.96	326
	0.43	0.6557	73	70	0.74	0.86	300	0.45	0.6708	81	78	0.73	0.85	308	0.69	0.8307	81	78	1.10	1.05	315
4	0.49	0.7000	73	70	0.84	0.92	308	0.51	0.7141	82	78	0.83	0.91	319	0.46	0.6782	81	78	0.75	0.87	317
	0.5	0.7071	73	71	0.86	0.93	306	0.51	0.7141	83	79	0.83	0.91	321	0.48	0.6928	81	79	0.78	0.88	315
5	0.42	0.6481	74	71	0.71	0.84	312	0.39	0.6245	83	80	0.62	0.79	325	0.33	0.5745	81	80	0.53	0.73	315
	0.45	0.6708	74	72	0.77	0.88	314	0.39	0.6245	83	80	0.62	0.79	324	0.35	0.5916	82	80	0.56	0.75	315
6	0.99	0.9950	75	74	1.60	1.26	313	0.97	0.9849	83	80	1.50	1.22	325	0.99	0.9950	82	81	1.60	1.26	304
	1	1.0000	77	73	1.55	1.24	314	1.1	1.0488	83	80	1.70	1.30	319	0.93	0.9644	83	81	1.50	1.22	315
7	0.73	0.8544	77	74	1.20	1.10	311	1	1.0000	84	80	1.60	1.26	322	0.93	0.9644	83	81	1.50	1.22	314
	0.76	0.8718	77	74	1.20	1.10	310	0.54	0.7348	84	80	0.87	0.93	317	0.59	0.7681	84	81	0.96	0.98	316
8	0.69	0.8307	73	73	1.10	1.05	308	0.49	0.7000	84	80	0.79	0.89	316	0.71	0.8426	84	82	1.10	1.05	315
	0.78	0.8832	74	73	1.20	1.10	311	0.57	0.7550	83	81	0.93	0.96	315	0.73	0.8544	84	82	1.20	1.10	315
9	0.37	0.6083	74	73	0.60	0.77	316	0.32	0.5657	84	81	0.52	0.72	320	0.52	0.7211	84	83	0.84	0.92	315
	0.44	0.6633	75	73	0.70	0.84	315	0.65	0.8062	84	82	1.10	1.05	325	0.62	0.7874	84	83	1.00	1.00	315
10	0.41	0.6403	74	72	0.64	0.80	322	0.34	0.5831	84	81	0.55	0.74	332	0.35	0.5916	84	83	0.56	0.75	315
	0.41	0.6403	75	72	0.64	0.80	321	0.41	0.6403	84	82	0.66	0.81	331	0.41	0.6403	84	83	0.65	0.81	315
11	1	1.0000	75	72	1.50	1.22	321	1.2	1.0954	82	81	1.90	1.38	330	1	1.0000	83	82	1.60	1.26	319
	1	1.0000	75	72	1.50	1.22	322	1.1	1.0488	83	81	1.70	1.30	329	1	1.0000	83	82	1.60	1.26	321
12	1.2	1.0954	72	71	1.90	1.38	323	1.2	1.0954	84	81	1.90	1.38	328	1	1.0000	84	82	1.60	1.26	326
	1.2	1.0954	75	72	1.90	1.38	322	0.87	0.9327	84	81	1.40	1.18	328	1.1	1.0488	84	82	1.80	1.34	330
13	0.81	0.9000	76	71	1.30	1.14	320	0.86	0.9274	84	81	1.40	1.18	327	0.84	0.9165	84	83	1.30	1.14	334
	0.81	0.9000	76	71	1.30	1.14	322	0.89	0.9434	84	82	1.40	1.18	327	0.84	0.9165	84	83	1.30	1.14	332
14	0.39	0.6245	76	72	0.60	0.77	326	0.64	0.8000	85	82	1.00	1.00	327	0.53	0.7280	84	83	0.84	0.92	336
	0.59	0.7681	76	72	0.91	0.95	325	0.53	0.7280	85	82	0.84	0.92	330	0.64	0.8000	84	83	1.00	1.00	333
15	0.57	0.7550	76	73	0.88	0.94	330	0.35	0.5916	84	85	0.56	0.75	330	0.81	0.9000	84	83	1.30	1.14	336
	0.61	0.7810	77	74	0.94	0.97	330	0.32	0.5657	84	82	0.51	0.71	333	0.73	0.8544	84	83	1.20	1.10	335
16	1.1	1.0488	77	74	1.70	1.30	327	1.2	1.0954	82	81	1.90	1.38	330	1	1.0000	83	84	1.60	1.26	322
	1.1	1.0488	76	75	1.70	1.30	326	1	1.0000	83	81	1.60	1.26	330	1	1.0000	84	83	1.60	1.26	324
17	1.2	1.0954	76	75	1.85	1.36	330	1	1.0000	84	81	1.60	1.26	330	1	1.0000	84	83	1.60	1.26	323
	1.2	1.0954	78	75	1.85	1.36	327	1	1.0000	85	81	1.60	1.26	330	1	1.0000	85	83	1.60	1.26	323
18	0.91	0.9539	79	75	1.40	1.18	327	0.83	0.9110	85	81	1.30	1.14	332	0.75	0.8660	85	83	1.20	1.10	329
	0.85	0.9220	80	75	1.30	1.14	330	0.91	0.9539	86	81	1.40	1.18	333	0.89	0.9434	84	83	1.40	1.18	331
19	0.83	0.9110	80	75	1.30	1.14	332	0.62	0.7874	85	81	1.00	1.00	336	0.63	0.7937	84	83	0.00	0.00	330
	0.84	0.9165	80	76	1.30	1.14	332	0.62	0.7874	85	81	1.00	1.00	335	0.72	0.8485	83	83	1.20	1.10	334
20	0.67	0.8185	80	76	1.00	1.00	333	0.67	0.8185	85	82	1.10	1.05	336	0.76	0.8718	84	83	1.20	1.10	337
	0.72	0.8485	80	77	1.00	1.00	335	0.62	0.7874	85	81	1.00	1.00	336	0.76	0.8718	83	82	1.20	1.10	334
21	1.2	1.0954	78	78	1.80	1.34	330	0.98	0.9899	83	81	1.60	1.26	330	1	1.0000	80	81	1.60	1.26	331
	0.91	0.9539	80	78	1.40	1.18	324	0.98	0.9899	83	81	1.60	1.26	330	0.78	0.8832	81	81	1.30	1.14	328
22	0.95	0.9747	81	77	1.50	1.22	328	0.99	0.9950	84	81	1.60	1.26	330	0.83	0.9110	81	80	1.30	1.14	321
	1.1	1.0488	83	78	1.70	1.30	330	0.99	0.9950	86	81	1.60	1.26	334	0.78	0.8832	82	80	1.30	1.14	326
23	1	1.0000	84	78	1.50	1.22	332	0.95	0.9747	86	81	1.50	1.22	335	0.78	0.8832	81	80	1.30	1.14	321
	1	1.0000	84	78	1.50	1.22	332	0.99	0.9950	86	81	1.60	1.26	335	0.91	0.9539	81	80	1.40	1.18	323
24	0.66	0.8124	83	78	1.00	1.00	337	0.75	0.8660	87	81	1.20	1.10	335	0.68	0.8246	81	80	1.10	1.05	321
	0.74	0.8602	82	78	1.10	1.05	336	0.86	0.9274	86	81	1.40	1.18	338	0.72	0.8485	81	80	1.20	1.10	319
25	0.61	0.7810	81	78	0.93	0.96	336	0.96	0.9798	86	81	1.50	1.22	337	0.55	0.7416	80	80	0.87	0.93	326
	0.6	0.7746	81	78	0.91	0.95	335	0.92	0.9592	86	81	1.50	1.22	337	0.81	0.9000	80	80	1.30	1.14	331
Average	0.78	0.8681	75		1.22	1.09	322	0.77	0.8645	82		1.24	1.09	327	0.76	0.8628	82		1.20	1.07	322

UNIT 1 BOILER
B TRAINS- BAGHOUSE INLET OHM - Runs 1, 2 AND 3

Run No.	Cal. Check	1B	2B	3B	
Date:		16-Sep-99	17-Sep-99	17-Sep-99	
Start Time		11:00	8:25	13:55	
Stop Time		17:30	12:26	17:35	AVERAGES
Nozzle Diameter, (inches)		0.218	0.218	0.218	0.218
Barometric Pressure, (inches of mercury)		28.55	28.70	28.80	28.68
Net Sampling Time, (minutes)		150.0	150.0	150.0	150.0
Volume Metered, (cubic feet)		83.055	89.095	87.559	86.570
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	74	74	83	77
Average ΔH, (inches of water)		1.10	1.21	1.13	1.15
Average ΔH, (inches of mercury)		0.0809	0.0890	0.0831	0.0843
Dry Gas Meter Calibration Factor (Y) Meterbox # 90343	0.981	0.981	0.981	0.981	0.981
Dry Gas Meter ΔH @	1.885	1.885	1.885	1.885	1.885
Volume of Gas Collected, (dscf)		77.091	83.153	80.628	80.291
Total Water Collected, (mL)		156.0	170.4	160.0	162.1
Volume of Water Vapor, (scf)		7.355	8.034	7.544	7.645
Moisture, (percent)		8.7	8.8	8.6	8.7
Dry Mole Fraction		0.9129	0.9119	0.9144	0.9131
CO_2 Concentration, (percent dry)		13.20	14.10	14.90	14.07
O_2 Concentration, (percent dry)		7.20	6.70	6.30	6.73
CO and N_2, (percent dry)		79.60	79.20	78.80	79.20
Dry Molecular Weight, (lb/lb mole)		30.40	30.52	30.64	30.52
Wet Molecular Weight, (lb/lb mole)		29.32	29.42	29.55	29.43
Excess Air at Stack, (percent)		52.1	47.2	43.4	47.6
Stack Area, (square inches) ID(inches) = 72X120		8640.0	8640.0	8640.0	8640.0
Static Pressure, (inches of water)		-10.70	-12.31	-11.24	-11.42
Stack Pressure, (inches of mercury)		27.76	27.79	27.97	27.84
Average Stack Temperature, (°F)		319	321	325	322
Average Sqroot of ΔP		0.8425	0.8620	0.8291	0.8445
SDE Average		23.515	24.090	23.230	23.611
Pitot Coefficient		0.88	0.88	0.88	0.88
Stack Gas Velocity, (actual feet per minute - afpm)		3,721	3,803	3,647	3724
Stack Flowrate, (actual cubic feet per minute - acfm)		223,241	228,180	218,829	223417
Stack Flowrate, (standard cubic feet per minute - scfm)		140,404	143,305	137,611	140,440
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		128,174	130,679	125,837	128230
Isokinetics, Percent		**92.8**	**98.2**	**98.9**	**97**
Meterbox Calibration Verifications					
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!				
Post Test: Y_{qa}		1.03	1.00	0.99	1.01
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		5%	2%	1%	3%

Calibration Check		
Time (min.)	DGM IN	DGM OUT
0		
2		
4		
6		
8		
10		
	#DIV/0!	

	RUN1							RUN2							RUN3						
Traverse Point	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F
1	0.75	0.8660	68	68	1.10	1.05	302	0.95	0.9747	64	60	1.50	1.22	310	0.83	0.9110	81	81	1.30	1.14	315
	0.79	0.8888	68	68	1.20	1.10	303	0.96	0.9798	66	60	1.60	1.26	310	0.83	0.9110	81	81	1.30	1.14	315
2	0.71	0.8426	69	68	1.10	1.05	302	0.82	0.9055	69	61	1.30	1.14	310	0.8	0.8944	82	81	1.30	1.14	316
	0.85	0.9220	71	68	1.30	1.14	302	0.82	0.9055	70	62	1.30	1.14	310	0.8	0.8944	82	81	1.30	1.14	315
3	0.58	0.7616	72	68	0.91	0.95	301	0.66	0.8124	71	62	1.10	1.05	307	0.6	0.7746	83	81	0.98	0.99	310
	0.58	0.7616	72	68	0.91	0.95	300	0.66	0.8124	71	63	1.10	1.05	307	0.6	0.7746	83	81	0.98	0.99	311
4	0.39	0.6245	73	68	0.61	0.78	308	0.45	0.6708	72	63	0.72	0.85	310	0.43	0.6557	83	81	0.70	0.84	319
	0.45	0.6708	73	68	0.71	0.84	307	0.45	0.6708	72	64	0.72	0.85	312	0.43	0.6557	83	81	0.70	0.84	317
5	0.35	0.5916	74	68	0.55	0.74	306	0.3	0.5477	72	64	0.49	0.70	313	0.21	0.4583	84	81	0.34	0.58	319
	0.45	0.6708	74	68	0.71	0.84	314	0.3	0.5477	72	65	0.49	0.70	311	0.21	0.4583	84	81	0.34	0.58	319
6	1	1.0000	71	69	1.50	1.22	318	0.85	0.9220	75	66	1.40	1.18	313	0.8	0.8944	84	81	1.30	1.14	321
	1	1.0000	72	69	1.50	1.22	318	0.85	0.9220	75	66	1.40	1.18	314	0.8	0.8944	84	81	1.30	1.14	320
7	0.75	0.8660	74	70	1.10	1.05	318	0.9	0.9487	77	66	1.40	1.18	315	0.8	0.8944	85	82	1.30	1.14	319
	0.75	0.8660	74	70	1.10	1.05	313	0.88	0.9381	77	67	1.40	1.18	314	0.8	0.8944	85	82	1.30	1.14	319
8	0.65	0.8062	71	69	1.00	1.00	308	0.64	0.8000	77	68	1.00	1.00	311	0.6	0.7746	85	82	0.98	0.99	317
	0.65	0.8062	72	69	1.00	1.00	310	0.64	0.8000	78	68	1.00	1.00	310	0.55	0.7416	86	83	0.90	0.95	316
9	0.55	0.7416	74	69	0.85	0.92	314	0.6	0.7746	77	68	0.99	0.99	316	0.5	0.7071	85	83	0.82	0.91	320
	0.58	0.7616	74	69	0.89	0.94	314	0.6	0.7746	78	69	0.99	0.99	315	0.5	0.7071	86	83	0.82	0.91	322
10	0.35	0.5916	75	70	0.54	0.73	314	0.4	0.6325	77	69	0.65	0.81	319	0.35	0.5916	85	83	0.57	0.75	324
	0.35	0.5916	75	70	0.54	0.73	312	0.4	0.6325	77	69	0.65	0.81	318	0.35	0.5916	85	83	0.57	0.75	324
11	1	1.0000	74	70	1.50	1.22	322	1.1	1.0488	73	70	1.80	1.34	319	1	1.0000	84	82	1.61	1.27	325
	1	1.0000	74	70	1.50	1.22	322	1.1	1.0488	74	70	1.80	1.34	319	1	1.0000	84	81	1.61	1.27	327
12	0.92	0.9592	75	71	1.40	1.18	321	1.1	1.0488	75	70	1.80	1.34	319	0.95	0.9747	86	81	1.52	1.23	325
	0.93	0.9644	77	71	1.40	1.18	322	1.1	1.0488	75	71	1.80	1.34	319	0.95	0.9747	86	82	1.52	1.23	324
13	0.6	0.7746	78	71	0.92	0.96	319	0.72	0.8485	74	71	1.20	1.10	318	0.8	0.8944	86	82	1.31	1.14	322
	0.65	0.8062	78	71	1.00	1.00	319	0.72	0.8485	74	71	1.20	1.10	319	0.8	0.8944	86	82	1.31	1.14	321
14	0.58	0.7616	79	72	0.89	0.94	321	0.65	0.8062	74	71	1.00	1.00	322	0.6	0.7746	86	82	0.96	0.98	325
	0.65	0.8062	79	72	1.00	1.00	322	0.7	0.8367	74	71	1.10	1.05	324	0.6	0.7746	86	82	0.96	0.98	325
15	0.41	0.6403	80	72	0.63	0.79	321	0.7	0.8367	74	71	1.10	1.05	321	0.45	0.6708	86	83	0.72	0.85	326
	0.41	0.6403	79	72	0.63	0.79	322	0.65	0.8062	74	71	1.00	1.00	322	0.45	0.6708	86	82	0.72	0.85	328
16	1.1	1.0488	79	72	1.63	1.28	325	1.2	1.0954	75	72	1.90	1.38	325	0.95	0.9747	84	81	1.50	1.22	328
	1.1	1.0488	79	72	1.63	1.28	325	1.2	1.0954	77	73	1.50	1.22	327	0.95	0.9747	84	81	1.50	1.22	329
17	1.1	1.0488	77	73	1.60	1.26	329	0.8	0.8944	78	73	1.20	1.10	328	0.95	0.9747	86	81	1.50	1.22	328
	1.1	1.0488	78	74	1.60	1.26	327	0.8	0.8944	78	73	1.20	1.10	328	0.95	0.9747	86	81	1.50	1.22	329
18	0.85	0.9220	80	74	1.30	1.14	327	0.75	0.8660	80	74	1.20	1.10	328	0.85	0.9220	86	82	1.30	1.14	330
	0.95	0.9747	81	74	1.40	1.18	327	1	1.0000	80	74	1.60	1.26	328	0.75	0.8660	86	82	1.20	1.10	329
19	0.7	0.8367	81	74	1.00	1.00	330	0.85	0.9220	81	74	1.30	1.14	331	0.66	0.8124	86	82	1.00	1.00	332
	0.65	0.8062	82	74	0.98	0.99	330	0.75	0.8660	81	75	1.20	1.10	330	0.67	0.8185	86	81	1.10	1.05	332
20	0.35	0.5916	82	75	0.83	0.91	327	0.4	0.6325	81	75	0.64	0.80	333	0.49	0.7000	86	82	0.78	0.88	329
	0.55	0.7416	82	75	0.83	0.91	327	0.4	0.6325	81	76	0.64	0.80	333	0.49	0.7000	86	82	0.78	0.88	330
21	0.95	0.9747	80	75	1.44	1.20	322	0.74	0.8602	82	77	1.20	1.10	322	1	1.0000	84	81	1.60	1.26	329
	0.95	0.9747	80	75	1.44	1.20	322	0.74	0.8602	82	77	1.20	1.10	324	1	1.0000	85	81	1.60	1.26	330
22	0.81	0.9000	81	75	1.20	1.10	328	0.83	0.9110	84	77	1.30	1.14	330	1	1.0000	86	81	1.60	1.26	331
	0.92	0.9592	83	75	1.40	1.18	328	0.83	0.9110	85	78	1.30	1.14	330	1	1.0000	86	81	1.60	1.26	330
23	0.8	0.8944	83	75	1.20	1.10	332	1	1.0000	85	78	1.60	1.26	335	0.8	0.8944	86	81	1.30	1.14	335
	0.9	0.9487	83	76	1.30	1.14	332	1	1.0000	86	78	1.60	1.26	336	0.8	0.8944	87	81	1.30	1.14	333
24	0.82	0.9055	83	76	1.20	1.10	333	0.9	0.9487	86	78	1.40	1.18	337	0.51	0.7141	86	81	0.82	0.91	336
	0.82	0.9055	83	76	1.20	1.10	335	0.9	0.9487	86	79	1.40	1.18	337	0.51	0.7141	86	81	0.82	0.91	337
25	0.65	0.8062	83	76	0.98	0.99	335	0.65	0.8062	86	80	1.00	1.00	336	0.82	0.9055	86	82	1.30	1.14	335
	0.65	0.8062	82	77	0.98	0.99	333	0.65	0.8062	86	80	0.88	0.94	336	0.82	0.9055	86	82	1.30	1.14	335
Average	0.73	0.8425	74		1.10	1.04	319	0.76	0.8620	74		1.21	1.09	321	0.71	0.8291	83		1.13	1.05	325

UNIT 1 BOILER
B TRAINS- BAGHOUSE INLET OHM - Run4

Run No.		**Cal. Check**	**4B**
Date:			**17-Sep-99**
Start Time			**18:48**
Stop Time			**22:00**
Nozzle Diameter, (inches)			0.218
Barometric Pressure, (inches of mercury)			28.85
Net Sampling Time, (minutes)			150.0
Volume Metered, (cubic feet)			87.509
Average Dry Gas Meter Temperature, (°F)		#DIV/0!	79
Average ΔH, (inches of water)			1.09
Average ΔH, (inches of mercury)			0.0801
Dry Gas Meter Calibration Factor (Y)	Meterbox # 90343	0.981	0.981
Dry Gas Meter ΔH @		1.885	1.885
Volume of Gas Collected, (dscf)			81.312
Total Water Collected, (mL)			158.0
Volume of Water Vapor, (scf)			7.450
Moisture, (percent)			8.4
Dry Mole Fraction			0.9161
CO_2 Concentration, (percent dry)			14.10
O_2 Concentration, (percent dry)			7.10
CO and N_2, (percent dry)			78.80
Dry Molecular Weight, (lb/lb mole)			30.54
Wet Molecular Weight, (lb/lb mole)			29.49
Excess Air at Stack, (percent)			51.8
Stack Area, (square inches)	ID(inches) = 72X120		8640.0
Static Pressure, (inches of water)			-13.38
Stack Pressure, (inches of mercury)			27.87
Average Stack Temperature, (°F)			320
Average Sqroot of ΔP			0.8117
SDE Average			22.670
Pitot Coefficient			0.88
Stack Gas Velocity, (actual feet per minute - afpm)			3,570
Stack Flowrate, (actual cubic feet per minute - acfm)			214,209
Stack Flowrate, (standard cubic feet per minute - scfm)			135,049
Stack Flowrate, (dry standard cubic feet per minute - dscfm)			123,714
Isokinetics, Percent			**101.4**
Meterbox Calibration Verifications			
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)		#DIV/0!	
Post Test: Y_{qa}			0.97
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)			-2%

Calibration Check		
Time (min.)	DGM IN	DGM OUT
0		
2		
4		
6		
8		
10		
	#DIV/0!	

RUN4

Traverse Point	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F
1	0.75	0.8660	77	75	1.20	1.10	313
	0.75	0.8660	75	76	1.20	1.10	313
2	0.8	0.8944	77	76	1.30	1.14	314
	0.8	0.8944	77	75	1.30	1.14	314
3	0.6	0.7746	78	75	0.97	0.98	310
	0.61	0.7810	78	76	1.00	1.00	310
4	0.61	0.7810	80	77	1.00	1.00	314
	0.61	0.7810	80	77	1.00	1.00	318
5	0.22	0.4690	80	77	0.36	0.60	313
	0.22	0.4690	80	77	0.36	0.60	311
6	0.75	0.8660	81	77	1.20	1.10	313
	0.4	0.6325	82	77	0.68	0.82	314
7	0.4	0.6325	82	77	0.65	0.81	313
	0.72	0.8485	83	77	1.10	1.05	310
8	0.72	0.8485	83	78	1.10	1.05	314
	0.55	0.7416	83	78	0.90	0.95	316
9	0.55	0.7416	83	78	0.90	0.95	318
	0.35	0.5916	83	78	0.57	0.75	315
10	0.35	0.5916	83	78	0.57	0.75	315
	0.9	0.9487	81	78	1.50	1.22	323
11	0.9	0.9487	82	78	1.50	1.22	323
	0.85	0.9220	83	78	1.40	1.18	322
12	0.83	0.9110	83	78	1.30	1.14	322
	0.72	0.8485	84	78	1.20	1.10	320
13	0.72	0.8485	84	78	1.20	1.10	320
	0.6	0.7746	84	78	0.97	0.98	323
14	0.6	0.7746	83	78	0.97	0.98	324
	0.62	0.7874	83	78	1.00	1.00	322
15	0.62	0.7874	83	78	1.00	1.00	322
	1	1.0000	80	78	1.60	1.26	325
16	1	1.0000	81	78	1.60	1.26	324
	1	1.0000	82	78	1.60	1.26	324
17	1	1.0000	83	78	1.60	1.26	325
	0.6	0.7746	83	78	0.97	0.98	324
18	0.6	0.7746	83	77	0.97	0.98	322
	0.45	0.6708	82	78	0.73	0.85	326
19	0.45	0.6708	81	77	0.73	0.85	326
	0.55	0.7416	81	77	0.88	0.94	327
20	0.55	0.7416	80	77	0.88	0.94	325
	1	1.0000	78	77	1.60	1.26	325
21	1	1.0000	79	76	1.60	1.26	322
	1	1.0000	80	76	1.60	1.26	322
22	1	1.0000	80	76	1.60	1.26	322
	0.61	0.7810	80	76	0.99	0.99	327
23	0.61	0.7810	79	75	0.99	0.99	327
	0.75	0.8660	79	75	1.20	1.10	328
24	0.75	0.8660	79	75	1.20	1.10	329
	0.55	0.7416	78	75	0.88	0.94	330
25	0.55	0.7416	78	75	0.88	0.94	330
Average	0.68	0.8117	79		1.09	1.03	320

Unit 1 &2 - A trains
COMBINED STACK EXHAUST OHM - Runs 1, 2 AND 3

Run No.	Cal. Check	1A	2A	3A	
Date:		16-Sep-99	17-Sep-99	17-Sep-99	
Start Time		11:01	8:25	13:53	
Stop Time		17:26	12:46	17:37	AVERAGES
Nozzle Diameter, (inches)		0.185	0.185	0.185	0.185
Barometric Pressure, (inches of mercury)		28.55	28.70	28.80	28.68
Net Sampling Time, (minutes)		144.0	144.0	144.0	144.0
Volume Metered, (cubic feet)		88.517	94.060	98.923	93.833
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	79	92	87	86
Average ΔH, (inches of water)		1.22	1.18	1.25	1.22
Average ΔH, (inches of mercury)		0.0897	0.0868	0.0919	0.0895
Dry Gas Meter Calibration Factor (Y) Meterbox # 90342	0.983	0.983	0.983	0.983	0.983
Dry Gas Meter ΔH @	1.973	1.973	1.973	1.973	1.973
Volume of Gas Collected, (dscf)		81.589	85.091	90.638	85.773
Total Water Collected, (mL)		159.4	164.3	173.5	165.7
Volume of Water Vapor, (scf)		7.516	7.747	8.181	7.814
Moisture, (percent)		8.4	8.3	8.3	8.4
Dry Mole Fraction		0.9157	0.9166	0.9172	0.9165
CO_2 Concentration, (percent dry)		13.10	14.00	14.10	13.73
O_2 Concentration, (percent dry)		7.30	6.80	6.90	7.00
CO and N_2, (percent dry)		79.60	79.20	79.00	79.27
Dry Molecular Weight, (lb/lb mole)		30.39	30.51	30.53	30.48
Wet Molecular Weight, (lb/lb mole)		29.34	29.47	29.49	29.44
Excess Air at Stack, (percent)		53.2	48.2	49.4	50.3
Stack Area, (square inches) ID(inches) = 129		13069.8	13069.8	13069.8	13069.8
Static Pressure, (inches of water)		-1.50	-1.40	-1.40	-1.43
Stack Pressure, (inches of mercury)		28.44	28.60	28.70	28.58
Average Stack Temperature, (°F)		313	314	319	315
Average Sqroot of ΔP		1.2261	1.2104	1.2380	1.2248
SDE Average		34.089	33.674	34.553	34.106
Pitot Coefficient		0.84	0.84	0.84	0.84
Stack Gas Velocity, (actual feet per minute - afpm)		5,085	4,999	5,118	5067
Stack Flowrate, (actual cubic feet per minute - acfm)		461,534	453,698	464,519	459917
Stack Flowrate, (standard cubic feet per minute - scfm)		299,655	295,815	301,978	299,149
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		274,380	271,131	276,979	274163
Isokinetics, Percent		**100.4**	**106.0**	**110.5**	**105.6**
Meterbox Calibration Verifications					
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!				
Post Test: Y_{qa}		0.96	0.90	0.88	0.91
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		-2%	-9%	-11%	-7%

Calibration Check		
Time (min.)	DGM IN	DGM OUT
0		
2		
4		
6		
8		
10		
	#DIV/0!	

	RUN1							RUN2							RUN3						
Traverse Point	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F
1	1.5	1.2247	78	76	1.20	1.10	314	1.5	1.2247	78	77	1.20	1.10	313	1.5	1.2247	91	92	1.20	1.10	318
	1.5	1.2247	77	77	1.20	1.10	314	1.6	1.2649	80	75	1.30	1.14	314	1.5	1.2247	90	90	1.20	1.10	317
2	1.5	1.2247	75	77	1.20	1.10	313	1.6	1.2649	78	77	1.30	1.14	311	1.4	1.1832	89	90	1.10	1.05	317
	1.5	1.2247	77	75	1.20	1.10	314	1.5	1.2247	81	78	1.20	1.10	311	1.4	1.1832	90	89	1.10	1.05	316
3	1.3	1.1402	78	76	1.00	1.00	313	1.5	1.2247	82	78	1.20	1.10	311	1.3	1.1402	90	90	1.10	1.05	318
	1.3	1.1402	79	75	1.00	1.00	311	1.5	1.2247	83	79	1.20	1.10	311	1.3	1.1402	91	90	1.10	1.05	318
4	1.2	1.0954	79	77	0.97	0.98	310	1.4	1.1832	82	80	1.10	1.05	310	1.3	1.1402	92	90	1.10	1.05	317
	1.2	1.0954	80	77	0.97	0.98	310	1.4	1.1832	86	80	1.10	1.05	310	1.4	1.1832	92	91	1.10	1.05	318
5	1.1	1.0488	80	77	0.89	0.94	308	1.3	1.1402	87	80	1.00	1.00	308	1.3	1.1402	92	91	1.10	1.05	318
	1.1	1.0488	80	76	0.89	0.94	308	1.2	1.0954	87	81	0.97	0.98	307	1.25	1.1180	92	91	1.00	1.00	318
6	1.1	1.0488	78	77	0.89	0.94	308	1.2	1.0954	88	82	0.97	0.98	307	1.3	1.1402	95	90	1.10	1.05	318
	0.91	0.9539	81	77	0.73	0.85	305	1.2	1.0954	89	83	0.97	0.98	307	1.2	1.0954	95	91	0.97	0.98	316
7	1.7	1.3038	78	78	1.40	1.18	314	1.7	1.3038	92	86	1.40	1.18	313	1.8	1.3416	95	92	1.45	1.20	320
	1.7	1.3038	77	77	1.40	1.18	313	1.7	1.3038	93	88	1.40	1.18	313	1.8	1.3416	96	93	1.45	1.20	321
8	1.8	1.3416	77	76	1.46	1.21	313	1.7	1.3038	93	87	1.40	1.18	314	1.8	1.3416	97	93	1.45	1.20	319
	1.8	1.3416	79	77	1.50	1.22	315	1.6	1.2649	93	89	1.30	1.14	313	1.8	1.3416	96	93	1.45	1.20	320
9	1.8	1.3416	75	73	1.50	1.22	314	1.6	1.2649	95	90	1.30	1.14	314	1.8	1.3416	96	95	1.45	1.20	319
	1.8	1.3416	72	77	1.50	1.22	314	1.6	1.2649	97	92	1.30	1.14	313	1.75	1.3229	99	94	1.40	1.18	319
10	1.7	1.3038	74	75	1.40	1.18	314	1.4	1.1832	98	96	1.10	1.05	314	1.75	1.3229	99	96	1.40	1.18	319
	1.7	1.3038	75	76	1.40	1.18	313	1.5	1.2247	98	95	1.20	1.10	313	1.7	1.3038	99	96	1.40	1.18	319
11	1.7	1.3038	75	75	1.40	1.18	314	1.3	1.1402	98	95	1.00	1.00	312	1.8	1.3416	100	97	1.45	1.20	320
	1.5	1.2247	75	74	1.20	1.10	313	1.3	1.1402	97	95	1.00	1.00	312	1.7	1.3038	101	96	1.40	1.18	319
12	1.5	1.2247	74	72	1.20	1.10	313	1.3	1.1402	98	95	1.00	1.00	311	1.7	1.3038	101	96	1.40	1.18	319
	1.5	1.2247	77	73	1.20	1.10	314	1.2	1.0954	98	95	0.97	0.98	310	1.7	1.3038	101	99	1.40	1.18	320
13	1.7	1.3038	75	73	1.40	1.18	310	1.7	1.3038	99	96	1.40	1.18	317	1.7	1.3038	80	84	1.40	1.18	321
	1.7	1.3038	78	75	1.40	1.18	314	1.7	1.3038	99	96	1.40	1.18	318	1.7	1.3038	79	80	1.40	1.18	321
14	1.7	1.3038	78	76	1.40	1.18	315	1.7	1.3038	99	96	1.40	1.18	318	1.7	1.3038	79	80	1.40	1.18	321
	1.7	1.3038	78	75	1.40	1.18	315	1.8	1.3416	99	96	1.50	1.22	318	1.7	1.3038	79	80	1.40	1.18	320
15	1.6	1.2649	80	75	1.30	1.14	314	1.7	1.3038	98	95	1.40	1.18	316	1.7	1.3038	79	81	1.40	1.18	320
	1.6	1.2649	81	75	1.30	1.14	314	1.7	1.3038	99	95	1.40	1.18	316	1.7	1.3038	79	81	1.40	1.18	321
16	1.6	1.2649	83	75	1.30	1.14	316	1.7	1.3038	98	95	1.40	1.18	316	1.7	1.3038	79	81	1.40	1.18	322
	1.5	1.2247	83	75	1.20	1.10	313	1.7	1.3038	100	95	1.40	1.18	318	1.7	1.3038	79	80	1.40	1.18	321
17	1.5	1.2247	85	80	1.20	1.10	312	1.5	1.2247	99	95	1.20	1.10	316	1.7	1.3038	79	80	1.40	1.18	320
	1.5	1.2247	86	80	1.20	1.10	314	1.5	1.2247	99	96	1.20	1.10	317	1.5	1.2247	80	80	1.20	1.10	320
18	1.5	1.2247	86	81	1.20	1.10	313	1.5	1.2247	98	96	1.20	1.10	314	1.5	1.2247	79	81	1.20	1.10	329
	1.5	1.2247	85	80	1.20	1.10	313	1.5	1.2247	100	98	1.20	1.10	315	1.5	1.2247	80	80	1.20	1.10	320
19	1.6	1.2649	85	85	1.30	1.14	314	1.5	1.2247	96	96	1.20	1.10	318	1.5	1.2247	79	81	1.20	1.10	318
	1.6	1.2649	85	84	1.30	1.14	315	1.5	1.2247	96	96	1.20	1.10	316	1.5	1.2247	80	80	1.20	1.10	318
20	1.6	1.2649	85	83	1.30	1.14	314	1.6	1.2649	96	96	1.30	1.14	316	1.5	1.2247	80	80	1.20	1.10	319
	1.6	1.2649	86	85	1.30	1.14	314	1.5	1.2247	97	96	1.20	1.10	317	1.5	1.2247	80	80	1.20	1.10	319
21	1.6	1.2649	86	85	1.30	1.14	314	1.3	1.1402	98	96	1.00	1.00	315	1.4	1.1832	84	80	1.15	1.07	318
	1.5	1.2247	87	84	1.20	1.10	313	1.3	1.1402	98	96	1.00	1.00	316	1.4	1.1832	83	80	1.15	1.07	315
22	1.5	1.2247	87	86	1.20	1.10	313	1.3	1.1402	98	96	1.00	1.00	315	1.4	1.1832	84	81	1.15	1.07	316
	1.4	1.1832	88	86	1.13	1.06	313	1.3	1.1402	98	95	1.00	1.00	315	1.4	1.1832	84	81	1.15	1.07	316
23	1.4	1.1832	89	87	1.10	1.05	313	1.2	1.0954	98	96	0.97	0.98	314	1.3	1.1402	82	81	1.05	1.02	314
	1.4	1.1832	87	87	1.10	1.05	312	1.2	1.0954	99	96	0.97	0.98	314	1.3	1.1402	82	81	1.05	1.02	315
24	1.4	1.1832	87	86	1.10	1.05	312	1.2	1.0954	99	97	0.97	0.98	314	1.3	1.1402	82	82	1.05	1.02	315
	1.4	1.1832	89	86	1.10	1.05	313	1.2	1.0954	100	97	0.97	0.98	315	1.3	1.1402	82	82	1.05	1.02	314
Average	1.51	1.2261	79		1.22	1.10	313	1.47	1.2104	92		1.18	1.08	314	1.54	1.2380	87		1.25	1.12	319

UNIT 1&2 - B TRAINS
COMBINED STACK EXHAUST OHM - Runs 1, 2 AND 3

Run No.	Cal. Check	1B	2B	3B	
Date:		16-Sep-99	17-Sep-99	17-Sep-99	
Start Time		11:01	8:25	13:53	
Stop Time		17:26	12:46	17:37	AVERAGES
Nozzle Diameter, (inches)		0.184	0.184	0.184	0.184
Barometric Pressure, (inches of mercury)		28.55	28.70	28.80	28.68
Net Sampling Time, (minutes)		144.0	144.0	144.0	144.0
Volume Metered, (cubic feet)		89.608	88.791	90.583	89.661
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	82	94	89	88
Average ΔH, (inches of water)		1.34	1.29	1.32	1.32
Average ΔH, (inches of mercury)		0.0985	0.0949	0.0971	0.0968
Dry Gas Meter Calibration Factor (Y) Meterbox # 90336	0.987	0.987	0.987	0.987	0.987
Dry Gas Meter ΔH @	1.981	1.981	1.981	1.981	1.981
Volume of Gas Collected, (dscf)		82.497	80.383	83.046	81.975
Total Water Collected, (mL)		166.0	159.1	158.9	161.3
Volume of Water Vapor, (scf)		7.827	7.502	7.492	7.607
Moisture, (percent)		8.7	8.5	8.3	8.5
Dry Mole Fraction		0.9133	0.9146	0.9172	0.9151
CO_2 Concentration, (percent dry)		13.20	13.20	13.20	13.20
O_2 Concentration, (percent dry)		7.20	7.20	7.00	7.13
CO and N_2, (percent dry)		79.60	79.60	79.80	79.67
Dry Molecular Weight, (lb/lb mole)		30.40	30.40	30.39	30.40
Wet Molecular Weight, (lb/lb mole)		29.33	29.34	29.37	29.34
Excess Air at Stack, (percent)		52.1	52.1	49.8	51.3
Stack Area, (square inches) ID(inches) = 129		13069.8	13069.8	13069.8	13069.8
Static Pressure, (inches of water)		-1.60	-1.40	-1.40	-1.47
Stack Pressure, (inches of mercury)		28.43	28.60	28.70	28.58
Average Stack Temperature, (°F)		313	314	316	314
Average Sqroot of ΔP		1.2515	1.2374	1.2448	1.2446
SDE Average		34.795	34.426	34.676	34.632
Pitot Coefficient		0.88	0.88	0.88	0.88
Stack Gas Velocity, (actual feet per minute - afpm)		5,440	5,365	5,392	5399
Stack Flowrate, (actual cubic feet per minute - acfm)		493,740	486,951	489,432	490041
Stack Flowrate, (standard cubic feet per minute - scfm)		320,482	317,496	319,404	319,127
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		292,711	290,395	292,973	292026
Isokinetics, Percent		**96.2**	**94.5**	**96.8**	**96**
Meterbox Calibration Verifications					
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!				
Post Test: Y_{qa}		1.00	1.00	0.99	0.99
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		1%	1%	0%	1%

Calibration Check		
Time (min.)	DGM IN	DGM OUT
0		
2		
4		
6		
8		
10		
	#DIV/0!	

	RUN1							RUN2							RUN3						
Traverse Point	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F
1	1.7	1.3038	75	77	1.45	1.20	315	1.7	1.3038	81	81	1.45	1.20	314	1.6	1.2649	92	91	1.35	1.16	314
	1.7	1.3038	77	77	1.45	1.20	316	1.7	1.3038	83	81	1.45	1.20	314	1.6	1.2649	91	91	1.35	1.16	318
2	1.7	1.3038	77	77	1.45	1.20	315	1.7	1.3038	83	80	1.45	1.20	313	1.6	1.2649	92	92	1.35	1.16	316
	1.7	1.3038	76	76	1.45	1.20	315	1.7	1.3038	82	81	1.45	1.20	312	1.6	1.2649	93	92	1.35	1.16	316
3	1.6	1.2649	77	77	1.35	1.16	314	1.7	1.3038	85	81	1.45	1.20	313	1.5	1.2247	93	92	1.28	1.13	316
	1.6	1.2649	78	75	1.35	1.16	313	1.6	1.2649	86	81	1.35	1.16	313	1.6	1.2649	93	92	1.35	1.16	314
4	1.5	1.2247	78	75	1.30	1.14	313	1.5	1.2247	87	81	1.28	1.13	310	1.6	1.2649	93	92	1.35	1.16	316
	1.5	1.2247	79	76	1.30	1.14	309	1.5	1.2247	89	83	1.28	1.13	311	1.6	1.2649	93	91	1.35	1.16	314
5	1.3	1.1402	80	76	1.10	1.05	305	1.3	1.1402	90	83	1.10	1.05	310	1.6	1.2649	93	92	1.35	1.16	314
	1.3	1.1402	80	78	1.10	1.05	305	1.4	1.1832	92	84	1.20	1.10	310	1.6	1.2649	94	92	1.35	1.16	314
6	1.3	1.1402	80	78	1.10	1.05	306	1.2	1.0954	93	87	1.00	1.00	303	1.6	1.2649	95	92	1.35	1.16	314
	1.2	1.0954	80	79	1.00	1.00	295	1.2	1.0954	99	89	1.00	1.00	300	1.6	1.2649	95	93	1.35	1.16	315
7	1.6	1.2649	77	78	1.35	1.16	314	1.7	1.3038	99	93	1.45	1.20	315	1.6	1.2649	96	94	1.35	1.16	315
	1.6	1.2649	78	76	1.35	1.16	314	1.7	1.3038	100	93	1.45	1.20	316	1.6	1.2649	97	95	1.35	1.16	316
8	1.5	1.2247	80	76	1.30	1.14	316	1.4	1.1832	103	94	1.20	1.10	316	1.5	1.2247	98	94	1.28	1.13	317
	1.4	1.1832	80	78	1.20	1.10	316	1.9	1.3784	103	93	1.60	1.26	315	1.5	1.2247	99	95	1.28	1.13	317
9	1.4	1.1832	74	73	1.20	1.10	314	1.8	1.3416	104	95	1.50	1.22	315	1.5	1.2247	98	95	1.28	1.13	317
	1.4	1.1832	75	74	1.20	1.10	313	1.75	1.3229	105	97	1.45	1.20	315	1.3	1.1402	99	96	1.10	1.05	316
10	1.3	1.1402	76	74	1.10	1.05	313	1.7	1.3038	101	100	1.45	1.20	314	1.3	1.1402	100	96	1.10	1.05	316
	1.3	1.1402	77	74	1.10	1.05	315	1.7	1.3038	101	99	1.45	1.20	313	1.3	1.1402	100	96	1.10	1.05	315
11	1.3	1.1402	78	74	1.10	1.05	313	1.55	1.2450	101	100	1.05	1.02	313	1.3	1.1402	100	96	1.10	1.05	315
	1.2	1.0954	80	74	1.00	1.00	308	1.55	1.2450	99	100	1.05	1.02	288	1.3	1.1402	101	96	1.10	1.05	314
12	1.2	1.0954	80	74	1.00	1.00	307	1.4	1.1832	97	100	1.20	1.10	310	1.3	1.1402	100	96	1.10	1.05	313
	1.2	1.0954	80	75	1.00	1.00	311	1.5	1.2247	96	97	1.30	1.14	315	1.3	1.1402	101	97	1.10	1.05	314
13	1.6	1.2649	80	77	1.35	1.16	315	1.5	1.2247	95	94	1.30	1.14	316	1.9	1.3784	102	84	1.62	1.27	318
	1.7	1.3038	81	78	1.45	1.20	316	1.6	1.2649	95	94	1.36	1.17	318	1.9	1.3784	84	83	1.62	1.27	319
14	1.7	1.3038	81	78	1.45	1.20	318	1.6	1.2649	94	92	1.36	1.17	317	1.8	1.3416	83	83	1.53	1.24	317
	1.9	1.3784	83	78	1.62	1.27	316	1.6	1.2649	94	93	1.36	1.17	316	1.8	1.3416	81	83	1.53	1.24	316
15	1.9	1.3784	86	78	1.62	1.27	317	1.4	1.1832	95	93	1.20	1.10	316	1.8	1.3416	82	83	1.53	1.24	318
	1.9	1.3784	86	79	1.62	1.27	314	1.4	1.1832	95	93	1.20	1.10	315	1.7	1.3038	83	83	1.45	1.20	321
16	1.8	1.3416	87	80	1.53	1.24	316	1.25	1.1180	95	95	1.06	1.03	312	1.7	1.3038	81	83	1.45	1.20	319
	1.8	1.3416	89	81	1.53	1.24	314	1.3	1.1402	95	95	1.10	1.05	314	1.6	1.2649	82	83	1.36	1.17	320
17	1.8	1.3416	90	82	1.53	1.24	316	1.2	1.0954	97	94	1.00	1.00	312	1.6	1.2649	82	83	1.36	1.17	316
	1.6	1.2649	90	83	1.36	1.17	316	1.1	1.0488	97	94	0.93	0.96	313	1.5	1.2247	83	83	1.28	1.13	314
18	1.7	1.3038	90	84	1.45	1.20	316	1.2	1.0954	97	95	1.00	1.00	308	1.5	1.2247	83	83	1.28	1.13	314
	1.6	1.2649	90	86	1.36	1.17	308	1.02	1.0100	96	95	0.86	0.93	318	1.5	1.2247	83	83	1.28	1.13	313
19	1.7	1.3038	90	87	1.45	1.20	316	1.65	1.2845	95	94	1.40	1.18	320	1.8	1.3416	83	83	1.53	1.24	321
	1.8	1.3416	89	89	1.53	1.24	318	1.65	1.2845	95	95	1.40	1.18	325	1.8	1.3416	83	83	1.53	1.24	322
20	1.8	1.3416	89	86	1.53	1.24	317	1.65	1.2845	95	95	1.40	1.18	318	1.7	1.3038	83	83	1.45	1.20	318
	1.8	1.3416	89	87	1.53	1.24	315	1.65	1.2845	95	95	1.40	1.18	319	1.7	1.3038	83	83	1.45	1.20	317
21	1.7	1.3038	90	87	1.45	1.20	314	1.65	1.2845	97	95	1.40	1.18	318	1.6	1.2649	84	83	1.36	1.17	316
	1.7	1.3038	90	87	1.45	1.20	316	1.65	1.2845	97	95	1.40	1.18	317	1.6	1.2649	84	83	1.36	1.17	316
22	1.6	1.2649	92	87	1.36	1.17	313	1.65	1.2845	98	95	1.40	1.18	317	1.5	1.2247	84	83	1.28	1.13	315
	1.6	1.2649	92	87	1.36	1.17	313	1.65	1.2845	98	95	1.40	1.18	317	1.5	1.2247	84	83	1.28	1.13	314
23	1.5	1.2247	95	89	1.30	1.14	314	1.65	1.2845	99	95	1.40	1.18	317	1.3	1.1402	85	83	1.10	1.05	314
	1.6	1.2649	92	91	1.36	1.17	314	1.65	1.2845	100	95	1.40	1.18	317	1.3	1.1402	86	83	1.10	1.05	315
24	1.6	1.2649	91	89	1.36	1.17	314	1.65	1.2845	100	95	1.40	1.18	318	1.3	1.1402	87	83	1.10	1.05	314
	1.6	1.2649	91	88	1.36	1.17	314	1.65	1.2845	101	95	1.35	1.16	317	1.3	1.1402	86	84	1.10	1.05	315
Average	1.57	1.2515	82		1.34	1.15	313	1.54	1.2574	94		1.29	1.13	314	1.55	1.2448	89		1.32	1.15	316

UNIT 2 BOILER
Method 1-4 BAGHOUSE INLET - Runs 1, 2 AND 3

Run No.	Cal. Check	1B	2B	3B	
Date:		16-Sep-99	17-Sep-99	11-Aug-99	
Start Time		11:00	8:35	13:55	
Stop Time		17:30	12:05	17:15	AVERAGES
Nozzle Diameter, (inches)		na	na	na	0.000
Barometric Pressure, (inches of mercury)		28.55	28.70	28.80	28.68
Net Sampling Time, (minutes)		159.0	180.0	200.0	179.7
Volume Metered, (cubic feet)		89.170	86.200	94.370	89.913
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	67	70	78	72
Average ΔH, (inches of water)		1.00	0.75	0.75	0.83
Average ΔH, (inches of mercury)		0.0735	0.0551	0.0551	0.0613
Dry Gas Meter Calibration Factor (Y) Meterbox # 90341	0.983	0.983	0.983	0.983	0.983
Dry Gas Meter ΔH @	1.963	1.963	1.963	1.963	1.963
Volume of Gas Collected, (dscf)		84.015	81.128	87.801	84.315
Total Water Collected, (mL)		105.1	133.4	152.2	130.2
Volume of Water Vapor, (scf)		4.955	6.290	7.176	6.141
Moisture, (percent)		5.6	7.2	7.6	6.8
Dry Mole Fraction		0.9443	0.9280	0.9244	0.9323
CO_2 Concentration, (percent dry)		11.00	11.00	12.00	11.33
O_2 Concentration, (percent dry)		9.40	9.20	8.70	9.10
CO and N_2, (percent dry)		79.60	79.80	79.30	79.57
Dry Molecular Weight, (lb/lb mole)		30.14	30.13	30.27	30.18
Wet Molecular Weight, (lb/lb mole)		29.46	29.26	29.34	29.35
Excess Air at Stack, (percent)		80.9	77.5	71.1	76.5
Stack Area, (square inches) ID(inches) = 72X120		8640.0	8640.0	8640.0	8640.0
Static Pressure, (inches of water)		-12.31	-12.31	-12.31	-12.31
Stack Pressure, (inches of mercury)		27.64	27.79	27.89	27.78
Average Stack Temperature, (°F)		308	308	312	309
Average Sqroot of ΔP		0.9244	0.9364	0.9544	0.9384
SDE Average		25.618	25.950	26.518	26.029
Pitot Coefficient		0.84	0.84	0.84	0.84
Stack Gas Velocity, (actual feet per minute - afpm)		3,868	3,922	3,994	3928
Stack Flowrate, (actual cubic feet per minute - acfm)		232,096	235,292	239,657	235682
Stack Flowrate, (standard cubic feet per minute - scfm)		147,430	150,272	152,814	150,172
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		139,219	139,460	141,268	139982
Isokinetics, Percent		**#VALUE!**	**#VALUE!**	**#VALUE!**	**#VALUE!**
Meterbox Calibration Verifications					
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!				
Post Test: Y_{qa}		0.96	0.98	0.99	0.98
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		-3%	-1%	1%	-1%

Calibration Check		
Time (min.)	DGM IN	DGM OUT
0		
2		
4		
6		
8		
10		
#DIV/0!		

	RUN1							RUN2							RUN3						
Traverse Point	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F	Delta P	Sqrt Delta P	DGM IN	DGM OUT	Delta H	Sqrt Delta H	Stack Temp °F
1.00	1.05	1.0247	63	63	1.00	1.00	310	1.2	1.0954	65	66	0.75	0.87	308	1.1	1.0488	74	74	0.75	0.87	316
	1.05	1.0247	65	63	1.00	1.00	309	1.2	1.0954	67	66	0.75	0.87	308	1.1	1.0488	74	74	0.75	0.87	317
2.00	0.91	0.9539	65	63	1.00	1.00	308	1	1.0000	67	66	0.75	0.87	311	0.95	0.9747	75	74	0.75	0.87	316
	0.87	0.9327	65	63	1.00	1.00	307	1.1	1.0488	68	66	0.75	0.87	311	0.9	0.9487	75	74	0.75	0.87	316
3.00	0.42	0.6481	65	63	1.00	1.00	302	0.85	0.9220	68	66	0.75	0.87	316	0.85	0.9220	76	74	0.75	0.87	317
	0.43	0.6557	66	63	1.00	1.00	302	0.9	0.9487	68	67	0.75	0.87	313	0.65	0.8062	76	74	0.75	0.87	317
4.00	0.63	0.7937	66	63	1.00	1.00	299	0.85	0.9220	69	67	0.75	0.87	307	0.85	0.9220	77	74	0.75	0.87	314
	0.67	0.8185	66	63	1.00	1.00	300	0.85	0.9220	69	67	0.75	0.87	307	0.75	0.8660	77	75	0.75	0.87	314
5.00	0.56	0.7483	67	64	1.00	1.00	300	0.95	0.9747	69	68	0.75	0.87	310	0.95	0.9747	78	75	0.75	0.87	310
	0.5	0.7071	65	67	1.00	1.00	300	0.95	0.9747	69	68	0.75	0.87	310	1	1.0000	78	75	0.75	0.87	310
6.00	1.1	1.0488	65	65	1.00	1.00	302	1.1	1.0488	69	68	0.75	0.87	311	1.1	1.0488	78	76	0.75	0.87	316
	1.1	1.0488	68	65	1.00	1.00	303	1.1	1.0488	69	68	0.75	0.87	311	1.1	1.0488	79	76	0.75	0.87	316
7.00	1.2	1.0954	66	67	1.00	1.00	304	0.95	0.9747	69	68	0.75	0.87	314	0.9	0.9487	79	77	0.75	0.87	316
	1.2	1.0954	66	67	1.00	1.00	308	0.9	0.9487	70	69	0.75	0.87	313	0.75	0.8660	79	77	0.75	0.87	316
8.00	0.98	0.9899	65	67	1.00	1.00	312	1	1.0000	70	69	0.75	0.87	312	1	1.0000	79	77	0.75	0.87	316
	0.98	0.9899	68	66	1.00	1.00	311	1	1.0000	70	70	0.75	0.87	318	1	1.0000	79	77	0.75	0.87	316
9.00	1.1	1.0488	68	66	1.00	1.00	314	0.65	0.8062	71	70	0.75	0.87	307	0.85	0.9220	79	78	0.75	0.87	310
	1.15	1.0724	68	66	1.00	1.00	313	0.65	0.8062	71	70	0.75	0.87	308	0.85	0.9220	79	78	0.75	0.87	310
10.00	1.1	1.0488	68	67	1.00	1.00	312	0.85	0.9220	71	70	0.75	0.87	305	1	1.0000	79	78	0.75	0.87	308
	1.1	1.0488	69	67	1.00	1.00	312	0.85	0.9220	71	70	0.75	0.87	305	1	1.0000	79	78	0.75	0.87	308
11.00	1.05	1.0247	70	68	1.00	1.00	314	1.2	1.0954	71	71	0.75	0.87	310	1.1	1.0488	78	78	0.75	0.87	313
	1.05	1.0247	71	69	1.00	1.00	313	1.2	1.0954	72	71	0.75	0.87	311	1.1	1.0488	78	77	0.75	0.87	313
12.00	0.88	0.9381	71	69	1.00	1.00	314	0.9	0.9487	72	71	0.75	0.87	308	1.1	1.0488	78	77	0.75	0.87	315
	0.88	0.9381	68	68	1.00	1.00	314	0.9	0.9487	72	71	0.75	0.87	308	1.1	1.0488	78	77	0.75	0.87	315
13.00	0.75	0.8660	69	69	1.00	1.00	314	0.85	0.9220	72	71			307	0.85	0.9220	79	77			312
	0.75	0.8660	69	69	1.00	1.00	314	0.85	0.9220	72	72			307	0.8	0.8944	79	77			312
14.00	0.98	0.9899	70	69	1.00	1.00	307	0.65	0.8062	73	72			305	0.9	0.9487	80	77			312
	0.98	0.9899	70	69	1.00	1.00	307	0.85	0.9220	73	72			305	0.75	0.8660	80	77			312
15.00	0.8	0.8944	74	71	1.00	1.00	307	0.9	0.9487	73	72			303	0.85	0.9220	80	78			307
	0.82	0.9055	72	71	1.00	1.00	306	0.85	0.9220	73	72			303	0.65	0.8062	80	78			307
16.00	1.1	1.0488	72	71	1.00	1.00	312	1	1.0000	73	72			307	1	1.0000	79	78			314
	1.1	1.0488	72	71	1.00	1.00	312	1	1.0000	74	73			307	1	1.0000	80	78			314
17.00	0.75	0.8660	71	71	1.00	1.00	310	0.8	0.8944	74	73			306	1	1.0000	80	78			312
	0.75	0.8660			1.00	1.00	310	0.8	0.8944	74	73			306	0.85	0.9220	80	77			312
18.00	0.7	0.8367			1.00	1.00	305	0.65	0.8062	74	74			304	0.65	0.8062	80	78			310
	0.66	0.8124			1.00	1.00	305	0.8	0.8944	75	74			304	0.8	0.8944	80	78			310
19.00	0.68	0.8246			1.00	1.00	302	0.55	0.7416					305	0.85	0.9220	80	78			308
	0.68	0.8246			1.00	1.00	302	0.55	0.7416					305	0.75	0.8660	80	78			308
20.00	1	1.0000			1.00	1.00	311	0.8	0.8944					305	0.9	0.9487	80	78			307
	1	1.0000			1.00	1.00	312	0.8	0.8944					305	0.9	0.9487	80	78			307
21.00	1	1.0000			1.00	1.00	313	1	1.0000					312	1	1.0000					313
	1	1.0000			1.00	1.00	313	1	1.0000					313	1.1	1.0488					313
22.00	0.85	0.9220			1.00	1.00	311	0.8	0.8944					308	0.95	0.9747					311
	0.85	0.9220			1.00	1.00	311	0.8	0.8944					309	1	1.0000					311
23.00	0.45	0.6708			1.00	1.00	308	0.7	0.8367					308	0.65	0.8062					309
	0.5	0.7071			1.00	1.00	308	0.72	0.8485					308	0.7	0.8367					309
24.00	0.85	0.9220			1.00	1.00	305	0.65	0.8062					306	0.95	0.9747					310
	0.74	0.8602			1.00	1.00	305	0.75	0.8660					306	0.9	0.9487					310
25.00	0.86	0.9274			1.00	1.00	305	1	1.0000					305	1	1.0000					305
	0.86	0.9274			1.00	1.00	305	1	1.0000					305	1	1.0000					305
Average	0.87	0.9244	67		1.00	1.00	308	0.88	0.9364	70		0.75	0.87	308	0.92	0.9544	78		0.75	0.87	312

Appendix A.3

Process Mercury Inflow Calculations

UNIT 1

Process Stream	Run No.	TPH	g/hr	hg ug/g	ug/hr	mg/hr
Coal	1	33.49	3.0384E+07	5.50E-01	1.6711E+07	16711
	2	37.90	3.4378E+07	5.20E-01	1.7877E+07	17877
	3	37.83	3.4321E+07	5.10E-01	1.7504E+07	17504
		TPH	**kg/hr**	**mg/kg**		**mg/hr**
limestone	1	7.36	6678.77	0.1		668
	2	9.19	8340.02	0.1		834
	3	7.33	6649.78	0.1		665
		GPM	**L/hr**	**mg/L**		**mg/hr**
Ammonia	1	3.12	708.63	0.002		1
	2	3.12	708.63	0.002		1
	3	3.12	708.63	0.002		1

Unit 2

Process Stream	Run No.	TPH	g/hr	hg ug/g	ug/hr	mg/hr
Coal	1	33.02	2.9956E+07	5.00E-01	1.4978E+07	14978
	2	35.89	3.2563E+07	4.20E-01	1.3677E+07	13677
	3	37.11	3.3662E+07	5.20E-01	1.7504E+07	17504
		TPH	**kg/hr**	**mg/kg**		**mg/hr**
limestone	1	9.11	8268.52	0.1		827
	2	12.26	11119.98	0.1		1112
	3	9.02	8182.85	0.1		818
		GPM	**L/hr**	**mg/L**		**mg/hr**
Ammonia	1	3.12	708.63	0.002		1
	2	3.12	708.63	0.002		1
	3	3.12	708.63	0.002		1

Run 1- UNIT 1

	1b2	1b1	1a2	1a1
min	390	390	390	390
int	82410305	2077094	46946711	30633935
fin	82529743	2195359	47045729	30732612
lbs	119438	118265	99018	98677
lbs/min	306.3	303.2	253.9	253.0

Run 2- UNIT 1

1b2	1b1	1a2	1a1	
185	185	185	185	min
37509	21243	21192	21160	int
21390	37148	37072	36974	fin
58899	58391	58264	58134	lbs
318.4	315.6	314.9	314.2	lbs/min

Run 3- UNIT 1

1b2	1b1	1a2	1a1	
225	226	225	226	min
82889126	2561146	47386692	31067672	int
82960820	2632150	47457650	31138390	fin
71694	71004	70958	70718	lbs
318.6	314.2	315.4	312.9	lbs/min

Run 1- UNIT 1

	1a	1b
min	375	375
int	42077280	98915453
fin	42123193	98961566
lbs	45913	46113
lbs/min	122.4	123.0

Run 2- UNIT 1

1a	1b	
185	185	min
42237448	99059378	int
42265761	99087757	fin
28313	28379	lbs
153.0	153.4	lbs/min

Run 3- UNIT 1

1a	1b	
225	225	min
42277225	99099250	int
42304803	99126648	fin
27578	27398	lbs
122.6	121.8	lbs/min

Run 1- UNIT 2

	2a1	2a2	2b1	2b2
min	390	390	390	390
int	87296491	73482535	49387512	30214040
fin	87404143	73589099	49495555	30321049
lbs	107652	106564	108043	107009
lbs/min	276.0	273.2	277.0	274.4

Run 2- UNIT 2

2a1	2a2	2b1	2b2	
185	185	185	185	min
19208	19098	19504	19361	int
36372	35801	36135	35872	fin
55580	54899	55639	55233	lbs
300.4	296.8	300.8	298.6	lbs/min

Run 3- UNIT 2

2a1	2a2	2b1	2b2	
225	226	225	226	min
87751123	73938258	49851295	30663799	int
87819638	74008979	49921932	30732838	fin
68515	70721	70637	69039	lbs
304.5	312.9	313.9	305.5	lbs/min

Run 1- UNIT 1

	2a	2b
min	375	375
int	76451794	29739175
fin	76508587	29796313
lbs	56793	57138
lbs/min	151.4	152.4

Run 2- UNIT 1

2a	2b	
185	185	min
76648511	29931538	int
76686261	29969377	fin
37750	37839	lbs
204.1	204.5	lbs/min

Run 3- UNIT 1

2a	2b	
226	226	min
76699930	29982931	int
76734008	30016804	fin
34078	33873	lbs
150.8	149.9	lbs/min

Unit 1

Run #	Fuel Flow TPH	Heat Value Btu/lb	Heat Input Btu/Hr	F-Factor	O2 %		flow dscfm	
1	33.49215385	8509	5.6997E+08	9780	6.7		136740	
2	37.89535135	8520	6.4574E+08	9780	6.7		154918	
3	37.83292153	7996	6.0502E+08	9780	7.1		149358	
4						avg	147005	129913

Unit 2

Run #	Fuel Flow TPH	Heat Value Btu/lb	Heat Input Btu/Hr	F-Factor	O2 %		flow dscfm
1	33.02	8554	5.6492E+08	9780	6.7		135528
2	35.89	8520	6.1165E+08	9780	6.7		146739
3	37.11	7996	5.9340E+08	9780	7.1		146487
						avg	142918

APPENDIX B

RAW FIELD DATA AND CALIBRATION DATA SHEETS

Appendix B.1

Raw Field Data Sheets

TRC ENVIRONMENTAL CORPORATION - 1. KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-20004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Inlet
Stack Diameter:
Date: 9/14/99
Run No.: PGE-SG-OHM- -Blank
Operator: RR/RN
Meterbox No.: 90338
Meterbox ΔH @:
Y Factor:

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 1
Train Prepared By: EG
Pitot Number and Side: P-9
Pitot Tube CP:
Filter No.: N/A
Ambient Temp., °F:
Bar. Pressure, In. Hg.:
Assumed Moisture, %:
Heater Box Setting, °F: 300
Nozzle # / Dia., In.:
Probe Length / Material: 12' glass
Probe Heater Setting: 328

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
	1420		688.482													
			688.582													
	1620		688.582													
			688.697													

Train Leak Check:

Comments:

Before Test: 0.001 CF in 60 Seconds at 15 In. Hg
After Test: 0.000 CF in 60 Seconds at 7 In. Hg

	Initial	Final	Port	Static Pressure			
Pitot Tube Leak Check	⊗	⊗	Inches H_2O				
ORSAT Train Leak Check	○	○	Inches Hg				

lowell02.wp

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Scrubgrass Generating Station
Source: Outlet

Date: 9/14/99
Run No.: Outlet FB
Train Type: Ontario-Hydro
Recovery Person: [illegible]

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			Comments:
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	696.8	648.5	692.5	625.8	707.0	646.5	689.9
Initial Vol. (ml/g):	696.8	648.4	692.5	625.8	707.2	646.7	690.0
Net Collected (ml/g):	0	0.1	0.0	0.0	-0.2	-0.2	-0.1

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	787.4			
Initial Vol. (ml/g):	787.3			
Net Collected (ml/g):	0.3			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = -0.1

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/14/99

Location: Inlet **Run:** Field Blank

Sample ID: PG&E-56-OHM-I1-FB

Train Set Up By:		**Date:** 9/14/99	**Time:** 1340
Transported to Location By:		**Date:** 9/14/99	**Time:** 1400
Received at Location By:		**Date:** 9/14/99	**Time:** 1405
Transported to Recovery Area By:		**Date:** 9/14/99	**Time:** 1644
Received at Recovery Area By:		**Date:** 9/14/99	**Time:** 1654
Train Recovered By:		**Date:** 9/14/99	**Time:** 1654

Comments:

Hg

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
nt: PG&E
Facility: Scrubgrass Generating Station
Source: Outlet Exhaust stack

Date: 9/17/99
Run No.: Field Blank
Train Type: Ontario-Hydro
Recovery Person: CM

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			Comments:
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	635.6	624.1	688.1	701.5	715.0	711.6	702.8
Initial Vol. (ml/g):	635.6	624.2	688.0	701.5	715.1	711.5	702.8
Collected (ml/g):	0	-0.1	0.1	0	-0.1	0.1	0

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	830.7			
Initial Vol. (ml/g):	830.7			
Net Collected (ml/g):	0			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 0

Sample Train Tracking Form

ımple Train: OH - Hg **Date:** 9/17/99

Location: Outlet **Run:** FB

Sample ID: PG&E-SG-OHM-O-FB

Train Set Up By:	[signature]	**Date:** 9/17/99	**Time:** 1604
Transported to Location By:	S. J	**Date:** 9/17/99	**Time:** 1607
Received at Location By:	S. J	**Date:** 9/17/99	**Time:** 1627
Transported to Recovery Area By:	[signature]	**Date:** 17 Sept 99	**Time:** 2111
Received at Recovery Area By:	[signature]	**Date:** 9/17/99	**Time:** 2111
Train Recovered By:	[signature]	**Date:** 9/17/99	**Time:** 2115

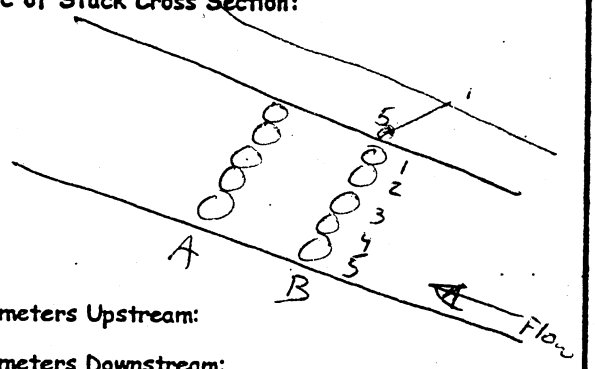
Comments: exhaust stack

Ig

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	9/14/99
Client:	PG+E
Facility:	SCRUBGRASS
Run No.:	Initial Velocity
Barometric Pressure (in. Hg):	
% Moisture:	
Pitot Tube ID:	P-3
Post Leak Check:	✓
Measurement Device:	
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	

Project No.:	26046-0630-00004
Sample Location:	INLET B
Load Condition:	
Operator:	D. GILL
Meterbox No.:	903413
Static (in. H_2O):	-25 mm Hg
Pitot Tube Coefficient:	
Stack Diameter (in.):	
Schematic of Stack Cross Section:	
Stack Diameters Upstream:	
Stack Diameters Downstream:	



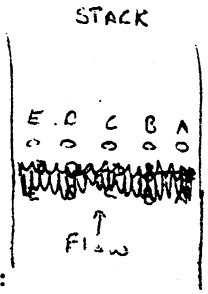
Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1430	1 1 B	320	.92	0
	2	313	.72	0
	3	311	.58	0
	4	318	.45	0
	5	310	.40	0
	2 1	322	1.0	0
	2	320	.87	-4
	3	321	.55	-7
	4	325	0.65	-2
	5	332	.54	+12
	3 1	329	1.1	5
	2	331	1.0	0

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
	3 3	331	.95	0
	4	333	.75	0
	5	336	.61	0
	4 1	330	1.0	0
	2	331	1.1	0
	3	335	.98	0
	4	338	.72	0
	5	341	.62	0
	5 1	326	.75	0
	2	332	.98	0
	3	335	.96	0
	4	338	.88	0
	5	342	.72	0

TRC

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	26046-0030-00004
Client:	PG&E
Facility:	Scrubgrass
Run No.:	Prelim
Barometric Pressure (in. Hg):	28.72
% Moisture:	
Pitot Tube ID:	P-200
Post Leak Check:	✓ Pre ✓
Measurement Device:	
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	

Project No.:	9/14/99
Sample Location:	Outlet
Load Condition:	Full
Operator:	
Meterbox No.:	#90336
Static (in. H_2O):	+ 8.6
Pitot Tube Coefficient:	0.84
Stack Diameter (in.):	
Schematic of Stack Cross Section:	
Stack Diameters Upstream:	
Stack Diameters Downstream:	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1430	D 1	337	1.9	10°
	2	339	1.8	5°
	3	339	1.2	0°
	4	339	.95	5°
	5	339	.47	1
	B 1	337	1.7	10°
	2	338	1.5	10°
	3	339	.84	0°
	4	339	.46	10°
	5	339	.38	0°
	C 1	333	1.6	10°
	2	339	1.1	10°

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
	3	339	.57	5°
	4	339	.43	5°
	5	339	.41	5°
	D 1	330	1.3	5°
	2	336	1.2	5°
	3	337	.78	5°
	4	338	.65	5°
	5	338	.55	0°
	E 1	335	1.3	10°
	2	338	1.1	10°
	3	337	.98	5°
	4	338	.88	5°
	5	338	.73	—

TRC

STACK GEOMETRY AND GAS VELOCITY DATA

Date: 9/15/99	Project No.: 26046-0030-00004
Client: PG+E	Sample Location: Outlet Exhaust Stack
acility: Scrubgrass	Load Condition:
Run No.: Prelim	Operator:
Barometric Pressure (in. Hg):	Meterbox No.: 9033X
% Moisture:	Static (in. H_2O):
Pitot Tube ID: P-200	Pitot Tube Coefficient: 0.84
Post Leak Check: Pre;	Stack Diameter (in.):
Measurement Device:	Schematic of Stack Cross Section:
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	Stack Diameters Upstream:
	Stack Diameters Downstream:

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
	D1	318	1.5	0
	2	318	1.5	4
	3	316	1.2	3
	4	314	1.1	0

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
	01	318	1.5	0
	2	319	1.5	1
	3	317	1.1	2
	4	314	.84	5
	R1	317	1.7	8
	2	319	1.8	6
	3	319	1.6	7
	4	318	1.6	5
	C1	318	1.6	5
	2	317	1.5	3
	3	317	1.3	4
	4	316	1.2	3

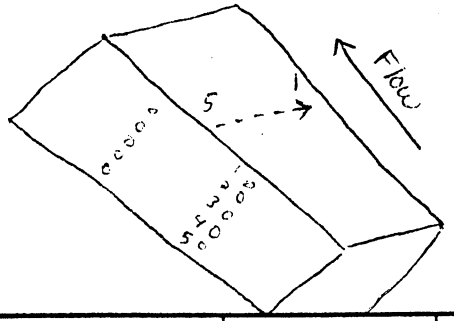
TRC

TRC ENVIRONMENTAL CORPORATION - 1. KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-20004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Bag House Inlet
Stack Diameter: 120 x 60
Date: 9/16/99
Run No.: ACE-SG-OHM-IA-2
Operator: R. Rebello
Meterbox No.: 90338
Meterbox ΔH @: ~~0.444~~ 1.934
Y Factor: ~~1.130~~ 0.974

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point

SKETCH



Sheet 1 of 3
Train Prepared By: E. Mackinnon
Pitot Number and Side: P-4 Imp.
Pitot Tube CP: 0.88
Filter No.: —
Ambient Temp., °F: 64°F
Bar. Pressure, In. Hg.: 28.55
Assumed Moisture, %: 10
Heater Box Setting, °F: 330°F
Nozzle # / Dia., In.: L-5/L-3 0.219/0.216
Probe Length / Material: 18' Glass
Probe Heater Setting: 330°F

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) 1 Stack	3 Filter Box	4 Imp Temp	XAD Cond	°C 2 Probe	5 Filter Outlet
1-1	1100	0	690.72[illegible]	.64	1.11	1.1	69	69	6	OK	315	295	51	—	292	330
		3	693.24	.87	1.49	1.5	71	69	7	OK	317	296	50		293	330
2		6	694.43	.79	1.36	1.4	72	69	7	OK	306	301	50		292	320
		9	696.12	.91	1.56	1.5	72	69	8	OK	305	304	51		293	322
3		12	698.55	.34	.58	.58	73	69	6.5	OK	301	306	51		294	320
		15	699.57	.43	.74	.74	73	70	7	OK	300	307	51		293	320
4		18	700.73	.49	.84	.84	73	~~7~~0	8	OK	308	308	51		293	319
		21	702.20	.50	.86	.86	73	71	9	OK	306	306	51		294	318
5		24	703.96	.42	.71	.71	74	71	9	OK	312	308	51		294	318
		27	705.31	.45	.77	.77	74	72	10	OK	314	308	51		295	318
	1130*	30	706.5	~~.99~~	~~1.6~~	~~1.6~~	~~75~~	~~74~~	~~8~~	~~OK~~	~~313~~	~~290~~	~~54~~		~~296~~	~~317~~
2-1	1207	30	713.568	.99	1.6	1.6	75	74	8	OK	313	290	54		296	317
		33	715.38	1.0	1.57	1.55	77	73	8.5	OK	314	290	53		294	311
2		36	717.14	.93	1.15	1.2	77	74	10	OK	311	288	52	↓	295	309

Train Leak Check:

Before Test: .001 CF in 60 Seconds at 19 In. Hg
After Test: .002 CF in 60 Seconds at 20 In. Hg

Comments:
* Broken nozzle @ 30 min Leak check @ 10 in Hg (pass) .001
Nozzle changed L-3 .0.216 Leak checked @ 20 in Hg (pass) .001

	Initial	Final	Static Pressure Port	1			
Pitot Tube Leak Check	✓	✓	Inches H₂O				
ORSAT Train Leak Check	✓	✓	~~Inches Hg~~	-20			

TRC ENVIRONMENTAL CORPORATION - I[illegible]KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: UNit 1

Date: 9/16/99
Run No.: PGE-SG-OHM-IA-1
Sample Location: Inlet A
Operator: R. Rebello

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F 1 Stack	3 Filter Box	4 Imp Temp	XAD Cond	°C 2 Probe	5 Filter Outlet
		39	718.99	.76	1.2	1.2	77	74	11	OK	310	289	52		294	318
3	1014 1300 *	42	720.28/721.27	.69	1.09	1.1	73	73	12	OK	308	288	55		295	307
		45	~~721.27~~ 722.69	.78	1.24	1.2	74	73	13	OK	311	268	52		296	330
4		48	724.29	.37	.58	.6	74	73	12.5	OK	316	247	51		296	336
		51	725.77	.44	.69	.7	75	73	12	OK	315	235	51		294	313
5		54	727.13	.41	.64	.64	74	72	13	OK	322	240	52		294	314
		57	728.58	.41	.64	.64	75	72	13	OK	321	236	53		294	310
	1330	60	729.24													
3-1	1331	60	730.65	1.0	1.56	1.5	75	72	19	OK	321	235	52		290	321
	1334 ** 1500	63	732.714	1.0	1.56	1.5 ~~.92~~	75	72	19	OK	322	237	53		292	319
2		66	735.22	1.2	1.87	1.9	72	71	8	OK	323	249	56		296	326
		69	738.71	1.2	1.86	1.9	75	72	10	OK	322	230	52		294	297
3		72	741.22	.81	1.26	1.3	76	71	10.5	OK	320	247	54		293	292
		75	743.12	.81	1.26	1.3	76	71	11	OK	322	276	55		293	300
4		78	745.11	.39	.60	.6	76	72	9.5	OK	326	279	57		293	309
		81	746.38	.59	.91	.91	74	72	11	OK	325	282	57		293	317
5		84	747.83	.57	.88	.88	76	73	12	OK	330	282	57		305	323
		87	749.34	.61	.94	.94	77	74	13	OK	330	282	58		307	330
		90	750.47													
4-1	1530	90	751.74	1.1	1.71	1.7	77	74	17	OK	327	281	57		310	337
~~1434~~	*** 1615	93	753.41	1.1	1.7	1.7	76	75	17	OK	326	281	57		315	336
2		96	756.33	1.2	1.85	1.85	76	75	8	OK	330	279	59		311	310
		99	759.99	1.2	1.85	1.85	78	75	9	OK	327	291	55		308	308
3		102	762.13	.91	1.4	1.4	79	75	9.5	OK	327	293	57		308	318

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____
_____ CF in _____ Seconds at _____ In. Hg _____

Meter Reading: Stop / Start

Comments:
* pause
** Stop change filters
*** Stop change filters
Before .000 @ 60 in 20
Before filter change Int Leak check .002 CF in 60 sec @ 23 in
Final " " after filter change .001 CF in 60 sec @ 19 in

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TRC ENVIRONMENTAL CORPORATION - I[illegible] KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 2

Date: 9/16/99
Run No.: PGE-SG-OHM-EA-1
Sample Location: Inlet A
Operator: R. Rebello

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C 1 Stack	3 Filter Box	4 Imp Temp	XAD Cond	2 Probe	5 Filter Outlet
		105	764.02	.85	1.31	1.3	80	75	10	OK	330	294	58		308	327
4		108	765.89	.83	1.28	1.3	80	75	11	OK	332	290	58		308	330
		111	767.72	.84	1.29	1.3	80	76	12	OK	332	293	57		307	332
5		114	769.23	.67	1.03	1.0	80	76	12	OK	333	294	57		307	331
		117	770.98	.72	1.1	1.0	80	77	13	OK	335	293	57		308	332
	*1642	120	772.42													
5-1	1700	120	773.83	1.2	1.85	1.8	78	78	8	OK	330	288	61		310	310
		123	775.74	.91	1.42	1.4	80	78	9	OK	324	294	55		308	304
2		126	777.57	.95	1.46	1.5	81	77	10	OK	328	318	54		307	308
		129	779.64	1.1	1.69	1.7	83	78	12	OK	330	328	55		308	310
3		132	781.26	1.0	1.54	1.5	84	78	14	OK	332	340	56		307	315
		135	783.26	1.0	1.54	1.5	84	78	15.5	OK	332	347	57		307	329
4		138	784.99	.66	1.01	1.0	83	78	16	OK	337	358	58		307	340
		141	786.77	.74	1.13	1.1	82	78	17	OK	336	340	58		307	339
5		144	788.33	.61	.93	.93	81	78	18	OK	336	343	59		306	337
		147	790.05	.60	.91	.91	81	78	19	OK	335	343	60		307	336
	1730	150	791.532													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg

_____ CF in _____ Seconds at _____ In. Hg

Meter Reading: Stop / Start

Comments: # Change Filter
Before .002 CF in 60sec @ 19 in Hg
After .004 CF in 60 sec @ 20 in Hg

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	9/16/98
Client:	PG&E	Run No.:	1A
Facility:	Scrubgrass Generating Station	Train Type:	Ontario-Hydro
Source:	Inlet	Recovery Person:	CM

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			Comments:
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	798.7	740.4	700.3	664.2	720.6	664.4	701.8
Initial Vol. (ml/g):	700.7	707.6	695.4	661.7	720.8	663.8	702.5
Net Collected (ml/g):	98.0	32.8	4.9	2.5	-0.2	0.6	-0.7

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	861.6			
Initial Vol. (ml/g):	836.5			
Net Collected (ml/g):	25.1			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 163

Sample Train Tracking Form

ample Train: OH - Hg Date: 9/16/99

Location: Inlet Run: 1A

Sample ID: PG&E-SG-OHM-11a-1

Train Set Up By:	[signature]	Date: 9/16/99	Time: 0732
Transported to Location By:	[signature]	Date: 9/16/99	Time: 0740
Received at Location By:	[signature]	Date: 9/16/99	Time: 0745
Transported to Recovery Area By:	[signature]	Date: 9/16/99	Time: 1804
Received at Recovery Area By:	[signature]	Date: 9/16/99	Time: 1805
Train Recovered By:	[signature]	Date: 9/16/99	Time: 1849

Comments:

Ig

ORSAT ANALYSIS

Project No. 26046-0030-00004
Client PG&E
Facility Scrubgrass
Source Unit 1
Location Baghouse Inlet

Date 9/16/99
Run 1A
Operator MPM
Comments 1100 -

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 21.0
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
1	1418	13.2	20.4	7.2	—	—	1.038
	1429	13.2	20.4	7.2	—	—	1.038
	1448	13.2	20.4	7.2	—	—	1.038

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

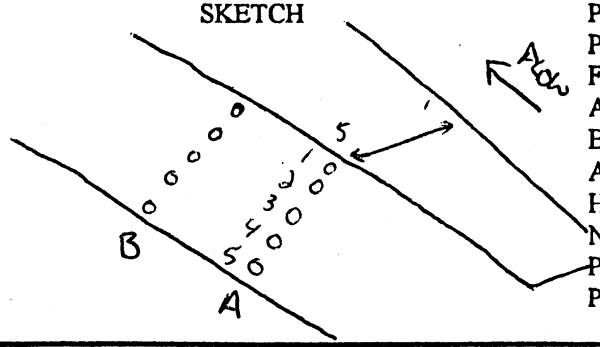
Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

TRC ENVIRONMENTAL CORPORATION - I[illegible]KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Bag House Inlet - A
Stack Diameter: 120 x 72
Date: 9/17/99
Run No.: PGE-SG-OHM-IA-3
Operator: R. Rebello
Meterbox No.: 90338
Meterbox ΔH @: 1.939
Y Factor: 0.974

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-9 Imp.
Pitot Tube CP: 0.88
Filter No.: —
Ambient Temp., °F: 68
Bar. Pressure, In. Hg.: 28.80
Assumed Moisture, %: 8.0
Heater Box Setting, °F: 330°F
Nozzle # / Dia., In.: L-3 0.216
Probe Length / Material: 12' Glass
Probe Heater Setting: 330°F

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
1-1	1355	0	854.082	.79	1.29	1.3	78	76	6	OK	311	285	67		212	291
		3	855.84	.91	1.48	1.5	80	76	7	OK	314	295	65		221	295
2		6	857.75	.98	1.59	1.6	81	77	8	OK	311	302	65		240	295
		9	859.69	.89	1.44	1.4	81	77	9	OK	313	304	65		258	312
3		12	861.62	.55	.90	.90	82	77	8.5	OK	307	300	65		278	318
		15	863.19	.45	.73	.73	81	78	8.5	OK	308	298	64		289	316
4		18	864.64	.51	.83	.83	82	78	9	OK	319	299	63		298	317
		21	866.06	.51	.83	.83	83	79	10	OK	321	284	63		308	317
5		24	867.54	.39	.62	.62	83	80	11	OK	325	285	64		311	315
		27	869.95	.39	.62	.62	83	80	11	OK	324	287	64		313	316
	1425	30	870.137													
2-1	1431	30	871.392	.97	1.56	1.5	83	80	6.5	OK	325	270	68		312	307
		33	873.51	1.1	1.76	1.7	83	80	9	OK	319	285	66		313	307
2		36	875.12	1.0	1.6	1.6	84	80	10	OK	322	286	65		312	315

Train Leak Check:

Comments:

Before Test: .008 CF in 60 Seconds at 22 In. Hg
After Test: .001 CF in 60 Seconds at 18 In. Hg

	Initial	Final	Static Pressure				
			Port	2			
Pitot Tube Leak Check	✓	✓	Inches H_2O				
ORSAT Train Leak Check	✓	✓	~~Inches~~ Hg	-21			

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PGE-SG-OHM-IA-3
Sample Location: Baghouse Inlet A
Operator: R. Rebillo

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
		39	876.97	.54	.87	.87	84	80	9	OK	317	286	64		313	321
3		42	878.89	.49	.79	.79	84	80	8.5	OK	316	286	65		313	320
		45	880.33	.57	.93	.93	83	81	9	OK	315	284	66		313	323
4		48	881.95	.32	.52	.52	84	81	7	OK	320	284	66		314	317
		51	883.27	.65	1.05	1.1	84	82	9.5	OK	325	284	68		315	322
5		54	885.00	.34	.55	.55	84	81	8.5	OK	332	279	66		315	322
		57	886.31	.41	.66	.66	84	82	8.5	OK	331	285	66		315	315
	1501 *	60	887.842													
3-1	1525	60	890.163	1.2	1.91	1.9	82	81	6.5	OK	330	287	66		316	312
		63	892.21	1.1	1.75	1.7	83	81	8.5	OK	329	301	63		314	314
2		66	894.18	1.2	1.91	1.9	84	81	10	OK	328	313	60		313	315
		69	896.18	.87	1.38	1.4	84	81	11	OK	328	319	58		313	317
3		72	898.02	.86	1.37	1.4	84	81	12	OK	327	317	60		313	332
		75	899.84	.89	1.42	1.4	84	82	13.5	OK	327	303	61		313	326
4		78	901.61	.64	1.02	1.0	85	82	14	OK	327	304	63		314	327
		81	903.31	.53	.84	.84	85	82	14	OK	330	303	64		314	325
5		84	904.85	.35	.56	.56	84	85	13	OK	330	304	64		314	325
		87	905.99	.32	.51	.51	84	82	12.5	OK	333	304	65		314	327
**	1555	90	907.534													
4-1	1615	90	909.149	1.2	1.91	1.9	82	81	7.5	OK	330	290	67		317	311
		93	911.26	1.0	1.59	1.6	83	81	8.5	OK	330	302	67		314	315
2		96	913.18	1.0	1.59	1.6	84	81	9	OK	330	308	65		314	319
		99	915.00	1.0	1.59	1.6	85	81	10.5	OK	330	310	62		314	325
3		102	916.89	.83	1.32	1.3	85	81	11	OK	332	311	61		314	935

Meter Leak Check During Test:

Meter Reading

	Stop	Start
_____ CF in _____ Seconds at _____	In. Hg _____	_____
_____ CF in _____ Seconds at _____	In. Hg _____	_____

Comments: * Change Filter
Before: .001 CF in 60 sec @ 14 in Hg
After: .002 CF in 60 sec @ 17 in Hg

** Filter Change
Before: .000 CF in 60 sec @ 16 in Hg.

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/94
Run No.: PGE-SG-OHM-IA-3
Sample Location: Baghouse Inlet A
Operator: R. Rebello

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
		105	918.69	.91	1.45	1.4	86	81	12	OK	333	305	62		315	335
4		108	920.46	.62	.99	1.0	85	81	11.5	OK	336	308	62		314	329
		111	922.13	.62	.99	1.0	85	81	12.5	OK	335	311	63		315	334
5		114	923.88	.67	1.07	1.1	85	82	16.5	OK	336	307	63		315	335
		117	925.62	.62	.99	1.0	85	81	17.5	OK	336	311	63		316	334
**	1645	120	927.254													
5-1	1705	120	930.259	.98	1.56	1.6	83	81	6.5	OK	330	343	65		315	312
		123	932.07	.98	1.56	1.6	83	81	7	OK	330	264	62		314	314
2		126	934.19	.99	1.57	1.6	84	81	9	OK	330	284	58		314	320
		129	935.83	.99	1.57	1.6	86	81	11	OK	334	304	57		314	322
3		132	937.76	.95	1.51	1.5	86	81	11.5	OK	335	318	58		315	328
		135	939.62	.99	1.57	1.6	86	81	12.5	OK	335	330	60		314	326
4		138	941.52	.75	1.19	1.2	87	81	12.5	OK	335	339	61		315	342
		141	943.49	.86	1.37	1.4	86	81	13	OK	338	331	61		315	350
5		144	945.18	.96	1.53	1.5	86	81	15	OK	337	332	62		315	340
		147	947.00	.92	1.46	1.5	86	81	15.5	OK	337	330	63		316	331
	1735	150	948.736													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg

_____ CF in _____ Seconds at _____ In. Hg

Meter Reading

	Stop	Start

Comments: ** Filter Change
.001 CF in 60 sec @ 22 in Hg
.002 CF in 60 sec @ 20 in Hg

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Scrubgrass Generating Station
Source: Inlet

Date: 6/17/99
Run No.: 3A
Train Type: Ontario-Hydro
Recovery Person: am

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

Comments:

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	792.8	742.0	701.0	663.7	725.4	679.2	682.0
Initial Vol. (ml/g):	704.7	709.2	695.5	661.5	724.4	662.0	697.2
Net Collected (ml/g):	88.1	32.8	5.5	2.2	1.0	17.2	-15.2

Silica Gel Impinger:	8	8A		Comments:
Final Vol. (ml/g):		913.7		
Initial Vol. (ml/g):	829.6	898.8		
Net Collected (ml/g):		14.9		

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 146.5

Sample Train Tracking Form

ımple Train: OH - Hg **Date:** 9/17/99

Location: Inlet **Run:** 3A

Sample ID: PG&E-SG-OHM-Ila-3

Train Set Up By:		**Date:** 9/17/99	**Time:** 1028
Transported to Location By:		**Date:** 9/17/99	**Time:** 12:53
Received at Location By:		**Date:** 9/17/99	**Time:** 12:56
Transported to Recovery Area By:		**Date:** 9/17/99	**Time:** 1800
Received at Recovery Area By:		**Date:** 9/17/99	**Time:** 1818
Train Recovered By:		**Date:** 9/17/99	**Time:** 1818

Comments:

Ig

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Baghouse Inlet-A
Stack Diameter: 120x60
Date: 9/17/99
Run No.: PGE-SG-OHM-IA-4
Operator: R. Rebello
Meterbox No.: 90338
Meterbox ΔH @: 1.934
Y Factor: 0.474

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 3
Train Prepared By: Ed MacKinnon
Pitot Number and Side: P-9 Imp
Pitot Tube CP: 0.88
Filter No.:
Ambient Temp., °F: 68
Bar. Pressure, In. Hg.: 28.85
Assumed Moisture, %: 5.0
Heater Box Setting, °F: 330
Nozzle # / Dia., In.: L-3 0.216
Probe Length / Material: 12' Glass
Probe Heater Setting: 330

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
1-1	1848	0	951.196	.78	1.26	1.3	77	77	5	OK	308	290	64		252	289
		3	953.04	.81	1.3	1.3	79	77	5.5	OK	308	302	63		257	290
2		6	954.77	.98	1.58	1.6	79	78	7	OK	311	302	62		260	305
		9	956.76	.86	1.38	1.4	80	78	7	OK	310	304	63		263	322
3		12	958.42	.57	.92	.92	80	78	8	OK	308	299	65		263	326
		15	959.94	.69	1.11	1.1	81	78	10	OK	308	292	67		284	315
4		18	961.58	.46	.75	.75	81	78	9.5	OK	316	293	67		285	317
		21	963.11	.48	.78	.78	81	79	10	OK	311	292	67		289	315
5		24	964.66	.33	.53	.53	81	80	10	OK	325	291	68		294	315
		27	965.99	.35	.56	.56	82	80	10	OK	325	292	64		300	315
3	1918	30	967.583													
2-1	1924	30	968.245	.99	1.6	1.6	82	81	6.5	OK	318	269	66		270	304
		33	970.07	.93	1.51	1.5	83	81	8.5	OK	315	294	64		294	315
2		36	972.12	.93	1.51	1.5	83	81	9.5	OK	318	297	61		311	314

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 17 In. Hg
After Test: .001 CF in 60 Seconds at 22 In. Hg

Comments:
#

	Initial	Final	Static Pressure
Pitot Tube Leak Check	✓	✓	Port
ORSAT Train Leak Check	✓	✓	Inches H₂O 2
			~~Inches Hg~~ -.25

TRC ENVIRONMENTAL CORPORATION - I[illegible]KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PGE-SG-OHM-EA-4
Sample Location: Baghouse Inlet-A
Operator: R. Rebelle

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
		39	973.85	.59	.96	.96	84	81	10.5	OK	314	293	60		316	316
3		42	975.54	.71	1.14	1.1	84	82	11.5	OK	316	293	60		320	315
		45	977.21	.73	1.19	1.2	84	82	13.5	OK	313	293	60		322	315
4		48	978.89	.52	.84	.84	84	83	14	OK	321	292	60		324	315
		51	980.49	.62	.99	1.0	84	83	16	OK	319	295	60		323	315
5		54	982.11	.35	.56	.56	84	83	15	OK	320	293	60		321	315
		57	983.61	.41	.65	.65	84	83	14.5	OK	325	293	61		325	315
*	1954	60	984.923													
31	2012	60	988.214	1.0	1.61	1.6	83	82	6	OK	330	225	60		275	319
		63	989.99	1.0	1.61	1.6	83	82	7	OK	327	237	58		312	321
2		66	992.01	1.0	1.61	1.6	84	82	9	OK	327	256	57		314	326
		69	993.89	1.1	1.77	1.8	84	82	10	OK	324	273	56		315	330
3		72	995.83	.84	1.34	1.3	84	83	11	OK	325	279	57		320	334
		75	997.75	.84	1.34	1.3	84	83	11.5	OK	327	284	57		321	332
4		78	999.61	.53	.84	.84	84	83	11.5	OK	328	289	58		322	336
		81	1001.29	.64	1.03	1.0	84	83	12.5	OK	326	289	58		325	333
5		84	1002.73	.81	1.3	1.3	84	83	14	OK	325	289	59		327	336
		87	4.41	.73	1.17	1.2	84	83	17	OK	326	291	60		326	335
*	2042 ***	90	6.0643													
4-1	2053	90	6.469	1.0	1.6	1.6	83	84	7	OK	327	232	61		310	322
		93	10.41	1.0	1.6	1.6	84	83	7.5	OK	325	240	59		309	324
2		96	12.32	1.0	1.6	1.6	84	83	9	OK	327	263	56		313	323
		99	14.08	1.0	1.6	1.6	85	83	10.5	OK	328	277	54		316	323
3		102	15.96	.75	1.2	1.2	85	83	11.5	OK	327	279	54		315	324

Meter Leak Check During Test:

Meter Reading

		Stop	Start
_____ CF in _____	Seconds at _____	In. Hg _____	_____
_____ CF in _____	Seconds at _____	In. Hg _____	_____

Comments:

* Filter change
Before: .000 CF in 60 sec @ 20 in Hg
After: .001 CF in 60 sec @ 20 in Hg

*** Before: .000 CF in 60 sec @ 25 in Hg

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TRC ENVIRONMENTAL CORPORATION - I[illegible] KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046 -0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PG-E-SG-OHM-IA-4
Sample Location: Baghouse Inlet-A
Operator: R. Rebello

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
		105	17.72	.89	1.4	1.4	84	83	13	OK	327	291	54	T	317	331
4		108	19.46	.63	1.01	1.00	84	83	13.5	OK	328	295	54		316	330
		111	21.12	.72	1.15	1.2	83	83	16	OK	330	299	54		317	334
5		114	22.94	.76	1.22	1.2	84	83	17	OK	330	305	54		315	337
		117	24.59	.76	1.22	1.2	83	82	18	OK	329	305	54		320	334
**	2123	120	26.22													
5-1	2130	120	27.682	1.0	1.6	1.6	80	81	6.5	OK	328	240	54		309	331
		123	29.61	.78	1.25	1.3	81	81	8	OK	322	248	52		310	328
2		126	31.36	.83	1.33	1.3	81	80	10	OK	323	272	50		312	321
		129	33.17	.78	1.25	1.3	82	80	11.5	OK	324	281	49		314	326
3		132	34.92	.78	1.25	1.3	81	80	13	OK	329	295	49		313	321
		135	36.67	.91	1.45	1.4	81	80	14.5	OK	328	298	49		316	323
4		138	38.46	.68	1.08	1.1	81	80	15.5	OK	332	299	49		319	321
		141	40.20	.72	1.15	1.2	81	80	17	OK	330	314	50		320	319
5		144	42.99	.55	.87	.87	80	80	14	OK	330	319	50		320	326
		147	43.54	.81	1.29	1.3	80	80	16	OK	332	321	50		322	331
	2200	150	45.367													

Meter Leak Check During Test:

Meter Reading

	CF in	Seconds at	Stop In. Hg	Start

Comments: ** Filter Change
Before: .002 CF in 60sec @ 22 in Hg
After: .001 CF in 60sec @ 19 in Hg

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Scrubgrass Generating Station
Source: Inlet

Date: 9/17/99
Run No.: 4A
Train Type: Ontario-Hydro
Recovery Person: GMM

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

Comments:

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	804.8	749.2	704.3	652.3	714.9	706.5	699.2
Initial Vol. (ml/g):	719.4	709.3	698.5	648.5	716.0	703.8	698.4
Net Collected (ml/g):	85.4	39.9	5.8	3.8	−1.1	2.7	0.8

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	793.4			
Initial Vol. (ml/g):	773.8			
Net Collected (ml/g):	19.6			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 155.3

Sample Train Tracking Form

ample Train: OH - Hg Date: 9/17/99

Location: Inlet Run: 4A

Sample ID: PG&E-SG-OHM-Inl-4

Train Set Up By:	[signature]	Date: 9/17/99	Time: 1805
Transported to Location By:	[signature]	Date: 9/17/99	Time: 1809
Received at Location By:	[signature]	Date: 9/17/99	Time: 1820
Transported to Recovery Area By:	[signature]	Date: 9/17/99	Time: 2232
Received at Recovery Area By:	[signature]	Date: 9/17/99	Time: 2232
Train Recovered By:	[signature]	Date: 9/17/99	Time: 2232

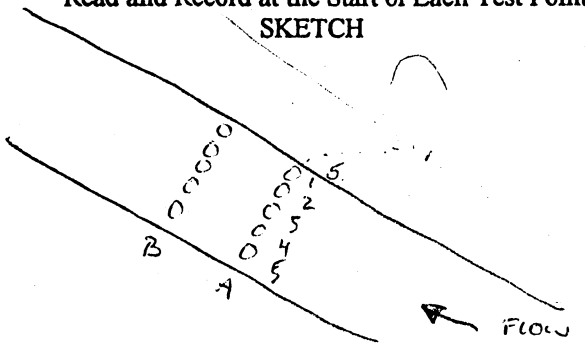
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - I. KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Baghouse Inlet
Stack Diameter: 130 x 60
Date: 9/16/99
Run No.: PGE-SG-OHM-IB-3 1 mm
Operator: D. Gill
Meterbox No.: 90347
Meterbox ΔH @: 1.885
Y Factor: 0.981

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-1
Pitot Tube CP: 0.88
Filter No.: —
Ambient Temp., °F: 64
Bar. Pressure, In. Hg.: 28.55
Assumed Moisture, %: 8
Heater Box Setting, °F: 340
Nozzle # / Dia., In.: L-4 / .218
Probe Length / Material: 12' / 6L
Probe Heater Setting: 330

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
1-1	1100	0	270.187	.75	1.18	1.1	68	68	5	✓	302	318	54	—	239	305
		3	272.5	.79	1.2	1.2	68	68	6	✓	303	320	53		258	305
1-2		6	273.3	.71	1.12	1.1	69	68	7	✓	302	319	51		251	304
		9	275.1	.85	1.3	1.3	71	68	8	✓	302	307	51		260	301
3		12	276.7	.58	.91	.91	72	68	9	✓	301	318	52		265	298
		15	278.4	.58	.91	.91	72	68	9	✓	300	321	53		269	298
4		18	280.2	.39	.61	.61	73	68	9	✓	308	327	54		269	305
		21	281.5	.45	.71	.71	73	68	9	✓	307	327	54		269	305
5		24	283.0	.35	.55	.553	74	68	9	✓ 316	308	327	55		272	307
		27	284.3	.45	.71	.71	74	68	9.5	✓	314	325	54		274	305
	1130	30	285.8													
2-1	1207	30	286.442	1.0	1.5	1.5	71	69	15	✓	318	270	59		271	319
		33	288.21	1.0	1.5	1.5	72	69	15	✓	318	261	54		275	319
2-2		36	289.721	.75	1.1	1.1	74	70	16	✓	318	254	53		271	319

Train Leak Check:

Comments:

Before Test: .001 CF in 60 Seconds at 20 In. Hg
After Test: .004 CF in 60 Seconds at 20 In. Hg

	Initial	Final	Static Pressure				
			Port	1			
Pitot Tube Leak Check	⊘	○	Inches H_2O				
ORSAT Train Leak Check	⊘	○	Inches Hg	-20			

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TRC ENVIRONMENTAL CORPORATION - I[illegible] INETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-000004
Client: PG&E
Facility: Scrubber #1
Source: UNIT 1

Date: 9/16/99
Run No.: PG&E-SG-OHM-IB-1
Sample Location: INLET
Operator: D.Gill

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
2-2	1324	39	291.8	.75	1.1	1.1	74	70	16.5	✓	313	286	54	—	258	307
-3	1330 *	42	293.12	.65	1.0	1.0	71	69	6	✓	308	292	55	—	251	308
		45	295.6	.65	1.0	1.0	72	69	7	✓	310	282	54	—	253	318
4		48	298.41	.55	.85	.85	74	69	7	✓	314	265	52	—	255	317
		51	299.9	.58	.89	.89	74	69	8	✓	314	264	53	—	257	316
5		54	301.5	.35	.54	.54	75	70	6.5	✓	314	277	55	—	252	315
		57	302.8	.35	.54	.54	75	70	8	✓	312	277	55	—	258	312
	1330	60	303.721													
3-1	1331	60	304.826	1.0	1.54	1.5	74	70	15	✓	322	281	56	—	251	321
**	1334	63	306.92	1.0	1.54	1.5	74	70	17	✓	322	282	55	—	252	320
2	1500	66	313.7	.92	1.41	1.4	75	71	7	✓	321	299	54	—	258	320
		69	315.3	.93	1.43	1.4	77	71	8	✓	322	291	54	—	270	326
3		72	317.0	.60	.924	.92	78	71	7.5	✓	319	325	54	—	278	320
		75	318.6	.65	1.0	1.0	78	71	8	✓	319	366	55	—	284	320
4		78	320.3	.58	.89	.89	79	72	9	✓	321	383	56	—	289	317
		81	321.8	.65	1.0	1.0	79	72	10	✓	322	285	56	—	292	319
5		84	323.5	.41	.63	.63	80	72	10	✓	321	386	58	—	296	325
		87	325.0	.41	.63	.63	79	72	10	✓	322	370	58	—	297	322
		90	326.361													
4-1	1534 1615	90	327.451	1.1	1.63	1.63	79	72	12	✓	325	361	58	—	295	320
***		93	328.215 / 330.125	1.1	1.63	1.63	79	72	12	✓	325	362	58	—	290	322
2		96	332.1	1.1	1.67	1.6	77	73	7.5	✓	329	327	57	—	276	330
		99	333.7	1.1	1.67	1.6	78	74	9	✓	327	341	57	—	279	330
3		102	335.7	.85	1.29	1.3	80	74	10		327	354	58	—	279	332

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg

_____ CF in _____ Seconds at _____ In. Hg

Meter Reading

	Stop	Start
	_____	_____
	_____	_____

Comments:

* Purge

** change out Filters - Post .002 60 20
Pre .001 60 20

*** change out Filter - Post .002 60 12
Pre .002

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TRC ENVIRONMENTAL CORPORATION - I KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-000041
Client: PG&E
Facility: SCRUBGRASS
Source: UNIT 1

Date: 9/16/99
Run No.: PGE-SG1-CHM-IB-1
Sample Location: INLET
Operator: D. Gill

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
4-3		105	338.1	.95	1.44	1.4	81	74	11	✓	327	343	59	—	284	341
4		108	339.4	.70	1.06	1.0	81	74	11	✓	330	324	60	—	286	339
		111	341.2	.65	.98	.98	82	74	11.5	✓	330	320	60	—	288	334
5		114	342.9	.55	.83	.83	82	75	11	✓	327	327	61	—	291	321
		117	344.7	.55	.83	.83	82	75	12.5	✓	327	347	61	—	298	324
***	1642	120	345.921													
5-1	1700	120	347.521	.95	1.44	1.44	80	75	8	✓	328	330	58	—	292	320
		123	349.5	.95	1.44	1.44	80	75	10	✓	322	331	54	—	291	320
2		126	350.9	.81	1.23	1.2	81	75	11	✓	328	335	54	—	288	321
		129	353.1	.92	1.39	1.4	83	75	12	✓	328	332	54	—	286	327
3		132	354.5	.80	1.21	1.2	83	75	14	✓	332	332	54	—	291	330
		135	356.1	.90	1.36	1.3	83	76	15	✓	332	330	54	—	296	331
4		138	358.3	.82	1.24	1.2	83	76	16	✓	333	328	55	—	301	335
		141	360.0	.82	1.24	1.2	83	76	17	✓	335	331	55	—	300	331
5		144	361.8	.65	.98	.98	83	76	18.5	✓	335	336	56	—	305	328
		147	363.6	.65	.98	.98	82	77	19	✓	333	337	57	—	305	328
	1730	150	364.999													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg

_____ CF in _____ Seconds at _____ In. Hg

Meter Reading

	Stop	Start
In. Hg	_____	_____
In. Hg	_____	_____

Comments: * Leak check change filter,

Pb,T .001 60 18

Pte .001 60 20

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	9/16/99
Client:	PG&E	Run No.:	1B
Facility:	Scrubgrass Generating Station	Train Type:	Ontario-Hydro
Source:	Inlet	Recovery Person:	

FRONT HALF

Filter No.:	N/A			Comments:
Thimble No.:	N/A			

XAD Trap No.:	N/A				Comments:
Final Wt. (g):					
Initial Wt. (g):					
Net Collected (g):					

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	697.8	656.4	683.2	713.2	716.7	722.1	623.2
Initial Vol. (ml/g):	594.1	632.5	679.8	710.8	716.3	721.3	623.1
Net Collected (ml/g):	102.9	23.9	3.4	3.0	0.4	0.8	0.1

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	915.6			
Initial Vol. (ml/g):	894.1			
Net Collected (ml/g):	21.5			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 156

Sample Train Tracking Form

ample Train: OH - Hg **Date:** 9/16/99

Location: Inlet **Run:** 1B

Sample ID: PG&E-SG-OHM-I1b-1

Train Set Up By:	[signature]	**Date:** 9/16/99	**Time:** 0732
Transported to Location By:	[signature]	**Date:** 9/16/99	**Time:** 738
Received at Location By:	[signature]	**Date:** 9/16/99	**Time:** 747
Transported to Recovery Area By:	[signature]	**Date:** 9-16-99	**Time:** 18:02
Received at Recovery Area By:	[signature]	**Date:** 9/16/99	**Time:** 1806
Train Recovered By:	[signature]	**Date:** 9/16/99	**Time:** 1806

Comments:

Hg

ORSAT ANALYSIS

Project No. 26046-0030-00004
Client PG+E
Facility Scrubgrass
Source UNIT 1
Location BagHouse Inlet

Date 9/16/99
Run 1B
Operator MRM
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 21.0
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
1	2030	11.8	20.4	8.6	—	—	
2	2038	11.8	20.4	8.6	—	—	
3	2049	11.8	20.4	8.6	—	—	

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

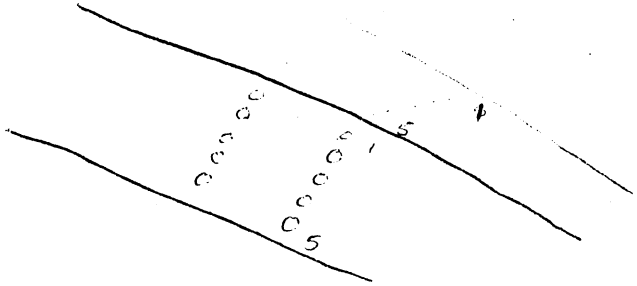
Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-20004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Bag House Inlet - B
Stack Diameter: 120 x 60
Date: 9/17/99
Run No.: PGE-SG-OHM-FB-2
Operator: D. Gick
Meterbox No.: 90343
Meterbox ΔH @: 1.885
Y Factor:

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: Ed Merkowitz
Pitot Number and Side: P1
Pitot Tube CP: 0.84
Filter No.:
Ambient Temp., °F: 58
Bar. Pressure, In. Hg.: 28.70
Assumed Moisture, %: 8.0
Heater Box Setting, °F: 340
Nozzle # / Dia., In.: L-4 / .218
Probe Length / Material: 12' / 6L
Probe Heater Setting: 340

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
1-1	825	0	367.125	.95	1.53	1.5	64	60	6	✓	310	300	52	—	287	310
		3	369.1	.96	1.56	1.5	66	60	7	✓	310	302	52	—	291	310
2		6	370.9	.82	1.33	1.3	69	61	8	✓	310	305	52	—	294	311
		9	372.8	.82	1.33	1.3	70	62	8.5	✓	310	307	52	—	300	310
3		12	374.6	.66	1.08	1.1	71	62	9.5	✓	307	307	54	—	311	294
		15	376.3	.66	1.08	1.1	71	63	10	✓	307	309	55	—	316	297
4		18	378.1	.45	.72	.72	72	63	11	✓	310	308	57	—	321	301
		21	379.8	.45	.72	.72	72	64	11	✓	312	308	57	—	324	303
5		24	381.3	.30	.49	.49	72	64	10	✓	313	307	58	—	320	304
		27	382.6	.30	.49	.49	72	65	10		311	308	58	—	321	304
	855	30	383.999													
2-1	905	30	387.125	.85	1.39	1.4	75	66	8	✓	313	305	56	—	324	305
		33	389.3	.85	1.39	1.4	75	66	9	✓	314	304	57	—	324	301
2		36	391.0	.90	1.46	1.4	77	66	10	✓	315	301	57	—	325	305

Train Leak Check:

Comments:

Before Test: .001 CF in 60 Seconds at 20 In. Hg
After Test: .002 CF in 60 Seconds at 25 In. Hg

	Initial	Final		Static Pressure			
			Port	2			
Pitot Tube Leak Check	✓	○	Inches H₂O				
ORSAT Train Leak Check	✓	○	~~Inches~~ Hg	-23			

TRC ENVIRONMENTAL CORPORATION - I' CINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046 - 0030 - 000041
Client: PG&E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PG&E - SG - OHM - 1B - 2
Sample Location: Inlet
Operator: D. Gill

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
2-2		39	392.9	.88	1.43	1.4	77	67	11	✓	314	303	57	—	325	310
3		42	394.7	.64	1.041	1.0	77	68	13	✓	311	305	58	—	328	307
		45	396.5	.64	1.04	1.0	78	68	13	✓	310	305	58	—	328	306
4		48	398.2	.60	.99	.99	77	68	15	✓	316	309	58	—	329	301
		51	399.9	.60	.99	.99	78	69	15.5	✓	315	310	59	—	330	301
5		54	401.6	.40	.65	.65	77	69	15	✓	319	313	60	—	324	304
		57	403.2	.40	.65	.65	77	69	15	✓	318	312	61	—	324	304
*	935	60	404.602													
3-1	1010	60	406.721	1.14	1.79	1.8	73	70	9	✓	319	308	60	—	321	303
		63	408.24	1.1	1.79	1.8	74	70	10	✓	319	308	59	—	320	304
** 2	1016/1019	66	411.054/411.521	1.1	1.79	1.8	75	70	11	✓	319	310	58	—	321	305
		69	413.5	1.1	1.79	1.8	75	71	11	✓	319	311	58	—	323	304
3		72	415.6	.72	1.18	1.2	74	71	12	✓	318	311	60	—	323	306
		75	417.5	.72	1.18	1.2	74	71	13	✓	319	313	60	—	323	307
4		78	419.3	.65	1.05	1.0	74	71	14	✓	322	313	61	—	324	308
		81	421.0	.70	1.1	1.1	74	71	15	✓	324	310	62	—	324	310
5		84	423.1	.70	1.1	1.1	74	71	17	✓	321	310	65	—	324	311
		87	424.6	.65	1.05	1.0	74	71	18	✓	322	313	66	—	324	311
***	1043	90	426.821													
4-1	1120	90	427.925	1.2	1.94	1.9	75	72	9	✓	325	310	60	—	341	320
		93	429.9	1.2	1.94	1.9	77	73	10	✓	327	310	55	—	343	321
2		96	432.4	.80	1.2	1.2	78	73	11	✓	328	318	54	—	346	322
		99	433.9	.80	1.2	1.2	78	73	12	✓	328	318	54	—	347	322
3		102	435.7	.75	1.21	1.2	80	74	15	✓	328	318	56	—	350	325

Meter Leak Check During Test:

Meter Reading

	Stop	Start
_____ CF in _____ Seconds at _____	In. Hg _____	_____
_____ CF in _____ Seconds at _____	In. Hg _____	_____

Comments: * change filters Post .001 60 22
Pre .001 60 28

** Pump failed change out pumps

*** change filter Post .001 60 20

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-000041
Client: PG&E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PG&E-SG-OHM-113-3
Sample Location: Inlet
Operator: D. Gill

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
4-3		105	437.6	1.0	1.62	1.6	85	74	19	✓	328	320	57	—	351	327
4		108	439.7	.85	1.36	1.3	81	74	20	✓	331	317	58	—	354	328
		111	441.2	.75	1.20	1.2	81	75	22	✓	330	316	61	—	354	326
5		114	443.0	.40	.64	.64	81	75	22	✓	333	321	65	—	356	329
		117	444.8	.40	.64	.64	81	76	22	✓	333	321	66	—	356	330
*	1160	120	446.031													
5-1	1156	120	447.525	.74	1.19	1.2	82	77	7	✓	322	321	66	—	359	325
		123	449.2	.74	1.19	1.2	82	77	9	✓	324	326	62	—	357	324
2		126	451.1	.83	1.33	1.3	84	77	11	✓	330	321	58	—	357	326
		129	452.9	.83	1.33	1.3	85	78	12	✓	330	320	57	—	357	321
3		132	454.7	1.0	1.61	1.6	85	78	15	✓	335	320	56	—	357	330
		135	456.6	1.0	1.61	1.6	86	78	18	✓	336	321	57	—	357	331
4		138	458.6	.90	1.41	1.4	86	78	21	✓	337	325	58	—	355	332
		141	460.8	.90	1.41	1.4	86	79	21	✓	337	325	58	—	355	335
5		144	462.1	.65	1.04	1.0	86	80	22	✓	336	325	61	—	355	334
		147	464.0	.65	.88	.88	86	80	22	✓	336	325	61	—	355	334
	1226	150	465.632													

Meter Leak Check During Test:

Meter Reading

	Stop	Start
_____ CF in _____ Seconds at _____	In. Hg _____	_____
_____ CF in _____ Seconds at _____	In. Hg _____	_____

Comments: * Filter change Post .001 60 25
Pre .002 60 20

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	9/17/99
Client:	PG&E	Run No.:	2B
Facility:	Scrubgrass Generating Station	Train Type:	Ontario-Hydro
Source:	Inlet	Recovery Person:	gm

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			Comments:
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	787.3	693.9	701.1	641.4	712.7	715.0	698.9
Initial Vol. (ml/g):	706.2	643.6	691.1	637.0	713.2	713.7	698.7
Net Collected (ml/g):	81.1	50.3	10.0	4.4	-0.5	1.3	0.2

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	848.1			
Initial Vol. (ml/g):	824.5			
Net Collected (ml/g):	23.6			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 170.4

Sample Train Tracking Form

ample Train: OH - Hg Date: 9/17/99

Location: Inlet Run: 2B

Sample ID: PG&E-SG-OHM-IL6-2

Train Set Up By:	[signature]	Date: 9/17/99	Time: 0714
Transported to Location By:	[signature]	Date: 9/17/99	Time: 0716
Received at Location By:	[signature]	Date: 9/17/99	Time: 0720
Transported to Recovery Area By:	[signature]	Date: 9/17/99	Time: 1247
Received at Recovery Area By:	[signature]	Date: 9/17/99	Time: 1247
Train Recovered By:	[signature]	Date: 9/17/99	Time: 1246

Comments:

Ig

ORSAT ANALYSIS

Project No. 2604G-0030-00004
Client PG&E
Facility Scrubgrass
Source Unit 1
Location Bag House Inlet

Date 9/17/99
Run 2
Operator MPM
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 21.0
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
1	1337	13.4	20.2	6.8			
2	1350	13.4	20.2	6.8			
3	1400	13.4	20.2	6.8			

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

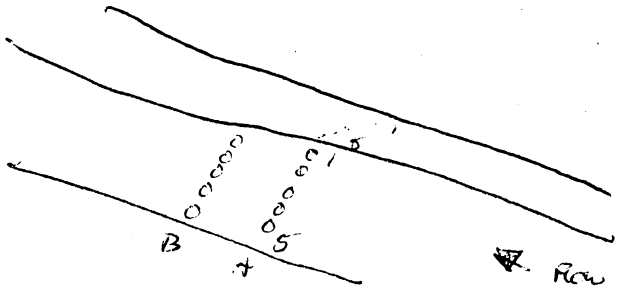
Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

TRC ENVIRONMENTAL CORPORATION - I. KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-20004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Bag House Inlet - B
Stack Diameter: 120 x 72
Date: 9/17/99
Run No.: PGE-SG-OHM-IB-3
Operator: D. Geiss
Meterbox No.: 90343
Meterbox ΔH @: 1.885
Y Factor:

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: Engr
Pitot Number and Side: P1
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 66
Bar. Pressure, In. Hg.: 28.80
Assumed Moisture, %: 8.0
Heater Box Setting, °F: 340
Nozzle # / Dia., In.: L-4 / .218
Probe Length / Material: 12' / GL
Probe Heater Setting: 340

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Temperatures (°F) Filter Box	Temperatures (°F) Imp Temp	Temperatures (°F) XAD Cond	Temperatures (°F) Probe	Temperatures (°F) Filter Outlet
1-1	1355	0	467.131	.83	1.36	1.3	81	81	6.5	✓	315	308	67	—	328	291
		3	468.9	.83	1.36	1.3	81	81	7	✓	315	306	66	—	328	295
2		6	471.0	.80	1.31	1.3	82	81	7.5	✓	316	307	66	—	329	301
		9	472.6	.80	1.31	1.3	82	81	8	✓	315	307	65	—	331	310
3		12	474.5	.60	.984	.98	83	81	9	✓	310	310	64	—	332	308
		15	476.3	.60	.984	.98	83	81	9	✓	311	311	63	—	332	307
4		18	477.6	.43	.70	.70	83	81	10	✓	319	315	62	—	333	308
		21	479.2	.43	.70	.70	83	81	10	✓	317	314	61	—	336	307
5		24	480.7	.21	.34	.34	84	81	10	✓	319	316	60	—	337	309
		27	482.4	.21	.34	.34	84	81	10	✓	319	318	60	—	339	312
	1425	30	483.152													
2-1	1431	30	484.565	.80	1.3	1.3	84	81	8	✓	321	308	60	—	346	320
		33	486.3	.80	1.3	1.3	84	81	8	✓	320	309	57	—	345	320
2		36	488.0	.80	1.3	1.3	85	82	9	✓	319	295	56	—	344	321

Train Leak Check:

Comments:

Before Test: .063 CF in 60 Seconds at 20 In. Hg
After Test: .004 CF in 60 Seconds at 23 In. Hg

	Initial	Final	Port	Static Pressure			
Pitot Tube Leak Check	✓	✓	Inches H₂O				
ORSAT Train Leak Check	✓	✓	Inches Hg	-21			

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TRC ENVIRONMENTAL CORPORATION - I[illegible]KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PG&E-SG OHM-IB-3
Sample Location: Inlet
Operator: D. Gill

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
2-2		39	489.9	.80	1.3	1.3	85	82	12	✓	319	298	55	—	344	320
3		42	491.6	.60	.98	.98	85	82	11	✓	317	299	54	—	343	320
		45	493.4	.55	.90	.90	86	83	11.5	✓	316	304	55	—	344	320
4		48	495.1	.50	.82	.82	85	83	13	✓	320	304	55	—	344	321
		51	496.6	.50	.82	.82	86	83	13	✓	322	307	54	—	345	322
5		54	498.2	.35	.57	.57	85	83	14	✓	324	307	55	—	346	322
		57	499.7	.35	.57	.57	85	83	14	✓	324	307	55	—	347	324
*	1501	60	501.321													
3-1	1525	60	503.210	1.0	1.61	1.61	84	82	8	✓	325	308	63	—	368	324
		63	505.2	1.0	1.61	1.6	84	81	8	✓	327	295	61	—	366	325
2		66	507.1	.95	1.52	1.5	86	81	9	✓	325	299	61	—	362	325
		69	508.9	.95	1.52	1.5	86	82	10	✓	324	304	63	—	357	324
3		72	511.2	.80	1.31	1.3	86	82	11	✓	322	305	63	—	354	325
		75	512.4	.80	1.31	1.3	86	82	11	✓	321	306	63	—	351	324
4		78	514.4	.60	.96	.96	86	82	13	✓	325	306	64	—	351	324
		81	516.5	.60	.96	.96	86	82	14	✓	325	305	65	—	349	325
5		84	518.2	.45	.72	.72	86	83	14	✓	326	309	64	—	349	325
		87	519.5	.45	.72	.72	86	82	14	✓	328	308	63	—	348	324
**	1555	90	521.031													
4-1	1615	90	522.745	.95	1.5	1.5	84	81	7	✓	328	301	66	—	367	325
		93	524.6	.95	1.5	1.5	84	81	8	✓	329	302	64	—	363	326
2		96	526.6	.95	1.5	1.5	86	81	9	✓	328	301	61	—	360	327
		99	528.7	.95	1.5	1.5	86	81	10.5	✓	329	295	61	—	358	326
3		102	530.5	.85	1.3	1.3	86	82	12	✓	330	296	59	—	357	327

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg _____ _____
_____ CF in _____ Seconds at _____ In. Hg _____ _____

Meter Reading: Stop / Start

Comments:

* chancefickin Post .002 60s 20 "Hg
Pre .00. 60s 20 "Hg

** chance ficker Post .003 60s 15 "Hg
Pre .002 60s 22 "Hg

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TRC ENVIRONMENTAL CORPORATION - I[illegible] KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0003-0000-1
Client: PG+E
Facility: SCRUBGRASS
Source: UNIT 1

Date: 9/17/99
Run No.: PGE-SG-OHM-IB-3
Sample Location: INLET
Operator: D.GILL

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
4-3		105	522.5	.75	1.2	1.2	86	82	12	✓	329	300	57	—	353	327
4		108	534.7	.66	1.0	1.0	86	82	13	✓	332	301	56	—	349	328
		111	536.0	.67	1.07	1.1	86	81	14	✓	332	302	55	—	349	328
5		114	537.7	.49	.78	.78	86	82	15	✓	329	303	54	—	347	328
		117	539.3	.49	.78	.78	86	82	15	✓	330	306	54	—	348	327
*	1645	120	540.256													
5-1	1705	120	543.621	1.0	1.61	1.6	84	81	8	✓	329	301	61	—	377	330
		123	545.7	1.0	1.61	1.6	85	81	9	✓	330	302	51	—	372	329
2		126	547.6	1.0	1.61	1.6	86	81	10	✓	331	301	52	—	370	328
		129	549.6	1.0	1.61	1.6	86	81	11	✓	330	296	52	—	369	329
3		132	551.7	.80	1.28	1.3	86	81	13	✓	335	297	54	—	351	330
		135	553.1	.80	1.28	1.3	87	81	14	✓	333	297	55	—	349	330
4		138	554.9	.51	.816	.82	86	81	14	✓	336	301	57	—	348	331
		141	556.7	.51	.816	.82	86	81	14	✓	337	302	58	—	347	330
5		144	558.3	.82	1.31	1.3	86	82	19	✓	335	302	58	—	347	330
		147	559.9	.82	1.31	1.3	86	82	20	✓	335	303	58	—	346	330
	1735	150	562.071													

Meter Leak Check During Test:

Meter Reading

	Stop	Start
_____ CF in _____ Seconds at _____	In. Hg _____	_____
_____ CF in _____ Seconds at _____	In. Hg _____	_____

Comments: * Filter chsm .002 60 s 18" Hg
.001 60 s 25" Hg

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Scrubgrass Generating Station
Source: Inlet

Date: 9/17/99
Run No.: 3B
Train Type: Ontario-Hydro
Recovery Person: clm

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			Comments:
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	678.5	666.5	687.0	708.0	714.2 clm	729.9 clm	618.2
Initial Vol. (ml/g):	590.3	629.4	677.9	706.0	711.7	724.4	618.5
Net Collected (ml/g):	88.2	37.1	9.1	2.0	2.5	1.1	-0.3

clm 9/17/99 A 9/17/99

Silica Gel Impinger:	8	8A	8	Comments:
Final Vol. (ml/g):	618.2		881.8	
Initial Vol. (ml/g):	861.5	898.8	861.5	
Net Collected (ml/g):			20.3	

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 160

Sample Train Tracking Form

ımple Train: OH - Hg **Date:** 9/17/99

Location: Inlet **Run:** 3B

Sample ID: P68E-S6-OHM-Ilb-3

Train Set Up By:	[signature]	**Date:** 9/17/99	**Time:** 1029
Transported to Location By:	[signature]	**Date:** 9/17/99	**Time:** 1300
Received at Location By:	[signature]	**Date:** 9/17/99	**Time:** 1307
Transported to Recovery Area By:	[signature]	**Date:** 9/17/99	**Time:** 1800
Received at Recovery Area By:	[signature]	**Date:** 9/17/99	**Time:** 1806
Train Recovered By:	[signature]	**Date:** 9/17/99	**Time:** 1900

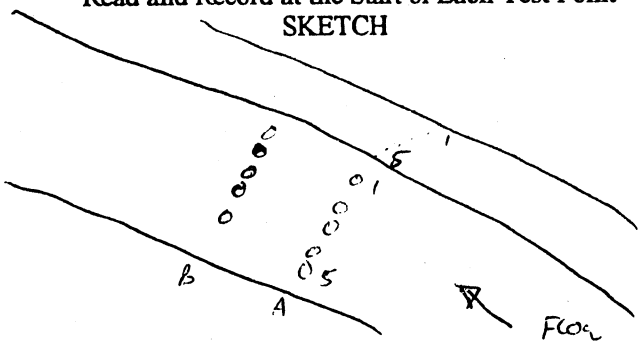
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0003-000041
Client: PG+E
Facility: Scrub Grass
Source: Unit 1
Sample Location: Inlet B
Stack Diameter: 120 X 72
Date: 9/17
Run No.: PG+E-S6-OHM-IB-4
Operator: D. Gille
Meterbox No.: 90343
Meterbox ΔH @: 1.885
Y Factor: 0.9961

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: E Mac
Pitot Number and Side: P-1
Pitot Tube CP: 0.84
Filter No.:
Ambient Temp., °F: 72
Bar. Pressure, In. Hg.: 28.85
Assumed Moisture, %: 8
Heater Box Setting, °F: 340
Nozzle # / Dia., In.: L-41 .218
Probe Length / Material: 12' IGL
Probe Heater Setting: 340

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
1-1	1848	0	563.721	.175	1.23	1.2	77	75	6	✓	313	308	67	—	310	310
		3	565.3	.175	1.23	1.2	75	76	7	✓	313	309	65	—	311	310
2		6	567.2	.80	1.32	1.3	77	76	8	✓	314	309	64	—	311	310
		9	568.9	.80	1.32	1.3	77	75	9	✓	314	310	62	—	310	310
3		12	570.7	.60	.97	.97	78	75	10	✓	310	321	61	—	315	310
		15	572.8	.61	1.0	1.0	78	76	10	✓	310	322	60	—	315	312
4		18	574.4	.61	1.0	1.0	80	77	10	✓	314	323	57	—	318	313
		21	576.3	.61	1.0	1.0	80	77	10	✓	318	324	55	—	318	312
5		24	578.1	.22	.36	.36	80	77	7	✓	313	321	55	—	319	312
		27	579.2	.22	.36	.36	80	77	8	✓	311	321	56	—	319	313
	1918	30	580.713													
2-1	1924	30	581.431	.175	1.23	1.2	80	77	7	✓	314	321	57	—	320	315
		33	583.4	.175	1.23	1.2	81	77	7	✓	313	325	60	—	321	317
2-2		36	585.4	.40	.65	.64	82	77	7	✓	314	321	57	—	320	318

Train Leak Check:

Comments:

Before Test: .001 CF in 60 Seconds at 20 In. Hg
After Test: .002 CF in 60 Seconds at 21 In. Hg

	Initial	Final		Static Pressure			
Pitot Tube Leak Check	○	○	Port	2			
ORSAT Train Leak Check	○	○	Inches H₂O				
			Inches Hg	-25			

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TRC ENVIRONMENTAL CORPORATION - I[illegible] KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0003-000041
Client: PG+E -
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PG+E - SG - OHM - EB - 4
Sample Location: Inlet B
Operator: D. Gelle

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
2-2		39	587.2	.40	.65	.65	82	77	7	✓	313	321	61	—	320	318
3		42	588.7	.72	1.1	1.1	83	77	7	✓	310	322	60	—	321	318
		45	590.3	.72	1.1	1.1	83	78	10	✓	311	323	59	—	321	317
4		48	592.1	.55	.90	.90	83	78	10	✓	316	324	59	—	321	317
		51	593.8	.55	.90	.90	83	78	10	✓	318	322	58	—	320	318
5		54	595.0	.35	.57	.57	83	78	12	✓	315	321	58	—	321	319
		57	596.6	.35	.57	.57	83	78	12	✓	315	318	58	—	321	318
*	1954	60	598.6													
3-1	2012	60	599.871	.90	1.45	1.5	81	78	8	✓	323	317	60	—	325	319
		63	601.7	.90	1.45	1.5	82	78	89	✓	323	320	58	—	331	321
2		66	603.6	.85	1.38	1.4	83	78	10	✓	322	321	54	—	341	325
		69	605.5	.83	1.36	1.3	83	78	11	✓	322	325	54	—	343	326
3		72	607.4	.72	1.17	1.2	84	78	13	✓	320	326	55	—	344	322
		75	608.9	.72	1.17	1.2	84	78	14	✓	320	327	56	—	340	323
4		78	611.0	.60	.97	.97	84	78	15	✓	323	325	57	—	340	323
		81	612.5	.60	.97	.97	83	78	15	✓	324	327	56	—	341	323
5		84	614.3	.62	1.01	1.0	83	78	17	✓	322	327	58	—	340	323
		87	616.1	.62	1.01	1.0	83	78	18	✓	322	326	58	—	340	322
**	2042	90	618.123													
4-1	2053	90	619.152	1.0	1.67	1.6	80	78	9	✓	325	325	58	—	342	323
		93	620.9	1.0	1.62	1.6	81	78	9	✓	324	326	55	—	344	324
2		96	623.1	1.0	1.62	1.6	82	78	10	✓	324	327	54	—	345	325
		99	624.9	1.0	1.62	1.6	83	78	13	✓	325	326	53	—	342	325
3		102	626.9	.60	.97	.97	83	77	12	✓	324	327	54	—	341	326

Meter Leak Check During Test:

	Meter Reading Stop	Meter Reading Start
_____ CF in _____ Seconds at _____	In. Hg _____	_____
_____ CF in _____ Seconds at _____	In. Hg _____	_____

Comments:

* filter change Post .002 60s 20"Hg
Pre .001 60s 20"Hg

** filter chan Post .003 60s 18"Hg
Pre .002 60s 22"Hg

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0003-000621
Client: PG+E
Facility: SCRUBGRASS
Source: UNIT 1

Date: 9/17/99
Run No.: PG+E - SG-OHM-1B-4
Sample Location: INLET B
Operator: D. Gill

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
4-3		105	628.5	.60	.97	.97	83	78	13	✓	322	328	54	—	340	325
4		108	630.2	.45	.73	.73	82	77	14	✓	326	327	54	—	340	326
		111	631.7	.45	.73	.73	81	77	14	✓	326	327	53	—	338	325
5		114	633.5	.55	.88	.88	81	77	14	✓	327	329	54	—	341	327
		117	635.1	.55	.88	.88	80	77	16	✓	325	330	54	—	342	325
*	2123	120	636.672													
5-1	2130	120	637.625	1.0	1.63	1.6	78	76	8	✓	325	332	55	—	343	326
		123	639.0	1.0	1.63	1.6	79	76	9	✓	322	335	52	—	342	325
2		126	641.6	1.0	1.63	1.6	80	76	11	✓	322	336	51	—	342	324
		129	643.6	1.0	1.63	1.6	80	76	14	✓	322	335	51	—	341	323
3		132	645.3	.61	.99	.99	80	75	15	✓	327	334	51	—	342	325
		135	647.4	.61	.99	.99	79	75	15	✓	327	335	50	—	342	325
4		138	649.1	.75	1.2	1.2	79	75	17	✓	328	336	51	—	345	326
		141	650.1	.75	1.2	1.2	79	75	20	✓	329	336	51	—	346	327
5		144	6825	.55	.88	.88	78	75	20	✓	330	336	51	—	346	328
		147	654.3	.55	.88	.88	78	75	20	✓	330	337	50	—	346	328
	2200	150	656.001													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____

_____ CF in _____ Seconds at _____

Meter Reading

	Stop	Start
In. Hg	_____	_____
In. Hg	_____	_____

Comments:

* Filter change

Post .002 60 20

Pre .002 60 20

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	9/17/99
Client:	PG&E	Run No.:	4B
Facility:	Scrubgrass Generating Station	Train Type:	Ontario-Hydro
Source:	Inlet	Recovery Person:	CW

FRONT HALF

Filter No.:	N/A			Comments:
Thimble No.:	N/A			

XAD Trap No.:	N/A				Comments:
Final Wt. (g):					
Initial Wt. (g):					
Net Collected (g):					

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	785.1	682.6	701.4	619.5	715.9	656.6	690.3
Initial Vol. (ml/g):	697.1	645.5	695.1	616.8	715.8	654.3	688.9
Net Collected (ml/g):	88.0	37.1	6.3	2.7	0.1	2.3	1.4

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	824.8			
Initial Vol. (ml/g):	804.7			
Net Collected (ml/g):	20.1			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 158

Sample Train Tracking Form

ımple Train: OH - Hg **Date:** 9/17/99

Location: Inlet **Run:** 4B

Sample ID: PG&E-SG-OHM-Ib-4

Train Set Up By:	[signature]	**Date:** 9/17/99	**Time:** 1805
Transported to Location By:	[signature]	**Date:** 9/17/99	**Time:** 1810
Received at Location By:	[signature]	**Date:** 9/17/99	**Time:** 1812
Transported to Recovery Area By:	[signature]	**Date:** 9/17/99	**Time:** 2237
Received at Recovery Area By:	[signature]	**Date:** 9/17/99	**Time:** 2237
Train Recovered By:	[signature]	**Date:** 9/17/99	**Time:** 2257

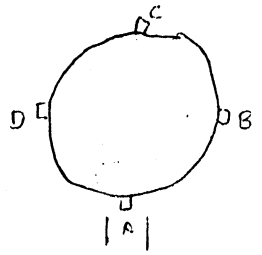
Comments:

Ig

TRC ENVIRONMENTAL CORPORATION - IS[illegible]INETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Exhaust stack
Stack Diameter: 129"
Date: 9/16/99
Run No.: PGE-SG-OHM-OA-1
Operator: [illegible]
Meterbox No.: #90342
Meterbox ΔH @: 1.973
Y Factor: 0.983

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: Ed MacKinnon
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 65°
Bar. Pressure, In. Hg.: 28.55
Assumed Moisture, %: 10%
Heater Box Setting, °F:
Nozzle # / Dia., In.: PGE-N-4 0.185
Probe Length / Material: 8' EFF Glass
Probe Heater Setting:

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
A1	1101	0	686.460	1.5	1.21	1.20	78	76	3.0	Blue	314	289	67	N/A	287	276
		3	688.710	1.5	1.22	1.20	77	77	3.0	Blue	314	290	64		288	284
2		6	691.950	1.5	1.22	1.20	75	77	3.0	Blue	313	292	60		290	286
		9	692.710	1.5	1.22	1.20	77	75	3.0	Blue	314	293	58		293	289
3		12	695.010	1.3	1.05	1.0	78	76	3.0	Blue	313	295	56		294	291
		15	696.575	1.3	1.05	1.0	79	75	2.0	Blue	311	296	50		297	287
4		18	697.940	1.2	0.97	0.97	79	77	2.0	Blue	310	293	51		296	286
		21	699.712	1.2	0.97	0.97	80	77	2.0	Blue	310	290	51		294	285
5	*	24	701.525	1.1	0.89	0.89	80	77	2.0	Blue	308	287	—		295	280
		27	703.193	1.1	0.89	0.89	80	76	2.0	Blue	308	296	—		293	280
6		30	704.985	1.1	0.89	0.89	78	77	2.0	Blue	308	291	—		291	281
		33	706.385	0.91	0.73	0.73	81	77	2.0	Blue	305	290	—		295	278
STOP	1137	36	707.703													

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 10.5 In. Hg
After Test: .002 CF in 60 Seconds at 5.0 In. Hg

Static Pressure

	Initial	Final					
			Port	B			
Tube Leak Check	✓	✓	Inches H_2O	-1.5			
T Train Leak Check	○	○	Inches Hg				

Comments: KF - 315 0.81
Lost Imp Temp. Loose wire Thru Test - Fix Jumper
ALL
Port A .001 60sec. 5 in Hg 707.899
Port B .001 60sec 4.5 in Hg 707.934

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TRC ENVIRONMENTAL CORPORATION - I KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1

Date: 9/16/99
Run No.: PGE-SG-OHM-0A-1
Sample Location: Exhaust Stack
Operator: SJ

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	°C Probe	°C Filter Outlet
B1	1207	0	707.934	1.7	1.38	1.40	78	78	3.0	Blue	314	289	52	N/A	293	290
		3	710.930	1.7	1.38	1.40	77	77	3.0	Blue	313	290	49		290	291
2		6	712.150	1.8	1.46	1.46	77	76	3.0	Blue	313	287	50		288	291
	**	9	713.835	1.8	1.46	1.50	79	77	3.0	Blue	313	285	52		286	291
3		12	715.692	1.8	1.46	1.50	75	73	3.0	Blue	314	292	55		310	279
		15	717.985	1.8	1.46	1.50	72	77	3.0	Blue	314	294	50		307	293
4		18	719.712	1.7	1.38	1.40	74	75	3.0	Blue	314	293	51		299	291
		21	721.645	1.7	1.38	1.40	75	76	3.0	Blue	313	295	52		303	291
5		24	723.565	1.7	1.38	1.40	75	75	3.0	Blue	314	294	56		303	291
		27	726.041	1.5	1.22	1.20	75	74	3.0	Blue	313	294	56		304	289
6		30	728.162	1.5	1.22	1.20	74	72	3.0	Blue	313	294	55		300	291
		33	729.143	1.5	1.22	1.20	77	73	3.0	Blue	314	296	55		299	292
Stop	1324	36	730.978													
B1	1500	0	731.212	1.7	1.38	1.40	75	73	3.0	Blue	310	313	66		327	304
		3	733.072	1.7	1.38	1.40	78	75	3.0	Blue	314	302	57		322	311
2		6	734.960	1.7	1.38	1.40	78	76	3.0	Blue	315	299	58		321	310
		9	736.850	1.7	1.38	1.40	78	75	3.0	Blue	315	301	58		321	307
3		12	738.740	1.6	1.30	1.30	80	75	3.0	Blue	314	300	57		322	307
		15	740.582	1.6	1.30	1.30	81	75	3.0	Blue	314	298	57		321	305
4		18	742.465	1.6	1.30	1.30	83	75	3.0	Blue	316	297	59		321	303
		21	744.370	1.5	1.22	1.20	83	75	3.0	Blue	313	299	60		323	302
5		24	746.510	1.5	1.22	1.20	85	80	3.0	Blue	312	300	63		320	301
		27	748.345	1.5	1.22	1.20	86	80	3.0	Blue	314	299	66		322	300
6		30	749.770	1.5	1.22	1.20	86	81	3.0	Blue	313	300	64		320	299

Meter Leak Check During Test:

Point B .002 CF in 60 Seconds at 5.5 In. Hg 731.121

Point C .002 CF in 60 Seconds at 5.0 In. Hg 731.212

Meter Reading: Stop / Start

730.978

731.121

Comments: K_F 315 0.81

** STOP, TRAINS - ADD INSULATION 1219

Start, 1300

TRC ENVIRONMENTAL CORPORATION - KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 2

Date: 9/16/99
Run No.: PGE-SG-OHM-OA-1
Sample Location: Exhaust Stack
Operator: BH

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
		33	751.571	1.5	1.22	1.20	85	80	3.0	Blue	313	300	64	N/A	321	300
STOP	1536	36	753.378													
01	1615	0	753.647	1.6	1.30	1.30	85	83	3.0	Blue	314	303	61		326	301
		3	765.615	1.6	1.30	1.30	85	84	3.0	Blue	315	302	56		320	302
2		6	767.371	1.6	1.30	1.30	86	83	3.0	Blue	314	301	54		310	296
		9	759.241	1.6	1.30	1.30	86	85	3.0	Blue	314	300	54		318	295
3		12	761.191	1.6	1.30	1.30	86	85	3.0	Blue	314	299	55		319	296
		15	763.055	1.5	1.22	1.20	87	84	3.0	Blue	313	299	57		317	296
4		18	765.940	1.5	1.22	1.20	87	86	3.0	Blue	313	299	57		318	296
		21	766.705	1.4	1.13	1.13	88	86	3.0	Blue	313	299	56		319	296
5	***	24	768.578	1.4	1.13	1.10	89	87	3.0	Blue	313	301	64		321	287
		27	770.880	1.4	1.13	1.10	87	87	3.0	Blue	312	301	58		321	300
6		30	772.161	1.4	1.13	1.10	87	86	3.0	Blue	312	301	56		318	299
		33	773.931	1.4	1.13	1.10	89	86	3.0	Blue	313	302	58		319	298
STOP	1726	36	775.711													

Meter Leak Check During Test:

.002 CF in 60 Seconds at 4.5 In. Hg Stop --
.002 CF in 60 Seconds at 5.0 In. Hg Start 753.647

Meter Reading
Stop 753.378
Start --

Comments: Kf 0.81

AM STOP 1640 INLET PORT CHANGE
START 1715

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	9/14/99
Client:	PG&E	Run No.:	1A
Facility:	Scrubgrass Generating Station	Train Type:	Ontario-Hydro
Source:	Outlet	Recovery Person:	SM

FRONT HALF

Filter No.:	N/A			Comments:
Thimble No.:	N/A			

XAD Trap No.:	N/A				Comments:
Final Wt. (g):					
Initial Wt. (g):					
Net Collected (g):					

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	827.6	642.5	622.0	589.7	611.7	596.6	697.6
Initial Vol. (ml/g):	710.1	623.5	619.8	587.6	612.2	596.2	697.4
Net Collected (ml/g):	116.4	19.0	2.2	2.1	-0.5	0.4	0.2

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	834.7			
Initial Vol. (ml/g):	815.6			
Net Collected (ml/g):	19.1			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 159.4

ORSAT ANALYSIS

Project No. 26046-0030-00004
Client PG&E
Facility Scrubgrass
Source ~~Exhaust stack~~ Unit 1 & 2
Location Combined Exhaust stack

Date 9/16/99
Run 1A
Operator MPM
Comments 1100 -

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 21.0
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
1	1840	13.2	20.4	7.2	—	—	1.038
2	1853	13.1	20.4	7.3	—	—	
3	1904	13.0	20.4	7.4			

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\ O_2}{\%\ CO_2}$$

Fuel _____
Reported F_o _____

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other _____

Sample Train Tracking Form

ample Train:	OH - Hg	Date:	9/16/99
Location:	Outlet	Run:	1A
Sample ID:	PG&E-SG-OHM-Oa-1		

Train Set Up By:	[signature]	Date: 9/16/99	Time: 0730
Transported to Location By:	[signature]	Date: 9/16/99	Time: 0800
Received at Location By:	[signature]	Date: 9/16/99	Time: 0820
Transported to Recovery Area By:	[signature]	Date: 9/16/99	Time: 1815
Received at Recovery Area By:	[signature]	Date: 9/16/99	Time: 1823
Train Recovered By:	[signature]	Date: 9/16/99	Time: 1930

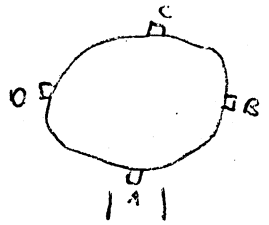
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Exhaust STACK
Stack Diameter: 12'9
Date: 9/17/99
Run No.: PGE-SG-OHM-OA-2
Operator: DF
Meterbox No.: #90342
Meterbox ΔH @:
Y Factor:

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: Ed MacKinnon
Pitot Number and Side: P-200 #000962 P-4
Pitot Tube CP: 0.84
Filter No.:
Ambient Temp., °F: 66°
Bar. Pressure, In. Hg.: 28.70
Assumed Moisture, %: 9.0
Heater Box Setting, °F:
Nozzle # / Dia., In.: PGE-N-4 0.185
Probe Length / Material: 8' EFF GLASS
Probe Heater Setting:

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
Di	0825	0	776.061	1.5	1.22	1.20	78	77	3.0	Blue	313	307	71	N/A	305	273
		3	778.075	1.6	1.30	1.30	80	75	3.0	Blue	314	302	59		301	284
2		6	779.980	1.6	1.30	1.30	78	77	3.0	Blue	311	301	58		300	288
		9	781.961	1.5	1.22	1.20	81	78	3.0	Blue	311	301	58		299	292
3		12	784.051	1.5	1.22	1.20	82	78	3.0	Blue	311	302	58		299	291
		15	785.875	1.5	1.22	1.20	83	79	3.0	Blue	311	304	56		299	294
4		18	787.475	1.4	1.13	1.10	82	80	3.0	Blue	310	303	55		298	296
		21	789.610	1.4	1.13	1.10	86	80	3.0	Blue	310	305	55		299	294
5		24	791.440	1.3	1.05	1.0	87	80	3.0	Blue	308	305	57		297	294
		27	793.320	1.2	0.97	0.97	87	81	3.0	Blue	307	306	59		299	295
6		30	794.915	1.2	0.97	0.97	86	82	3.0	Blue	307	305	60		298	294
		33	796.941	1.2	0.97	0.97	89	83	2.5	Blue	307	307	62		298	294
Stop	0901	36	798.367													

Train Leak Check:

Before Test: .004 CF in 60 Seconds at 11.0 In. Hg
After Test: .001 CF in 60 Seconds at 6.0 In. Hg

Static Pressure

	Initial	Final	Port				
Pitot Tube Leak Check	☑	☑	Inches H₂O	-1.4			
ORSAT Train Leak Check	○	○	Inches Hg				

Comments: KF 0.81 315°

Port 0 .001 60sec 4.0 in-Hg 798.437
Port C .001 60sec 4.5 in-Hg 798.526

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit #1

Date: 9/17/99
Run No.: PGE-SG-OHM-OA-2
Sample Location: Exhaust Stack
Operator: [signature]

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
C1	0915	0	798.526	1.7	1.38	1.40	92	86	2.5	Blue	313	308	67	N/A	302	292
		3	800.710	1.7	1.38	1.40	93	88	3.5	Blue	313	310	61		301	298
2		6	802.591	1.7	1.38	1.40	93	87	3.5	Blue	314	310	58		302	300
		9	804.660	1.6	1.30	1.30	93	89	3.5	Blue	313	310	55		302	299
3		12	806.635	1.6	1.30	1.30	95	90	3.5	Blue	314	308	54		302	300
		15	808.811	1.6	1.30	1.30	97	92	3.5	Blue	313	307	55		300	302
4	*	18	810.712	1.4	1.13	1.1	98	96	3.0	Blue	314	315	70		306	287
		21	812.750	1.5	1.22	1.2	98	95	3.0	Blue	313	313	61		302	305
5		24	814.670	1.3	1.05	1.0	98	95	3.0	Blue	312	311	54		304	300
		27	816.460	1.3	1.05	1.0	97	95	3.0	Blue	312	311	54		304	300
6		30	818.285	1.3	1.05	1.0	98	95	3.0	Blue	311	311	53		302	298
		33	820.120	1.2	0.97	0.97	98	95	3.0	Blue	310	309	55		300	297
STOP	1028	36	821.924													
B1	1120	0	822.047	1.7	1.38	1.40	99	96	3.5	Blue	317	313	65		302	294
		3	824.155	1.7	1.38	1.40	99	96	3.5	Blue	318	309	52		302	301
2		6	826.360	1.7	1.38	1.40	99	96	3.5	Blue	318	310	49		299	299
		9	828.485	1.8	1.46	1.50	99	96	3.5	Blue	318	308	49		300	299
3		12	830.751	1.7	1.38	1.40	98	95	3.5	Blue	316	310	51		301	299
		15	832.915	1.7	1.38	1.40	99	95	4.0	Blue	316	308	53		299	297
4		18	835.110	1.7	1.38	1.40	98	95	4.0	Blue	316	305	53		299	297
		21	837.355	1.7	1.38	1.40	100	95	4.0	Blue	318	307	55		298	290
5		24	839.560	1.5	1.22	1.2	99	95	3.5	Blue	316	308	57		300	288
		27	841.581	1.5	1.22	1.2	99	96	3.5	Blue	317	307	58		299	293
6		30	843.585	1.5	1.22	1.2	98	96	3.5	Blue	314	307	57		299	290

Meter Leak Check During Test:

Point .002 CF in 60 Seconds at 5.0
Point .002 CF in 60 Seconds at 5.5

Meter Reading

	Stop	Start
In. Hg	821.954	821.924
In. Hg	822.047	82 54

Comments: K_F 0.81

* STOP 0932 WAIT INLETS
START 1010

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit #1

Date: 9/17/99
Run No.: PGE-SG-OHM-OA-2
Sample Location: Exhaust Stack
Operator: BJ

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (F) °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
		33	845.690	1.5	1.22	1.2	100	98	3.5	Blue	315	308	57	N/A	300	291
STOP	1156	36	847.640													
A1	1210	0	847.815	1.5	1.22	1.2	96	96	3.0	Blue	318	311	68		306	294
		3	849.775	1.5	1.22	1.2	96	96	3.0	Blue	316	309	55		303	297
2		6	852.550	1.6	1.30	1.3	96	96	3.0	Blue	316	308	54		303	299
		9	854.965	1.5	1.22	1.2	97	96	3.0	Blue	317	310	55		302	300
3		12	855.791	1.3	1.05	1.0	98	96	3.0	Blue	315	310	56		302	300
		15	857.921	1.8	1.05	1.0	98	96	3.0	Blue	316	310	58		304	300
4		18	859.695	1.3	1.05	1.0	98	96	3.0	Blue	315	308	59		303	299
		21	861.491	1.3	1.05	1.0	98	95	3.0	Blue	315	309	60		302	298
5		24	863.370	1.2	0.97	0.97	98	96	3.0	Blue	314	309	60		302	299
		27	865.325	1.2	0.97	0.97	99	96	2.5	Blue	314	308	60		302	298
6		30	867.041	1.2	0.97	0.97	99	97	2.5	Blue	314	308	60		304	298
		33	869.940	1.2	0.97	0.97	100	97	2.5	Blue	315	309	61		301	298
STOP	1246	36	870.758													

Meter Leak Check During Test:

Point B
.002 CF in 60 Seconds at 6.0
.002 CF in 60 Seconds at 6.5

Meter Reading

	Stop	Start
In. Hg	847.738	847.640
In. Hg	847.815	847.738

Comments:

Point A

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	**Date:**	9/17/99 (9/14/99)
Client:	PG&E	**Run No.:**	2A
Facility:	Scrubgrass Generating Station	**Train Type:**	Ontario-Hydro
Source:	Outlet	**Recovery Person:**	

FRONT HALF

Filter No.:	N/A			**Comments:**
Thimble No.:	N/A			

XAD Trap No.:	N/A				**Comments:**
Final Wt. (g):					
Initial Wt. (g):					
Net Collected (g):					

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	806.2	750.1	709.0	757.4	712.4	702.2	700.1
Initial Vol. (ml/g):	717.9	705.8	700.5	754.1	714.0	700.1	699.9
Net Collected (ml/g):	88.3	44.3	8.5	3.3	-1.6	2.1	0.2

Silica Gel Impinger:	8			**Comments:**
Final Vol. (ml/g):	773.9			
Initial Vol. (ml/g):	754.7			
Net Collected (ml/g):	19.2			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 164.3

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/17/99

Location: Outlet **Run:** 2A

Sample ID: PG&E-SG-OHM-02-2

Train Set Up By:	[signature]	**Date:** 9/17/99	**Time:** 0716
Transported to Location By:	[signature]	**Date:** 9/17/99	**Time:** 0720
Received at Location By:	[signature]	**Date:** 9/17/99	**Time:** 0733
Transported to Recovery Area By:	[signature]	**Date:** 9/17/99	**Time:** 1300
Received at Recovery Area By:	[signature]	**Date:** 9/17/99	**Time:** 1340
Train Recovered By:	[signature]	**Date:** 9/17/99	**Time:** 1438

Comments:

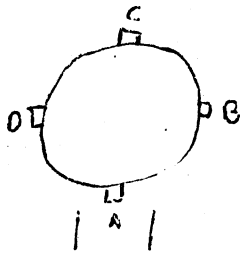
Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-20004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Exhaust STACK
Stack Diameter: 129"
Date: 9/17/94
Run No.: PGE-SG-OHM-OH-3
Operator: [illegible]
Meterbox No.: #90342
Meterbox ΔH @:
Y Factor:

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point

SKETCH



Sheet 1 of 3
Train Prepared By: E. Mackinnon
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 78°
Bar. Pressure, In. Hg.: 28.80
Assumed Moisture, %: 8.0
Heater Box Setting, °F:
Nozzle # / Dia., In.: PG-E-N-4 0.185 Glass
Probe Length / Material: 8' EGF Glass
Probe Heater Setting:

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F / °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
A1	1353	0	871.986	1.5	1.22	1.2	91	92	3.0	Blue	318	301	63	N/A	308	277
		3	873.410	1.5	1.22	1.2	90	90	3.0	Blue	317	300	58		303	289
2		6	875.170	1.4	1.13	1.1	89	90	3.0	Blue	317	299	53		302	295
		9	877.172	1.4	1.13	1.1	90	89	3.0	Blue	316	301	52		304	294
3		12	879.235	1.3	1.10	1.1	90	90	3.0	Blue	318	300	52		306	295
		15	881.345	1.3	1.10	1.1	91	90	3.0	Blue	318	300	53		306	296
4		18	883.334	1.3	1.10	1.1	92	90	3.0	Blue	317	305	54		305	296
		21	885.375	1.4	1.13	1.1	92	91	3.0	Blue	318	303	54		307	295
5		24	887.195	1.3	1.10	1.1	90	91	3.0	Blue	318	302	55		307	294
		27	889.168	1.25	1.01	1.00	92	91	3.0	Blue	318	302	56		309	297
6		30	891.086	1.3	1.10	1.1	95	90	3.0	Blue	318	301	58		310	297
		33	893.034	1.2	0.97	0.97	95	91	3.0	Blue	316	301	59		308	296
STOP	1428	36	894.726													
START	1431	0	894.925	1.8	1.45	1.45	95	93	3.0	Blue	320	320	68		315	299

Train Leak Check:

Before Test: .004 CF in 60 Seconds at 10.5 In. Hg
After Test: 0.003 CF in 60 Seconds at 7.0 In. Hg

Comments: K_F 0.81 315°
@ 36 mins 894.925

	Initial	Final	Static Pressure Port			
Pitot Tube Leak Check	☑	○	A			
ORSAT Train Leak Check	○	○	Inches H_2O -1.4			
			Inches Hg			

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PGE
Facility: Sarbgrass
Source: Unit 1

Date: 9/17/94
Run No.: PGE-SG-OHM-OA-3
Sample Location: Exhaust Stack
Operator: DJ

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	°C Probe	°C Filter Outlet
START 1		0	894.925	1.8	1.45	1.45	95	92	3.0	RUN	320	320	68		315	299
		3	897.785	1.8	1.45	1.45	96	93	3.0	RUN	321	318	67		312	303
2		6	899.261	1.8	1.45	1.45	96	93	3.0	RUN	319	317	58		312	301
		45 9	901.334	1.8	1.45	1.40	96	95	3.0	RUN	320	319	57		313	299
3		12	903.567	1.8	1.45	1.45	96	95	3.0	RUN	319	316	58		310	296
		15	905.646	1.75	1.41	1.40	99	94	3.0	RUN	319	318	58		311	297
4		18	907.897	1.75	1.41	1.40	99	96	3.0	RUN	319	316	58		312	297
		21	909.853	1.70	1.37	1.40	99	96	3.0	RUN	319	315	59		312	296
5		24	912.183	1.8	1.45	1.45	100	97	3.0	RUN	320	314	57		311	295
		27	914.321	1.70	1.37	1.40	101	96	3.0	RUN	319	316	58		310	291
6		30	916.434	1.70	1.37	1.40	101	96	3.0	RUN	319	315	58		311	290
		33	918.642	1.70	1.37	1.40	101	99	3.0	RUN	320	317	58		308	290
STOP	15:52	36	920.880				80	84	3.0	RUN	321	320	68		316	314
1	15:45	0	921.075	1.70	1.37	1.40	80	84	4.0	RUN	321	305	66		316	315
		3	923.024	1.70	1.37	1.40	79	80	4.0	RUN	321	321	60		316	320
2		6	925.387	1.70	1.37	1.40	79	80	4.0	RUN	321	321	57		316	320
		9	927.356	1.70	1.37	1.40	79	80	4.0	RUN	320	321	57		313	319
3		12	929.879	1.70	1.37	1.40	79	81	4.0	RUN	320	321	56		313	319
		15	931.546	1.70	1.37	1.40	79	81	4.0	RUN	321	321	57		311	318
4		18	933.974	1.70	1.37	1.40	79	81	4.0	RUN	320	321	57		314	319
		21	936.005	1.70	1.37	1.40	79	80	4.0	RUN	321	321	58		312	319
5	16:08 START	24	938.999	1.70	1.37	1.40	79	80	4.0	RUN	320	321	68		311	317
	16:15	27	940.845	1.55	1.21	1.20	80	80	4.0	RUN	320	320	60		310	316
6		30	942.563	1.5	1.21	1.20	79	81	4.0	RUN	319	320	57		312	319

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg

_____ CF in _____ Seconds at _____ In. Hg

Meter Reading: Stop _____ Start _____

Comments: 1615 = START TIME @ 24
1608 = START TIME @ 3

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26048-0080-00004
Client: PG&E
Facility: Sonoma
Source: Unit 1

Date: 9/17/99
Run No.: PGE-SG-OHM-OA-3
Sample Location: Exhaust Stack
Operator: [illegible]

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
		33	944.936	1.5	1.21	1.20	80	80	4.0	RUN	320	321	89		314	315
STOP		36	947.108													
1	~~1655~~	0	947.108	1.5	1.21	1.20	79	81	3.0	RUN	318	320	68		311	315
	1701	3	949.368	1.5	1.21	1.20	80	80	3.0	RUN	318	321	64		312	316
2		6	951.576	1.5	1.21	1.20	80	80	3.0	RUN	319	322	57		312	313
		9	953.872	1.5	1.21	1.20	80	80	3.0	RUN	319	321	57		310	311
3		12	956.423	1.4	1.13	1.15	84	80	3.0	RUN	318	321	57		310	311
		15	958.058	1.4	1.13	1.15	83	80	3.0	RUN	315	320	58		311	308
4		18	960.043	1.4	1.13	1.15	84	81	3.0	RUN	316	316	58		311	304
		21	961.975	1.4	1.13	1.15	84	81	3.0	RUN	316	318	58		311	307
5		24	964.032	1.3	1.05	1.05	83	81	3.0	RUN	314	318	58		311	303
		27	966.015	1.3	1.05	1.05	83	81	3.0	RUN	315	316	58		312	302
6		30	968.128	1.3	1.05	1.05	83	83	3.0	RUN	316	318	58		310	303
		33	970.234	1.3	1.05	1.05	83	83	3.0	RUN	314	318	61		307	303
STOP	1737	36	971.303													

Meter Leak Check During Test:

Meter Reading (Stop / Start)

Comments:

_____ CF in _____ Seconds at _____ In. Hg _____ / _____

_____ CF in _____ Seconds at _____ In. Hg _____ / _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	**Date:**	9/17/99
Client:	PG&E	**Run No.:**	3A
Facility:	Scrubgrass Generating Station	**Train Type:**	Ontario-Hydro
Source:	Outlet	**Recovery Person:**	KM

FRONT HALF

Filter No.:	N/A			**Comments:**
Thimble No.:	N/A			

XAD Trap No.:	N/A				**Comments:**
Final Wt. (g):					
Initial Wt. (g):					
Net Collected (g):					

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	818.2	659.8	625.0	592.0	613.8	595.6	699.8
Initial Vol. (ml/g):	706.4	624.7	619.6	589.3	613.7	595.5	699.2
Net Collected (ml/g):	111.8	35.1	5.4	2.7	0.1	0.1	0.6

Silica Gel Impinger:	8			**Comments:**
Final Vol. (ml/g):	873.5			
Initial Vol. (ml/g):	855.8			
Net Collected (ml/g):	17.7			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 173.5

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/17/99

Location: Outlet **Run:** 3A

Sample ID: PG&E-SG-OHM-Oa-3

Train Set Up By:	EMacKinnon	**Date:** 9/17/99	**Time:** 1030
Transported to Location By:	B Nixon	**Date:** 9/17/99	**Time:** 1230
Received at Location By:	S. [illegible]	**Date:** 9/17/99	**Time:** 1245
Transported to Recovery Area By:		**Date:**	**Time:**
Received at Recovery Area By:	[signature]	**Date:** 9/17/99	**Time:** 1809
Train Recovered By:	[signature]	**Date:** 9/17/99	**Time:** 1809

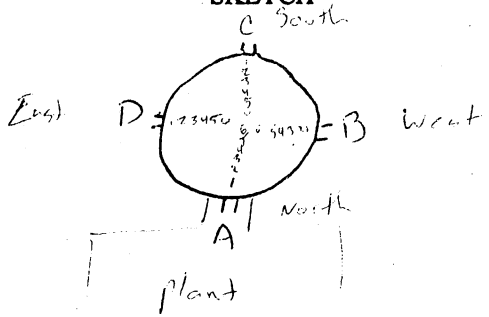
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Exhaust STACK
Stack Diameter: 129
Date: 9/16/99
Run No.: PGE-SG-OHM-OB-1
Operator: RN, SJ, CP
Meterbox No.: 90336
Meterbox ΔH @: 1.981
Y Factor: 0.987

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-3
Pitot Tube CP: 0.88
Filter No.: N/A
Ambient Temp., °F: 65
Bar. Pressure, In. Hg.: 28.55
Assumed Moisture, %: 10
Heater Box Setting, °F: 320
Nozzle # / Dia., In.: PGE-N-3 0.184
Probe Length / Material: 7' EFF glass
Probe Heater Setting: 320

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F (circled) °C Stack	Filter Box	Imp Temp	~~XAD Cond~~	Probe	Filter Outlet
A1	1101	0	482.089	1.7	1.45	1.45	75	77	6	OK	315	278	63	—	311	285
		3	484.1	1.7	1.45	1.45	77	77	6	OK	316	279	60	—	310	287
2		6	486.2	1.7	1.45	1.45	77	77	6	OK	315	279	55	—	305	288
		9	488.3	1.7	1.45	1.45	76	76	6	OK	315	264	49	—	306	287
3		12	490.3	1.6	1.36	1.35	77	77	6	OK	314	260	49	—	306	287
		15	492.0	1.6	1.36	1.35	78	75	5	OK	313	260	48	—	306	286
4		18	493.9	1.5	1.28	1.30	78	75	5	OK	313	259	48	—	306	285
		21	495.9	1.5	1.28	1.30	79	76	5	OK	309	259	49	—	307	286
5		24	497.6	1.3	1.10	1.10	80	76	5	OK	305	255	47	—	308	284
		27	499.4	1.3	1.10	1.10	80	78	5	OK	305	247	49	—	307	280
6		30	501.2	1.3	1.10	1.10	80	78	5	OK	306	248	49	—	307	X—
		33	502.9	1.2	1.02	1.00	80	79	5	OK	295	250	48	—	304	X—
B1	1137	36	504.657	1.6	1.36	1.35	77	78	5	OK	314	260	61	—	310	X—
	1207	39	504.870 / 506.7	1.6	1.36	1.35	78	76	5	OK	314	260	50	—	309	X—

Train Leak Check:

Comments: * Temp of Filter outlet ~220° ~~Not rec~~ Indicated.

Before Test: 0.003 CF in 60 Seconds at 10 In. Hg
After Test: 0.001 CF in 60 Seconds at 8.0 In. Hg

	Initial	Final	Static Pressure				
Pitot Tube Leak Check	⊗	✓	Port		-1.6		
ORSAT Train Leak Check	○	○	Inches H_2O				
			Inches Hg				

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TRC ENVIRONMENTAL CORPORATION - ' KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 2

Date: 9/16/99
Run No.: PGE-SG-OHM-03-1
Sample Location: Exhaust stack
Operator: RV, ST, CP

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	~~XAD~~ Cond	Probe	Filter Outlet
B2		42	508.4	1.5	1.3 ~~80~~	1.3 ~~76~~	80	76	5	OK	316	259	49	—	310	211
	1219	45	510.3	1.4	1.19	1.20	80	78	5	OK	316	250	49	—	311	215
3		48	512.063	1.4	1.19	1.20	74	73	5	OK	314	267	65	—	320	215
		51	514.2	1.4	1.19	1.20	75	74	5	OK	313	264	53	—	318	225
4		54	516.1	1.3	1.10	1.10	76	74	5	OK	313	267	52	—	317	230
		57	517.6	1.3	1.10	1.10	77	71	5	OK	313	261	50	—	318	233
5		60	519.2	1.3	1.10	1.10	78	74	5	OK	313	260	51	—	318	236
		63	520.9	1.2	1.02	1.00	70	74	5	OK	308	259	54	—	318	235
6		66	522.6	1.2	1.02	1.00	80	74	5	OK	307	260	55	—	318	234
		69	524.2	1.2	1.02	1.00	80	75	5	OK	311	258	55	—	319	233
C1	1323	72	525.912 ~~525.1994~~	1.6	1.36	1.35	80	77	5	OK	315	300	68	—	319	240
	1500	75	528.0	1.7	1.45	1.45	81	78	5	OK	316	298	58	—	319	240
2		78	529.6	1.7	1.45	1.45	81	78	5	OK	318	297	56	—	319	251
		81	531.7	1.9	1.62	1.62	83	78	5	OK	316	290	53	—	320	252
3		84	534.0	1.9	1.62	1.62	86	78	5	OK	317	291	56	—	317	254
		87	536.0	1.9	1.62	1.62	86	79	5	OK	314	290	57	—	319	255
4		90	538.1	1.8	1.53	1.53	87	80	6	OK	316	286	58	—	319	254
		93	540.0	1.8	1.53	1.53	89	81	6	OK	314	288	60	—	320	252
5		96	541.9	1.6	1.53	1.53	90	82	6	OK	316	287	60	—	319	252
		99	543.9	1.6	1.36	1.36	90	83	6	OK	316	286	60	—	320	252
6		102	545.9	1.7	1.45	1.45	90	84	6	OK	316	288	61	—	320	251
		105	547.9	1.6	1.36	1.36	90	86	6	OK	308	281	61	—	318	250
P1	1536	108	549.798 ~~549.988~~	1.7	1.45	1.45	90	87	6	OK	316	327	68	—	324	255
	1615	111	552.0	1.8	1.53	1.53	89	89	6	OK	318	325	68	—	324	264

Meter Leak Check During Test:

.001 CF in 60 Seconds at 7.0

_____ CF in _____ Seconds at _____

Meter Reading

	Stop	Start
In. Hg	525.199	_____
In. Hg	_____	_____

Comments:

.002 60sec. 6.5 in Hg. 525.

1214: Stop sampleing to insulate Hot Box.

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 36046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 2

Date: 9/16/99
Run No.: PGE-SG-OHM-OD-1
Sample Location: Exhaust stack
Operator: RN, SJ, CP

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	~~XAD~~ Cond	Probe	Filter Outlet
D2		114	554.1	1.8	1.53	1.53	89	86	6	OK	317	313	62	—	321	270
		117	555.9	1.6	1.53	1.53	89	87	6	OK	315	314	63	—	322	272
3		120	558.2	1.7	1.45	1.45	90	87	6	OK	314	311	63	—	319	272
		123	560.0	1.7	1.45	1.45	90	87	6	OK	316	309	64	—	323	270
4		126	562.1	1.6	1.36	1.36	92	87	6	OK	313	304	67	—	321	270
		129	564.2	1.6	1.36	1.36	92	87	6	OK	313	304	67	—	321	270
5	16:40	132	565.862	1.5	1.28	1.30	93	89	6	OK	314	304	66	—	318	266
		135	567.9	1.6	1.36	1.36	92	91	6	OK	314	325	66	—	324	260
6		138	569.6	1.6	1.36	1.36	91	89	6	OK	314	320	66	—	321	267
		141	571.5	1.6	1.36	1.36	91	88	6	OK	314	313	66		322	269
	17:26	144	573.304													

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg

_____ CF in _____ Seconds at _____ In. Hg

Meter Reading

	Stop	Start
In. Hg	_____	_____
In. Hg	_____	_____

Comments:

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	9/16/99
Client:	PG&E	Run No.:	1B
Facility:	Scrubgrass Generating Station	Train Type:	Ontario-Hydro
Source:	Outlet	Recovery Person:	[illegible]

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			Comments:
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	828.5	694.5	690.2	713.2	700.8	715.8	697.1
Initial Vol. (ml/g):	706.9	676.5	686.9	710.8	700.6	715.2	697.0
Net Collected (ml/g):	121.6	18.0	3.3	2.4	0.2	0.6	0.1

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	807.7			
Initial Vol. (ml/g):	787.9			
Net Collected (ml/g):	19.8			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 166

ORSAT ANALYSIS

Project No. 26046-0030-00004
Client PG+E
Facility Scrubgrass
Source Unit 1 +2
Location Exhaust Stack

Date 9/10/99
Run 2B
Operator MPM
Comments 1120

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 21.0
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
1	1959	12.4	20.4	8.0	—	—	
2	2008	12.4	20.4	8.0	—	—	
3	2016	12.4	20.4	8.0	—	—	

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Sample Train Tracking Form

ample Train: OH - Hg **Date:** 9/16/99

Location: Outlet **Run:** 1B

Sample ID: PG&E-SG-OHM-01B

Train Set Up By:	[signature]	**Date:** 9/16/99	**Time:** 0730
Transported to Location By:	[signature]	**Date:** 9/16/99	**Time:** 0800
Received at Location By:	[signature]	**Date:** 9/16/99	**Time:** 0820
Transported to Recovery Area By:	[signature]	**Date:** 9/16/99	**Time:** 1815
Received at Recovery Area By:	[signature]	**Date:** 9/16/99	**Time:** 1822
Train Recovered By:	[signature]	**Date:** 9/16/99	**Time:** 1950

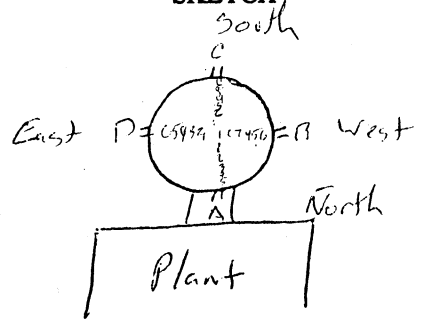
Comments:

Ig

TRC ENVIRONMENTAL CORPORATION - I KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1
Sample Location: Exhaust Stack
Stack Diameter: 129"
Date: 9/17/99
Run No.: PGE-SG-OHM-OB-2
Operator: RN SJCP
Meterbox No.: 90336
Meterbox ΔH @:
Y Factor:

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-3
Pitot Tube CP: 0.88
Filter No.: —
Ambient Temp., °F:
Bar. Pressure, In. Hg.: 28.70
Assumed Moisture, %: 8
Heater Box Setting, °F:
Nozzle # / Dia., In.: ~~.192~~ mpm 0.184
Probe Length / Material: 5' glass
Probe Heater Setting:

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F ~~XAD Cond~~	Temperatures °F Probe	Temperatures °F Filter Outlet
C1	0825	0	573.624	1.7	1.45	1.45	81	81	5	OK	314	294	68	NA	312	283
2		3	575.5	1.7	1.45	1.45	83	81	5	OK	314	290	68	—	307	284
2		6	577.8	1.7	1.45	1.45	83	80	5	OK	313	295	65	—	316	288
2		9	579.6	1.7	1.45	1.45	82	82	5	OK	312	302	63	—	326	300
3		12	581.5	1.7	1.45	1.45	85	81	5	OK	313	302	61	—	343	306
		15	583.3	1.6	1.36	1.35	86	81	5	OK	313	299	61	—	340	304
4		18	585.2	1.5	1.28	1.28	87	81	5	OK	310	305	63	—	344	302
		21	587.1	1.5	1.28	1.28	89	83	5	OK	311	310	63	—	346	310
5		24	589.0	1.3	1.11	1.10	90	83	5	OK	310	307	63	—	334	310
		27	591.1	1.4	1.19	1.20	92	84	5	OK	310	308	65	—	335	307
6		30	593.0	1.2	1.02	1.00	93	87	5	OK	303	310	65	—	336	310
	0901	33	594.5	1.2	1.02	1.00	99	89	5	OK	300	310	65	—	336	311
D1	0915	36	595.556 596.021	1.7	1.45	1.45	99	93	5	OK	315	333	68	—	336	330
		39	597.9	1.7	1.45	1.45	100	93	5	OK	316	326	63	—	324	330

Train Leak Check:

Before Test: .006 CF in 60 Seconds at 10.0 In. Hg
After Test: .003 CF in 60 Seconds at 6.5 In. Hg

Comments:

Port C .002 60sec. 6.5 In Hg
Port B .002 60sec. 6.0 in Hg 596.021

	Initial	Final	Static Pressure				
			Port				
Pitot Tube Leak Check	✓	✓	Inches H_2O				
ORSAT Train Leak Check	○	○	Inches Hg				

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TRC ENVIRONMENTAL CORPORATION - I KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PGE-SG-OHM-01B-2
Sample Location: Exhaust Stack
Operator: RN, SJ, CP

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	~~XAD Cond~~	Probe	Filter Outlet
D2		42	600.4	1.4	1.19	1.20	103	94	5	OK	316	310	61	—	323	327
		45	602.1	1.9	1.61	1.60	103	93	5	OK	306	309	60	—	325	315
3		48	604.0	1.8	1.53	1.50	104	95	5	OK	315	312	58	—	320	301
		51	606.4	1.75	1.48	1.45	105	97	5.5	OK	315	312	58	—	319	302
4	9:32	54	607.900	1.70	1.44	1.45	101	100	5	OK	315	301	60	—	316	304
	10:10	57	609.9	1.70	1.44	1.45	101	99	5	OK	314	275	58	—	298	336
5		60	611.7	1.55	1.06	1.05	101	100	5	OK	313	265	55	—	275	317
		63	613.6	1.55	1.06	1.05	99	100	5	OK	313	275	53	—	298	288
6		66	615.6	1.40	1.19	1.20	97	100	5	OK	288	290	54	—	301	269
		69	617.3	1.50	1.27	1.30	96	97	5	OK	310	294	55	—	301	292
A1	1120	72	618.768 620.492	1.5	1.27	1.30	95	94	5	OK	315	302	68	—	345	288
		75	622.3	1.6	1.36	1.36	95	94	5	OK	316	309	61	—	346	299
2		78	624.2	1.6	1.36	1.36	94	92	5	OK	318	306	57	—	330	302
		81	626.1	1.6	1.36	1.36	94	93	5	OK	317	307	57	—	328	301
3		84	628.1	1.4	1.19	1.20	95	95	5	OK	316	307	55	—	328	300
		87	629.9	1.4	1.19	1.20	95	93	5	OK	312	311	58	—	326	299
4		90	631.7	1.25	1.06	1.06	95	95	5	OK	315	310	57	—	328	302
		93	633.5	1.30	1.10	1.10	95	95	5	OK	312	315	57	—	330	299
5		96	635.2	1.20	1.02	1.00	97	94	5	OK	314	313	60	—	328	304
		99	636.9	1.10	0.93	0.93	97	94	5	OK	312	318	60	—	327	297
6		102	638.5	1.20	1.02	1.00	97	95	5	OK	313	320	60	—	327	302
		105	640.1	1.02	0.86	0.86	96	95	5	OK	308	320	60	—	327	298
B1	Stop 11:56	108	641.323 641.831	1.65	1.40	1.40	97	94	5	OK	318	315	68	—	335	320
		111	643.7	1.65	1.40	1.40	95	95	5	OK	320	317	64	—	330	310

Meter Leak Check During Test:

Port C
.002 CF in 60 Seconds at 7.0 In. Hg —
Port D .004 CF in 60 Seconds at 7.0 In. Hg 620.492

Meter Reading: Stop 618.768 — Start —

Comments: Stop @ 9:32

Port A .003 60 sec 7.0 in-Hg
Port D .002 60 sec. 7.0 in-Hg

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TRC ENVIRONMENTAL CORPORATION - KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Sarvbgrass
Source: Unit 1

Date: 9/17/99
Run No.: PGE-SG-OHM-OB-2
Sample Location: Exhaust Stack
Operator: KW, SJ, CP

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	~~XAD~~ Cond	Probe	Filter Outlet
B2		114	645.7	1.65	1.40	1.40	95	95	5	OH	318	325	60	—	331	304
		117	647.3	1.65	1.40	1.40	95	95	5	OH	319	326	60	—	329	300
3		120	649.1	1.65	1.40	1.40	97	95	5	OH	318	324	60	—	330	301
		123	651.1	1.65	1.40	1.40	97	95	5	OH	317	325	62	—	330	300
4		126	653.9	1.65	1.40	1.40	98	95	5	OH	317	321	64	—	330	300
		129	654.9	1.65	1.40	1.40	98	95	5	OH	317	325	65	—	330	299
5		132	656.9	1.65	1.40	1.40	99	95	5	OH	317	322	66	—	330	299
		135	658.7	1.65	1.40	1.40	100	95	5	OH	317	320	65	—	330	299
6		138	660.5	1.65	1.40	1.40	100	95	5	OH	318	319	66	—	325	299
		141	662.4	1.60	1.36	1.35	101	95	5	OH	317	323	66	—	330	299
	1246	144	664.312											—		

Meter Leak Check During Test:

Meter Reading (Stop / Start)

Comments:

_____ CF in _____ Seconds at _____ In. Hg _____ / _____

_____ CF in _____ Seconds at _____ In. Hg _____ / _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
t: PG&E
Facility: Scrubgrass Generating Station
Source: Outlet

Date: 9/17/99
Run No.: 2B
Train Type: Ontario-Hydro
Recovery Person: [illegible]

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			Comments:
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	800.2	673.9	699.3	626.1	711.3	645.9	687.6
Initial Vol. (ml/g):	698.6	645.4	691.8	624.1	711.5	645.3	688.3
Net Collected (ml/g):	102.0	28.5	7.5	2.0	-0.2	0.6	-0.7

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	804.7			
Initial Vol. (ml/g):	785.3			
Net Collected (ml/g):	19.4			

Comments/Notes:

T[illegible]L MOISTURE (Impingers and Silica Gel) (g) = 159.1

Sample Train Tracking Form

ample Train: OH - Hg Date: 9/17/99

Location: Outlet Run: 2B

Sample ID: PG&E-S6-OHM-06-2

Train Set Up By:	[signature]	Date: 9/17/99	Time: 0716
Transported to Location By:	[signature]	Date: 9/17/99	Time: 0730
Received at Location By:	B. Nixon	Date: 9/17/99	Time: 0740
Transported to Recovery Area By:	[signature]	Date: 9/17/99	Time: 1332
Received at Recovery Area By:	[signature]	Date: 9/17/99	Time: 1341
Train Recovered By:	[signature]	Date: 9/17/99	Time: 1402

Comments:

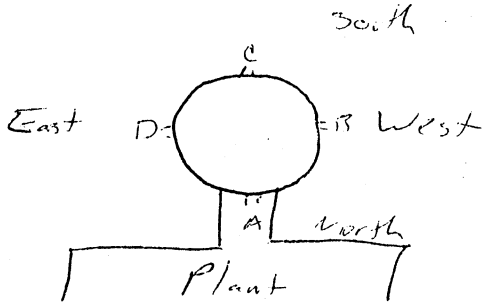
Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0080-00004
Client: PG&E
Facility: Scrubgrass
Source: UNIT 1
Sample Location: Exhaust STACK
Stack Diameter: 129"
Date: 9/12/99
Run No.: PGE-SG-OHM-OB-3
Operator: CP, SJ, RN
Meterbox No.: 90336
Meterbox ΔH @:
Y Factor:

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point

SKETCH



Sheet 1 of 3
Train Prepared By: ED
Pitot Number and Side: P-3
Pitot Tube CP: .858
Filter No.:
Ambient Temp., °F:
Bar. Pressure, In. Hg.: 28.80
Assumed Moisture, %: 8.0
Heater Box Setting, °F:
Nozzle # / Dia., In.: ~~.192~~ 0.184
Probe Length / Material: 5' glass
Probe Heater Setting:

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
D1	1353	0	664.534	1.6	1.36	1.35	92	91	6	OK	314	302	68	—	329	268
		3	666.8	1.6	1.36	1.35	91	91	6	OK	318	304	68	—	329	269
2		6	668.6	1.6	1.36	1.35	92	92	6	OK	316	305	67	—	326	290
		9	670.5	1.6	1.36	1.35	93	92	6	OK	316	309	67	—	325	290
3		12	672.6	1.5	1.28	1.28	93	92	6	OK	316	308	68	—	325	296
		15	674.6	1.6	1.36	1.35	93	92	6	OK	314	308	67	—	327	301
4		18	676.6	1.6	1.36	1.35	93	92	6	OK	316	305	67	—	327	300
		21	678.3	1.6	1.36	1.35	93	91	6	OK	314	307	67	—	325	301
5		24	680.2	1.6	1.36	1.35	94	92	6	OK	314	305	66	—	322	300
		27	682.0	1.6	1.36	1.35	95	92	6	OK	314	306	67	—	329	301
6		30	683.9	1.6	1.36	1.35	95	92	6	OK	314	308	67	—	330	300
		33	685.9	1.6	1.36	1.35	96	93	6	OK	315	307	67	—	331	301
A1	1428	36	~~687.654~~ 687.402	1.6	1.36	1.35	97	94	6	OK	315	277	68	—	335	302
	1436	39	689.6	1.6	1.36	1.35	98	95	6	OK	316	275	68	—	331	302

Train Leak Check:

Before Test: .006 CF in 60 Seconds at 14.0 In. Hg
After Test: .002 CF in 60 Seconds at 8.0 In. Hg

Comments:

	Initial	Final	Static Pressure Port				
Pitot Tube Leak Check	✓	✓	Inches H_2O				
ORSAT Train Leak Check	○	○	Inches Hg				

lowell

TRC ENVIRONMENTAL CORPORATION - KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PGE-SG-OHM-OB-3
Sample Location: Exhaust stack
Operator: RN, CP, SJ

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	°C Probe	°C Filter Outlet
A 2		42	691.5	1.5	1.28	1.28	99	94	6	OK	317	286	68	—	329	295
		45	693.2	1.5	1.28	1.28	98	95	6	OK	317	299	68	—	330	295
3		48	695.6	1.5	1.28	1.28	99	95	6	OK	317	306	68	—	328	299
		51	697.2	1.3	1.10	1.10	100	96	6	OK	316	308	67	—	335	305
4		54	698.9	1.3	1.10	1.10	100	96	6	OK	316	310	66	—	333	298
		57	700.5	1.3	1.10	1.10	100	96	6	OK	315	310	65	—	334	299
5		60	702.4	1.3	1.10	1.10	101	96	6	OK	315	312	64	—	334	295
		63	704.2	1.3	1.10	1.10	100	96	6	OK	314	317	65	—	332	299
6		66	705.4	1.3	1.10	1.10	101	96	6	OK	313	320	66	—	332	300
		69	707.5	1.3	1.10	1.10	102	97	6	OK	314	314	66	—	333	304
B1	1512	72	709.080 701.868	1.9	1.62	1.62	84	84	6	OK	318	322	68	—	363	303
	1545	75	711.8	1.9	1.62	1.62	83	83	6	OK	319	309	68	—	355	310
2		78	713.7	1.8	1.53	1.53	81	83	6	OK	317	302	66	—	355	309
		81	715.8	1.8	1.53	1.53	82	83	6	OK	316	307	66	—	351	308
3		84	718.1	1.8	1.53	1.53	83	83	6	OK	318	310	66	—	351	301
		87	720.0	1.7	1.45	1.45	81	83	6	OK	321	311	68	—	354	302
4		90	721.8	1.7	1.45	1.45	82	83	6	OK	319	309	67	—	352	300
		93	723.6	1.6	1.36	1.36	82	83	6	OK	320	311	66	—	355	301
5	1604	96	725.676	1.6	1.36	1.36	83	83	6	OK	316	312	68	—	351	299
	1615	99	727.3	1.5	1.28	1.28	83	83	6	OK	314	318	64	—	352	300
6		102	729.2	1.5	1.28	1.28	83	83	6	OK	314	316	61	—	352	300
		105	731.3	1.5	1.28	1.28	83	83	6	OK	313	309	58	—	354	300
C 1	1626	108	733.052 731.277	1.8	1.53	1.53	83	83	6	OK	321	318	68	—	361	300
	1701	111	735.1	1.8	1.53	1.53	83	83	6	OK	322	316	65	—	355	300

Meter Leak Check During Test:

Meter Reading

	Stop	Start
_____ CF in _____ Seconds at _____	In. Hg _____	_____
_____ CF in _____ Seconds at _____	In. Hg _____	_____

Comments:

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TRC ENVIRONMENTAL CORPORATION - I KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG+E
Facility: Scrubgrass
Source: Unit 1

Date: 9/17/99
Run No.: PGE-SG-01M-013-3
Sample Location: Exhaust stack
Operator: RN, CP, SJ

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
C2		114	737.1	1.7	1.45	1.45	83	83	6	OK	318	321	62	—	354	300
		117	739.0	1.7	1.45	1.45	84	83	6	OK	317	315	60	—	346	301
3		120	741.3	1.6	1.36	1.36	84	83	6	OK	316	319	60	—	351	300
		123	743.2	1.6	1.36	1.36	84	83	6	OK	316	321	61	—	349	305
4		126	744.9	1.5	1.28	1.28	84	83	6	OK	315	315	63	—	354	300
		129	747.1	1.5	1.28	1.28	85	83	6	OK	314	319	62	—	350	300
5		132	748.8	1.3	1.10	1.10	86	83	6	OK	314	321	63	—	357	300
		135	750.4	1.3	1.10	1.10	87	83	6	OK	315	315	64	—	358	300
6		138	752.6	1.3	1.10	1.10	86	83	6	OK	314	313	64	—	351	300
		141	753.9	1.3	1.10	1.10	86	84	6	OK	315	317	65	—	357	300
	1737	144	755.678													

Meter Leak Check During Test:

Meter Reading

				Stop	Start
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____

Comments:

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	9/17/99
Client:	PG&E	Run No.:	3B
Facility:	Scrubgrass Generating Station	Train Type:	Ontario-Hydro
Source:	Outlet	Recovery Person:	CMM

FRONT HALF

Filter No.:	N/A		
Thimble No.:	N/A		

Comments:

XAD Trap No.:	N/A			Comments:
Final Wt. (g):				
Initial Wt. (g):				
Net Collected (g):				

IMPINGERS

Impinger No.:	1	2	3	4	5	6	7
Reagent:	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 10% KCl Sol.	100 mls 5% HNO_3 /10% H_2O_2	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4	100 mls 4% $KMnO_4$/10% H_4SO_4
Final Vol. (ml/g):	700.5	712.9	690.2	714.1	697.7	710.8	699.0
Initial Vol. (ml/g):	707.4	677.4	683.4	712.0	697.0	710.7	698.0
Net Collected (ml/g):	93.1	35.5	6.8	2.1	0.7	0.1	1.0

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	793.1			
Initial Vol. (ml/g):	773.5			
Net Collected (ml/g):	19.6			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 158.9

Sample Train Tracking Form

ample Train: OH - Hg **Date:** 9/17/99

Location: Outlet **Run:** 3B

Sample ID: P6&E-SG-OHM-Ob-3

Train Set Up By:	[signature]	**Date:** 9/17/99	**Time:** 1031
Transported to Location By:	Clay	**Date:** 9/17/99	**Time:** 1230
Received at Location By:	[signature]	**Date:** 9/17/99	**Time:** 1245
Transported to Recovery Area By:		**Date:**	**Time:**
Received at Recovery Area By:	[signature]	**Date:** 9/17/99	**Time:** 1809
Train Recovered By:	[signature]	**Date:** 9/17/99	**Time:** 1840

Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit # 2
Sample Location: Baghouse Inlet
Stack Diameter: 920 x 60
Date: 9/16/99
Run No.: PGE-SG-OHM-I2-1
Operator: MPM
Meterbox No.: 90341
Meterbox ΔH @: ~~2.022~~ ~~10/3/99~~ 1.963
Y Factor: ~~0.983~~ Spr 0.983

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH

Sheet 1 of 3
Train Prepared By: E. MacKinnon
Pitot Number and Side: A-2
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 60
Bar. Pressure, In. Hg.: 28.55
Assumed Moisture, %: 10
Heater Box Setting, °F: NA
Nozzle # / Dia., In.: NA
Probe Length / Material: 10' Steel
Probe Heater Setting: NA

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
1	1100	0	846.230	1 - 1.05	1.0	1.0	63	63	6.0	✓	310		56			
	1103*	3	849.850	1 - 1.05	1.0	1.0	65	63	~~6.0~~ 3.0	✓	309		56			
	1109	9	849.975	2 - 0.91	1.0	1.0	65	63	3.0	✓	303		55			
	1112	~~9~~ 6	851.750	2 - 0.87	1.0	1.0	65	63	3.0	✓	307		55			
	1115	~~12~~ 9	853.20	3 - 0.42	1.0	1.0	65	63	3.0	✓	302		55			
	1118	12	855.200	3 - 0.043	1.0	1.0	66	63	3.0	✓	302		55			
	1121	15	857.500	4 - 0.63	1.0	1.0	66	63	3.0	✓	299		56			
	1124	18	859.000	4 - 0.67	1.0	1.0	66	63	3.0	✓	300		56			
	1127	21	860.510	5 - 0.56	1.0	1.0	67	64	3.0	✓	300		56			
	1130	24	861.900	5 - 0.50	1.0	1.0	65	67	3.0	✓	300		57			
	1133	27	863.630	6 - 0.76	1.0	1.0	65	65	3.0	✓	306		58			
	1136	30	865.100	6 - 0.74	1.0	1.0	68	65	3.0	✓	308		58			
*	1139	33	866.700													

Train Leak Check:

Before Test: 0.003 CF in 60 Seconds at 12.0 In. Hg
After Test: 0.008 CF in 60 Seconds at 14.0 In. Hg

	Initial	Final	Port	Static Pressure			
Pitot Tube Leak Check	✓	○	Inches H_2O				
ORSAT Train Leak Check	✓	○	Inches Hg				

Comments:
11:03 - Moisture Train Shut Down ΔH Manometer Not Reading.
11:09 - Restart - Null switch Stuck. Fixed.
1139 - Pause Run Nozzle Broken on Unit 2

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Port 4		ΔP	STEMP.
	1	1.1	302
	1	1.1 @93	303
START 1207	2	~~1.2~~ 1.2	304
	2	1.2	308
ENDED 1326	3	0.98	312
	3	0.98	311
	4	1.10	314
	4	1.15	313
	5	1.10	312
	5	1.10	312

POINT 1 OUT - 5 IN

STATIC -22 mm/Hg

Port 5		ΔP	STEMP
	5	1.05	314
	5	1.05 @93	313
START 1500	4	~~0.88~~ 0.88	314
	4	0.88	314
ENDED 1530	3	0.75	314
	3	0.75	314
	2	0.98	307
	2	0.98	307
	1	0.80	307
	1	0.82	306

Port 3		ΔP	STEMP.
	5	1.0	313
	5	1.0	313
	4	0.85	311
START	4	0.85	311
@93 ~~1715~~ 1645	3	0.45	308
	3	0.50	308
ENDED	2	0.85	305
1715	2	0.74	305
	1	0.86	305
	1	0.86	305

Port 2		ΔP	STEMP
	5	1.1	312
	5	1.1	312
@93 START	4	0.75	310
1615 ~~1645~~	4	0.75	310
	3	0.70	305
ENDED	3	0.66	305
@93 1645 ~~1715~~	2	0.68	302
	2	0.68	302
	1	1.0	311
	1	1.0	312

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 2

Date: 16 Sept 99
Run No.: PGE-SG-OHM-I2-1
Sample Location: Baghouse Inlet
Operator: J. Zuzolo / C. O'Brien

Sheet 2 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
RESTART	1207		866.700	—												
	1213	6	870.200		1.0	1.0	66	67	3	✓			57			
STOP	1219	12	873.240		1.0	1.0	66	67	3	✓			56			
RESTART	1302	0	873.240	—												
		6	876.600		1.0	1.0	65	67	3	✓			59			
		12	879.900		1.0	1.0	68	66	3	✓			56			
		18	883.200		1.0	.98	68	66	3	✓			54			
STOP	1326	24	886.450		1.0	.98	68	66	4				55			
RESTART	1500	~~30~~	886.450		—		—		—	—			—			
		6	889.900		1.0	1.0	68	67	3	—			59			
		12	893.400		1.0	1.0	69	67	3	—			57			
		18	897.000		1.0	1.0	70	68	4	—			55			
		24	900.400		1.0	1.0	71	69	4	—			58			
STOP	1530	30	903.850		1.0	1.0	71	69	3	—			58			
RESTART	1615	0	903.850	—	—	—	—		—	—	—	—	—	—	—	—
		6	907.200		1.0	1.0	68	68	5	—			62			
		12	910.580		1.0	1.0	69	69	5	—			61			
		18	914.000		1.0	1.0	69	69	6	—			60			
		24	917.420		1.0	1.0	70	69	7	—			59			
		30	920.850		1.0	1.0/.80	70	69	10	—			59	Vacuum Relieved —		
		36	924.800		1.0	1.0/.80	74	71	10/5	—			63	Put in Ice / Vacuum ✓		
		42	927.400		1.0	1.0/.70	72	71	11/6	—			62	Vacuum pulsing — ✓		
		48	930.500		1.0	1.0/.70	72	71	12/7	—			62	"		
		54	933.450		1.0	.9/.6	72	71	14/10	—			63	"		

Meter Leak Check During Test:

Meter Reading

				Stop	Start
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____

Comments:
1200 - ORSAT, Pump Left on after Train shut down. Purge bag; Restart ORSAT when sampling resumes.

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: Scrubgrass
Source: Unit 2

Date: 16 Sept 99
Run No.: PGE-GG-OHM-I2-1
Sample Location: BAGHOUSE INLET
Operator: J. Zuzolo / C. O'Brien

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
From Page 2			933.450		—	—			—		—					
		060	935.400		1.0	.6	71	71	14	~	307	→	64			
		66	—													
	1715		END @			Vacuum to high —										

Meter Leak Check During Test:

Meter Reading

				Stop	Start
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____

Comments:

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Field Moisture Determination

Client: PG&E
Location: Inlet Unit 2
Run No.: 1

Project No.: 26046
Date: 9/16/99
Operator: Joe Zuzalo

Data

Minutes	Clock Time	Gas Meter cf vm	TM In	TM Out	Orifice In. H_2O (+)	Vac. Gage In. Hg (-)
0						
5						
10						
15						
20						
25						
30						
Total/ Avg						

Impingers

	1	2	3
Final mL	684.1	673.2	841.7
Initial mL	606.7	669.1	818.1
Net mL			

Total Moisture (Net mL + Net gm) = 105.1

~~Silica Gel~~ Imp 1 A

~~Container No.~~

Final gm

Intial gm 630.5

Net gm

9/16/99 EV

Calculations

(1) PB = 28.55
Meterbox No.: 90341
(2) VM Net = 89.17
Y = DGM Calibration Factor = 0.
(3) TM Avg = _____
TM + 460 = _____

(4) PM Avg = + 1.0 Orifice in. H_2O × $\frac{1}{13.6}$ = + _____ orifice in.Hg.
= - _____ Vacuum gage In. Hg (when meter is before pump)

(5) VMSTD = $\frac{528 \times VM \times (PB + PM) \times (Y)}{29.92 \times (TM + 460)}$ = _____

(6) VW = mL H_2O + gm Silica Gel = 105.1

(7) VW Gas = VW × 0.04715 = _____

(8) %M = $\frac{100 \times VW\ Gas}{VMSTD + VW\ Gas}$ = $\frac{100 \times (\quad)}{(\quad) + (\quad)}$ = $\frac{(\quad)}{(\quad)}$ =

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ORSAT ANALYSIS

Project No. 26046-0030-000004
Client PG&E
Facility Scrubgrass
Source Unit 2
Location Baghouse Inlet

Date 9/16/99
Run 1
Operator MSM
Comments 11:00 - 17:15

Orsat Leak Checked (yes) / no
Purge System with Sample Gas yes / no
Ambient Air Check CO_2 0.0 O_2 21.0 .1750
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
1	~~1735~~ 1750 mm	11.0	20.4	9.4			1.046
2	1810	10.9	20.4	9.5			1.046
3	1820	11.0	20.4	9.4			1.046

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\,O_2}{\%\,CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

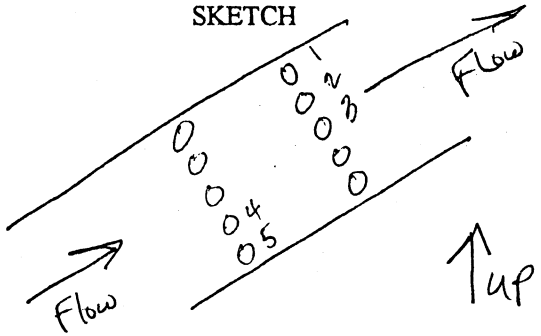
Other

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26016-0030-000041
Client: PGE
Facility: Scrubgrass
Source: Unit 2
Sample Location: Bag House Inlet
Stack Diameter: ~~120 x 60~~ 120 x 72"
Date: 9/17/99
Run No.: PGE-5G-~~MM~~-MM-2-2
Operator: J. Luzolo / C O'Brien
Meterbox No.: 9034T
Meterbox ΔH @: 2.022 (6/3/99)
Y Factor: 0.983 (5PT)

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point

SKETCH



Sheet 1 of
Train Prepared By: Ed MacKinnon
Pitot Number and Side: A-2
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 56°
Bar. Pressure, In. Hg.: 28.70
Assumed Moisture, %: 5.0
Heater Box Setting, °F: —
Nozzle # / Dia., In.: —
Probe Length / Material: 5S
Probe Heater Setting: —

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) Stack	Filter Box	Imp Temp	XAD Cond	Comments: ~~Probe~~	~~Filter Outlet~~
Port 1	0835	START	936.750	—	—		—			—			—	—		
		5	939.200		.75	.75	65	66	2	✓			58			
		10	941.720		.75	.75	67	66	2	✓			57			
		15	944.180		.75	.75	67	66	2				55			
		20	946.500		.75	.75	68	66	2				55			
		25	948.880		.75	.75	68	66	3				55			
		30	951.290		.75	.75	68	69	3				55			
		35	953.650		.75	.75	69	67	3				55			
		40	956.000		.75	.75	69	67	3				56			
		45	958.370		.75	.75	69	68	3				56			
		50	960.730		.75	.75	69	68	3				56			
		55	963.100		.75	.75	69	68	3				57			
		60	965.450		.75	.75	69	68	3				57			
		65	967.850		.75	.75	69	68	3				57			

SEE TRAVERSE SHEET FOR THIS RUN

Train Leak Check:

Before Test: 0.008 CF in 60 Seconds at 10 In. Hg
After Test: _____ CF in _____ Seconds at _____ In. Hg

	Initial	Final	Port	Static Pressure			
Pitot Tube Leak Check	○	○	Inches H₂O				
ORSAT Train Leak Check	○	○	Inches Hg				

Comments:

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TRC ENVIRONMENTAL CORPORATION - KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PGE
Facility: SCRUBGRASS
Source: UNIT 2

Date: 17 SEPT99
Run No.: PGE-SG-M4-2-2
Sample Location: UNIT 2 BAGHOUSE INLET
Operator: J. Zuzolo / C'O'Brien

Sheet 2 of _____

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Comments: Probe	Comments: ~~Filter Outlet~~
From Page 1			967.850													
		70	970.230		.75	.75	70	69								
		75	972.760		.75	.75	70	69	3.5							
		80	975.160	SEE TRAVERSE SHEET THIS RUN	.75	.75	70	70	3.5		SEE TRAVERSE SHEET THIS RUN					
		85	977.500		.75	.75	71	70	3.5				58			
		90	979.880		.75	.75	71	70	3.5				58			
		95	982.270		.75	.75	71	70	3.5				58			
		100	984.620		.75	.75	71	70	3.5				58			
		105	987.080		.75	.75	71	71	3.5				58			
		110	989.480		.75	.75	72	71	3.5				59			
		115	991.420		.75	.75	72	71	3.5				59			
		120	993.860		.75	.75	72	71	4.0				59			
		125	996.260		.75	.75	72	71	4.0				59			
		130	~~1001.30~~		.75	.75	72	72	4.0				59			
		135	1001.300		.75	.75	73	72	4.0				60			
STOP	START	140	1003.700		.75	.75	73	72	4.0				60			
		145	1006.000 @3		.75	.75	73	72	3.5				60			
		150	1008.580		.75	.75	73	72	4.0				62			
		155	1010.950		.75	.75	73	72	4.0				62			
		160	1013.300		.75	.75	74	73	4.0				62			
		165	1015.740		.75	.75	74	73	4.0				62			
		170	1018.100		.75	.75	74	73	4.0				62			
1205		175	1020.500		.75	.75	74	74	4.0				62			
END		180	1022.980		.75	.75	75	74	4.0				62			

Meter Leak Check During Test: 0 MPM

Meter Reading

				Stop	Start
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____

Comments: STOPPED @ 140 MIN MARK DUE TO SAMPLING PROBLEM ON UNIT 1 INLET SAMPLING TRAIN.
RESTARTED @ 1126 HOURS NO CHANGE

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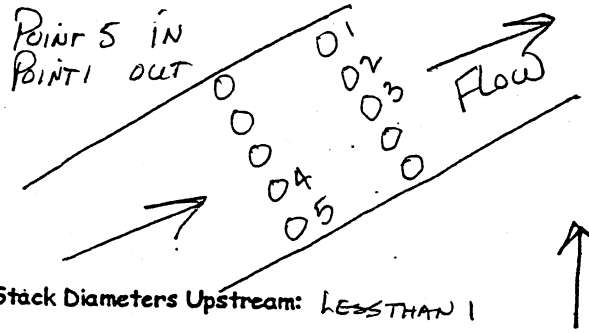
STACK GEOMETRY AND GAS VELOCITY DATA

Date:	17 SEPT 99
Client:	PG&E
Facility:	SCRUBGRASS
Run No.:	PGE-SG-M2-2-2
Barometric Pressure (in. Hg):	28.70
% Moisture:	(SEE MOISTURE DATA THIS RUN)
Pitot Tube ID:	
Post Leak Check:	✓ ✓
Measurement Device:	
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	BlowBack Pitot Lines Between 3/4

Project No.:	26046-0030-00004
Sample Location:	BAGHOUSE INLET UNIT 2
Load Condition:	
Operator:	J. Zuzolo / C. O'Brien
Meterbox No.:	90341
Static (in. H_2O):	-23MM/Hg
Pitot Tube Coefficient:	.84 .83
Stack Diameter (in.):	~~120" x 60"~~ 120" x 72"

Schematic of Stack Cross Section:



Stack Diameters Upstream: LESS THAN 1

Stack Diameters Downstream: ≈ 2

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
0845	PORT 5	~~308~~	~~1.2~~	~~03~~
	5	308	1.2	
	5	308	1.2	
	4	311	1.0	
	4	311	1.1	
	3	316	0.85	
	3	313	0.90	
	2	307	0.85	
	2	307	0.85	
	1	310	0.95	
0908	1	310	0.95	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
0910	PORT 4			
	5	311	1.1	
	5	311	1.1	
	4	314	0.95	
	4	313	0.90	
	3	312	1.0	
	3	318	1.0	
	2	307	0.65	
	2	308	0.65	
	1	305	0.85	
0935	1	305	0.85	

TRC

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STACK GEOMETRY AND GAS VELOCITY DATA

Date:	17 SEPT 99
Client:	PG&E
Facility:	SCRUBGRASS
Run No.:	PGE-SG-M2-2-2
Barometric Pressure (in. Hg):	28.70
% Moisture:	(SEE MOISTURE DATA THIS RUN)
Pitot Tube ID:	
Post Leak Check:	✓ ✓
Measurement Device:	
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	

BLOW BACK PITOT LINES BETWEEN 3/2

Project No.:	26046-0030-00004
Sample Location:	UNIT 2 BAGHOUSE INLET
Load Condition:	
Operator:	J. Zuzolo / C O'BRIEN
Meterbox No.:	9034
Static (in. H_2O):	-23 mm/Hg
Pitot Tube Coefficient:	.84
Stack Diameter (in.):	120" x 72"
Schematic of Stack Cross Section:	SEE Sheet 1 of 3
Stack Diameters Upstream:	LESS THAN 1
Stack Diameters Downstream:	≈ 2

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1000	PORT 3	XXX	XXX	XXX
	5	310	1.2	
	5	311	1.2	
	4	308	0.90	
	4	308	0.90	
	3	307	0.85	
	3	307	0.85	
	2	305	0.65	
	2	305	0.85	
	1	303	0.90	
1025	1	303	0.85	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1033	PORT 2	XXX	XXX	XXX
	5	307	1.0	
	5	307	1.0	
	4	306	0.80	
	4	306	0.80	
	3	304	0.65	
	3	304	0.80	
	2	305	0.55	
	2	305	0.55	
	1	305	0.80	
1058	1	305	0.80	

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	17 Sept 99
Client:	PG&E
Facility:	SCRUBGRASS
Run No.:	PGE-SG-M2-2-2
Barometric Pressure (in. Hg):	28.70
% Moisture:	(SEE MOISTURE DATA THIS RUN)
Pitot Tube ID:	
Post Leak Check:	
Measurement Device:	
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	

Project No.:	26046-0030-00004
Sample Location:	UNIT 2 BAGHOUSE INLET
Load Condition:	
Operator:	J. Zuzolo / C O'Brien
Meterbox No.:	9034I
Static (in. H_2O):	-23 MM/Hg
Pitot Tube Coefficient:	.84
Stack Diameter (in.):	120" X 72"
Schematic of Stack Cross Section:	See Page 1 of 3
Stack Diameters Upstream:	LESS THAN 1
Stack Diameters Downstream:	= 2

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1138	PORT 1			
	5	312	1.0	
	5	313	1.0	
	4	308	.80	
	4	309	.80	
	3	308	.70	
	3	308	.72	
	2	306	.65	
	2	306	.75	
	1	305	1.0	
1215	1	305	1.0	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle

TRC

ORSAT ANALYSIS

Project No. 26096-003-00004
Client PG+E
Facility Scrub grass
Source Unit 2
Location Bag House Inlet

Date 9/17/99
Run
Operator
Comments

Orsat Leak Checked (yes) / no
Purge System with Sample Gas (yes) / no
Ambient Air Check CO_2 0.0 O_2 21.0
Audit Gas Check (measured/actual): CO_2 / O_2 / CO /
Expiration Date of Reagents / /

Sample Point	Time	CO_2 Reading 1	O_2 Reading 2		CO Reading 3		F_o
			Actual	Net	Actual	Net	
1	1230	11.0	20.2	9.2			
2	1310	11.0	20.3	9.3			
3	1325	11.0	20.2	9.2			

Net O_2 Reading = Reading 2 - Reading 1 (Actual)
Net CO Reading = Reading 3 - Reading 2 (Actual)

QC Validation

Calculate F_o

$$F_o = \frac{20.9 - \%\ O_2}{\%\ CO_2}$$

Fuel
Reported F_o

Expected F_o Ranges

Anthracite/Lignite	1.015 - 1.130
Bituminous	1.083 - 1.230
Distillate Oil	1.260 - 1.413
Residual Oil	1.210 - 1.370
Natural Gas	1.600 - 1.836
Wood Bark	1.000 - 1.120
Municipal Garbage	1.043 - 1.177

Other

Field Moisture Determination

Client: PG&E
Location: Unit 2
Run No.: 2

Project No.: 96046
Date: 9/17/99
Operator: Joe Zuzolo

Data

Minutes	Clock Time	Gas Meter cf vm	TM In	TM Out	Orifice In. H_2O (+)	Vac. Gage In. Hg (-)
0						
5						
10						
15						
20						
25						
30						
Total/ Avg						

Impingers

	1	2	3
Final mL	725.6	677.3	965.5
Initial mL	612.8	678.4	946.8
Net mL	110.8	3.9	18.7

Total Moisture (Net mL + Net gm) = 133.4

Silica Gel

Container No. _____
Final gm _____
Intial gm _____
Net gm _____

Calculations

(1) PB = _____ Meterbox No.: _____
(2) VM Net = _____ Y = DGM Calibration Factor = _____
(3) TM Avg = _____ TM + 460 = _____

(4) PM Avg = + _____ Orifice in. $H_2O \times \frac{1}{13.6}$ = + _____ orifice in.Hg.
= - _____ Vacuum gage In. Hg (when meter is before pump)

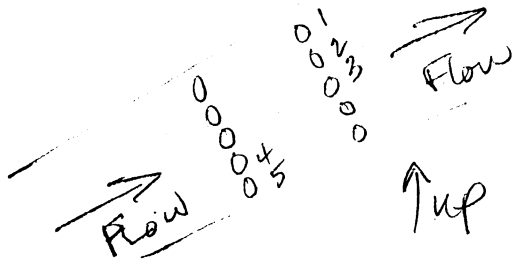
(5) $VMSTD = \frac{528 \times VM \times (PB + PM) \times (Y)}{29.92 \times (TM + 460)}$ = _____
(6) VW = mL H_2O + gm Silica Gel = _____
(7) VW Gas = VW × 0.04715 = _____

(8) $\%M = \frac{100 \times VW\ Gas}{VMSTD + VW\ Gas} = \frac{100 \times (\quad)}{(\quad) + (\quad)} = \frac{(\quad)}{(\quad)} =$

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PG&E
Facility: SCRUBGRASS
Source: UNIT 2
Sample Location: BAGHOUSE INLET
Stack Diameter: 120 X 72"
Date: 17 SEPT 99
Run No.: PGE-SG-M2-2-3
Operator: J. Luzolo / C O'Brien
Meterbox No.: 90347
Meterbox ΔH @: 2.022 (6/3/99)
Y Factor: 0.983 (5PT)

VERY IMPORTANT - FILL IN ALL BLANKS
Read and Record at the Start of Each Test Point
SKETCH



Sheet 1 of 3
Train Prepared By: ED. MACKINNON
Pitot Number and Side: A-2
Pitot Tube CP: .84
Filter No.: —
Ambient Temp., °F: 68
Bar. Pressure, In. Hg.: 28.80
Assumed Moisture, %: ~ 8%
Heater Box Setting, °F: —
Nozzle # / Dia., In.: —
Probe Length / Material: SS
Probe Heater Setting: —

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft³)	Pitot In. H₂O ΔP	Orifice ΔH Inches H₂O Desired	Orifice ΔH Inches H₂O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
	1355	0	23.830		.75	.75	74	74	5.0	✓			65			
		5	26.300	SEE	.75	.75	74	74	5.0	✓			65			
		10	28.720		.75	.75	75	74	5.0	✓	SEE		60			
		15	31.100		.75	.75	75	74	5.0				59			
		20	33.470	TRAVERSE	.75	.75	76	74	5.0		TRAVERSE		57			
		25	35.900		.75	.75	76	74	5.0				57			
		30	38.310	THIS	.75	.75	77	74	5.0		DATA		57			
		35	40.710		.75	.75	77	75	5.0				57			
		40	43.070	RUN.	.75	.75	78	75	5.0		THIS		57			
		45	45.400		.75	.75	78	75	5.0				57			
		50	47.730		.75	.75	78	76	5.0		RUN		58			
		55	50.050		.75	.75	79	76	5.0				59			
	1455	60	52.350		.75	.75	79	77	5.0				60			
			NEXT	PAGE												

Train Leak Check:

Before Test: 0.008 CF in 60 Seconds at 8 In. Hg
After Test: 0.010 CF in 60 Seconds at 8 In. Hg

Comments:

	Initial	Final	Port	Static Pressure			
Pitot Tube Leak Check	○	○	Inches H₂O				
ORSAT Train Leak Check	○	○	Inches Hg				

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TRC ENVIRONMENTAL CORPORATION - I KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PGE
Facility: SCRUBGRASS
Source: UNIT 2

Date: 17 SEPT 99
Run No.: PGE-S6-M4-2-3
Sample Location: BAGHOUSE INLET
Operator: J. Luzod / C. O'BRIEN

Sheet 2 of 3

Point	Clock Time From 24-hr	Clock Time min	52.350 Dry Gas Meter, (ft³)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures (°F) °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
		65	54.750		.75	.75	79	77	5.0	✓			61			
		70	57.040	SEE	.75	.75	79	77	5.0				61			
		75	59.410		.75	.75	79	77	5.0				61			
		80	61.800	TRAVERSE	.75	.75	79	78	5.0				60			
		85	64.220		.75	.75	79	78	5.0				59			
		90	66.620		.75	.75	79	78	5.0				59			
		95	69.000	SHEET	.75	.75	79	78	5.0				59			
		100	71.350		.75	.75	79	78	5.0				59			
		105	73.650		.75	.75	78	77	5.0				58			
		110	75.990		.75	.75	78	77	5.0				58			
		115	78.360	THIS	.75	.75	78	77	5.0				58			
	1555	120	80.720		.75	.75	78	77	5.0				58			
		125	83.080		.75	.75	78	77	5.0				58			
		130	85.440	RUN	.75	.75	79	77	5.0				57			
		135	87.810		.75	.75	79	77	5.0				57			
		140	90.200		.75	.75	79	78	5.0				56			
		145	92.500		.75	.75	80	78	5.0				55			
		150	94.810		.75	.75	80	78	5.5				54			
		155	97.050		.75	.75	80	78	5.5				54			
		160	99.310		.75	.75	80	78	6.0				54			
		165	101.600		.75	.75	79	77	6.0				54			
		170	103.910	43	.75	.75	80	78	6.0				55			
		175	106.350		.75	.75	80	78	6.0				55			
	1655	180	108.680		.75	.75	80	78	6.0				55			

SEE TRAVERSE SHEET THIS RUN.

Meter Leak Check During Test:

Meter Reading

				Stop	Start
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____
_____ CF in	_____	Seconds at	_____	In. Hg _____	_____

Comments:

TRC ENVIRONMENTAL CORPORATION - KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00004
Client: PGE
Facility: SCRUBGRASS
Source: UNIT 2 BAGHOUSE INLET

Date: 17 SEPT 99
Run No.: PGE-SG-M4-2-3
Sample Location: UNIT 2 BAGHOUSE INLET
Operator: J. ZUZOLO / C O'BRIEN

Sheet 3 of 3

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3) (From 2 of 3: 108.680)	Pitot In. H_2O ΔP	Orifice ΔH Inches H_2O Desired	Orifice ΔH Inches H_2O Actual	Dry Gas Temperature, °F Inlet	Dry Gas Temperature, °F Outlet	Pump Vacuum In. Hg Gauge	Silica Gel Cond.	Temperatures °F °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
		185	111.100	SEE TRAVERSE SHEETS THIS RUN	.75	.75	80	78	6.0	✓	SEE TRAVERSE SHEETS THIS RUN		55			
		190	113.500		.75	.75	80	78	6.0				55			
		195	115.880		.75	.75	80	78	6.0				55			
END	1715	200	118.200		.75	.75	80	78	6.0				55			

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____ In. Hg

_____ CF in _____ Seconds at _____ In. Hg

Meter Reading: Stop _____ Start _____

Comments:

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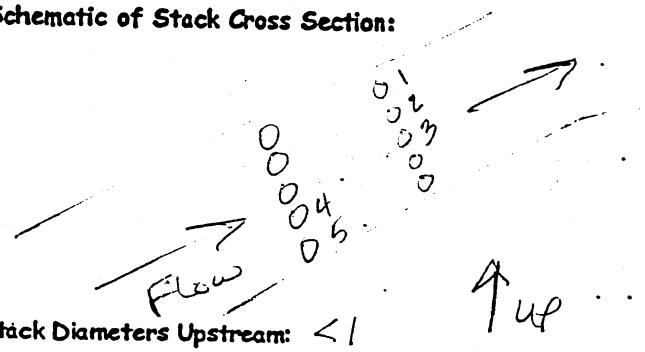
STACK GEOMETRY AND GAS VELOCITY DATA

Date:	17 SEPT 99
Client:	PGE
Facility:	SCRUBGRASS
Run No.:	PGE-SG-M2-2-3
Barometric Pressure (in. Hg):	
% Moisture:	(SEE MOISTURE DATA THIS RUN)
Pitot Tube ID:	A-2
Post Leak Check:	— —
Measurement Device:	
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	

Project No.:	26046-0030-00004
Sample Location:	UNIT 2 BAGHOUSE INLET
Load Condition:	
Operator:	J. Zuzolo /
Meterbox No.:	9034I
Static (in. H_2O):	-23 mm/Hg
Pitot Tube Coefficient:	.84
Stack Diameter (in.):	120" x 72"

Schematic of Stack Cross Section:



Stack Diameters Upstream: <1

Stack Diameters Downstream: ≈2

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1400	PORT 4	XXX	XXX	X
	5	316	1.10	
	5	317	1.10	
	4	316	.95	
	4	316	.90	
	3	317	.85	
	3	317	.65	
	2	314	.85	
	2	314	.75	
	1	310	.95	
1430	1	310	1.00	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1435	PORT 5	XXX	XXX	XXX
	5	316	1.10	
	5	316	1.10	
	4	316	.90	
	4	316	.75	
	3	316	1.0	
	3	316	1.0	
	2	310	.85	
	2	310	.85	
	1	308	1.0	
1505	1	308	1.0	

TRC

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	17 SEPT 99
Client:	PG&E
Facility:	SCRUBGRASS
Run No.:	PGE-SG-M2-2-3
Barometric Pressure (in. Hg):	
% Moisture:	(SEE MOISTURE DATA THIS RUN)
Pitot Tube ID:	A-2
Post Leak Check:	✓ ✓
Measurement Device:	
Micromanometer:	
10" Manometer:	)
Magnehelic:	
Other:	
Explain:	

BLOW OUT PITOT LINES BETWEEN PORTS —

Project No.:	26046-0030-00004
Sample Location:	UNIT 2 BAGHOUSE INLET
Load Condition:	
Operator:	J. ZUZOLO / C O'BRIEN
Meterbox No.:	90341
Static (in. H_2O):	-23 MM/Hg
Pitot Tube Coefficient:	.84
Stack Diameter (in.):	120" x 72"
Schematic of Stack Cross Section:	

See Page 1 of 3 This Run

Stack Diameters Upstream: <1

Stack Diameters Downstream: ≥2

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1520	PORT 3			
	5	313	1.1	
	5	313	1.1	
	4	315	1.10	
	4	315	1.10	
	3	312	.85	
	3	312	.80	
	2	312	.90	
	2	312	.75	
	1	307	.85	
1550	1	307	.65	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1610 ~~1620~~	PORT 2			
	5	314	1.0	
	5	314	1.0	
	4	312	1.0	
	4	312	.85	
	3	310	.65	
	3	310	.80	
	2	308	.85	
	2	308	.75	
	1	307	.90	
1640	1	307	.90	

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	17 SEPT 99
Client:	PGE
Facility:	SCRUBGRASS
Run No.:	PGE-SG1-M2-2-3
Barometric Pressure (in. Hg):	
% Moisture:	(SEE MOISTURE DATA THIS RUN)
Pitot Tube ID:	A-2
Post Leak Check:	✓ ✓
Measurement Device:	
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	

Project No.:	26046-0030-00004
Sample Location:	UNIT 2 BAGHOUSE INLET
Load Condition:	
Operator:	J. Zuzolo / C O'BRIEN
Meterbox No.:	90341
Static (in. H_2O):	-23 MM/Hg
Pitot Tube Coefficient:	.84
Stack Diameter (in.):	120" X 72"
Schematic of Stack Cross Section:	See Page 1 of 3 This Run
Stack Diameters Upstream:	< 1
Stack Diameters Downstream:	≈ 2

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1650	PORT 1			
	5	313	1.0	
	5	313	1.1	
	4	311	.95	
	4	311	1.0	
	3	309	.65	
	3	309	.70	
	2	310	.95	
	2	310	.90	
	1	305	1.0	
1720	1	305	1.0	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle

TRC

Lowell01.xls

Field Moisture Determination

Client: PG&E
Location: Unit 2
Run No.: 3

Project No.: 26046
Date: 9/17/99
Operator: Joe Zuzolo / SDM

Data

Minutes	Clock Time	Gas Meter cf vm	TM In	TM Out	Orifice In. H_2O (+)	Vac. Gage In. Hg (-)
0						
5						
10						
15						
20						
25						
30						
Total/ Avg						

Impingers

	1	2	3
Final mL	756.3	683.0	819.5
Initial mL	630.3	677.3	799.0
Net mL	126.0	5.7	20.5

Total Moisture (Net mL + Net gm) = 152.2

Silica Gel

Container No. _____
Final gm _____
Intial gm _____
Net gm _____

Calculations

(1) PB = _____
(2) VM Net = _____
(3) TM Avg = _____

Meterbox No.: _____
Y = DGM Calibration Factor = _____
TM + 460 = _____

(4) PM Avg = + _____ Orifice in. H_2O $\times \frac{1}{13.6}$ = + _____ orifice in.Hg.
= - _____ Vacuum gage In. Hg (when meter is before pump)

(5) $VMSTD = \frac{528 \times VM \times (PB + PM) \times (Y)}{29.92 \times (TM + 460)}$ = _____

(6) VW = mL H_2O + gm Silica Gel = _____

(7) VW Gas = VW $\times$ 0.04715 = _____

(8) $\%M = \frac{100 \times VW\ Gas}{VMSTD + VW\ Gas} = \frac{100 \times (\quad)}{(\quad) + (\quad)} = \frac{(\quad)}{(\quad)} =$

PG&E Generating Company
Scrubgrass Station
Instrumental Orsat Bag Analysis

Sampling Location	September 17, 1999 Run 2		September 17, 1999 Run 3		September 17, 1999 Run 4	
	CO_2	O_2	CO_2	O_2	CO_2	O_2
Unit 1 Inlet Train B	14.1	6.7	14.9	6.3	14.1	7.1
Unit1 Inlet Train A	X	X	13.7	7.3	16.4	5.0
Combined Outlet Stack Train A	14.0	6.8	14.1	6.9	X	X
Combined Outlet Stack Train B	13.9	6.9	14.1	6.9	X	X
Unit 2 Baghouse Inlet	11.3	9.1	12.0	8.7	X	X

Appendix B.2

Calibration Data Sheets

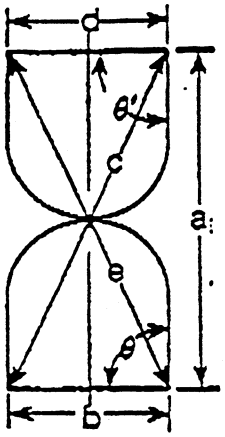
S-TYPE PITOT GEOMETRIC CALIBRATION
PART 2 - PITOT ALIGNMENT

Procedure No. T/S-811
Revision No. 1
Date December 9, 1980
Page _____ of _____

TRC Probe Identification _____
Pitot Identification A-2

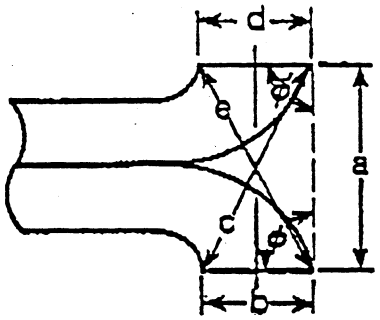
Technical Specialist MPM
Date 9/15/99

A. Transverse Tube Axis



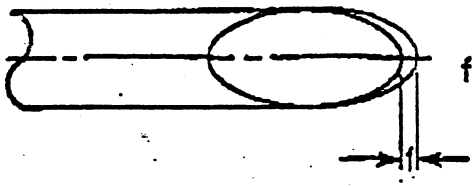
a	0.374 ~~0.484~~ 1.048 mpm	$\frac{a^2 + b^2 - c^2}{2ab} = \cos\theta$
b	0.374	
c	~~0.484~~ 1.048 mpm	
d	0.374	$\frac{a^2 + d^2 - e^2}{2ad} = \cos\theta'$
e	1.034	
θ	89.2	$(80° < \theta < 100°)$
θ'	88.9	$(80° < \theta' < 100°)$

B. Longitudinal Tube Axis

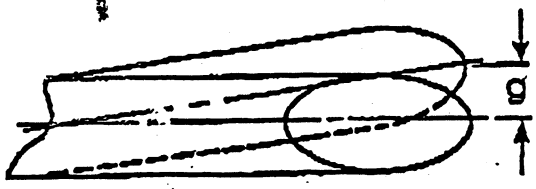


a	0.984	$\frac{a^2 + b^2 - c^2}{2ab} = \cos\phi$
b	0.603	
c	1.135	
d	0.581	$\frac{a^2 + d^2 - e^2}{2ad} = \cos\phi'$
e	1.142	
φ	87.8	$(85° < \phi < 95°)$
φ'	90.0	$(85° < \phi' < 95°)$

C. (f < 1/8")



D. (g = 1/32")



NOTE: Values in parentheses are EPA Method 2 specifications.

PROBE THERMOCOUPLE CALIBRATION

TOLERANCES
°R = °F + 460

Thermocouple Identification _____
Expected Stack Temperature (T_s) _____ °R
Reference Thermometer (T_{ref}) Ref. Thermocouple °R ($T_s \pm 10\%$)
Thermocouple Readout Cal sheet attached °R ($T_{ref} \pm 1.5\%$)

Technician _____ Date 9/15/99
Reviewed By _____ Date _____

TRC
TRC Environmental Consultants, Inc.

A-2

			Squared			
Transverse tube Axis	a	0.984	0.968256			
	b	0.374	0.139876			
	c	1.048	1.098304	0.013353	1.557443	**89.2**
	d	0.374	0.139876	0.019154	1.551642	**88.9**
	e	1.034	1.069156			
Longitudinal Tube Axis	a	0.984	0.968256			
	b	0.605	0.366025			
	c	1.135	1.288225	0.038682	1.532105	**87.8**
	d	0.581	0.337561	0.000735	1.570061	**90.0**
	e	1.142	1.304164			

TRC Environmental
Pitot Calibration Data
Order Number 0005266
4-Aug-99

ambient density = 0.0718 #/cu. Ft
Reference Probe WT-1
Reference Cp = 0.99

probe P-1	trial	reference	velocity	probe side A	probe Cp	reference	velocity	probe side B	probe Cp
	1	0.10	1281	0.12	0.90	0.08	1146	0.10	0.89
	2	0.40	2562	0.52	0.87	0.39	2530	0.48	0.89
	3	0.68	3341	0.88	0.87	0.61	3164	0.76	0.89
	4	0.85	3735	1.10	0.87	0.87	3779	1.09	0.88
	5	1.29	4601	1.68	0.87	1.29	4601	1.64	0.88
	max	2.07	5829	2.66	0.87	1.94	5643	2.45	0.88
				Avg Cp	0.88			Avg Cp	0.88

probe P-3	trial	reference	velocity	probe side A	probe Cp	reference	velocity	probe side B	probe Cp
	1	0.10	1281	0.13	0.87	0.10	1281	0.12	0.90
	2	0.43	2657	0.53	0.89	0.38	2497	0.45	0.91
	3	0.67	3316	0.84	0.88	0.62	3190	0.78	0.88
	4	0.88	3800	1.10	0.89	0.86	3757	1.06	0.89
	5	1.29	4601	1.62	0.88	1.27	4565	1.55	0.90
	max	2.12	5899	2.68	0.88	1.95	5657	2.38	0.90
				Avg Cp	0.88			Avg Cp	0.90

probe P-9	trial	reference	velocity	probe side A	probe Cp	reference	velocity	probe side B	probe Cp
	1	0.08	1146	0.12	0.81	0.12	1403	0.14	0.92
	2	0.40	2562	0.50	0.89	0.41	2594	0.51	0.89
	3	0.66	3291	0.84	0.88	0.68	3341	0.83	0.90
	4	0.90	3843	1.14	0.88	0.99	4031	1.11	0.93
	5	1.30	4619	1.63	0.88	1.26	4547	1.55	0.89
	max	2.02	5758	2.51	0.89	2.03	5772	2.50	0.89
				Avg Cp	0.87			Avg Cp	0.90

probe 200	trial	reference	velocity	probe side A	probe Cp	reference	velocity	probe side B	probe Cp
	1	0.10	1281	0.14	0.84	0.10	1281	0.14	0.84
	2	0.39	2530	0.55	0.83	0.39	2530	0.54	0.84
	3	0.60	3138	0.83	0.84	0.64	3241	0.89	0.84
	4	0.82	3669	1.12	0.85	0.87	3779	1.19	0.85
	5	1.20	4438	1.64	0.85	1.26	4547	1.74	0.84
	max	2.10	5871	2.84	0.85	2.10	5871	2.88	0.85
				Avg Cp	0.84			Avg Cp	0.84

Ambient Conditions DB = 73F WB = 64F Baro =29.34 in Hg

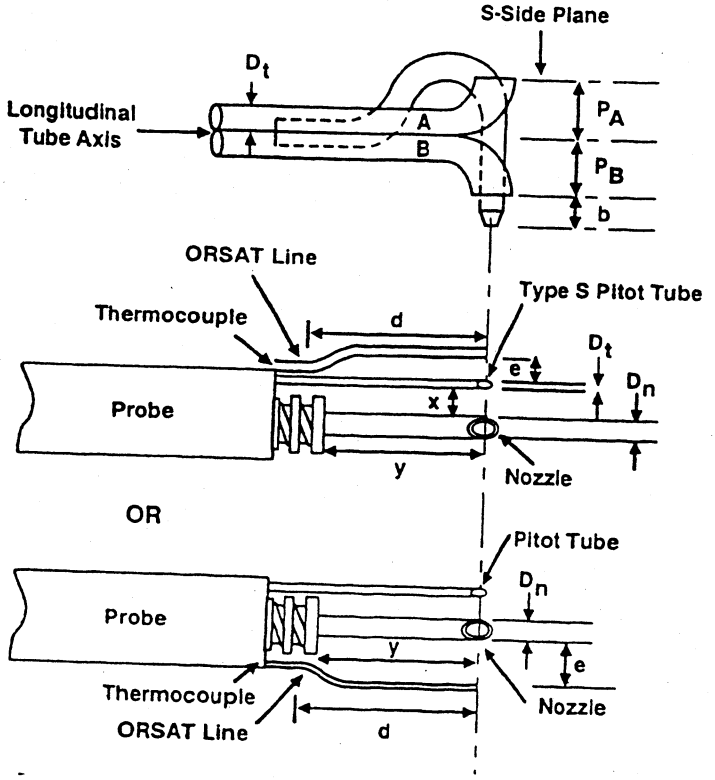
Type S Pitot Inspection Form

Pitot Tube ID No. P-1 Probe 12-2

Tubing Diameter, D_t 3/8

Pitot Tube Assembly Level? (Yes) No

Pitot Tube Opening Damaged? Yes (No)



Note:

$1.05\ D_t \le P \le 1.50\ D_t$

$P_A = P_B$ Yes/No

b = .427 in.

P_A = .501 in.

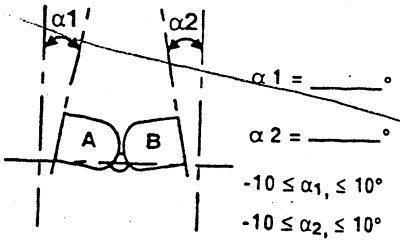
P_B = .501 in.

A' = .934 in.

D_t	.378	e	1.134
y	3.791	x	.938
d	3.392	D_n	.498

y _____

f _____

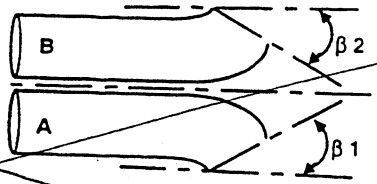


α 1 = _____°

α 2 = _____°

$-10 \le \alpha_1 \le 10°$

$-10 \le \alpha_2 \le 10°$

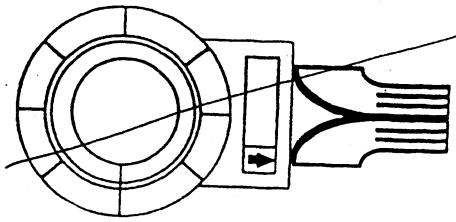


β 1 = _____°

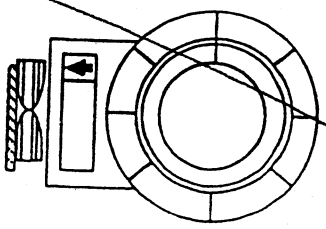
β 2 = _____°

$-5 \le \beta_1 \le 5°$

$-5 \le \beta_2 \le 5°$



γ = _____°



θ = _____°

Level Position to find γ = _____

Z = A' sin γ _____ in. (< 1/8 in.)

Level Position to find θ = _____

W = A' sin θ _____ in. (< 1/32 in.)

Comments: _____

Checked by: Robert Robello Date: 9/14/99

QA/QC by: _____ Date: 9/12/99

Calibration Required? _____ Yes (No)

D_t = External Pitot Tube Diameter

A' = Distance Between Tips (P_A + P_B) inches

Specifications (EPA Method 2)

D_t = 3/16" to 3/8"	x ≥ 3/4"	y ≥ 3"	e ≥ 3/4"	$1.05\ D_t \le P \le 1.50\ D_t$
D_n = 1/2"	b > 0	d > 3"	$P_a = P_b$	

372

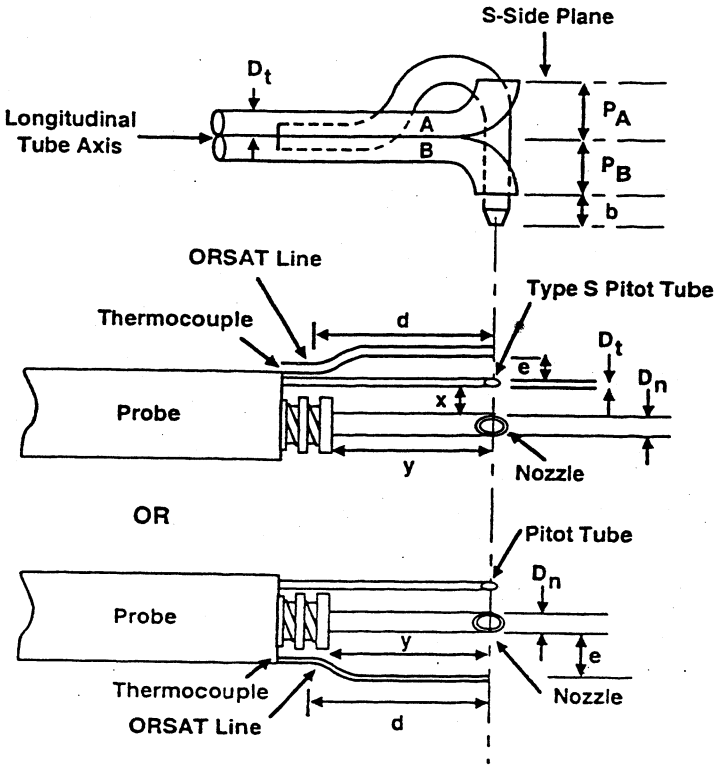
Type S Pitot Inspection Form

Pitot Tube ID No. P-9 Probe 1-12

Tubing Diameter, D_t 3/8

Pitot Tube Assembly Level? (Yes)/No

Pitot Tube Opening Damaged? Yes/(No)



Note:

$1.05\ D_t \le P \le 1.50\ D_t$

$P_A = P_B$ Yes/No

b = .853 in.

P_A = .424 in.

P_B = .424 in.

A' = .954 in.

D_t .381

y ~~3~~ 3.498

d 5.215

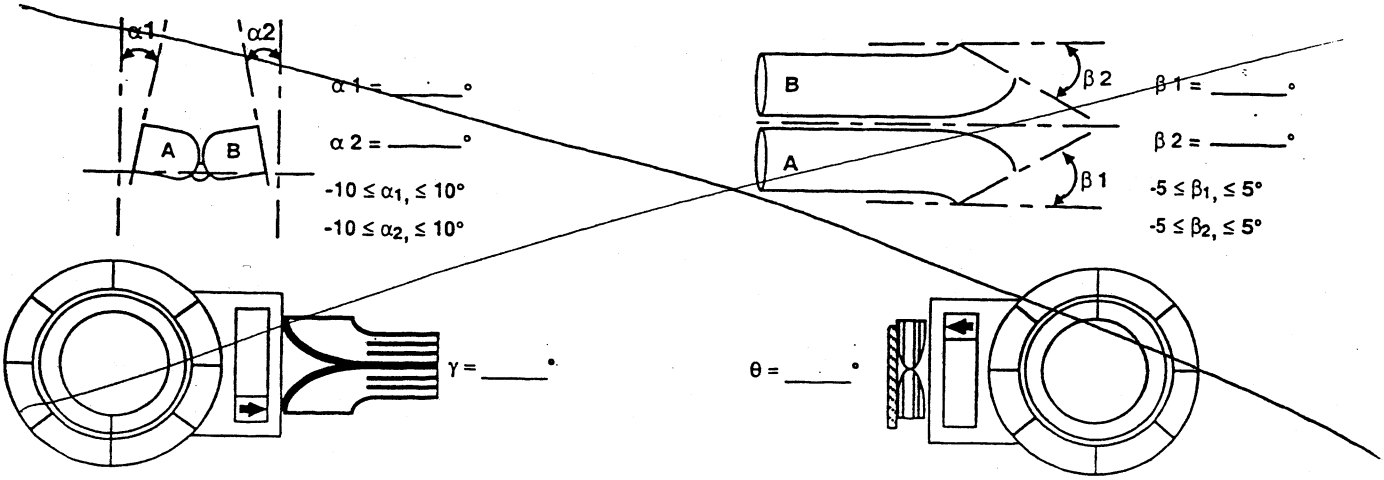
e 1.022

x .9011

D_n .498

y _____

f _____



Level Position to find γ = _____

Z = A' sin γ _____ in. (< 1/8 in.)

Level Position to find θ = _____

W = A' sin θ _____ in. (< 1/32 in.)

Comments: _____

Checked by: Robert Rosello Date: 9/14/99

QA/QC by: _____ Date: 9/17/99

Calibration Required? _____ Yes No

D_t = External Pitot Tube Diameter

A' = Distance Between Tips (P_A + P_B) inches

Specifications (EPA Method 2)

D_t = 3/16" to 3/8"	x ≥ 3/4"	y ≥ 3"	e ≥ 3/4"	$1.05\ D_t \le P \le 1.50\ D_t$
D_n = 1/2"	b > 0	d > 3"	$P_a = P_b$	

AF-372

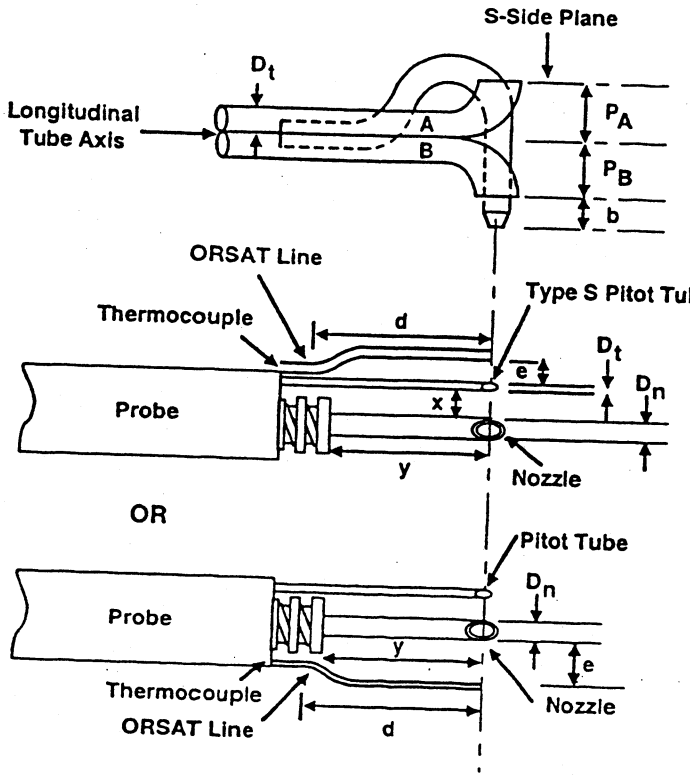
Pitot Inspection Form

Pitot Tube ID No. P-3

Tubing Diameter, D_t 3/8

Pitot Tube Assembly Level? (Yes) No

Pitot Tube Opening Damaged? Yes (No)



Note:

$1.05\ D_t \le P \le 1.50\ D_t$

P_A = .493 in.

P_B = .493 in.

$P_A = P_B$ (Yes) No

A' = .982 in.

b = 1.465 in.

0.374 4/17/99

D_t ~~.406~~ mm

y 3.794

d 5.257

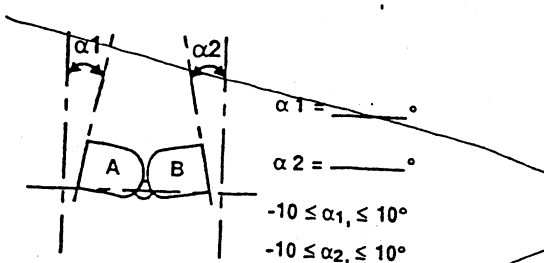
e 1.270

x .787

D_n .498

y _____

f _____

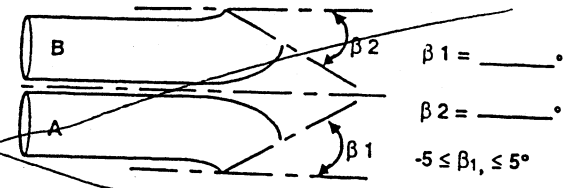


α 1 = _____ °

α 2 = _____ °

$-10 \le \alpha_1, \le 10°$

$-10 \le \alpha_2, \le 10°$

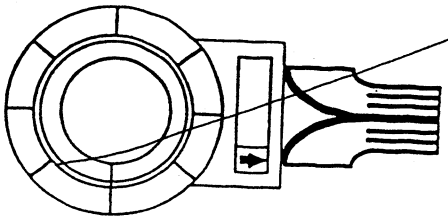


β 1 = _____ °

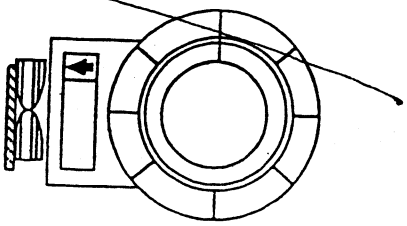
β 2 = _____ °

$-5 \le \beta_1, \le 5°$

$-5 \le \beta_2, \le 5°$



γ = _____ °



θ = _____ °

Level Position to find γ = _____

Z = A' sin γ _____ in. (< 1/8 in.)

Level Position to find θ = _____

W = A' sin θ _____ in. (< 1/32 in.)

Comments: _____

Checked by: RL Nixon Date: 9/16/99

QA/QC by: _____ Date: _____

Calibration Required? _____ Yes No

D_t = External Pitot Tube Diameter

A' = Distance Between Tips (P_A + P_B) inches

Specifications (EPA Method 2)

D_t = 3/16" to 3/8"	x ≥ 3/4"	y ≥ 3"	e ≥ 3/4"	$1.05\ D_t \le P \le 1.50\ D_t$
D_n = 1/2"	b > 0	d > 3"	$P_a = P_b$	

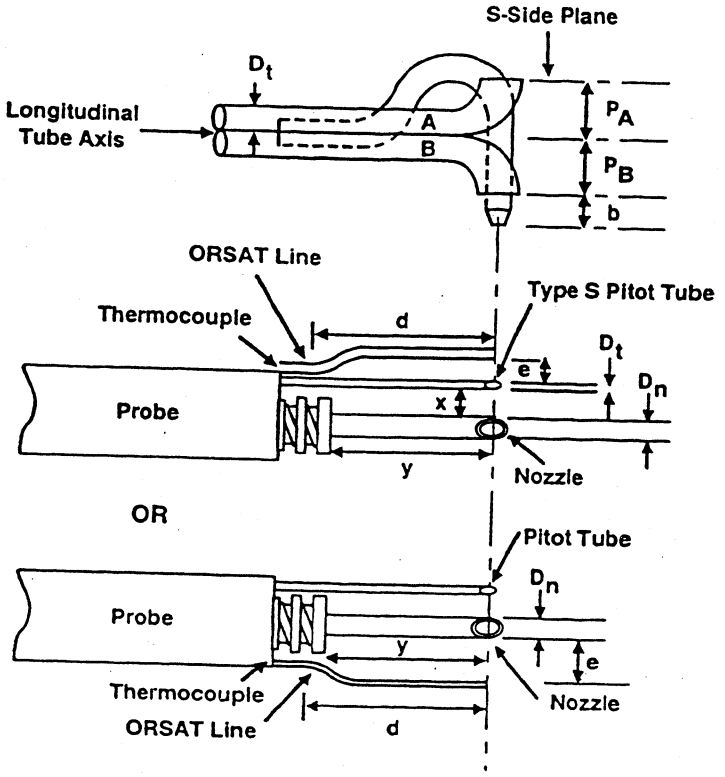
Type S Pitot Inspection Form

Pitot Tube ID No. P200

Tubing Diameter, D_t 3/8

Pitot Tube Assembly Level? (Yes)/No

Pitot Tube Opening Damaged? Yes/(No)



Note:

$1.05\ D_t \le P \le 1.50\ D_t$

$P_A = P_B$ (Yes)/No

b = 1.074 in.

P_A = .459 in.

P_B = .489 in.

A' = .975 in.

0.379 4/17/99

D_t ~~.406~~ MPR

y 3.789

d 6.000

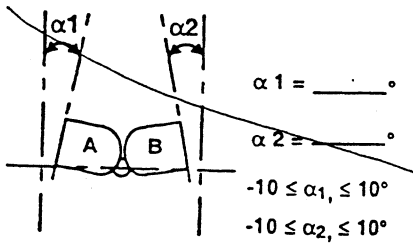
e 1.021

x .938

D_n .495

y _____

f _____

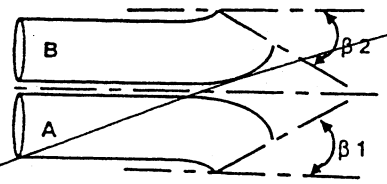


α 1 = _____°

α 2 = _____°

$-10 \le \alpha_1, \le 10°$

$-10 \le \alpha_2, \le 10°$

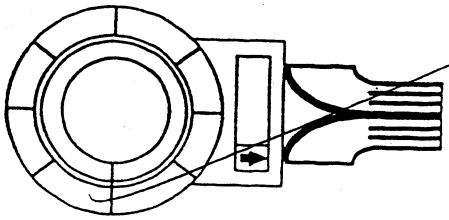


β 1 = _____°

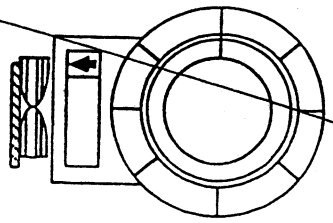
β 2 = _____°

$-5 \le \beta_1, \le 5°$

$-5 \le \beta_2, \le 5°$



γ = _____°



θ = _____°

Level Position to find γ = _____

Z = A' sin γ _____ in. (< 1/8 in.)

Level Position to find θ = _____

W = A' sin θ _____ in. (< 1/32 in.)

Comments: _____

Checked by: Rob N. Eon Date: 9/16/99

QA/QC by: _____ Date: _____

Calibration Required? _____ Yes No

D_t = External Pitot Tube Diameter

A' = Distance Between Tips (P_A + P_B) inches

Specifications (EPA Method 2)

D_t = 3/16" to 3/8"	x ≥ 3/4"	y ≥ 3"	e ≥ 3/4"	$1.05\ D_t \le P \le 1.50\ D_t$
D_n = 1/2"	b > 0	d > 3"	$P_a = P_b$	

NOZZLE CALIBRATION

Nozzle No.	Diameter (in.)				Nozzle Set No.
	a	b	c	Average	
L-1	.220	.219	.220	.220	
L-2	.215	.216	.215	.215	
L-3	.216	.215	.217	.216	
L-4	.218	.218	.219	.218	
L-5	.219	.219	.219	.219	
L-6	.222	.221	.223	.222	
L-7	.217	.217	.216	.217	

NOZZLE CALIBRATION

Nozzle No.	Diameter (in.) a	b	c	Average	Nozzle Set No.
PG&E-N-1	0.179	0.180	0.180	0.180	~~Salem Harbor~~ 0.180
PG&E-N-2	0.180	0.180	0.180		
PGE-N-3	0.184	0.184	0.184	0.184	~~0.18~~
PGE-N-4	0.185	0.185	0.185	0.185	

MPM 8/23/99

MPM 8/31/99

MPM 8/31/99

METHOD 5 DRY GAS METER CALIBRATION

Calibrated: Scott Tibbetts

Barometric Pressure, 29.91 in. Hg

Date: 08/02/99

Meter Box No.: 90336

Orifice Manometer Setting delta H in. H_2O	Gas Volume Wet Test Meter Vw ft^3	Gas Volume Dry Test Meter Vd ft^3	Temperature				Time T min.	Y	delta H @	Deviation	
			Wet Test Meter tw °F	Dry gas meter							
				Inlet td_i °F	Outlet td_o °F	Average td_a °F				Y	delta H @
0.5	5.716	5.825	75.0	82	78	80	15.0	0.989	1.956	0.001	0.025
1.0	8.018	8.190	75.0	85	79	82	15.0	0.989	1.981	0.002	0.000
1.5	9.801	10.064	75.0	89	81	85	15.0	0.988	1.983	0.001	0.002
2.0	11.260	11.595	75.0	89	83	86	15.0	0.986	1.995	0.001	0.015
3.0	13.799	14.267	75.0	93	84	89	15.0	0.984	1.989	0.003	0.008
							AVERAGE	0.987	1.981		

CALCULATIONS

Y	delta H @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_a + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

Y = Ratio of reading of wet test meter to dry gas meter;
Tolerance for individual value ± 0.02 from average

delta H @ = Orifice pressure differential that equates to 0.75 cfm of air at 68°F and 29.92 inches of mercury, in. H2O;
Tolerance for individual values ± 0.20 from average

METERBOX THERMOCOUPLE CALIBRATION FORM

METERBOX NUMBER: 90336

Thermocouple Number	Reference Temp.1 °F	Temp. Reading 1 °F	Criteria	Reference Temp.2 °F	Temp. Reading 2 °F	Criteria
#1	32.0	31		250.0	249	
#2		31			249	
#3		32			249	
#4		31			249	
#5		31			249	

Thermocouple Number	Reference Temp.3 °F	Temp. Reading 3 °F	Criteria	Reference Temp.4 °F	Temp. Reading 4 °F	Criteria
#1	500.0	500		1800.0	1800	
#2		500			1800	
#3		500			1800	
#4		500			1800	
#5		500			1800	

Name: Scott Tibbetts

Date: 8/5/99

Criteria: Percent difference between the Reference Temperature and the Average Temperature Reading can be only +/- 1.5% °R

Equation: $\frac{((\text{Ref. Temp.} + 460) - (\text{Temp. Reading} + 460))}{(\text{Ref. Temp.} + 460)} \times 100$

TRC

METHOD 5 DRY GAS METER CALIBRATION

Calibrated: Scott Tibbetts

Barometric Pressure, 29.98 in. Hg

Date: 08/04/99

Meter Box No.: 90338

Orifice Manometer Setting delta H in. H_2O	Gas Volume Wet Test Meter Vw ft^3	Gas Volume Dry Test Meter Vd ft^3	Temperature				Time T min.	Y	delta H @	Deviation	
			Wet Test Meter tw °F	Dry gas meter							
				Inlet td_i °F	Outlet td_o °F	Average td_a °F				Y	delta H @
0.5	5.845	6.037	76.0	83	80	82	15.0	0.977	1.864	0.003	0.074
1.0	8.173	8.486	76.0	85	80	83	15.0	0.972	1.907	0.001	0.032
1.5	9.801	10.186	76.0	87	81	84	15.0	0.973	1.984	0.000	0.045
2.0	11.290	11.764	76.0	89	83	86	15.0	0.973	1.988	0.001	0.049
3.0	13.946	14.541	76.0	91	84	88	15.0	0.973	1.950	0.001	0.012
							AVERAGE	0.974	1.939		

CALCULATIONS

Y	delta H @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_o + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

Y = Ratio of reading of wet test meter to dry gas meter;
Tolerance for individual value ± 0.02 from average

delta H @ = Orifice pressure differential that equates to 0.75 cfm of air at 68°F and 29.92 inches of mercury, in. H2O;
Tolerance for individual values ± 0.20 from average

METERBOX THERMOCOUPLE CALIBRATION FORM

METERBOX NUMBER: 90338

Thermocouple Number	Reference Temp.1 °F	Temp. Reading 1 °F	Criteria	Reference Temp.2 °F	Temp. Reading 2 °F	Criteria
#1	32.0	32		250.0	250	
#2		32			250	
#3		32			250	
#4		32			250	
#5		32			250	

Thermocouple Number	Reference Temp.3 °F	Temp. Reading 3 °F	Criteria	Reference Temp.4 °F	Temp. Reading 4 °F	Criteria
#1	500.0	500		1800.0	1801	
#2		500			1802	
#3		500			1802	
#4		500			1802	
#5		500			1801	

Name: Scott Tibbetts

Date: 8/4/99

Criteria: Percent difference between the Reference Temperature and the Average Temperature Reading can be only +/- 1.5% °R

Equation: $\frac{((\text{Ref. Temp.} + 460) - (\text{Temp. Reading} + 460))}{(\text{Ref. Temp.} + 460)} \times 100$

TRC

METHOD 5 DRY GAS METER CALIBRATION

Calibrated: Scott Tibbetts

Barometric Pressure, 29.98 in. Hg

Date: 08/04/99

Meter Box No.: 90342

Orifice Manometer Setting delta H in. H_2O	Gas Volume Wet Test Meter Vw ft^3	Gas Volume Dry Test Meter Vd ft^3	Temperature				Time T min.	Y	delta H @	Deviation	
			Wet Test Meter tw °F	Dry gas meter							
				Inlet td_i °F	Outlet td_o °F	Average td_a °F				y	delta H @
0.5	5.770	5.901	76.0	84	80	82	15.0	0.987	1.913	0.004	0.060
1.0	8.132	8.296	76.0	82	78	80	15.0	0.985	1.933	0.002	0.040
1.5	9.801	10.040	76.0	84	79	82	15.0	0.983	1.993	0.000	0.020
2.0	11.232	11.539	76.0	86	81	84	15.0	0.982	2.016	0.001	0.042
3.0	13.771	14.178	76.0	87	81	84	15.0	0.979	2.011	0.004	0.038
							AVERAGE	0.983	1.973		

CALCULATIONS

Y	delta H @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_a + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

Y = Ratio of reading of wet test meter to dry gas meter;
Tolerance for individual value ± 0.02 from average

delta H @ = Orifice pressure differential that equates to 0.75 cfm of air at 68°F and 29.92 inches of mercury, in. H2O;
Tolerance for individual values ± 0.20 from average

METERBOX THERMOCOUPLE CALIBRATION FORM

METERBOX NUMBER: 90342

Thermocouple Number	Reference Temp.1 °F	Temp. Reading 1 °F	Criteria	Reference Temp.2 °F	Temp. Reading 2 °F	Criteria
#1	32.0	32		250.0	250	
#2		32			250	
#3		32			250	
#4		32			250	
#5		32			250	

Thermocouple Number	Reference Temp.3 °F	Temp. Reading 3 °F	Criteria	Reference Temp.4 °F	Temp. Reading 4 °F	Criteria
#1	500.0	500		1600.0	1800	
#2		500			1800	
#3		500			1800	
#4		500			1800	
#5		500			1800	

Name: Scott Tibbetts

Date: 8/4/99

Criteria: Percent difference between the Reference Temperature and the Average Temperature Reading can be only +/- 1.5% °R

Equation: $\frac{((\text{Ref. Temp.} + 460) - (\text{Temp. Reading} + 460))}{(\text{Ref. Temp.} + 460)} \times 100$

TRC

METHOD 5 DRY GAS METER CALIBRATION

Calibrated: Scott Tibbetts

Barometric Pressure, 29.8 in. Hg

Date: 07/29/99

Meter Box No.: 90341

Orifice Manometer Setting delta H in. H_2O	Gas Volume Wet Test Meter Vw ft^3	Gas Volume Dry Test Meter Vd ft^3	Temperature				Time T min.	Y	delta H @	Deviation	
			Wet Test Meter tw °F	Dry gas meter							
				Inlet td_i °F	Outlet td_o °F	Average td_a °F				Y	delta H @
0.5	5.846	5.991]	76.0	83	80	81	15.0	0.984	1.876	0.002	0.088
1.0	8.110	8.320	76.0	86	81	83	15.0	0.986	1.945	0.003	0.018
1.5	9.766	10.106	76.0	91	85	88	15.0	0.984	1.997	0.002	0.034
2.0	11.215	11.621	76.0	92	86	89	15.0	0.984	2.016	0.001	0.052
3.0	13.744	14.258	76.0	76	94	87	15.0	0.976	1.983	0.007	0.019
							AVERAGE	0.983	1.963		

CALCULATIONS

Y	delta H @
$\frac{Vw \times Pb \times (td_o + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_o + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

Y = Ratio of reading of wet test meter to dry gas meter;
Tolerance for individual value ± 0.02 from average

delta H @ = Orifice pressure differential that equates to 0.75 cfm of air at 68°F and 29.92 inches of mercury, in. H2O;
Tolerance for individual values ± 0.20 from average

METERBOX THERMOCOUPLE CALIBRATION FORM

METERBOX NUMBER: 90341

Thermocouple Number	Reference Temp.1 °F	Temp. Reading 1 °F	Criteria	Reference Temp.2 °F	Temp. Reading 2 °F	Criteria
#1	32.0	32		250.0	250	
#2		32			250	
#3		32			250	
#4		32			250	
#5						

Thermocouple Number	Reference Temp.3 °F	Temp. Reading 3 °F	Criteria	Reference Temp.4 °F	Temp. Reading 4 °F	Criteria
#1	500.0	500		1800.0	1800	
#2		500			1800	
#3		500			1801	
#4		500			1800	
#5						

Name: Scott Tibbetts Scott Gillett

Date: 8/5/99

Criteria: Percent difference between the Reference Temperature and the Average Temperature Reading can be only +/- 1.5% °R

Equation: $\frac{((\text{Ref. Temp.} + 460) - (\text{Temp. Reading} + 460))}{(\text{Ref. Temp.} + 460)} \times 100$

TRC

METHOD 5 DRY GAS METER CALIBRATION

Calibrated: Scott Tibbetts

Barometric Pressure, 29.8 in. Hg

Date: 07/29/99

Meter Box No.: 90343

Orifice Manometer Setting delta H in. H_2O	Gas Volume Wet Test Meter Vw ft^3	Gas Volume Dry Test Meter Vd ft^3	Temperature				Time T min.	Y	delta H @	Deviation	
			Wet Test Meter tw °F	Dry gas meter							
				Inlet td_i °F	Outlet td_o °F	Average td_a °F				Y	delta H @
0.5	5.989	6.134	76.0	83	79	81	15.0	0.984	1.790	0.003	0.095
1.0	8.311	8.554	76.0	87	81	84	15.0	0.983	1.852	0.002	0.034
1.5	9.936	10.268	76.0	89	83	86	15.0	0.982	1.937	0.001	0.052
2.0	11.477	11.886	76.0	92	84	88	15.0	0.982	1.931	0.001	0.046
3.0	14.086	14.632	76.0	94	86	87	15.0	0.974	1.916	0.007	0.031
							AVERAGE	0.981	1.885		

CALCULATIONS

Y	delta H @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_a + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

Y = Ratio of reading of wet test meter to dry gas meter;
Tolerance for individual value ± 0.02 from average

delta H @ = Orifice pressure differential that equates to 0.75 cfm of air at 68°F and 29.92 inches of mercury, in. H2O;
Tolerance for individual values ± 0.20 from average

METERBOX THERMOCOUPLE CALIBRATION FORM

METERBOX NUMBER: 90343

Thermocouple Number	Reference Temp.1 °F	Temp. Reading 1 °F	Criteria	Reference Temp.2 °F	Temp. Reading 2 °F	Criteria
#1	32.0	31		250.0	249	
#2		31			249	
#3		31			249	
#4		31			249	
#5		31			249	

Thermocouple Number	Reference Temp.3 °F	Temp. Reading 3 °F	Criteria	Reference Temp.4 °F	Temp. Reading 4 °F	Criteria
#1	500.0	500		1800.0	1800	
#2		500			1800	
#3		500			1800	
#4		500			1800	
#5		500			1800	

Name: Scott Tibbetts

Date: 8/5/99

Criteria: Percent difference between the Reference Temperature and the Average Temperature Reading can be only +/- 1.5% °R

Equation: $\frac{((\text{Ref. Temp.} + 460) - (\text{Temp. Reading} + 460))}{(\text{Ref. Temp.} + 460)} \times 100$

TRC

APPENDIX C

SAMPLING LOG AND CHAIN-OF-CUSTODY RECORDS

Appendix C.1

Exhaust Gas Streams

4. SHIPPING/RECEIVING DOCUMENTS

Airbills (No. of shipments)
Chain-of-Custody Records
Sample Log-In Sheets
Miscellaneous Shipping/Receiving Records (describe or list)
Fax notification

MB 3128-.

3

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/14/99 – 9/16/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

MATRIX / ANALYSIS

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*				Comments
PG&E-SG-OHM-I-FB-PF-Hg	9/14/99	Petri							x	Inlet Field Blk	✓	x												53130.
PG&E-SG-OHM-I-FB-PR-Hg		125ml	G				x				✓	x					Scrub grass							
PG&E-SG-OHM-I-FB-KCl-Hg		500ml					x				✓	x												
PG&E-SG-OHM-I-FB-HNO3/H2O2-Hg		125ml					x				✓	x												
PG&E-SG-OHM-I-FB-KMnO4-Hg		500ml					x				✓	x												
PG&E-SG-OHM-O-FB-PF-Hg	9/14/99	Petri							x	Outlet Field Blk		x												
PG&E-SG-OHM-O-FB-PR-Hg		125ml	G				x					x												
PG&E-SG-OHM-O-FB-KCl-Hg		500ml					x					x												
PG&E-SG-OHM-O-FB-HNO3/H2O2-Hg		125ml					x					x												
PG&E-SG-OHM-O-FB-KMnO4-Hg		500ml					x					x												
PG&E-SG-OHM-RB-PF-Hg	9/16/99	Petri							x	Reagent Blk	✓	x				10000-x 5,000								53129
PG&E-SG-OHM-RB-HNO3-Hg	~~125ml~~	125ml	G				x				✓	x												
PG&E-SG-OHM-RB-HNO3/H2O2-Hg							x				✓	x												
PG&E-SG-OHM-RB-KCl-Hg							x				✓	x												
PG&E-SG-OHM-RB-KMnO4-Hg	9/16/99						x				✓	x												
PG&E-SG-OHM-RB-Hydrox-Hg	9/16/99						x			Hydrox	✓	x												

Relinquished by: [signature]	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by: [signature] - PASC	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

00186

№ 02565

TRC

WHITE – LABORATORY YELLOW – LABORATORY COPY PINK – OFFICE COPY GOLD – FIELD COPY

Mr. 53152.

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/16/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-Ia-1-PF-Hg	9/16/99	Petri						X		Inlet 1 Run 1A	X	X									53131
PG&E-SG-OHM-Ia-1-PR-Hg		500ml	G			X					X	X			1LCG×2, 500CG, 250CG×2						
PG&E-SG-OHM-Ia-1-KCl-Hg		1L				X					X	X				PPD.					
PG&E-SG-OHM-Ia-1-HNO3/H2O2-Hg		250ml				X					X	X									
PG&E-SG-OHM-Ia-1-KMnO4-Hg		1L				X					X	X									
PG&E-SG-OHM-Ia-1-A-Hg	↓	125ml	↓		X					↓	X	X	↓		250CG×2	53153.					2 bottles composite before Analysis
PG&E-SG-OHM-Ib-1-PF-Hg	9/16/99	Petri						X		Inlet 1 Run 1B	X	X				ppd, 500CG, 250CG					53134
PG&E-SG-OHM-Ib-1-PR-Hg		500ml	G			X					X	X				1LCG×2					2 bottles composite
PG&E-SG-OHM-Ib-1-KCl-Hg		1L				X					X	X									
PG&E-SG-OHM-Ib-1-HNO3/H2O2-Hg		250ml				X					X	X									
PG&E-SG-OHM-Ib-1-KMnO4-Hg		1L				X					X	X									
PG&E-SG-OHM-Ib-1-A-Hg	↓	125ml	↓		X					↓	X	X	↓		100CG, 250CG.	53154					2 bottles composite Prior to Analysis

Relinquished by:	Date/Time: 9/16/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/09/18 12:30	Received by:	Date/Time:

REMARKS (*):

0187

№ 02566

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/17/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-Ib-2-PF-Hg	9/17/99	Petri							X	Inlet Run 2B	✓	X									53135
PG&E-SG-OHM-Ib-2-PR-Hg	↓	500ml	G			X				↓	✓	X								ppb.	
PG&E-SG-OHM-Ib-2-KCl-Hg		1L	↓			X					✓	X									
PG&E-SG-OHM-Ib-2-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-Ib-2-KMnO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ib-2-A-Hg		500ml			X						✓	X									53154
PG&E-SG-OHM-Oa-2-PF-Hg	9/17	Petri							X	Outlet Run 2A		X									53164
PG&E-SG-OHM-Oa-2-PR-Hg	↓	250ml	G			X				↓		X									
PG&E-SG-OHM-Oa-2-KCl-Hg		1L	↓			X						X									
PG&E-SG-OHM-Oa-2-HNO3/H2O2-Hg		250ml				X						X									
PG&E-SG-OHM-Oa-2-KMnO4-Hg		1L				X						X									
~~PG&E-SG-OHM-Oa-2-A~~																					53165
PG&E-SG-OHM-Ob-2-PF-Hg	9/17	Petri							X	Outlet Run 2B		X									
PG&E-SG-OHM-Ob-2-PR-Hg	↓	250ml	G			X				↓		X									
PG&E-SG-OHM-Ob-2-KCl-Hg		1L	↓			X						X									
PG&E-SG-OHM-Ob-2-HNO3/H2O2-Hg		250ml				X						X									
PG&E-SG-OHM-Ob-2-KMnO4-Hg	↓	1L	↓			X				↓		X									

Relinquished by:	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*): Note! There is NO Inlet Run 2A

№ 02568

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 260516
Sampling Date(s): 9/17/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury Ontario-Hydro	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-IIa-3-PF-Hg	9/17/99	Petri							X	Inlet Run 3A	✓	X		PPD, 250C6x3, 1LC6x2							53132
PG&E-SG-OHM-IIa-3-PR-Hg		2x250ml	G			X					✓	X									Composite prior to Analysis
PG&E-SG-OHM-IIa-3-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-IIa-3-[illegible]		250ml				X					✓	X									
PG&E-SG-OHM-IIa-3-$KMnO_4$-Hg		1L				X					✓	X									
PG&E-SG-OHM-IIa-3-A-Hg		500ml			X						✓	X									53155
PG&E-SG-OHM-IIb-3-PF-Hg	9/17	Petri							X	Inlet Run 3B	✓	X									53136
PG&E-SG-OHM-IIb-3-PR-Hg		2x250ml	G			X					✓	X		PPD, 250C6x3, 1LC6x2							Composite before Analysis
PG&E-SG-OHM-IIb-3-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-IIb-3-[illegible]		250ml				X					✓	X									
PG&E-SG-OHM-IIb-3-$KMnO_4$-Hg		1L				X					✓	X									
PG&E-SG-OHM-IIb-3-A-Hg		500ml			X						✓	X									53151

Relinquished by: [signature]	Date/Time: 9/15/99	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 9/16/99 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02570

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/17/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-I1a-4-PF-Hg	9/17	Petri							X	Inlet Run 4A	✓	X				250C6x3,				1LC6x2	53133
PG&E-SG-OHM-I1a-4-PR-Hg		2x250ml	G			X					✓	X				ppd.					Composite before Analysis
PG&E-SG-OHM-I1a-4-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-I1a-4-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-I1a-4-KMnO4/H2SO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-I1a-4-A-Hg	↓	2x250ml	↓		X					↓	✓	X						5356			Composite before Analysis
PG&E-SG-OHM-I1b-4-PF-Hg	9/17	Petri							X	Inlet Run 4B	✓	X		250C6x3,						1LC6x2	53137
PG&E-SG-OHM-I1b-4-PR-Hg		2x250ml	G			X					✓	X						ppd.			Composite before Analysis
PG&E-SG-OHM-I1b-4-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-I1b-4-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-I1b-4-KMnO4/H2SO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-I1b-4-A-Hg	↓	2x250ml	↓		X					↓	✓	X						5359			Composite before Analysis

Relinquished by:	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02576

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/16/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-S6-OHM-Oa-1-PF-Hg	9/16/99	Petri							X	Outlet Run 1A	✓	X	250(6+2), 14(6+2), ppd								53139
PG&E-S6-OHM-Oa-1-PR-Hg		250ml	G			X					✓	X									
PG&E-S6-OHM-Oa-1-KCl-Hg		1L				X					✓	X									
PG&E-S6-OHM-Oa-1-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-S6-OHM-Oa-1-KMnO4-Hg		1L				X					✓	X									
PG&E-S6-OHM-Ob-1-PF-Hg	9/16/99	Petri							X	Outlet Run 1B	✓	X	250(6+2), 14(6+2), ppd								53141
PG&E-S6-OHM-Ob-1-PR-Hg		250ml	G			X					✓	X									
PG&E-S6-OHM-Ob-1-KCl-Hg		1L				X					✓	X									
PG&E-S6-OHM-Ob-1-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-S6-OHM-Ob-1-KMnO4-Hg		1L				X					✓	X									

Relinquished by:	Date/Time: 9/16/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/16/99 12:30	Received by:	Date/Time:

REMARKS (*):

00-91

№ 02567

WHITE - LABORATORY YELLOW - LABORATORY COPY PINK - OFFICE COPY GOLD - FIELD COPY

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/17/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

MATRIX / ANALYSIS

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-Oa-3-PF-Hg	9/17	Petri							X	Outlet Run 3A	✓	X			250CG×2, 1LCG×2						53139.
PG&E-SG-OHM-Oa-3-PR-Hg	↓	250ml	G				X			↓	✓	X					ppd.				
PG&E-SG-OHM-Oa-3-KCl-Hg	↓	1L	↓				X			↓	✓	X									
PG&E-SG-OHM-Oa-3-HNO3/H2O2-Hg	↓	250ml	↓				X			↓	✓	X									
PG&E-SG-OHM-Oa-3-KMnO4-Hg	↓	1L	↓				X			↓	✓	X									
PG&E-SG-OHM-Ob-3-PF-Hg	9/17	Petri							X	Outlet Run 3B	✓	X									53142
PG&E-SG-OHM-Ob-3-PR-Hg	↓	250ml	G				X			↓	✓	X						"			
PG&E-SG-OHM-Ob-3-KCl-Hg	↓	1L	↓				X			↓	✓	X									
PG&E-SG-OHM-Ob-3-HNO3/H2O2-Hg	↓	250ml	↓				X			↓	✓	X									
PG&E-SG-OHM-Ob-3-KMnO4-Hg	↓	1L	↓				X			↓	✓	X									
PG&E-SG-OHM-O-FB-PF-Hg	9/17	Petri							X	Outlet Field Blk	✓	X			100CG×2, 500CG×2						53138.
PG&E-SG-OHM-O-FB-PR-Hg	↓	125ml	G				X			↓	✓	X							ppd.		
PG&E-SG-OHM-O-FB-KCl-Hg	↓	500ml	↓				X			↓	✓	X									
PG&E-SG-OHM-O-FB-HNO3/H2O2-Hg	↓	125ml	↓				X			↓	✓	X									
PG&E-SG-OHM-O-FB-KMnO4-Hg	↓	500ml	↓				X			↓	✓	X									

Relinquished by: [signature]	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 99 09 18 12:30	Received by:	Date/Time:

REMARKS (*):

00192

№ 02571

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s):
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-3-IE-2-PF-Hg	9/9/99	Petri							X	Boiler #3 Rm 2 Inlet East	✓	X									53145
PG&E-BP-OHM-3-IE-2-PR-Hg		250ml	G			X					✓	X									
PG&E-BP-OHM-3-IE-2-KCl-Hg		1L				X					✓	X									
PG&E-BP-OHM-3-IE-2-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-BP-OHM-3-IE-2-KMnO4-Hg		1L				X					✓	X									
PG&E-BP-OHM-3-IE-2-A-Hg		125ml			X						✓	X									53160.-
PG&E-BP-OHM-3-IW-2-PF-Hg	9/9/99	Petri							X	Boiler #3 Rm 2 Inlet West	X										53147
PG&E-BP-OHM-3-IW-2-PR-Hg		250ml	G			X					X										
PG&E-BP-OHM-3-IW-2-KCl-Hg		1L				X					X										
PG&E-BP-OHM-3-IW-2-HNO3/H2O2-Hg		250ml				X					X										
PG&E-BP-OHM-3-IW-2-KMnO4-Hg		1L				X					X										
PG&E-BP-OHM-3-IW-2-A-Hg		125ml			X						X										53162.

Relinquished by:	Date/Time: 9/13/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/09/8 12:30	Received by:	Date/Time:

REMARKS (*):

00193

№ 02437

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton Point
Project No.: 26046
Sampling Date(s):
Laboratory:
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-3-IF-3-PF-Hg	9/9/99	Petri							X	Boiler #3 - Run 3	X	ppd, Ontario-Hydro									53146.
PG&E-BP-OHM-3-IF-3-HCl-Hg		1L	G			X				East Inlet	X										
PG&E-BP-OHM-3-IF-3-HNO3/H2O2-Hg		250ml				X					X										
PG&E-BP-OHM-3-IF-3-KMnO4-Hg		1L				X					X										
PG&E-BP-OHM-3-IF-3-PR-Hg		250ml				X					X										
PG&E-BP-OHM-3-IF-3-A-Hg		125ml			X						X										53161.
PG&E-BP-OHM-3-IW-3-PF-Hg	9/9/99	Petri							X	Boiler #3 Run 3	X										53148
PG&E-BP-OHM-3-IW-3-PR-Hg		250ml	G			X				West Inlet	X										
PG&E-BP-OHM-3-IW-3-HCl-Hg		1L				X					X										
PG&E-BP-OHM-3-IW-3-HNO3/H2O2-Hg		250ml				X					X										
PG&E-BP-OHM-3-IW-3-KMnO4-Hg		1L				X					X										
PG&E-BP-OHM-3-IW-3-A-Hg		125ml			X						X										53163

Relinquished by:	Date/Time: 9/15/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

OCT 94

№ 02563

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TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/7/99, 9/8/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-3-RB-PF-Hg	9/8/99	Petri	P					X		Reagent Blank	✓	X		ppd, 100UG*5							53143.
PG&E-BP-OHM-3-RB-HNO_3-Hg		125ml	G			X					✓	X									
PG&E-BP-OHM-3-RB-KCl-Hg						X					✓	X		Brayton							
PG&E-BP-OHM-3-RB-Hydrox-Hg						X					✓	X									
PG&E-BP-OHM-3-RB-HNO3/H2O2-Hg						X					✓	X									
PG&E-BP-OHM-3-RB-$KMnO_4$-Hg	9/8/99					X					✓	X									
PG&E-BP-OHM-3-O-FB-PF-Hg	9/7/99	Petri						X		Outlet Field Blank	✓	X		ppd	100UG*2, 500UG*2						53149.
PG&E-BP-OHM-3-O-FB-PR-Hg		125ml	G			X					✓	X									
PG&E-BP-OHM-3-O-FB-KCl-Hg		50ml				X					✓	X			11						
PG&E-BP-OHM-3-O-FB-HNO3/H2O2-Hg		125ml				X					✓	X									
PG&E-BP-OHM-3-O-FB-$KMnO_4$-Hg		50ml				X					✓	X									
PG&E-BP-OHM-3-I-FB-PF-Hg	9/7/99	Petri						X		Inlet Field Blank		X		ppd,	100UG*2, 500UG*2						53144
PG&E-BP-OHM-3-I-FB-PR-Hg		125ml	G			X						X									
PG&E-BP-OHM-3-I-FB-KCl-Hg		50ml				X						X			11						
PG&E-BP-OHM-3-I-FB-HNO3/H2O2-Hg		125ml				X						X									
PG&E-BP-OHM-3-I-FB-$KMnO_4$-Hg		50ml				X						X									

Relinquished by:	Date/Time: 9/8/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/9/99 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02435

WHITE — LABORATORY COPY — YELLOW — LABORATORY COPY — PINK — OFFICE COPY — GOLD — FIELD COPY

TRC Environmental Corp.

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton Point
Project No.: 26046
Sampling Date(s):
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

MATRIX: Aqueous, Organic Solvent, Ash/Soil/Sediment, Acidic, Basic, Other

ANALYSIS: Trace Metals*, Mercury Ontario-Hydro, Hexavalent Chromium, HCl, Cl2, Particulate Matter, PCDD/PCDF, Semi-Volatile Organics, Volatile Organics, Physical Parameters*

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury Ontario-Hydro	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
~~PG&E-BP-OHM-3-0-4-PF-Hg~~		~~Petri~~							x	~~Boiler #3 Run 4~~		x									
~~PG&E-BP-OHM-3-0-4-PR-Hg~~		~~250ml~~	~~G~~				x			~~Outlet~~		x									
~~PG&E-BP-OHM-3-0-4-KCl-Hg~~		~~1L~~					x					x									
~~PG&E-BP-OHM-3-0-4-HNO3/H2O2-Hg~~		~~250ml~~					x					x									
~~PG&E-BP-OHM-3-0-4-KMnO4-Hg~~		~~1L~~					x					x									
PG&E-BP-OHM-3-0-2-PF-Hg	9/9/99	Petri							x	Boiler #3 Run 2	✓	x	ppd, 250CG×2, 1LCG×2								53150
PG&E-BP-OHM-3-0-2-PR-Hg		250ml	G				x			Outlet	✓	x									
PG&E-BP-OHM-3-0-2-KCl-Hg		1L					x				✓	x									
PG&E-BP-OHM-3-0-2-HNO3/H2O2-Hg		250ml					x				✓	x									
PG&E-BP-OHM-3-0-2-KMnO4-Hg		1L					x				✓	x									
PG&E-BP-OHM-3-0-3-PF-Hg	9/9/99	Petri							x	Boiler #3 Run 3	✓	x	ppd, 250CG×2, 1LCG×2								53151
PG&E-BP-OHM-3-0-3-PR-Hg		250ml					x			Outlet	✓	x									
PG&E-BP-OHM-3-0-3-KCl-Hg		1L					x				✓	x									
PG&E-BP-OHM-3-0-3-HNO3/H2O2-Hg		250ml					x				✓	x									
PG&E-BP-OHM-3-0-3-KMnO4-Hg		1L					x				✓	x									

Relinquished by: [signature]	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

00196

№ 02436

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/7, 9/8, 9/6 9/17
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
COC #02435																					
COC #02436																					
COC #02437																					
COC #02563																					
COC #02565																					
COC #02566																					
COC #02567																					
COC #02568																					
COC #02570																					
COC #02571																					
COC #02576																					

Relinquished by:		Date/Time: 9/16/99 0960	Relinquished by: J. Jones	Date/Time: 09-18-99 9:00	
Received by:		Date/Time: 990918 17:30	Received by:	Date/Time:	

REMARKS (*): Eight shipping containers. COC's in Box 6 of 8.

09-97

№ 02577

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TRC

TRC Environmental Corp.

00198

Page ___ of ___

US SAMPLE LOG IN SHEET

TRC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Garcia

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent ✓	Samples rec'd intact.
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	pkup from site	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	9 18 99	
Time Received	12:30	

Temperature of Coolers

Cooler ID:	Temperature
8 Boxes	not taken

Relinquished By: _____

Date: 9 / 8 / 99

Logbook No: _____

Logbook Page No. _____

** TX STATUS REPORT ** AS OF SEP 22 1999 11:15 PAGE.01

PHILIP ANALYTICAL

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	JOB#	STATUS
29	09/22	11:15	19784531995	EC--S	00'30"	002	196	OK

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: OH 14
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
053129	SG-OHM-RB	99/09/14	99/09/18
053130	SG-OHM-I-FB	99/09/14	99/09/18
053131	SG-OHM-I1a-R1	99/09/16	99/09/18
053132	SG-OHM-I1a-R3	99/09/17	99/09/18
053133	SG-OHM-I1a-R4	99/09/17	99/09/18
053134	SG-OHM-I1b-R1	99/09/16	99/09/18
053135	SG-OHM-I1b-R2	99/09/17	99/09/18
053136	SG-OHM-I1b-R3	99/09/17	99/09/18
053137	SG-OHM-I1b-R4	99/09/17	99/09/18
053138	SG-OHM-O-FB	99/09/17	99/09/18
053139	SG-OHM-Oa-R1	99/09/16	99/09/18
053140	SG-OHM-Oa-R3	99/09/17	99/09/18
053141	SG-OHM-Ob-R1	99/09/16	99/09/18
053142	SG-OHM-Ob-R3	99/09/17	99/09/18
053143	BP-OHM-3-RB	99/09/08	99/09/18
053144	BP-OHM-3-I-FB	99/09/07	99/09/18
053145	BP-OHM-3-IE-R2	99/09/09	99/09/18
053146	BP-OHM-3-IE-R3	99/09/09	99/09/18
053147	BP-OHM-3-IW-R2	99/09/09	99/09/18
053148	BP-OHM-3-IW-R3	99/09/09	99/09/18
053149	BP-OHM-3-O-FB	99/09/07	99/09/18
053150	BP-OHM-3-O-R2	99/09/09	99/09/18
053151	BP-OHM-3-O-R3	99/09/09	99/09/18
053164	SG-OHM-Oa-R2	99/09/17	99/09/18
053165	SG-OHM-Ob-R2	99/09/17	99/09/18

Comments: _____

_____

_____

Date 99/09/22

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: OH IA
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
053129	SG-OHM-RB	99/09/14	99/09/18
053130	SG-OHM-I-FB	99/09/14	99/09/18
053131	SG-OHM-I1a-R1	99/09/16	99/09/18
053132	SG-OHM-I1a-R3	99/09/17	99/09/18
053133	SG-OHM-I1a-R4	99/09/17	99/09/18
053134	SG-OHM-I1b-R1	99/09/16	99/09/18
053135	SG-OHM-I1b-R2	99/09/17	99/09/18
053136	SG-OHM-I1b-R3	99/09/17	99/09/18
053137	SG-OHM-I1b-R4	99/09/17	99/09/18
053138	SG-OHM-O-FB	99/09/17	99/09/18
053139	SG-OHM-Oa-R1	99/09/16	99/09/18
053140	SG-OHM-Oa-R3	99/09/17	99/09/18
053141	SG-OHM-Ob-R1	99/09/16	99/09/18
053142	SG-OHM-Ob-R3	99/09/17	99/09/18
053143	BP-OHM-3-RB	99/09/08	99/09/18
053144	BP-OHM-3-I-FB	99/09/07	99/09/18
053145	BP-OHM-3-IE-R2	99/09/09	99/09/18
053146	BP-OHM-3-IE-R3	99/09/09	99/09/18
053147	BP-OHM-3-IW-R2	99/09/09	99/09/18
053148	BP-OHM-3-IW-R3	99/09/09	99/09/18
053149	BP-OHM-3-O-FB	99/09/07	99/09/18
053150	BP-OHM-3-O-R2	99/09/09	99/09/18
053151	BP-OHM-3-O-R3	99/09/09	99/09/18
053164	SG-OHM-Oa-R2	99/09/17	99/09/18
053165	SG-OHM-Ob-R2	99/09/17	99/09/18

Comments: _____

_____

_____

Date 99/09/22

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: He via 7471A
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
053153	SG-OHM-I1a-R1 Ash	99/09/16	99/09/18
053154	SG-OHM-I1b-R2 Ash	99/09/17	99/09/18
053155	SG-OHM-I1a-R3 Ash	99/09/17	99/09/18
053156	SG-OHM-I1a-R4 Ash	99/09/17	99/09/18
053157	SG-OHM-I1b-R1 Ash	99/09/16	99/09/18
053158	SG-OHM-I1b-R3 Ash	99/09/17	99/09/18
053159	SG-OHM-I1b-R4 Ash	99/09/17	99/09/18
053160	BP-OHM-IE-R2 Ash	99/09/09	99/09/18
053161	BP-OHM-3-IE-R3 Ash	99/09/09	99/09/18
053162	BP-OHM-3-IW-R2 Ash	99/09/09	99/09/18
053163	BP-OHM-3-IW-R3 Ash	99/09/09	99/09/18
053247	NIST 1633b Coal Ash	99/09/22	99/09/22

Comments: _____

_____

_____

Date 99/09/22

Appendix C.2

Process Streams

CHAIN C USTODY RECORD

Project Name: PG&E Scrubs RAD / Brayton Point
Project No.: 26046-0030-00004
Sampling Date(s): 9/16-17/99
Laboratory: Commercial Testing
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s): 9/20/99
Shipper's Name:

MATRIX / ANALYSIS

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Cl, HHV, 90% Ash Pack	S			Comments
PG&E-SG-OHM-1-C-1	9/16/99	5gal	P						✓	Coal Unit 1 Run 1		X									X	X			
PG&E-SG-OHM-1-C-2	9/16/99	5gal	P						✓	Coal Unit 2 Run 1		X									X	X			
PG&E-SG-OHM-2-C-1	9/17/99	5gal	P						✓	Coal Unit 1 Run 2		X									X	X			
PG&E-SG-OHM-2-C-2	9/17/99	5gal	P						✓	Coal Unit 2 Run 2		X									X	X			
PG&E-SG-OHM-3-C-1	9/17/99	5gal	P						✓	Coal Unit 1 Run 3		X									X	X			
PG&E-SG-OHM-3-C-2	9/17/99	5gal	P						✓	Coal Unit 2 Run 3		X									X	X			
PG&E-BP-OHM-3-3-C	9/9/99	5gal	P							Coal Unit 3 Run 3		X									X	X			
PG&E-BP-OHM-3-2-C	9/9/99	5gal	P						✓	Coal Unit 3 Run 2		X									X	X			

Relinquished by: [signature]	Date/Time: 9/20/99	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 9-22-99 15:30	Received by:	Date/Time:

REMARKS (*):

№ 02564

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC
TRC Environmental Corporation

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

LIME

RUN No. 1

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment	Lime Totalizer/Ton	E
1A	9/16/99	1100	[illegible]	1 Qt		42077280	87
2A	9/16/99	1100	[illegible]	"	START →	76451794	800
1B	9/16/99	1105	[illegible]	"		98915453	463
2B	9/16/99	1105	[illegible]	"		29739175	186
1A	9/16/99	1130	[illegible]	"		42080116	128
2A	9/16/99	1130	[illegible]	"		76454242	253
1B	9/16/99	1135	[illegible]	"		98918377	388
2B	9/16/99	1135	[illegible]	"		29742207	219
1A	9/16/99	1200	[illegible]	"		42083732	799
2A	9/16/99	1200	[illegible]	"		76459467	476
1B	9/16/99	1200	[illegible]	"		98922026	037
2B	9/16/99	1200	[illegible]	"		29747567	579
1A	9/16/99	1230	[illegible]	"		42087505	513
2A	9/16/99	1230	[illegible]	"		76465254	263
1B	9/16/99	1230	[illegible]	"		98925761	771
2B	9/16/99	1230	[illegible]	"		29753328	339
1A	9/16/99	1300	[illegible]	"		42090921	940
2A	9/16/99	1300	[illegible]	"		76469911	929
1B	9/16/99	1300	[illegible]	"		98929546	557
2B	9/16/99	1300	[illegible]	"		29757685	699
1A	9/16/99	1330	[illegible]	"		42094545	562
2A	9/16/99	1330	[illegible]	"		76474570	588
1B	9/16/99	1330	[illegible]	"		98933026	041
2B	9/16/99	1330	[illegible]	"		29762314	329
1A	9/16/99	1500	[illegible]	"		42105588	
2A	9/16/99	1500	[illegible]	"		76487977	
1B	9/16/99	1500	[illegible]	"		98944027	
2B	9/16/99	1500	[illegible]	"		29775876	

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

LIME

RUN No. 1

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment	Tons Lime Totalizer
1A	9/16/99	1530	1000	1 Qt		42109506
2A	9/16/99	1530	1000	"		76492665
1B	9/16/99	1530	1000	"	Stopped Samples	
2B	9/16/99	1530	1000	"	" "	
1A	9/16/99	1615	1000	"		42115268
2A	9/16/99	1615	1000	"		76499310
1B	9/16/99	1615	1000	"		98953662
2B	9/16/99	1615	1000	"		29787132
1A	9/16/99	1645	1000	"		42119438
2A	9/16/99	1645	1000	"		76504123
1B	9/16/99	1645	1000	"		98957726
2B	9/16/99	1645	1000	"		29791853
1A	9/16/99	1715	1000	"		42123193
2A	9/16/99	1715	1000	"	End Run	76508587
1B	9/16/99	1715	1000	"		98961566
2B	9/16/99	1715	1000	"		29796313

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

LIME

RUN No. 2

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
1A	9/17/99	0825	JEL	1 Qt	42237448
2A	9/17/99	0825	JEL	1 Qt	76648511
1B	9/17/99	0825	JEL	1 Qt	99059378
2B	9/17/99	0825	JEL	1 Qt	29931538
1A	9/17/99	0900	JEL	1 Qt	42241431
2A	9/17/99	0900	JEL	1 Qt	76654712
1B	9/17/99	0900	JEL	1 Qt	9906 3416
2B	9/17/99	0900	JEL	1 Qt	2993 7770
1A	9/17/99	0930	JEL	1 Qt	42245086
2A	9/17/99	0930	JEL	1 Qt	76660359
1B	9/17/99	0930	JEL	1 Qt	99067073
2B	9/17/99	0930	JEL	1 Qt	29943388
1A	9/17/99	1010	JEL	1 Qt	42249735
2A	9/17/99	1010	JEL	1 Qt	76667024
1B	9/17/99	1010	JEL	1 Qt	99071642
2B	9/17/99	1010	JEL	1 Qt	29949874
1A	9/17/99	1040	JEL	1 Qt	42253415
2A	9/17/99	1040	JEL	1 Qt	76671178
1B	9/17/99	1040	JEL	1 Qt	99075429
2B	9/17/99	1040	JEL	1 Qt	29954247
1A	9/17/99	1120	JEL	1 Qt	42258484
2A	9/17/99	1120	JEL	1 Qt	76677604

Pg #1

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

LIME

RUN No. 2

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
1B	9/17/99	1120	[illegible]	1Qt	99080565
2B	9/17/99	1120	[illegible]	1Qt	29961177
1A	9/17/99	1150	[illegible]	1Qt	43262110
2A	9/17/99	1150	[illegible]	1Qt	76682000
1B	9/17/99	1150	[illegible]	1Qt	99084081
2B	9/17/99	1150	[illegible]	1Qt	29965260
1A	9/17/99	1220	[illegible]	1Qt	43265761
2A	9/17/99	1220	[illegible]	1Qt	76682761
1B	9/17/99	1220	[illegible]	1Qt	99087757
2B	9/17/99	1220	[illegible]	1Qt	29969377

Pg #2

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

LIME

RUN No. 3

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
1A	9/17/99	1355	[illegible]	1 Qt	42277225
2A	9/17/99	1355	[illegible]	1 Qt	76699930
1B	9/17/99	1355	[illegible]	1 Qt	99099250
2B	9/17/99	1355	[illegible]	1 Qt	29982931
1A	9/17/99	1425	[illegible]	1 Qt	42280751
2A	9/17/99	1425	[illegible]	1 Qt	76704643
1B	9/17/99	1425	[illegible]	1 Qt	99102793
2B	9/17/99	1425	[illegible]	1 Qt	29988183
1A	9/17/99	1455	[illegible]	1 Qt	42284645
2A	9/17/99	1455	[illegible]	1 Qt	7670·9183
1B	9/17/99	1455	[illegible]	1 Qt	99106630
2B	9/17/99	1455	[illegible]	1 Qt	29993372
1A	9/17/99	1525	[illegible]	1 Qt	42288261
2A	9/17/99	1525	[illegible]	1 Qt	76712912
1B	9/17/99	1525	[illegible]	1 Qt	99110785
2B	9/17/99	1525	[illegible]	1 Qt	29995948
1A	9/17/99	1555	[illegible]	1 Qt	42291768
2A	9/17/99	1555	[illegible]	1 Qt	76717438
1B	9/17/99	1555	[illegible]	1 Qt	99113783
2B	9/17/99	1555	[illegible]	1 Qt	30000551
1A	9/17/99	1625	[illegible]	1 Qt	42295631
2A	9/17/99	1625	[illegible]	1 Qt	76722283

Page #1

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

LIME

RUN No. 3

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
1B	9/17/99	1625	[illegible]	1Qt	99117625
2B	9/17/99	1625	[illegible]	1Qt	30055341
1A	9/17/99	1655	[illegible]	1Qt	42299305
2A	9/17/99	1655	[illegible]	1Qt	76727525
1B	9/17/99	1655	[illegible]	1Qt	99121295
2B	9/17/99	1655	[illegible]	1Qt	30010518
1A	9/17/99	1725	[illegible]	1Qt	42302872
2A	9/17/99	1725	[illegible]	1Qt	76731991
1B	9/17/99	1725	[illegible]	1Qt	99124967
2B	9/17/99	1725	[illegible]	1Qt	30014985
					End Run #3

Page #2

Page 1.
UNIT 1.

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

RUN No. 1

Feeder no.	DATE	Time	Sampler	Approx. Volume (Scoops)	Comment
ALL # 1B2	9-16-99	11:00	L.O.	3	END
1B1	9-16-99	11:04	L.O.	3	
1A2	9-16-99	11:08	L.O.	3	
1A1	9-16-99	11:12	L.O.	3	
1B2	9-16-99	11:30	L.O.	3	
1B1	9-16-99	11:32	L.O.	3	
1A2	9-16-99	11:35	L.O.	3	
1A1	9-16-99	11:37	L.O.	3	
1B2	11	12:00	L.O.	3	
1B1	11	12:04	L.O.	3	
1A2	11	12:08	L.O.	3	
1A1	11	12:10	L.O.	3	
1B2	11	12:30	L.O.	3	
1B1	11	12:34	L.O.	3	
1A2	11	12:36	L.O.	3	
1A1	11	12:38	L.O.	3	
1B2	11	1:00	L.O.	3	
1B1	11	1:05	L.O.	3	
1A2	11	1:07	L.O.	3	
1A1	11	1:10	L.O.	3	
1B2	11	1:30	L.O.	3	
1B1	11	1:34	L.O.	3	
1A2	11	1:38	L.O.	3	
1A1	11	1:40	L.O.	3	
1B2	11	3:04	L.O.	3	
1B1	11	3:08	L.O.	3	
1A2	11	3:10	L.O.	3	
1A1	11	3:15	L.O.	3	

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of 21

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

RUN No. 1

Feeder no.	DATE	Time 16:15	Sampler	Approx. Volume (Scoops)	Comment
1B2	9-16-99	[illegible]	L.O.	3	
1B1	"	16:19	L.O.	3	
1A2	"	16:23	L.O.	3	
1A1	"	16:27	L.O.	3	
1A2	"	16:45	L.O.	3	
1B1	"	16:49	L.O.	3	
1A2	"	16:54	L.O.	3	
1A1	"	17:00	L.O.	3	
1B2	"	17:15	L.O.	3	
1B1	"	17:19	L.O.	3	
1A2	"	17:23	L.O.	3	
1A1	"	17:27	L.O.	3	

Page 1
UNIT 2

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

RUN No. 1

Feeder no.	DATE	Time	Sampler	Approx. Volume (Scoops)	Comment
2A1	9-16-99	11:00	J.W.	3	
2A2	9-16-99	11:04	J.W.	3	
2B1	9-16-99	11:08	J.W.	3	
2B2	9-16-99	11:12	J.W.	3	
2A1	11	11:30	J.W.	3	
2A2	11	11:32	J.W.	3	
2B1	11	11:35	J.W.	3	
2B2	11	11:37	J.W.	3	
2A1	11	12:00	J.W.	3	
2A2	11	12:04	J.W.	3	
2B1	11	12:08	J.W.	3	
2B2	11	12:10	J.W.	3	
2A1	11	12:30	J.W.	3	
2A2	11	12:34	J.W.	3	
2B1	11	12:36	J.W.	3	
2B2	11	12:38	J.W.	3	
2A1	11	1:00	J.W.	3	
2A2	11	1:05	J.W.	3	
2B1	11	1:07	J.W.	3	
2B2	11	1:10	J.W.	3	
2A1	11	1:30	J.W.	3	
2A2	11	1:37	J.W.	3	
2B1	11	1:38	J.W.	3	
2B2	11	1:40	J.W.	3	
2A1	11	3:04	J.W.	3	
2A2	11	3:10	J.W.	3	
2B1	11	3:11	J.W.	3	
2B2	11	3:14	J.W.	3	

Rye 2
Unit 2

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

RUN No. 1

Feeder no.	DATE	Time 16:15	Sampler	Approx. Volume (Scoops)	Comment
2A1	9-16-99	[redacted]	J.W	3	
2A2	"	16:19	J.W	3	
2B1	"	16:24	J.W.	3	
2B2	"	16:32	J.W.	3	
2A1	"	16:45	J.W	3	
2A2	"	16:49	J.W.	3	
2B1	"	16:54	J.W.	3	
2B2	"	16:59	J.W.	3	
2A1	"	17:15	J.W.	3	
2A2	"	17:20	J.W.	3	
2B1	"	17:24	J.W.	3	
2B2	"	17:30	J.W.	3	

Page 1

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

UNIT 1 RUN No. 2

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
1B2	9-17	0830	L.O.	3	
1B1	9-17	0834	L.O.	3	
1A2	9-17	0838	L.O.	3	
1A1	9-17	0842	L.O.	3	
1B2	9-17	0900	L.O.	3	
1B1	9-17	0904	L.O.	3	
1A2	9-17	0908	L.O.	3	
1A1	9-17	0912	L.O.	3	
1B2	9-17	0930	L.O.	3	
1B1	9-17	0934	L.O.	3	
1A2	9-17	0938	L.O.	3	
1A1	9-17	0942	L.O.	3	
1B2	9-17	10:10	L.O.	3	
1B1	9-17	10:14	L.O.	3	
1A2	9-17	10:18	L.O.	3	
1A1	9-17	10:22	L.O.	3	
1B2	9-17	10:40	L.O.	3	
1B1	9-17	10:44	L.O.	3	
1A2	9-17	10:48	L.O.	3	
1A1	9-17	10:52	L.O.	3	
1B2	9-17	11:20	L.O.	3	
1B1	9-17	11:24	L.O.	3	
1A2	9-17	11:28	L.O.	3	
1A1	9-17	11:32	L.O.	3	

Page 2

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

UNIT 1 RUN No. 2

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
1B2	9-17-99	11:50	L.O.	3	
1B1	9-17	11:54	L.O.	3	
1A2	9-17	11:58	L.O.	3	
1A1	9-17	12:02	L.O.	3	
1B2	9-17	12:20	L.O.	3	
1B1	9-17	12:24	L.O.	3	
1A2	9-17	12:28	L.O.	3	
1A1	9-17	12:32	L.O.	3	

UNIT #2 COAL FEEDERS 1 PAGE

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

RUN No. 2

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
2A1	9-17-99	0830	J.W	3 scoops	
2A2	9-17-99	0834	J.W	3 "	
2B1	9-17-99	0839	J.W.	3 "	
2B2	9-17-99	0845	J.W.	3 "	
2A1	"	0900	J.W	3	
2A2	"	0905	J.W	3	
2B1	"	0908	J.W.	3	
2B2	"	0914	J.W	3	
2A1	"	0930	J.W.	3	~~87675196~~
2A2	"	0934	J.W.	3	~~73662996~~
2B1	"	0936	J.W.	3	~~49775273~~
2B2	"	0938	J.W	3	~~30588569~~
2A1	"	1010	J.W	3	
2A2	"	1013	J.W.	3	
2B1	"	1017	J.W.	3	
2B2	"	1022	J.W.	3	
2A1	"	1040	J.W	3	
2A2	"	1043	J.W.	3	
2B1	"	1048	J.W.	3	
2B2	"	1055	J.W.	3	
2A1	"	1120	J.W	3	
2A2	"	1123	J.W.	3	
2B1	"	1125	J.W	3	
2B2	"	1129	J.W.	3	

UNIT #2 COAL FEEDRS 2 PAGE

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

RUN No. 2

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
2A1	9-17-94	11:50	J.W.	3 scoops	
2A2	9-17	11:53	J.W.	3 "	
2B1	9-17	11:58	J.W.	3 "	
2B2	9-17	12:05	J.W.	3"	
2A1	"	12:20	J.W.	3	
2A2	"	12:24	J.W.	3	
2B1	"	12:27	J.W.	3	
2B2	"	12:31	J.W.	3	
2A1	"		J.W.		
2A2	"		J.W.		
2B1	"		J.W.		
2B2	"		J.W.		

Page 1

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

9-17-99 UNIT 1 PULVERIZED COAL SAMPLE LOG

RUN No. 3

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
1B2	9-17-99	13:55	L.O.	3	
1B1	9-17	13:59	L.O	3	
1A2	9-17	14:03	L.O.	3	
1A1	9-17	14:07	L.O.	3	
1B2	9-17	14:25	L.O	3	
1B1	9-17	14:29	L.O	3	
1A2	9-17	14:33	L.O	3	
1A1	9-17	14:37	L.O.	3	
1B2	9-17	14:55	L.O	3	
1B1	9-17	14:59	L.O.	3	
1A2	9-17	15:03	L.O	3	
1A1	9-17	15:07	L.O.	3	
1B2	9-17	15:25	L.O	3	
1B1	9-17	15:29	L.O	3	
1A2	9-17	15:33	L.O	3	
1A1	9-17	15:37	L.O.	3	
1B2	9-17	15:55	L.O.	3	
1B1	9-17	15:59	L.O.	3	
1A2	9-17	16:03	L.O	3	
1A1	9-17	16:07	L.O.	3	
1B2	9-17	16:25	L.O.	3	
1B1	9-17	16:29	L.O	3	
1A2	9-17	16:33	L.O.	3	
1A1	9-17	16:37	L.O	3	

Page 2

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

UNIT 1

RUN No. 3

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
1B2	9-17	16:55	L.O.	3	
1B1	9-17	16:59	L.O.	3	
1A2	9-17	17:03	L.O.	3	
1A1	9-17	17:07	L.O.	3	
1B2	9-17	17:25	L.O.	3	
1B1	9-17	17:29	L.O.	3	
1A2	9-17	17:33	L.O.	3	
1A1	9-17	17:37	L.O.	3	

UNIT #2 COAL FEEDERS PAGE #1

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

RUN No. 3

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
2A1	9-17-99	13:55	J.W.	3 SCOOPS	
2A2	9-17-99	13:59	J.W.	3 "	
2B1	9-17-99	14:03	J.W.	3 "	
2B2	9-17-99	14:09	J.W.	3 "	
2A1	9-17	14:25	J.W.	3 "	
2A2	"	14:29	J.W.	3	
2B1	"	14:31	J.W.	3	
2B2	"	14:35	J.W.	3	
2A1	"	14:55	J.W.	3	
2A2	"	15:05	J.W.	3	
2B1	"	15:08	J.W.	3	
2B2	"	15:12	J.W.	3	
2A1	"	15:35	J.W.	3	
2A2	"	15:40	J.W.	3	
2B1	"	15:42	J.W.	3	
2B2	"	15:45	J.W.	3	
2A1	"	1555	J.W.	3	
2A2	"	1600	J.W.	3	
2B1	"	1603	J.W.	3	
2B2	"	1607	J.W.	3	
2A1	"	1625	J.W.	3	
2A2	"	1628	J.W.	3	
2B1	"	1633	J.W.	3	
2B2	"	1636	J.W.	3	

UNIT #2 COAL FEEDERS PAGE #2

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

RUN No. 3

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
2A1	9-17-99	1655	J.W.	3 scoops	
2A2	9-17 99	1659	J.W.	3 "	
2B1	9-17	1703	J.W.	3 "	
2B2	9-17	1710	J.W.	3 "	
2A1	"	1725	J.W.	3	
2A2	"	1729	J.W.	3	
2B1	"	1733	J.W.	3	
2B2	"	1737	J.W.	3	

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

AMMONIA SOLUTION

RUN No.

Sub Sample no.	DATE	Time	Sampler	Approx. Volume	Comment
1	9-16-99	16:10	MIKOLAYCIK	500 ml	250 ml FROM UNIT 1 WEST CYCLONE INLET
					250 ml FROM UNIT 1 EAST CYCLONE INLET
					SAMPLES TAKEN FROM VALVE RACK
2	9-17-99	09:50	MIKOLAYCIK	500 ml	"
3	9-17-99	15:51	MIKOLAYCIK	500ml	"

9-17-99

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004
BOTTOM ASH
~~PULVERIZED COAL SAMPLE LOG~~

RUN No. 2

	Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
UNIT #1	BEGINNING	9-17-99	0830	J.W.	1 GAL.	BOT. ASH
	MIDDLE	"	1020	J.W.	1 GAL.	
	END	"	1255	J.W.	1 GAL	
	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	
UNIT #2	BEGINNING	9-17-99	0830	J.W.	1 GAL.	BOT. ASH
	MIDDLE	"	10:20	J.W.	1 GAL.	
	END	"	1255	J.W.	1 GAL.	

RUN#3 BOTTOM ASH

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

PULVERIZED COAL SAMPLE LOG

RUN No. 3

	Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
UNIT #1	[illegible]	9-17-99	13:55	J.W.	1 GAL.	
	MIDDLE	9-17	15:47	J.W.	1 GAL.	BOT. ASH
	END	9-17		J.W.	1 GAL.	
	XXXX	XXXX	XXXX	XXXX	XXXX	
UNIT #2	BEGINNING	9-17-99	13:55	J.W.	1 GAL.	
	MIDDLE	9/17/99	15:47	J.W.	1 GAL.	BOT. ASH
	END	9-17		J.W.	1 GAL.	

PG & E GENERATING
SCRUBGRASS STATION
26046-0030-00004

Bottom Ash Samples ~~FLY ASH SAMPLE LOG~~

RUN No. _____

	Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment
~~1A2~~		~~9-16-99~~	~~10:55~~	~~J.W.~~		
~~1A3~~		~~9-16-99~~	~~11:10~~	~~J.W.~~		
RUN 1 UNIT 1		9-16-99	11:30	JS	1GAL	
		9-16-99	1:15	JS	1GAL	
		9-16-99		JS.	1GAL	
RUN 2 UNIT 1						
RUN 3 UNIT 1						
RUN 1 UNIT 2		9-16-99	11:30	JS	1GAL	
		9-16-99	1:05	JS	1GAL.	
		9-16-99		JS	1GAL.	
RUN 2 UNIT 2						
RUN 3 UNIT 2						

APPENDIX D

ANALYTICAL DATA SHEETS

Appendix D.1

Exhaust Gas Streams

INORGANIC DATA PACKAGE
FOR
TRC ENVIRONMENTAL CORPORATION
Project # 26046

Philip Analytical Services Corporation
5555 North Service Road
Burlington, ON L7L 5H7

Submission #: 9I0694

Prepared by : Janice Joseph - CSR
Approved by : Dr. Ron McLeod - Principal Scientist

Initial : _____
Initial : _____

1. CASE NARRATIVE

PROJECT NARRATIVE

PHILIP Analytical Services (Burlington ON)
Philip Project: AN990787
Philip Submission #:9I0694

Client: TRC Environmental Corporation
Client Project: 26046

I. SAMPLE RECEIPT/ANALYSIS

a) Sample Listing

Philip ID	Client Sample ID	Date Sampled	Date Received	Date Prepped	Run Date
Mercury via SW846 Method 7471A					
053152 99	Method Blank	99/09/16	99/09/18	99/09/24	99/09/24
053153 99	SG-OHM-I1a-R1 Ash	99/09/16	99/09/18	99/09/24	99/09/24
053154 99	SG-OHM-I1b-R2 Ash	99/09/17	99/09/18	99/09/24	99/09/24
053155 99	SG-OHM-I1a-R3 Ash	99/09/17	99/09/18	99/09/24	99/09/24
053156 99	SG-OHM-I1a-R4 Ash	99/09/17	99/09/18	99/09/24	99/09/24
053157 99	SG-OHM-I1b-R1 Ash	99/09/16	99/09/18	99/09/24	99/09/24
053158 99	SG-OHM-I1b-R3 Ash	99/09/17	99/09/18	99/09/24	99/09/24
053159 99	SG-OHM-I1b-R4 Ash	99/09/17	99/09/18	99/09/24	99/09/24
053160 99	BP-OHM-IE-R2 Ash	99/09/09	99/09/18	99/09/24	99/09/24
053161 99	BP-OHM-3-IE-R3 Ash	99/09/09	99/09/18	99/09/24	99/09/24
053162 99	BP-OHM-3-IW-R2 Ash	99/09/09	99/09/18	99/09/24	99/09/24
053163 99	BP-OHM-3-IW-R3 Ash	99/09/09	99/09/18	99/09/24	99/09/24
053247 99	NIST 1633b Coal Ash	99/09/22	99/09/22	99/09/24	99/09/24
Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- Front Half					
053128 99	Method Blank	99/09/14	99/09/18	99/10/09	99/10/09
053129 99	SG-OHM-RB	99/09/14	99/09/18	99/10/09	99/10/09
053130 99	SG-OHM-I-FB	99/09/14	99/09/18	99/10/09	99/10/09
053138 99	SG-OHM-O-FB	99/09/17	99/09/18	99/10/09	99/10/09
053139 99	SG-OHM-Oa-R1	99/09/16	99/09/18	99/10/09	99/10/09
053140 99	SG-OHM-Oa-R3	99/09/17	99/09/18	99/10/09	99/10/09
053141 99	SG-OHM-Ob-R1	99/09/16	99/09/18	99/10/09	99/10/09
053142 99	SG-OHM-Ob-R3	99/09/17	99/09/18	99/10/09	99/10/09
053143 99	BP-OHM-3-RB	99/09/08	99/09/18	99/10/09	99/10/09
053144 99	BP-OHM-3-I-FB	99/09/07	99/09/18	99/10/09	99/10/09
053149 99	BP-OHM-3-O-FB	99/09/07	99/09/18	99/10/09	99/10/09
053150 99	BP-OHM-3-O-R2	99/09/09	99/09/18	99/10/09	99/10/09
053151 99	BP-OHM-3-O-R3	99/09/09	99/09/18	99/10/09	99/10/09
053164 99	SG-OHM-Oa-R2	99/09/17	99/09/18	99/10/09	99/10/09
053165 99	SG-OHM-Ob-R2	99/09/17	99/09/18	99/10/09	99/10/09

053131 99	SG-OHM-I1a-R1	99/09/16	99/09/18	99/10/10	99/10/10
053132 99	SG-OHM-I1a-R3	99/09/17	99/09/18	99/10/10	99/10/10
053133 99	SG-OHM-I1a-R4	99/09/17	99/09/18	99/10/10	99/10/10
053134 99	SG-OHM-I1b-R1	99/09/16	99/09/18	99/10/10	99/10/10
053135 99	SG-OHM-I1b-R2	99/09/17	99/09/18	99/10/10	99/10/10
053136 99	SG-OHM-I1b-R3	99/09/17	99/09/18	99/10/11	99/10/11
053137 99	SG-OHM-I1b-R4	99/09/17	99/09/18	99/10/11	99/10/11
053145 99	BP-OHM-3-IE-R2	99/09/09	99/09/18	99/10/10	99/10/10
053146 99	BP-OHM-3-IE-R3	99/09/09	99/09/18	99/10/11	99/10/11
053147 99	BP-OHM-3-IW-R2	99/09/09	99/09/18	99/10/11	99/10/11
053148 99	BP-OHM-3-IW-R3	99/09/09	99/09/18	99/10/10	99/10/10

Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- Hydroxylamine

053128 99	Method Blank	99/09/14	99/09/18	99/10/01	99/10/01
053129 99	SG-OHM-RB	99/09/14	99/09/18	99/10/01	99/10/01
053143 99	BP-OHM-3-RB	99/09/08	99/09/18	99/10/01	99/10/01

Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- KCl Impingers/Rinses

053128 99	Method Blank	99/09/14	99/09/18	99/10/04	99/10/04
053129 99	SG-OHM-RB	99/09/14	99/09/18	99/10/04	99/10/04
053130 99	SG-OHM-I-FB	99/09/14	99/09/18	99/10/04	99/10/04
053131 99	SG-OHM-I1a-R1	99/09/16	99/09/18	99/10/04	99/10/04
053132 99	SG-OHM-I1a-R3	99/09/17	99/09/18	99/10/04	99/10/04
053133 99	SG-OHM-I1a-R4	99/09/17	99/09/18	99/10/04	99/10/04
053134 99	SG-OHM-I1b-R1	99/09/16	99/09/18	99/10/04	99/10/04
053135 99	SG-OHM-I1b-R2	99/09/17	99/09/18	99/10/04	99/10/04
053136 99	SG-OHM-I1b-R3	99/09/17	99/09/18	99/10/04	99/10/04
053137 99	SG-OHM-I1b-R4	99/09/17	99/09/18	99/10/04	99/10/04
053138 99	SG-OHM-O-FB	99/09/17	99/09/18	99/10/04	99/10/04
053139 99	SG-OHM-Oa-R1	99/09/16	99/09/18	99/10/04	99/10/04
053140 99	SG-OHM-Oa-R3	99/09/17	99/09/18	99/10/04	99/10/04
053141 99	SG-OHM-Ob-R1	99/09/16	99/09/18	99/10/04	99/10/04
053142 99	SG-OHM-Ob-R3	99/09/17	99/09/18	99/10/04	99/10/04
053143 99	BP-OHM-3-RB	99/09/08	99/09/18	99/10/04	99/10/04
053144 99	BP-OHM-3-I-FB	99/09/07	99/09/18	99/10/04	99/10/04
053145 99	BP-OHM-3-IE-R2	99/09/09	99/09/18	99/10/04	99/10/04
053146 99	BP-OHM-3-IE-R3	99/09/09	99/09/18	99/10/04	99/10/04
053147 99	BP-OHM-3-IW-R2	99/09/09	99/09/18	99/10/04	99/10/04
053148 99	BP-OHM-3-IW-R3	99/09/09	99/09/18	99/10/04	99/10/04
053149 99	BP-OHM-3-O-FB	99/09/07	99/09/18	99/10/04	99/10/04
053150 99	BP-OHM-3-O-R2	99/09/09	99/09/18	99/10/04	99/10/04
053151 99	BP-OHM-3-O-R3	99/09/09	99/09/18	99/10/04	99/10/04
053164 99	SG-OHM-Oa-R2	99/09/17	99/09/18	99/10/04	99/10/04
053165 99	SG-OHM-Ob-R2	99/09/17	99/09/18	99/10/04	99/10/04

Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- KMNO4 Impingers/Rinses

053128 99	Method Blank	99/09/14	99/09/18	99/10/04	99/10/04
053129 99	SG-OHM-RB	99/09/14	99/09/18	99/10/04	99/10/04
053130 99	SG-OHM-I-FB	99/09/14	99/09/18	99/10/04	99/10/04

053131 99	SG-OHM-I1a-R1	99/09/16	99/09/18	99/10/04	99/10/04
053132 99	SG-OHM-I1a-R3	99/09/17	99/09/18	99/10/04	99/10/04
053133 99	SG-OHM-I1a-R4	99/09/17	99/09/18	99/10/04	99/10/04
053134 99	SG-OHM-I1b-R1	99/09/16	99/09/18	99/10/04	99/10/04
053135 99	SG-OHM-I1b-R2	99/09/17	99/09/18	99/10/04	99/10/04
053136 99	SG-OHM-I1b-R3	99/09/17	99/09/18	99/10/04	99/10/04
053137 99	SG-OHM-I1b-R4	99/09/17	99/09/18	99/10/04	99/10/04
053138 99	SG-OHM-O-FB	99/09/17	99/09/18	99/10/04	99/10/04
053139 99	SG-OHM-Oa-R1	99/09/16	99/09/18	99/10/04	99/10/04
053140 99	SG-OHM-Oa-R3	99/09/17	99/09/18	99/10/04	99/10/04
053141 99	SG-OHM-Ob-R1	99/09/16	99/09/18	99/10/04	99/10/04
053142 99	SG-OHM-Ob-R3	99/09/17	99/09/18	99/10/04	99/10/04
053143 99	BP-OHM-3-RB	99/09/08	99/09/18	99/10/04	99/10/04
053144 99	BP-OHM-3-I-FB	99/09/07	99/09/18	99/10/04	99/10/04
053145 99	BP-OHM-3-IE-R2	99/09/09	99/09/18	99/10/04	99/10/04
053146 99	BP-OHM-3-IE-R3	99/09/09	99/09/18	99/10/04	99/10/04
053147 99	BP-OHM-3-IW-R2	99/09/09	99/09/18	99/10/04	99/10/04
053148 99	BP-OHM-3-IW-R3	99/09/09	99/09/18	99/10/04	99/10/04
053149 99	BP-OHM-3-O-FB	99/09/07	99/09/18	99/10/04	99/10/04
053150 99	BP-OHM-3-O-R2	99/09/09	99/09/18	99/10/04	99/10/04
053151 99	BP-OHM-3-O-R3	99/09/09	99/09/18	99/10/04	99/10/04
053164 99	SG-OHM-Oa-R2	99/09/17	99/09/18	99/10/04	99/10/04
053165 99	SG-OHM-Ob-R2	99/09/17	99/09/18	99/10/04	99/10/04

Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- HNO3/H202 Impingers/Rinses

053128 99	Method Blank	99/09/14	99/09/18	99/10/01	99/10/01
053129 99	SG-OHM-RB	99/09/14	99/09/18	99/10/01	99/10/01
053130 99	SG-OHM-I-FB	99/09/14	99/09/18	99/10/01	99/10/01
053131 99	SG-OHM-I1a-R1	99/09/16	99/09/18	99/10/01	99/10/01
053132 99	SG-OHM-I1a-R3	99/09/17	99/09/18	99/10/01	99/10/01
053133 99	SG-OHM-I1a-R4	99/09/17	99/09/18	99/10/01	99/10/01
053134 99	SG-OHM-I1b-R1	99/09/16	99/09/18	99/10/01	99/10/01
053135 99	SG-OHM-I1b-R2	99/09/17	99/09/18	99/10/01	99/10/01
053136 99	SG-OHM-I1b-R3	99/09/17	99/09/18	99/10/01	99/10/01
053137 99	SG-OHM-I1b-R4	99/09/17	99/09/18	99/10/01	99/10/01
053138 99	SG-OHM-O-FB	99/09/17	99/09/18	99/10/01	99/10/01
053139 99	SG-OHM-Oa-R1	99/09/16	99/09/18	99/10/01	99/10/01
053140 99	SG-OHM-Oa-R3	99/09/17	99/09/18	99/10/01	99/10/01
053141 99	SG-OHM-Ob-R1	99/09/16	99/09/18	99/10/01	99/10/01
053142 99	SG-OHM-Ob-R3	99/09/17	99/09/18	99/10/01	99/10/01
053143 99	BP-OHM-3-RB	99/09/08	99/09/18	99/10/01	99/10/01
053144 99	BP-OHM-3-I-FB	99/09/07	99/09/18	99/10/01	99/10/01
053145 99	BP-OHM-3-IE-R2	99/09/09	99/09/18	99/10/01	99/10/01
053146 99	BP-OHM-3-IE-R3	99/09/09	99/09/18	99/10/01	99/10/01
053147 99	BP-OHM-3-IW-R2	99/09/09	99/09/18	99/10/01	99/10/01
053148 99	BP-OHM-3-IW-R3	99/09/09	99/09/18	99/10/01	99/10/01
053149 99	BP-OHM-3-O-FB	99/09/07	99/09/18	99/10/01	99/10/01
053150 99	BP-OHM-3-O-R2	99/09/09	99/09/18	99/10/01	99/10/01
053151 99	BP-OHM-3-O-R3	99/09/09	99/09/18	99/10/01	99/10/01

053164 99	SG-OHM-Oa-R2	99/09/17	99/09/18	99/10/01	99/10/01
053165 99	SG-OHM-Ob-R2	99/09/17	99/09/18	99/10/01	99/10/01

Run Date is defined as the date of injection of the last calibration standard (12 hour or less) prior to the samples analyzed within that run sequence. Therefore the time of calibration injection that defines the run date is always within 12 hours of the time of sample injection.

b) Shipping Problems: none encountered

c) Documentation Problems: none encountered

II. SAMPLE PREP:

No problems encountered

III. SAMPLE ANALYSIS:

See also comments within the appropriate Certificate of Analysis.

a) Hold Times: all within recommended hold times

b) Instrument Calibration: all within control limits

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the cognizant laboratory official or his/her designee, as verified by this signature.

R.A. McLeod

Ronald A. McLeod, Principal Sci., Ph.D.,C.Chem.

99/11/09

Date

2. ANALYTICAL DATA REPORT

PSC
PHILIP SERVICES

Ed McKinnon
TRC Environmental Corp
Booth Mills South, Foot of John Street
Lowell, MA
01852

December 6, 1999

Dear Mr. McKinnon:

Re Correction on Proj# 26046, PG&E (PASC Submission # 9I0694):

Regretfully, we must inform you that there were calculation errors on some of the draft ASTM mercury speciation data reported to you in the past. The portions that were impacted are the KCl and KMnO4 impinger data which were reported high by a factor of $9/4^{th}$ relative to the correct value.

The error occurred where a correction factor for sample vs standard prep of 1.5 was applied to the data in the wrong direction - a multiplication rather than a division. The 1.5 factor compensates for a 1.5-fold dilution of the standards during the preparation of these digested standards.

Enclosed is a revised report that presents the final results to the correct values. In regard to the corresponding data packages; the concentrations on the corresponding run sequence tables are incorrect since the dilution factors were entered as 1.5 (or appropriate dilutions of this value) rather than 0.667. The corresponding final ug of mercury per train portion as reported on the run sequence tables and on the validation tables have been reported high by the factor of $9/4^{th}$. I have enclosed copies of example pages from the original data package in which these errors are present. Instead of correcting each erroneous page of the original package, I request that with the data package as submitted to you prior, you include this letter of explanation and the enclosed revised report.

Of course quality data is of great concern to Philip and since this error has past several review stages before it has been identified, our review processes must be re-evaluated. We will also keep you informed as to the appropriated corrective actions that we implement to ensure that such an error will not repeat.

Should you have any questions in this regard please do not hesitate to contact me at extension 236 or the QA/QC scientist, Gerry Bengert, at extension 248.

Yours truly,

Ronald A. McLeod, Ph.D., C.Chem.
Principal Scientist

cc: Gerry Bengert

PHILIP ANALYTICAL SERVICES CORPORATION
5555 North Service Road, Burlington, Ontario, Canada L7L 5H7 Tel: (905) 332-8788 Fax: (905) 332-9169

PSC
PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION		LABORATORY INFORMATION	
Attention:	Michael P. Martin	**Contact:**	Ron McLeod
Client Name:	TRC Environmental Corporation	**Project:**	AN990787
Project:	26046	**Date Received:**	99/09/18
Project Desc:	PG&E	**Date Reported:**	99/10/12
Address:	Boott Mills South, Foot of John Street Lowell, MA MA 01852	**Submission No.:** **Sample No.:**	9I0694 053128-053247
Fax Number:	978-453-1995		
Phone Number:	978-970-5600		

NOTES: ***"-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available***
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)

Methods used by PASC are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Nineteenth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PASC for a period of three weeks from receipt of data or as per contract.

COMMENTS: **Revised Report: 991206**

Certified by:

PHILIP ANALYTICAL SERVICES CORPORATION
5555 North Service Road, Burlington, Ontario, Canada L7L 5H7 Tel: (905) 332-8788 Fax: (905) 332-9169

PASC - Certificate of Analysis

			Method Blank	Blank Spike#1	Blank Spike#1	Blank Spike#2	Blank Spike#2	SG OHM-RB	SG OHM-I-FB	SG OHM-I1a-R1	SG OHM-I1a-R3
	Client ID:										
	Lab No.:		053128 99	053128 99	053128 99	053128 99	053128 99	053129 99	053130 99	053131 99	053132 99
	Date Sampled:		-	-	-	-	-	99/09/14	99/09/14	99/09/16	99/09/17
Component	**MDL**	**Units**			% Recoveries		% Recoveries				
Mercury - FH (Outlets)	0.010	ug	<	0.095	95	0.095	95	<	<	-	-
Mercury (Inlets)	0.010	"	-	-	-	-	-	-	-	11	2.8
Mercury - hydroxylamine	0.010	"	<	0.10	100	0.10	100	<	-	-	-
Mercury - KCl	0.030	"	<	0.31	101	0.30	100	<	<	1.79	0.62
Mercury - KMnO4	0.030	"	<	0.30	101	0.30	101	<	<	0.33	<
Mercury - H202	0.010	"	<	0.050	100	0.050	100	<0.25	<0.25	<0.25	<0.25

			SG	SG	SG	SG	SG	SG	SG	SG
	Client ID:		OHM-I1a-R3	OHM-I1a-R3	OHM-I1a-R3	OHM-I1a-R3	OHM-I1a-R3	OHM-I1a-R4	OHM-I1b-R1	OHM-I1b-R1
	Lab No.:		053132 99	053132 99	053132 99	053132 99	053132 99	053133 99	053134 99	053134 99
	Date Sampled:		99/09/17	99/09/17	99/09/17	99/09/17	99/09/17	99/09/17	99/09/16	99/09/16
Component	**MDL**	**Units**	Duplicate	M. Spike	MS % Rec.	MS Dup	MSD % Rec.			Duplicate
Mercury - FH (Outlets)	0.010	ug	-	-	-	-	-	-	-	-
Mercury (Inlets)	0.010	"	-	-	-	-	-	6.4	9.4	-
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-	-	-
Mercury - KCl	0.030	"	0.62	1.31	103	1.31	103	0.26	0.56	-
Mercury - KMnO4	0.030	"	-	-	-	-	-	<	0.082	-
Mercury - H202	0.010	"	-	-	-	-	-	<0.25	<0.25	<0.25

PASC - Certificate of Analysis

			SG	SG	SG	SG	SG	SG
	Client ID:		OHM-I1b-R1	OHM-I1b-R1	OHM-I1b-R1	OHM-I1b-R1	OHM-I1b-R2	OHM-I1b-R2
	Lab No.:		053134 99	053134 99	053134 99	053134 99	053135 99	053135 99
	Date Sampled:		99/09/16	99/09/16	99/09/16	99/09/16	99/09/17	99/09/17
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.		Duplicate
Mercury - FH (Outlets)	0.010	ug	-	-	-	-	-	-
Mercury (Inlets)	0.010	"	-	-	-	-	7.9	-
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-
Mercury - KCl	0.030	"	-	-	-	-	0.77	-
Mercury - KMnO4	0.030	"	-	-	-	-	0.11	0.13
Mercury - H202	0.010	"	2.8	100	2.8	110	<0.25	-

PASC - Certificate of Analysis

			SG	SG	SG	SG	SG	SG
	Client ID:		OHM-I1b-R2	OHM-I1b-R2	OHM-I1b-R2	OHM-I1b-R2	OHM-I1b-R3	OHM-I1b-R3
	Lab No.:		053135 99	053135 99	053135 99	053135 99	053136 99	053136 99
	Date Sampled:		99/09/17	99/09/17	99/09/17	99/09/17	99/09/17	99/09/17
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.		Duplicate
Mercury - FH (Outlets)	0.010	ug	-	-	-	-	-	-
Mercury (Inlets)	0.010	"	-	-	-	-	3.1	3.1
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-
Mercury - KCl	0.030	"	-	-	-	-	0.18	-
Mercury - KMnO4	0.030	"	0.64	78	0.69	87	<	-
Mercury - H202	0.010	"	-	-	-	-	<0.25	-

			SG	SG	SG	SG	SG	SG	SG	SG
	Client ID:		OHM-I1b-R3	OHM-I1b-R3	OHM-I1b-R3	OHM-I1b-R3	OHM-I1b-R4	OHM-O-FB	OHM-Oa-R1	OHM-Oa-R1
	Lab No.:		053136 99	053136 99	053136 99	053136 99	053137 99	053138 99	053139 99	053139 99
	Date Sampled:		99/09/17	99/09/17	99/09/17	99/09/17	99/09/17	99/09/17	99/09/16	99/09/16
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.				Duplicate
Mercury - FH (Outlets)	0.010	ug	-	-	-	-	-	<	<	<
Mercury (Inlets)	0.010	"	7.9	96	7.9	97	10	-	-	-
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-	-	-
Mercury - KCl	0.030	"	-	-	-	-	0.10	<	0.10	-
Mercury - KMnO4	0.030	"	-	-	-	-	<	<	<	-
Mercury - H202	0.010	"	-	-	-	-	<0.25	<0.25	<0.25	-

PASC - Certificate of Analysis

			SG	SG	SG	SG	SG	SG
	Client ID:		OHM-Oa-R1	OHM-Oa-R1	OHM-Oa-R1	OHM-Oa-R1	OHM-Oa-R3	OHM-Oa-R3
	Lab No.:		053139 99	053139 99	053139 99	053139 99	053140 99	053140 99
	Date Sampled:		99/09/16	99/09/16	99/09/16	99/09/16	99/09/17	99/09/17
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.		Duplicate
Mercury - FH (Outlets)	0.010	ug	0.10	100	0.10	100	<	-
Mercury (Inlets)	0.010	"	-	-	-	-	-	-
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-
Mercury - KCl	0.030	"	-	-	-	-	0.079	0.088
Mercury - KMnO4	0.030	"	-	-	-	-	<	-
Mercury - H202	0.010	"	-	-	-	-	<0.25	-

	Client ID:		SG OHM-Oa-R3	SG OHM-Oa-R3	SG OHM-Oa-R3	SG OHM-Oa-R3	SG OHM-Ob-R1	SG OHM-Ob-R3	BP OHM-3-RB	BP OHM-3-I-FB
	Lab No.:		053140 99	053140 99	053140 99	053140 99	053141 99	053142 99	053143 99	053144 99
	Date Sampled:		99/09/17	99/09/17	99/09/17	99/09/17	99/09/16	99/09/17	99/09/08	99/09/07
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.				
Mercury - FH (Outlets)	0.010	ug	-	-	-	-	<	<	<	<
Mercury (Inlets)	0.010	"	-	-	-	-	-	-	-	-
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-	<	-
Mercury - KCl	0.030	"	0.78	105	0.78	105	0.13	0.068	<	0.016
Mercury - KMnO4	0.030	"	-	-	-	-	<	<	<	<
Mercury - H202	0.010	"	-	-	-	-	<0.25	<0.25	<0.25	<0.25

	Client ID:		BP OHM-3-IE-R2	BP OHM-3-IE-R2	BP OHM-3-IE-R2	BP OHM-3-IE-R2	BP OHM-3-IE-R2	BP OHM-3-IE-R2	BP OHM-3-IE-R3
	Lab No.:		053145 99	053145 99	053145 99	053145 99	053145 99	053145 99	053146 99
	Date Sampled:		99/09/09	99/09/09	99/09/09	99/09/09	99/09/09	99/09/09	99/09/09
Component	**MDL**	**Units**		Duplicate	M. Spike	MS % Rec.	MS Dup	MSD % Rec.	
Mercury - FH (Outlets)	0.010	ug	-	-	-	-	-	-	-
Mercury (Inlets)	0.010	"	2.8	-	-	-	-	-	0.45
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-	-
Mercury - KCl	0.030	"	4.1	-	-	-	-	-	5.5
Mercury - KMnO4	0.030	"	0.86	0.87	2.1	91	2.1	90	1.2
Mercury - H202	0.010	"	<0.25	<0.25	2.7	110	2.8	110	<0.25

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	Client ID:		BP OHM-3-IW-R2	BP OHM-3-IW-R3	BP OHM-3-O-FB	BP OHM-3-O-R2	BP OHM-3-O-R3	SG OHM-Oa-R2	SG OHM-Oa-R2
	Lab No.:		053147 99	053148 99	053149 99	053150 99	053151 99	053164 99	053164 99
	Date Sampled:		99/09/09	99/09/09	99/09/07	99/09/09	99/09/09	99/09/17	99/09/17
Component	**MDL**	**Units**							Duplicate
Mercury - FH (Outlets)	0.010	ug	-	-	<	1.4	1.6	<	<
Mercury (Inlets)	0.010	"	0.62	1.5	-	-	-	-	-
Mercury - hydroxylamine	0.010	"	-	-	-	-	-	-	-
Mercury - KCl	0.030	"	7.3	5.1	<	5.7	4.1	0.10	0.11
Mercury - KMnO4	0.030	"	0.83	0.52	<	1.32	0.97	<	-
Mercury - H202	0.010	"	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	-

PASC - Certificate of Analysis

	Client ID:		SG OHM-Oa-R2	SG OHM-Oa-R2	SG OHM-Oa-R2	SG OHM-Oa-R2	SG OHM-Ob-R2
	Lab No.:		053164 99	053164 99	053164 99	053164 99	053165 99
	Date Sampled:		99/09/17	99/09/17	99/09/17	99/09/17	99/09/17
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.	
Mercury - FH (Outlets)	0.010	ug	0.10	100	0.10	100	<
Mercury (Inlets)	0.010	"	-	-	-	-	-
Mercury - hydroxylamine	0.010	"	-	-	-	-	-
Mercury - KCl	0.030	"	0.77	100	0.78	101	0.070
Mercury - KMnO4	0.030	"	-	-	-	-	<
Mercury - H202	0.010	"	-	-	-	-	<0.25

			NIST 1633b	NIST 1633b
Client ID:			Coal Ash	Coal Ash
Lab No.:			053247 99	053247 99
Date Sampled:			99/09/22	99/09/23
Component	**MDL**	**Units**	Observed	Theoretical
Mercury	0.04	mg/kg	0.14	0.141

Batch Code:	**0924IIA2**			
Mercury	053247 99			
Run Date:	99/09/24			
Date of Sample Prep:	99/09/24			
Batch Code:	**10091GFL**	**10092GFL**		
Mercury - FH (Outlets)	053128 99	053143 99		
	053129 99	053144 99		
	053130 99	053149 99		
	053138 99	053150 99		
	053139 99	053151 99		
	053140 99	053164 99		
	053141 99	053165 99		
	053142 99			
Run Date:	99/10/09	99/10/09		
Date of Sample Prep:	99/10/09	99/10/09		
Batch Code:	**10103GFT**	**10111GFB**	**10104GFT**	
Mercury (Inlets)	053131 99	053136 99	053145 99	
	053132 99	053137 99	053148 99	
	053133 99	053146 99		
	053134 99	053147 99		
	053135 99			
Run Date:	99/10/10	99/10/11	99/10/10	
Date of Sample Prep:	99/10/10	99/10/11	99/10/10	
Batch Code:	**1001MGHY**			
Mercury - hydroxalamine	053128 99			
	053129 99			
	053143 99			
Run Date:	99/10/01			
Date of Sample Prep:	99/10/01			
Batch Code:	**10041GKC**	**10046GKC**	**10042GKC**	**10043GKC**
Mercury - KCl	053128 99	053129 99	053140 99	053150 99
	053130 99		053141 99	053151 99
	053131 99		053142 99	053164 99
	053132 99		053143 99	053165 99
	053133 99		053144 99	
	053134 99		053145 99	
	053135 99		053146 99	
	053136 99		053147 99	
	053137 99		053148 99	
	053138 99		053149 99	
	053139 99			
Run Date:	99/10/04	99/10/04	99/10/04	99/10/04
Date of Sample Prep:	99/10/04	99/10/04	99/10/04	99/10/04
Batch Code:	**10044BMN**	**10046BMN**	**10045BMN**	

Mercury - KMnO4	053128 99	053133 99	053135 99
	053129 99	053145 99	053136 99
	053130 99	053146 99	053137 99
	053131 99	053147 99	053138 99
	053132 99	053148 99	053139 99
	053134 99	053149 99	053140 99
		053150 99	053141 99
		053151 99	053142 99
		053164 99	053143 99
		053165 99	053144 99
Run Date:	99/10/04	99/10/04	99/10/04
Date of Sample Prep:	99/10/04	99/10/04	99/10/04
Batch Code:	**10012B2B**	**10013B2B**	**10014B2B**
Mercury - H202	053128 99	053134 99	053144 99
	053129 99	053135 99	053145 99
	053130 99	053136 99	053146 99
	053131 99	053137 99	053147 99
	053132 99	053138 99	053148 99
	053133 99	053139 99	053149 99
		053140 99	053150 99
		053141 99	053151 99
		053142 99	053164 99
		053143 99	053165 99
Run Date:	99/10/01	99/10/01	99/10/01
Date of Sample Prep:	99/10/01	99/10/01	99/10/01

PSC
PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION		LABORATORY INFORMATION	
Attention:	Michael P. Martin	**Contact:**	Ron McLeod
Client Name:	TRC Environmental Corporation	**Project:**	AN990787
Project:	26046	**Date Received:**	99/09/18
Project Desc:	PG&E	**Date Reported:**	99/10/12
Address:	Boott Mills South, Foot of John Street Lowell, MA MA 01852	**Submission No.:**	9I0694
		Sample No.:	053152-053163
Fax Number:	978-453-1995		
Phone Number:	978-970-5600		

NOTES: ***'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available***
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
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COMMENTS:

Certified by: _____

PHILIP ANALYTICAL SERVICES CORPORATION
5555 North Service Road, Burlington, Ontario, Canada L7L 5H7 Tel: (905) 332-8788 Fax: (905) 332-9169

	Client ID:		Method Blank	Blank Spike	Blank Spike	SG-OHM-I1a-R1 Ash	SG-OHM-I1b-R2 Ash	SG-OHM-I1a-R3 Ash	SG-OHM-I1a-R4 Ash	SG-OHM-I1b-R1 Ash
	Lab No.:		053152 99	053152 99	053152 99	053153 99	053154 99	053155 99	053156 99	053157 99
	Date Sampled:		-	-	-	99/09/16	99/09/17	99/09/17	99/09/17	99/09/16
Component	**MDL**	**Units**			% Recoveries					
Weight of sample	0.0001	g	-	-	-	158.2	203.9	214.8	203.9	173.5
Mercury	0.04	mg/kg	<	1.0	100	1.9	1.1	0.68	0.80	1.8

00022

	Client ID:		SG-OHM-I1b-R3 Ash	SG-OHM-I1b-R4 Ash	SG-OHM-I1b-R4 Ash	SG-OHM-I1b-R4 Ash	SG-OHM-I1b-R4 Ash	BP-OHM-IE-R2 Ash
	Lab No.:		053158 99	053159 99	053159 99	053159 99	053159 99	053160 99
	Date Sampled:		99/09/17	99/09/17	99/09/17	99/09/17	99/09/17	99/09/09
Component	**MDL**	**Units**			Duplicate	M. Spike	MS % Rec.	
Weight of sample	0.0001	g	199.0	157.8	-	-	-	9.4
Mercury	0.04	mg/kg	0.66	1.3	1.3	2.2	95	0.39

000123

PASC - Certificate of Analysis

			BP-OHM-3-IE-R3	BP-OHM-3-IW-R2	BP-OHM-3-IW-R3
	Client ID:		Ash	Ash	Ash
	Lab No.:		053161 99	053162 99	053163 99
	Date Sampled:		99/09/09	99/09/09	99/09/09
Component	**MDL**	**Units**			
Weight of sample	0.0001	g	10.2	12.0	11.3
Mercury	0.04	mg/kg	0.15	0.21	0.24

00024

00025

Batch Code:	**1007LTA1**
Weight of sample	053153 99
	053154 99
	053155 99
	053156 99
	053157 99
	053158 99
	053159 99
	053160 99
	053161 99
	053162 99
Run Date:	99/10/07
Date of Sample Prep:	99/10/07

Batch Code:	**0924IIA1**	**0924IIA2**
Mercury	053152 99	053159 99
	053153 99	053160 99
	053154 99	053161 99
	053155 99	053162 99
	053156 99	053163 99
	053157 99	
	053158 99	
Run Date:	99/09/24	99/09/24
Date of Sample Prep:	99/09/24	99/09/24

3. RAW DATA

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
053152	TRC-LO	MB R456	Mercury	PV	-0.04	-99999.0	1.00	100.			99/09/24	IIA1	99/09/24	MG02	8.	6.	
053153	TRC-LO	SG-OHM-I1a-R1 Ash	Mercury	PV	1.88						99/09/24	IIA1	99/09/24	MG02	8.	6.	
053154	TRC-LO	SG-OHM-I1b-R2 Ash	Mercury	PV	1.08						99/09/24	IIA1	99/09/24	MG02	7.	6.	
053155	TRC-LO	SG-OHM-I1a-R3 Ash	Mercury	PV	0.68						99/09/24	IIA1	99/09/24	MG02	7.	6.	
053156	TRC-LO	SG-OHM-I1a-R4 Ash	Mercury	PV	0.80						99/09/24	IIA1	99/09/24	MG02	7.	6.	
053157	TRC-LO	SG-OHM-I1b-R1 Ash	Mercury	PV	1.84						99/09/24	IIA1	99/09/24	MG02	8.	6.	
053158	TRC-LO	SG-OHM-I1b-R3 Ash	Mercury	PV	0.66						99/09/24	IIA1	99/09/24	MG02	7.	6.	
BL0924	INTERNAL		Mercury	PV	-0.04	-99999.0	1.00	100.			99/09/24	IIA1	99/09/24	MG02	$$$	$$$	
053159	TRC-LO	SG-OHM-I1b-R4 Ash	Mercury	PV	1.30	1.27	2.24	95.			99/09/24	IIA2	99/09/24	MG02	7.	6.	
053160	TRC-LO	BP-OHM-IE-R2 Ash	Mercury	PV	0.39						99/09/24	IIA2	99/09/24	MG02	15.	6.	
053161	TRC-LO	BP-OHM-3-IE-R3 Ash	Mercury	PV	0.15						99/09/24	IIA2	99/09/24	MG02	15.	6.	
053162	TRC-LO	BP-OHM-3-IW-R2 Ash	Mercury	PV	0.21						99/09/24	IIA2	99/09/24	MG02	15.	6.	
053163	TRC-LO	BP-OHM-3-IW-R3 Ash	Mercury	PV	0.24						99/09/24	IIA2	99/09/24	MG02	15.	6.	
053247	TRC-LO	NIST 1633b Coal Ash	Mercury	PV	0.14						99/09/24	IIA2	99/09/24	MG02	2.	2.	
BL0924	INTERNAL		Mercury	PV	-0.04	-99999.0	1.03	103.			99/09/24	IIA2	99/09/24	MG02	$$$	$$$	

15 Tests for 7471HG-S with an MDL of 0.04 mg/kg Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00027

00028

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.09.24 Run Code: MG02 Matrix: SOIL

Analyst: MG Units: MG/KG (see comments) MDL: 0.04

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL0924	IIA1		
13			BL0924S			
14			52874			
15			874D			
16			874S			
17			53709			
18			53153			
19			154			
20			155			
21			156			
22			157			
23			158			
24			CCV			
25			B			
26			D4			
27			BL0924	IIA2		
28			BL0924S			
29			53159			
30			159D			
31			159S			
32			160			
33			161			
34			162			
35			163			
36			53247			
37			ERA 240			
38			CCV			
39			B			
40			D4			
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Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

EPA 7471 SOIL PREPARATION LOG - MERCURY

00029 DG7471HG

Check List

- ✓ Digest Code/labels
- ✓ Samples weighed
- ✓ Acids added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxyamine HCl added
- ✓ Samples bulked, mixed, and centrifuged
- ✓ Rack order checked

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy/Std 1	0 ppb	None	0 mg/kg
2	Standard 2	2.5	200 ul of 0.5 ppm IV working stock std.	0.5
3	Standard 3	5	400 ul of 0.5 ppm IV working stock std.	1.0
4	Standard 4	7.5	600 ul of 0.5 ppm IV working stock std.	1.5
5	Standard 5	10	800 ul of 0.5 ppm IV working stock std.	2.0
6	Standard 6	12.5	1000 ul of 0.5 ppm IV working stock std	2.5

	#	Sample I.D.	B.Code	Init.Wt.	F. Vol.	Dil	Comment
	7	ICV (Init. Calib. Verif.)	11A1	0.2gm	40 ml	200X	7.5 ppb or 1.5 mg/kg = 600 ul. of 0.5 ppm HP MESS-ZENO 30/QCA Std.
	8	BL 09/24	"	"	"	"	(Processed Blank) 52873 53152
	9	BL S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
10	1	10 52874	"	0.201	40ml	"	
	1	11 D	"	0.200	"	"	(Duplicate sample)
	1	12 S	"	0.201	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	1	13 DS	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	2	14 ~~48224-45~~	"	"	"	"	
	3	15 53207	"	0.202	"	"	
	4	16 ~~52162-34~~	"	"	"	"	
10	5	17 53153	"	0.202	"	"	
	6	18 54	"	0.198	"	"	
	7	19 55	"	0.202	"	"	
	8	20 56	"	0.202	"	"	
	9	21 57	"	0.200	"	"	
	10	22 58	"	0.202	"	"	
	23	CCV (Cont. Calib. Verif.)	11A2	0.2gm	40 ml	200X	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	24	BL 09/24	"	"	"	"	(Processed Blank)
	25	BL S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	1	26 53159	"	0.201	40ml	"	
	1	27 D	"	0.201	"	"	(Duplicate sample)
	1	28 S	"	0.202	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	1	29 DS	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	2	30 53160	"	0.202	"	"	
	3	31 61	"	0.201	"	"	
	4	32 62	"	0.199	"	"	
	5	33 63	"	0.200	"	"	
	6	34 53247	"	0.202	"	"	
	7	35 ERA240	"	0.201	"	"	
	8	36	"	"	"	"	
	9	37	"	"	"	"	
	10	38	"	"	"	"	

HCL Lot No. 419030	HNO3 Lot No. 119040	Bath Temps. 1 195 °C

Notes:

* concentration based on 40 ml final volume, ** concentration based on 1 gram of sample

Prepare 0.5 ppm standards daily

Include one External Reference Material (ERA 230 or NRC PACS-1) per run

Prepared By: [signature] **Date:** Apr 24/99 **Checked by:** [signature]

RUN DATE: 09-24-1999 CHART DATE: 09-24-1999
CHART SPEED: 30
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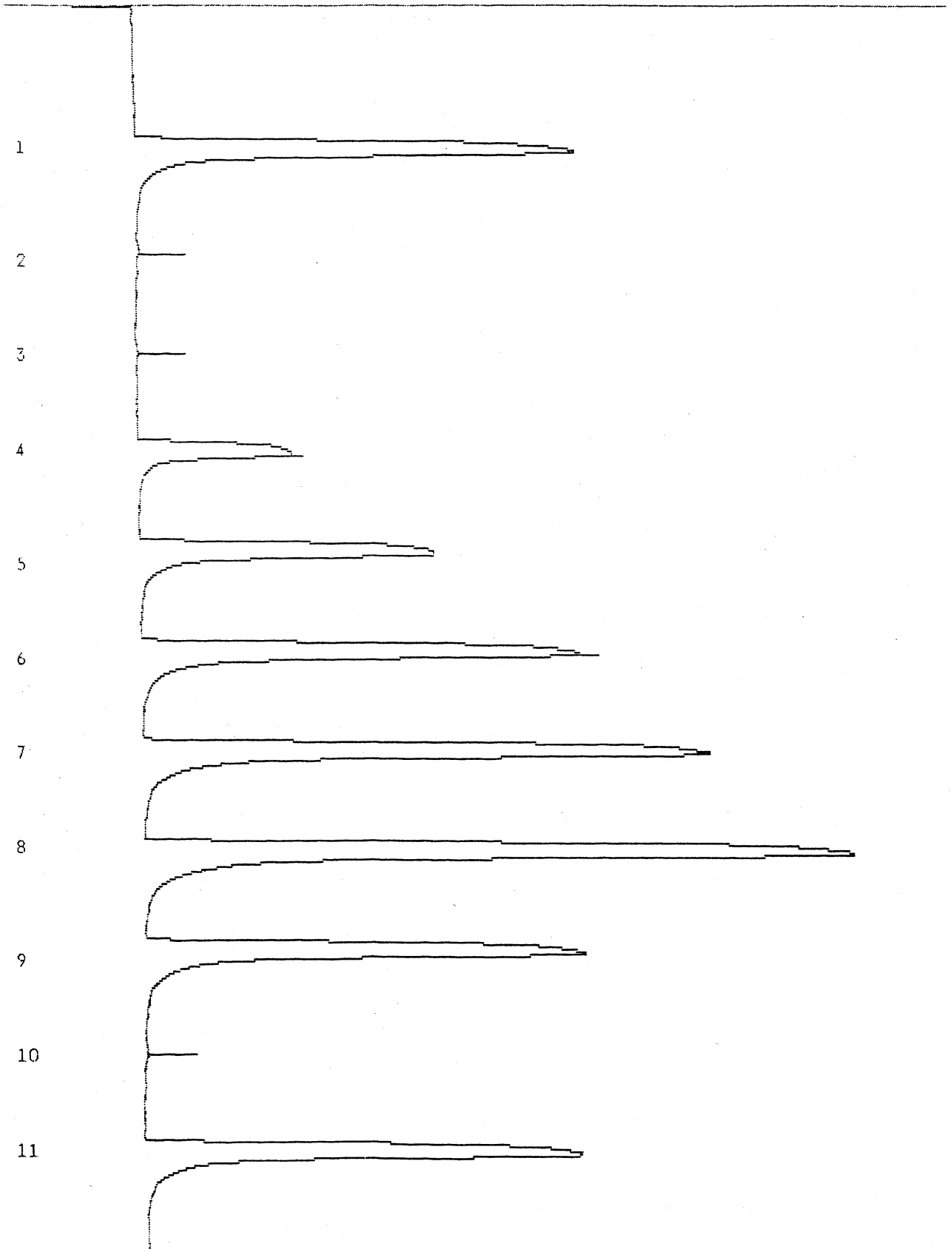

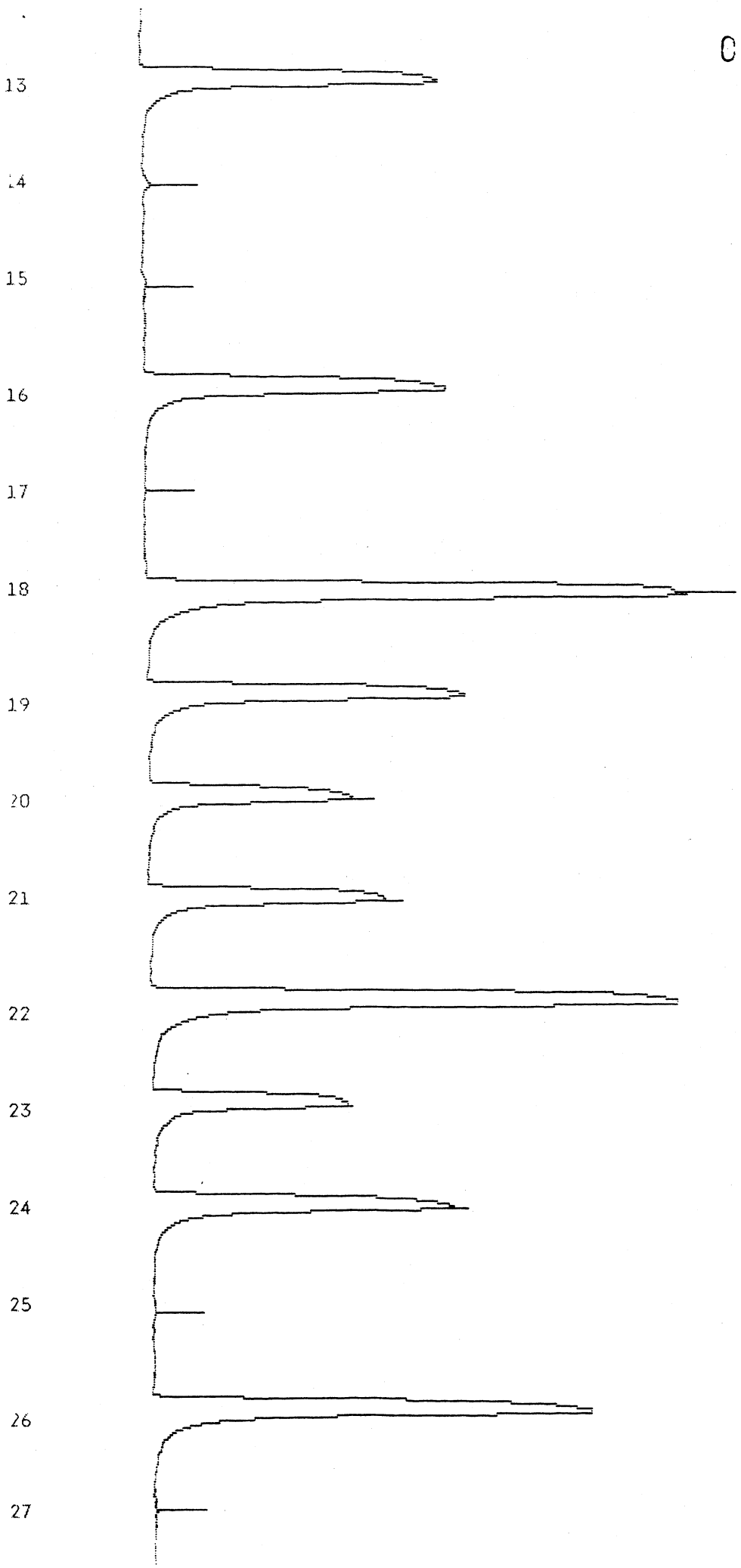
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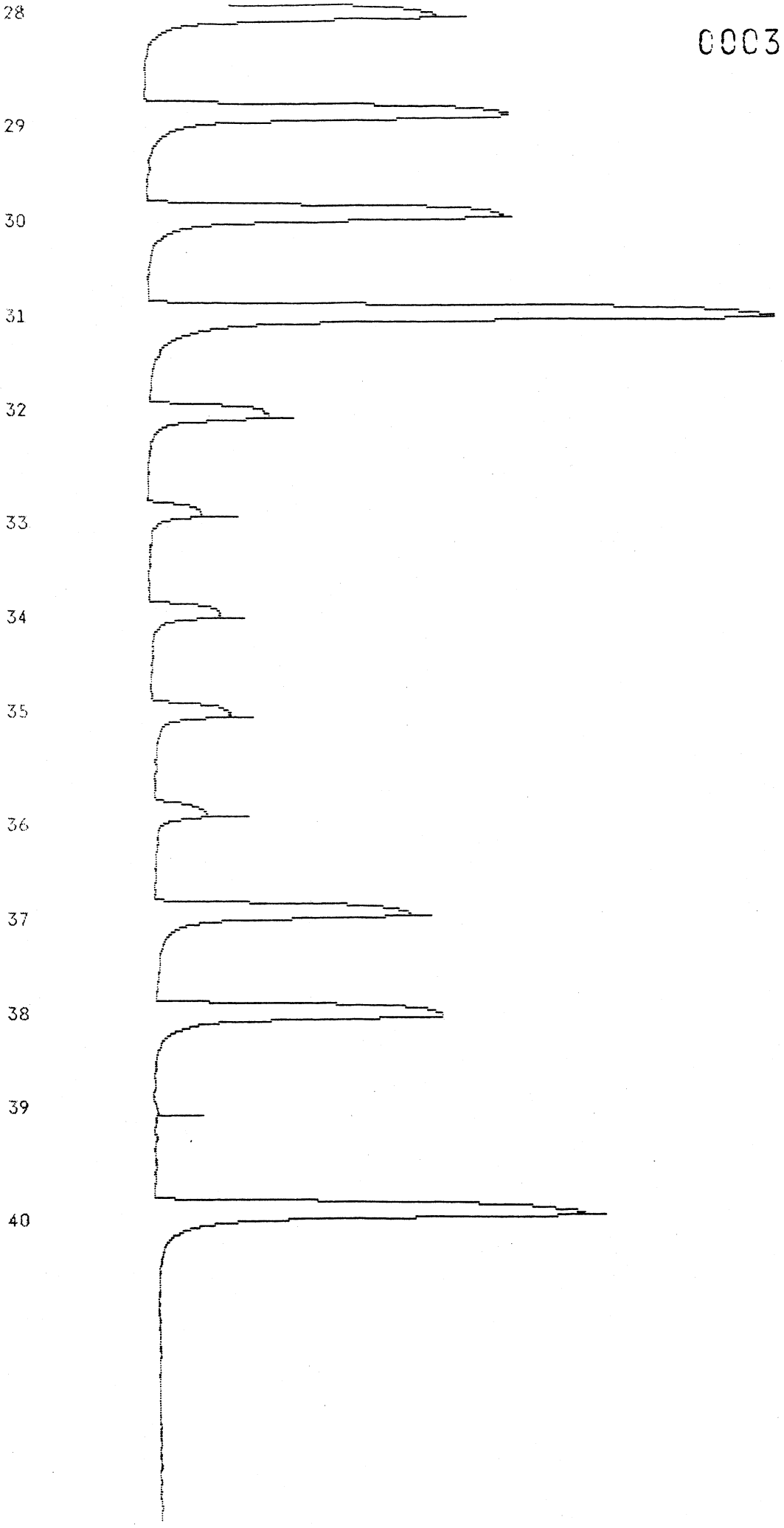
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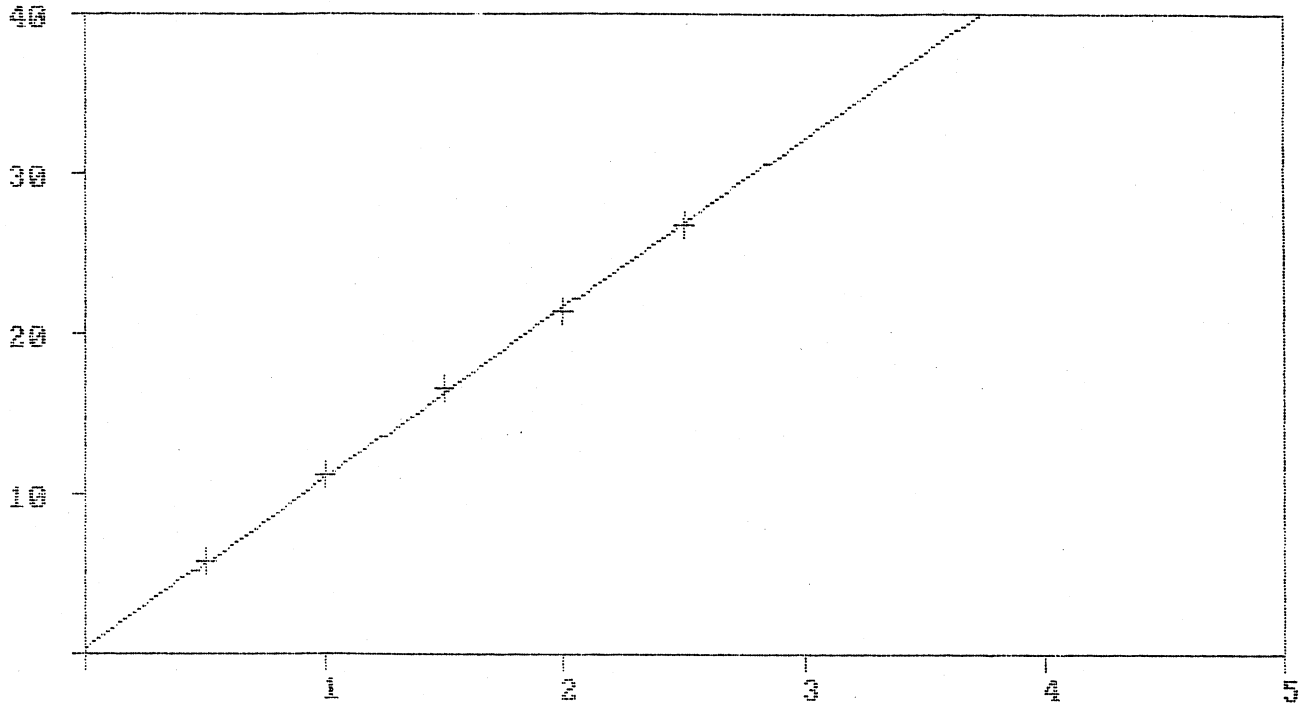
CHANNEL NAME: LDC
RUN NAME: 990924S



DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.36
SLOPE = 10.60666

CORRELATION: .9997363

CHANNEL NAME: LDC
RUN DATE: 09-24-1999
SAMPLE TABLE NAME: 990924S
METHOD NAME: HGSOIL

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION	EF
1	PRIMER	1	1	16.6	1.527	s
2	DUMMY	1	1	0.0	-0.034	I
3	S1: 0	1	1	0.0	-0.029	I
4	S2: .5	1	1	5.8	0.512	
5	S3: 1	1	1	11.2	1.021	
6	S4: 1.5	1	1	16.5	1.523	
7	S5: 2	1	1	21.4	1.988	
8	S6: 2.5	1	1	26.7	2.485	
9	ICV	1	1	16.5	1.523	101%
10	B	1	1	0.0	-0.034	b
11	D4	1	1	16.5	1.523	d
12	BL0924-IIA1 53152	1	1	0.0	-0.034	I
13	BL0924S	1	1	11.0	1.000	100%
14	52874	1	1	0.2	-0.013	I
15	52874D	1	1	0.0	-0.034	I
16	52874S	1	1	11.3	1.032	s 103%
17	53709	1	1	0.0	-0.034	I

19	53154	1	1	11.8	1.081	
20	53155	1	1	7.5	0.678	
21	53156	1	1	8.9	0.802	
22	53157	1	1	19.9	1.838	
23	53158	1	1	7.3	0.655	
24	CCV	1	1	11.3	1.028	103%
25	B	1	1	0.0	-0.034	b
26	D4	1	1	16.5	1.523	d
27	BL0924-IIA2	1	1	0.1	-0.027	I
28	BL0924S	1	1	11.4	1.039	103%
29	53159	1	1	14.2	1.304	
30	53159D	1	1	13.8	1.267	
31	53159S	1	1	24.1	2.241	95%
32	53160	1	1	4.5	0.390	
33	53161	1	1	2.0	0.153	
34	53162	1	1	2.6	0.213	
35	53163	1	1	2.9	0.243	
36	53247	1	1	1.9	0.141	
37	ERA 240	1	1	9.8	0.892	
38	CCV	1	1	11.2	1.019	101%
39	B	1	1	0.0	-0.034	b
40	D4	1	1	16.5	1.523	d

CCC54

INTERCEPT: 0.36 LINEAR COEF: 10.60666

CORRELATION COEF: .9997363

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
053128	TRC-LO	MB R456	Mercury -	PV	-0.010	-99999.0	0.095	95.	0.095	95.	99/10/09	1GFL	99/10/09	MG01	25.	21.	
053129	TRC-LO	SG-OHM-RB	Mercury -	PV	-0.010						99/10/09	1GFL	99/10/09	MG01	25.	21.	
053130	TRC-LO	SG-OHM-I-FB	Mercury -	PV	-0.010						99/10/09	1GFL	99/10/09	MG01	25.	21.	
053138	TRC-LO	SG-OHM-O-FB	Mercury -	PV	-0.010						99/10/09	1GFL	99/10/09	MG01	22.	21.	
053139	TRC-LO	SG-OHM-Oa-R1	Mercury -	PV	-0.010	-0.010	0.104	102.	0.103	101.	99/10/09	1GFL	99/10/09	MG01	23.	21.	*PDS*
053140	TRC-LO	SG-OHM-Oa-R3	Mercury -	PV	-0.010						99/10/09	1GFL	99/10/09	MG01	22.	21.	
053141	TRC-LO	SG-OHM-Ob-R1	Mercury -	PV	-0.010						99/10/09	1GFL	99/10/09	MG01	23.	21.	
053142	TRC-LO	SG-OHM-Ob-R3	Mercury -	PV	-0.010						99/10/09	1GFL	99/10/09	MG01	22.	21.	
BL1009	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.095	95.	0.095	95.	99/10/09	1GFL	99/10/09	MG01	$$$	$$$	
053143	TRC-LO	BP-OHM-3-RB	Mercury -	PV	-0.010						99/10/09	2GFL	99/10/09	MG01	31.	21.	
053144	TRC-LO	BP-OHM-3-I-FB	Mercury -	PV	-0.010						99/10/09	2GFL	99/10/09	MG01	32.	21.	
053149	TRC-LO	BP-OHM-3-O-FB	Mercury -	PV	-0.010						99/10/09	2GFL	99/10/09	MG01	32.	21.	
053150	TRC-LO	BP-OHM-3-O-R2	Mercury -	PV	1.370						99/10/09	2GFL	99/10/09	MG01	30.	21.	
053151	TRC-LO	BP-OHM-3-O-R3	Mercury -	PV	1.613						99/10/09	2GFL	99/10/09	MG01	30.	21.	
053164	TRC-LO	SG-OHM-Oa-R2	Mercury -	PV	-0.010	-0.010	0.103	100.	0.103	100.	99/10/09	2GFL	99/10/09	MG01	22.	21.	*PDS*
053165	TRC-LO	SG-OHM-Ob-R2	Mercury -	PV	-0.010						99/10/09	2GFL	99/10/09	MG01	22.	21.	
BL1009	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.094	94.	0.095	95.	99/10/09	2GFL	99/10/09	MG01	$$$	$$$	

25 Tests for OHFLT with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00035

LDC AUTOSAMPLER RUN LOG (MERCURY)

(1)

: 99.10.09(WA) Run Code: MG01 Matrix: IMP.

Analyst: MG Units: µg (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL1009	1G FL		
13			"			
14			BL1009 S			
15			"			
16			BL1009 DS			
17			"			
18			53139			
19			"			
20			53139 D			
21			"			
22			53139 S			
23			"			
24			53139 DS			
25			"			
26		1/10	51662			
27			"			
28			51663			
29			"			
30			51664			
31			"			
32			CCV			
33			B			
34			D4			
35			53129 a			
36			"			
37			53129 b			
38			"			
39			53129 c			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			53130			
42			"			
43			53138			
44			"			
45			53140			
46			"			
47			53141			
48			"			
49			53142			
50			"			
51			BL1009	2G FL		
52			"			
53			BL1009 S			
54			"			
55			CCV			
56			B			
57			D4			
58			BL1009 DS			
59			"			
60			53164			
61			"			
62			53164 D			
63			"			
64			53164 S			
65			"			
66			53164 DS			
67			"			
68			53143 a			
69			"			
70			53143 b			
71			"			
72			53143 c			
73			"			
74			53144			
75			"			
76			53149			
77			"			
78			CCV			
79			B			
80			D4			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

e: 99.10.09 Run Code: MG01 Matrix: WP

Analyst: MG Units: ug (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	%R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21		1/10	53150			
22			"			
23			53151			
24			"			
25			53165			
26			"			
27			53685 a			
28			"			
29			53685 b			
30			"			
31			53685 c			
32			"			
33			53690			
34			"			
35			53691			
36			"			
37			BL1009	3GFL		
38			"			
39			BL1009 S			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	%R
41			CCV			
42			B			
43			D4			
44			BL1009 DS			
45			"			
46			53693			
47			"			
48			53693 D			
49			"			
50			53693 S			
51			"			
52			53693 DS			
53			"			
54			53692			
55			"			
56			47503			
57			"			
58			51449 a			
59			"			
60			51449 b			
61			"			
62			51449 c			
63			"			
64			CCV			
65			B			
66			D4			
67			51450			
68			" 51459			
69		1/10	51460			
70			"			
71			51461			
72			"			
73			42246 a			
74			"			
75			42246 b			
76			"			
77			42246 c			
78			"			
79			42265			
80			"			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.09 Run Code: MG01 Matrix: WP.

Analyst: MG Units: ug (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
41 21			BL1009	4GFL		
22			"			
23			BL1009 S			
24			"			
25			BL1009 DS			
26			"			
27			CCV			
28			B			
29			D4			
30			42266			
31			"			
32			42266 D			
33			"			
34			42266 S			
35			"			
36			42266 DS			
37			"			
38			42267			
39			"			
40			42730			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			42730			
42			42731			
43			"			
44			42732			
45			"			
46			42733			
47			"			
48			43189 a			
49			"			
50			ccv			
51			B			
52			D4			
53			43189 b			
54			"			
55			43189 c			
56			"			
57			43194			
58			"			
59			43195			
60			"			
61			43196			
62			"			
63			43225			
64			"			
65			47489 a			
66			"			
67			CCV			
68			B			
69			D4			
70						
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Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L; CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

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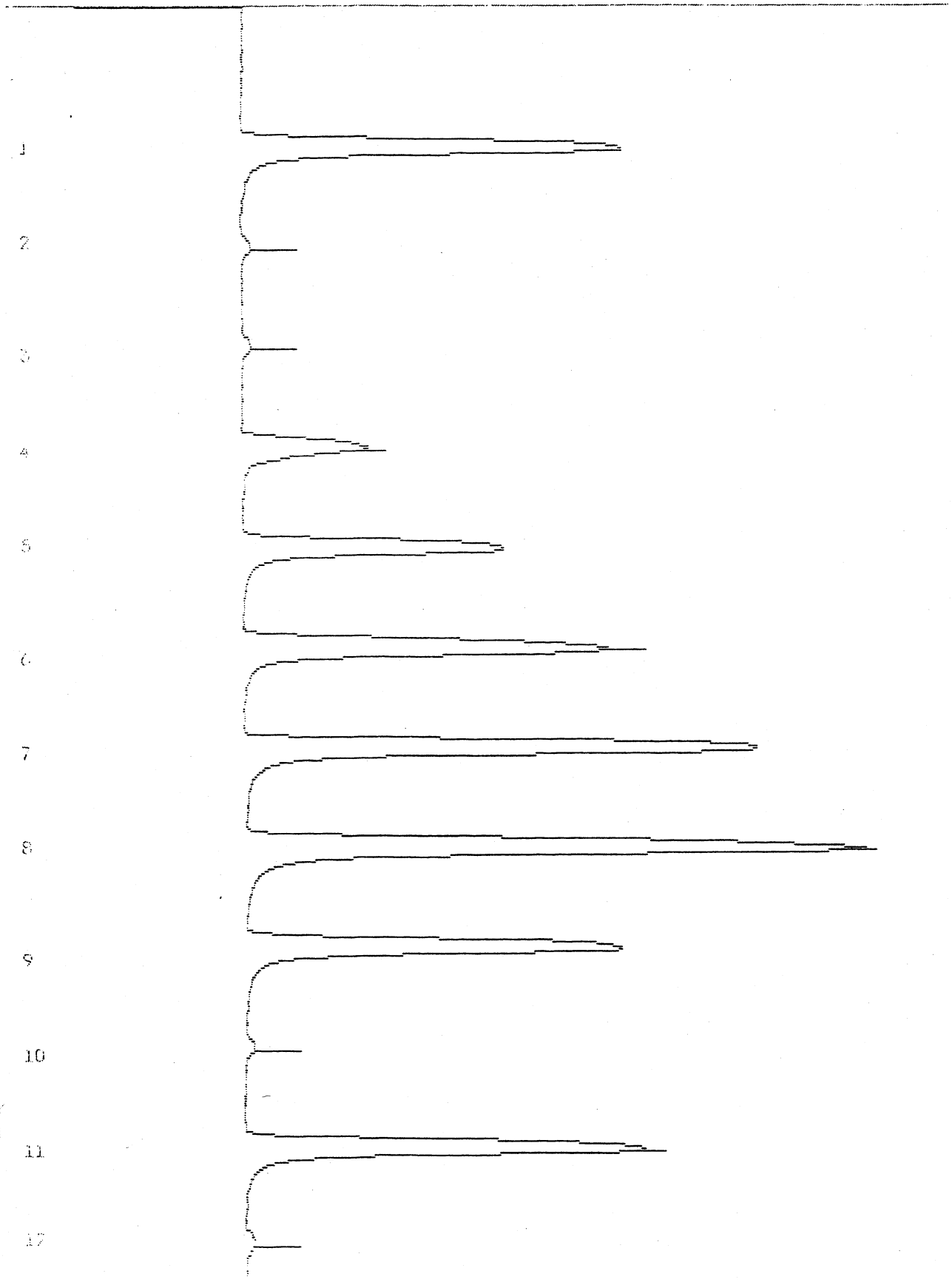

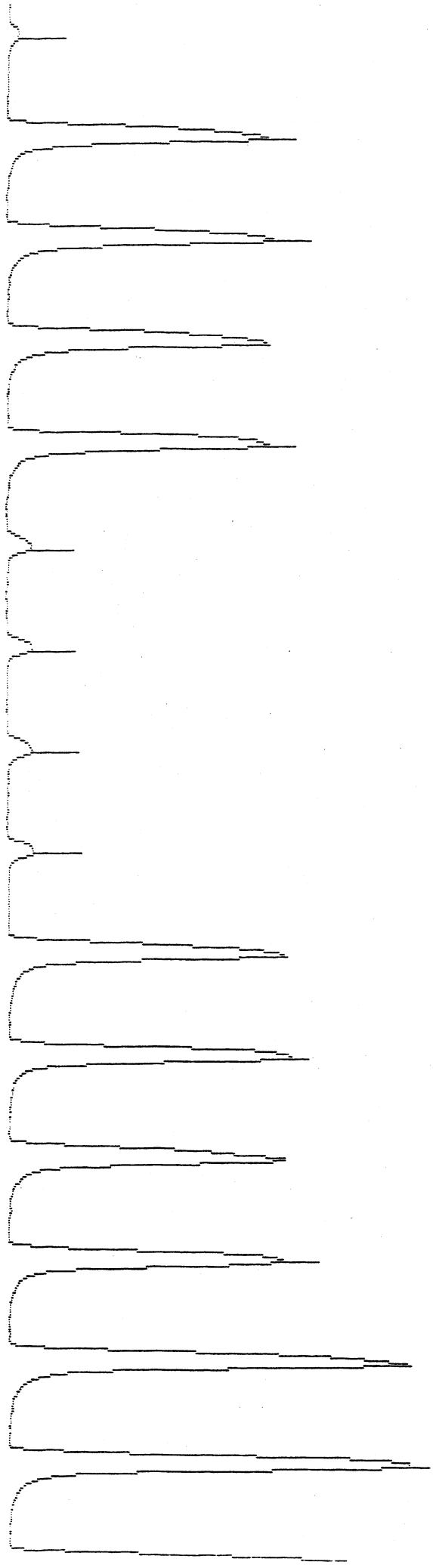
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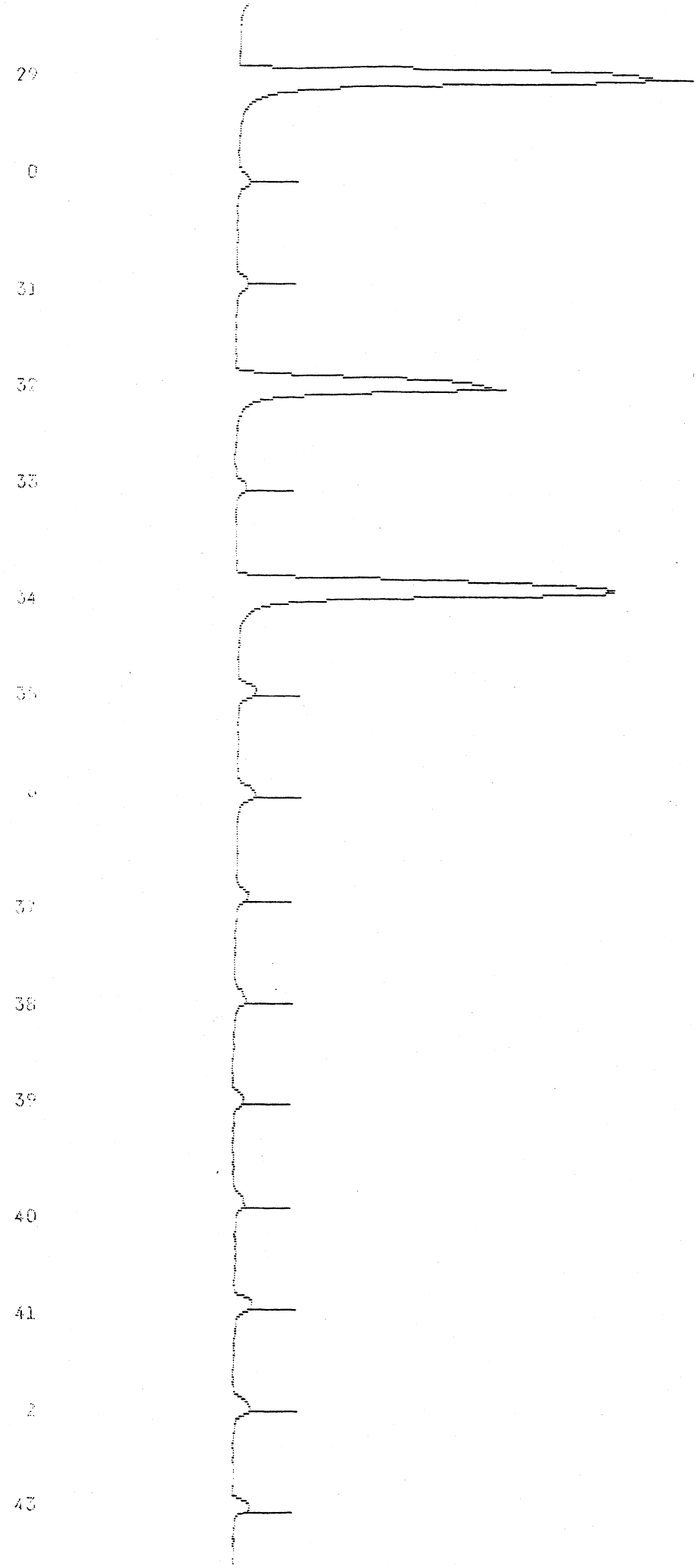
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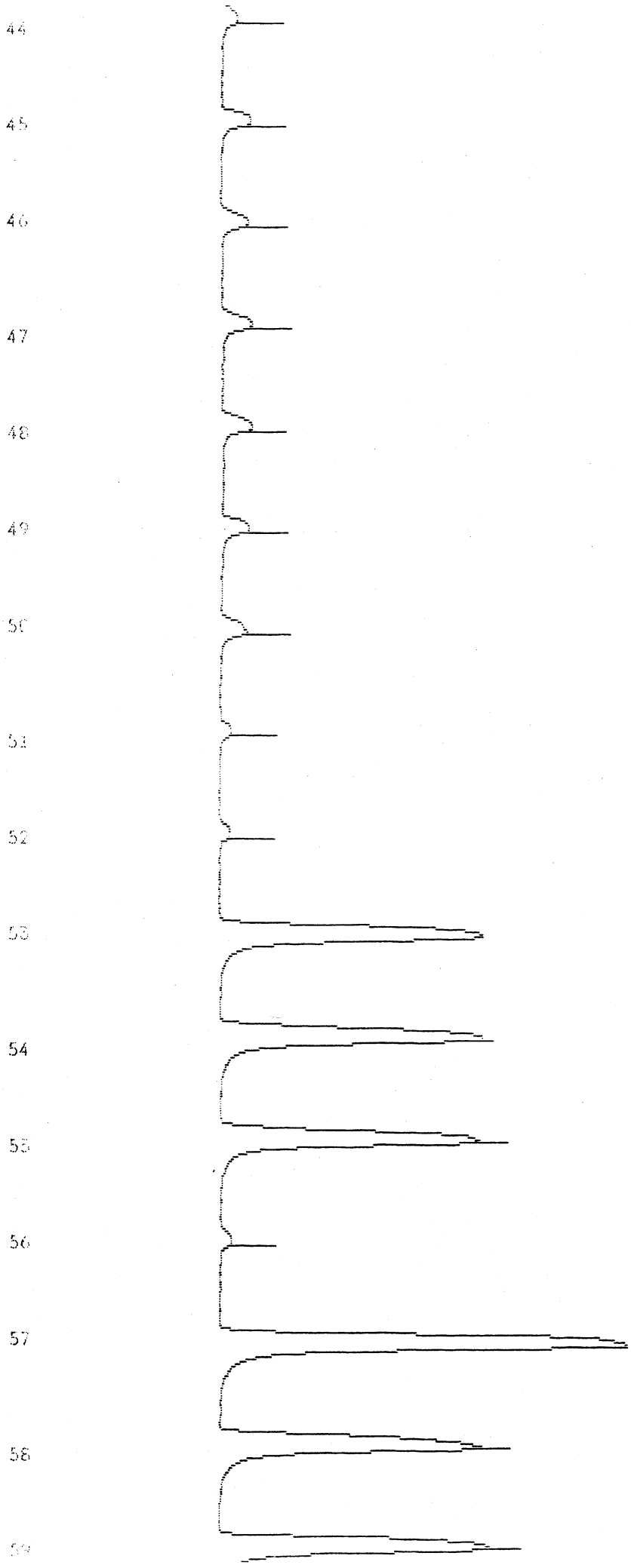
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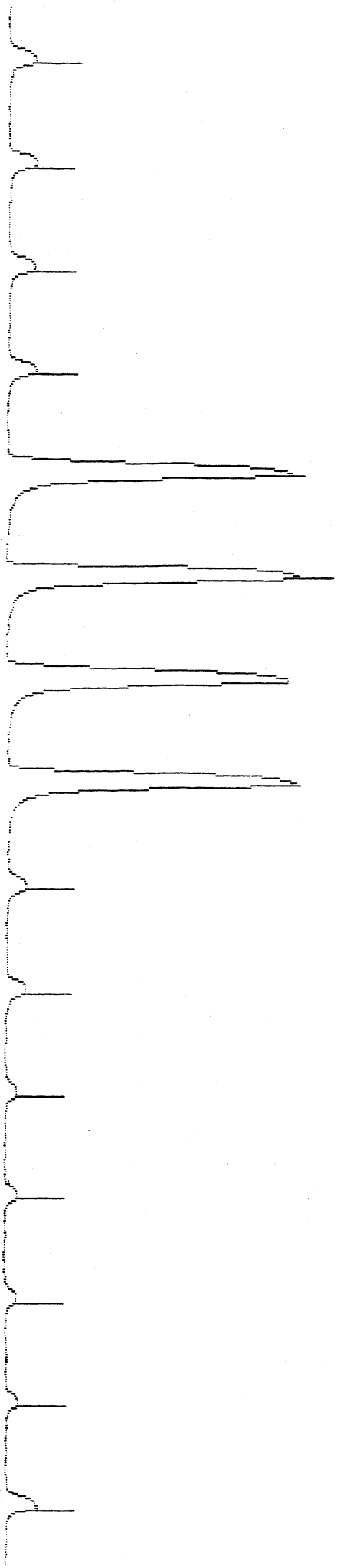
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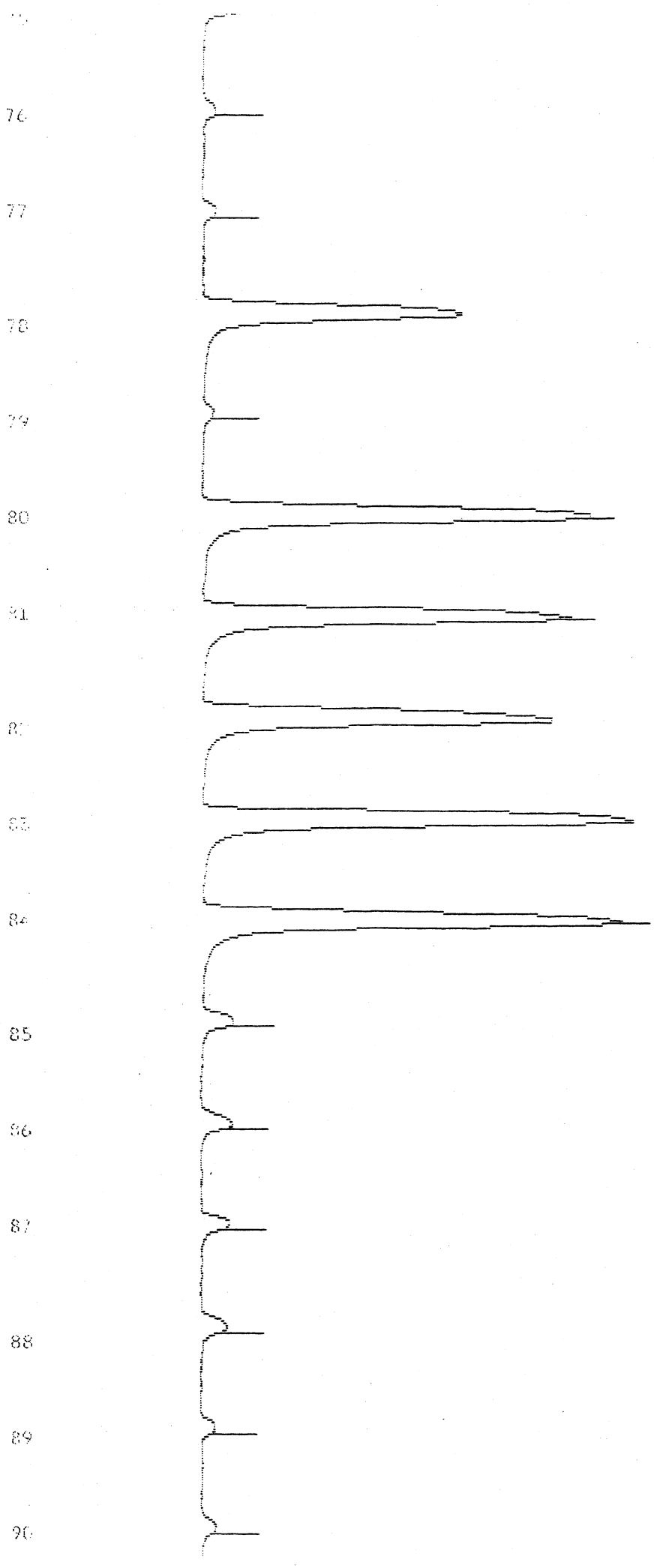
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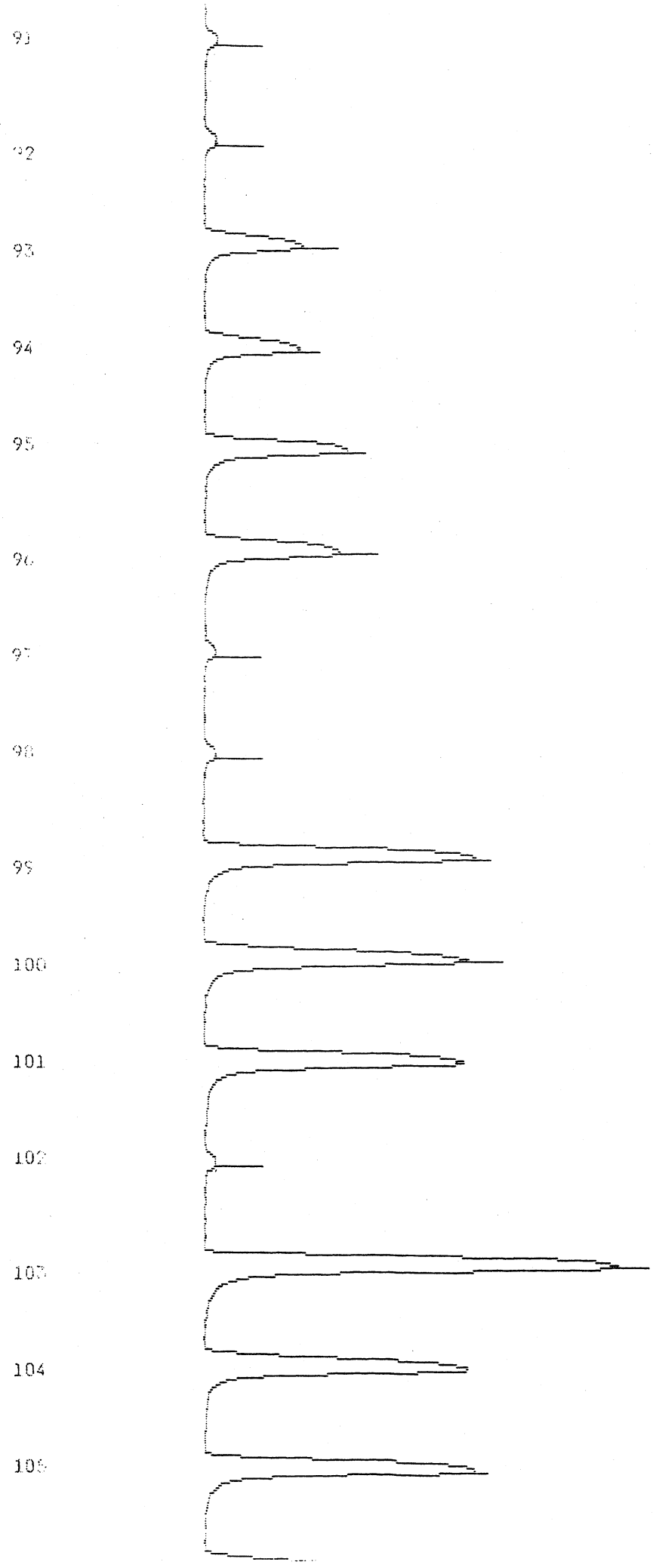
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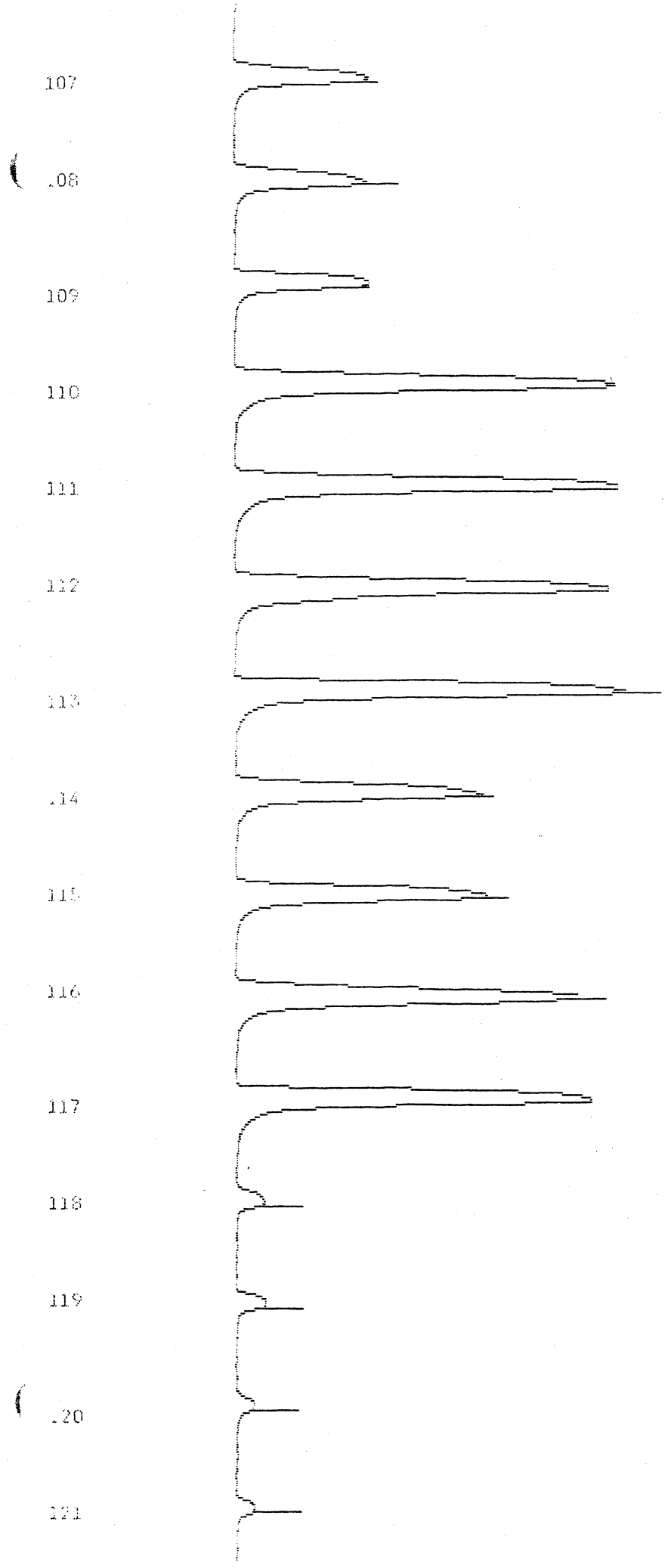
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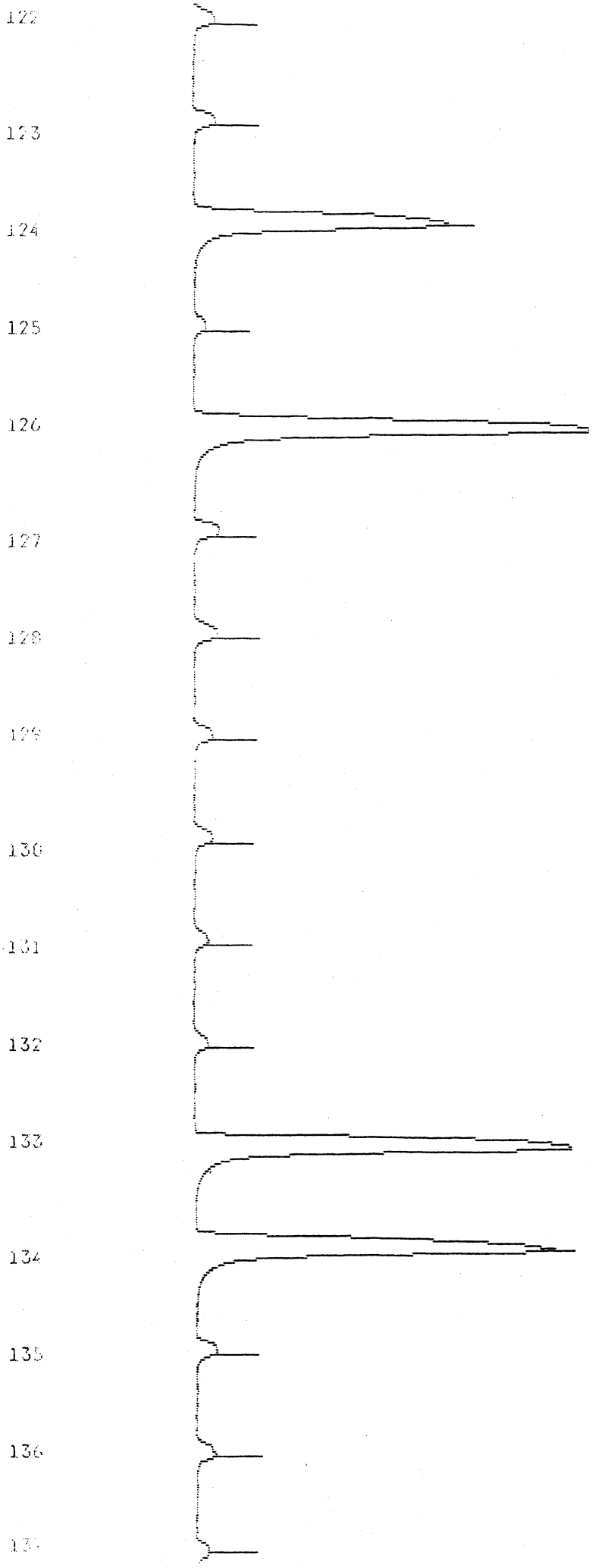
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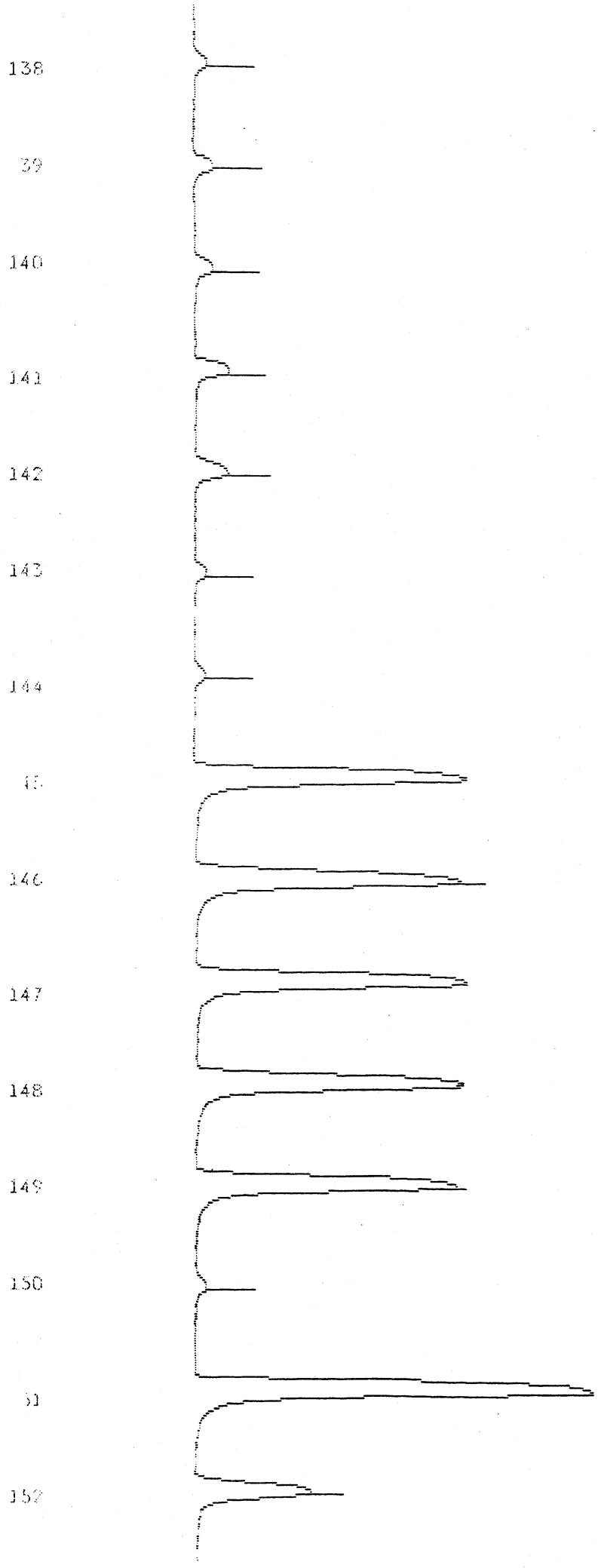
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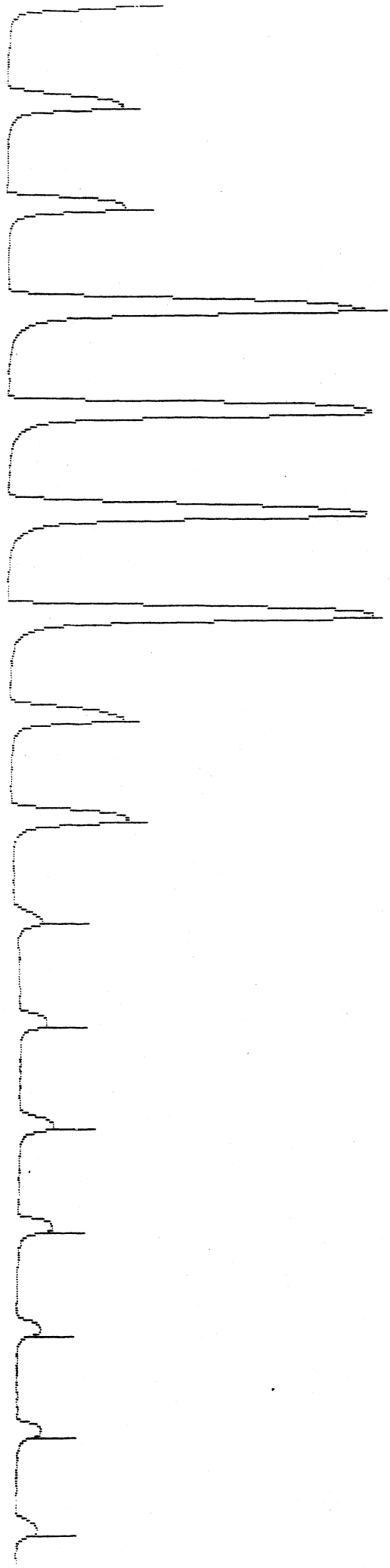
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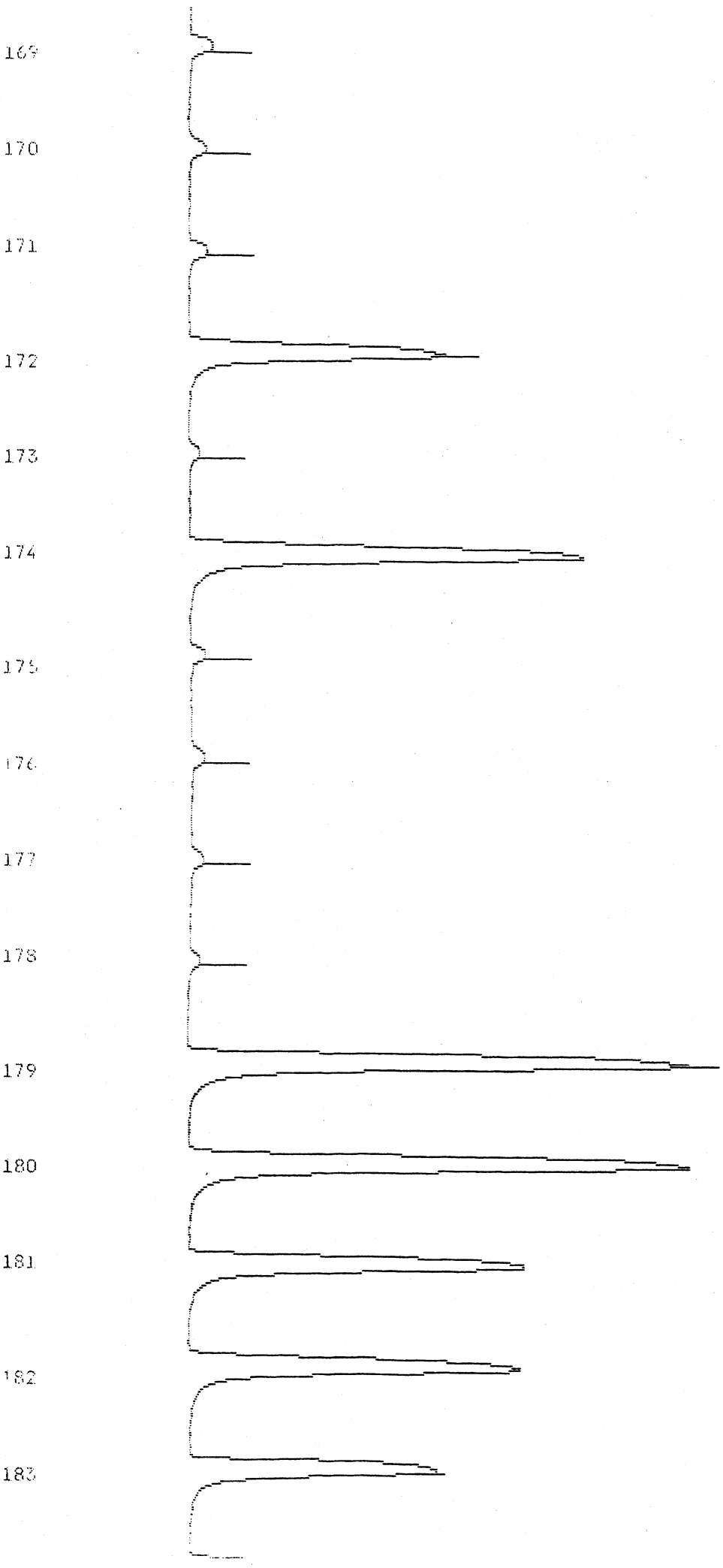
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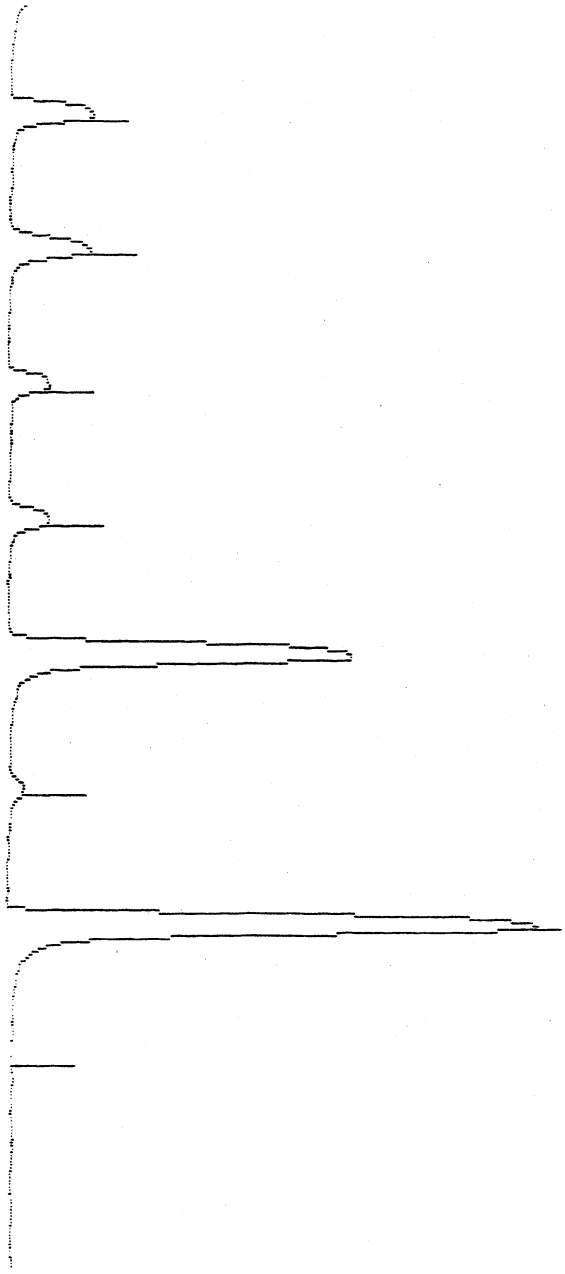
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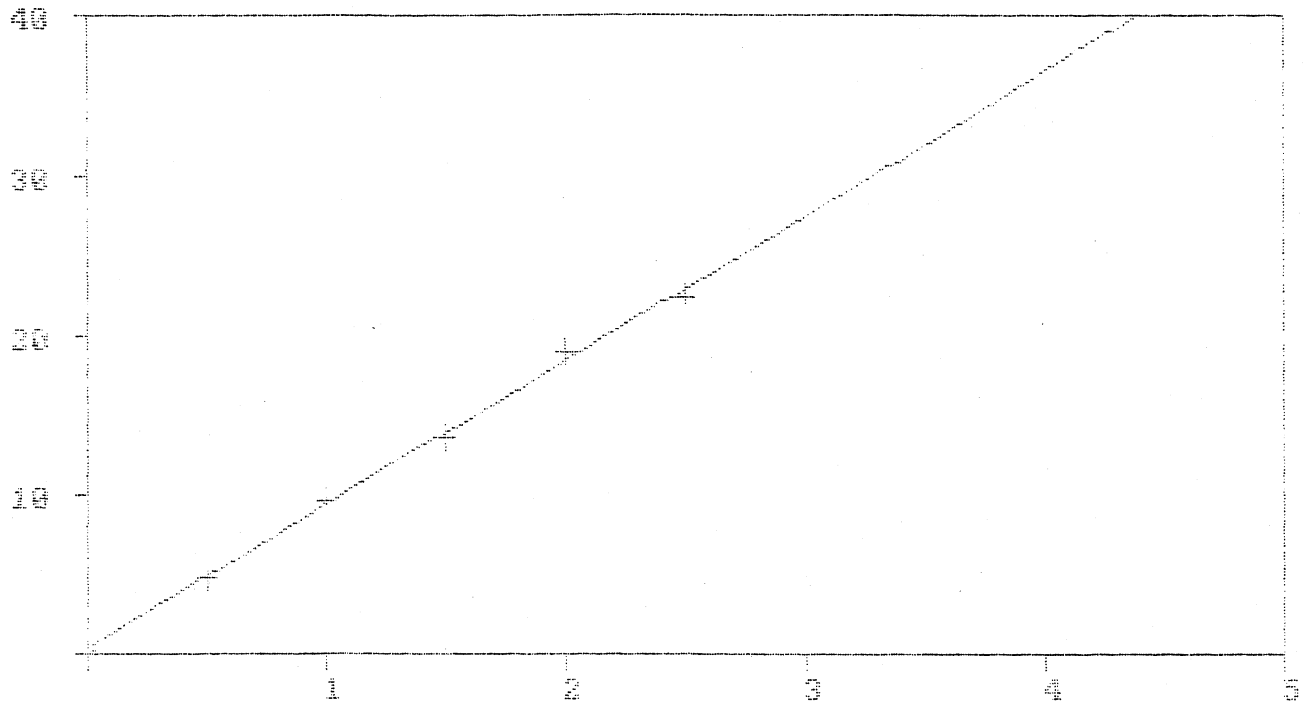
CHANNEL NAME: LDC
RUN NAME: 991009WA



DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.33 SLOPE = 9.024243

CORRELATION: .9991148

CHANNEL NAME: LDC
RUN DATE: 10-09-1999
SAMPLE TABLE NAME: 991009WA
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION	EF
						ppb	
1	PRIMER	1	1	14.5		1.571	b
2	DUMMY	1	1	0.2		-0.015	I
3	S1: 0	1	1	0.2		-0.015	I
4	S2: .5	1	1	4.7		0.486	
5	S3: 1	1	1	9.7		1.038	
6	S4: 1.5	1	1	13.7		1.481	
7	S5: 2	1	1	18.9		2.058	
8	S6: 2.5	1	1	22.5		2.453	
9	ICV	1	1	13.4	TUG	1.446	96%
10	B	1	1	0.0		-0.037	b
11	04	1	1	13.7		1.481	d
12	BL1009-1GFL	1	1	0.0	<0.01	-0.037	I
13	BL1009-1GFL	1	1	0.0		-0.037	I
14	BL1009S	1	1	8.8	0.095	0.935	95%
15	BL1009S	1	1	9.0		0.956	
16	BL1009DS	1	1	8.8	0.095	0.940	98%
17	BL1009DS	1	1	8.9		0.954	
18	53139	1	1	0.5	<0.01	0.020	I
19	53139	1	1	0.6		0.026	I
20	53139D	1	1	0.5	<0.01	0.015	
21	53139D	1	1	0.4		0.012	
22	53139S	1	1	9.6	0.104	1.024	102%
23	53139S	1	1	9.8		1.054	

3128

25	53165D	1	1	7.6		1.024		
26	51662	10	1	14.2	1.546	15.382		
27	51662	10	1	14.3		15.537		
28	51663	10	1	13.4	1.532	14.489		
29	51663	10	1	14.9		16.140		
30	51664	1	1	0.0	<0.01	-0.034	l	
31	51664	1	1	0.0		-0.034	s	
32	CCV	1	1	9.3		0.989	99%	
33	B	1	1	0.0		-0.037	b	
34	D4	1	1	13.7		1.481	d	
35	53129 A	1	1	0.2	<0.01	-0.015	l	
36	53129 A	1	1	0.2		-0.010	I	
37	53129 B	1	1	0.0	<0.01	-0.034	l	
38	53129 B	1	1	0.1		-0.026	I	
39	53129 C	1	1	0.0	<0.01	-0.031	I	
40	53129 C	1	1	0.0		-0.037	I	
41	53130	1	1	0.2	<0.01	-0.010	I	
42	53130	1	1	0.2		-0.012	I	
43	53138	1	1	0.2	<0.01	-0.015	l	
44	53138	1	1	0.2		-0.018	I	
45	53140	1	1	0.7	<0.01	0.039		
46	53140	1	1	0.6		0.028	s	
47	53141	1	1	0.7	<0.01	0.039		
48	53141	1	1	0.6		0.034		
49	53142	1	1	0.5	<0.01	0.023		
50	53142	1	1	0.5		0.020	I	
51	BL1009-2GFL 53684	1	1	0.0	<0.01	-0.037	l	
52	BL1009-2GFL	1	1	0.0		-0.037	l	
53	BL1009S	1	1	8.9	0.094	0.948	94%	
54	BL1009S	1	1	8.8		0.935		
55	CCV	1	1	8.6		0.921	92%	
56	B	1	1	0.0		-0.037	b	
57	D4	1	1	13.7		1.481	d	
58	BL1009DS	1	1	8.8	0.095	0.937	95%	
59	BL1009DS	1	1	8.9		0.954		
60	53164	1	1	0.6	<0.01	0.028	I	
61	53164	1	1	0.6		0.034	s	
62	53164D	1	1	0.5	<0.01	0.020		
63	53164D	1	1	0.6		0.031		
64	53164S	1	1	9.5	0.103	1.013	100%	
65	53164S	1	1	9.8		1.046		
66	53164DS	1	1	9.5	0.103	1.016	100%	
67	53164DS	1	1	9.7		1.038		
68	53143 A	1	1	0.3	<0.01	0.001	I	
69	53143 A	1	1	0.3		-0.002	I	
70	53143 B	1	1	0.0	<0.01	-0.031	I	
71	53143 B	1	1	0.1		-0.026	l	
72	53143 C	1	1	0.0	<0.01	-0.031	l	
73	53143 C	1	1	0.0		-0.031	l	
74	53144	1	1	0.7	<0.01	0.044		
75	53144	1	1	0.7		0.042		
76	53149	1	1	0.1	<0.01	-0.026	s	
77	53149	1	1	0.1		-0.023	l	
78	CCV	1	1	9.1		0.970	97%	
79	B	1	1	0.0		-0.037	b	
80	D4	1	1	13.7		1.481	d	
81	53150	10	1	13.1	1.370	14.110		
82	53150	10	1	12.3		13.298		
83	53151	10	1	15.1	1.613	16.410		
84	53151	10	1	14.6		15.842		
85	53165	1	1	0.7	<0.01	0.042		
86	53165	1	1	0.7		0.042	I	
87	53685 A	1	1	0.6	<0.01	0.031		
88	53685 A	1	1	0.6		0.028		
89	53685 B	1	1	0.1	<0.01	-0.023	l	

92	53685 C	1	1	0.0	<0.01	-0.031	I	
93	53690	1	1	3.0	0.029	0.299		
94	53690	1	1	2.9		0.288		
95	53691	1	1	4.6	0.0460	0.472		
96	53691	1	1	4.3		0.440		
97	BL1009-3GFL 42245, 51448	1	1	0.0	<0.01	-0.031	I	
98	BL1009-3GFL	1	1	0.0		-0.034	I	
99	BL1009S	1	1	9.0	0.095	0.965	95%	
100	BL1009S	1	1	8.7		0.929		
101	CCV	1	1	8.5		0.910	91%	
102	B	1	1	0.0		-0.037	b	
103	D4	1	1	13.7		1.481	d	
104	BL1009DS	1	1	8.6	0.094	0.921	93%	
105	BL1009DS	1	1	8.9		0.948		
106	53693	1	1	4.2	0.0433	0.431	s	
107	53693	1	1	4.2		0.434		
108	53693D	1	1	4.1	0.0424	0.418		
109	53693D	1	1	4.2		0.429		
110	53693S	1	1	12.7	0.138	1.373	95%	
111	53693S	1	1	12.9		1.395		
112	53693DS	1	1	12.6	0.139	1.365	96%	
113	53693DS	1	1	13.1		1.419		
114	53692	1	1	8.3	0.089	0.881		
115	53692	1	1	8.4		0.900		
116	47503	1	1	11.6	0.128	1.254		
117	47503	1	1	12.1		1.305		
118	51449 A	1	1	0.6	<0.01	0.028	I	
119	51449 A	1	1	0.7		0.036		
120	51449 B	1	1	0.2	<0.01	-0.015	I	
121	51449 B	1	1	0.3		-0.007	s	
122	51449 C	1	1	0.3	<0.01	0.001	I	
123	51449 C	1	1	0.4		0.004		
124	CCV	1	1	8.6		0.921	92%	
125	B	1	1	0.0		-0.037	b	
126	D4	1	1	13.7		1.481	d	
127	51450	1	1	0.4	<0.01	0.012		
128	51450	1	1	0.4		0.012	I	
129	51459	1	1	0.3	<0.01	-0.007	I	
130	51459	1	1	0.2		-0.010	I	
131	51460 VOID	10	1	0.1		-0.205	}	RERUN ON 1x DIL. ON 99/10/11.
132	51460	10	1	0.1		-0.232	}	
133	51461	10	1	12.9	1.358	13.921		
134	51461	10	1	12.3		13.244		
135	42246 A	1	1	0.3	<0.01	0.001	I	
136	42246 A	1	1	0.2		-0.012	s	
137	42246 B	1	1	0.0	<0.01	-0.037	I	
138	42246 B	1	1	0.1		-0.029	I	
139	42246 C	1	1	0.3	<0.01	-0.007	R	
140	42246 C	1	1	0.2		-0.012	I	
141	42265	1	1	0.8	<0.01	0.055		
142	42265	1	1	0.8		0.050		
143	BL1009-4GFL 42724, 43188	1	1	0.0	<0.01	-0.031	I	
144	BL1009-4GFL	1	1	0.0		-0.034	I	
145	BL1009S	1	1	9.3	0.098	0.992	98%	
146	BL1009S	1	1	9.0		0.959		
147	BL1009DS	1	1	9.2	0.097	0.978	97%	
148	BL1009DS	1	1	9.1		0.970		
149	CCV	1	1	8.9		0.946	95%	
150	B	1	1	0.0		-0.037	b	
151	D4	1	1	13.7		1.481	s	
152	42266	1	1	3.6	0.037	0.364		
153	42266	1	1	3.7		0.372		
154	42266D	1	1	3.6	0.037	0.361		
155	42266D	1	1	3.7		0.375		

[illegible]	[illegible]	1	1	[illegible]		[illegible]	
158	42266DS	1	1	12.3	0.134	1.330	97%
159	42266DS	1	1	12.5		1.343	
160	42267	1	1	3.6	0.037	0.366	
161	42267	1	1	3.7		0.369	
162	42730	1	1	0.5	<0.01	0.020	I
163	42730	1	1	0.6		0.028	
164	42731	1	1	0.8	<0.01	0.050	
165	42731	1	1	0.8		0.047	
166	42732	1	1	0.4	<0.01	0.009	s
167	42732	1	1	0.5		0.017	
168	42733	1	1	0.3	<0.01	0.001	I
169	42733	1	1	0.4		0.007	I
170	43189 A	1	1	0.2	<0.01	-0.010	I
171	43189 A	1	1	0.2		-0.010	I
172	CCV	1	1	8.8		0.943	94%
173	B	1	1	0.0		-0.037	b
174	D4	1	1	13.7		1.481	d
175	43189 B	1	1	0.1	<0.01	-0.023	I
176	43189 B	1	1	0.0		-0.031	I
177	43189 C	1	1	0.0	<0.01	-0.031	I
178	43189 C	1	1	0.0		-0.037	I
179	43194	1	1	17.4	0.189	1.887	
180	43194	1	1	17.3		1.885	
181	43195	1	1	11.5	0.123	1.238	s
182	43195	1	1	11.4		1.230	
183	43196	1	1	8.4	0.089	0.889	
184	43196	1	1	8.3		0.883	
185	43225	1	1	1.6	0.016	0.161	
186	43225	1	1	1.7		0.163	
187	47489 A	1	1	0.6	<0.01	0.034	
188	47489 A	1	1	0.6		0.031	
189	CCV	1	1	8.6		0.919	92%
190	B	1	1	0.0		-0.037	b
191	D4	1	1	13.7		1.481	d

INTERCEPT: 0.33 LINEAR COEF: 9.024245
CORRELATION COEF. .9991148

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
053131	TRC-LO	SG-OHM-I1a-R1	Mercury -	PV	11.262						99/10/10	3GFT	99/10/10	MG02	24.	22.	
053132	TRC-LO	SG-OHM-I1a-R3	Mercury -	PV	2.799						99/10/10	3GFT	99/10/10	MG02	23.	22.	
053133	TRC-LO	SG-OHM-I1a-R4	Mercury -	PV	6.385						99/10/10	3GFT	99/10/10	MG02	23.	22.	
053134	TRC-LO	SG-OHM-I1b-R1	Mercury -	PV	9.406						99/10/10	3GFT	99/10/10	MG02	24.	22.	
053135	TRC-LO	SG-OHM-I1b-R2	Mercury -	PV	7.927						99/10/10	3GFT	99/10/10	MG02	23.	22.	
BL1010	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.098	98.	0.098	98.	99/10/10	3GFT	99/10/10	MG02	$$$	$$$	
053145	TRC-LO	BP-OHM-3-IE-R2	Mercury -	PV	2.758						99/10/10	4GFT	99/10/10	MG02	31.	22.	
053148	TRC-LO	BP-OHM-3-IW-R3	Mercury -	PV	1.535						99/10/10	4GFT	99/10/10	MG02	31.	22.	
BL1010	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.098	98.	0.099	99.	99/10/10	4GFT	99/10/10	MG02	$$$	$$$	

35 Tests for OHFLTB with an MDL of 0.010 ug Validated By CMH Control Chart Updated N/A IO Requirements met N/A

00056

LDC AUTOSAMPLER RUN LOG (MERCURY)

te: 99.10.10(WA) Run Code: MG02 Matrix: IMP.

Analyst: MG Units: µg (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL1010	1GFB		
13			"			
14			BL1010 S			
15			"			
16			BL1010 DS			
17			"			
18		1/10	44798			
19			"			
20			44798 D			
21			"			
22			44798 S			
23			"			
24			44798 DS			
25			"			
26			42477 a			
27			"			
28			42477 b			
29			"			
30			42477 c			
31			"			
32			CCV			
33			B			
34			D4			
35			42534			
36			"			
37			42264			
38			"			
39		1/10	44799			
40		↓				

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41		1/10	44800			
42		↓	"			
43		1/4	44801			
44		↓	"			
45		1/8	44802			
46		↓	"			
47		1/4	44803			
48		↓	"			
49		1/2	47491			
50		↓	"			
51			BL1010	2GFB		
52			"			
53			BL1010 S			
54			"			
55			CCV			
56			B			
57			D4			
58			BL1010 DS			
59			"			
60		1/4	47492			
61			"			
62			47492 D			
63			"			
64			47492 S			
65			"			
66			47492 DS			
67		↓	"			
68		1/2	47493			
69			"			
70			47494			
71			"			
72			47495			
73			"			
74			47496			
75			"			
76			47497			
77		↓	"			
78			CCV			
79			B			
80			D4			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.10 Run Code: MG02 Matrix: IMP.

Analyst: MG Units: ug (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21		1/2	47498			
22		↓	"			
23			51451			
24			"			
25			51452			
26			"			
27			51453			
28			"			
29			BL1010	3GFT		
30			"			
31			BL1010 S			
32			"			
33			BL1010 DS			
34			"			
35			51454			
36			"			
37			51454 D			
38			"			
39			51454 S			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			CCV			
42			B			
43			D4			
44			51454 DS			
45			"			
46			51455			
47			"			
48			51456			
49			"			
50			51457			
51			"			
52			51458			
53			"			
54		1/8	53131			
55		↓	"			
56		1/2	53132			
57		↓	"			
58		1/4	53133			
59			"			
60			53134			
61			"			
62		1/4	53135			
63		↓	"			
64			CCV			
65			B			
66			D4			
67			BL1010	4GFT		
68			"			
69			BL1010 S			
70			"			
71			BL1010 DS			
72			"			
73		1/10	53136			
74			"			
75			53136 D			
76			"			
77			53136 S			
78			"			
79			53136 DS			
80			"			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.10 Run Code: MG02 Matrix: IMP.

Analyst: MG Units: ug (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
41 21		1/4	53137			
22		↓	"			
23		1/2	53145			
24		↓	"			
25		1/10	53146			
26		↓	"			
27			CCV			
28			B			
29			D4			
30		1/2	53147			
31		↓	"			
32			53148			
33			"			
34			51664	OHFLT		
35			"			
36			51665	OHFLTB		
37			"			
38			CCV			
39			B			
40			D4			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
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72						
73						
74						
75						
76						
77						
78						
79						
80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

RUN DATE: 10-11-1999 CHART DATE: 10-11-1999
CHART SPEED: 30
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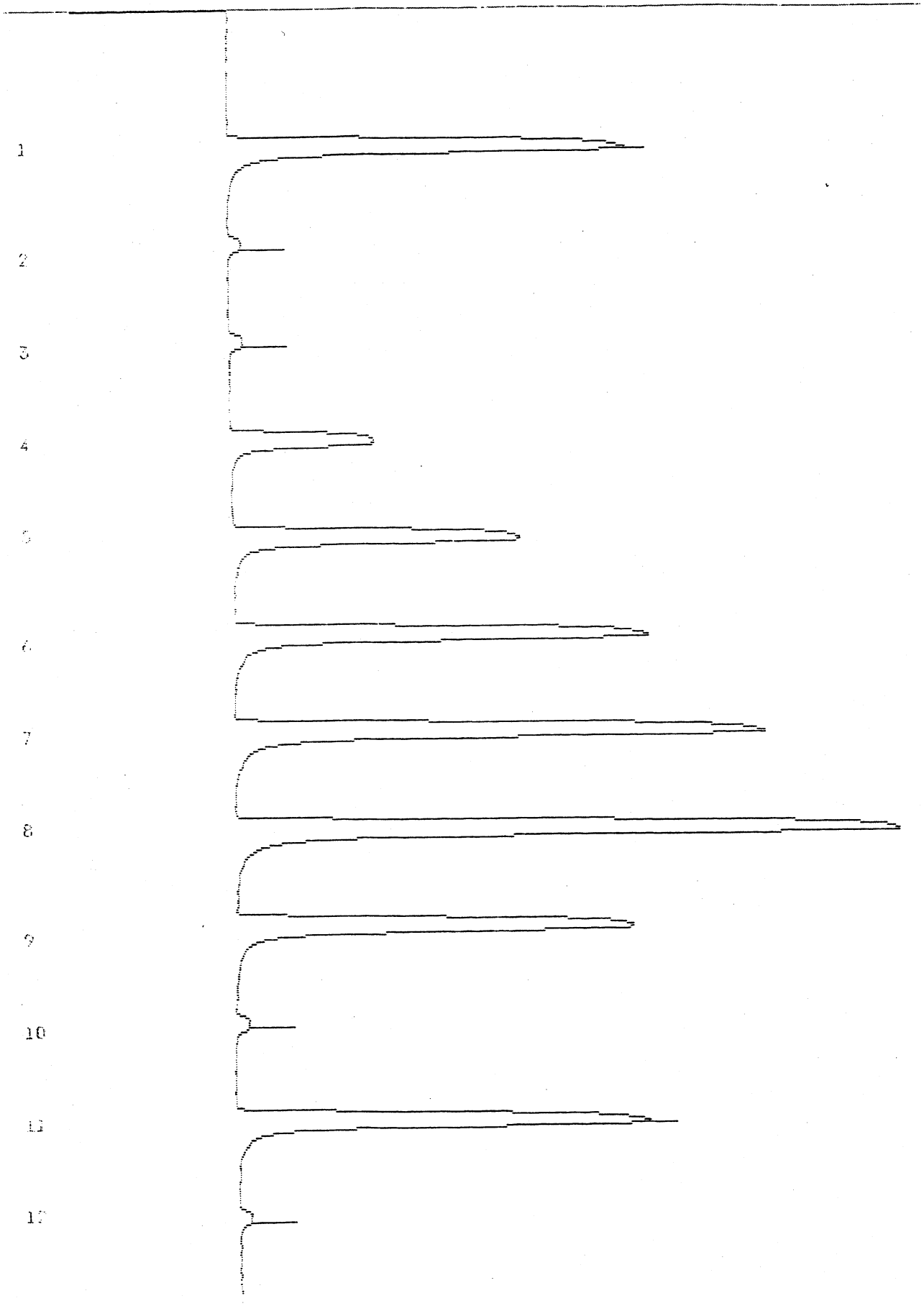

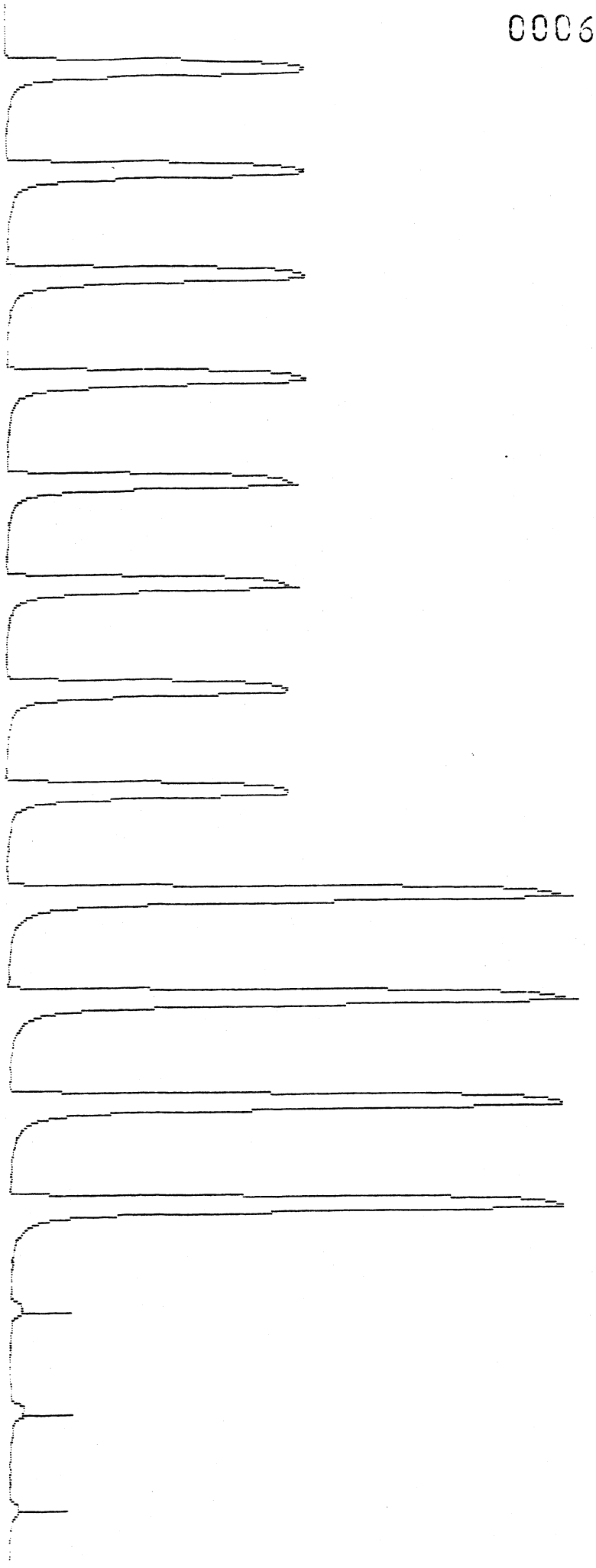

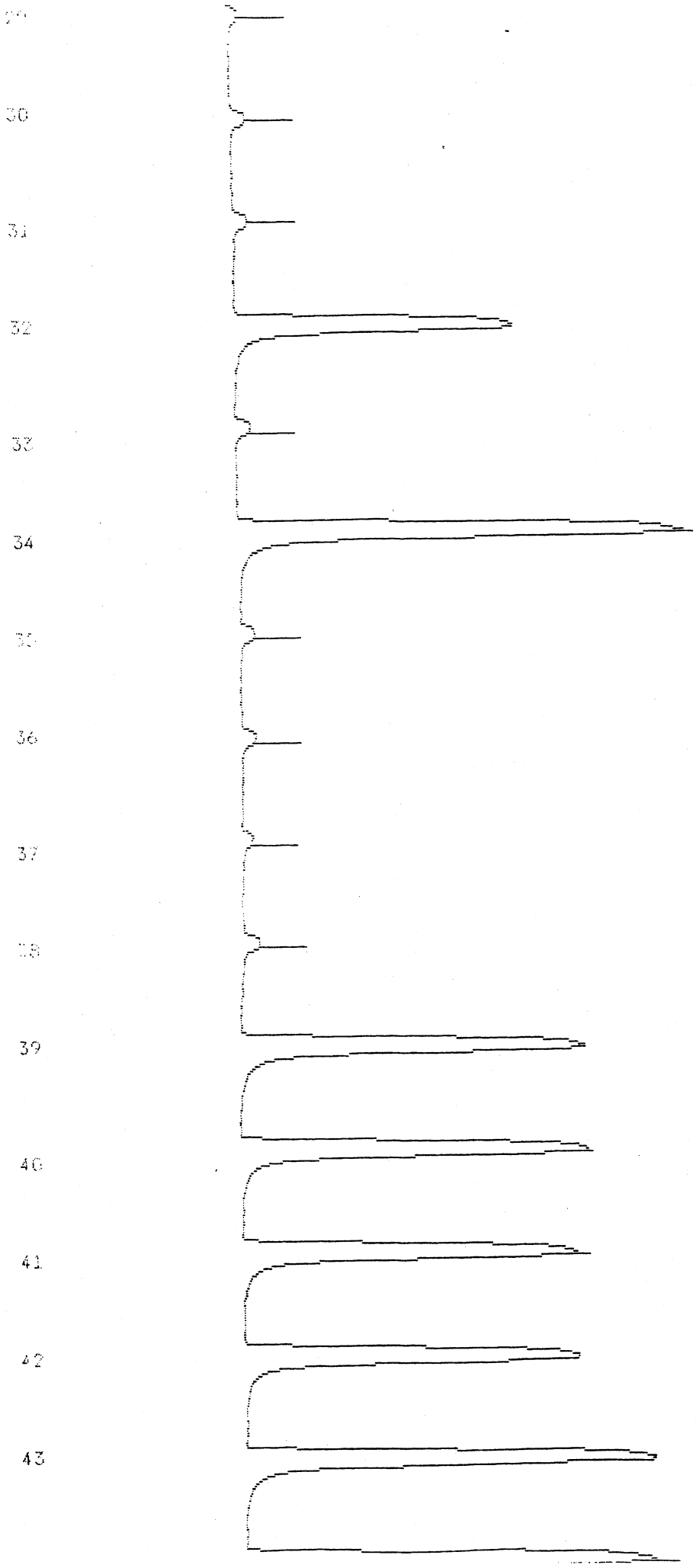
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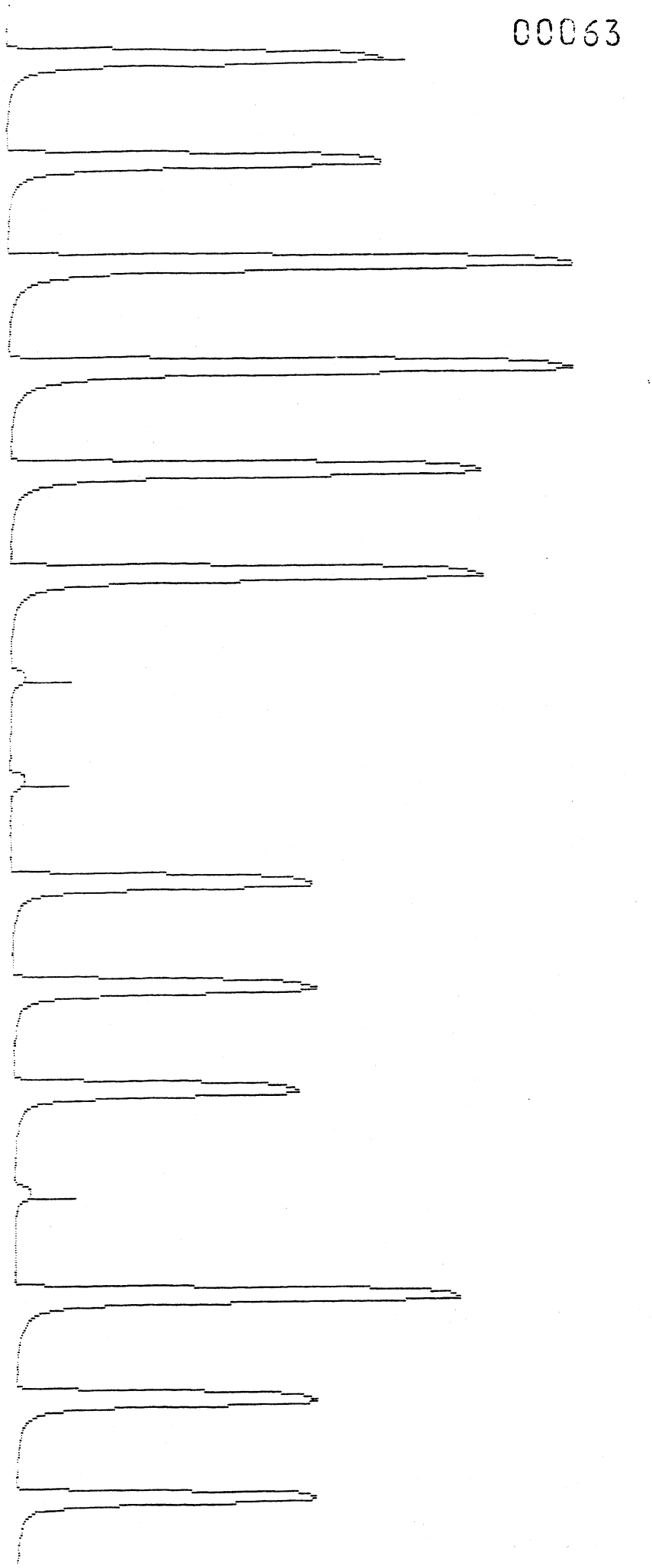

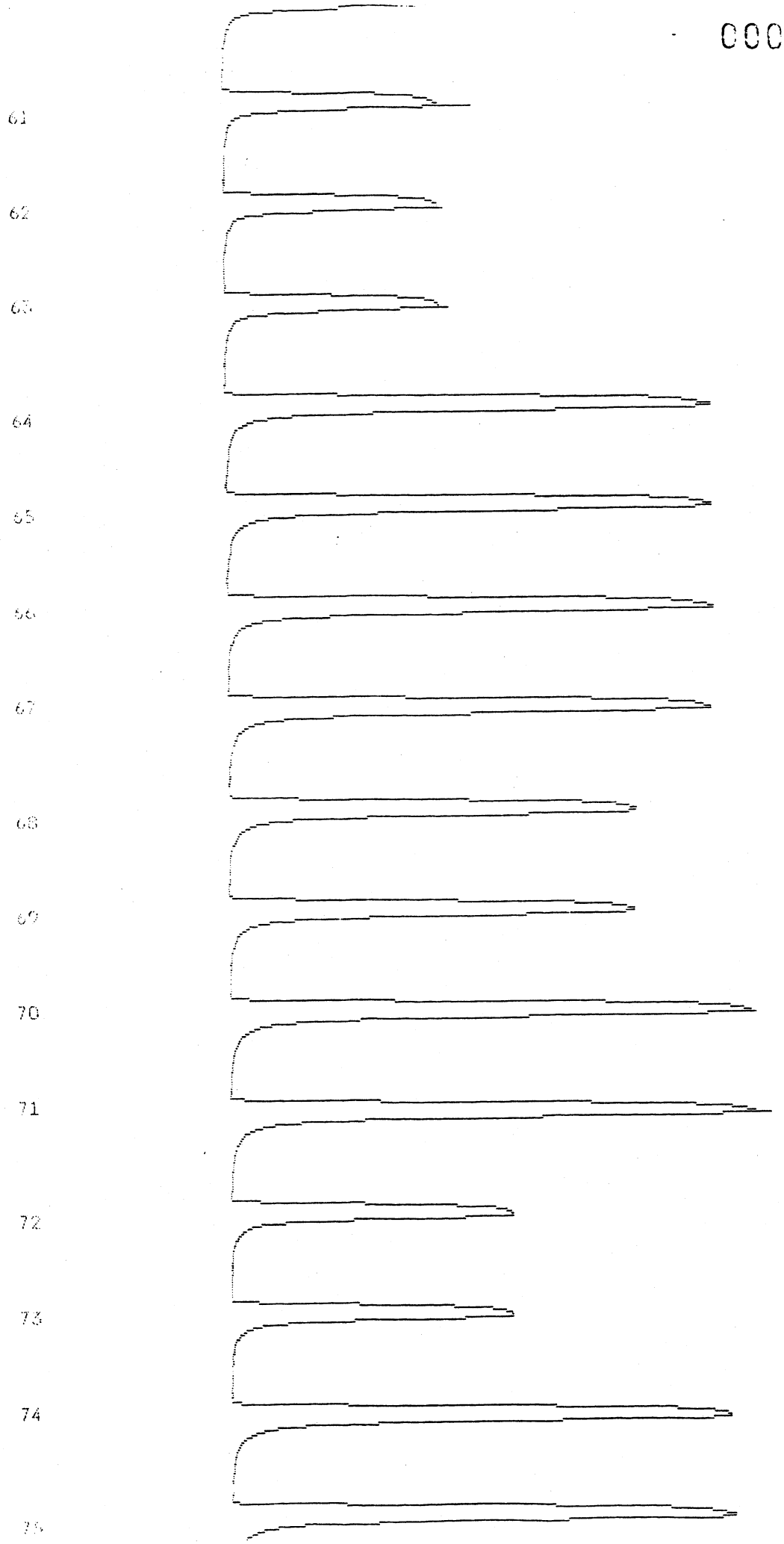
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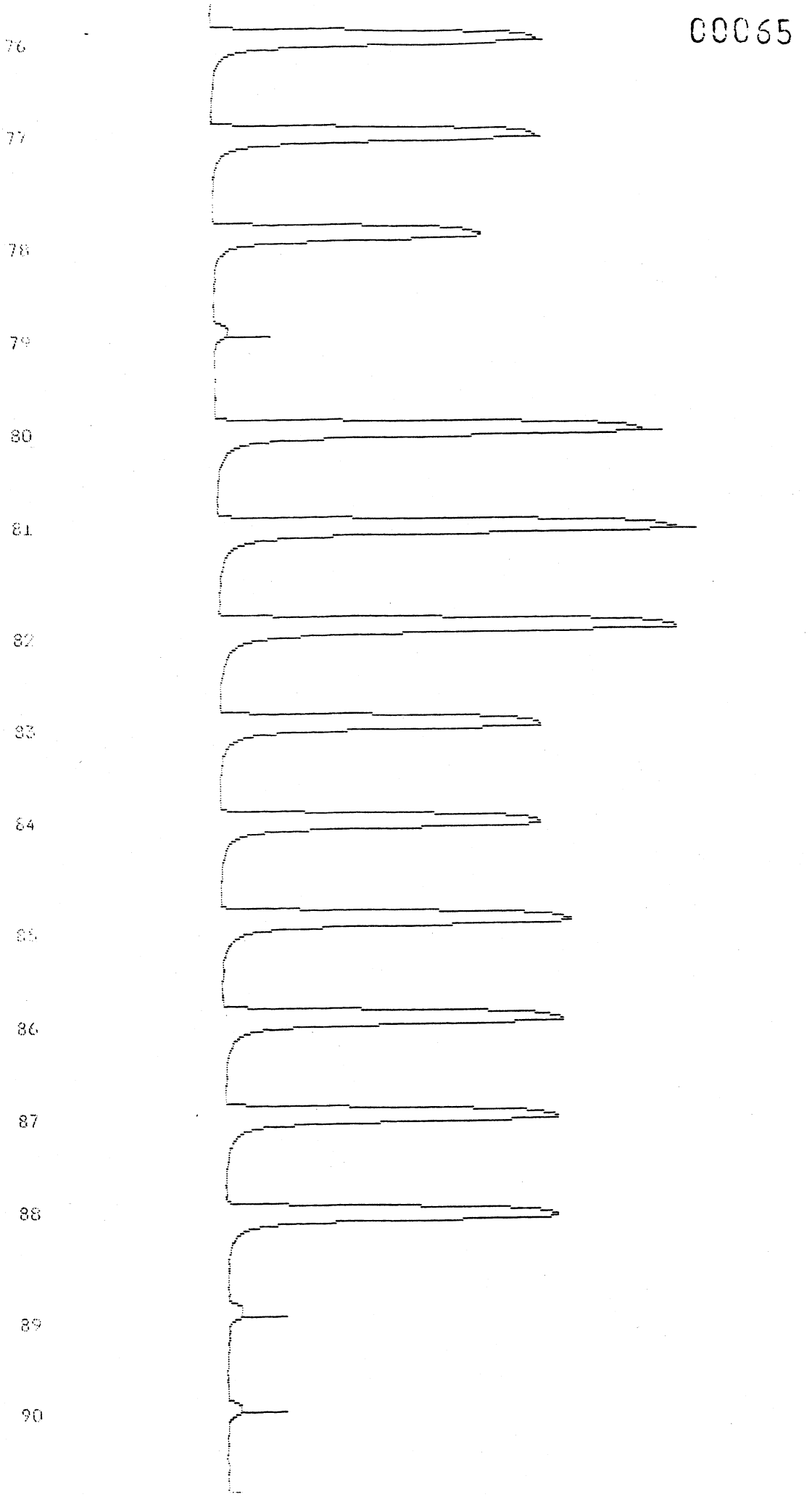
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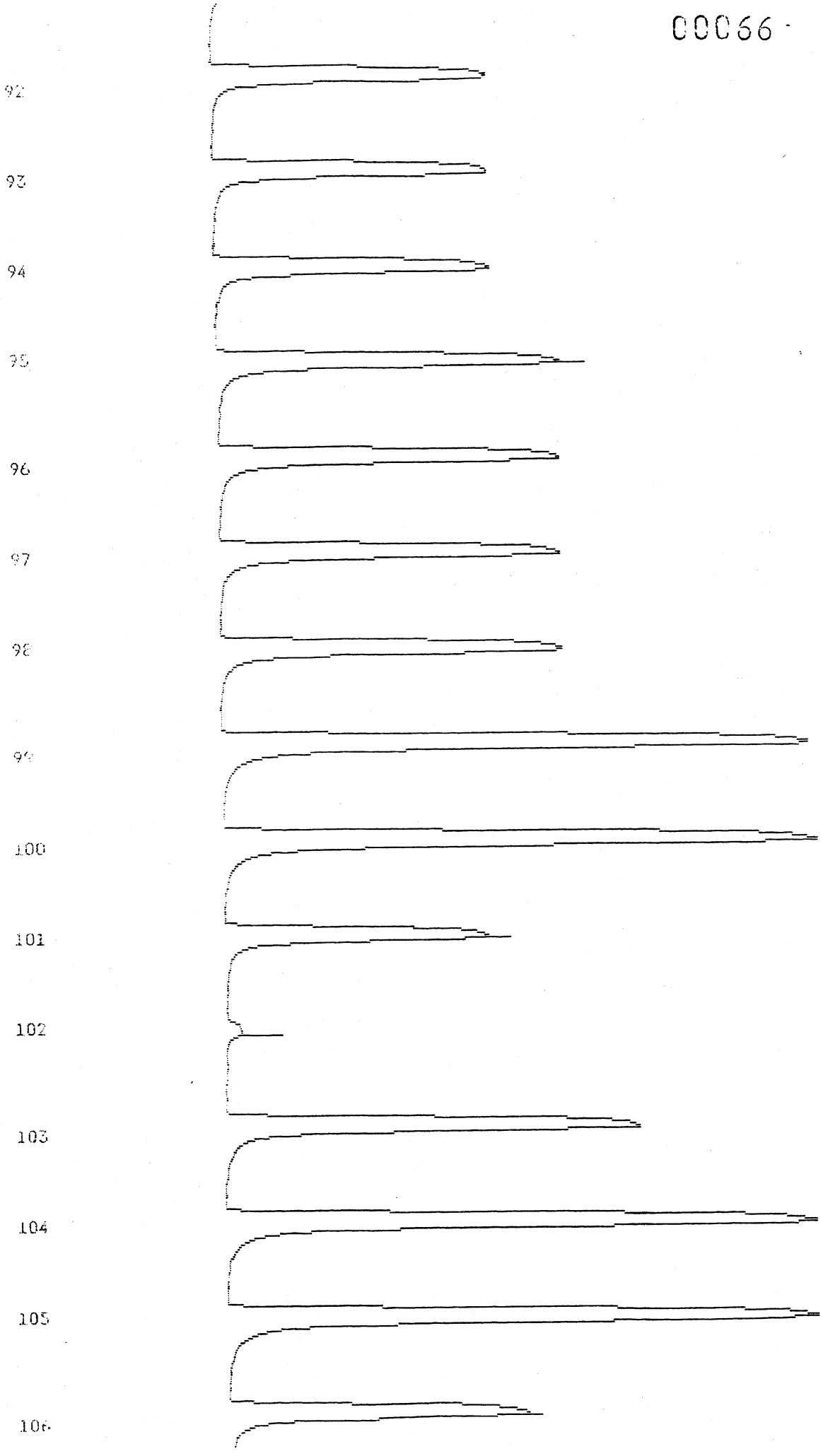
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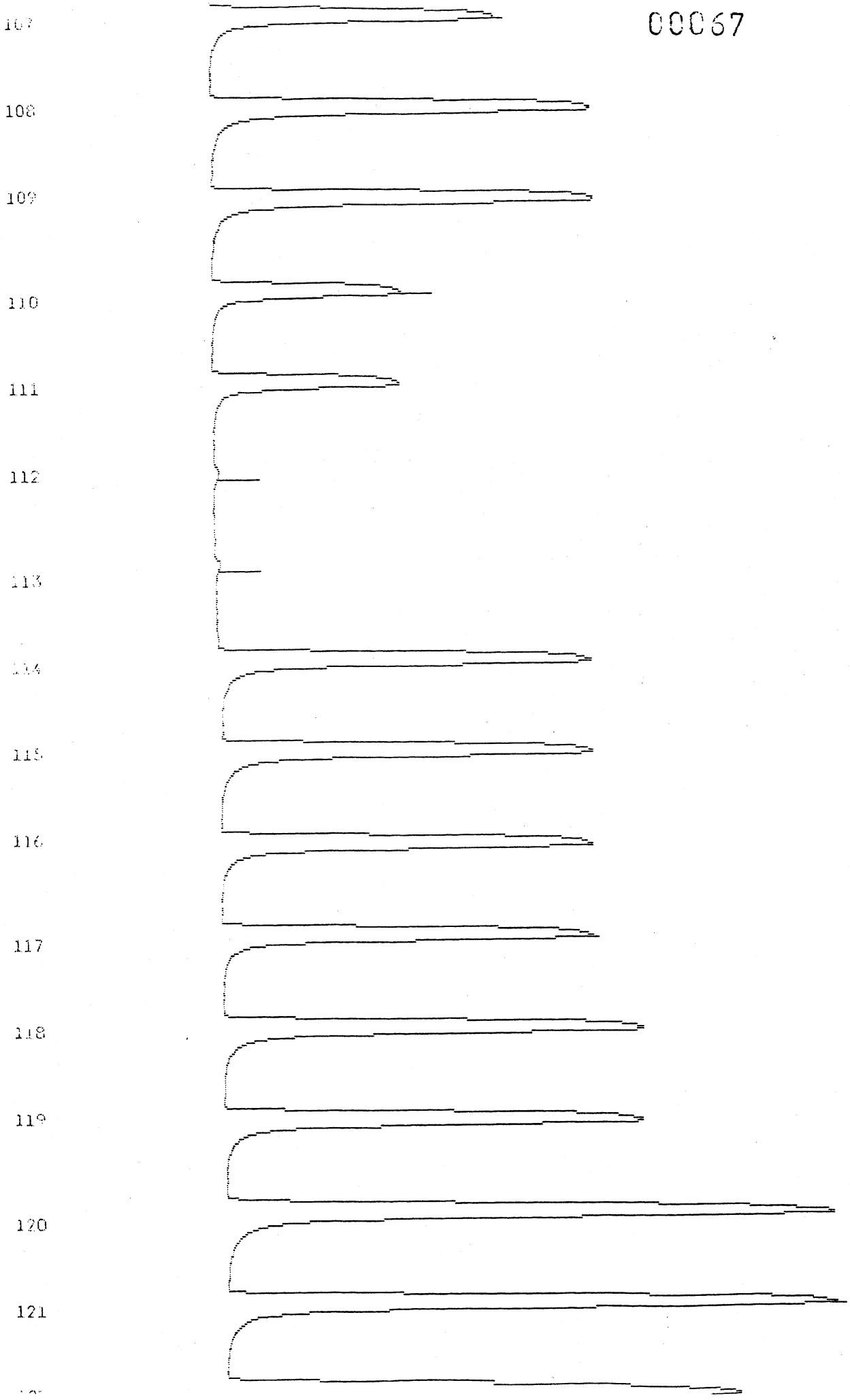
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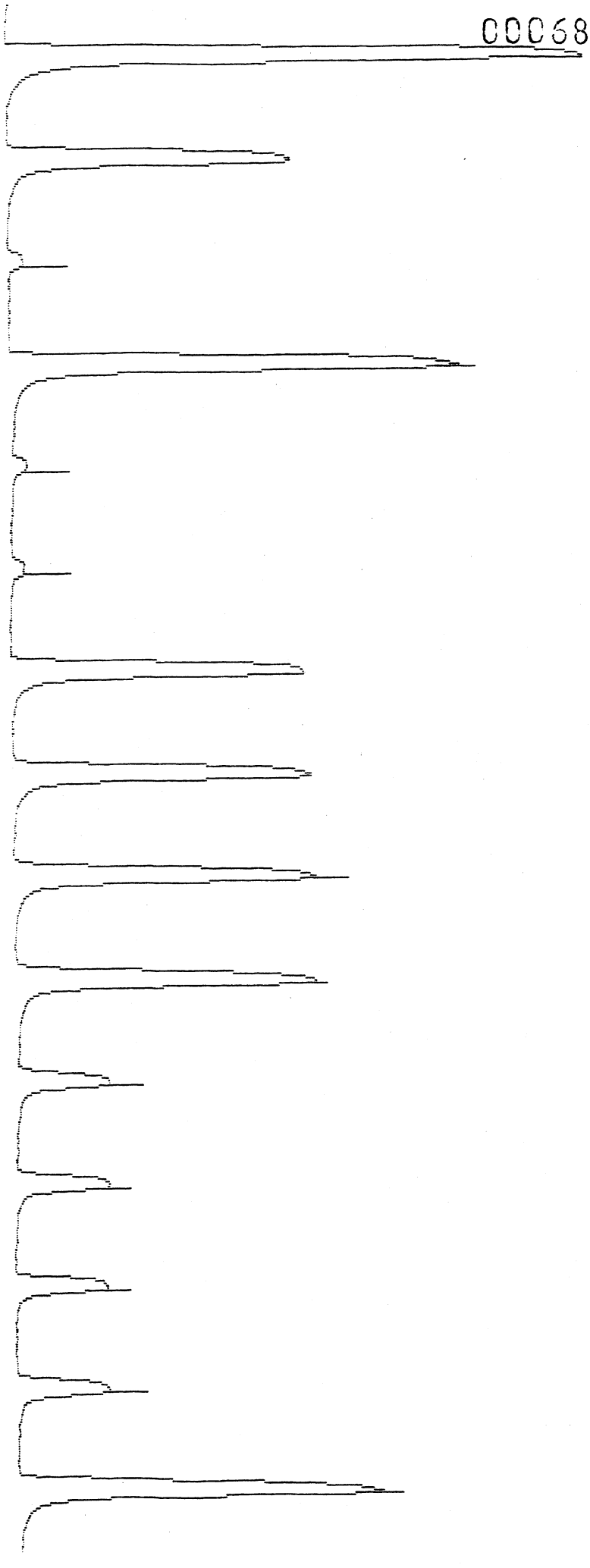
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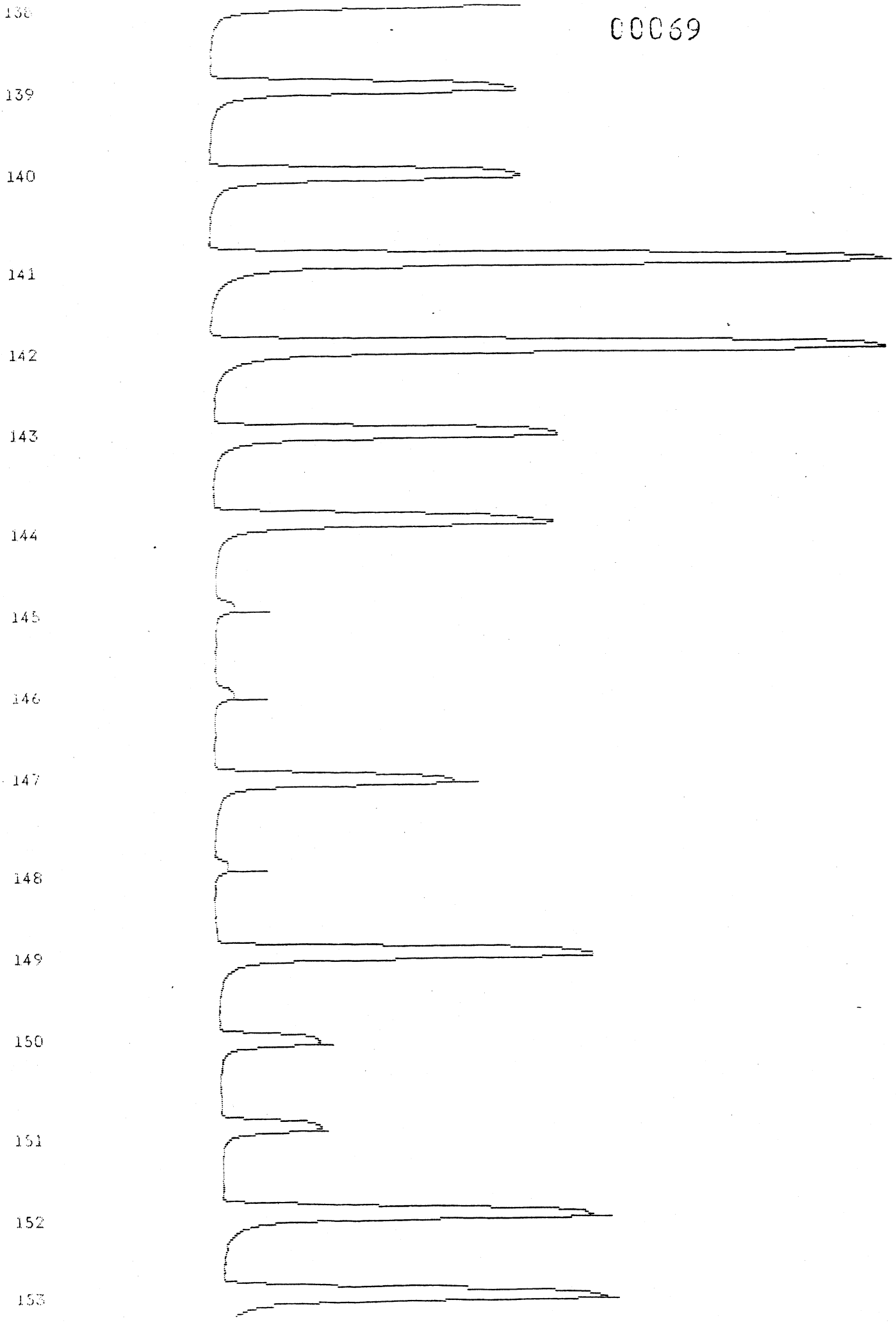
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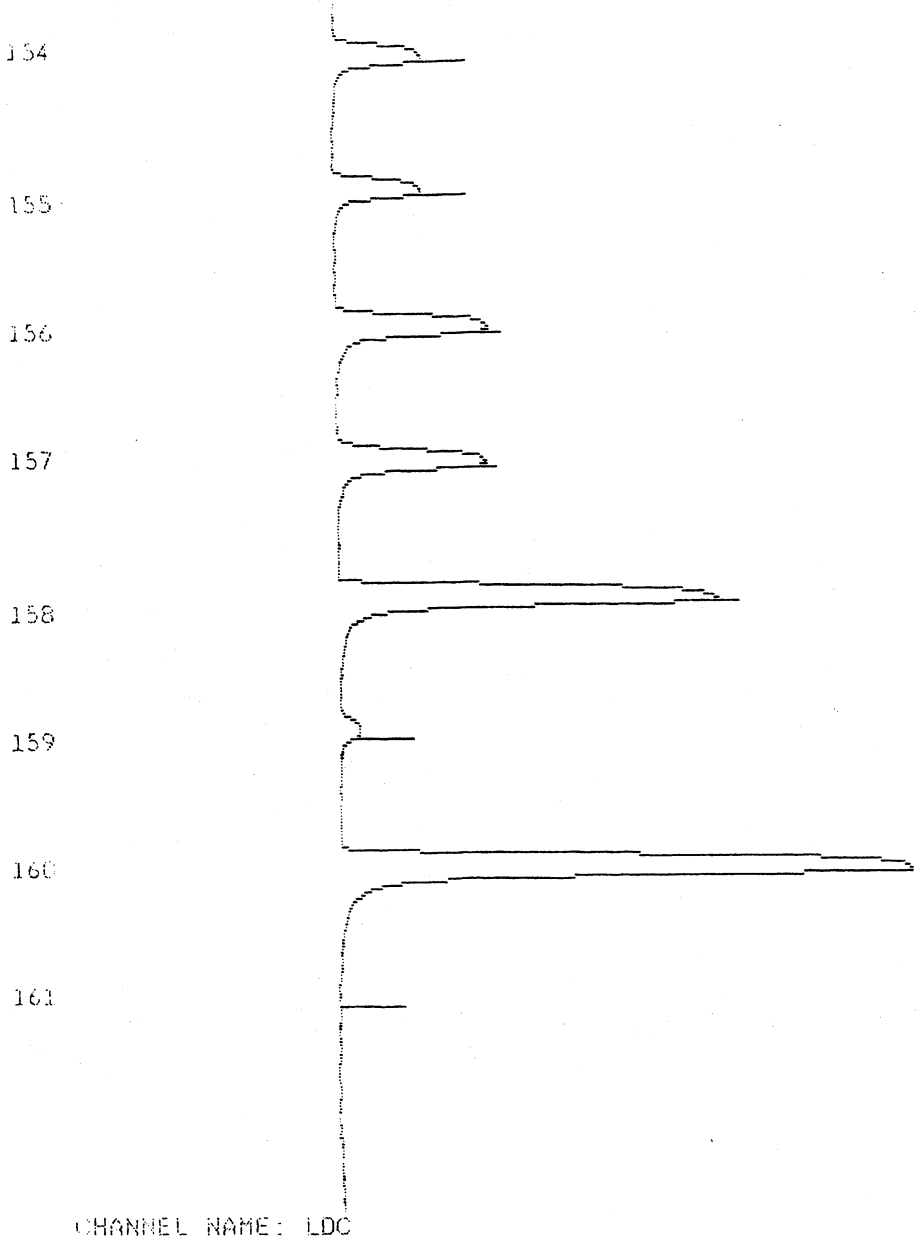
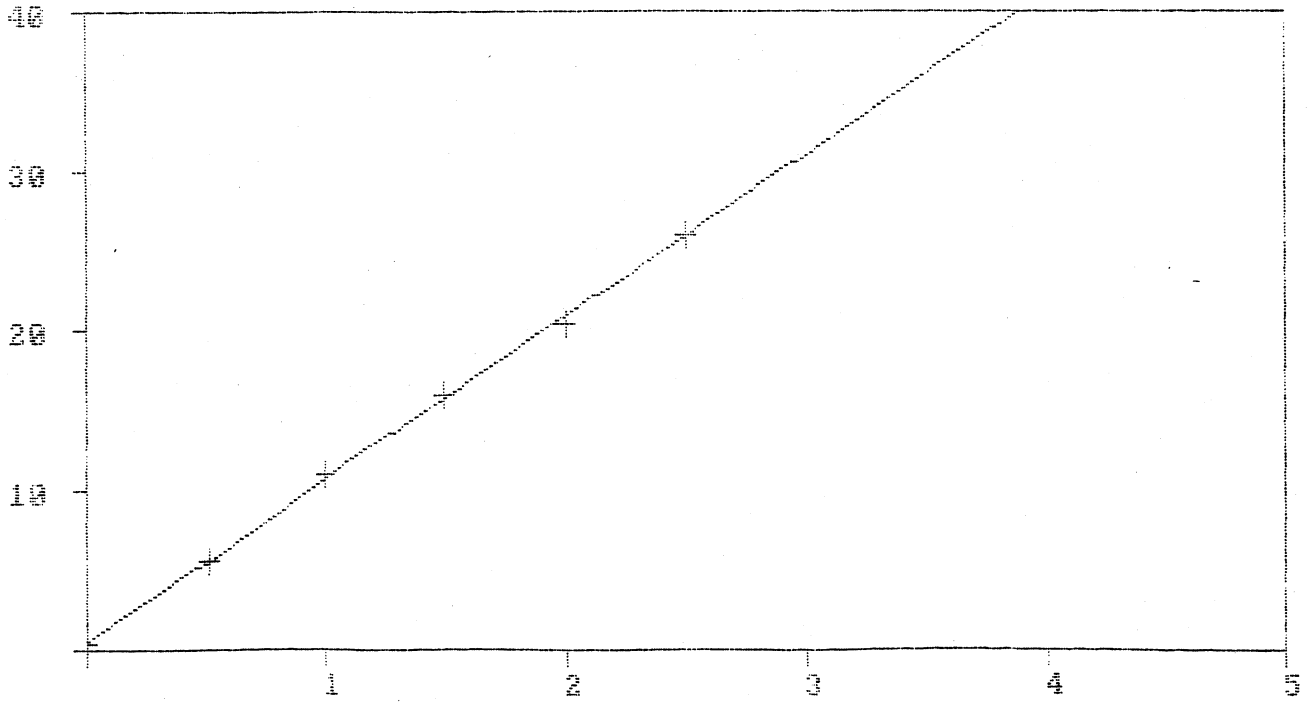


CHANNEL NAME: LDC
RUN NAME: 991010WA



CORRELATION: .9996244

00071

CHANNEL NAME: LDC
RUN DATE: 10-11-1999
SAMPLE TABLE NAME: 991010WA
METHOD NAME: HGWATER

ppb

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION	EF
1	PRIMER	1	1	15.6		1.479	s
2	DUMMY	1	1	0.4		-0.015	I
3	S1: 0	1	1	0.4		-0.015	I
4	S2: .5	1	1	5.5		0.492	
5	S3: 1	1	1	11.0		1.034	
6	S4: 1.5	1	1	16.0		1.522	
7	S5: 2	1	1	20.5		1.964	
8	S6: 2.5	1	1	26.0		2.504	
9	ICV	1	1	15.4	TUG	1.459	97%
10	B	1	1	0.0		-0.051	b
11	D4	1	1	16.0		1.522	d
12	BL1010-1GFT 44795,	1	1	0.0	<0.01	-0.051	I
13	BL1010-1GFT 47488	1	1	0.0		-0.046	I
14	BL1010S	1	1	10.7	0.100	1.005	100%
15	BL1010S	1	1	10.6		0.991	
16	BL1010DS	1	1	10.6	0.100	0.996	100%
17	BL1010DS	1	1	10.7		1.001	
18	44798	10	1	10.2	NA @ 9.486	9.526	
19	44798	10	1	10.1		9.406	
20	44798D	10	1	10.1	9.418	9.430	
21	44798D	10	1	10.1		9.406	
22	44798S	10	1	20.0	19.264	19.204	98%
23	44798S	10	1	20.2		19.324	
24	44798DS	10	1	20.1	19.240	19.252	98%
25	44798DS	10	1	20.1		19.228	
26	42477 A	1	1	0.0	<0.01	0.051	I
27	42477 A	1	1	0.0		-0.051	I
28	42477 B	1	1	0.0	<0.01	-0.051	I
29	42477 B	1	1	0.0		-0.051	I
30	42477 C	1	1	0.0	<0.01	-0.051	I
31	42477 C	1	1	0.0		-0.046	s
32	CCV	1	1	9.9		0.921	92%
33	B	1	1	0.0		-0.051	b
34	D4	1	1	16.0		1.522	d
35	42534	1	1	0.0	<0.200	-0.051	I
36	42534	1	1	0.0		-0.049	I
37	42264	1	1	0.0	<0.01	-0.051	I
38	42264	1	1	0.1		-0.044	I
39	44799	10	1	12.2	11.603	11.519	
40	44799	10	1	12.4		11.687	
41	44800	10	1	12.0	11.231	11.279	
42	44800	10	1	11.9		11.183	
43	44801	4	1	14.7	5.583	5.588	
44	44801	4	1	14.7		5.578	
45	44802	8	1	13.4	10.138	10.157	
46	44802	8	1	13.4		10.118	s
47	44803	4	1	20.5	7.845	7.856	
48	44803	4	1	20.4		7.835	
49	47491	2	1	16.9	3.231	3.216	
50	47491	2	1	17.0		3.245	
51	BL1010-2GFT	1	1	0.0	<0.01	-0.051	I
52	BL1010-2GFT	1	1	0.0		-0.051	I
53	BL1010S	1	1	10.7	0.100	0.998	100%

56	[illegible]	1	1	[illegible]		-0.051	b
57	D4	1	1	16.0	00072	1.522	d
58	BL1010DS	1	1	10.6	0.099	0.993	99%
59	BL1010DS	1	1	10.6		0.993	
60	47492	4	1	7.6	2.793	2.783	
61	47492	4	1	7.6		2.802	s
62	47492D	4	1	7.6	2.802	2.792	
63	47492D	4	1	7.7		2.811	
64	47492S	4	1	17.9	6.818	6.827	101%
65	47492S	4	1	17.8		6.808	
66	47492DS	4	1	17.9	6.793	6.817	100%
67	47492DS	4	1	17.7		6.769	
68	47493	2	1	14.9	2.830	2.837	
69	47493	2	1	14.9		2.823	
70	47494	2	1	19.1	3.671	3.663	
71	47494	2	1	19.2		3.678	
72	47495	2	1	10.2	1.894	1.896	
73	47495	2	1	10.1		1.891	
74	47496	2	1	18.2	3.512	3.485	
75	47496	2	1	18.5		3.538	
76	47497	2	1	12.1	2.266	2.275	s
77	47497	2	1	12.0		2.256	
78	CCV	1	1	9.9		0.921	92%
79	B	1	1	0.0		-0.051	b
80	D4	1	1	16.0		1.522	d
81	47498	2	1	17.3	3.291	3.293	
82	47498	2	1	17.2		3.289	
83	51451	2	1	11.9	2.239	2.241	
84	51451	2	1	11.9		2.237	
85	51452	1	1	13.0	1.205	1.224	
86	51452	1	1	12.6		1.186	
87	51453	1	1	12.2	1.151	1.152	
88	51453	1	1	12.2		1.150	
89	BL1010-3GFT	1	1	0.0	<0.01	-0.051	I
90	BL1010-3GFI	1	1	0.0		-0.051	I
91	BL1010S	1	1	10.5		0.984	s
92	BL1010S	1	1	10.5	0.098	0.979	98%
93	BL1010DS	1	1	10.5	0.098	0.979	98%
94	BL1010DS	1	1	10.5		0.981	
95	51454	1	1	13.2	1.237	1.243	
96	51454	1	1	13.0		1.231	
97	51454D	1	1	13.1	1.236	1.234	
98	51454D	1	1	13.1		1.238	
99	51454S	1	1	22.9	2.208	2.197	97%
100	51454S	1	1	23.1		2.218	
101	CCV	1	1	9.9		0.924	92%
102	B	1	1	0.0		-0.051	b
103	D4	1	1	16.0		1.522	d
104	51454DS	1	1	23.0	2.209	2.209	97%
105	51454DS	1	1	23.0		2.209	
106	51455	1	1	11.4	1.059	1.068	s
107	51455	1	1	11.2		1.049	
108	51456	1	1	15.1	1.450	1.438	
109	51456	1	1	15.4		1.462	
110	51457	1	1	7.4	0.665	0.672	
111	51457	1	1	7.2		0.657	
112	51458	1	1	0.0	<0.100	-0.051	I
113	51458	1	1	0.0		-0.051	I
114	53131	8	1	14.8	11.262	11.252	
115	53131	8	1	14.8		11.271	
116	53132	2	1	14.7	2.799	2.794	
117	53132	2	1	14.8		2.803	
118	53133	4	1	16.8	6.385	6.394	
119	53133	4	1	16.7		6.375	

122	[illegible]	4	1	20.6	7.927	[illegible]	
123	53135	4	1	20.7		[illegible]	
124	CCV	1	1	10.0		0.929	93%
125	B	1	1	0.0		-0.051	b
126	D4	1	1	16.0		1.522	d
127	BL1010-4GFT	1	1	0.0	<0.01	-0.051	I
128	BL1010-4GFT	1	1	0.0		-0.051	I
129	BL1010S	1	1	10.4	0.098	0.972	98%
130	BL1010S	1	1	10.5		[illegible]	
131	BL1010DS	1	1	10.6	0.099	[illegible]	99%
132	BL1010DS	1	1	10.6		[illegible]	
133	53136	10	1	2.8		[illegible]	
134	53136	10	1	[illegible]		[illegible]	
135	531360	10	1	[illegible]		[illegible]	
136	531360	10	[illegible]	[illegible]		[illegible]	
137	53136S	10		[illegible]		[illegible]	
138	53136S	[illegible]				[illegible]	
139	531360S	[illegible]		[illegible]		[illegible]	
140	531360S	[illegible]		[illegible]		[illegible]	
141	[illegible]	[illegible]		[illegible]		[illegible]	R
142	[illegible]	[illegible]		[illegible]		11.246	R
[illegible]	[illegible]	[illegible]		[illegible]	2.758	2.755	
[illegible]	[illegible]	[illegible]	[illegible]	14.6		2.760	
[illegible]	[illegible]	[illegible]	[illegible]	0.2		-0.272	R
[illegible]	[illegible]	[illegible]	1	0.2		-0.296	R
[illegible]	[illegible]	1	1	10.0		0.933	93%
[illegible]	[illegible]	[illegible]	1	0.0		-0.051	b
[illegible]	D4	1	1	16.0		1.522	d
[illegible]	[illegible]	2	1	4.1		0.695	
151	53148	2	1	4.1		0.695	s
152	53148	1	1	15.9	1.535	1.515	
153	53148	1	1	16.3		1.555	
154	51664	1	1	1.9	0.014	0.134	
155	51664	1	1	2.0		0.141	
156	51665	1	1	3.8	0.325	0.326	
157	51665	1	1	3.8		0.323	
158	CCV	1	1	10.2		0.955	95%
159	B	1	1	0.0		-0.051	b
160	D4	1	1	16.0		1.522	d

0.0073

RERUN ON 5x DIL. ON 99/10/11. MB

RERUN ON 10x DIL. 99/10/11 MB

RERUN ON 1x DIL

RERUN ON 1x DIL. MB

INTERCEPT: 0.52 LINEAR COEF: 10.1685

CORRELATION COEF: 9996244

99/10/11 16:18:34 Printed by MGAS LDCA DATA TO BE VALIDATED (METVAL') Analyzed by MGAS

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
053136	TRC-LO	SG-OHM-I1b-R3	Mercury -	PV	3.098	3.060	7.889	96.	7.915	97.	99/10/11	1GFB	99/10/11	MG01	24.	23.	*PDS*
053137	TRC-LO	SG-OHM-I1b-R4	Mercury -	PV	10.243						99/10/11	1GFB	99/10/11	MG01	24.	23.	
053146	TRC-LO	BP-OHM-3-IE-R3	Mercury -	PV	0.452						99/10/11	1GFB	99/10/11	MG01	32.	23.	
053147	TRC-LO	BP-OHM-3-IW-R2	Mercury -	PV	0.619						99/10/11	1GFB	99/10/11	MG01	32.	23.	
BL1011	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.100	100.	0.100	100.	99/10/11	1GFB	99/10/11	MG01	$$$	$$$	

5 Tests for OHFLTB with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00074

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.11 Run Code: MG01 Matrix: IMP.

Analyst: MG Units: µg (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL1011	1GFB		
13			"			
14			BL1011 S			
15			"			
16			BL1011 DS			
17			"			
18		1/5	53136			
19			"			
20			53136 D			
21			"			
22			53136 S			
23			"			
24			53136 DS			
25			"			
26		1/10	53137			
27			"			
28			53146			
29			"			
30			53147			
31			"			
32			CCV			
33			B			
34			D4			
35			42248			
36			"			
37			42249			
38			"			
39			42250			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			42251			
42			"			
43			42725 a			
44			"			
45			42725 b			
46			"			
47			42725 C			
48			"			
49			42726			
50			"			
51			BL10 11	2GFB		
52			"			
53			BL1011 S			
54			"			
55			CCV			
56			B			
57			D4			
58			BL1011 DS			
59			"			
60			42727			
61			"			
62			42727 D			
63			"			
64			42727 S			
65			"			
66			42727 DS			
67			"			
68			42728			
69			"			
70			42729			
71			"			
72			43189 a			
73			"			
74			43189 b			
75			"			
76			43189 c			
77			"			
78			CCV			
79			B			
80			D4			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.11 Run Code: MG01 Matrix: IMP.

Analyst: MG Units: ug (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21			43190			
22			"			
23			43191			
24			"			
25			43192			
26			"			
27			43193			
28			"			
29		1/5	53136 DS			
30		↓	"			
31			51460	OH FLT		
32			"			
33		1/10	51462			
34		↓	"			
35			51463			
36		↓	" 63	↓		
37			51664			
38			"			
39		1/2	43192			
40		↓	"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			CCV			
42			B			
43			D4			
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
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58						
59						
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74						
75						
76						
77						
78						
79						
80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

RUN DATE: 10-11-1999 CHART DATE: 10-11-1999
CHART SPEED: 30
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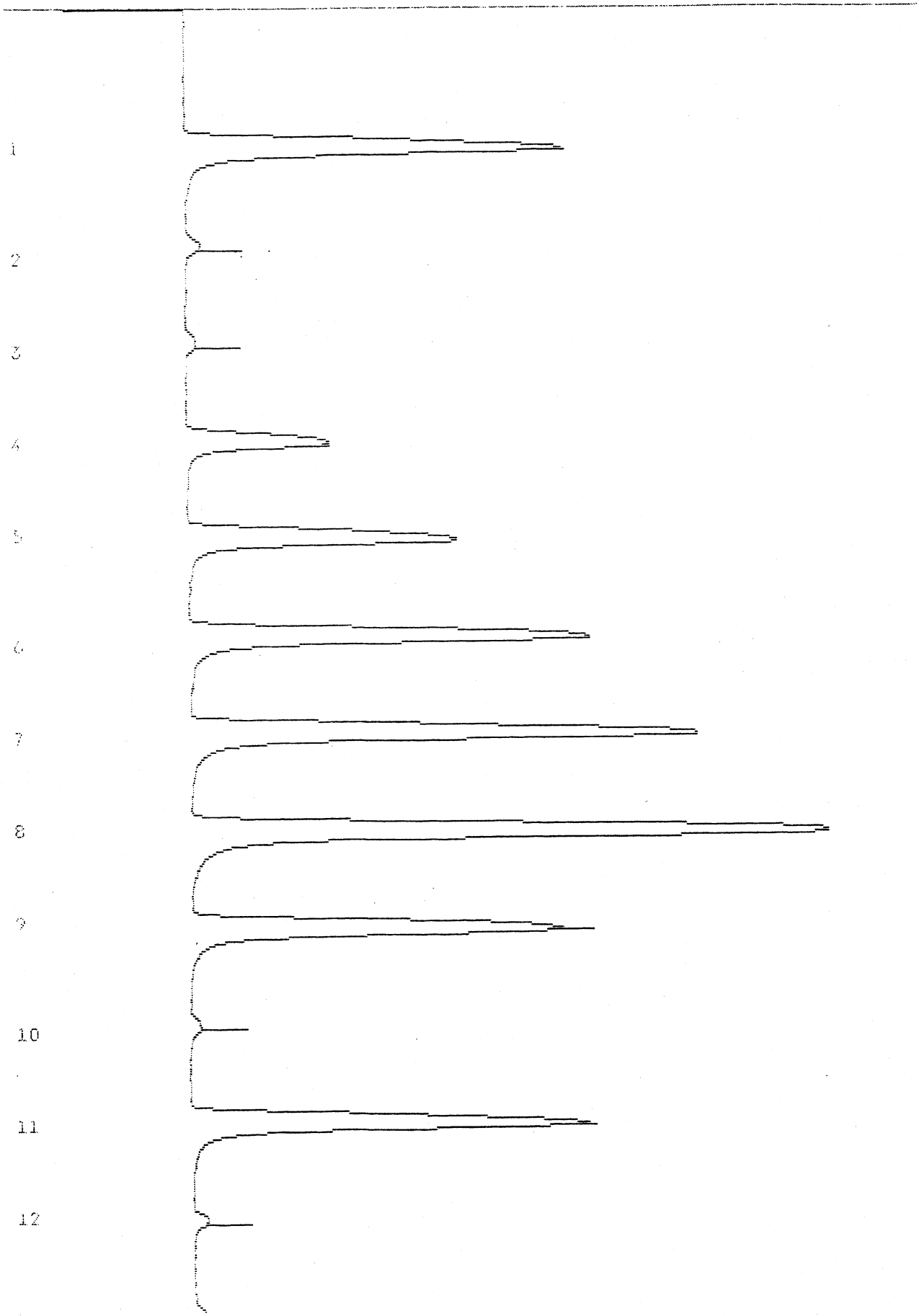

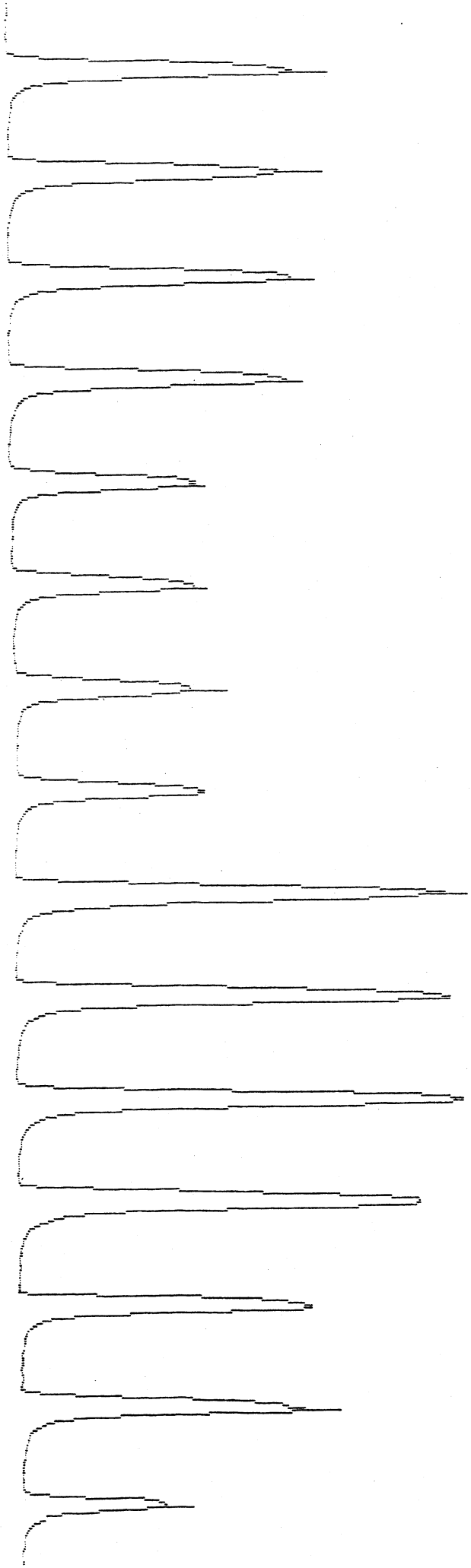

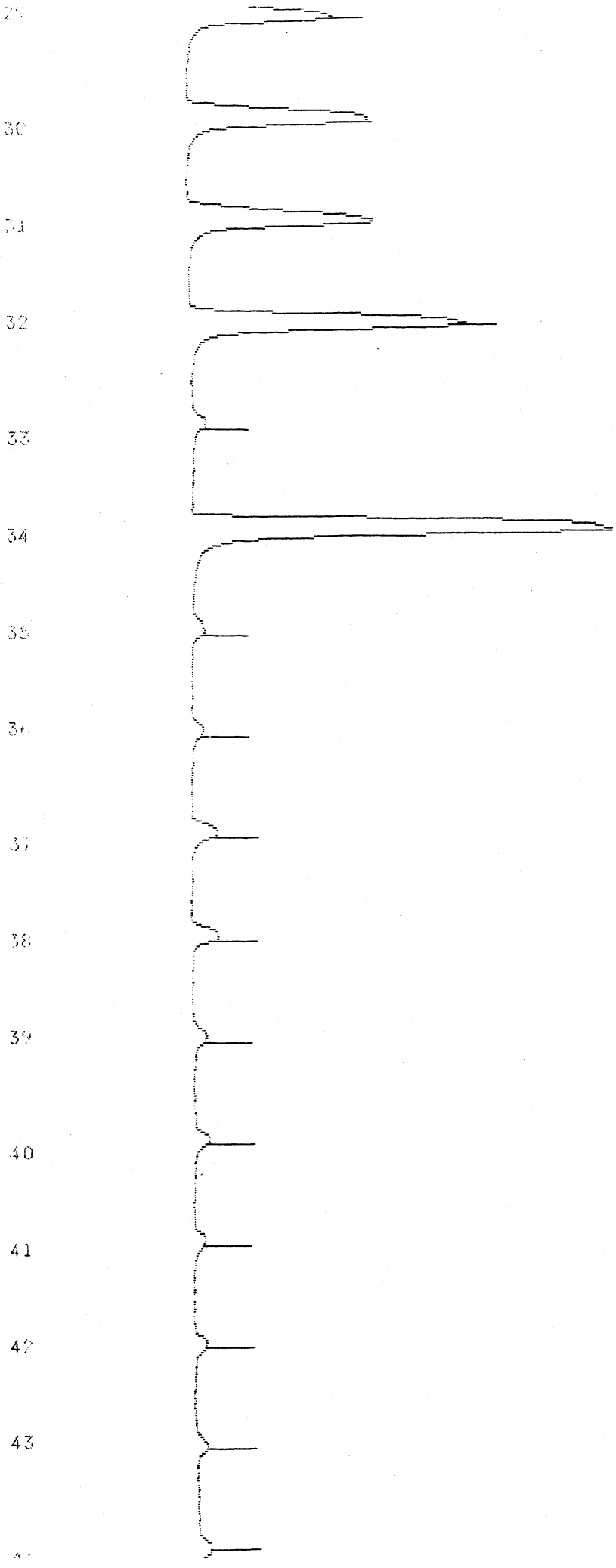
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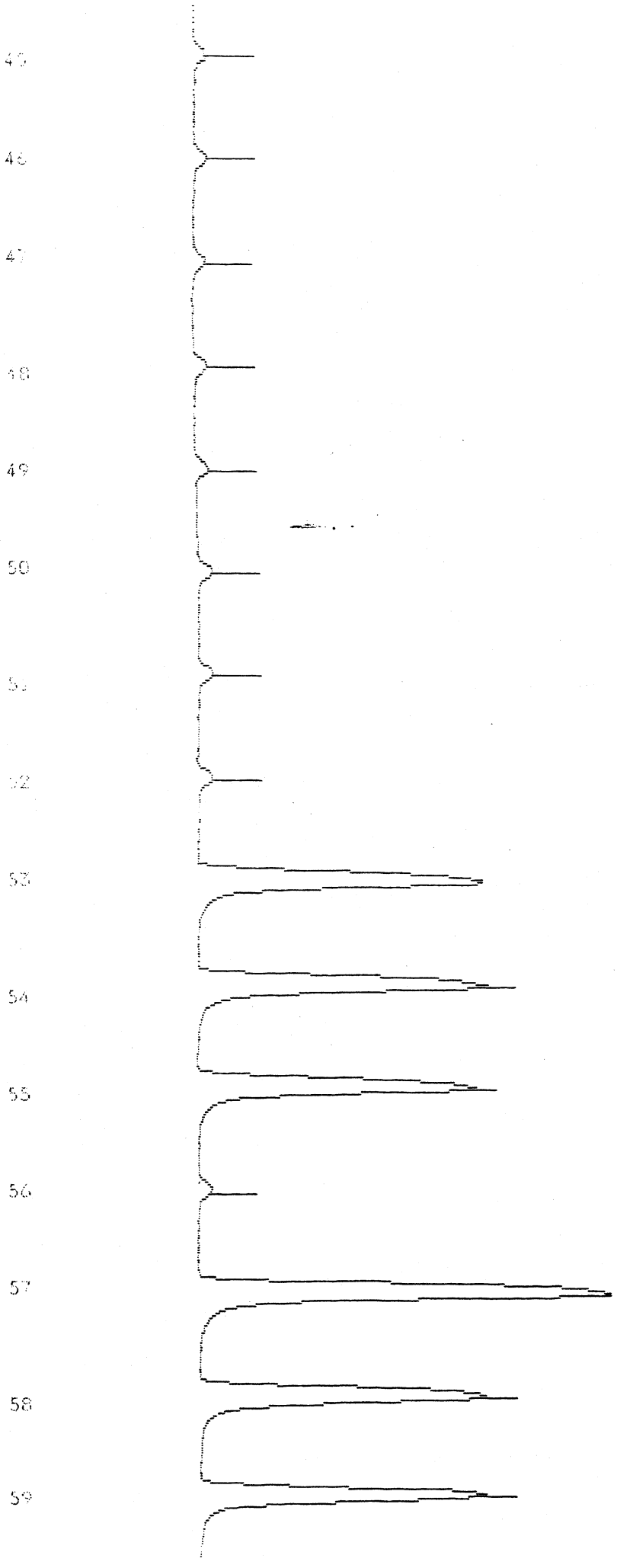
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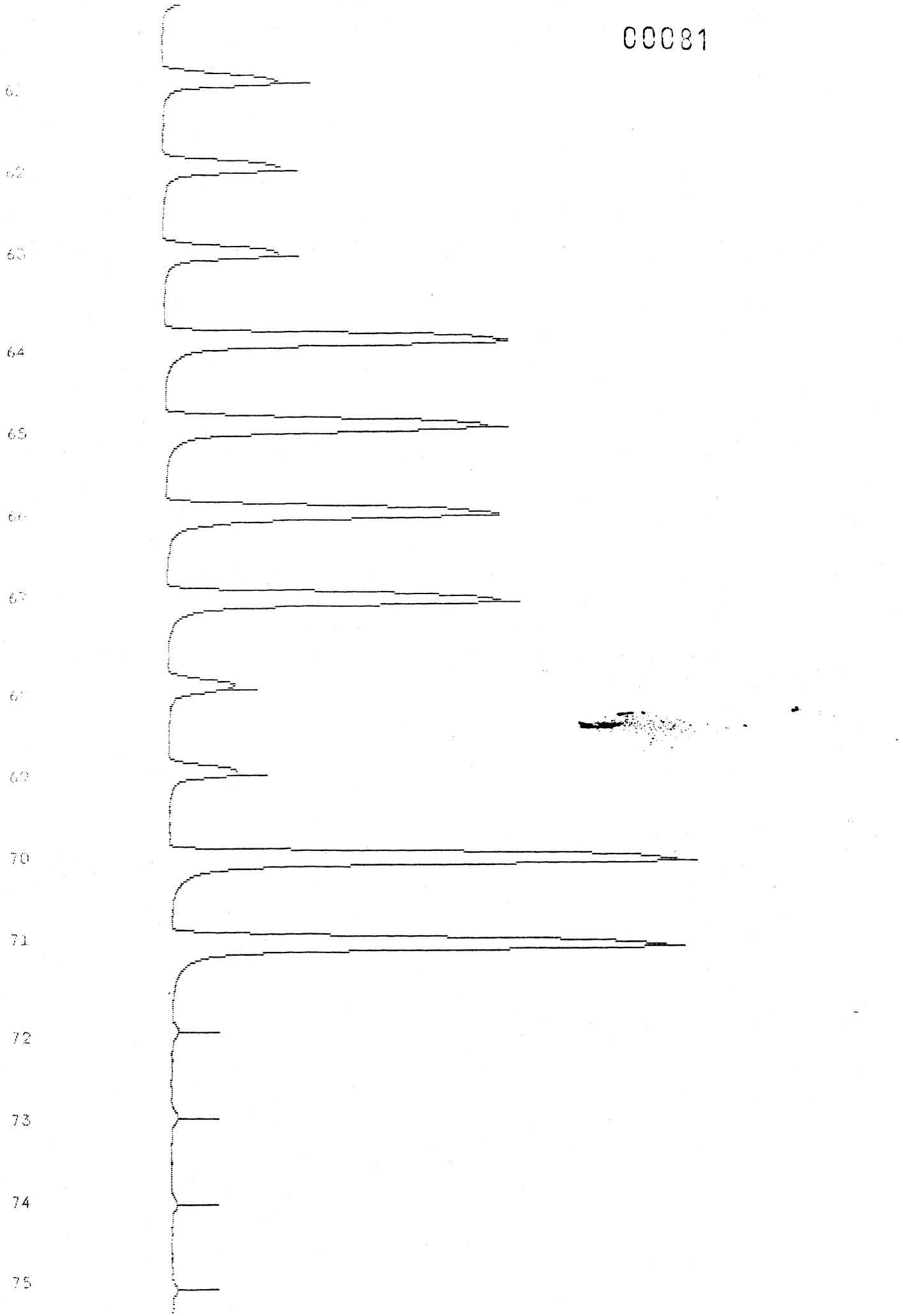
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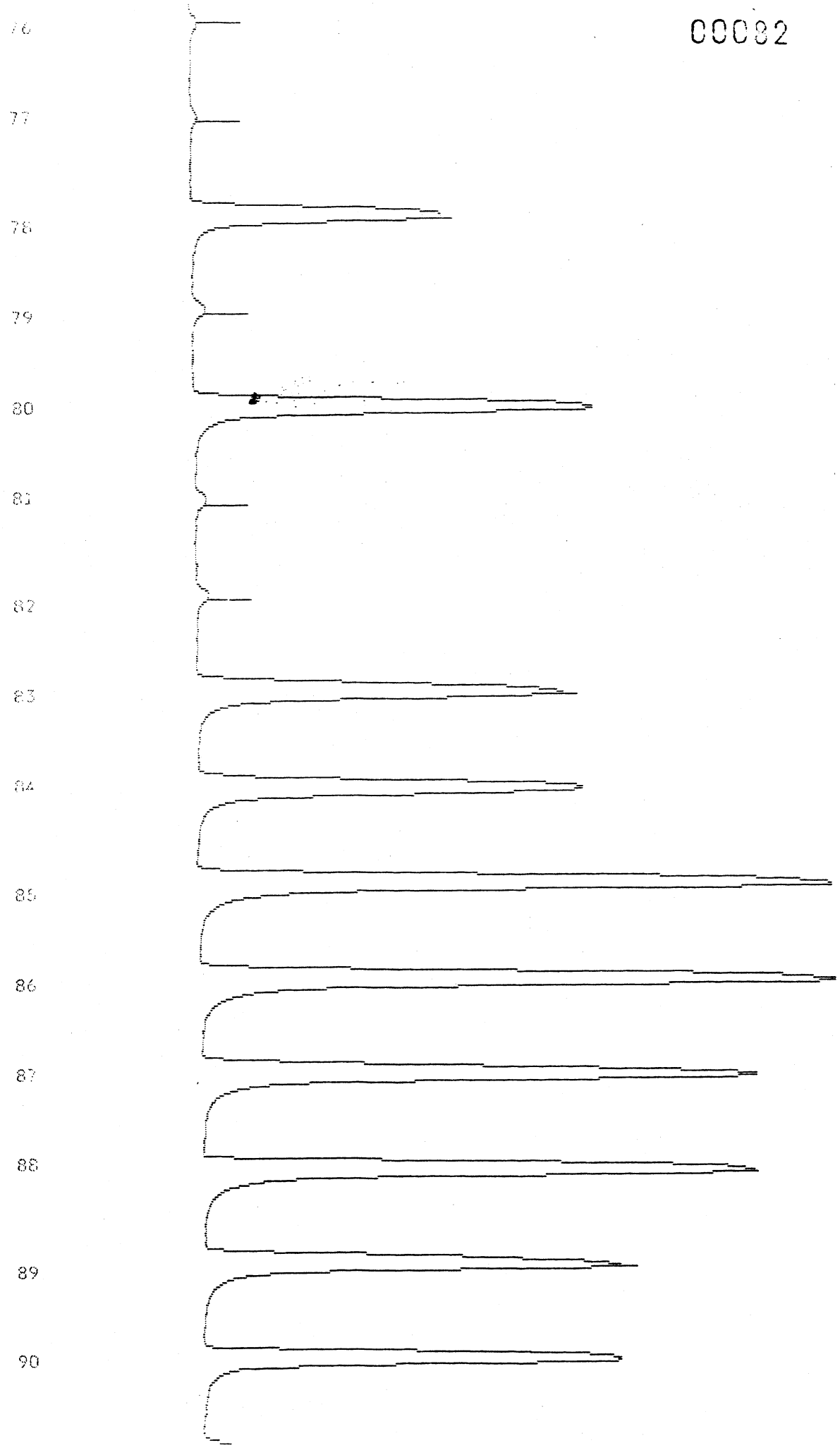
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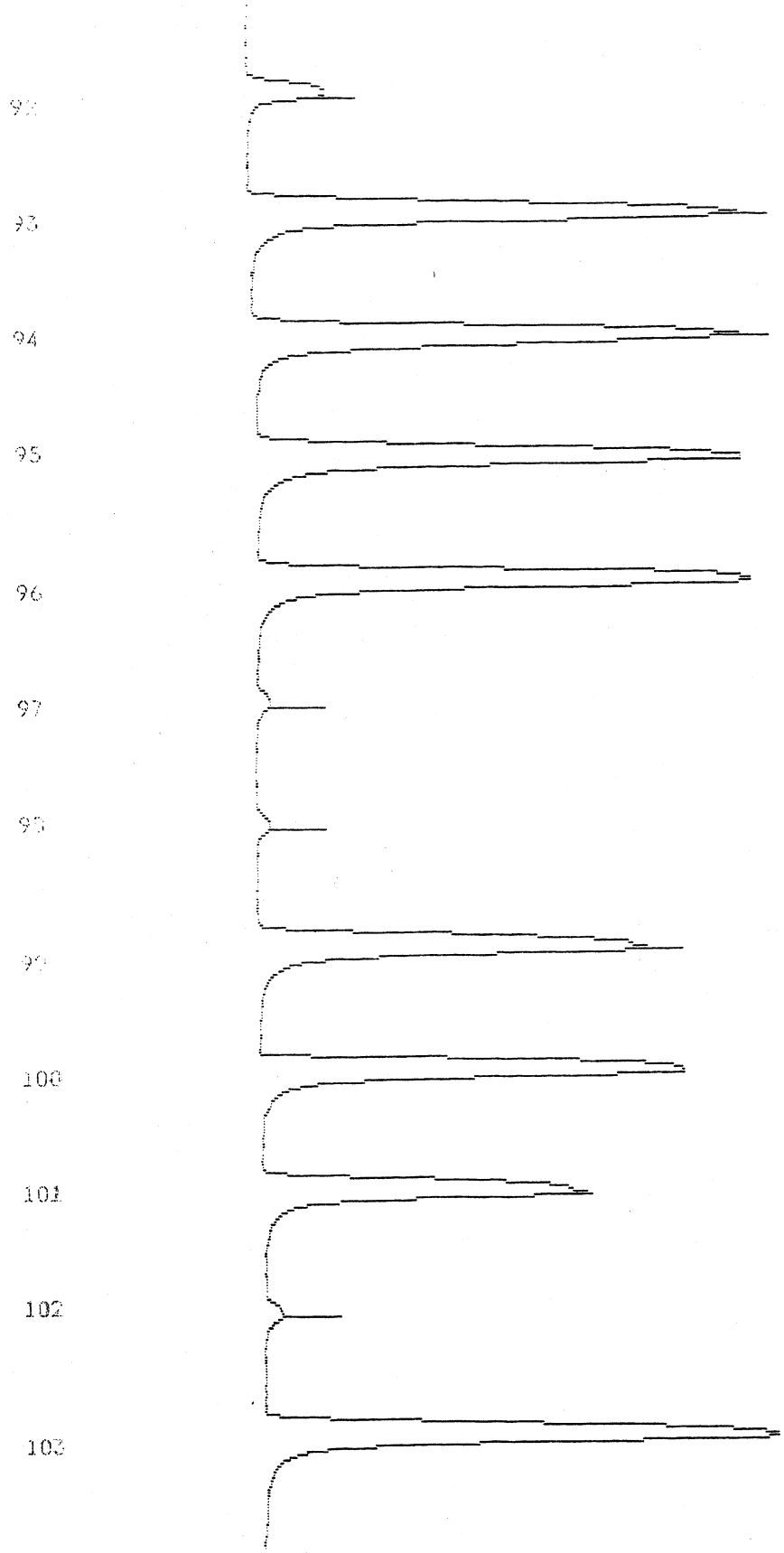
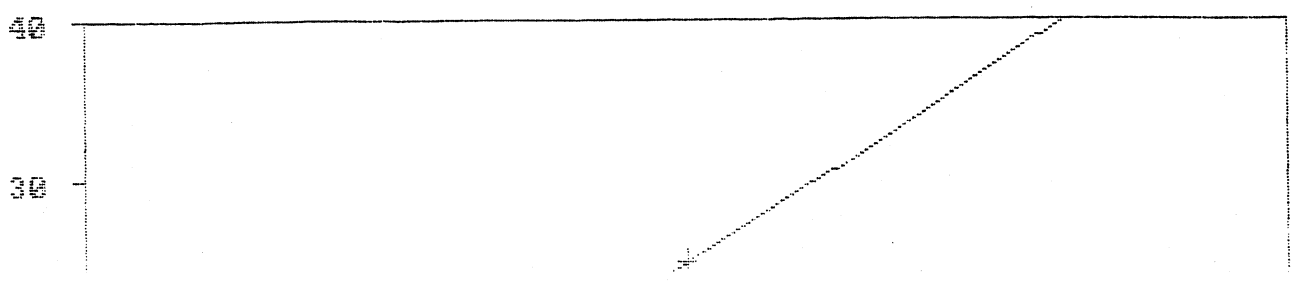
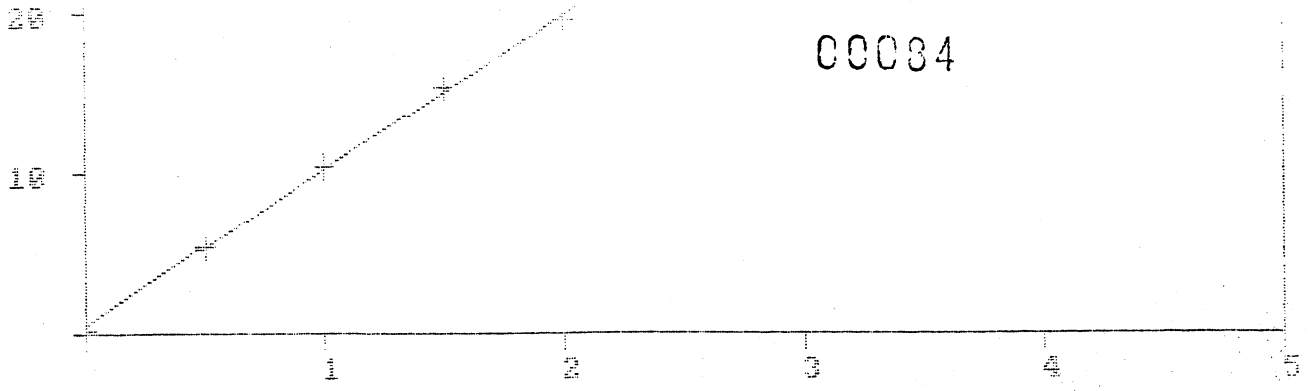


CHANNEL NAME: LDC
RUN NAME: 991011W





00084

DATA TYPE: FIA
INTERCEPT = 0.52

CALIBRATION ORDER: 1
SLOPE = 9.684284

CORRELATION: .9995842

CHANNEL NAME: LOC
RUN DATE: 10-11-1999
SAMPLE TABLE NAME: 991011W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION (ppb)	CF
1	PRIMER	1	1	14.6		1.457	s
2	DUMMY	1	1	0.5		-0.003	I
3	S1: 0	1	1	0.3		-0.023	I
4	S2: .5	1	1	5.4		0.504	
5	S3: 1	1	1	10.4		1.023	
6	S4: 1.5	1	1	15.4		1.535	
7	S5: 2	1	1	19.5		1.964	
8	S6: 2.5	1	1	24.7		2.498	
9	ICV	1	1	14.3	TMG	1.424	95%
10	B	1	1	0.0		-0.054	b
11	D4	1	1	15.4		1.535	d
12	BL1011-1GFB 42245, 42724	1	1	0.1	<0.01	-0.044	I
13	BL1011-1GFB	1	1	0.1		-0.046	I
14	BL1011S	1	1	10.5	0.100	1.028	100%
15	BL1011S	1	1	9.9		0.965	
16	BL1011DS	1	1	10.2	0.100	1.003	100%
17	BL1011DS	1	1	10.1		0.988	
18	53136	5	1	6.5	3.098	3.085	
19	53136	5	1	6.5		3.111	
20	53136D	5	1	6.2	3.060	2.934	
21	53136D	5	1	6.7		3.186	
22	53136S	5	1	15.7	7.889	7.839	96%
23	53136S	5	1	15.9		7.939	
24	53136DS VOID	5	1	16.3		8.141	} RERUN SEE BELOW ↓
25	53136DS	5	1	14.6		7.284	}
26	53137	10	1	10.5	10.243	10.331	
27	53137	10	1	10.4		10.155	
28	53146	1	1	4.9	0.452	0.451	
29	53146	1	1	4.9		0.453	
30	53147	1	1	6.4	0.619	0.607	
31	53147	1	1	6.6		0.630	s
32	CCV	1	1	10.0		0.983	98%
33	B	1	1	0.0		-0.054	b
34	D4	1	1	15.4		1.535	d
35	42248	1	1	0.0	<0.04	-0.054	I
36	42248	1	1	0.0		-0.054	I
37	42249	1	1	0.5	<0.300	-0.003	R
38	42249	1	1	0.5		-0.001	R

40	42250	1	1	0.0		-0.054	I
41	42251	1	1	0.0		-0.054	I
42	42251	1	1	0.0	<0.00035	-0.054	I
43	42725 A	1	1	0.0	<0.05	-0.054	I
44	42725 A	1	1	0.0		-0.054	I
45	42725 B	1	1	0.0	<0.01	-0.054	I
46	42725 B	1	1	0.0		-0.051	s
47	42725 C	1	1	0.0	<0.01	-0.054	I
48	42725 C	1	1	0.0		-0.054	I
49	42726	1	1	0.0	<0.08	-0.054	I
50	42726	1	1	0.0		-0.051	I
51	BL1011-2GFB 43188	1	1	0.0	<0.01	-0.049	I
52	BL1011-2GFB	1	1	0.1		-0.046	I
53	BL1011S	1	1	10.5	0.104	1.031	104%
54	BL1011S	1	1	10.7		1.048	
55	CCV	1	1	10.2		1.000	100%
56	B	1	1	0.0		-0.054	b
57	D4	1	1	15.4		1.535	d
58	BL1011DS	1	1	10.5	0.103	1.031	103%
59	BL1011DS	1	1	10.5		1.028	
60	42727	1	1	4.8	0.876	0.443	
61	42727	1	1	4.7		0.433	s
62	42727D	1	1	4.9	0.887	0.451	
63	42727D	1	1	4.7		0.436	
64	42727S	1	1	15.2	2.916	1.512	101%
65	42727S	1	1	14.1		1.404	
66	42727DS	1	1	14.7	2.904	1.462	101%
67	42727DS	1	1	14.5		1.442	
68	42728	1	1	2.4	0.395	0.191	
69	42728	1	1	2.5		0.204	
70	42729	1	1	22.2	4.401	2.236	
71	42729	1	1	21.5		2.165	
72	43189 A	1	1	0.0	<0.08	-0.054	I
73	43189 A	1	1	0.0		-0.054	I
74	43189 B	1	1	0.0	<0.01	-0.054	I
75	43189 B	1	1	0.0		-0.054	I
76	43189 C	1	1	0.0	<0.01	-0.054	s
77	43189 C	1	1	0.0		-0.054	I
78	CCV	1	1	9.5		0.922	92%
79	B	1	1	0.0		-0.054	b
80	D4	1	1	15.4		1.535	d
81	43190	1	1	0.0	<0.100	-0.054	I
82	43190	1	1	0.0		-0.054	I
83	43191	1	1	14.0	4.272	1.391	
84	43191	1	1	14.6		1.457	
85	43192	1	1	24.5	2.485	2.473	
86	43192	1	1	24.7		2.496	
87	43193	1	1	21.3	6.395	2.143	
88	43193	1	1	21.1		2.120	
89	53136DS	5	1	15.9	7.915	7.927	97%
90	53136DS	5	1	15.8		7.902	
91	51460-OHFLT	1	1	1.7	0.013	0.120	s
92	51460-OHFLT	1	1	1.8		0.133	
93	51462-OHFLT	10	1	14.6	1.442	14.543	
94	51462-OHFLT	10	1	14.4		14.290	
95	51463-OHFLT	10	1	14.5	1.443	14.442	
96	51463-OHFLT	10	1	14.5		14.416	
97	42264-?	1	1	0.0	<0.01	-0.054	I
98	42264-?	1	1	0.0		-0.054	I
99	43192 VOID	2	1	11.6		2.283	VOID
100	43192	2	1	12.5		2.465	
101	CCV	1	1	9.4		0.920	92%
102	B	1	1	0.0		-0.054	b
103	D4	1	1	15.4		1.535	d

CORRELATION COPY: 99/0242

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
044795	TRC-LO	MB R456	Mercury -	PV	-0.010	-99999.0	0.100	100.	0.101	101.	99/10/01	MGHY	99/10/01	MG02	51.	45.	*BLKIMP*
044796	TRC-LO	OHM-RB	Mercury -	PV	-0.010						99/10/01	MGHY	99/10/01	MG02	51.	45.	
047489	TRC-LO	PG&E-S-OHM-RB	Mercury -	PV	-0.010						99/10/01	MGHY	99/10/01	MG02	38.	35.	
053128	TRC-LO	MB R456	Mercury -	PV	-0.010	-99999.0	0.100	100.	0.101	101.	99/10/01	MGHY	99/10/01	MG02	17.	13.	*BLKIMP*
053129	TRC-LO	SG-OHM-RB	Mercury -	PV	-0.010						99/10/01	MGHY	99/10/01	MG02	17.	13.	
053143	TRC-LO	BP-OHM-3-RB	Mercury -	PV	-0.010						99/10/01	MGHY	99/10/01	MG02	23.	13.	
BL1001	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.100	100.	0.101	101.	99/10/01	MGHY	99/10/01	MG02	$$$	$$$	*BLKIMP*

7 Tests for OHHYX with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00088

1 of 3

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.01 Run Code: MG02 Matrix: IMP.

Analyst: MG Units: µg (see comments) MDL: 0.005

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			WS 378			
13			ORG. REF.			
14			BL1001	1B1B		
15			~~xxxxxx~~ NO CUP			
16			BL1001 S			
17			"			
18			BL1001 DS			
19			"			
20			50091			
21			"			
22			50091 D			
23			"			
24			50091 S			
25			"			
26			50091 DS			
27			"			
28			50089			
29			"			
30			50090			
31			"			
32			50092			
33			"			
34			CCV			
35			B			
36			D4			
37			50093			
38			"			
39			50094			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			BL1001	1N2B		
42			"			
43			BL1001 S			
44			"			
45			BL1001 DS			
46			"			
47	10		42257			
48			"			
49			42257 D			
50			"			
51			42257 S			
52			"			
53			42257 DS			
54			"			
55			42258			
56			"			
57			CCV			
58			B			
59			D4			
60	10		42258			
61			"			
62			42259			
63			"			
64			42272			
65			"			
66			42273			
67			"			
68			42274			
69			"			
70			42275			
71			"			
72			42280			
73			"			
74			BL1001	2N2B		
75			"			
76			BL1001 S			
77			"			
78			BL1001 DS			
79			"			
80			CCV			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10901 Run Code: MG02 Matrix: IMP

Analyst: MG Units: ug (see comments) MDL:

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
41 21			BL1001	4N2B		
22			"			
23			BL1001S			
24			"			
25			BL1001 DS			
26			"			
27	10		42745			
28	"		"			
29			CCV			
30			B			
31			D4			
32	10		42745 D			
33			"			
34			42745 S			
35			"			
36			42745 DS			
37			"			
38			42743			
39			"			
40			42744			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	10		42744 (Cup Missed)			
42			42746			
43			"			
44			42747			
45			"			
46			42748			
47			"			
48			42749			
49			"			
50			42750			
51			"			
52			CCV			
53			B			
54			D4			
55	10		42751			
56	"		"			
57			42282	HYDR.		
58			"	HYX		
59			42497			
60			"			
61			43224			
62			"			
63			42760			
64			"			
65			44796			
66			"			
67			47489			
68			"			
69			53129			
70			"			
71			53143			
72			"			
73			53685			
74			"			
75			WS 378			
76			ORG REF			
77			CCV			
78			B			
79			D4			
80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

00090 NOT DIGESTED

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG*

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
7	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- Digest Code/labels
- Samples poured out
- Acids added
- Reagents added
- Samples spiked
- Bath at 95 degrees C
- Samples digested
- Hydroxylamine HCl added
- Samples bulked and mixed
- Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	MGHY	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1001	"	"	"	"	(Processed Blank)
	11	BL 1001 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	42282	"	"	"	"	90 ml
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	42497	"	"	"	"	50 ml
3	17	43224	"	"	"	"	84 ml
4	18	42760	"	"	"	"	90 ml
5	19	42498	"	"	"	"	50 ml
6	20	44796	"	"	"	"	110 ml
7	21	47489	"	"	"	"	100 ml
8	22	53129	"	"	"	"	48 ml
9	23	53143	"	"	"	"	74 ml
10	24	53655	"	"	"	"	50 ml
	25	CCV (Cont. Calib. Verif.)		20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL	"	"	"	"	(Processed Blank)
	27	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28		"	"	"	"	
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32		"	"	"	"	
3	33		"	"	"	"	
4	34		"	"	"	"	
5	35		"	"	"	"	
6	36		"	"	"	"	
7	37		"	"	"	"	
8	38		"	"	"	"	
9	39		"	"	"	"	
10	40		"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

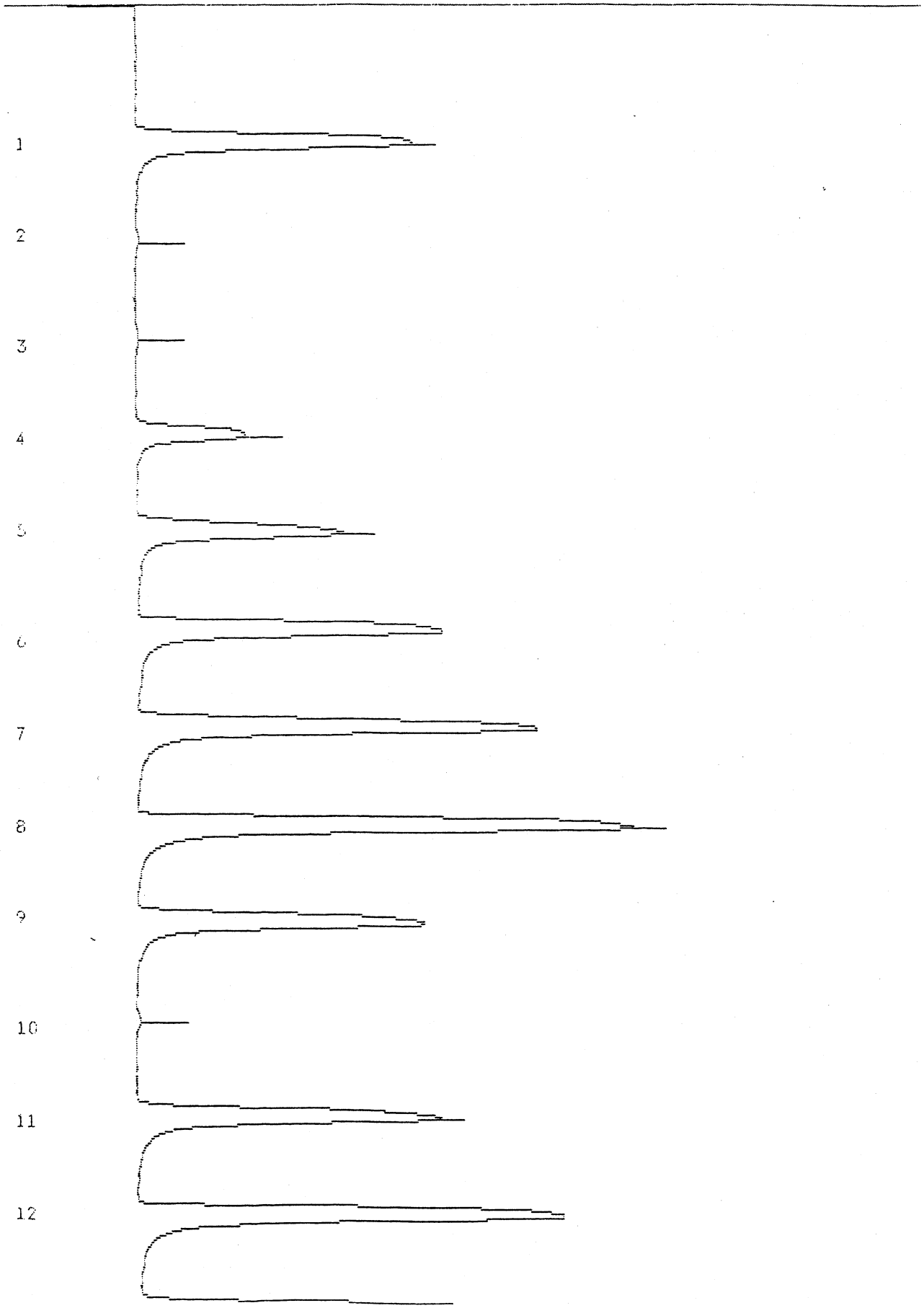
Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run

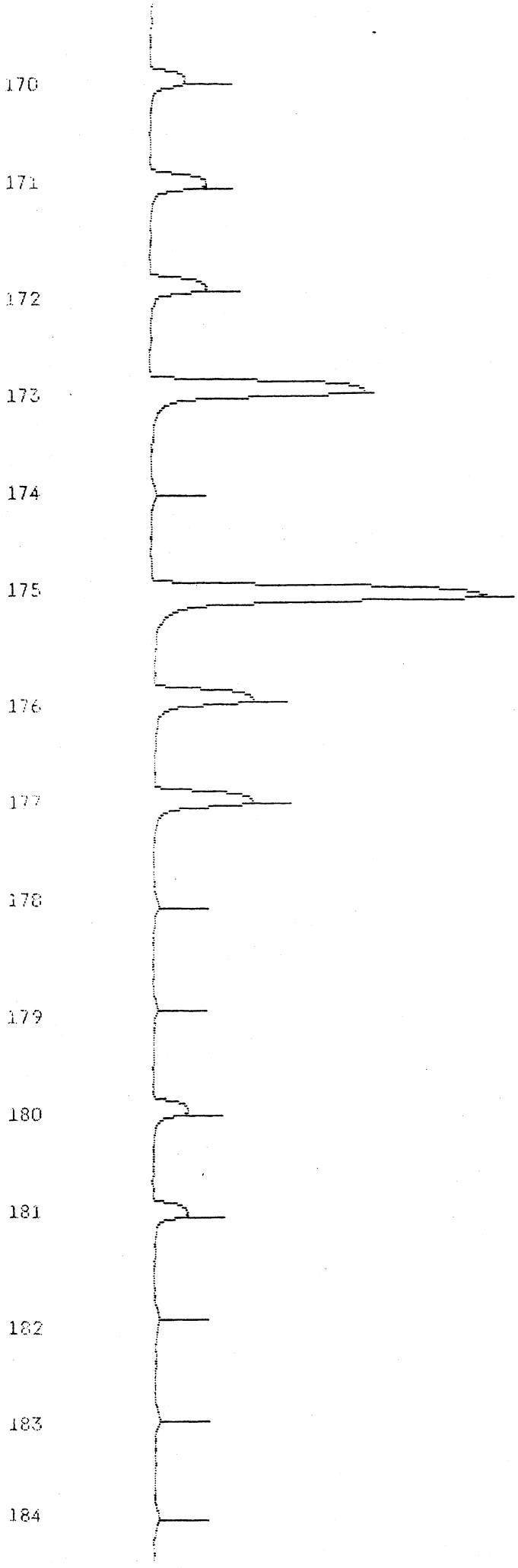
Prepare 0.05 ppm standards daily

HNO3 Lot. No. | H2SO4 Lot. No. | Bath Temps. / / °C

Prepared By: CMAT Date: 99/01/01 Checked by: CMAT

RUN DATE: 10-01-1999 CHART DATE: 10-02-1999
CHART SPEED: 30
DATA FILE NAME: C:\OP4\DATA\991001W.DAT

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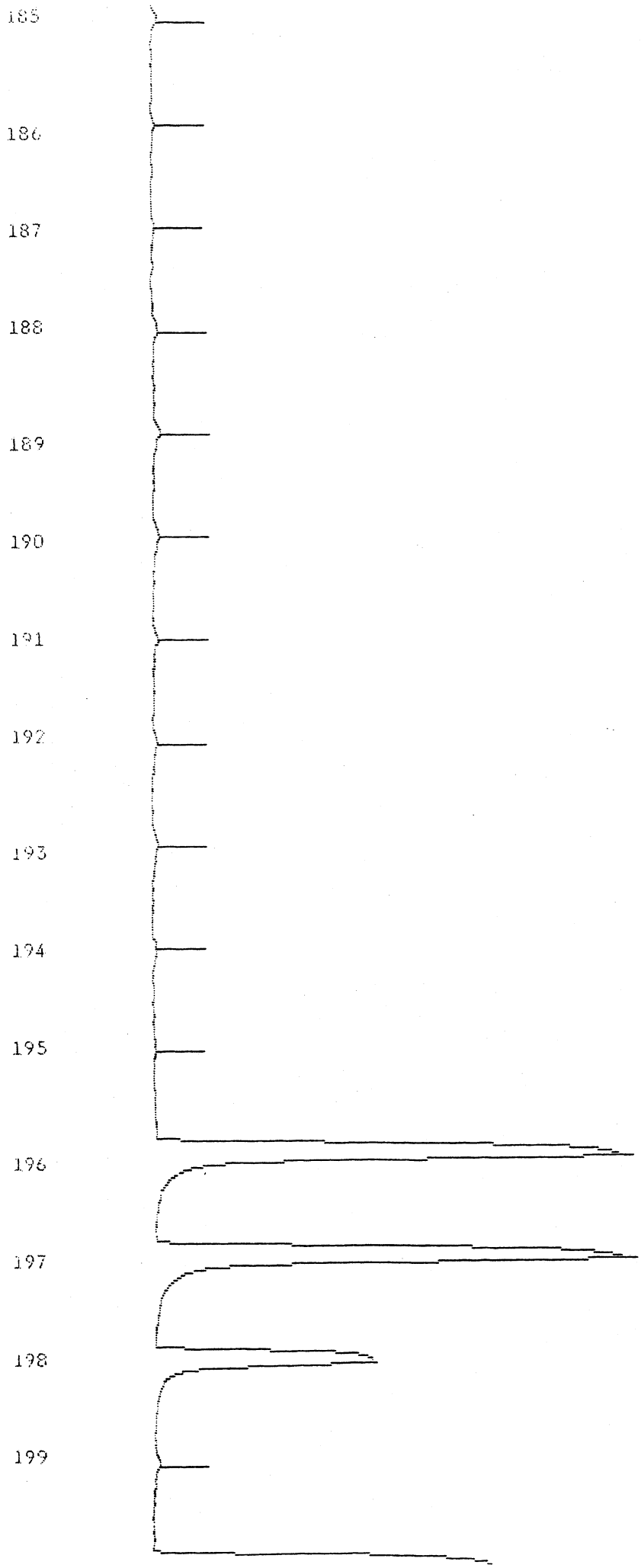
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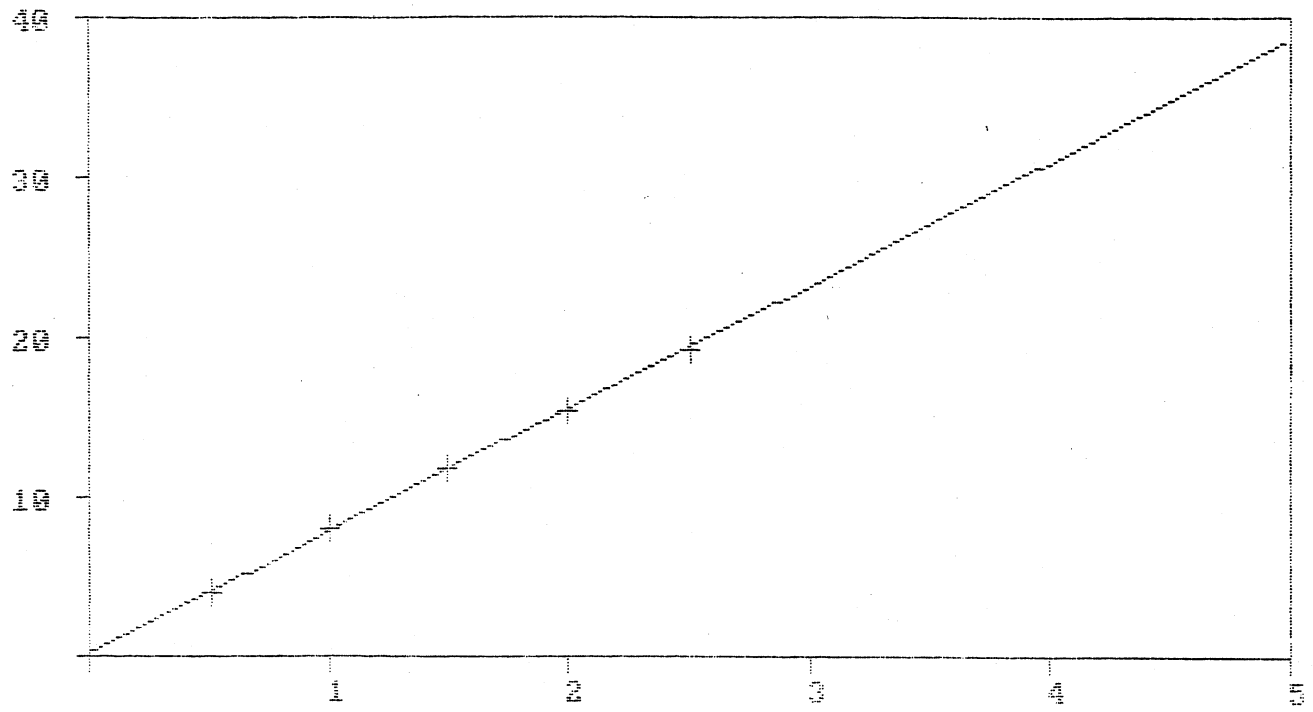
CHANNEL NAME: LDC
RUN NAME: 991001W



DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.20
SLOPE = 7.65819

CORRELATION: .9997931

CHANNEL NAME: LDC
RUN DATE: 10-01-1999
SAMPLE TABLE NAME: 991001W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION (ppb)	EF
1	PRIMER	1	1	10.8	1.383	s
2	DUMMY	1	1	0.0	-0.020	I
3	S1: 0	1	1	0.0	-0.023	I
4	S2: .5	1	1	4.1	0.506	
5	S3: 1	1	1	8.0	1.019	
6	S4: 1.5	1	1	11.9	1.523	
7	S5: 2	1	1	15.4	1.989	
8	S6: 2.5	1	1	19.2	2.486	
9	ICV	1	1	11.2	1.440	96%
10	B	1	1	0.0	-0.027	b
11	D4	1	1	11.9	1.523	d
12	WS 378	1	1	16.6	2 139	107%
13	ORG REF	1	1	16.5	2.132	107%
14	BL1001-1B1B 50089	1	1	0.0	-0.027	I
15	BL1001-1B1B	1	1	0.0	-0.027	I
16	BL10018	1	1	7.8	0.987	99%

Tug
<0.03
n.m.

[illegible]	[illegible]	1	1	[illegible]		[illegible]	46%
[illegible]	[illegible]	1	1	0.0	00095	027	b
172	04	1	1	11.9		1.523	d
173	427450	10	1	0.5	<0.250	0.372	I
174	427450	10	1	0.5		0.436	I
175	4254[illegible]	10	1	8.4	2.676	10.640	101%
176	4254[illegible]S	10	1	8.4		10.767	
177	42545DS	10	1	7.9	2.568	10.098	97%
178	42545DS	10	1	8.2		10.449	
179	42743	10	1	0.5	<0.250	0.404	I
180	42743	10	1	0.3		0.085	I
181	42744	10	1	0.2	<0.250	-0.043	I
182	42744	10	1	0.0		-0.266	I
183	42746	10	1	3.5	1.090	4.294	
184	42746	10	1	3.6		4.422	
185	42747	10	1	0.4	<0.250	0.276	I
186	42747	10	1	0.4		0.276	s
187	42748	10	1	0.1	<0.250	-0.170	I
188	42748	10	1	0.1		-0.138	I
189	42749	10	1	1.1	0.264	1.105	
190	42749	10	1	1.0		1.010	
191	42750	10	1	1.8	0.520	2.094	
192	42750	10	1	1.8		2.062	
193	CCV	1	1	7.5		0.956	95%
194	B	1	1	0.0		-0.027	b
195	D4	1	1	11.9		1.523	d
196	42751	10	1	3.3	1.018	4.071	
197	42751	10	1	3.3		4.071	
198	42282-HYX	1	1	0.0		-0.023	I
199	42282-HYX - MGHYX	1	1	0.0		-0.027	I
200	42497	1	1	1.1		0.111	
201	42497	1	1	1.1		0.114	s
202	43224	1	1	0.0		-0.027	I
203	43224	1	1	0.0		-0.027	I
204	42760	1	1	0.0		-0.020	I
205	42760	1	1	0.0		-0.020	I
206	44796	1	1	0.0		-0.027	I
207	44796	1	1	0.0		-0.027	I
208	47489	1	1	0.0		-0.027	I
209	47489	1	1	0.1		-0.017	I
210	53129	1	1	0.1		-0.017	I
211	53129	1	1	0.0		-0.027	I
212	53143	1	1	0.0		-0.027	I
213	53143	1	1	0.0		-0.027	I
214	53685	1	1	0.0		-0.027	I
215	53685	1	1	0.0		-0.027	I
216	WS 378	1	1	16.1		2.075	103%
217	ORG REF	1	1	16.2		2.084	104%
218	CCV	1	1	7.5		0.952	95%
219	B	1	1	0.0		-0.027	b
220	D4	1	1	11.9		1.523	d

INTERCEPT: 0.20 LINEAR COEF: 7.65812

CORRELATION COEF: .9997931

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
053128	TRC-LO	MB R456	Mercury -	PV	-0.030	-99999.0	0.305	101.	0.301	100.	99/10/04	1GKC	99/10/04	MG01	20.	16.	
053130	TRC-LO	SG-OHM-I-FB	Mercury -	PV	-0.030						99/10/04	1GKC	99/10/04	MG01	20.	16.	
053131	TRC-LO	SG-OHM-I1a-R1	Mercury -	PV	4.021						99/10/04	1GKC	99/10/04	MG01	18.	16.	
053132	TRC-LO	SG-OHM-I1a-R3	Mercury -	PV	1.400	1.400	2.944	103.	2.949	103.	99/10/04	1GKC	99/10/04	MG01	17.	16.	*PDS*
053133	TRC-LO	SG-OHM-I1a-R4	Mercury -	PV	0.579						99/10/04	1GKC	99/10/04	MG01	17.	16.	
053134	TRC-LO	SG-OHM-I1b-R1	Mercury -	PV	1.266						99/10/04	1GKC	99/10/04	MG01	18.	16.	
053135	TRC-LO	SG-OHM-I1b-R2	Mercury -	PV	1.741						99/10/04	1GKC	99/10/04	MG01	17.	16.	
053136	TRC-LO	SG-OHM-I1b-R3	Mercury -	PV	0.412						99/10/04	1GKC	99/10/04	MG01	17.	16.	
053137	TRC-LO	SG-OHM-I1b-R4	Mercury -	PV	0.215						99/10/04	1GKC	99/10/04	MG01	17.	16.	
053138	TRC-LO	SG-OHM-O-FB	Mercury -	PV	-0.030						99/10/04	1GKC	99/10/04	MG01	17.	16.	
053139	TRC-LO	SG-OHM-Oa-R1	Mercury -	PV	0.218						99/10/04	1GKC	99/10/04	MG01	18.	16.	
BL1004	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.305	101.	0.301	100.	99/10/04	1GKC	99/10/04	MG01	$$$	$$$	

12 Tests for OHKCL with an MDL of 0.030 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

96000

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
053140	TRC-LO	SG-OHM-Oa-R3	Mercury -	PV	0.177	0.197	1.760	105.	1.760	105.	99/10/04	2GKC	99/10/04	MG01	17.	16.	*PDS*
053141	TRC-LO	SG-OHM-Ob-R1	Mercury -	PV	0.287						99/10/04	2GKC	99/10/04	MG01	18.	16.	
053142	TRC-LO	SG-OHM-Ob-R3	Mercury -	PV	0.153						99/10/04	2GKC	99/10/04	MG01	17.	16.	
053143	TRC-LO	BP-OHM-3-RB	Mercury -	PV	-0.030						99/10/04	2GKC	99/10/04	MG01	26.	16.	
053144	TRC-LO	BP-OHM-3-I-FB	Mercury -	PV	0.035						99/10/04	2GKC	99/10/04	MG01	27.	16.	
053145	TRC-LO	BP-OHM-3-IE-R2	Mercury -	PV	9.263						99/10/04	2GKC	99/10/04	MG01	25.	16.	
053146	TRC-LO	BP-OHM-3-IE-R3	Mercury -	PV	12.290						99/10/04	2GKC	99/10/04	MG01	25.	16.	
053147	TRC-LO	BP-OHM-3-IW-R2	Mercury -	PV	16.355						99/10/04	2GKC	99/10/04	MG01	25.	16.	
053148	TRC-LO	BP-OHM-3-IW-R3	Mercury -	PV	11.390						99/10/04	2GKC	99/10/04	MG01	25.	16.	
053149	TRC-LO	BP-OHM-3-O-FB	Mercury -	PV	-0.030						99/10/04	2GKC	99/10/04	MG01	27.	16.	
BL1004	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.330	110.	0.296	98.	99/10/04	2GKC	99/10/04	MG01	$$$	$$$	

11 Tests for OHKCL with an MDL of 0.030 ug Validated By CMS Control Chart Updated N/A IO Requirements met N/A

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
053150	TRC-LO	BP-OHM-3-O-R2	Mercury -	PV	12.849						99/10/04	3GKC	99/10/04	MG01	25.	16.	
053151	TRC-LO	BP-OHM-3-O-R3	Mercury -	PV	9.262						99/10/04	3GKC	99/10/04	MG01	25.	16.	
053164	TRC-LO	SG-OHM-Oa-R2	Mercury -	PV	0.232	0.237	1.741	100.	1.757	101.	99/10/04	3GKC	99/10/04	MG01	17.	16.	*PDS*
053165	TRC-LO	SG-OHM-Ob-R2	Mercury -	PV	0.158						99/10/04	3GKC	99/10/04	MG01	17.	16.	
BL1004	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.343	114.	0.342	114.	99/10/04	3GKC	99/10/04	MG01	$$$	$$$	

5 Tests for OHKCL with an MDL of 0.030 ug Validated By CMS Control Chart Updated N/A IO Requirements met N/A

00098

(1)

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 991004 Run Code: KB01MG01 Matrix: IMP. (KCl)

Analyst: KB Units: µg (see comments) MDL: 0.015

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			WS378			
13			ORGREF			
14			BL1003	1GKC		
15			"			
16			BL1003S			
17			"			
18			BL1003ds			
19			"			
20	1.5		53132			
21			"			
22			53132d			
23			"			
24			53132s			
25			"			
26			53132ds			
27			"			
28	"		53130			
29			"			
30		1/2	53131			
31		↓	"			
32			53133			
33			"			
34			CCV			
35			B			
36			D4			
37	1.5		53134			
38			"			
39			53135			
40	↓		"			
41	1.5		53136			
42			"			
43			53137			
44			"			
45			53138			
46			"			
47			53139			
48	↓		"			
49			MB 53+BL1003	2GKC		
50			"			
51			BL1003S			
52			"			
53			BL1003ds			
54			"			
55	1.5		53140			
56	↓		"			
57			CCV			
58			B			
59			D4			
60	1.5		53140d			
61			53140d			
62			53140s			
63			"			
64			53140ds			
65			"			
66			53141			
67			"			
68			53142			
69			"			
70			53143			
71			"			
72			53144			
73			"			
74		1/5	53145			
75		↓	"			
76		1/5	53146			
77		↓	"			
78		1/5	53147			
79	↓	↓	"			
80			CCV			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

Run Date:	99/10/04	Matrix:	IMP(KCl)
Run Code	MG01		

Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
1GKC	BL1004	0.002	0.002	0.300	0.0006	
	BL1004	0.002				
	BL1004S	1.013	1.0165	0.300	0.30495	101.65
	BL1004S	1.02				
	BL1004DS	1.002	1.004	0.300	0.3012	100.4
	BL1004DS	1.006				
	53132	1.406	1.4	1	1.4	
	53132	1.394				
	53132DS	1.41	1.399	1	1.399	
	53132DS	1.388				
	53132S	2.954	2.9435	1	2.9435	102.93
	53132S	2.933				
	53132DS	2.949	2.949	1	2.949	103.30
	53132DS	2.949				
	53130	0.014	0.022	1	0.022	
	53130	0.03				
	53131	4.032	4.021	1	4.021	
	53131	4.01				
	53133	0.581	0.5785	1	0.5785	
	53133	0.576				
	53134	1.268	1.2655	1	1.2655	
	53134	1.263				
	53135	1.738	1.7405	1	1.7405	
	53135	1.743				
	53136	0.412	0.412	1	0.412	
	53136	0.412				
	53137	0.215	0.215	1	0.215	
	53137	0.215				
	53138	0.003	0.003	1	0.003	
	53138	0.003				
	53139	0.204	0.218	1	0.218	
	53139	0.232				

Run Date:	99/10/04	Matrix:	IMP(KCl)
Run Code	MG01		

Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
2GKC	BL1004	0.002	0.002	0.300	0.0006	
	BL1004	0.002				
	BL1004S	1.097	1.1005	0.300	0.33015	110.05
	BL1004S	1.104				
	BL1004D	0.977	0.986	0.300	0.2958	98.6
	BL1004D	0.995				
	53140	0.166	0.177	1	0.177	
	53140	0.188				
	53140D	0.194	0.1965	1	0.1965	
	53140D	0.199				
	53140S	1.776	1.7595	1	1.7595	104.85
	53140S	1.743				
	53140DS	1.765	1.7595	1	1.7595	104.85
	53140DS	1.754				
	53141	0.281	0.2865	1	0.2865	
	53141	0.292				
	53142	0.155	0.1525	1	0.1525	
	53142	0.15				
	53143	0.008	0.0055	1	0.0055	
	53143	0.003				
	53144	0.024	0.035	1	0.035	
	53144	0.046				
	53145	9.235	9.2625	1	9.2625	
	53145	9.29				
	53146	12.262	12.2895	1	12.2895	
	53146	12.317				
	53147	16.409	16.3545	1	16.3545	
	53147	16.3				
	53148	11.362	11.3895	1	11.3895	
	53148	11.417				
	53149	0.019	0.0245	1	0.0245	
	53149	0.03				

Run Date:	99/10/04	Matrix:	IMP(KCl)
Run Code	MG01		

Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
3GKC	BL1004	0.013	0.022	0.300	0.0066	
	BL1004	0.031				
	BL1004S	1.137	1.1425	0.300	0.34275	114.25
	BL1004S	1.148				
	BL1004D	1.14	1.14	0.300	0.342	114
	BL1004D	1.14				
	53164	0.232	0.232	1	0.232	
	53164	0.232				
	53164D	0.237	0.237	1	0.237	
	53164D	0.237				
	53164S	1.749	1.7405	1	1.7405	100.40
	53164S	1.732				
	53164DS	1.765	1.757	1	1.757	101.50
	53164DS	1.749				
	53165	0.155	0.158	1	0.158	
	53165	0.161				
	53150	12.835	12.8485	1	12.8485	
	53150	12.862				
	53151	9.207	9.2615	1	9.2615	
	53151	9.316				
	53685	0.003	0.003	1	0.003	
	53685	0.003				
	53686	0.144	0.139	1	0.139	
	53686	0.134				
	53687	15.072	14.9905	1	14.9905	
	53687	14.909				
	53688	13.108	12.9445	1	12.9445	
	53688	12.781				
	53689	9.752	10.216	1	10.216	
	53689	10.68				
	53690	0.401	0.39	1	0.39	
	53690	0.379		1		

Run Date: 99/10/04 **Matrix:** IMP(KCl)
Run Code MG01

Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
5GKC	BL1004	0.002	0.002	0.300	0.0006	
	BL1004	0.002				
	BL1004S	1.071	1.0655	0.300	0.31965	106.55
	BL1004S	1.06				
	BL1004D	0.907	0.9655	0.300	0.28965	96.55
	BL1004D	1.024				
	43202	1.492	1.492	1	1.492	
	43202	1.492				
	43202D	1.476	1.476	1	1.476	
	43202D	1.476				
	43202S	2.96	2.93	1	2.93	96.40
	43202S	2.9				
	43202DS	2.911	2.892	1	2.892	93.87
	53202DS	2.873				
	43203	5.906	5.9605	1	5.9605	
	43203	6.015				
	43204	1.547	1.544	1	1.544	
	43204	1.541				
	43205	0.685	0.6875	1	0.6875	
	43205	0.69				
	51449	0.003	0.0055	1	0.0055	
	51449	0.008				
	51450	0.024	0.019	1	0.019	
	51450	0.014				
	51451	14.063	14.104	1	14.104	
	51451	14.145				
	51452	22.342	22.4785	1	22.4785	
	51452	22.615				
	51453	12.535	12.5215	1	12.5215	
	51453	12.508				
	51454	13.954	13.9675	1	13.9675	
	51454	13.981				

Run Date: 99/10/04 **Matrix:** IMP(KCl)

Run Code MG01

Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
6GKC	BL1004	0.002	0.0055	0.300	0.00165	
	BL1004	0.009				
	BL1004S	0.907	0.909	0.300	0.2727	90.9
	BL1004S	0.911				
	BL1004D	0.915	0.915	0.300	0.2745	91.5
	BL1004D	0.915				
	51455	13.721	13.694	1	13.694	
	51455	13.667				
	51455D	13.721	13.721	1	13.721	
	51455D	13.721				
	51455S	28.017	28.044	1	28.044	95.58
	51455S	28.071				
	51455DS	27.962	27.962	1	27.962	95.03
	51455DS	27.962				
	51456	15.7	15.6725	1	15.6725	
	51456	15.645				
	51457	13.381	13.381	1	13.381	
	51457	13.381				
	51458	14.199	14.199	1	14.199	
	51458	14.199				
	51459	0.019	0.027	1	0.027	
	51459	0.035				
	51460	23.051	23.051	1	23.051	
	51460	23.051				
	51461	15.618	~~16.145~~ 15.645	1	~~16.145~~ 15.645 MB	
	51461	15.672 ~~16.672~~ MB				
	51462	13.135	13.2035	1	13.2035	
	51462	13.272				
	51463	12.317	12.2895	1	12.2895	
	51463	12.262				
	53129	0.003	0.003	1	0.003	
	53129	0.003				

(2)

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 991004 Run Code: MG01 Matrix: ~~ww~~ (KCl)

Analyst: KB/MG Units: µg (see comments) MDL: 0.015

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
81 21			B			
22			D4			
23	1.5	1/5	53148			
24	↓	↓	"			
25			53149			
26			"			
27			BL1003	3GKC		
28			"			
29			BL1004S			
30			"			
31			BL1004DS			
32			"			
33	1.5		53164			
34			"			
35			53164D			
36			"			
37			53164S			
38			"			
39			53164DS			
40	↓		"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	1.5		53165			
42	↓		"			
43			~~CCV~~ *(NO Cup)		KB	
44			B			
45			~~D4~~ CCV	1.5		
46	1.5	1/5	53150			
47	↓	↓	"			
48		1/5	53151			
49		↓	"			
50			53685			
51			"			
52			53686			
53			"			
54		1/5	53687			
55		↓	"			
56		1/5	53688			
57		↓	"			
58		1/5	53689			
59		↓	"			
60		~~1/5~~	53690			
61	↓	↓	"			
62			WS378			
63			ORG REF			
64			CCV			
65			B			
66		NA	~~B~~ D4			
67		NA	~~B~~ BL1003	4GKC		
68			D4 "			
69			BL1003S			
70			"			
71			BL1004DS			
72			"			
73	1/5	1/25	53745			
74			"			
75			53745D			
76			"			
77			53745S			
78			"			
79			53745DS			
80	↓	↓	"			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.04 Run Code: MG01 Matrix: INP (RCI

Analyst: MG Units: µg (see comments) MDL: 0.015

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
41 21	1.5	1/25	53745 DS			
22	↓	↓	"			
23			BL1003	5GKC		
24			"			
25			BL1003 S			
26			"			
27			CCV			
28			B			
29			D4			
30			BL1003D			
31			"			
32	1.5		43202			
33			"			
34			43202 D			
35			"			
36			43202 S			
37			"			
38			43202 DS			
39			"			
40	↓	1/5	43203			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	1.5	1/5	43203			
42			43204			
43			"			
44			43205			
45			"			
46			51449			
47			"			
48			51450			
49	↓		"			
50			CCV			
51			B			
52			D4			
53	1.5	1/5	51451			
54		"	"			
55		1/10	51452			
56		↓	"			
57		1/5	51453			
58		↓	"			
59		1/5	51454			
60	↓	↓	"			
61			BL1003	6GKC		
62			"			
63			BL1003 S			
64			"			
65			BL1003 DS			
66			"			
67	1.5	1/10	51455			
68			"			
69			51455 D			
70			"			
71			51455 S			
72	↓	↓	"			
73			CCV			
74			B			
75			D4			
76	1.5	1/10	51455 DS			
77		↓	"			
78		1/5	51456			
79			"			
80	↓	↓	51457			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.04 Run Code: MG Matrix: IMP (KCl)

Analyst: MG Units: ug (see comments) MDL: 0.015

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 6 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	1.5	1/5	51457			
22		↓	51458			
23		↓	"			
24			51459			
25			"			
26		1/10	51460			
27		↓	"			
28		1/5	51461			
29		↓	"			
30		1/5	51462			
31		↓	"			
32		↓	51463			
33		↓	"			
34			53129			
35	↓		"			
36			CCV			
37			B			
38			D4			
39			BL1004			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			BL1004 S			
42			"			
43			BL1004 DS			
44			"			
45	1.5	1/10	53691			
46	↓	↓	"			
47			53691 D			
48			"			
49			53691 S			
50			"			
51			53691 DS			
52		↓	"			
53		1/5	53692			
54		↓	"			
55			53693			
56		↓	"			
57			53205			
58	↓		"			
59			CCV			
60			B			
61			D4			
62	1.5		53164			
63	↓		"			
64			53164 D			
65			"			
66			53164 S			
67			"			
68			53164 DS			
69			"			
70			42498	44X		
71			"			
72			53164 D			
73	↓		"			
74			WS 378			
75			ORG. REF.			
76			CCV			
77			B			
78			D4			
79						
80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

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CHART SPEED: 30
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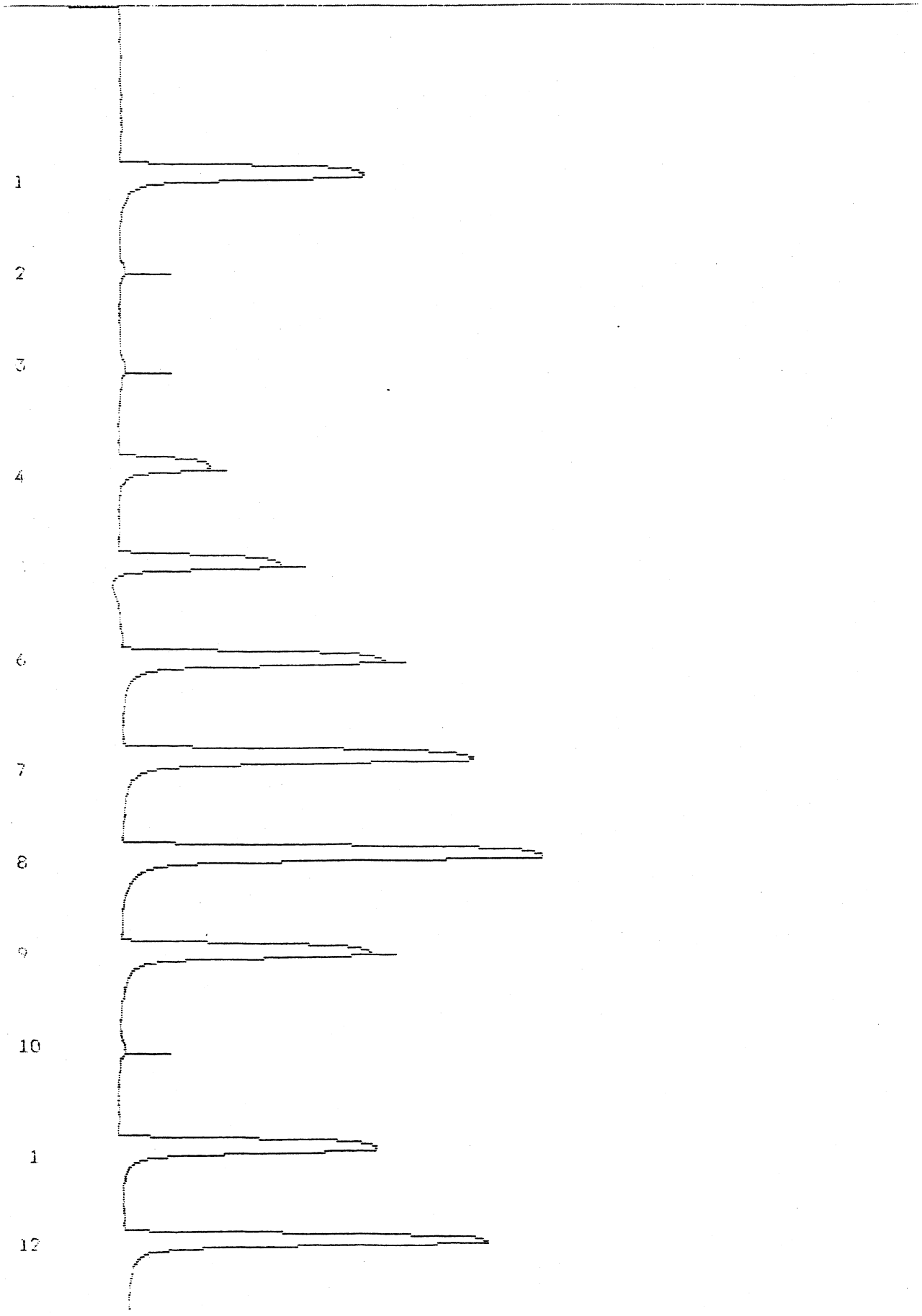

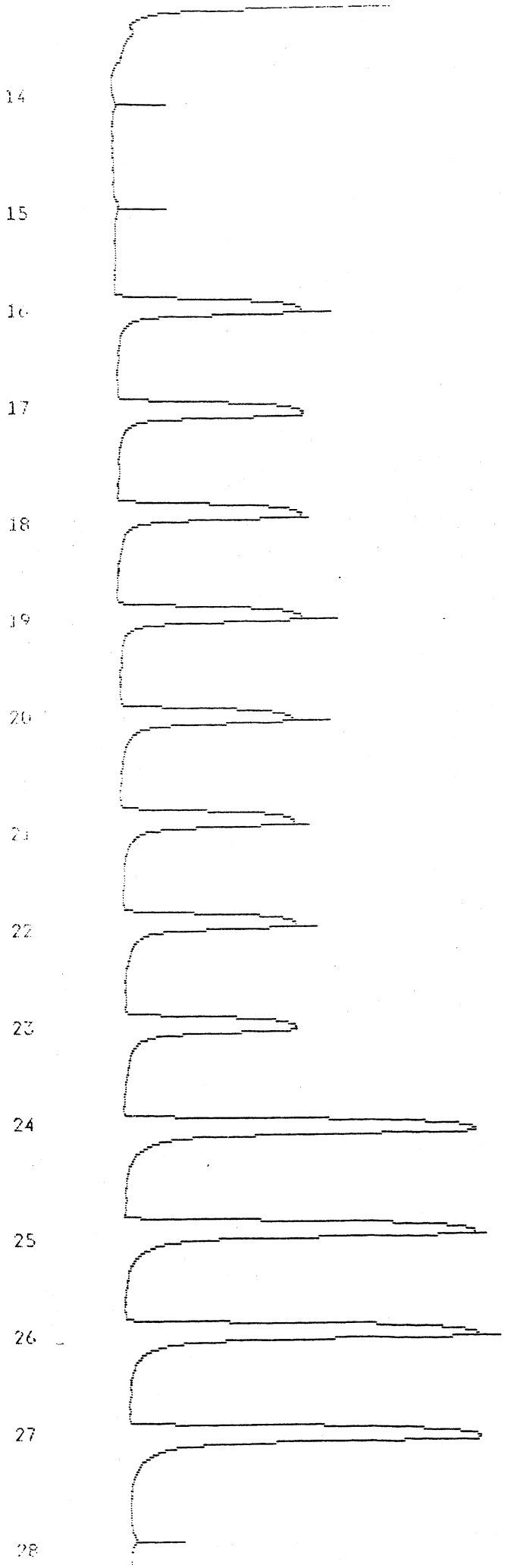
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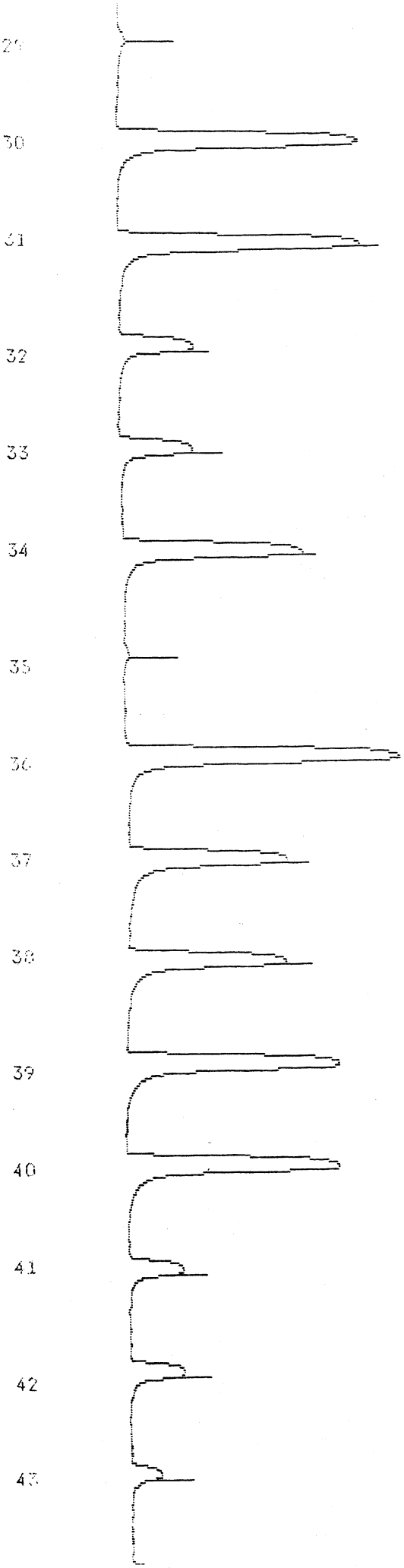
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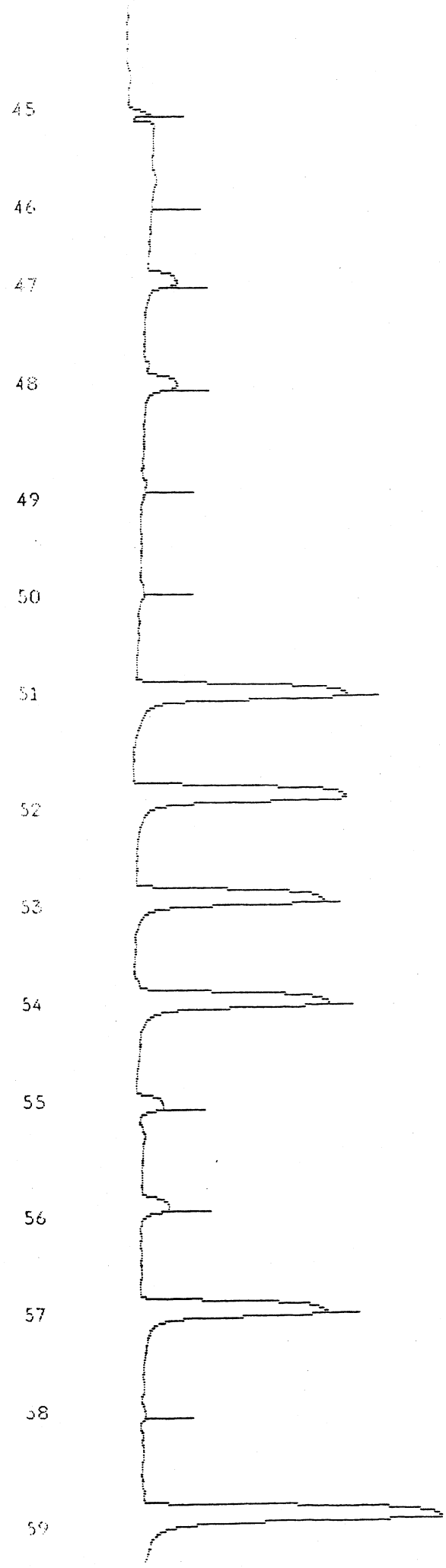
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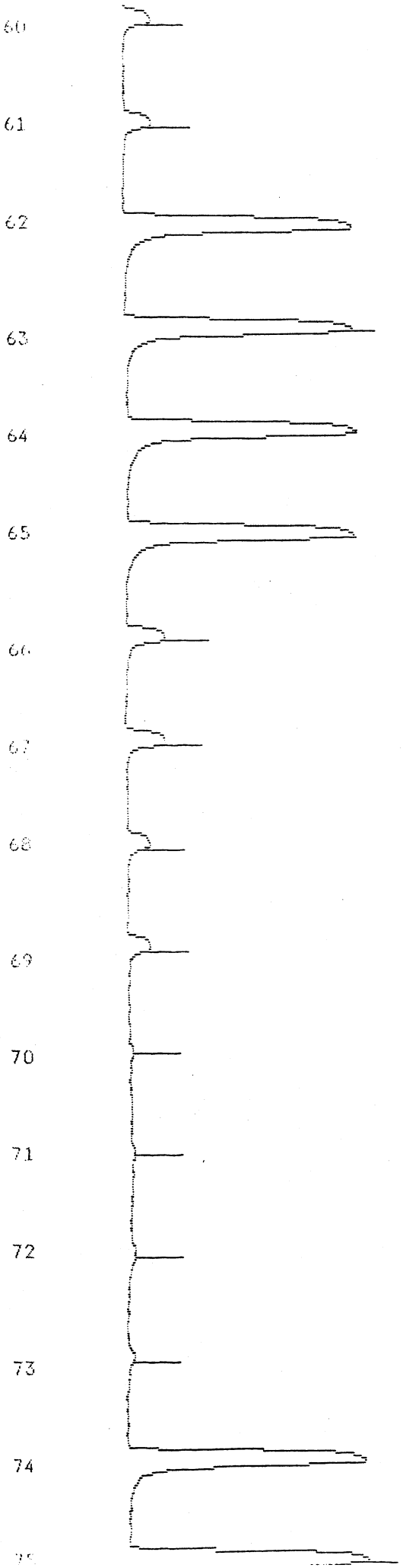
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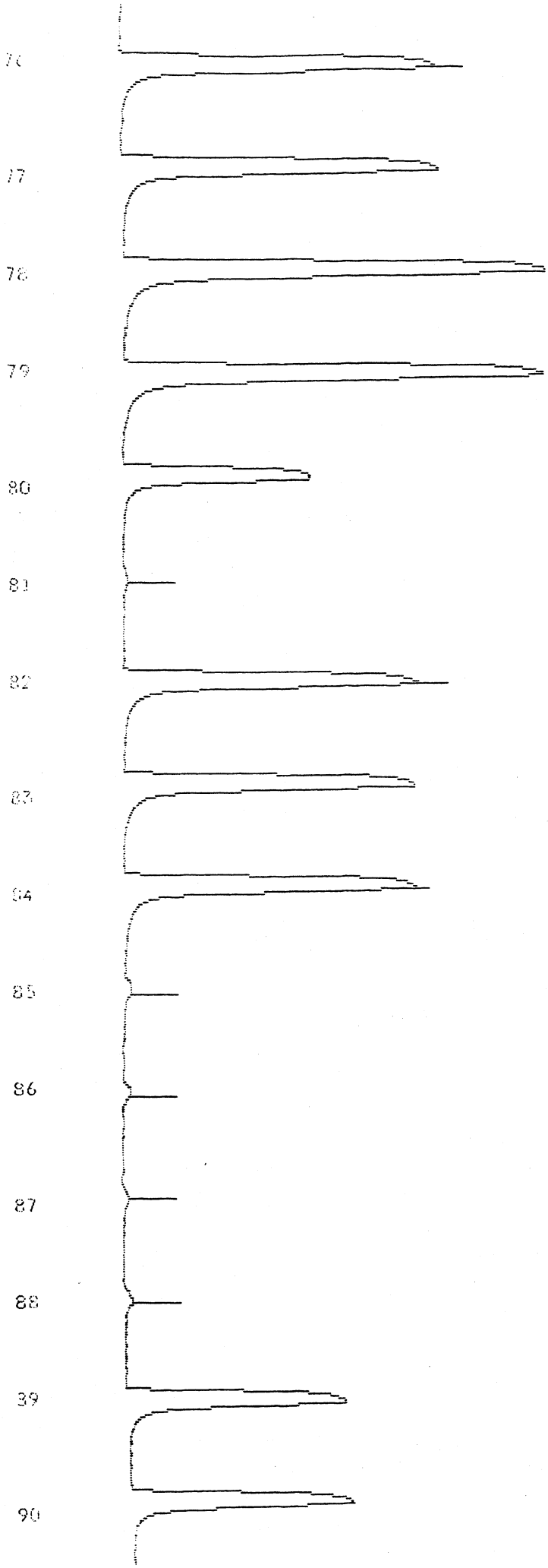
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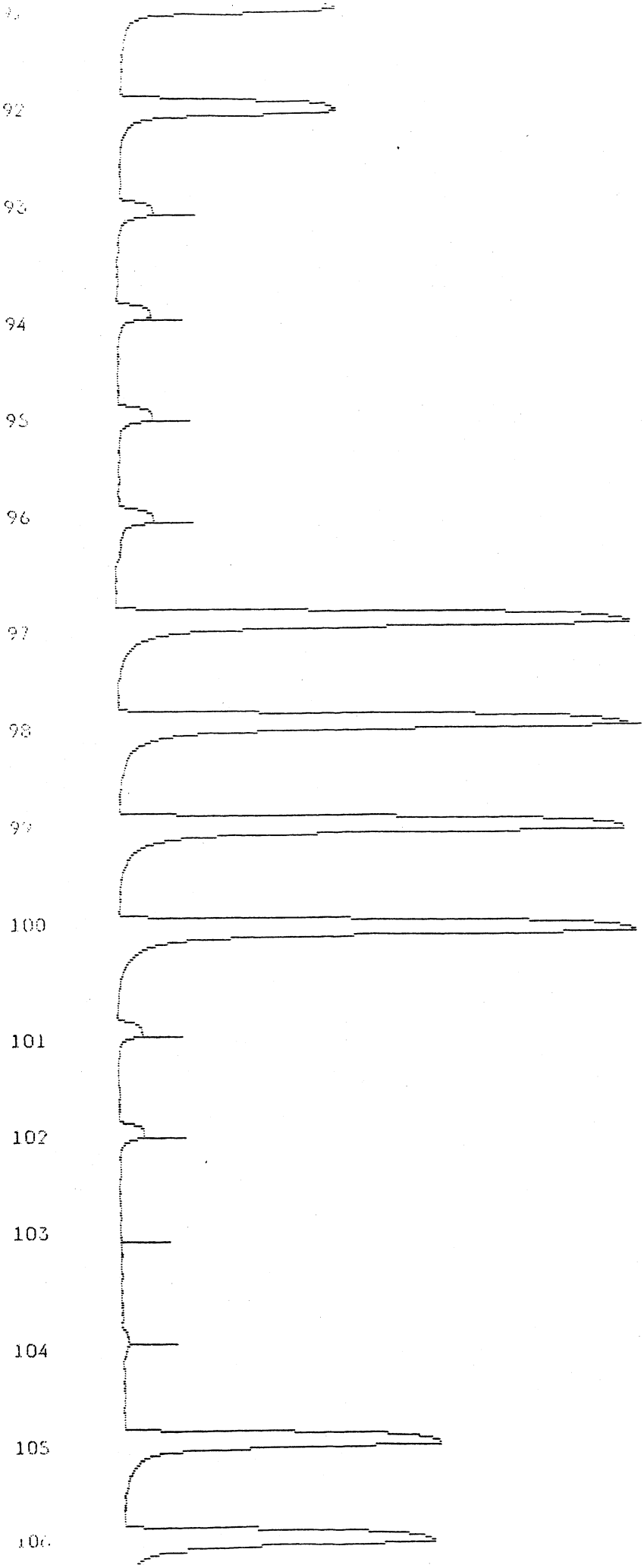
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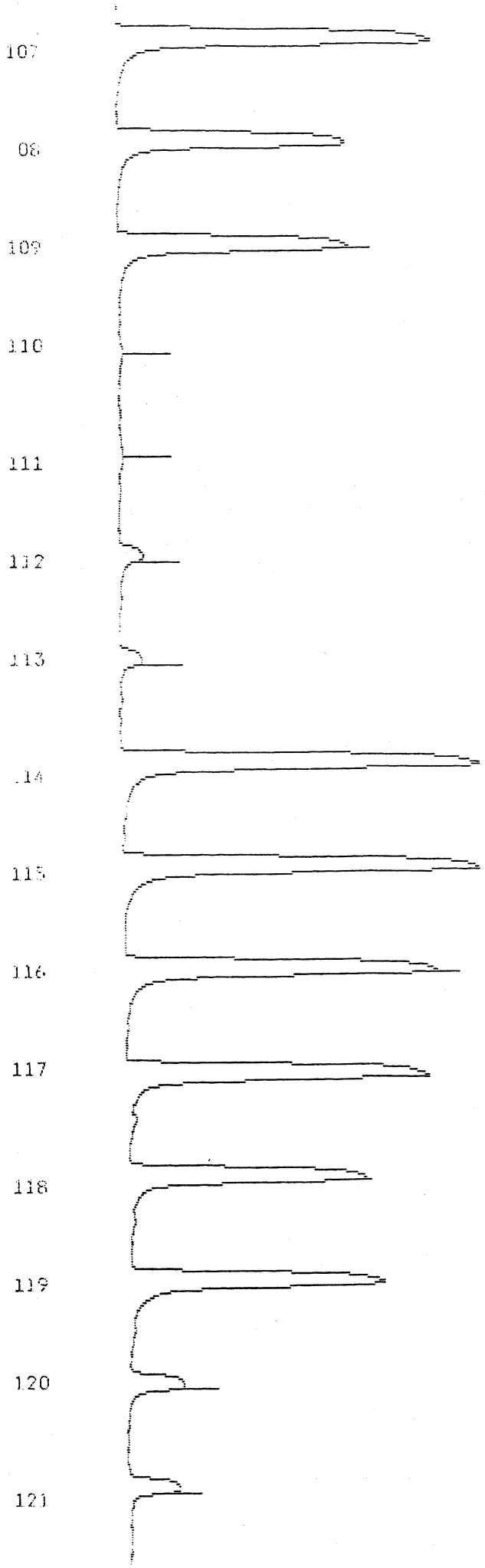
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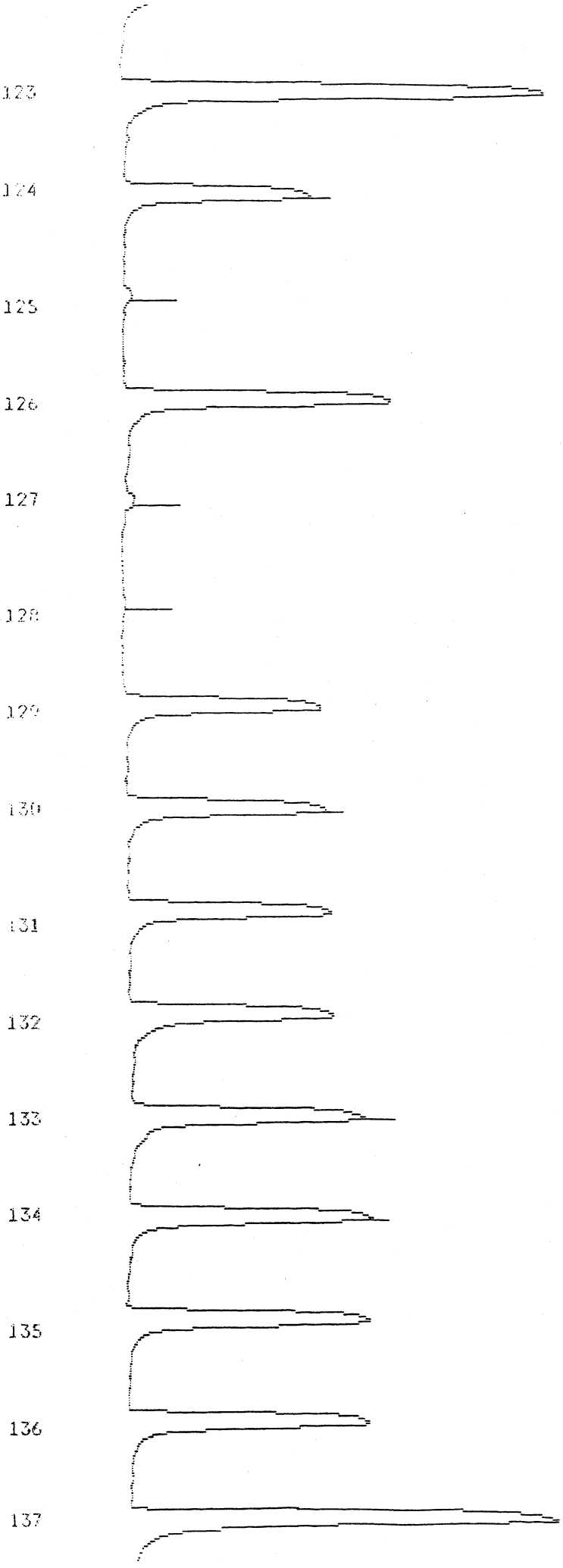
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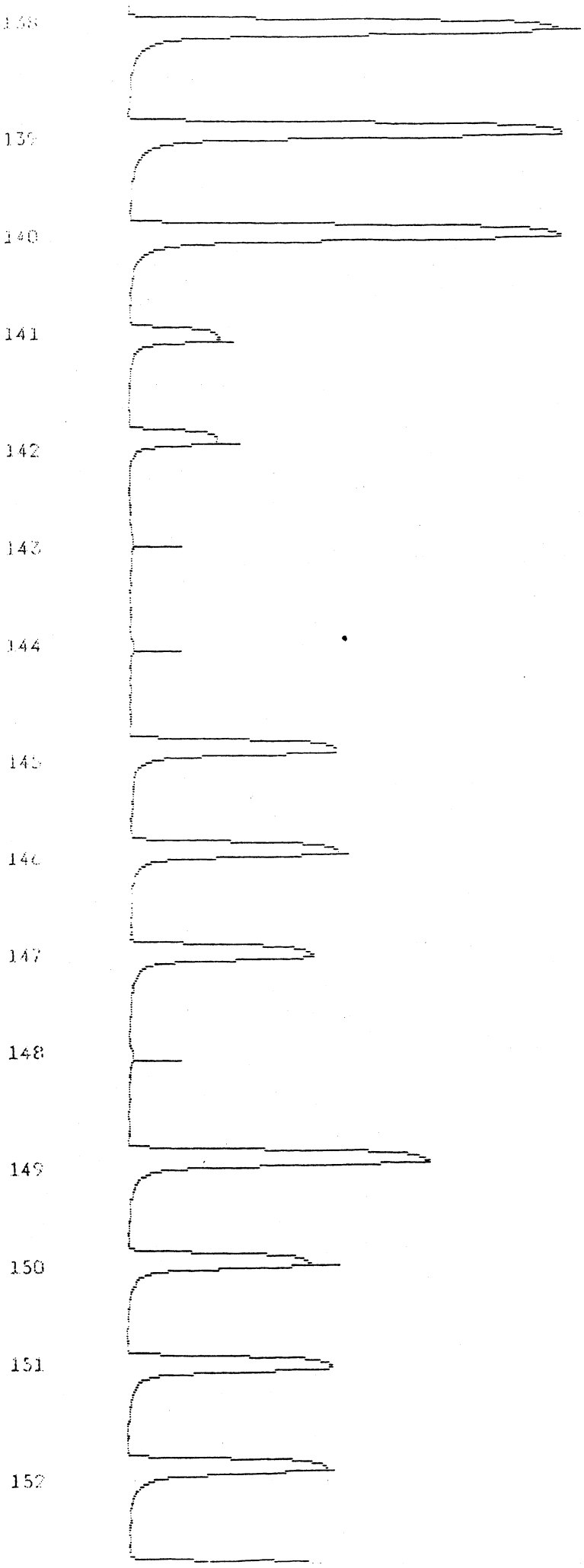
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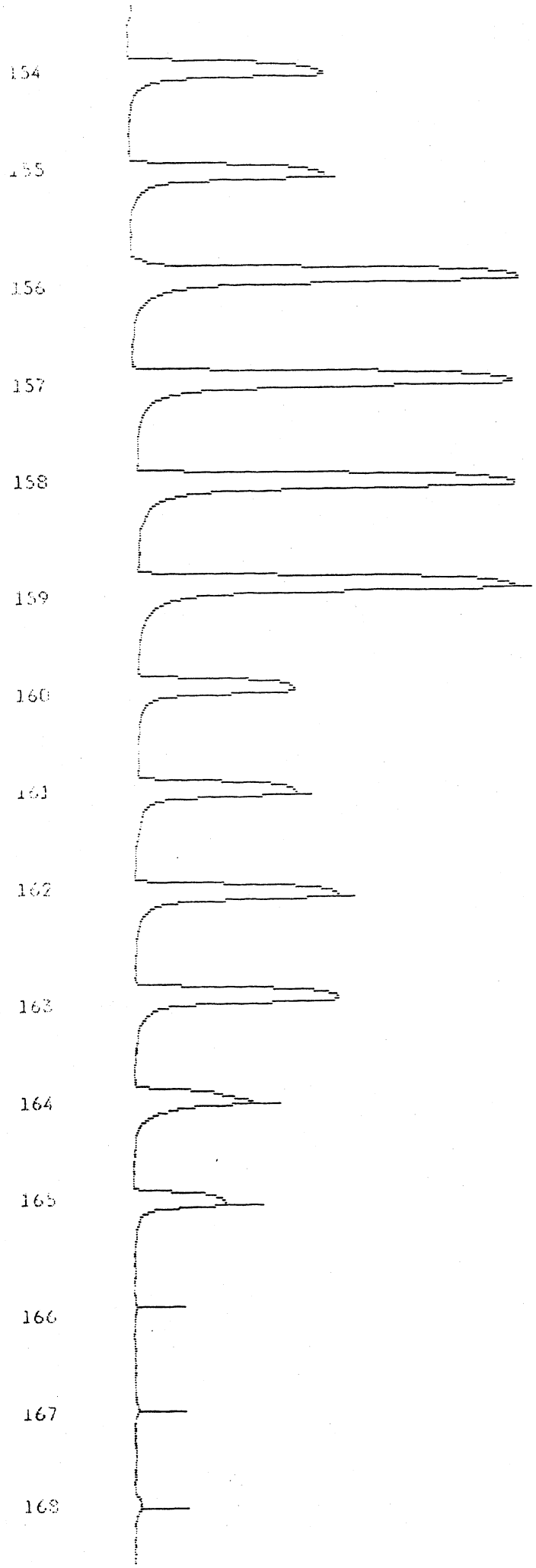
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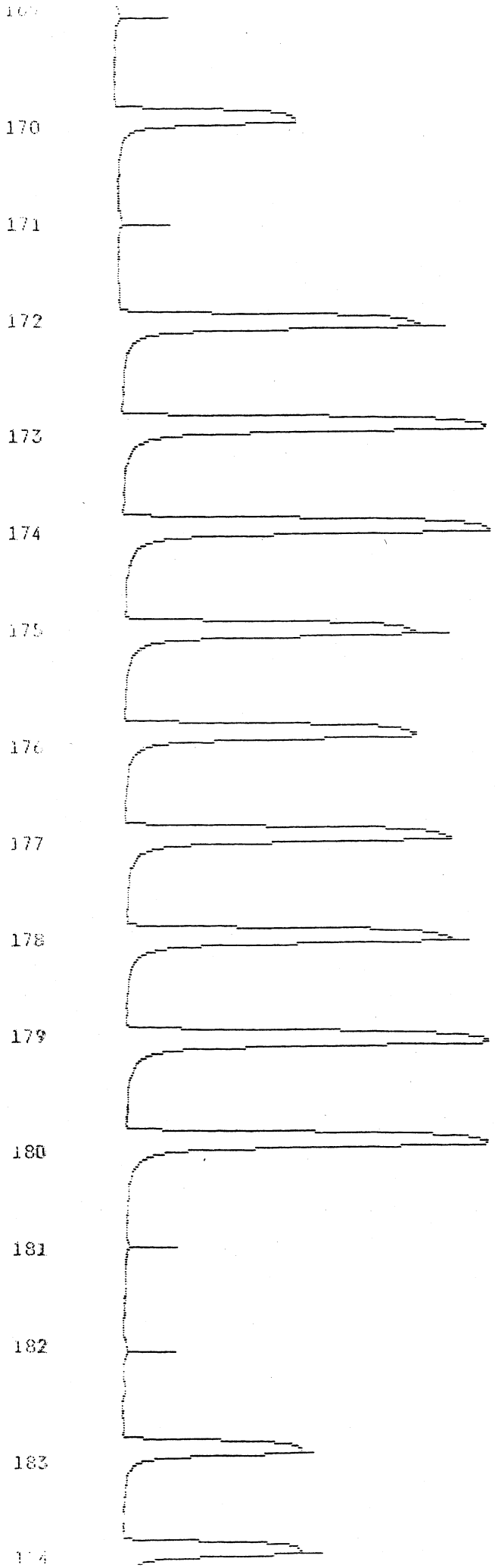
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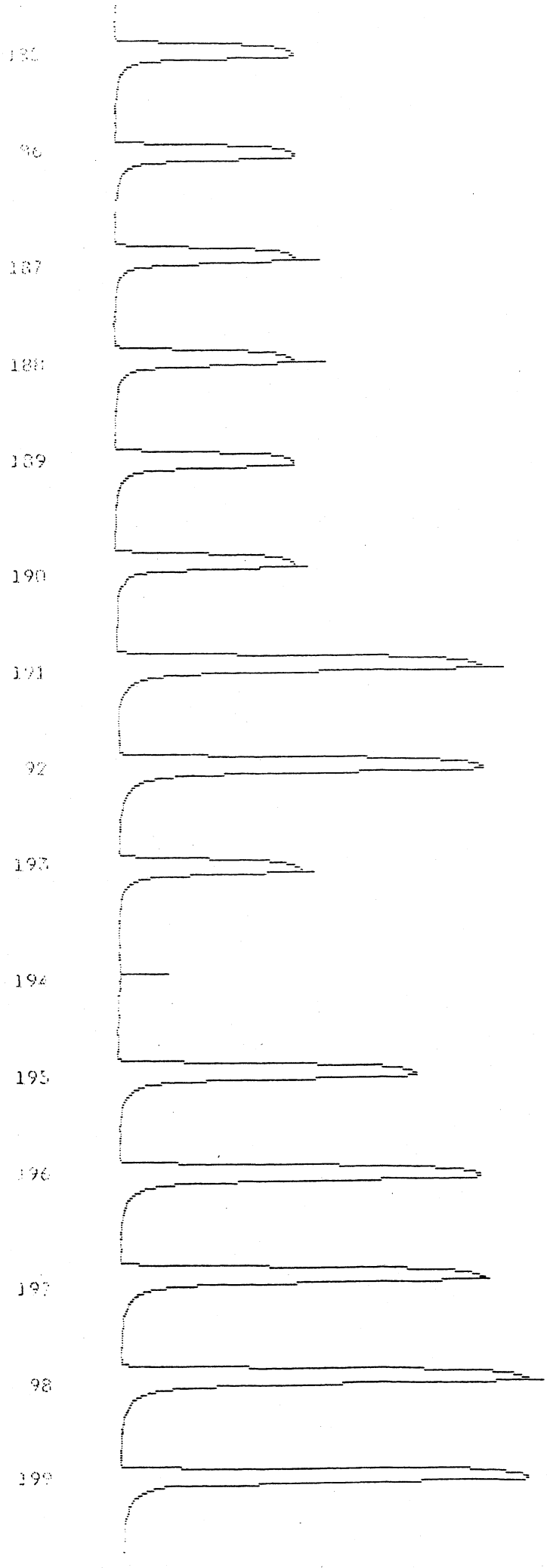
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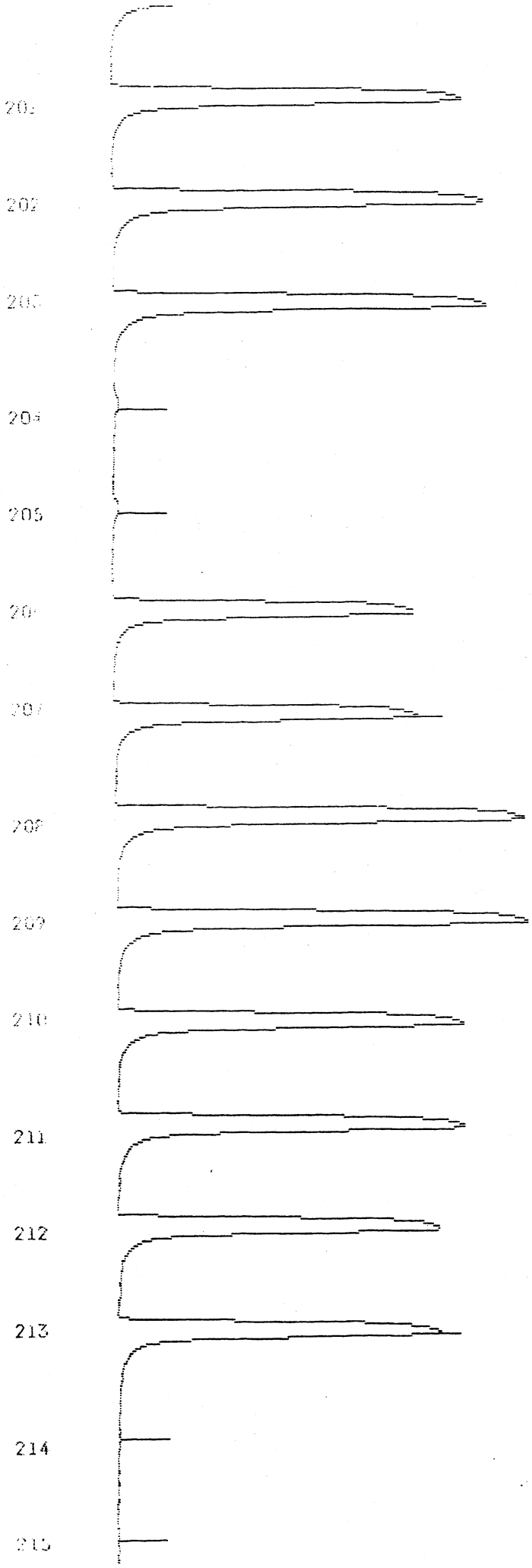
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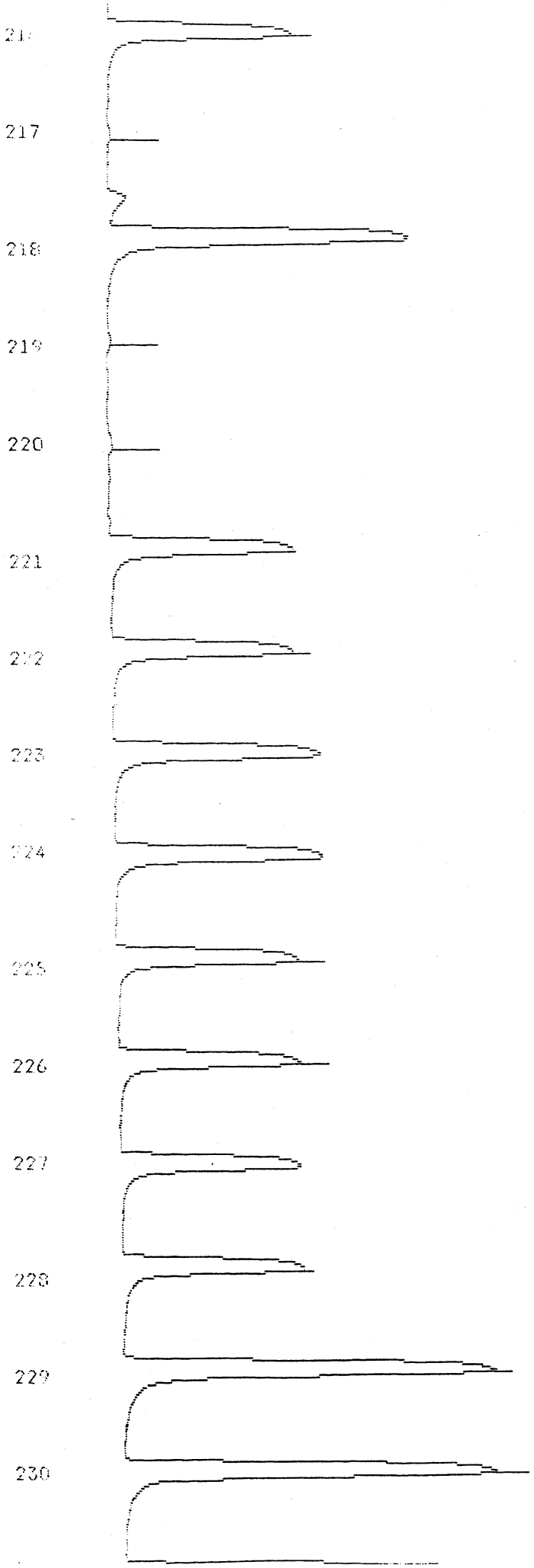
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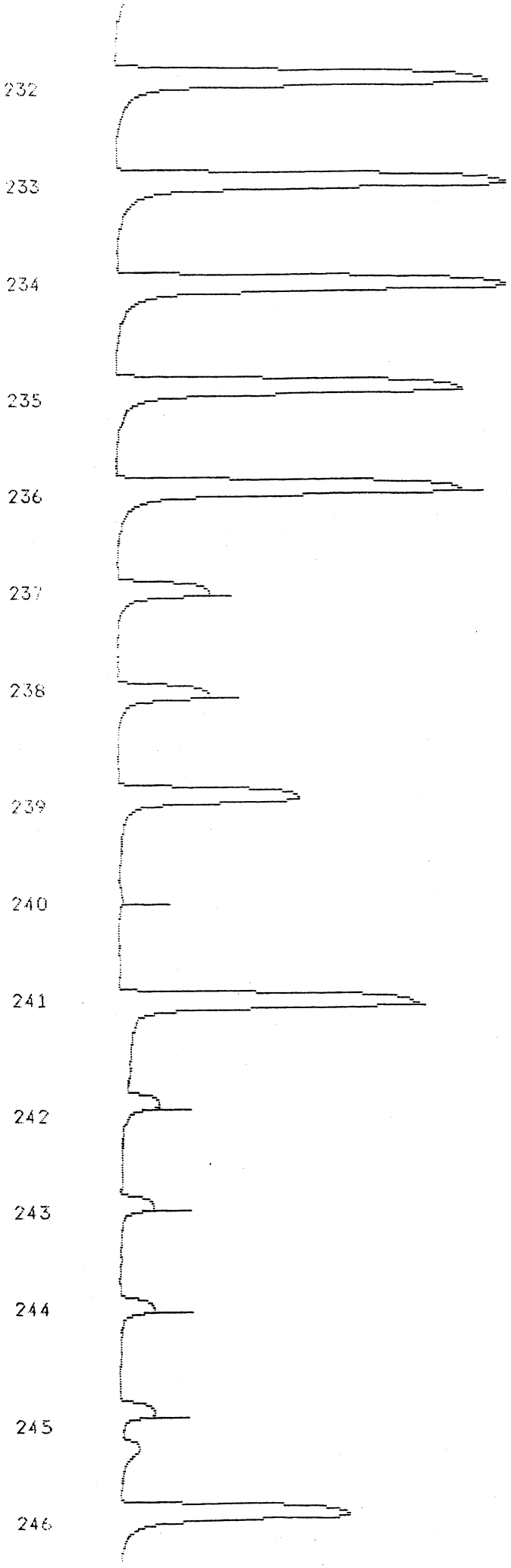
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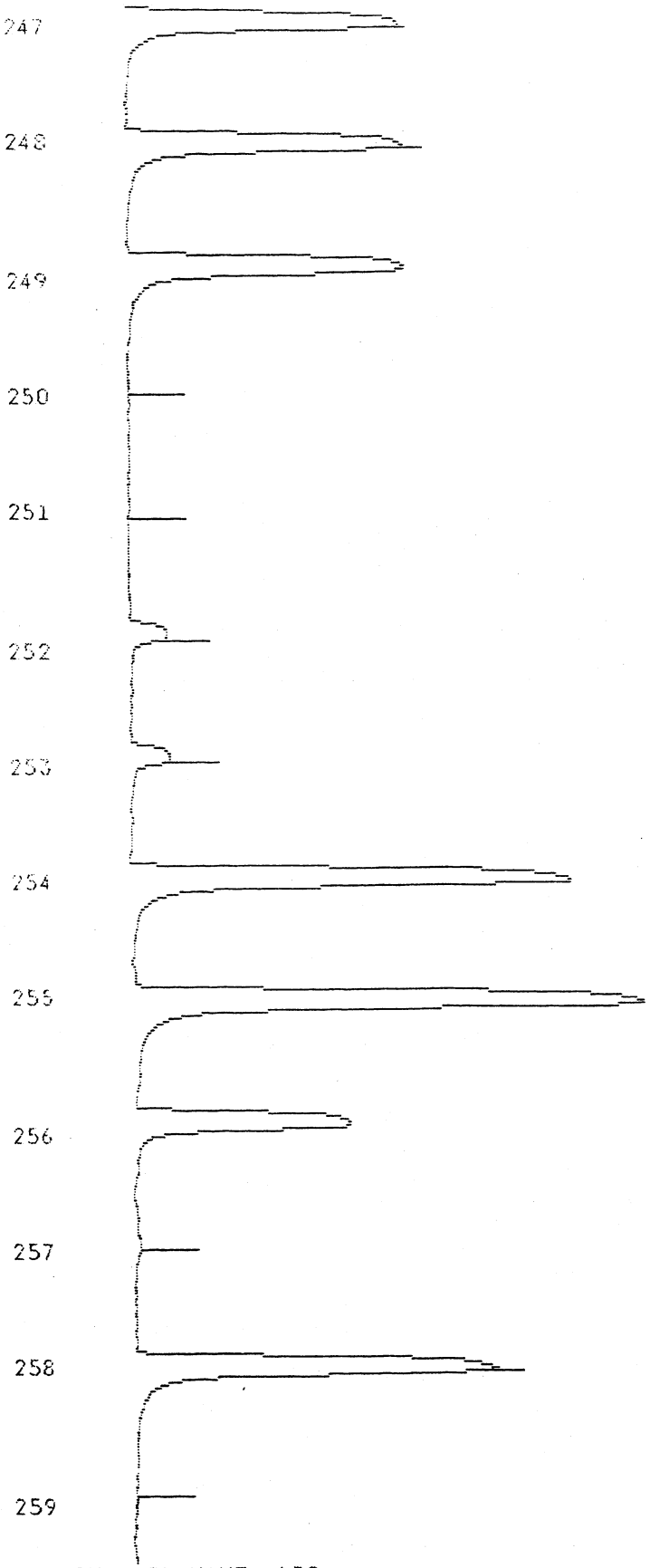

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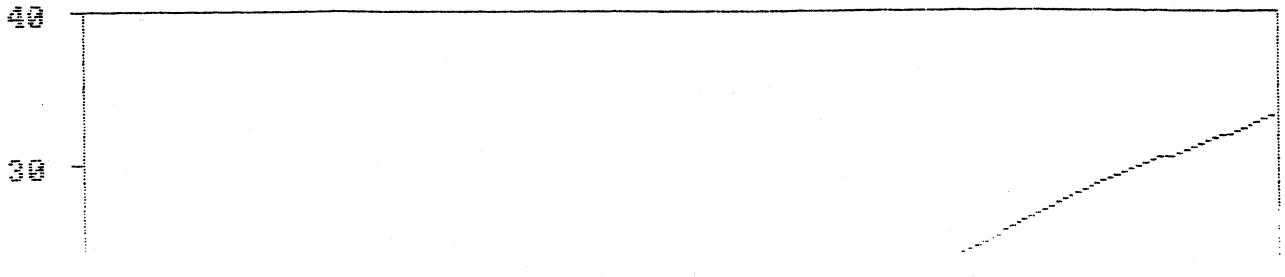
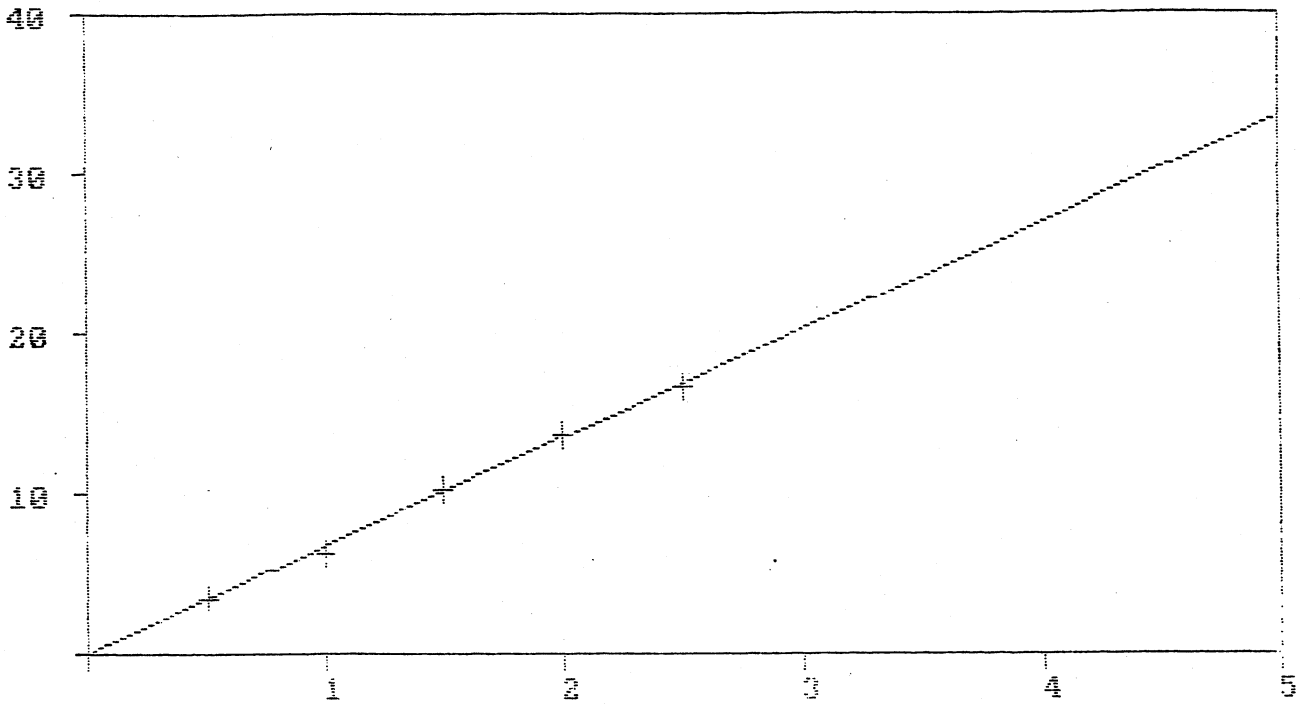
RUN NAME: 991004W



CHANNEL NAME: LDC
RUN NAME: 991004W



DATA TYPE: FIA
CALIBRATION ORDER 1
INTERCEPT = -1.16
SLOPE = 6.713413

CORRELATION: .9991758

CHANNEL NAME: LDC
RUN DATE: 10-04-1999
SAMPLE TABLE NAME: 991004W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION (PPB)	EF
1	PRIMER	1	1	9.6	1.428	s
2	DUMMY	1	1	0.1	0.013	I
3	S1: 0	1	1	0.1	0.013	I
4	S2: .5	1	1	3.4	0.507	
5	S3: 1	1	1	6.3	0.937	
6	S4: 1.5	1	1	10.3	1.529	
7	S5: 2	1	1	13.7	2.039 101%	
8	S6: 2.5	1	1	16.6	2.475 123%	
9	ICV	1	1	9.8	1.460 97%	
10	8	1	1	0.0	0.002	b
11	D4	1	1	10.3	1.529	d
12	WS378	1	1	14.4	2.141	
13	ORG REF	1	1	16.2	2.410	
14	BL1004-1GKC	1	1	0.0	0.002	I
15	BL1004-1GKC	1	1	0.0	0.002	s
16	BL1004S	1	1	6.8	1.013	
17	BL1004S	1	1	6.8	1.020	
18	BL1004DS	1	1	6.7	1.002	
19	BL1004DS	1	1	6.7	1.006	
20	53132	1.5	1	6.3	1.405	
21	53132	1.5	1	6.2	1.394	

24	531328	1.5	1	13.2	2.934	
25	53132S	1.5	1	13.1	2.933	
26	53132DS	1.5	1	13.2	2.949	
27	53132DS	1.5	1	13.2	2.949	
28	53130	1.5	1	0.0	0.014	I
29	53130	1.5	1	0.1	0.030	I
30	53131	3	1	9.0	4.032	s
31	53131	3	1	9.0	4.010	
32	53133	1.5	1	2.6	0.581	
33	53133	1.5	1	2.6	0.576	
34	CCV	1	1	6.6	0.991	99%
35	B	1	1	0.0	0.002	b
36	04	1	1	10.3	1.529	d
37	53134	1.5	1	5.7	1.268	
38	53134	1.5	1	5.6	1.263	
39	53135	1.5	1	7.8	1.738	
40	53135	1.5	1	7.8	1.743	
41	53136	1.5	1	1.8	0.412	
42	53136	1.5	1	1.8	0.412	
43	53137	1.5	1	1.0	0.215	
44	53137	1.5	1	1.0	0.215	
45	53138	1.5	1	0.0	0.003	s
46	53138	1.5	1	0.0	0.003	I
47	53139	1.5	1	0.9	0.204	
48	53139	1.5	1	1.0	0.232	
49	BL1004-2GKC	1	1	0.0	0.002	I
50	BL1004-2GKC	1	1	0.0	0.002	I
51	BL1004S	1	1	7.4	1.097	
52	BL1004S	1	1	7.4	1.104	
53	BL1004DS	1	1	6.5	0.977	
54	BL1004DS	1	1	6.7	0.995	
55	53140	1.5	1	0.7	0.166	
56	53140	1.5	1	0.8	0.188	
57	CCV	1	1	6.3	0.947	95%
58	B	1	1	0.0	0.002	b
59	04	1	1	10.3	1.529	d
60	531400	1.5	1	0.9	0.194	
61	531400	1.5	1	0.9	0.199	s
62	53140S	1.5	1	7.9	1.776	
63	53140S	1.5	1	7.8	1.743	
64	531400S	1.5	1	7.9	1.765	
65	531400S	1.5	1	7.8	1.754	
66	53141	1.5	1	1.2	0.281	
67	53141	1.5	1	1.3	0.292	
68	53142	1.5	1	0.7	0.155	I
69	53142	1.5	1	0.7	0.150	
70	53143	1.5	1	0.0	0.008	I
71	53143	1.5	1	0.0	0.003	I
72	53144	1.5	1	0.1	0.024	I
73	53144	1.5	1	0.2	0.046	I
74	53145	7.5	1	8.3	9.234	
75	53145	7.5	1	8.3	9.289	
76	53146	7.5	1	11.0	12.262	s
77	53146	7.5	1	11.0	12.317	
78	53147	7.5	1	14.7	16.409	
79	53147	7.5	1	14.6	16.300	
80	CCV	1	1	6.4	0.955	95%
81	B	1	1	0.0	0.002	b
82	04	1	1	10.3	1.529	d
83	53148	7.5	1	10.2	11.362	
84	53148	7.5	1	10.2	11.417	
85	53149	1.5	1	0.1	0.019	I
86	53149	1.5	1	0.1	0.030	I
87	BL1004-3GKC	1	1	0.1	0.013	I

90	BL1004S	1	1	7.7	1.148		
91	BL1004DS	1	1	7.6	1.140	s	
92	BL1004DS	1	1	7.6	1.140		
93	53164	1.5	1	1.1	0.243		
94	53164	1.5	1	1.1	0.254		
95	53164D	1.5	1	1.1	0.248		
96	53164D	1.5	1	1.1	0.254		
97	53164S	1.5	1	18.6	4.149	R	VOID DOUBLE SPIKED. REPEAT @ END MA
98	53164S	1.5	1	18.5	4.128	R	
99	53164DS	1.5	1	18.4	4.117	R	
100	53164DS	1.5	1	18.8	4.209	R	
101	53165	1.5	1	0.7	0.155		
102	53165	1.5	1	0.7	0.161		
103	NO CUP	1	1	0.0	0.002	I	
104	B	1	1	0.0	0.002	b	
105	CCV	1	1	11.7	1.744	116%	
106	53150	7.5	1	11.5	12.835	s	
107	53150	7.5	1	11.5	12.862		
108	53151	7.5	1	8.2	9.207		
109	53151	7.5	1	8.3	9.316		
110	53685	1.5	1	0.0	0.003	I	
111	53685	1.5	1	0.0	0.003	I	
112	53686	1.5	1	0.6	0.139		
113	53686	1.5	1	0.5	0.117		
114	53687	7.5	1	13.5	15.072		
115	53687	7.5	1	13.3	14.909		
116	53688	7.5	1	11.7	13.108		
117	53688	7.5	1	11.4	12.781		
118	53689	7.5	1	8.7	9.752		
119	53689	7.5	1	9.5	10.680		
120	53690	1.5	1	1.3	0.401		
121	53690	1.5	1	1.7	0.379	s	
122	WS378	1	1	14.4	2.151		
123	ORG REF	1	1	16.5	2.457		
124	CCV	1	1	7.0	1.049	105%	
125	B	1	1	0.0	0.002	b	
126	D4	1	1	10.3	1.529	d	
127	BL1004-4GKC	1	1	0.1	0.013	I	
128	BL1004-4GKC	1	1	0.0	0.002	I	
129	BL1004S	1	1	7.3	1.089		
130	BL1004S	1	1	7.4	1.104		
131	BL1004DS	1	1	7.6	1.129		
132	BL1004DS	1	1	7.5	1.126		
133	53745	37.5	1	8.7	48.898		
134	53745	37.5	1	9.0	50.399		
135	53745D	37.5	1	8.9	49.990		
136	53745D	37.5	1	8.8	49.035	s	
137	53745S	37.5	1	15.8	88.047		
138	53745S	37.5	1	15.7	87.501		
139	53745DS	37.5	1	15.7	87.911		
140	53745DS	37.5	1	15.5	86.683		
141	53745DS	187.5	1	3.1	86.943		
142	53745DS	187.5	1	3.0	83.533		
143	BL1004-5GKC	1	1	0.0	0.002	I	
144	BL1004-5GKC	1	1	0.0	0.002	I	
145	BL1004S	1	1	7.2	1.071		
146	BL1004S	1	1	7.1	1.060		
147	CCV	1	1	6.2	0.929	93%	
148	B	1	1	0.0	0.002	b	
149	D4	1	1	10.3	1.529	d	
150	BL1004DS	1	1	6.1	0.907		
151	BL1004DS	1	1	6.9	1.024	s	
152	43202	1.5	1	6.7	1.492		
153	43202	1.5	1	6.7	1.492		

156	432023	1.5	1	13.2	2.960	
157	432023	1.5	1	13.0	2.900	
158	4320203	1.5	1	13.0	2.911	
159	43202DS	1.5	1	12.8	2.873	
160	43203	7.5	1	5.3	5.906	
161	43203	7.5	1	5.4	6.015	
162	43204	1.5	1	6.9	1.547	
163	43204	1.5	1	6.9	1.541	
164	43205	1.5	1	3.9	0.881	
165	43205	1.5	1	3.0	0.674	
166	51449	1.5	1	0.0	0.003	s
167	51449	1.5	1	0.0	0.008	I
168	51450	1.5	1	0.1	0.024	I
169	51450	1.5	1	0.0	0.014	I
170	CCV	1	1	6.2	0.929	93%
171	B	1	1	0.0	0.002	b
172	D4	1	1	10.3	1.529	d
173	51451	7.5	1	12.6	14.063	
174	51451	7.5	1	12.6	14.145	
175	51452	15	1	10.0	22.342	
176	51452	15	1	10.1	22.615	
177	51453	7.5	1	11.2	12.535	
178	51453	7.5	1	11.2	12.508	
179	51454	7.5	1	12.5	13.954	
180	51454	7.5	1	12.5	13.981	
181	BL1004-6GKC	1	1	0.0	0.002	s
182	BL1004-6GKC	1	1	0.0	0.009	I
183	BL1004S	1	1	6.1	0.907	
184	BL1004S	1	1	6.1	0.911	
185	BL1004DS	1	1	6.1	0.915	
186	BL1004DS	1	1	6.1	0.915	
187	51455	15	1	6.1	13.721	
188	51455	15	1	6.1	13.667	
189	51455D	15	1	6.1	13.721	
190	51455D	15	1	6.1	13.721	
191	51455S	15	1	12.5	28.017	
192	51455S	15	1	12.6	28.071	
193	CCV	1	1	6.3	0.933	93%
194	B	1	1	0.0	0.002	b
195	D4	1	1	10.3	1.529	d
196	51455DS	15	1	12.5	27.962	s
197	51455DS	15	1	12.5	27.962	
198	51456	7.5	1	14.0	15.700	
199	51456	7.5	1	14.0	15.645	
200	51457	7.5	1	12.0	13.381	
201	51457	7.5	1	12.0	13.381	
202	51458	7.5	1	12.7	14.199	
203	51458	7.5	1	12.7	14.199	
204	51459	1.5	1	0.1	0.019	I
205	51459	1.5	1	0.1	0.035	I
206	51460	15	1	10.3	23.051	
207	51460	15	1	10.3	23.051	
208	51461	7.5	1	14.0	15.618	
209	51461	7.5	1	14.0	15.672	
210	51462	7.5	1	11.7	13.135	
211	51462	7.5	1	11.9	13.272	s
212	51463	7.5	1	11.0	12.317	
213	51463	7.5	1	11.0	12.262	
214	53129	1.5	1	0.0	0.003	I
215	53129	1.5	1	0.0	0.003	I
216	CCV	1	1	6.2	0.918	91%
217	B	1	1	0.0	0.002	b
218	D4	1	1	10.3	1.529	d
219	BL1004-7GKC	1	1	0.0	0.005	I

L REPEAT @ END *B

00129

222	BL10040	1	1	6.1	0.907	
223	BL10040S	1	1	7.0	1.046	
224	BL10040S	1	1	7.0	1.049	
225	53691	15	1	6.2	13.776	
226	53691	15	1	6.1	13.667	s
227	53691D	15	1	6.0	13.503	
228	53691D	15	1	6.1	13.721	
229	53691S	15	1	12.8	28.617	
230	53691S	15	1	12.7	28.453	
231	53691DS	15	1	12.7	28.453	
232	53691DS	15	1	12.9	28.780	
233	53692	7.5	1	13.5	15.072	
234	53692	7.5	1	13.5	15.045	
235	53693	7.5	1	12.0	13.463	
236	53693	7.5	1	11.9	13.354	
237	43205	1.5	1	3.1	0.685	
238	43205	1.5	1	3.1	0.690	
239	CCV	1	1	6.2	0.922	92%
240	B	1	1	0.0	0.002	b
241	D4	1	1	10.3	1.529	s
242	53164	1.5	1	1.0	0.232	
243	53164	1.5	1	1.0	0.232	
244	531640	1.5	1	1.1	0.237	
245	531640	1.5	1	1.1	0.237	
246	531643	1.5	1	7.8	1.749	
247	531643	1.5	1	7.7	1.732	
248	531640S	1.5	1	7.9	1.765	
249	531640S	1.5	1	7.8	1.749	
250	42498-HYX	1.5	1	0.0	0.003	I
251	42498-HYX	1.5	1	0.0	0.003	I
252	531640	1.5	1	1.0	0.215	
253	531640	1.5	1	1.0	0.215	
254	WS 378	1	1	12.9	1.864	93%
255	ORG REF	1	1	14.4	2.151	107%
256	CCV	1	1	6.0	0.889	89%
257	B	1	1	0.0	0.002	b
258	D4	1	1	10.3	1.529	d

INTERCEPT: -0.01 LINEAR COEF: 6.713413
CORRELATION COEF: .9991758

non mber	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
1458	TRC-LO	BP-OHM-1-Ib-5	Mercury -	P	0.886	0.825	2.259	93.	2.249	93.	99/10/04	4BMN	99/10/04	MG03	32.	20.	*PDS*
1460	TRC-LO	BP-OHM-1-O-2	Mercury -	P	1.838						99/10/04	4BMN	99/10/04	MG03	34.	20.	
1461	TRC-LO	BP-OHM-1-O-3	Mercury -	P	1.356						99/10/04	4BMN	99/10/04	MG03	33.	20.	
1462	TRC-LO	BP-OHM-1-O-4	Mercury -	P	1.512						99/10/04	4BMN	99/10/04	MG03	33.	20.	
1463	TRC-LO	BP-OHM-1-O-5	Mercury -	P	1.410						99/10/04	4BMN	99/10/04	MG03	32.	20.	
3128	TRC-LO	MB R456	Mercury -	P	-0.030	-99999.0	0.303	101.	0.303	101.	99/10/04	4BMN	99/10/04	MG03	20.	16.	
3129	TRC-LO	SG-OHM-RB	Mercury -	P	-0.030						99/10/04	4BMN	99/10/04	MG03	20.	16.	
3130	TRC-LO	SG-OHM-I-FB	Mercury -	P	-0.030						99/10/04	4BMN	99/10/04	MG03	20.	16.	
3131	TRC-LO	SG-OHM-I1a-R1	Mercury -	P	0.733						99/10/04	4BMN	99/10/04	MG03	18.	16.	
3132	TRC-LO	SG-OHM-I1a-R3	Mercury -	P	-0.030						99/10/04	4BMN	99/10/04	MG03	17.	16.	
3134	TRC-LO	SG-OHM-I1b-R1	Mercury -	P	0.185						99/10/04	4BMN	99/10/04	MG03	18.	16.	
1004	INTERNAL		Mercury -	P	-0.030	-99999.0	0.303	101.	0.303	101.	99/10/04	4BMN	99/10/04	MG03	$$$	$$$	

12 Tests for OHMN4 with an MDL of 0.030 ug Validated By _____ Control Chart Updated N/A IO Requirements met N/A

02'20

non mber	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
3135	TRC-LO	SG-OHM-I1b-R2	Mercury -	P	0.239	0.286	1.435	78.	1.561	87.	99/10/04	5BMN	99/10/04	MG03	17.	16.	*PDS*
3136	TRC-LO	SG-OHM-I1b-R3	Mercury -	P	0.056						99/10/04	5BMN	99/10/04	MG03	17.	16.	
3137	TRC-LO	SG-OHM-I1b-R4	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	17.	16.	
3138	TRC-LO	SG-OHM-O-FB	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	18.	16.	
3139	TRC-LO	SG-OHM-Oa-R1	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	17.	16.	
3140	TRC-LO	SG-OHM-Oa-R3	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	18.	16.	
3141	TRC-LO	SG-OHM-Ob-R1	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	17.	16.	
3142	TRC-LO	SG-OHM-Ob-R3	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	26.	16.	
3143	TRC-LO	BP-OHM-3-RB	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	27.	16.	
3144	TRC-LO	BP-OHM-3-I-FB	Mercury -	P	-0.030	-99999.0	0.309	103.	0.300	100.	99/10/04	5BMN	99/10/04	MG03	$$$	$$$	
.1004	INTERNAL																

11 Tests for OHMN4 with an MDL of 0.030 ug Validated By _____ Control Chart Updated N/A IO Requirements met N/A

Lenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
)53133	TRC-LO	SG-OHM-I1a-R4	Mercury -	PV	-0.030						99/10/04	6BMN	99/10/04	MG03	17.	16.	
)53145	TRC-LO	BP-OHM-3-IE-R2	Mercury -	PV	1.941	1.951	4.704	91.	4.630	90.	99/10/04	6BMN	99/10/04	MG03	25.	16.	*PDS*
)53146	TRC-LO	BP-OHM-3-IE-R3	Mercury -	PV	2.597						99/10/04	6BMN	99/10/04	MG03	25.	16.	
)53147	TRC-LO	BP-OHM-3-IW-R2	Mercury -	PV	1.873						99/10/04	6BMN	99/10/04	MG03	25.	16.	
)53148	TRC-LO	BP-OHM-3-IW-R3	Mercury -	PV	1.161						99/10/04	6BMN	99/10/04	MG03	25.	16.	
)53149	TRC-LO	BP-OHM-3-O-FB	Mercury -	PV	-0.030						99/10/04	6BMN	99/10/04	MG03	27.	16.	
)53150	TRC-LO	BP-OHM-3-O-R2	Mercury -	PV	2.973						99/10/04	6BMN	99/10/04	MG03	25.	16.	
)53151	TRC-LO	BP-OHM-3-O-R3	Mercury -	PV	2.177						99/10/04	6BMN	99/10/04	MG03	25.	16.	
)53164	TRC-LO	SG-OHM-Oa-R2	Mercury -	PV	-0.030						99/10/04	6BMN	99/10/04	MG03	17.	16.	
)53165	TRC-LO	SG-OHM-Ob-R2	Mercury -	PV	-0.030						99/10/04	6BMN	99/10/04	MG03	17.	16.	
BL1004	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.304	101.	0.302	101.	99/10/04	6BMN	99/10/04	MG03	$$$	$$$	

11 Tests for OHMN4 with an MDL of 0.030 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

Run Date: 99/10/04 Matrix: IMP(KMnO4)
Run Code MG03

Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
2BMN	BL1004	-0.025	-0.027	0.300	-0.0081	
	BL1004	-0.029				
	BL1004S	1.013	1.013	0.300	0.3039	101.3
	BL1004S	1.013				
	BL1004D	1.009	1.016	0.300	0.3048	101.6
	BL1004D	1.023				
	42512	0.817	0.8195	0.5	0.40975	
	42512	0.822				
	42512D	0.694	0.753	0.5	0.3765	
	42512D	0.812				
	42512S	2.206	2.2085	0.5	1.10425	94.82
	42512S	2.211				
	42512DS	2.211	2.201	0.5	1.1005	94.32
	42512DS	2.191				
	42527	-0.033	-0.0205	0.5	-0.01025	
	42527	-0.008				
	42528	42.938	42.9875	0.5	21.49375	
	42528	43.037				
	42529	53.715	53.6655	0.5	26.83275	
	42529	53.616				
	42530	63.305	62.6625	0.5	31.33125	
	42530	62.02				
	43543	-0.053	-0.053	0.5	-0.0265	
	42543	-0.053				
	42544	52.034	52.0835	0.5	26.04175	
	42544	52.133				
	42545	51.54	51.243	0.5	25.6215	
	42545	50.946				
	42546	49.463	49.7105	0.5	24.85525	
	42546	49.958				
	51449	-0.053	-0.053	1	-0.053	
	51449	-0.053				

Run Date: 99/10/04 Matrix: IMP(KMnO4)
Run Code MG03

Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
3BMN	BL1004	-0.035	-0.035	0.300	-0.0105	
	BL1004	-0.035				
	BL1004S	1.019	1.0255	0.300	0.30765	102.55
	BL1004S	1.032				
	BL1004D	1.016	1.0145	0.300	0.30435	101.45
	BL1004D	1.013				
	51452	0.698	0.671	1	0.671	
	51452	0.644				
	51452D	0.713	0.743	1	0.743	
	51452D	0.773				
	51452S	1.761	1.927	1	1.927	81.33
	51452S	2.093				
	51452DS	2.063	2.085	1	2.085	91.87
	51452DS	2.107				
	51450	-0.053	-0.053	1	-0.053	
	51450	-0.053				
	51451	1.643	1.8135	1	1.8135	
	51451	1.984				
	51453	2.888	2.9575	1	2.9575	
	51453	3.027				
	51454	1.104	1.1285	1	1.1285	
	51454	1.153				
	51455	2.562	2.577	1	2.577	
	51455	2.592				
okay	51456	0.382		1	0.382	
	51456	missed cup				
	51457	2.191	2.1935	1	2.1935	
	51457	2.196				
	51459	-0.053	-0.053	1	-0.053	
	51459	-0.053				
4BMN	51460	1.855	1.838	1	1.838	
	51460	1.821				

	Run Date:	99/10/04		Matrix:	IMP(KMnO4)	
	Run Code	MG03				
Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
4BMN	BL1004	-0.035	-0.035	0.300	-0.0105	
	BL1004	-0.035				
	BL1004S	1.009	1.011	0.300	0.3033	101.1
	BL1004S	1.013				
	BL1004D	1.006	1.0095	0.300	0.30285	100.95
	BL1004D	1.013				
	51458	0.881	0.886	1	0.886	
	51458	0.891				
	51458D	0.827	0.8245	1	0.8245	
	51458D	0.822				
	51458S	2.251	2.2585	1	2.2585	93.55
	51458S	2.266				
	51458DS	2.177	2.2485	1	2.2485	92.88
	51458DS	2.32				
	51461	1.351	1.356	1	1.356	
	51461	1.361				
	51462	1.499	1.5115	1	1.5115	
	51462	1.524				
	51463	1.405	1.41	1	1.41	
	51463	1.415				
	53129	-0.053	-0.053	1	-0.053	
	53129	-0.053				
	53130	-0.053	-0.053	1	-0.053	
	53130	-0.053				
	53131	0.703	0.733	1	0.733	
	53131	0.763				
	53132	-0.048	-0.0505	1	-0.0505	
	53132	-0.053				
	53134	0.16	0.1845	1	0.1845	
	53134	0.209				

Run Date: 99/10/04 Matrix: IMP(KMnO4)
Run Code MG03

Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
5BMN	BL1004	-0.029	-0.027	0.300	-0.0081	
	BL1004	-0.025				
	BL1004S	1.019	1.029	0.300	0.3087	102.9
	BL1004S	1.039				
	BL1004D	0.993	0.9995	0.300	0.29985	99.95
	BL1004D	1.006				
	53135	0.184	0.2385	1	0.2385	
	53135	0.293				
	53135D	0.318	0.286	1	0.286	
	53135D	0.254				
	53135S	1.539	1.435	1	1.435	78.18
	53135S	1.331				
	53135DS	1.509	1.561	1	1.561	86.58
	53135DS	1.613				
	53136	0.09	0.0555	1	0.0555	
	53136	0.021				
	53137	-0.048	-0.0505	1	-0.0505	
	53137	-0.053				
	53138	-0.048	-0.0505	1	-0.0505	
	53138	-0.053				
	53139	-0.043	-0.048	1	-0.048	
	53139	-0.053				
	53140	-0.053	-0.053	1	-0.053	
	53140	-0.053				
	53141	-0.043	-0.0355	1	-0.0355	
	53141	-0.028				
	53142	-0.053	-0.053	1	-0.053	
	53142	-0.053				
	53143	-0.053	-0.053	1	-0.053	
	53143	-0.053				
	53144	-0.053	-0.053	1	-0.053	
	53144	-0.053				

Run Date: 99/10/04 Matrix: IMP(KMnO4)
Run Code MG03

Batch	Sample #	Result (ug/L)	Average (ug/L)	Volume (L)	Result (total ug)	% Rec.
6BMN	BL1004	-0.035	-0.032	0.300	-0.0096	
	BL1004	-0.029				
	BL1004S	1.003	1.013	0.300	0.3039	101.3
	BL1004S	1.023				
	BL1004D	1.009	1.0075	0.300	0.30225	100.75
	BL1004D	1.006				
	53145	1.941	1.941	1	1.941	
	53145	1.941				
	53145D	1.951	1.951	1	1.951	
	53145D	1.951				
	53145S	4.689	4.704	1	4.704	91.93
	53145S	4.719				
	53145DS	4.61	4.63	1	4.63	89.47
	53145DS	4.65				
	53146	2.607	2.597	1	2.597	
	53146	2.587				
	53147	1.885	1.8725	1	1.8725	
	53147	1.86				
	53148	1.143	1.1605	1	1.1605	
	53148	1.178				
	53149	-0.053	-0.053	1	-0.053	
	53149	-0.053				
	53150	3.007	2.9725	1	2.9725	
	53150	2.938				
	53151	2.142	2.1765	1	2.1765	
	53151	2.211				
	53164	-0.053	-0.053	1	-0.053	
	53164	-0.053				
	53165	-0.053	-0.053	1	-0.053	
	53165	-0.053				
	53133	-0.053	-0.053	1	-0.053	
	53133	-0.053				

LDC AUTOSAMPLER RUN LOG (MERCURY)

e: 99.10.04 WI Run Code: MG03 Matrix: IMP ($KMnO_4$)

Analyst: MG Units: ug (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			WS 378			
13			ORG-REF.			
14			BL1004	IBMN		
15			"			
16			BL1004S			
17			"			
18			BL1004 DS			
19			"			
20	1.5	1/20	53746			
21			"			
22			53746 D			
23			"			
24			53746 S			
25			"			
26			53746 DS			
27			"			
28		1/100	53746 DS			
29			"			
30			53750			
31			"			
32			53750 D			
33			"			
34			CCV			
35			B			
36			D4			
37	1.5		53750S			
38			"			
39			53750 DS			
40			"			
41	1.5	1/5	42494			
42			"			
43			42494 D			
44			"			
45			42494 S			
46			"			
47			42494 DS			
48			"			
49			42492			
50			"			
51			42493			
52			"			
53		1/5	42495			
54			"			
55		1/5	42496			
56			"			
57			CCV			
58			B			
59			D4			
60	1.5		42511			
61			"			
62			42513			
63			"			
64			42514			
65			"			
66			BL1004	2BMN		
67			"			
68			BL1004S			
69			"			
70			BL1004 DS			
71			"			
72	1.5		42512			
73			"			
74			42512 D			
75			"			
76			42512 S			
77			"			
78			42512 DS			
79			"			
80			CCV			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

e: 99.10.04WI Run Code: MG03 Matrix: IMP (MnO_4)

Analyst: MG Units: ug (see comments) MDL: 0.03

up	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
MS 20						
81 ~~21~~			B			
22			D4			
23	1.5		42527			
24			"			
25		1/20	42528			
26			"			
27			42529			
28			"			
29			42530			
30			"			
31			42543			
32			"			
33		1/20	42544			
34			"			
35			42545			
36			"			
37			42546			
38			"			
39			51449			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			BL1004	3B MN		
42			"			
43			CCV			
44			B			
45			D4			
46			BL1004S			
47			"			
48			BL1004DS			
49			"			
50	1.5		51452			
51			"			
52			51452D			
53			"			
54			51452S			
55			"			
56			51452DS			
57			"			
58			51450			
59			"			
60			51451			
61			"			
62			51453			
63			"			
64			51454			
65			"			
66			CCV			
67			B			
68			D4			
69	1.5		51455			
70			"			
71			51456			
72			"			
73			51457			
74			"			
75			51459			
76			"			
77			51460			
78			"			
79			BL1004	4BMN		
80			"			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

:: 99.10.04(WI) Run Code: MG03 Matrix: IMP.

Analyst: MG/KB Units: _____ (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
19						
20						
21			BL1004S			
22			"			
23			BL1004 DS			
24			"			
25	1.5		51458			
26	↓		"			
27			51458 D			
28			"			
29			CCV			
30			B			
31			D4			
32	1.5		51458 S			
33	↓		"			
34			51458 DS			
35			"			
36			51461			
37			"			
38			51462			
39			"			
40	↓		51463			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	1.5		51463			
42	↓		53129			
43			"			
44			53130			
45			"			
46			53131			
47			"			
48			53132			
49			"			
50			53134			
51			"			
52			S.S	2.0		
53			CCV			
54			B			
55			D4			
56			BL1004	SBMN		
57			"			
58			BL1004 S			
59			"			
60			BL604 DS			
61			"			
62	1.5		53135			
63	↓		"			
64			53135 D			
65			"			
66			53135 S			
67			"			
68			53135 DS			
69			"			
70			53136			
71			"			
72			53137			
73			"			
74			53138			
75	↓		"			
76			CCV			
77			B			
78			D4			
79	1.5		53139			
80	↓		"			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

: 99.10.04 WI Run Code: MG03 Matrix: IMP

Analyst: MG/KB Units: µg (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	1.5		53140			
22			"			
23			53141			
24			"			
25			53142			
26			"			
27			53143			
28			"			
29			53144			
30			"			
31			BL1004	68MN		
32			"			
33			BL1004 S			
34			"			
35			BL1004 DS			
36			"			
37	1.5		53145			
38	↓		"			
39			CCV			
40			B			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			D4			
42	1.5		53145 D			
43			"			
44			53145 S			
45			"			
46			53145 DS			
47			"			
48			53146			
49			"			
50			53147			
51			"			
52			53148			
53			"			
54			53149			
55			"			
56			53150			
57			"			
58			53151			
59			"			
60			53164			
61	↓		"			
62			CCV			
63			B			
64			D4			
65	1.5		53165			
66			"			
67			53133			
68			"			
69			51458 D			
70			"			
71		OK	53135 DS			
72			"			
73		1/2	53145			
74			"			
75			53145 D			
76			"			
77			53145 S			
78			"			
79			53145 DS			
80	↓	↓	"			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

te: 99.10.04 WI Run Code: MG03 Matrix: IMP.

Analyst: MG/KB Units: ug (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21			1355			
22			"			
23			132			
24			134			
25			WS 38			
26			ORG. REF			
27			CCV			
28			B			
29			D4			
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						
56						
57						
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Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

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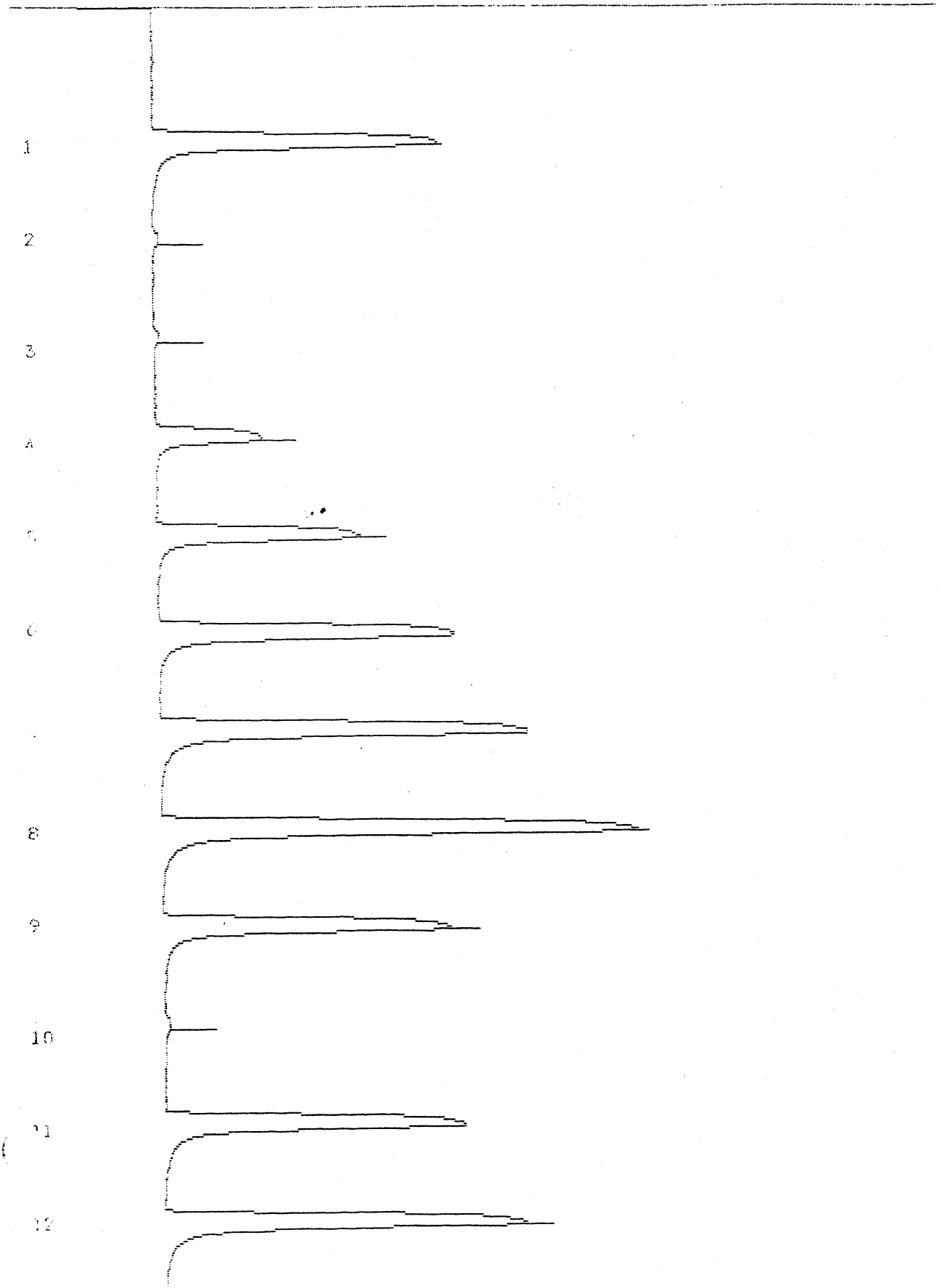

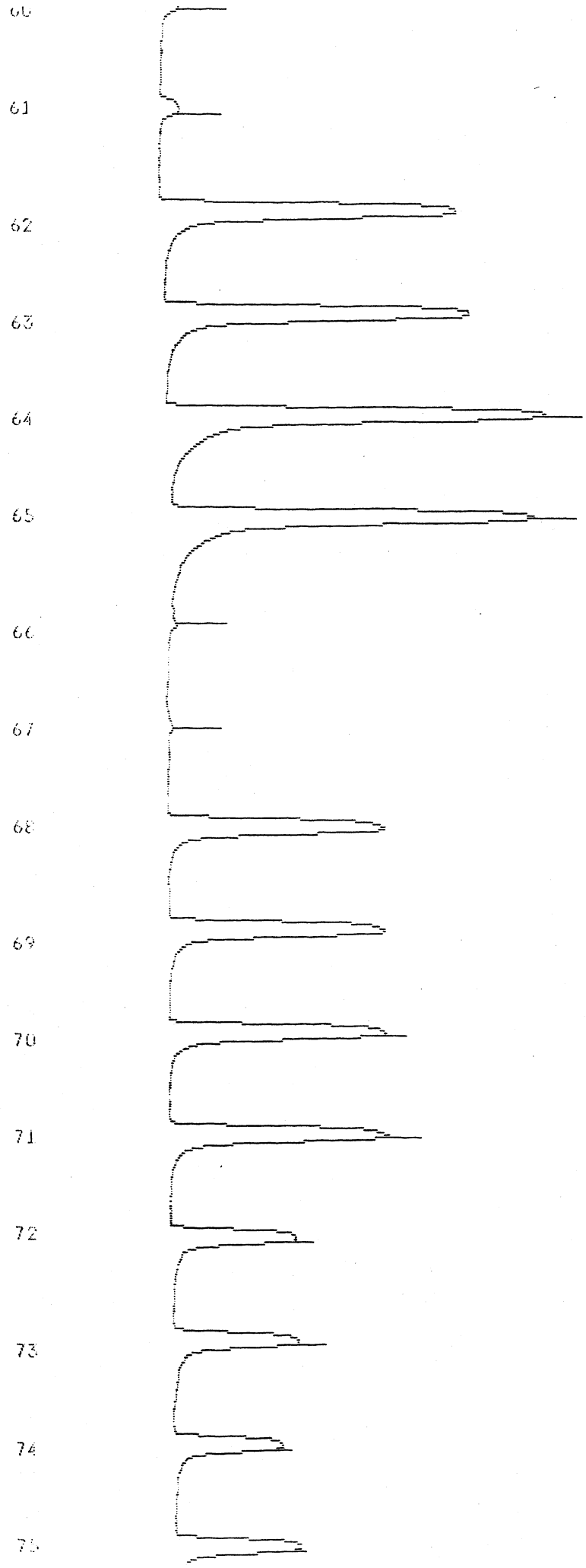
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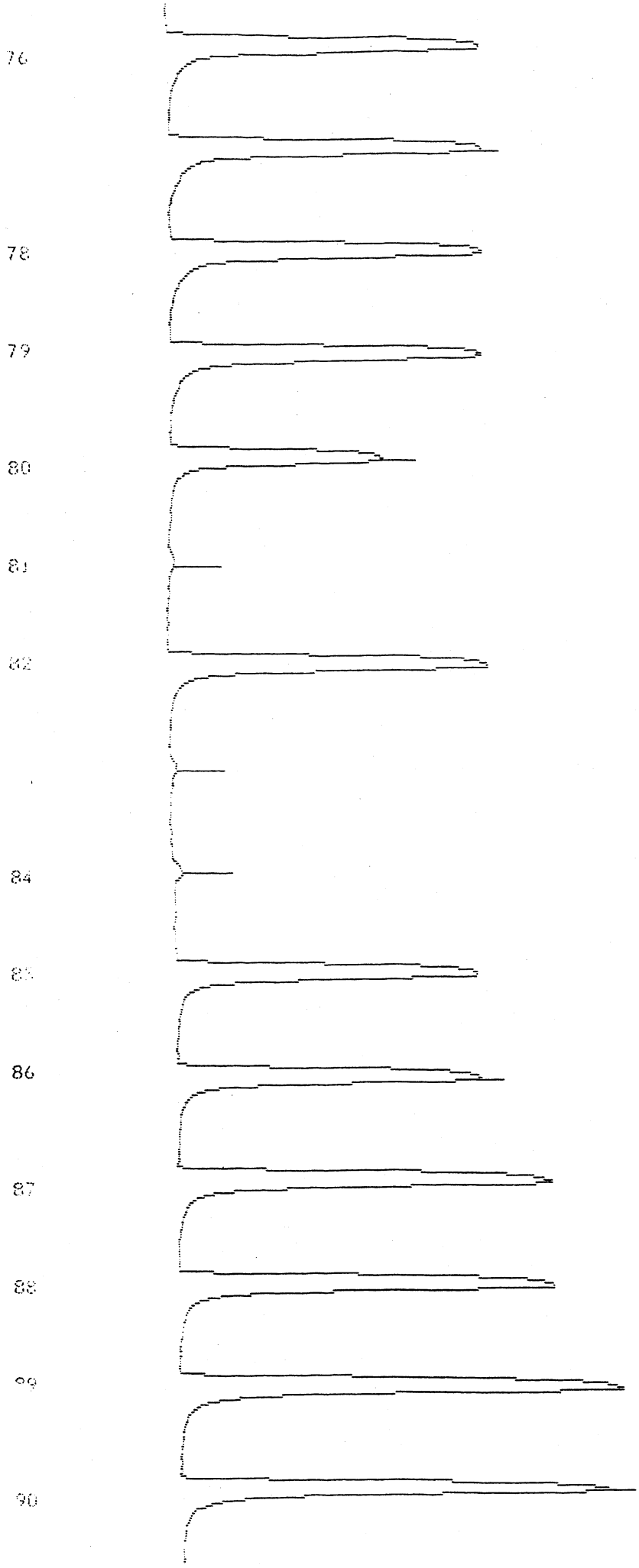
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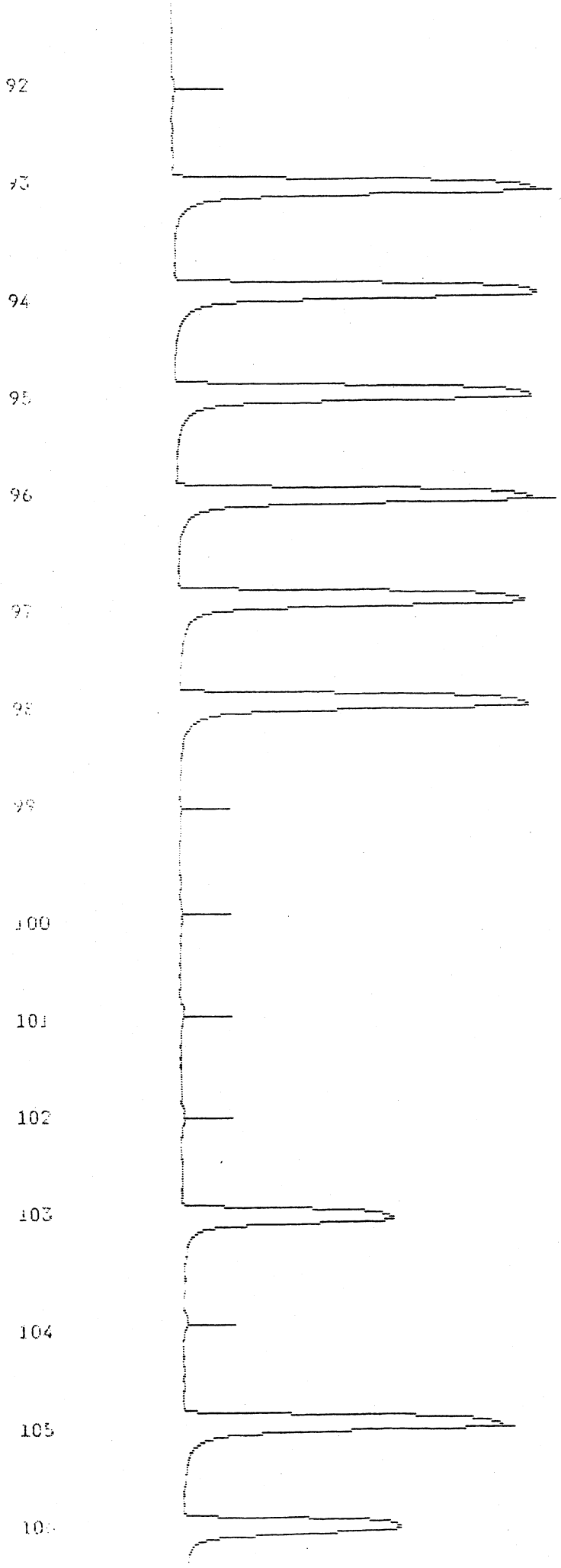
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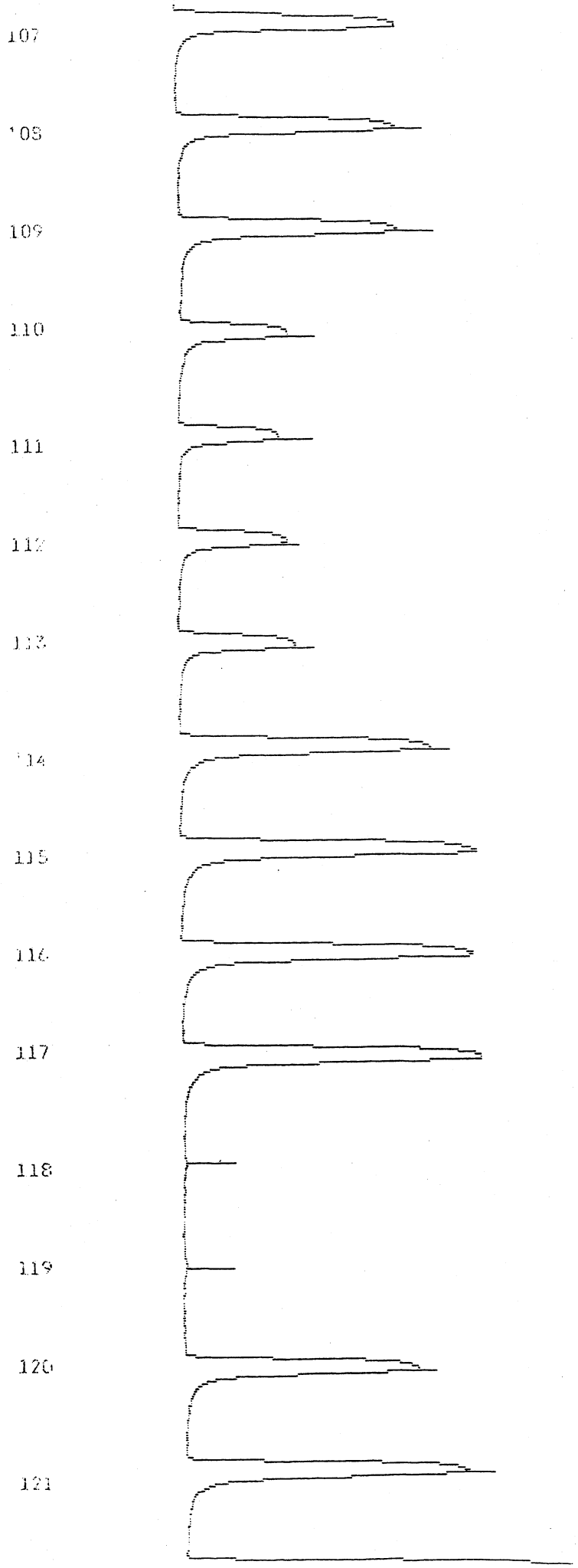
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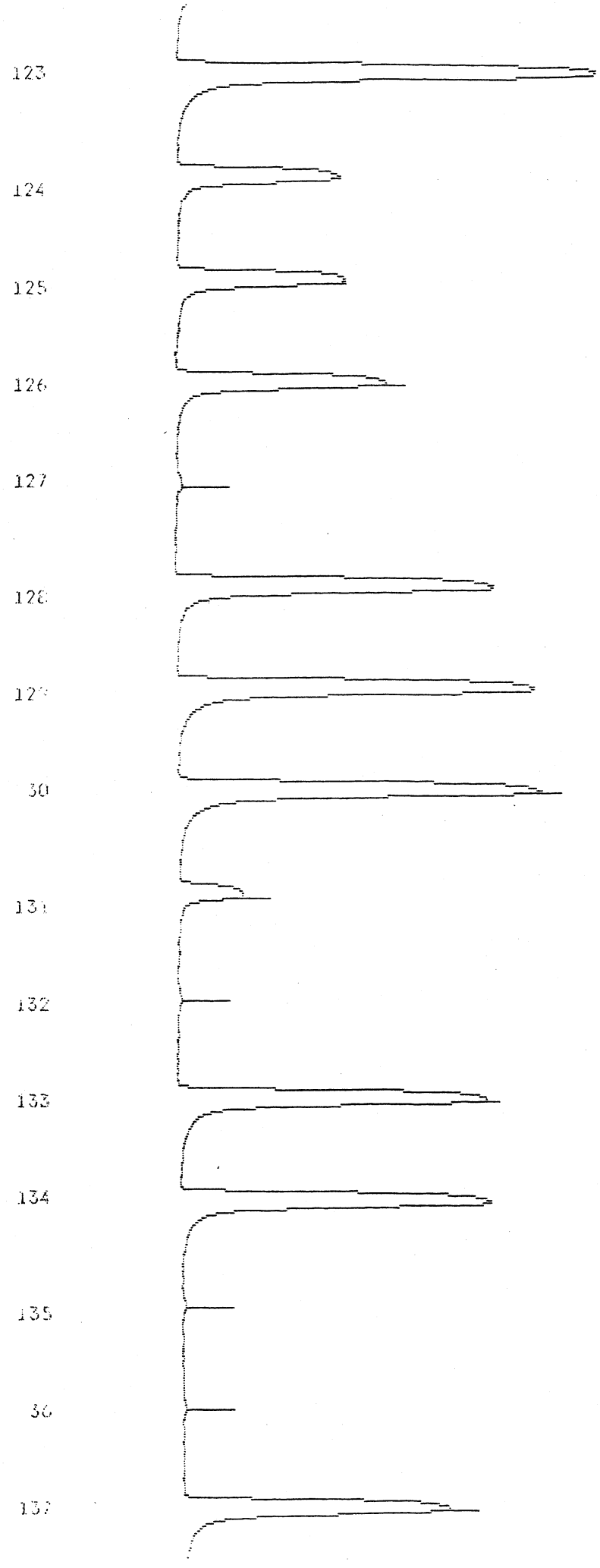
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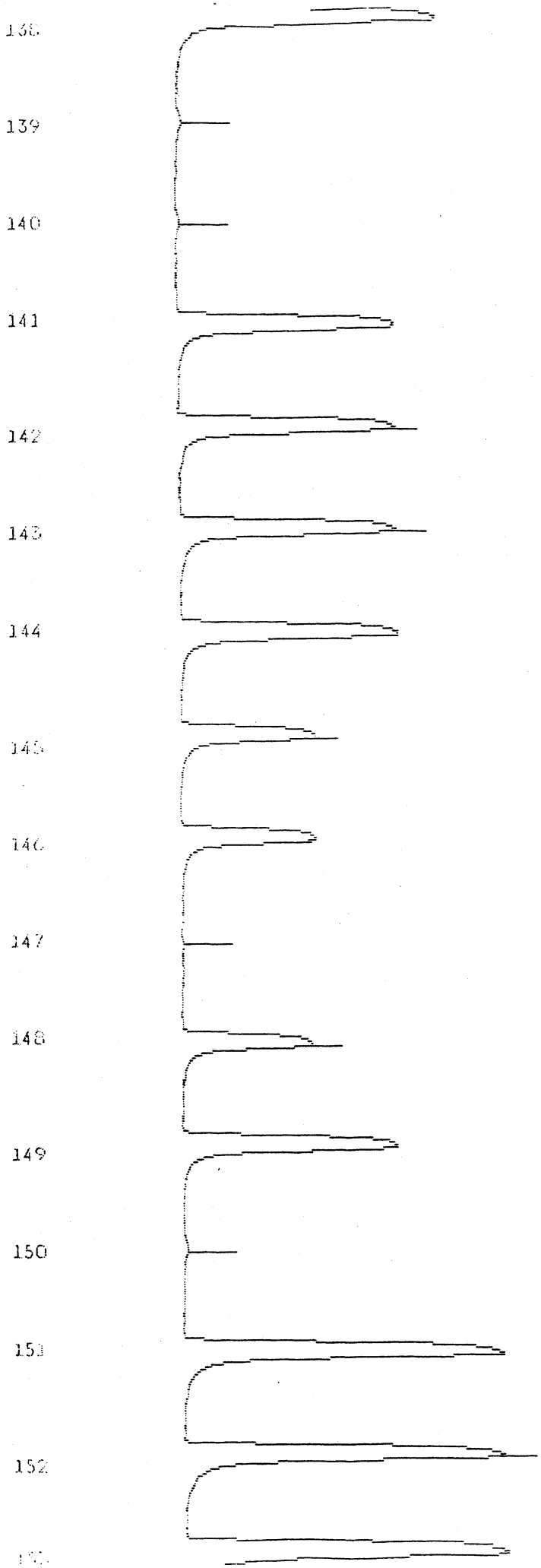
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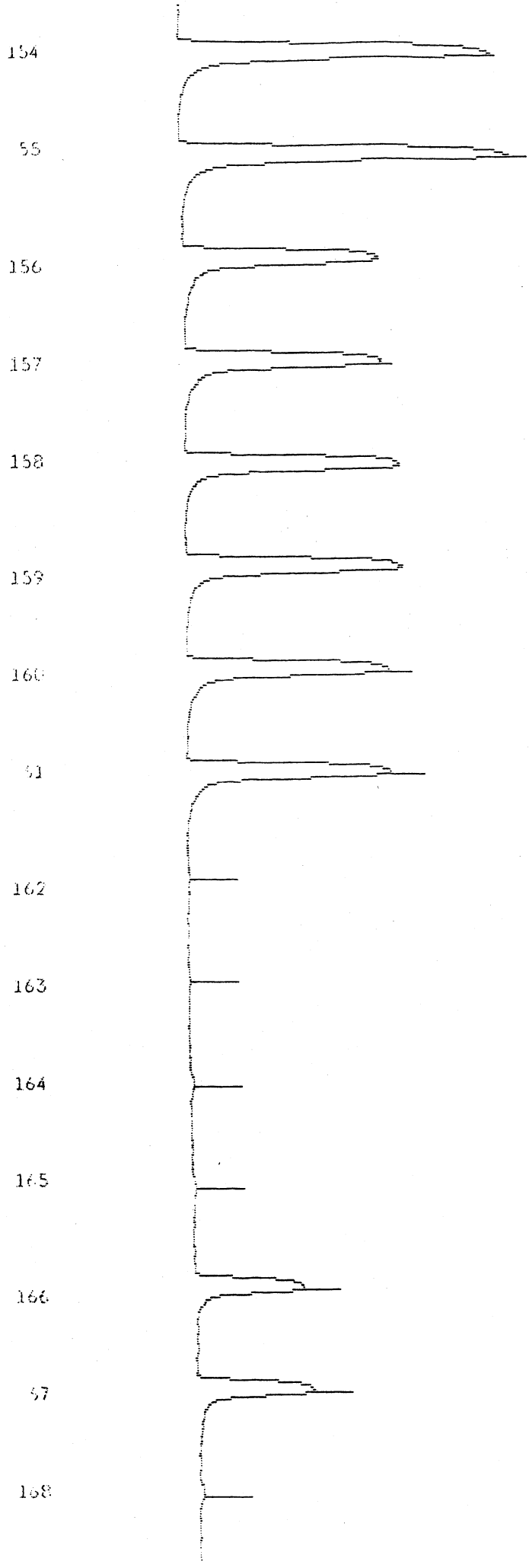
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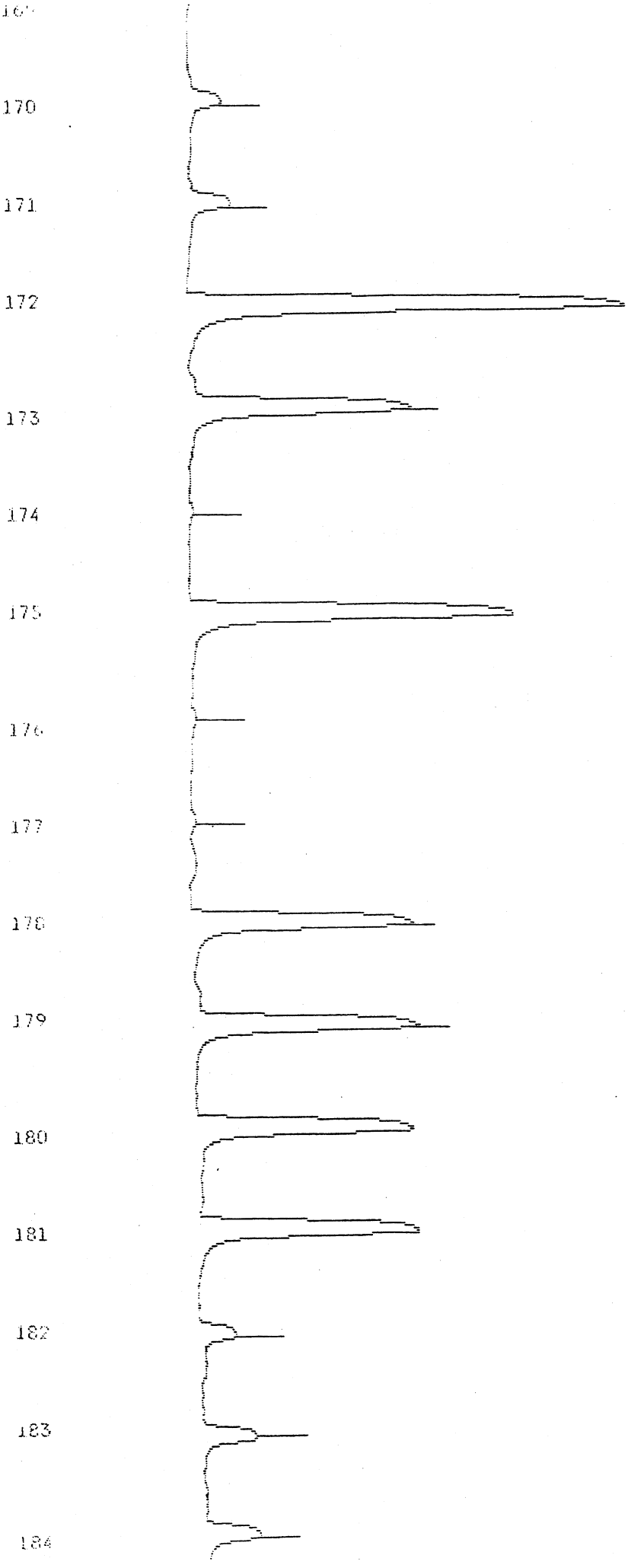
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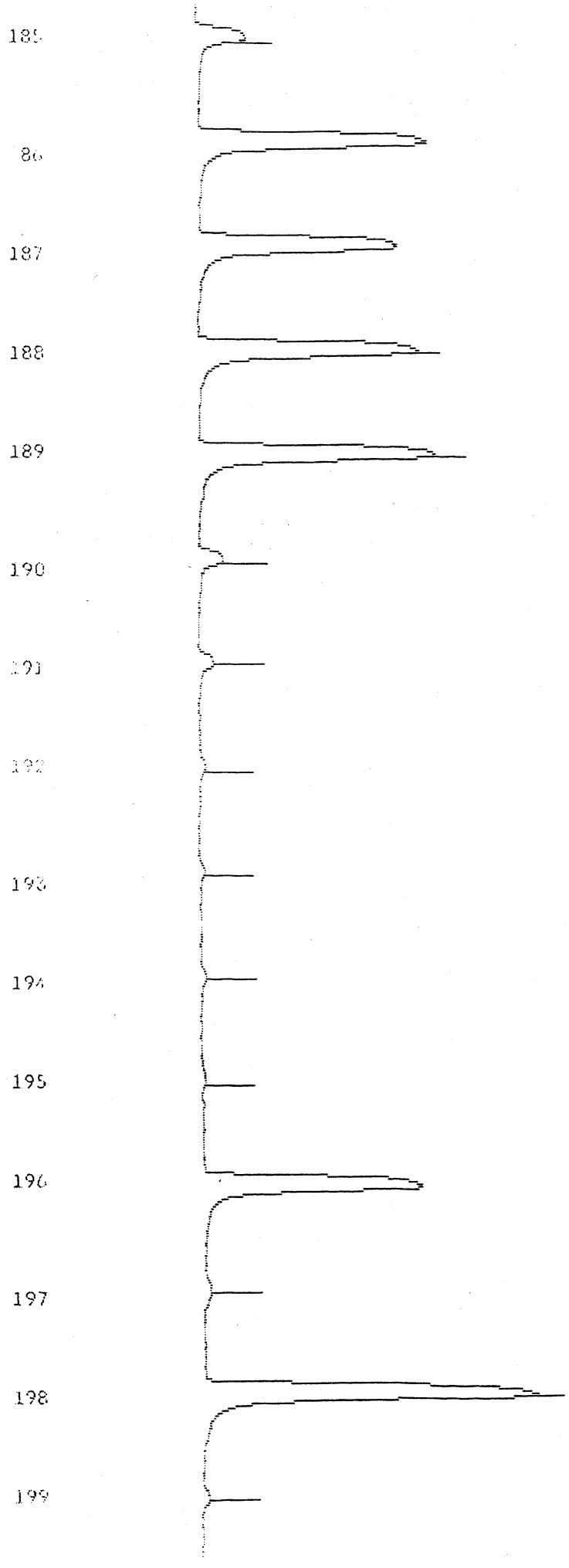
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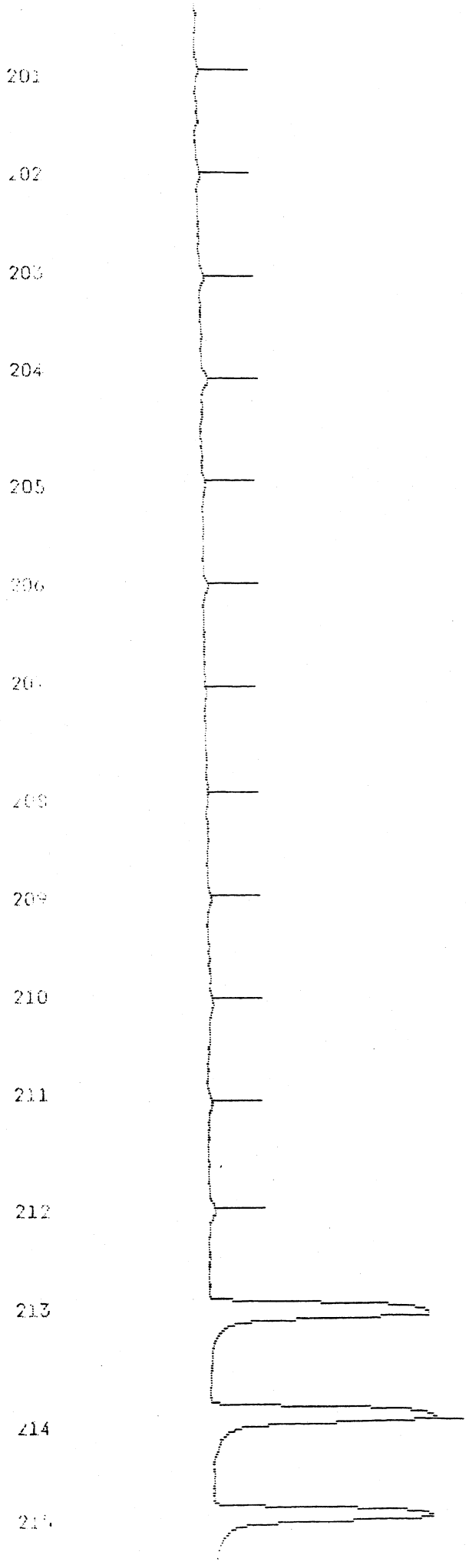
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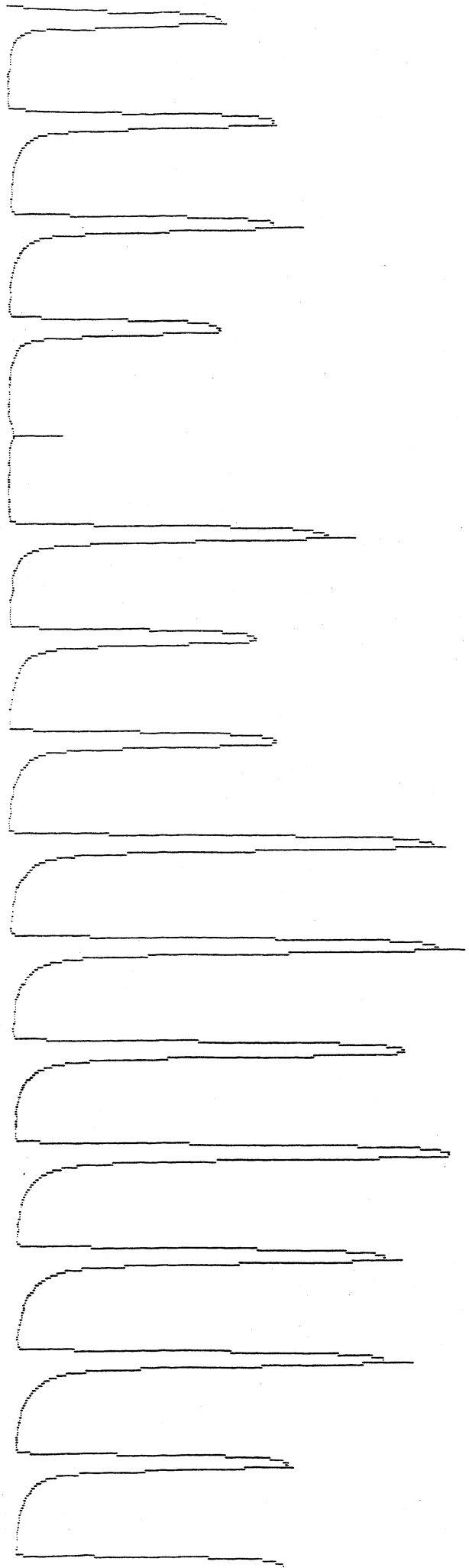
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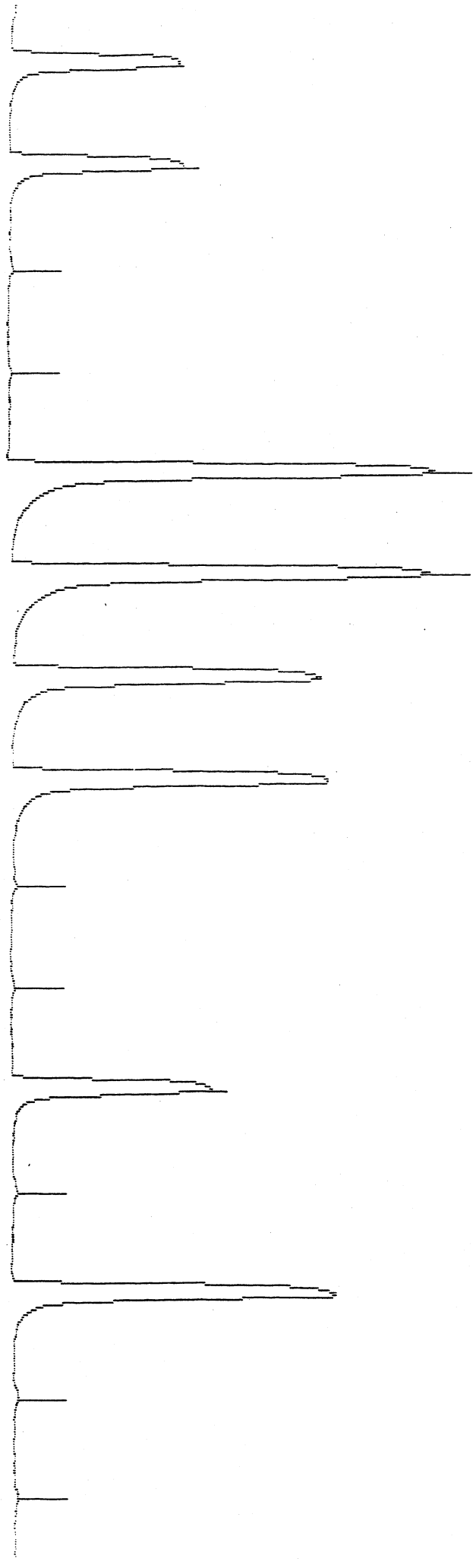
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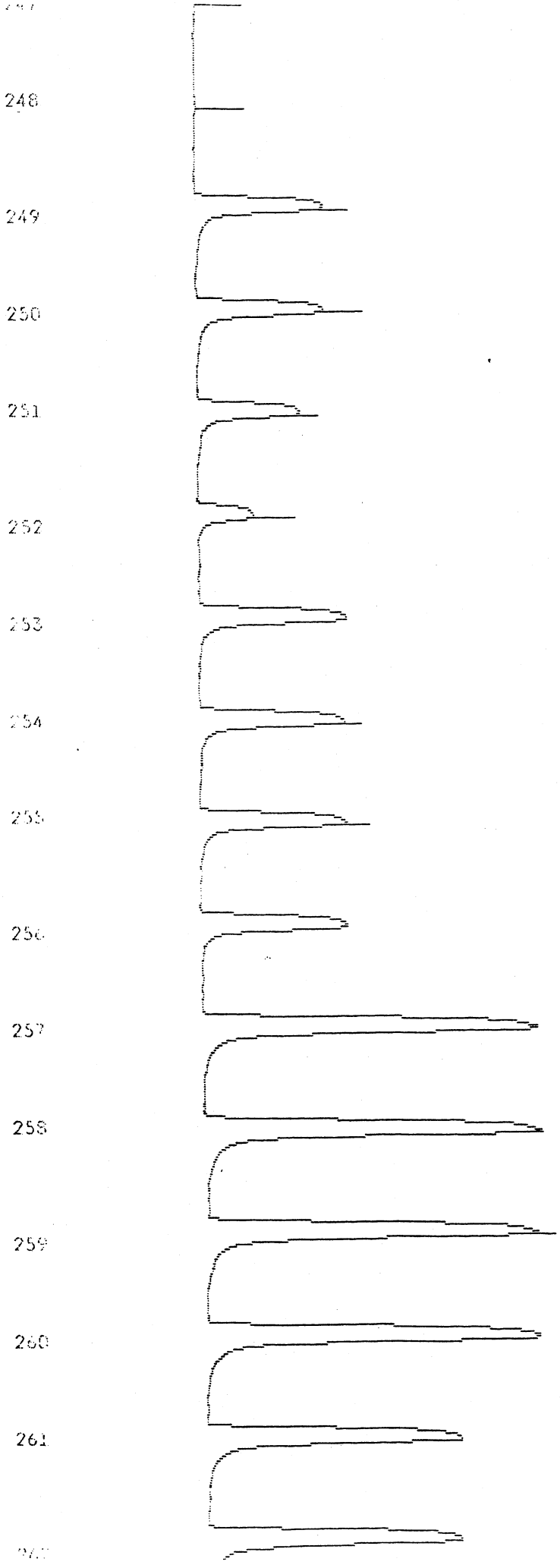
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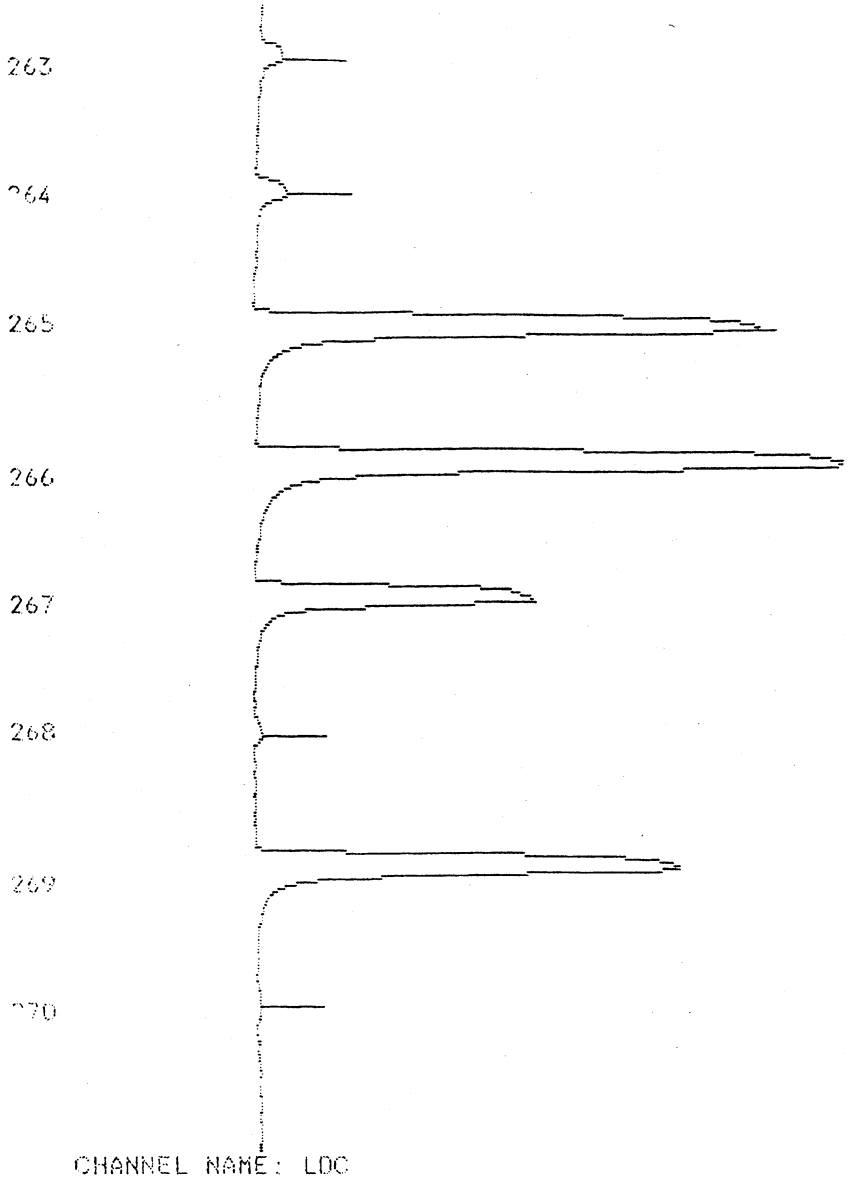
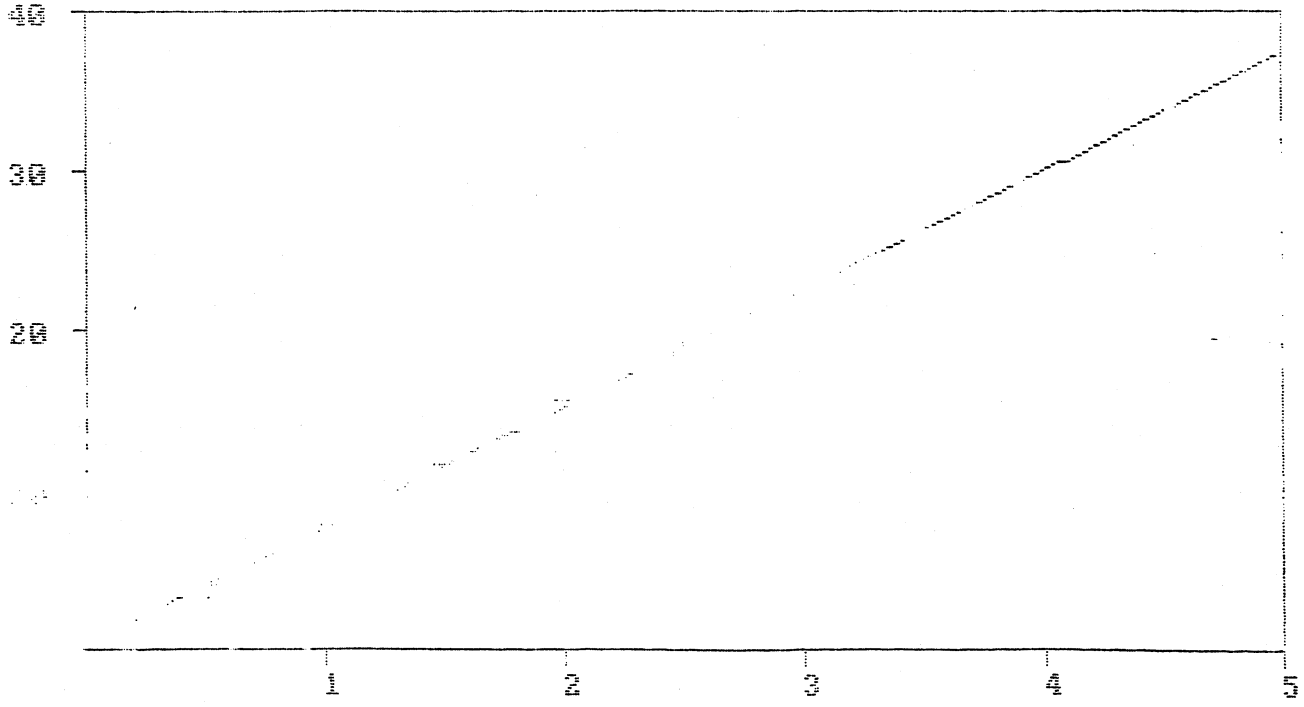


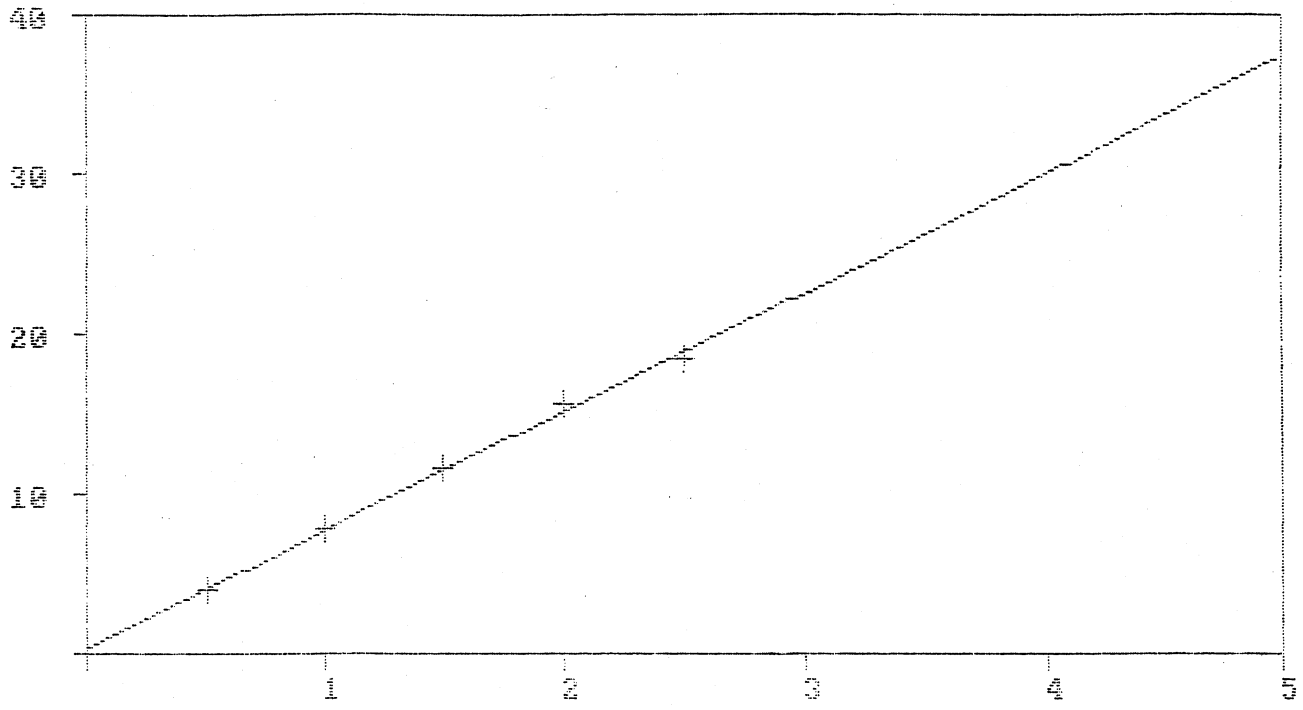
CHANNEL NAME: LDC
RUN NAME: 991004W1



DATA TYPE: FIA
INTERCEPT = 0.26

CALIBRATION ORDER: 1
SLOPE = 7.409/36

CHANNEL NAME: LDC
RUN NAME: 991004WI



DATA TYPE: FIA
INTERCEPT = 0.26

CALIBRATION ORDER: 1
SLOPE = 7.409733

CORRELATION: .9989929

CHANNEL NAME: LDC
RUN DATE: 10-05-1999
SAMPLE TABLE NAME: 991004WI
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION ppb	EF
1	PRIMER	1	1	11.0	1.451	s
2	DUMMY	1	1	0.1	-0.022	I
3	S1: 0	1	1	0.1	-0.025	I
4	S2: .5	1	1	4.0	0.499	
5	S3: 1	1	1	7.8	1.013	
6	S4: 1.5	1	1	11.5	1.517	
7	STD5	1	1	14.3	1.893 95%	
8	S6: 2.5	1	1	18.3	2.436	
9	ICV	1	1	11.0	1.454 97%	
10	B	1	1	0.0	-0.035	b
11	D4	1	1	11.5	1.517	d
12	WS 378	1	1	13.8	1.827	
13	ORG REF	1	1	14.8	1.962	
14	BL1004-1BMN	1	1	0.0	-0.035	I
15	BL1004-1BMN	1	1	0.0	-0.035	I
16	BL1004S	1	1	7.6	0.986	s
17	BL1004S	1	1	7.5	0.983	
18	BL1004DS	1	1	7.5	0.983	
19	BL1004DS	1	1	7.6	0.993	
20	S3746	30	1	8.7	34.336	
	S3746	30	[illegible]	[illegible]	34.336	

24	537463	30	1	15.7	61.921	
25	537463	30	1	15.6	62.218	
26	5374603	30	1	15.6	62.218	
27	5374603	30	1	15.7	62.316	
28	5374603	150	1	1.2	99.463	
29	5374603	150	1	3.2	99.969	
30	53750	1.5	1	4.5	0.881	
31	53750	1.5	1	4.7	0.901	s
32	537509	1.5	1	4.5	0.852	
33	537508	1.5	1	2.4	0.431	
34	CCV	1	1	7.4	0.963	96%
35	B	1	1	0.0	-0.035	b
36	D4	1	1	11.5	1.517	d
37	537503	1.5	1	11.4	2.251	
38	537503	1.5	1	11.4	2.261	
39	5375003	1.5	1	11.5	2.280	
40	5375003	1.5	1	10.7	2.117	
41	42494	7.5	1	6.7	6.508	
42	42494	7.5	1	6.7	6.532	
43	424940	7.5	1	6.7	6.508	
44	424940	7.5	1	6.7	6.532	
45	424948	7.5	1	13.9	13.775	
46	424948	7.5	1	13.9	13.849	s
47	4249403	7.5	1	14.0	13.898	
48	4249403	7.5	1	14.0	13.923	
49	42492	1.5	1	0.0	-0.053	I
50	42492	1.5	1	0.0	-0.053	I
51	42493	1.5	1	0.7	0.081	
52	42493	1.5	1	0.6	0.071	
53	42497	7.5	1	9.3	9.301	
54	42497	7.5	1	9.5	9.326	
55	42496	7.5	1	6.5	6.285	
56	42496	7.5	1	6.6	6.384	
57	CCV	1	1	7.4	0.970	97%
58	B	1	1	0.0	-0.035	b
59	D4	1	1	11.5	1.517	d
60	42511	1.5	1	0.5	0.046	I
61	42511	1.5	1	0.5	0.056	s
62	42513	1.5	1	10.6	2.088	
63	42513	1.5	1	10.9	2.162	
64	42514	1.5	1	13.6	2.706	
65	42514	1.5	1	13.0	2.587	
66	BL1004	1	1	0.1	-0.025	I
67	BL1004-28MN	1	1	0.0	-0.029	I
68	BL1004-28MN	1	1	7.8	1.013	
69	BL1004S	1	1	7.8	1.013	
70	BL1004DS	1	1	7.7	1.009	
71	BL1004DS	1	1	7.8	1.023	
72	42512	1.5	1	4.3	0.817	
73	42512	1.5	1	4.3	0.822	
74	425120	1.5	1	3.7	0.694	
75	42512D	1.5	1	4.3	0.812	
76	425128	1.5	1	11.2	2.206	s
77	425128	1.5	1	11.2	2.211	
78	4251208	1.5	1	11.2	2.211	
79	425120S	1.5	1	11.1	2.191	
80	CCV	1	1	7.6	0.986	99%
81	B	1	1	0.0	-0.035	b
82	D4	1	1	11.5	1.517	d
83	42527	1.5	1	0.1	-0.033	I
84	42527	1.5	1	0.2	-0.008	I
85	42528	30	1	10.9	42.938	
86	42528	30	1	10.9	43.037	
87	42529	30	1	13.5	53.715	

90	42530	30	1	15.6	52.030	
91	42543	1.5	1	0.0	-0.053	s
92	42543	1.5	1	0.0	-0.053	I
93	42544	30	1	13.1	52.034	
94	42544	30	1	13.1	52.133	
95	42545	30	1	13.0	51.540	
	42545	30	1	12.8	50.946	
97	42546	30	1	12.5	49.463	
98	42546	30	1	12.6	49.958	
99	51449	1.5	1	0.0	-0.053	I
100	51449	1.5	1	0.0	-0.053	I
101	BL1004-3BMN	1	1	0.0	-0.035	I
102	BL1004-3BMN	1	1	0.0	-0.035	I
103	CCV	1	1	7.6	0.993	99%
104	B	1	1	0.0	-0.035	b
105	D4	1	1	11.5	1.517	d
106	BL1004S	1	1	7.8	1.019	s
107	BL1004S	1	1	7.9	1.032	
108	BL1004DS	1	1	7.8	1.016	
109	BL1004DS	1	1	7.8	1.013	
110	51452	1.5	1	3.7	0.698	
111	51452	1.5	1	3.4	0.644	
112	51452D	1.5	1	3.8	0.713	
113	51452D	1.5	1	4.1	0.773	
114	51452S	1.5	1	9.0	1.761	
115	51452S	1.5	1	10.6	2.093	
116	51452DS	1.5	1	10.5	2.063	
117	51452DS	1.5	1	10.7	2.107	
118	51450	1.5	1	0.0	-0.053	I
119	51450	1.5	1	0.0	-0.053	I
120	51451	1.5	1	8.4	1.643	
121	51451	1.5	1	10.1	1.984	s
122	51453	1.5	1	14.8	2.888	
123	51453	1.5	1	15.2	3.027	
124	51454	1.5	1	5.7	1.104	
125	51454	1.5	1	6.0	1.153	
126	CCV	1	1	7.5	0.983	98%
127	B	1	1	0.0	-0.035	b
128	D4	1	1	11.5	1.517	d
129	51455	1.5	1	12.9	2.562	
130	51455	1.5	1	13.1	2.592	
131	51456	1.5	1	2.1	0.382	
132	51456 → MISSED CUP.	1.5	1	0.0	-0.053	I
133	51457	1.5	1	11.1	2.191	
134	51457	1.5	1	11.1	2.196	
135	51459	1.5	1	0.0	-0.053	I
136	51459	1.5	1	0.0	-0.053	s
137	51460	1.5	1	9.4	1.855	
138	51460	1.5	1	9.3	1.821	
139	BL1004-4BMN	1	1	0.0	-0.035	I
140	BL1004-4BMN	1	1	0.0	-0.035	I
141	BL1004S	1	1	7.7	1.009	
142	BL1004S	1	1	7.8	1.013	
143	BL1004DS	1	1	7.7	1.006	
144	BL1004DS	1	1	7.8	1.013	
145	51458	1.5	1	4.6	0.881	
146	51458	1.5	1	4.7	0.891	
147	51458D → MISSED CUP.	1.5	1	0.0	-0.053	I
148	51458D	1.5	1	4.5	0.852	
149	CCV	1	1	7.7	1.000	100%
150	B	1	1	0.0	-0.035	b
151	D4	1	1	11.5	1.517	s
152	51458S	1.5	1	11.4	2.251	
153	51458S	1.5	1	11.5	2.266	

156	51461	1.5	1	6.9	1.351	
157	51461	1.5	1	7.0	1.361	
158	51462	1.5	1	7.7	1.499	
159	51462	1.5	1	7.8	1.524	
160	51463	1.5	1	7.2	1.405	
161	51463	1.5	1	7.3	1.415	
162	53129	1.5	1	0.0	-0.053	I
163	53129	1.5	1	0.0	-0.053	I
164	53130	1.5	1	0.0	-0.053	I
165	53130	1.5	1	0.0	-0.053	I
166	53131	1.5	1	3.7	0.703	s
167	53131	1.5	1	4.0	0.763	
168	53132	1.5	1	0.0	-0.048	I
169	53132	1.5	1	0.0	-0.053	I
170	53134	1.5	1	1.1	0.160	
171	53134	1.5	1	1.3	0.209	
172	35: 2	1	1	15.5	2.061	
173	CCV	1	1	7.9	1.032	103%
174	B	1	1	0.0	-0.035	b
175	D4	1	1	11.5	1.517	d
176	BL1004-5BMN	1	1	0.0	-0.029	I
177	BL1004-5BMN	1	1	0.1	-0.025	I
178	BL1004S	1	1	7.8	1.019	
179	BL1004S	1	1	8.0	1.039	
180	BL1004DS	1	1	7.6	0.993	
181	BL1004DS	1	1	7.7	1.006	s
182	53135	1.5	1	1.2	0.184	
183	53135	1.5	1	1.7	0.293	
184	53135D	1.5	1	1.3	0.318	
185	53135D	1.5	1	1.5	0.254	
186	53135S	1.5	1	7.9	1.539	
187	53135S	1.5	1	6.8	1.331	
188	53135DS	1.5	1	7.7	1.509	
189	53135DS	1.5	1	8.2	1.613	
190	53136	1.5	1	0.7	0.090	
191	53136	1.5	1	0.4	0.021	I
192	53137	1.5	1	0.0	-0.048	I
193	53137	1.5	1	0.0	-0.053	I
194	53138	1.5	1	0.0	-0.048	I
195	53138	1.5	1	0.0	-0.053	I
196	CCV	1	1	7.5	0.980	s 98%
197	B	1	1	0.0	-0.035	b
198	D4	1	1	11.5	1.517	d
199	53139	1.5	1	0.0	-0.043	I
200	53139	1.5	1	0.0	-0.053	I
201	53140	1.5	1	0.0	-0.053	I
202	53140	1.5	1	0.0	-0.053	I
203	53141	1.5	1	0.0	-0.043	I
204	53141	1.5	1	0.1	-0.028	I
205	53142	1.5	1	0.0	-0.053	I
206	53142	1.5	1	0.0	-0.053	I
207	53143	1.5	1	0.0	-0.053	I
208	53143	1.5	1	0.0	-0.053	I
209	53144	1.5	1	0.0	-0.053	I
210	53144	1.5	1	0.0	-0.053	I
211	BL1004-6BMN	1	1	0.0	-0.035	s
212	BL1004-6BMN	1	1	0.0	-0.029	I
213	BL1004S	1	1	7.7	1.003	
214	BL1004S	1	1	7.8	1.023	
215	BL1004DS	1	1	7.7	1.009	
216	BL1004DS	1	1	7.7	1.006	
217	53145	1.5	1	9.5	1.870	
218	53145	1.5	1	9.4	1.855	
219	CCV	1	1	7.6	0.990	99%

222	53145D	1.5	1	8.8	1.922	
223	53145D	1.5	1	9.5	1.875	
224	53145S	1.5	1	15.1	3.007	
225	53145S	1.5	1	15.1	3.007	
226	53145DS	1.5	1	13.8	2.750	s
227	53145DS	1.5	1	15.4	3.061	
228	53146	1.5	1	13.1	2.607	
229	53146	1.5	1	13.0	2.587	
230	53147	1.5	1	9.6	1.885	
231	53147	1.5	1	9.5	1.860	
232	53148	1.5	1	5.9	1.143	
233	53148	1.5	1	6.1	1.178	
234	53149	1.5	1	0.0	-0.053	I
235	53149	1.5	1	0.0	-0.053	I
236	53150	1.5	1	15.1	3.007	
237	53150	1.5	1	14.8	2.938	
238	53151	1.5	1	10.8	2.142	
239	53151	1.5	1	11.2	2.211	
240	53164	1.5	1	0.0	-0.053	I
241	53164	1.5	1	0.0	-0.053	s
242	CCV	1	1	7.0	0.911	91%
243	B	1	1	0.0	-0.035	b
244	D4	1	1	11.5	1.517	d
245	53165	1.5	1	0.0	-0.053	I
246	53165	1.5	1	0.0	-0.053	I
247	53133	1.5	1	0.0	-0.053	I
248	53133	1.5	1	0.0	-0.053	I
249	514580	1.5	1	4.3	0.827	
250	514580	1.5	1	4.3	0.822	
251	53135DS	1.5	1	3.5	0.649	
252	53135DS	1.5	1	1.8	0.318	
253	53145	3	1	5.1	1.941	
254	53145	3	1	5.1	1.941	
255	53145D	3	1	5.1	1.951	
256	53145D	3	1	5.1	1.951	s
257	53145S	3	1	11.8	4.689	
258	53145S	3	1	11.9	4.719	
259	53145DS	3	1	11.6	4.610	
260	53145DS	3	1	11.7	4.650	
261	135S	1.5	1	8.9	1.756	
262	135S	1.5	1	8.8	1.737	
263	132	1.5	1	0.4	0.031	
264	134	1.5	1	0.7	0.081	
265	WS 378	1	1	13.7	1.807	90%
266	ORG REF	1	1	16.1	2.137	107%
267	CCV	1	1	7.5	0.973	97%
268	B	1	1	0.0	-0.035	b
269	D4	1	1	11.5	1.517	d

INTERCEPT: 0.26 LINEAR COEF: 7.409733

CORRELATION COEF: .9989929

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
053128	TRC-LO	MB R456	Mercury -	PV	-0.0050	-99999.0	0.0500	101.	0.0500	100.	99/10/01	2B2B	99/10/01	MG03	17.	13.	*BLKIMP*
053129	TRC-LO	SG-OHM-RB	Mercury -	PV	-0.2500						99/10/01	2B2B	99/10/01	MG03	17.	13.	*DDL*
053130	TRC-LO	SG-OHM-I-FB	Mercury -	PV	-0.2500						99/10/01	2B2B	99/10/01	MG03	17.	13.	*DDL*
053131	TRC-LO	SG-OHM-I1a-R1	Mercury -	PV	-0.2500						99/10/01	2B2B	99/10/01	MG03	15.	13.	*DDL*
053132	TRC-LO	SG-OHM-I1a-R3	Mercury -	PV	-0.2500						99/10/01	2B2B	99/10/01	MG03	14.	13.	*DDL*
053133	TRC-LO	SG-OHM-I1a-R4	Mercury -	PV	-0.2500						99/10/01	2B2B	99/10/01	MG03	14.	13.	*DDL*
BL1001	INTERNAL		Mercury -	PV	-0.0050	-99999.0	0.0500	101.	0.0500	100.	99/10/01	2B2B	99/10/01	MG03	$$$	$$$	*BLKIMP*
053134	TRC-LO	SG-OHM-I1b-R1	Mercury -	PV	-0.2500	-0.2500	2.8000	103.	2.8300	105.	99/10/01	3B2B	99/10/01	MG03	15.	13.	*PDS*
053135	TRC-LO	SG-OHM-I1b-R2	Mercury -	PV	-0.2500						99/10/01	3B2B	99/10/01	MG03	14.	13.	*DDL*
053136	TRC-LO	SG-OHM-I1b-R3	Mercury -	PV	-0.2500						99/10/01	3B2B	99/10/01	MG03	14.	13.	*DDL*
053137	TRC-LO	SG-OHM-I1b-R4	Mercury -	PV	-0.2500						99/10/01	3B2B	99/10/01	MG03	14.	13.	*DDL*
053138	TRC-LO	SG-OHM-O-FB	Mercury -	PV	-0.2500						99/10/01	3B2B	99/10/01	MG03	14.	13.	*DDL*
053139	TRC-LO	SG-OHM-Oa-R1	Mercury -	PV	-0.2500						99/10/01	3B2B	99/10/01	MG03	15.	13.	*DDL*
053140	TRC-LO	SG-OHM-Oa-R3	Mercury -	PV	-0.2500						99/10/01	3B2B	99/10/01	MG03	14.	13.	*DDL*
053141	TRC-LO	SG-OHM-Ob-R1	Mercury -	PV	-0.2500						99/10/01	3B2B	99/10/01	MG03	15.	13.	*DDL*
053142	TRC-LO	SG-OHM-Ob-R3	Mercury -	PV	-0.2500						99/10/01	3B2B	99/10/01	MG03	14.	13.	*DDL*
053143	TRC-LO	BP-OHM-3-RB	Mercury -	PV	-0.2500						99/10/01	3B2B	99/10/01	MG03	23.	13.	*DDL*
BL1001	INTERNAL		Mercury -	PV	-0.0050	-99999.0	0.0520	105.	0.0530	105.	99/10/01	3B2B	99/10/01	MG03	$$$	$$$	*BLKIMP*
053144	TRC-LO	BP-OHM-3-I-FB	Mercury -	PV	-0.2500						99/10/01	4B2B	99/10/01	MG03	24.	13.	*DDL*
053145	TRC-LO	BP-OHM-3-IE-R2	Mercury -	PV	-0.2500	-0.2500	2.7290	107.	2.8130	110.	99/10/01	4B2B	99/10/01	MG03	22.	13.	*PDS*
053146	TRC-LO	BP-OHM-3-IE-R3	Mercury -	PV	-0.2500						99/10/01	4B2B	99/10/01	MG03	22.	13.	*DDL*
053147	TRC-LO	BP-OHM-3-IW-R2	Mercury -	PV	-0.2500						99/10/01	4B2B	99/10/01	MG03	22.	13.	*DDL*
053148	TRC-LO	BP-OHM-3-IW-R3	Mercury -	PV	-0.2500						99/10/01	4B2B	99/10/01	MG03	22.	13.	*DDL*
053149	TRC-LO	BP-OHM-3-O-FB	Mercury -	PV	-0.2500						99/10/01	4B2B	99/10/01	MG03	24.	13.	*DDL*
053150	TRC-LO	BP-OHM-3-O-R2	Mercury -	PV	-0.2500						99/10/01	4B2B	99/10/01	MG03	22.	13.	*DDL*
053151	TRC-LO	BP-OHM-3-O-R3	Mercury -	PV	-0.2500						99/10/01	4B2B	99/10/01	MG03	22.	13.	*DDL*
053164	TRC-LO	SG-OHM-Oa-R2	Mercury -	PV	-0.2500						99/10/01	4B2B	99/10/01	MG03	14.	13.	*DDL*
053165	TRC-LO	SG-OHM-Ob-R2	Mercury -	PV	-0.2500						99/10/01	4B2B	99/10/01	MG03	14.	13.	*DDL*
BL1001	INTERNAL		Mercury -	PV	-0.0050	-99999.0	0.0510	102.	0.0520	105.	99/10/01	4B2B	99/10/01	MG03	$$$	$$$	*BLKIMP*

Tests for OHPOX with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00153

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.01(WA) Run Code: MG03 Matrix: IMP

Analyst: MG Units: ug (see comments) MDL: _____

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			WS 378			
13			ORG. REF.			
14			BL1001	1B2B		
15			"			
16			BL1001 S			
17			"			
18			BL1001 DS			
9			"			
20	10		51451			
21			"			
22			51451 D			
23			"			
24			51451 S			
25			"			
26			51451 DS			
27			"			
28		"	51449			
29			"			
30			51450			
31			"			
32			51452			
33			"			
34			CCV			
35			B			
36			D4			
37	10		51453			
38			"			
39			51454			
40			"			
41	10		51455			
42			"			
43			51456			
44			"			
45			51457			
46			"			
47			51458			
48			"			
49			BL1001	2B2B		
50			"			
51			BL1001 S			
52			"			
53			BL1001 DS			
54			"			
55	10		51460			
56			"			
57			CCV			
58			B			
59			D4			
60	10		51460 D			
61			"			
62			51460 S			
63			"			
64			51460 DS			
65			"			
66			51459			
67			"			
68			51461			
69			"			
70			51462			
71			"			
72			51463			
73			"			
74			53129			
75			"			
76			53130			
77			"			
78			53131			
79			"			
80			CCV			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.01 Run Code: MG03 Matrix: IMP

Analyst: MG Units: µg (see comments) MDL: _____

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
81 ~~21~~			B			
22			D4			
23	10		58132			
24	↓		"			
25			58133			
26			"			
27			BL1001	3B2B		
28			"			
29			BL1001 S			
30			"			
31			BL1001 DS			
32			"			
33	10		53134			
34	↓		"			
35			53134 D			
36			"			
37			53134 S			
38			"			
39			53134 DS			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	10		53135			
42	↓		"			
43		~~AS~~	~~[illegible]~~ CCV			
44			B			
45		~~AS~~	~~53~~ D4			
46	10		53136			
47	↓		"			
48			53137			
49			"			
50			53138			
51			"			
52			53139			
53			"			
54			53140			
55			"			
56			53141			
57			"			
58			53142			
59			"			
60			53143			
61			"			
62			BL1001	4B2B		
63			"			
64			BL1001 S			
65			"			
66			CCV			
67			B			
68			D4			
69			BL1001 DS			
70			"			
71	10		53145			
72	↓		"			
73			53145 D			
74			"			
75			53145 S			
76			"			
77			53145 DS			
78			"			
79			53144			
80			"			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.01 Run Code: MG03 Matrix: IMP.

Analyst: MG Units: µg (see comments) MDL: _____

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	%R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	10		53146			
22			"			
23			53147			
24			"			
25			53148			
26			"			
27			53149			
28			"			
29			CCV			
30			B			
31			D4			
32	10		53150			
33			"			
34			53151			
35			"			
36			53164			
37			"			
38			53165			
39			"			
40			42744	4N2B		

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	%R
41			42744	4N2B		
42			WS 378			
43			ORG. REF			
44			CCV			
45			B			
46			D4			
47						
48						
49						
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51						
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75						
76						
77						
78						
79						
80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

00167

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG***

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
7	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init.Calib. Verif.)	1625	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1001	"	~~1ml~~	~~15ml~~	10X	(Processed Blank) 51448 M.B
	11	BL 1001 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	51451	"	1ml	15ml	10X	
1	13	0	"	↓	↓	↓	(Duplicate sample)
1	14	S	"				1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"				(Duplicate Spiked sample)
2	16	51452	"				
3	17	53	"				
4	18	52	"				
5	19	53	"				
	20	54	"				
	21	55	"				
8	22	56	"				
9	23	57	"				
10	24	58	"	↓	↓	↓	
	25	CCV (Cont. Calib. Verif.)	2826	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 1001	"	"	"	"	(Processed Blank) 53128 M.B
	27	BL 1001 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	51460	"	1ml	15ml	10X	
1	29	D	"	↓	↓	↓	(Duplicate sample)
1	30	S	"				1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"				(Duplicate Spiked sample)
2	32	51459	"				
3	33	62	"				
4	34	63	"				
5	35	53129	"				
6	36	30	"				
7	37	31	"				
8	38	32	"				
9	39	33	"	↓	↓	↓	
	40		"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run — Prepare 0.05 ppm standards daily

HNO3 Lot. No.: | H2SO4 Lot. No.: | Bath Temps.: 95 / °C

Prepared By: AB Date: 99-10-01 Checked by: AB

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)	382B	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL 1001	"	"	"	"	(Processed Blank)
	43	BL 1001 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44	53134	"	1ml	15ml	10X	
1	45	D	"	"	"	"	(Duplicate sample)
1	46	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	47	DS	"	"	"	"	(Duplicate Spiked sample)
2	48	53135	"	"	"	"	
3	49	36	"	"	"	"	
4	50	37	"	"	"	"	
5	51	38	"	"	"	"	
6	52	39	"	"	"	"	
7	53	40	"	"	"	"	
8	54	41	"	"	"	"	
9	55	42	"	"	"	"	
10	56	43	"				

Comments

* concentration based on 30 ml final volume, ** concentration based on 20 ml final volume

* up of several Method 29 testcodes

Dilution factor of 1.5 is corrected by entering the calibration concentrations listed above

Procedure/Methodology:

1 Prepare 25 ppm Intermediate stock (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO3
2 Prepare 0.05 ppm Working stock daily by pipetting 200 ul., of 25 ppm Stock to 100 ml final volume of 2% HNO3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
7 Spike the tubes as indicated in the comment sector of the digestion sheet
8 Add 0.5 ml. of conc. Nitric Acid (HNO3), and 1 ml. of conc. Sulphuric acid, (H2SO4), to each tube
9 Add 3 ml. Potassium Permanganate (KMnO4), colour should remain for at least 15 minutes
10 Add 1.5 ml. of Potassium persulphate, (K2S2O8), to each tube
11 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
12 Remove tubes and allow to cool to room temperature
13 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
14 Recap tubes and shake until the Potassium Permanganate (KMnO4) is destroyed and sample becomes colourless
15 Dilute the sample to a final volume of 30 ml., cap and mix well

REFERENCE STANDARDS/SPIKING SOLUTIONS:
Source: Inorganic Ventures Standard, see standard tracking binder for current lot and expiry date information

ICV/CCV STANDARDS:
Source: High Purity MESS-ZENO 30/QCA Standard, see standard tracking binder for current lot

INTERNAL REFERENCE STANDARD: (2 ppb in 10% HNO3)
Source: EPA WS 378 or SPEX CertiPrep Trace Metal - Water Supply, see standard tracking binder for current source, lot and expiry date information.

All reagents used are of a grade suitable for mercury analyses

00169

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG***

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
7	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	HB2B	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1001	"	"	"	"	(Processed Blank)
	11	BL 1001 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	53/45	"	1 ml	15 ml	10 X	
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	53/44	"	"	"	"	
3	17	46	"	"	"	"	
4	18	47	"	"	"	"	
5	19	48	"	"	"	"	
	20	49	"	"	"	"	
	21	50	"	"	"	"	
8	22	51	"	"	"	"	
9	23	64	"	"	"	"	
10	24	65	"	"	"	"	
	25	CCV (Cont. Calib. Verif.)		20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL	"	"	"	"	(Processed Blank)
	27	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28		"	"	"	"	
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32		"	"	"	"	
3	33		"	"	"	"	
4	34		"	"	"	"	
5	35		"	"	"	"	
6	36		"	"	"	"	
7	37		"	"	"	"	
8	38		"	"	"	"	
9	39		"	"	"	"	
10	40		"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run

Prepare 0.05 ppm standards daily

HNO3 Lot. No. 119043 | H2SO4 Lot. No. 318064 | Bath Temps 1951 °C

Prepared By: AB Date: 99.10.01 Checked by: AB

RUN DATE: 10-02-1999 CHART DATE: 10-02-1999
CHART SPEED: 30
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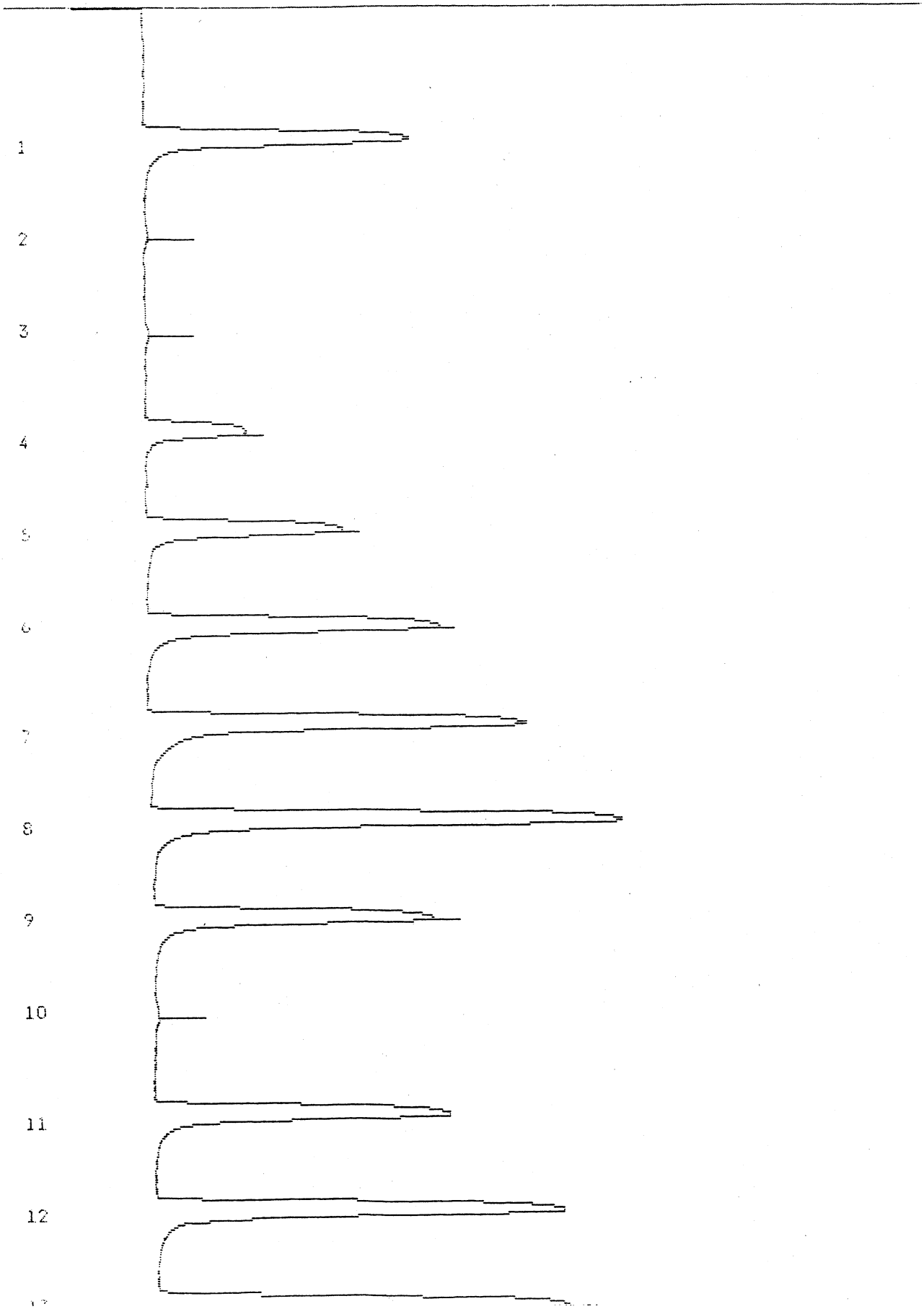

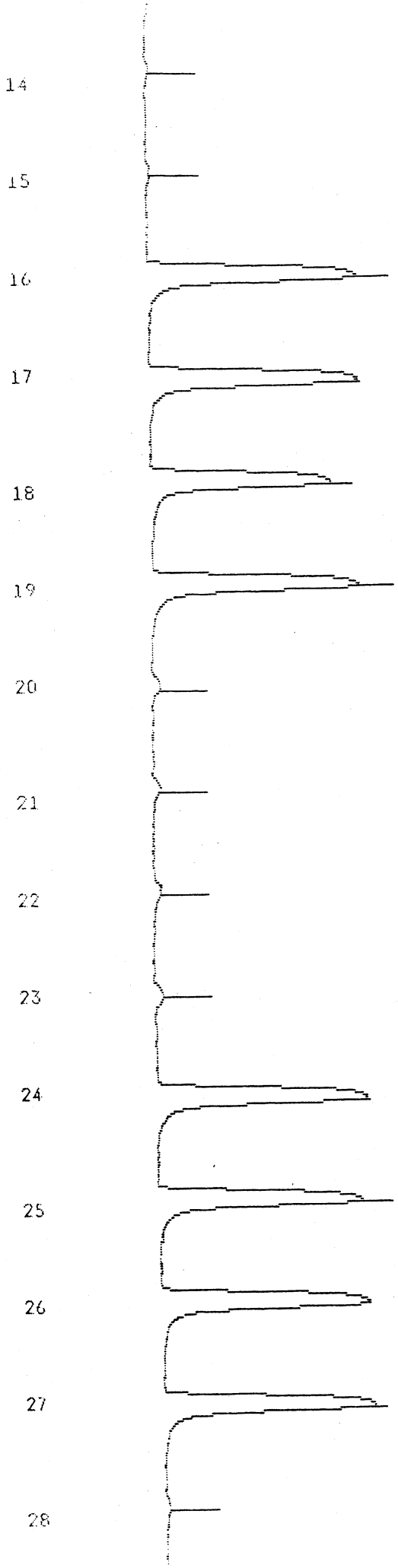
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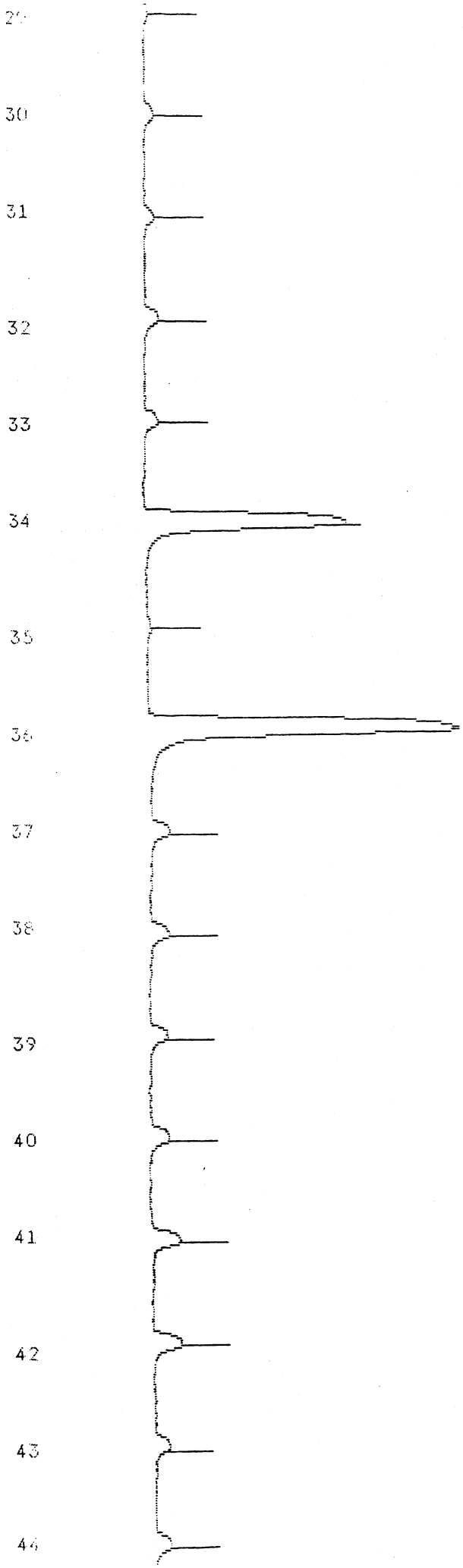
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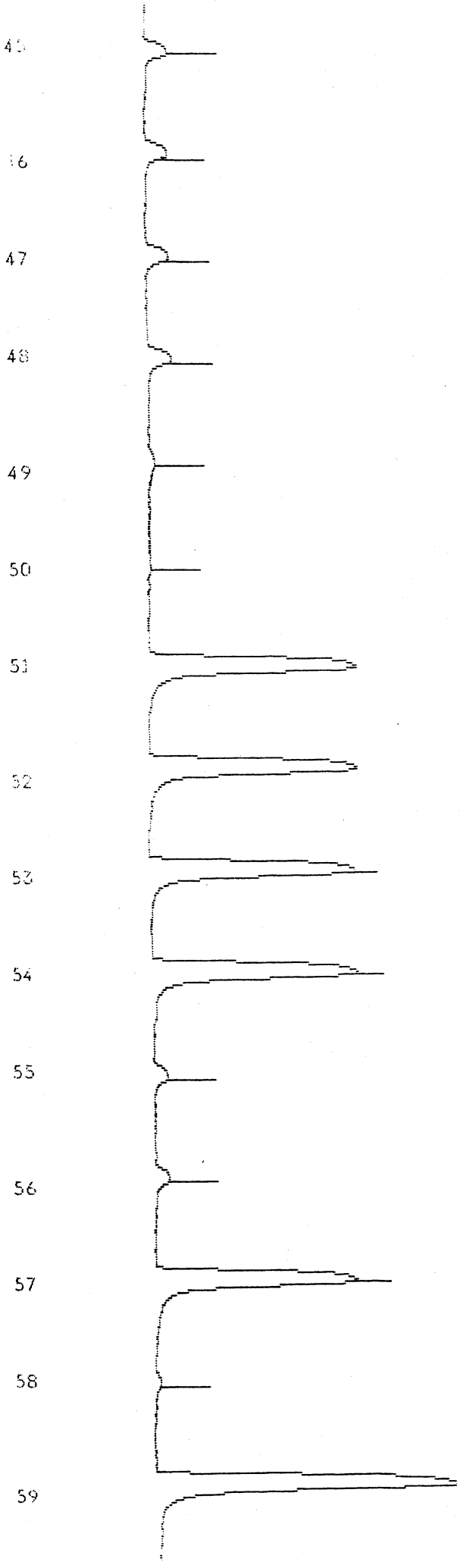
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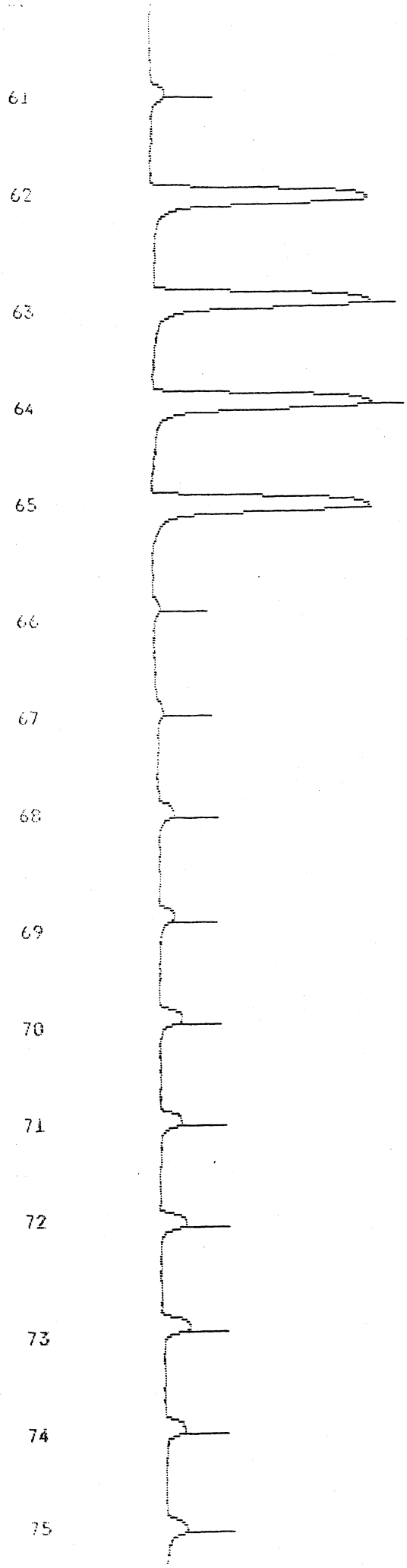
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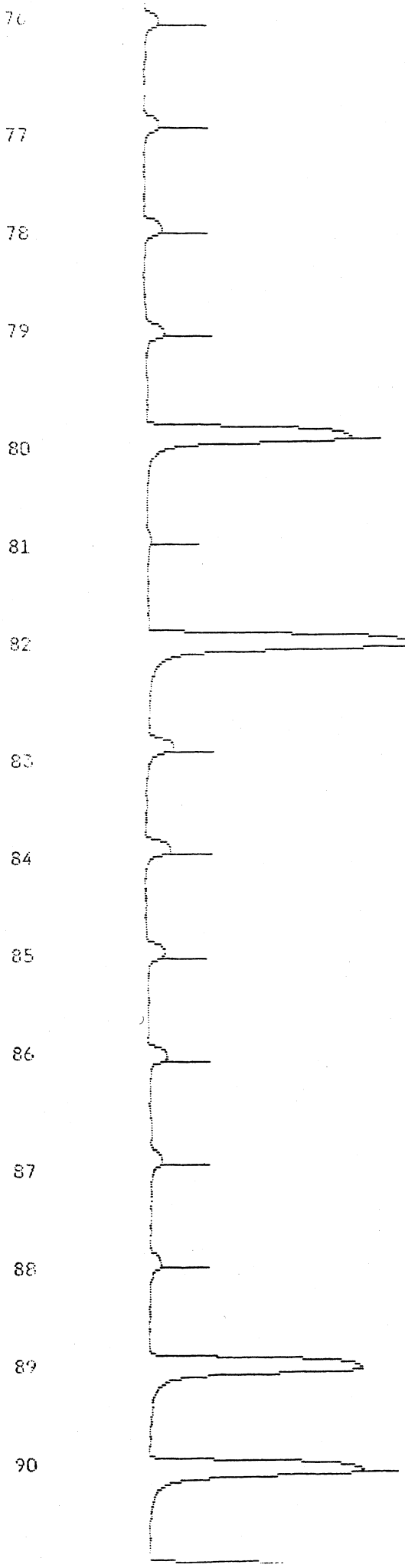
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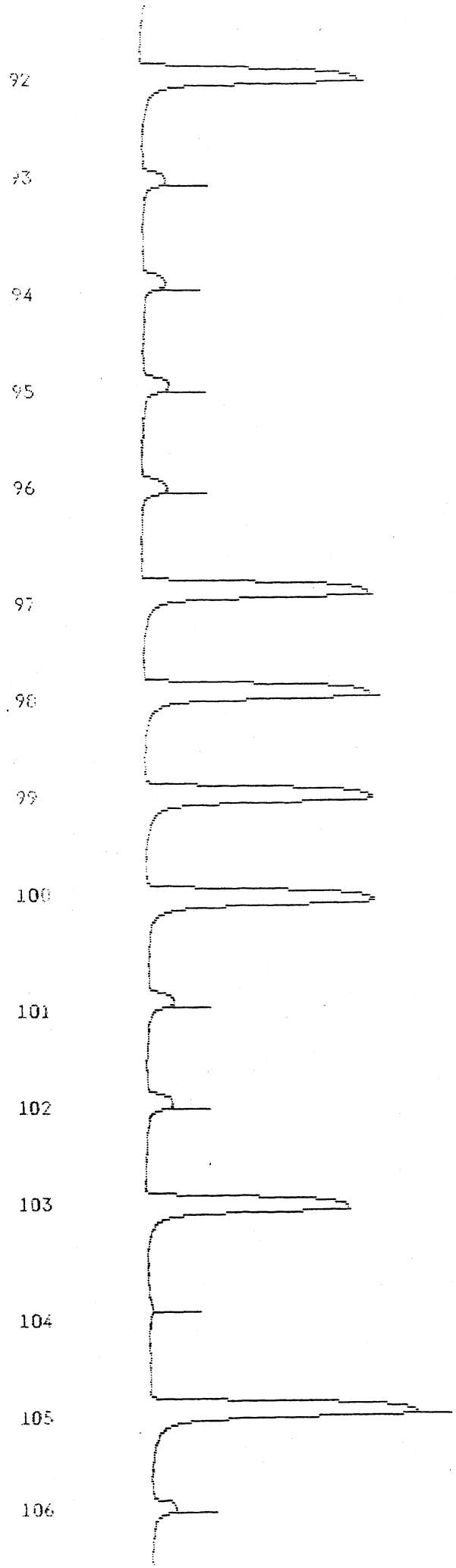
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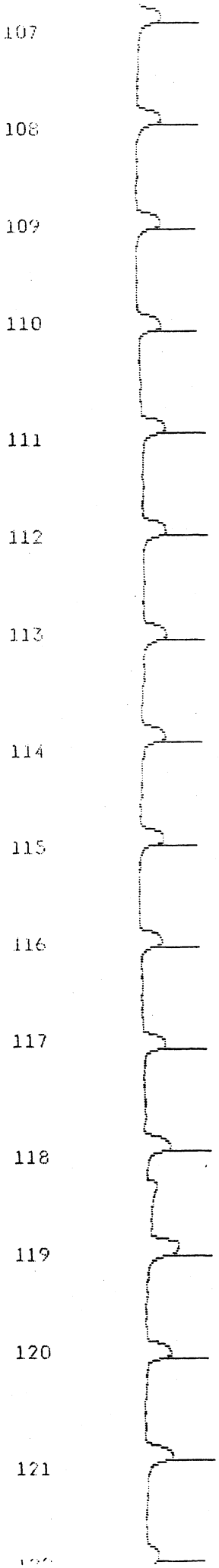
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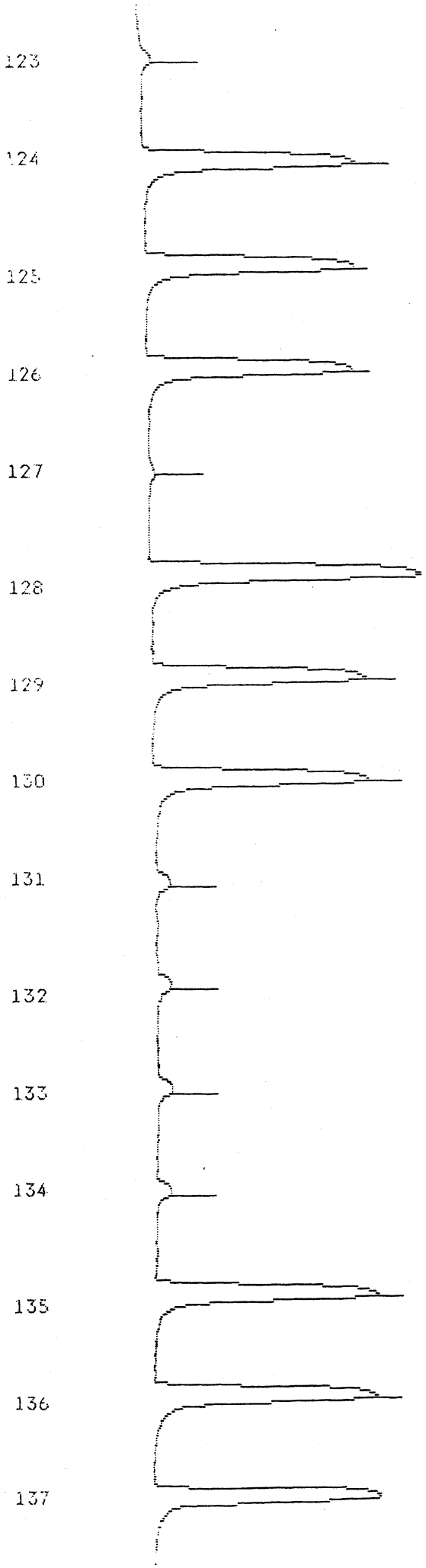
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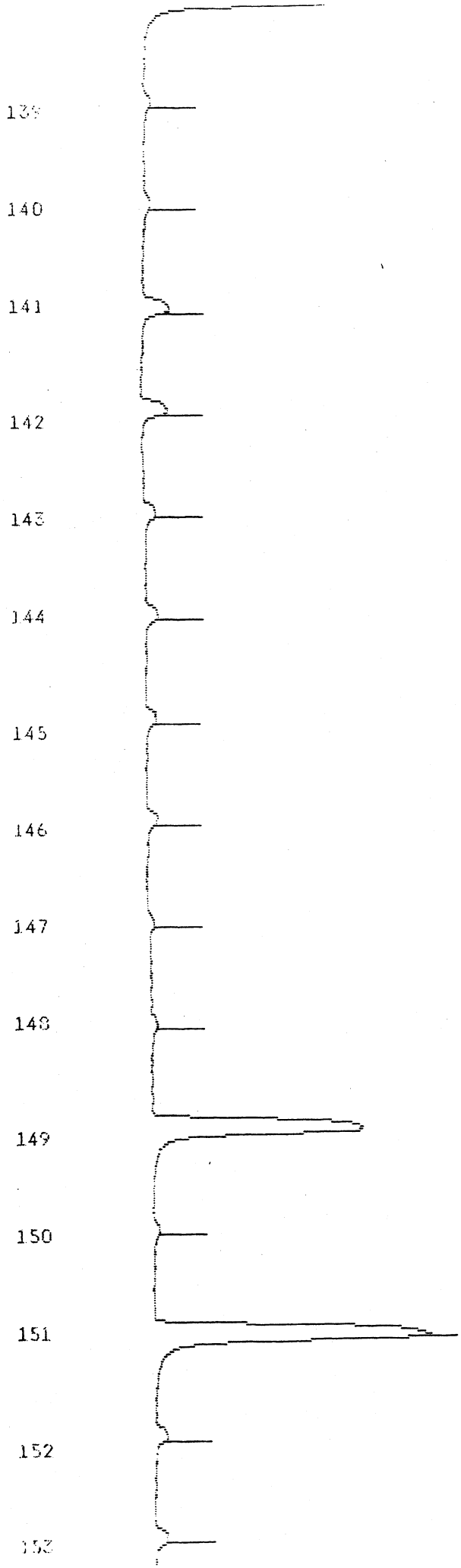
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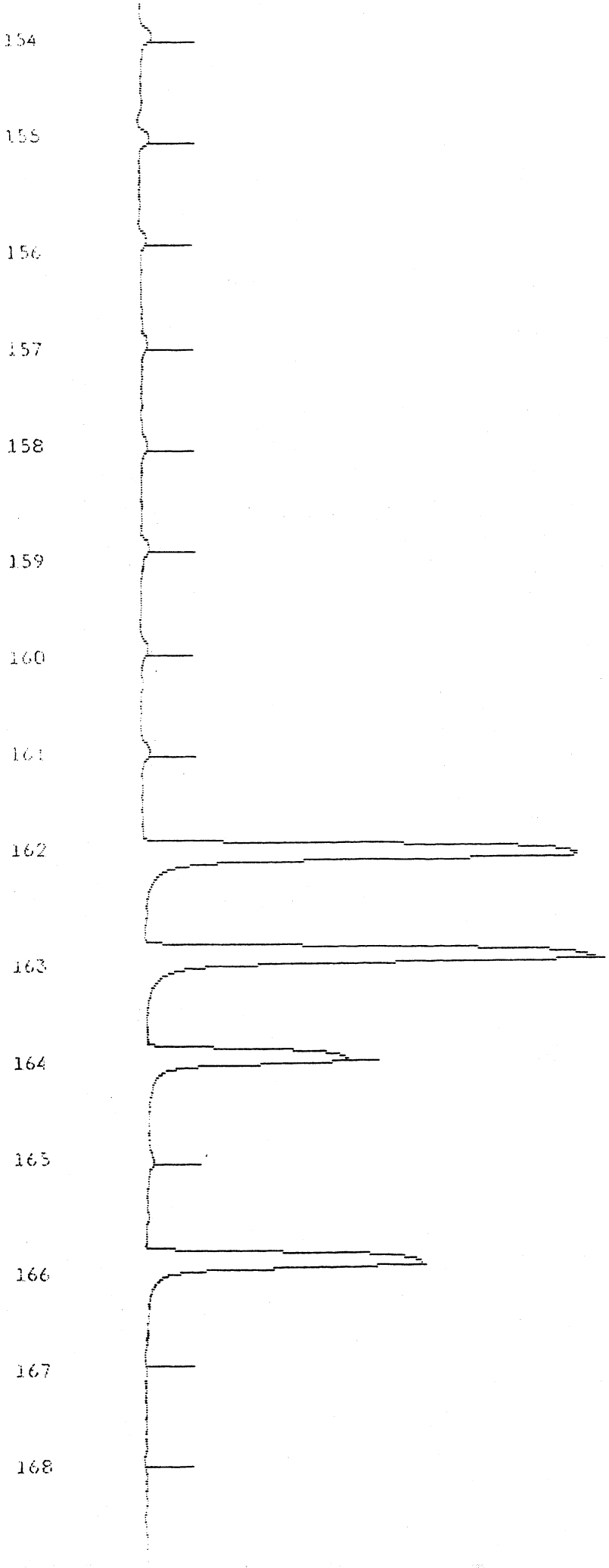
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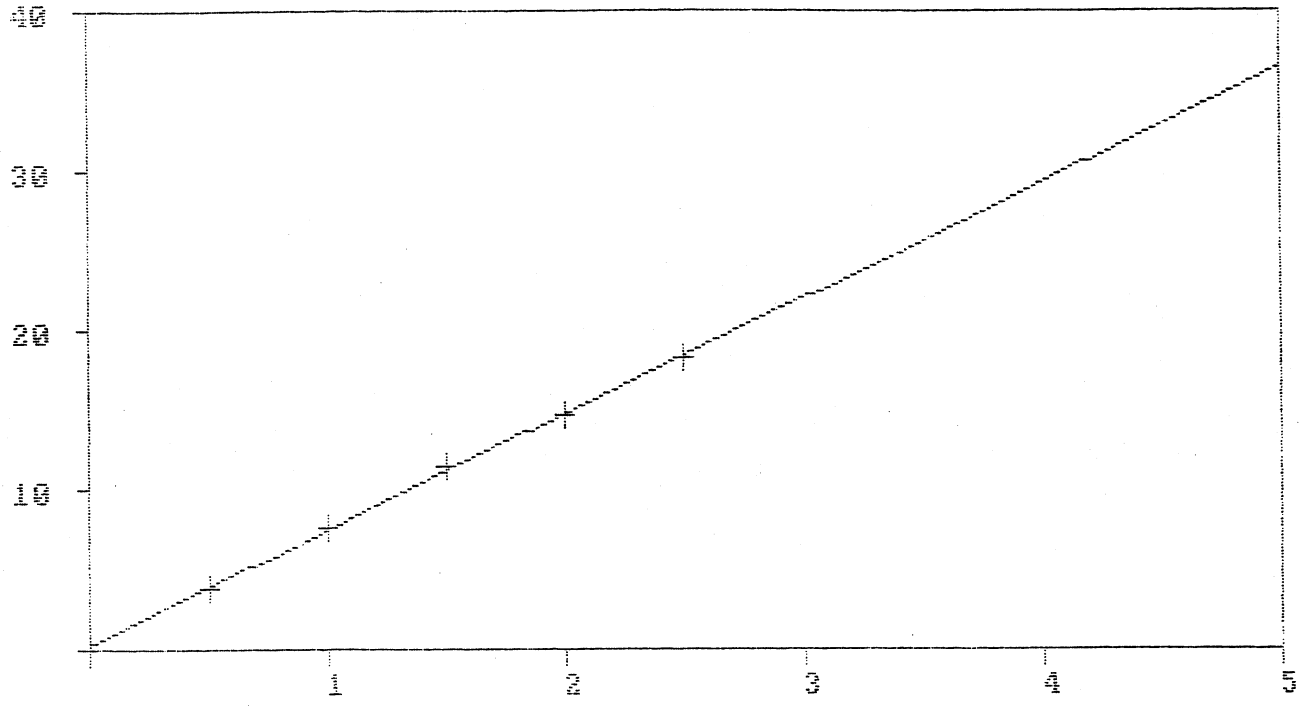
CHANNEL NAME: LDC
RUN NAME: 991001WA



DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.20
SLOPE = 7.235304

CORRELATION: .9996732

CHANNEL NAME: LDC
RUN DATE: 10-02-1999
SAMPLE TABLE NAME: 991001WA
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION (ppb)	EF	
1	PRIMER	1	1	10.3		1.397	s	
2	DUMMY	1	1	0.0		-0.024	I	
3	S1: 0	1	1	0.0		-0.024	I	
4	S2: .5	1	1	3.8		0.502		
5	S3: 1	1	1	7.5		1.015		
6	S4: 1.5	1	1	11.3		1.539		
7	S5: 2	1	1	14.6		1.987		
8	S6: 2.5	1	1	18.1		2.480		
9	ICV	1	1	10.7		1.447		97%
10	B	1	1	0.0		-0.027	b	
11	D4	1	1	11.3		1.539	d	
12	WS 378	1	1	15.6	TUG	2.126		106%
13	ORG REF	1	1	15.6		2.133		107%
14	BL1001-182B $1448	1	1	0.0	<0.005	-0.027	I	
15	BL1001-182B	1	1	0.0		-0.027	I	
16	BL1001S	1	1	7.5	0.050	1.005	s	101%
17	BL1001S	1	1	7.5		1.005		
18	BL10010S	1	1	6.3	0.046	0.850		92%
19	BL10010S	1	1	7.4		0.992		
20	[illegible]	10	1	0	<0.050	0.140	I	

22	51451D	10	1	0.1	<0.250	-0.174	I	
23	51451D	10	1	0.1	CC: 82	-0.274	I	
24	51451S	10	1	7.6	2.513	10.256	101%	
25	51451S	10	1	7.3		9.851		
26	51451DS	10	1	7.5	2.551	10.087	102%	
27	51451DS	10	1	7.7		10.323		
28	51449	10	1	0.0	<0.250	-0.275	I	
29	51449	10	1	0.0		-0.275	I	
30	51450	10	1	0.2	<0.250	-0.005	I	
31	51450	10	1	0.2		-0.039	s	
32	51452	10	1	0.3	<0.250	0.164	I	
33	51452	10	1	0.3		0.164	I	
34	CCV	1	1	7.2		0.972	97%	
35	B	1	1	0.0		-0.027	b	
36	D4	1	1	11.3		1.539	d	
37	51453	10	1	0.5	<0.250	0.468	I	
38	51453	10	1	0.6		[illegible]		
39	51454	10	1	0.5	<0.250	[illegible]		
40	51454	10	1	0.6		[illegible]		
41	51455	10	1	[illegible]	<0.250	0.771		
42	51455	10	1	[illegible]		[illegible]		
43	51456	10	1	[illegible]	<0.250	[illegible]		
44	51456	[illegible]	1	[illegible]		[illegible]		
45	51457	10	1	[illegible]	<0.250	0.503		
46	51457	[illegible]	1	[illegible]		0.569	s	
47	[illegible]	10	1	[illegible]	<0.250	0.603		
48	[illegible]	[illegible]	1	[illegible]		0.636		
49	[illegible] 53128		1	0.0	<0.005	-0.021	I	
50	[illegible]	[illegible]	1	0.0		-0.027	I	
51	[illegible]	1	1	7.5	0.050	1.005	101%	
52	[illegible]	[illegible]	1	7.5		1.009		
53	[illegible]	1	1	7.4	0.050	1.002	100%	
54	[illegible]	1	1	7.4		0.999		
55	51460	10	1	0.3	<0.250	0.198	I	
56	51460	10	1	0.4		0.231	I	
57	CCV	1	1	7.4		0.995	99%	
58	B	1	1	0.0		-0.027	b	
59	STD4	1	1	11.1		1.505		
60	51460D	10	1	0.3	<0.250	0.164	I	
61	51460D	10	1	0.4		0.265	s	
62	51460S	10	1	7.9	2.661	10.627	104%	
63	51460S	10	1	7.9		10.661		
64	51460DS	10	1	8.0	2.690	10.829	105%	
65	51460DS	10	1	7.9		10.694		
66	51459	10	1	0.1	<0.250	-0.174	I	
67	51459	10	1	0.1		-0.140	I	
68	51461	10	1	0.4	<0.250	0.299	I	
69	51461	10	1	0.4		0.265	I	
70	51462	10	1	0.6	<0.250	0.603		
71	51462	10	1	0.7		0.636		
72	51463	10	1	0.9	<0.250	0.906		
73	51463	10	1	0.9		0.906		
74	53129	10	1	0.6	<0.250	0.535	I	
75	53129	10	1	0.6		0.569	I	
76	53130	10	1	0.4	<0.250	0.265	s	
77	53130	10	1	0.4		0.299	I	
78	53131	10	1	0.6	<0.250	0.501	I	
79	53131	10	1	0.5		0.468	I	
80	CCV	1	1	7.4		0.995	99%	
81	B	1	1	0.0		-0.027	b	
82	STD4	1	1	9.8		1.326		
83	58132	10	1	0.8	<0.250	0.839		
84	58132	10	1	0.8		0.839		
85	58133	10	1	0.6	<0.250	0.501		
86	58133	10	1	0.6		0.501	I	

88	BL1001 SB2B	1	1	0.3		0.110	I	
89	BL1001S	1	1	7.7	0.052	1.042	105%	
90	BL1001S	1	1	7.8		1.049		
91	BL1001DS	1	1	7.7	0.053	1.042	105%	
92	BL1001DS	1	1	7.9		1.069		
93	53134	10	1	0.7	<0.250	0.738		
94	53134	10	1	0.7		0.738		
95	53134D	10	1	0.9	<0.250	0.906		
96	53134D	10	1	0.8		0.839		
97	53134S	10	1	8.3	2.800	11.201	103%	
98	53134S	10	1	8.3		11.201		
99	53134DS	10	1	8.4	2.830	11.336	105%	
100	53134DS	10	1	8.4		11.302		
101	53135	10	1	0.8	<0.250	0.873		
102	53135	10	1	0.8		0.873		
103	CCV	1	1	7.4		1.002	100%	
104	B	1	1	0.0		-0.027	b	
105	STD4	1	1	9.8		1.333		
106	53136	10	1	0.8	<0.250	0.771	s	
107	53136	10	1	0.8		0.771		
108	53137	10	1	0.7	<0.250	0.738		
109	53137	10	1	0.8		0.839		
110	53138	10	1	0.7	<0.250	0.670		
111	53138	10	1	0.7		0.738		
112	53139	10	1	0.7	<0.250	0.704		
113	53139	10	1	0.7		0.704	I	
114	53140	10	1	0.7	<0.250	0.670		
115	53140	10	1	0.7		0.636		
116	53141	10	1	0.6	<0.250	0.569		
117	53141	10	1	0.7		0.636		
118	53142	10	1	0.8	<0.250	0.771		
119	53142	10	1	0.9		0.940		
120	53143	10	1	0.8	<0.250	0.805		
121	53143	10	1	0.8		0.839	s	
122	BL1001-4B2B	1	1	0.2	<0.005	0.003	I	
123	BL1001-4B2B	1	1	0.2		0.003	I	
124	BL1001S	1	1	7.7	0.051	1.032	102%	
125	BL1001S	1	1	7.5		1.015		
126	CCV	1	1	7.4		0.999	100%	
127	B	1	1	0.0		-0.027	b	
128	STD4	1	1	9.9		1.336		
129	BL1001DS	1	1	7.8	0.052	1.046	105%	
130	BL1001DS	1	1	7.8		1.049		
131	53145	10	1	0.4	<0.250	0.231	I	
132	53145	10	1	0.3		0.198	I	
133	53145D	10	1	0.4	<0.250	0.265	I	
134	53145D	10	1	0.3		0.164	I	
135	53145S	10	1	8.1	2.729	10.931	107%	
136	53145S	10	1	8.1		10.897	s	
137	53145DS	10	1	8.3	2.813	11.201	110%	
138	53145DS	10	1	8.4		11.302		
139	53144	10	1	0.0	<0.250	-0.241	I	
140	53144	10	1	0.0		-0.241	I	
141	53146	10	1	0.9	<0.250	0.906		
142	53146	10	1	0.8		0.771		
143	53147	10	1	0.2	<0.250	0.029	I	
144	53147	10	1	0.2		0.063	I	
145	53148	10	1	0.1	<0.250	-0.072	I	
146	53148	10	1	0.2		-0.005	I	
147	53149	10	1	0.0	<0.250	-0.275	I	
148	53149	10	1	0.0		-0.241	I	
149	CCV	1	1	7.6		1.022	102%	
150	B	1	1	0.0		-0.027	b	
151	STD4	1	1	10.1		1.363	s	
152	53150	10	1	0.2	<0.250	0.029	I	

154	53151	10	1	0.2	<0.250	0.029	I
155	53151	10	1	0.2		0.029	I
156	53164	10	1	0.1	<0.250	-0.174	I
157	53164	10	1	0.1		-0.174	I
158	53165	10	1	0.0	<0.250	-0.241	I
159	53165	10	1	0.1		-0.106	I
160	42744	1	1	0.1	<0.250	-0.017	I
161	42744	1	1	0.1		-0.007	I
162	WS378	1	1	16.2		2.210	111%
163	ORGREF	1	1	16.7		2.284	114%
164	CCV	1	1	7.4		0.988	99%
165	B	1	1	0.0		-0.027	b
166	STD4	1	1	10.2		1.383	s
167	0	1	1	0.0		-0.027	l

INTERCEPT: 0.20 LINEAR COEF: 7.235304

CORRELATION COEF: .9996732

4. SHIPPING/RECEIVING DOCUMENTS

Airbills (No. of shipments)
Chain-of-Custody Records
Sample Log-In Sheets
Miscellaneous Shipping/Receiving Records (describe or list)
Fax notification

NB 128.

CHAIN OF C ODY RECORD

Project Name: PG&E
Project No.: 260446
Sampling Date(s): 9/14/99 - 9/16/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-I-FB-PF-Hg	9/14/99	Petri						X		Inlet Field Blk	X	X									53130.
PG&E-SG-OHM-I-FB-PR-Hg		125ml	G			X					X	X									
PG&E-SG-OHM-I-FB-KCl-Hg		500ml				X					X	X									
PG&E-SG-OHM-I-FB-HNO3/H2O2-Hg		125ml				X					X	X									
PG&E-SG-OHM-I-FB-KMnO4-Hg		500ml				X					X	X									
PG&E-SG-OHM-O-FB-PF-Hg	9/14/99	Petri						X		Outlet Field Blk	X	X									
PG&E-SG-OHM-O-FB-PR-Hg		125ml	G			X					X	X									
PG&E-SG-OHM-O-FB-KCl-Hg		500ml				X					X	X									
PG&E-SG-OHM-O-FB-HNO3/H2O2-Hg		125ml				X					X	X									
PG&E-SG-OHM-O-FB-KMnO4-Hg		500ml				X					X	X									
PG&E-SG-OHM-RB-PF-Hg	9/16/99	Petri						X		Reagent Blk	X	X									53129
PG&E-SG-OHM-RB-HNO3-Hg		125ml	G			X					X	X									
PG&E-SG-OHM-RB-HNO3/H2O2-Hg						X					X	X									
PG&E-SG-OHM-RB-KCl-Hg						X					X	X									
PG&E-SG-OHM-RB-KMnO4-Hg	9/16/99					X					X	X									
PG&E-SG-OHM-RB-Hydrox-Hg	9/16/99					X				Hydrox	X	X									

Relinquished by: [signature] Date/Time: 9/16/99
Received by: [signature] - PASC Date/Time: 990918 12:30

Relinquished by: Date/Time:
Received by: Date/Time:

REMARKS (*):

No. 02565

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

N° 53152.

CHAIN OF C ODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/16/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-Ia-1-PF-Hg	9/16/99	Petri							X	Inlet 1 Run 1A	X										53131
PG&E-SG-OHM-Ia-1-PR-Hg		500ml	G			X					X				1LCG×2, 500CG, 250CG×2						
PG&E-SG-OHM-Ia-1-KCl-Hg		1L				X					X					PPD					
PG&E-SG-OHM-Ia-1-HNO3/H2O2-Hg		250ml				X					X										
PG&E-SG-OHM-Ia-1-KMnO4-Hg		1L				X					X										
PG&E-SG-OHM-Ia-1-A-Hg		125ml			X						X				250CG×2	53153					2 bottles composite before Analysis
PG&E-SG-OHM-Ib-1-PF-Hg	9/16/99	Petri							X	Inlet 1 Run 1B	X				ppd, 500CG, 250CG						53134
PG&E-SG-OHM-Ib-1-PR-Hg		500ml	G			X					X					1LCG×2					2 bottles composite
PG&E-SG-OHM-Ib-1-KCl-Hg		1L				X					X										
PG&E-SG-OHM-Ib-1-HNO3/H2O2-Hg		250ml				X					X										
PG&E-SG-OHM-Ib-1-KMnO4-Hg		1L				X					X										
PG&E-SG-OHM-Ib-1-A-Hg		125ml			X						X				100CG, 250CG.	53154					2 bottles composite Prior to Analysis

Relinquished by:	Date/Time: 9/16/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/09/99 17:30	Received by:	Date/Time:

REMARKS (*):

CO
CO
7

№ 02566

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/17/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-Ib-2-PF-Hg	9/17/99	Petri							X	Inlet Run 2B	✓	X									53135
PG&E-SG-OHM-Ib-2-PR-Hg		500ml	G				X				✓	X								ppb.	
PG&E-SG-OHM-Ib-2-KCl-Hg		1L					X				✓	X									
PG&E-SG-OHM-Ib-2-HNO3/H2O2-Hg		250ml					X				✓	X									
PG&E-SG-OHM-Ib-2-KMnO4-Hg		1L					X				✓	X									
PG&E-SG-OHM-Ib-2-A-Hg		500ml				X					✓	X									53154
PG&E-SG-OHM-Oa-2-PF-Hg	9/17	Petri							X	Outlet Run 2A		X									53164
PG&E-SG-OHM-Oa-2-PR-Hg		250ml	G				X					X									
PG&E-SG-OHM-Oa-2-KCl-Hg		1L					X					X									
PG&E-SG-OHM-Oa-2-HNO3/H2O2-Hg		250ml					X					X									
PG&E-SG-OHM-Oa-2-KMnO4-Hg		1L					X					X									
~~PG&E-SG-OHM-Oa-2-A~~																					53165
PG&E-SG-OHM-Ob-2-PF-Hg	9/17	Petri							X	Outlet Run 2B		X									
PG&E-SG-OHM-Ob-2-PR-Hg		250ml	G				X					X									
PG&E-SG-OHM-Ob-2-KCl-Hg		1L					X					X									
PG&E-SG-OHM-Ob-2-HNO3/H2O2-Hg		250ml					X					X									
PG&E-SG-OHM-Ob-2-KMnO4-Hg		1L					X					X									

Relinquished by:	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*): Note! There is NO Inlet Run 2A

No. 02568

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/17/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-Ila-3-PF-Hg	9/17/99	Petri							X	Inlet Run 3A	✓	X									53132
PG&E-SG-OHM-Ila-3-PR-Hg		2x250ml	G			X					✓	X									Composite prior to Analysis
PG&E-SG-OHM-Ila-3-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ila-3-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-Ila-3-KMnO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ila-3-A-Hg		500ml			X						✓	X									53155
PG&E-SG-OHM-IIb-3-PF-Hg	9/17	Petri							X	Inlet Run 3B	✓	X									53136
PG&E-SG-OHM-IIb-3-PR-Hg		2x250ml	G			X					✓	X	PPD	2.5	X	3	1	L	G	X 3	Composite before Analysis
PG&E-SG-OHM-IIb-3-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-IIb-3-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-IIb-3-KMnO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-IIb-3-A-Hg		500ml			X						✓	X									53159

Relinquished by:	Date/Time: 9/15/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02570

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/17/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-I1a-4-PF-Hg	9/17	Petri							X	Inlet Run 4A	✓	X				250(G+3),	1(G+2				53133
PG&E-SG-OHM-I1a-4-PR-Hg		2x250ml	G			X					✓	X				ppd.					Composite before Analysis
PG&E-SG-OHM-I1a-4-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-I1a-4-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-I1a-4-KMnO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-I1a-4-A-Hg	↓	2x250ml	↓		X					↓	✓	X						5356.			Composite before Analysis
PG&E-SG-OHM-I1b-4-PF-Hg	9/17	Petri							X	Inlet Run 4B	✓	X		250(G+3,	1(G+2						53137
PG&E-SG-OHM-I1b-4-PR-Hg		2x250ml	G			X					✓	X						ppd.			Composite before Analysis
PG&E-SG-OHM-I1b-4-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-I1b-4-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-I1b-4-KMnO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-I1b-4-A-Hg	↓	2x250ml	↓		X					↓	✓	X						5359.			Composite before Analysis

Relinquished by:	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 990918 1230	Received by:	Date/Time:

REMARKS (*):

№ 02576

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF C[illegible]ODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/16/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

MATRIX / ANALYSIS

Sample Code	Sampled Date	Container Size	Container G/P	Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	Trace Metals*	Mercury Ontario-Hydro	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*					Comments
PG&E-SG-OHM-Oa-1-PF-Hg	9/16/99	Petri							X	Outlet Run 1A	✓	X		250CG×2, 1LCG×2, ppd											53:39
PG&E-SG-OHM-Oa-1-PR-Hg	↓	250ml	G				X			↓	✓	X													
PG&E-SG-OHM-Oa-1-KCl-Hg	↓	1L	↓				X			↓	✓	X													
PG&E-SG-OHM-Oa-1-HNO3/[illegible]-Hg	↓	250ml	↓				X			↓	✓	X													
PG&E-SG-OHM-Oa-1-KMnO4-Hg	↓	1L	↓				X			↓	✓	X													
PG&E-SG-OHM-Ob-1-PF-Hg	9/16/99	Petri							X	Outlet Run 1B	✓	X		250CG×2, 1LCG×2, ppd											53:41
PG&E-SG-OHM-Ob-1-PR-Hg	↓	250ml	G				X			↓	✓	X													
PG&E-SG-OHM-Ob-1-KCl-Hg	↓	1L	↓				X			↓	✓	X													
PG&E-SG-OHM-Ob-1-HNO3/[illegible]-Hg	↓	250ml	↓				X			↓	✓	X													
PG&E-SG-OHM-Ob-1-KMnO4-Hg	↓	1L	↓				X			↓	✓	X													

Relinquished by: [signature]	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

00:01

№ 02567

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC
TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 260046
Sampling Date(s): 9/17/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium (Ontario-Hydro)	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-SG-OHM-Oa-3-PF-Hg	9/17	Petri						X		Outlet Run 3A	✓	X									53139
PG&E-SG-OHM-Oa-3-PR-Hg		250ml	G			X					✓	X									
PG&E-SG-OHM-Oa-3-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-Oa-3-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-Oa-3-KMnO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ob-3-PF-Hg	9/17	Petri						X		Outlet Run 3B	✓	X									53142
PG&E-SG-OHM-Ob-3-PR-Hg		250ml	G			X					✓	X									
PG&E-SG-OHM-Ob-3-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ob-3-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-Ob-3-KMnO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-O-FB-PF-Hg	9/17	Petri						X		Outlet Field Blk	✓	X									53138
PG&E-SG-OHM-O-FB-PR-Hg		125ml	G			X					✓	X									
PG&E-SG-OHM-O-FB-KCl-Hg		500ml				X					✓	X									
PG&E-SG-OHM-O-FB-HNO3/H2O2-Hg		125ml				X					✓	X									
PG&E-SG-OHM-O-FB-KMnO4-Hg		500ml				X					✓	X									

Relinquished by:	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/20/99 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02571

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF ('ODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s):
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium (Ontario-Hydro)	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-3-IE-2-PF-Hg	9/9/99	Petri							X	Boiler #3 Run 2	✓	X									53145
PG&E-BP-OHM-3-IE-2-PR-Hg		250ml	G			X				Inlet East	✓	X									
PG&E-BP-OHM-3-IE-2-KCl-Hg		1L				X					✓	X									
PG&E-BP-OHM-3-IE-2-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-BP-OHM-3-IE-2-KMnO4-Hg		1L				X					✓	X									
PG&E-BP-OHM-3-IE-2-A-Hg		125ml			X						✓	X									53160
PG&E-BP-OHM-3-IW-2-PF-Hg	9/9/99	Petri							X	Boiler #3 Run 2		X									53147
PG&E-BP-OHM-3-IW-2-PR-Hg		250ml	G			X				Inlet West		X									
PG&E-BP-OHM-3-IW-2-KCl-Hg		1L				X						X									
PG&E-BP-OHM-3-IW-2-HNO3/H2O2-Hg		250ml				X						X									
PG&E-BP-OHM-3-IW-2-KMnO4-Hg		1L				X						X									
PG&E-BP-OHM-3-IW-2-A-Hg		125ml			X							X									53162

Relinquished by:	Date/Time: 9/13/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/09/99 17:30	Received by:	Date/Time:

REMARKS (*):

No. 02437

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF C ODY RECORD

Project Name: PG&E Brayton Point
Project No.: 26046
Sampling Date(s):
Laboratory:
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-3-IF-3-PF-Hg	9/9/99	Petri							X	Boiler #3 - Run 3	X	Ontario-Hydro									53146
PG&E-BP-OHM-3-IF-3-KCl-Hg		1L	G			X				East Inlet	X										
PG&E-BP-OHM-3-IF-3-HNO3/H2O2-Hg		250ml				X					X										
PG&E-BP-OHM-3-IF-3-KMnO4-Hg		1L				X					X										
PG&E-BP-OHM-3-IF-3-PR-Hg		250ml				X					X										
PG&E-BP-OHM-3-IF-3-A-Hg		125ml			X						X										53161
PG&E-BP-OHM-3-IW-3-PF-Hg	9/9/99	Petri							X	Boiler #3 Run 3	X										53148
PG&E-BP-OHM-3-IW-3-PR-Hg		250ml	G			X				West Inlet	X						11				
PG&E-BP-OHM-3-IW-3-KCl-Hg		1L				X					X										
PG&E-BP-OHM-3-IW-3-HNO3/H2O2-Hg		250ml				X					X										
PG&E-BP-OHM-3-IW-3-KMnO4-Hg		1L				X					X										
PG&E-BP-OHM-3-IW-3-A-Hg		125ml			X						X										53163

Relinquished by:	Date/Time: 9/10/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/10/99 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02563

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF C ODY RECORD

Project Name: PG&E
Project No.: 26046
Sampling Date(s): 9/7/99, 9/8/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium (Cotacio Hadic)	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-3-RB-PF-Hg	9/8/99	Petri	P					X		Reagent Blank	✓	X	ffd	100X6x5							53143
PG&E-BP-OHM-3-RB-HNO_3-Hg	↓	125ml	G			X				↓	✓	X									
PG&E-BP-OHM-3-RB-KCl-Hg		↓	↓			X					✓	X		Brayton							
PG&E-BP-OHM-3-RB-Hydrox-Hg						X					✓	X									
PG&E-BP-OHM-3-RB-~~HNO3/H2O2~~-Hg						X					✓	X									
PG&E-BP-OHM-3-RB-$KMnO_4$-Hg	9/8/99	↓	↓			X					✓	X									
PG&E-BP-OHM-3-O-FB-PF-Hg	9/7/99	Petri						X		Outlet Field Blank	✓	X	ffd	100X6x2, 500X6x2							53149
PG&E-BP-OHM-3-O-FB-PR-Hg	↓	125ml	G			X				↓	✓	X									
PG&E-BP-OHM-3-O-FB-KCl-Hg		500ml	↓			X					✓	X			"						
PG&E-BP-OHM-3-O-FB-~~HNO3/H2O2~~-Hg		125ml				X					✓	X									
PG&E-BP-OHM-3-O-FB-$KMnO_4$-Hg		500ml				X					✓	X									
PG&E-BP-OHM-3-I-FB-PF-Hg	9/7/99	Petri						X		Inlet Field Blank		X	ffd	100X6x2, 500X6x2							53144
PG&E-BP-OHM-3-I-FB-PR-Hg	↓	125ml	G			X				↓		X									
PG&E-BP-OHM-3-I-FB-KCl-Hg		500ml	↓			X						X			"						
PG&E-BP-OHM-3-I-FB-~~HNO3/H2O2~~-Hg		125ml				X						X									
PG&E-BP-OHM-3-I-FB-$KMnO_4$-Hg		500ml	↓			X						X									

Relinquished by:	Date/Time: 9/8/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/9/8 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02435

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF C ODY RECORD

Project Name: PG&E Brayton Point
Project No.: 26046
Sampling Date(s):
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury Ontario-Hydro	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
~~PG&E-BP-OHm-3-0-4-PF-Hg~~		Petri*						X		Boiler #3 Run 4	X										
~~PG&E-BP-OHm-3-0-4-PR-Hg~~		250ml	G			X				Outlet	X										
~~PG&E-BP-OHm-3-0-4-KCl-Hg~~		1L				X					X										
~~PG&E-BP-OHm-3-0-4-HNO3/H2O2-Hg~~		250ml				X					X										
~~PG&E-BP-OHm-3-0-4-KMnO4-Hg~~		1L				X					X										
PG&E-BP-OHm-3-0-2-PF-Hg	9/9/99	Petri*						X		Boiler #3 Run 2	X			ppd, 250G+2, 1LG+2							53150
PG&E-BP-OHm-3-0-2-PR-Hg		250ml	G			X				Outlet	X										
PG&E-BP-OHm-3-0-2-KCl-Hg		1L				X					X										
PG&E-BP-OHm-3-0-2-HNO3/H2O2-Hg		250ml				X					X										
PG&E-BP-OHm-3-0-2-KMnO4-Hg		1L				X					X										
PG&E-BP-OHm-3-0-3-PF-Hg	9/9/99	Petri*						X		Boiler #3 Run 3	X			ppd, 250G+2, 1LG+2							53151
PG&E-BP-OHm-3-0-3-PR-Hg		250ml				X				Outlet	X										
PG&E-BP-OHm-3-0-3-KCl-Hg		1L				X					X										
PG&E-BP-OHm-3-0-3-HNO3/H2O2-Hg		250ml				X					X										
PG&E-BP-OHm-3-0-3-KMnO4-Hg		1L				X					X										

Relinquished by:	Date/Time: 9/13/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02436

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF C ;ODY RECORD

Project Name: PG+E
Project No.: 26046
Sampling Date(s): 9/7, 9/8, 9/16 9/17
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
COC #02435																					
COC # 02436																					
COC #02437																					
COC # 02563																					
COC # 02565																					
COC # 02566																					
COC # 02567																					
COC # 02568																					
COC # 02570																					
COC # 02571																					
COC # 02576																					

Relinquished by:	Date/Time: 9/16/99 0960	Relinquished by: E. Jones	Date/Time: 09-18-99 9:00
Received by:	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*): Eight shipping containers. COC's in Box 6 of 8.

46.00

№ 02577

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporat

00198

Page ___ of ___

US SAMPLE LOG IN SHEET

TRC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K Garcia

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent ✓	Samples rec'd intact.
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	p/u from site	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	9 18 99	
Time Received	12:30	

Temperature of Coolers

Cooler ID:	Temperature
8 Boxes	not taken

Relinquished By: _____

Date: 9 18 99

Logbook No: _____

Logbook Page No. _____

** TX STATUS REPORT ** AS OF SEP 22 1999 11:15 PAGE.01

PHILIP ANALYTICAL

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	JOB#	STATUS
29	09/22	11:15	19784531995	EC--S	00'30"	002	196	OK

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: OH 14
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
053129	SG-OHM-RB	99/09/14	99/09/18
053130	SG-OHM-I-FB	99/09/14	99/09/18
053131	SG-OHM-I1a-R1	99/09/16	99/09/18
053132	SG-OHM-I1a-R3	99/09/17	99/09/18
053133	SG-OHM-I1a-R4	99/09/17	99/09/18
053134	SG-OHM-I1b-R1	99/09/16	99/09/18
053135	SG-OHM-I1b-R2	99/09/17	99/09/18
053136	SG-OHM-I1b-R3	99/09/17	99/09/18
053137	SG-OHM-I1b-R4	99/09/17	99/09/18
053138	SG-OHM-O-FB	99/09/17	99/09/18
053139	SG-OHM-Oa-R1	99/09/16	99/09/18
053140	SG-OHM-Oa-R3	99/09/17	99/09/18
053141	SG-OHM-Ob-R1	99/09/16	99/09/18
053142	SG-OHM-Ob-R3	99/09/17	99/09/18
053143	BP-OHM-3-RB	99/09/08	99/09/18
053144	BP-OHM-3-I-FB	99/09/07	99/09/18
053145	BP-OHM-3-IE-R2	99/09/09	99/09/18
053146	BP-OHM-3-IE-R3	99/09/09	99/09/18
053147	BP-OHM-3-IW-R2	99/09/09	99/09/18
053148	BP-OHM-3-IW-R3	99/09/09	99/09/18
053149	BP-OHM-3-O-FB	99/09/07	99/09/18
053150	BP-OHM-3-O-R2	99/09/09	99/09/18
053151	BP-OHM-3-O-R3	99/09/09	99/09/18
053164	SG-OHM-Oa-R2	99/09/17	99/09/18
053165	SG-OHM-Ob-R2	99/09/17	99/09/18

Comments: _____

_____

_____

Date 99/09/22

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: OH 14
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
053129	SG-OHM-RB	99/09/14	99/09/18
053130	SG-OHM-I-FB	99/09/14	99/09/18
053131	SG-OHM-I1a-R1	99/09/16	99/09/18
053132	SG-OHM-I1a-R3	99/09/17	99/09/18
053133	SG-OHM-I1a-R4	99/09/17	99/09/18
053134	SG-OHM-I1b-R1	99/09/16	99/09/18
053135	SG-OHM-I1b-R2	99/09/17	99/09/18
053136	SG-OHM-I1b-R3	99/09/17	99/09/18
053137	SG-OHM-I1b-R4	99/09/17	99/09/18
053138	SG-OHM-O-FB	99/09/17	99/09/18
053139	SG-OHM-Oa-R1	99/09/16	99/09/18
053140	SG-OHM-Oa-R3	99/09/17	99/09/18
053141	SG-OHM-Ob-R1	99/09/16	99/09/18
053142	SG-OHM-Ob-R3	99/09/17	99/09/18
053143	BP-OHM-3-RB	99/09/08	99/09/18
053144	BP-OHM-3-I-FB	99/09/07	99/09/18
053145	BP-OHM-3-IE-R2	99/09/09	99/09/18
053146	BP-OHM-3-IE-R3	99/09/09	99/09/18
053147	BP-OHM-3-IW-R2	99/09/09	99/09/18
053148	BP-OHM-3-IW-R3	99/09/09	99/09/18
053149	BP-OHM-3-O-FB	99/09/07	99/09/18
053150	BP-OHM-3-O-R2	99/09/09	99/09/18
053151	BP-OHM-3-O-R3	99/09/09	99/09/18
053164	SG-OHM-Oa-R2	99/09/17	99/09/18
053165	SG-OHM-Ob-R2	99/09/17	99/09/18

Comments: _____

_____

_____

Date 99/09/22

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: He via J471A
were received in good condition unless indicated below:

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
053153	SG-OHM-I1a-R1 Ash	99/09/16	99/09/18
053154	SG-OHM-I1b-R2 Ash	99/09/17	99/09/18
053155	SG-OHM-I1a-R3 Ash	99/09/17	99/09/18
053156	SG-OHM-I1a-R4 Ash	99/09/17	99/09/18
053157	SG-OHM-I1b-R1 Ash	99/09/16	99/09/18
053158	SG-OHM-I1b-R3 Ash	99/09/17	99/09/18
053159	SG-OHM-I1b-R4 Ash	99/09/17	99/09/18
053160	BP-OHM-IE-R2 Ash	99/09/09	99/09/18
053161	BP-OHM-3-IE-R3 Ash	99/09/09	99/09/18
053162	BP-OHM-3-IW-R2 Ash	99/09/09	99/09/18
053163	BP-OHM-3-IW-R3 Ash	99/09/09	99/09/18
053247	NIST 1633b Coal Ash	99/09/22	99/09/22

Comments: _____

_____

_____

Date 99/09/22

PHILIP SERVICES

INORGANIC DATA PACKAGE
FOR
TRC ENVIRONMENTAL CORPORATION

Project: 26046

Philip Analytical Services Corporation
5555 North Service Road
Burlington, ON L7L 5H7

Submission #: 9J0529

Prepared by : Janice Joseph - CSR
Approved by : Dr. Ron McLeod - Principal Scientist

Initial : _____
Initial : _____

1. CASE NARRATIVE

PROJECT NARRATIVE

PHILIP Analytical Services (Burlington ON)
Philip Project: AN990787
Philip Submission #:9J0529

Client: TRC Environmental Corporation
Client Project: 26046

I. SAMPLE RECEIPT/ANALYSIS

a) Sample Listing

Philip ID	Client Sample ID	Date Sampled	Date Received	Date Prepped	Run Date
Mercury via SW846 Method 7471A					
060263 99	Method Blank	99/10/06	99/10/13	99/10/22	99/10/22
060264 99	BP-OHM-3-IE-4 Ash	99/10/06	99/10/13	99/10/22	99/10/22
060265 99	BP-OHM-3-Iw-4 Ash	99/10/06	99/10/13	99/10/22	99/10/22
060279 99	NIST 1633b Coal Ash	99/10/15	99/10/15	99/10/22	99/10/22
Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- Front Half					
060115 99	Method Blank	99/10/06	99/10/14	99/12/02	99/12/02
060116 99	BP-OHM-3-RB	99/10/06	99/10/14	99/12/02	99/12/02
060117 99	BP-OHM-3-O-4	99/10/06	99/10/14	99/12/02	99/12/02
060118 99	BP-OHM-3-IE-4	99/10/06	99/10/14	99/12/02	99/12/02
060119 99	BP-OHM-3-IW-4	99/10/06	99/10/14	99/12/02	99/12/02
Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- KCl Impingers/Rinses					
060115 99	Method Blank	99/10/06	99/10/14	99/11/01	99/11/01
060116 99	BP-OHM-3-RB	99/10/06	99/10/14	99/11/01	99/11/01
060117 99	BP-OHM-3-O-4	99/10/06	99/10/14	99/11/01	99/11/01
060118 99	BP-OHM-3-IE-4	99/10/06	99/10/14	99/11/01	99/11/01
060119 99	BP-OHM-3-IW-4	99/10/06	99/10/14	99/11/01	99/11/01
Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- KMNO4 Impingers/Rinses					
060115 99	Method Blank	99/10/06	99/10/14	99/11/02	99/11/02
060116 99	BP-OHM-3-RB	99/10/06	99/10/14	99/11/02	99/11/02
060117 99	BP-OHM-3-O-4	99/10/06	99/10/14	99/11/02	99/11/02
060118 99	BP-OHM-3-IE-4	99/10/06	99/10/14	99/11/02	99/11/03
060119 99	BP-OHM-3-IW-4	99/10/06	99/10/14	99/11/02	99/11/03
Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- HNO3/H202 Impingers/Rinses					
060115 99	Method Blank	99/10/06	99/10/14	99/10/26	99/10/26
060116 99	BP-OHM-3-RB	99/10/06	99/10/14	99/10/26	99/10/26
060117 99	BP-OHM-3-O-4	99/10/06	99/10/14	99/10/26	99/10/26
060118 99	BP-OHM-3-IE-4	99/10/06	99/10/14	99/10/26	99/10/26

060119 99 BP-OHM-3-IW-4 99/10/06 99/10/14 99/10/26 99/10/26

Run Date is defined as the date of injection of the last calibration standard (12 hour or less) prior to the samples analyzed within that run sequence. Therefore the time of calibration injection that defines the run date is always within 12 hours of the time of sample injection.

b) Shipping Problems: none encountered

c) Documentation Problems: none encountered

II. SAMPLE PREP:

No problems encountered

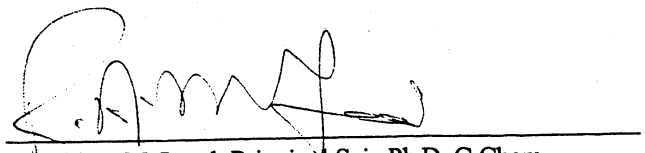
III. SAMPLE ANALYSIS:

See also comments within the appropriate Certificate of Analysis.

a) Hold Times:
All impingers portions were analyzed within this recommended hold time of 45 days. The filter and rinses were analyzed 57 days following sampling while the ash portions were analyzed within the recommended hold times. Since the front half portions of the sample are within the 'heated zone' of the sampling train and since volatile mercury would have been stripped from this section, there should be no compromise to data quality for this exceedance. Note that it is concern for the 'volatile' Hg portions that the recommended hold time of 45 days was targeted. Fly ash is well known to provide Hg in a stable solid matrix. The solid NIST reference material 1633b is a fly ash and is recognized as stable to certified levels for periods of years.

b) Instrument Calibration: all within control limits

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the cognizant laboratory official or his/her designee, as verified by this signature.



Ronald A. McLeod, Principal Sci., Ph.D.,C.Chem.

9/01202
Date

2. ANALYTICAL DATA REPORT

PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION		LABORATORY INFORMATION	
Attention:	Michael P. Martin	**Contact:**	Ron McLeod
Client Name:	TRC Environmental Corporation	**Project:**	AN990787
Project:	26046	**Date Received:**	99/10/14
Project Desc:	PG&E	**Date Reported:**	99/12/02
Address:	Boott Mills South, Foot of John Street Lowell, MA MA 01852	**Submission No.:**	9J0529
		Sample No.:	060115-060119
Fax Number:	978-453-1995		
Phone Number:	978-970-5600		

NOTES: ***'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available***
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)

Methods used by PASC are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Nineteenth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PASC for a period of three weeks from receipt of data or as per contract.

COMMENTS: Revision 99/12/02: KCl and KMNO4 Data

Certified by: _____

PHILIP ANALYTICAL SERVICES CORPORATION
5555 North Service Road, Burlington, Ontario, Canada L7L 5H7 Tel: (905) 332-8788 Fax: (905) 332-9169

	Client ID:		Method Blank	Blank Spike#1	Blank Spike#1	Blank Spike#2	Blank Spike#2	BP OHM-3-RB	BP OHM-3-O-4	BP OHM-3-O-4
	Lab No.:		060115 99	060115 99	060115 99	060115 99	060115 99	060116 99	060117 99	060117 99
	Date Sampled:		-	-	-	-	-	99/10/06	99/10/06	99/10/06
Component	**MDL**	**Units**			% Recoveries		% Recoveries			Duplicate
Mercury - filter	0.010	ug	<	0.10	100	0.10	100	0.075	<0.050	<0.050
Mercury - KCl	0.030	"	<	0.32	110	0.32	110	<0.10	6.6	6.5
Mercury - KMnO4	0.030	"	<	0.30	100	0.30	100	<0.10	6.3	6.3
Mercury - H202	0.010	"	<	0.10	100	0.11	110	<0.25	<0.25	<0.25

90000

			BP	BP	BP	BP	BP	BP
	Client ID:		OHM-3-O-4	OHM-3-O-4	OHM-3-O-4	OHM-3-O-4	OHM-3-IE-4	OHM-3-IW-4
	Lab No.:		060117 99	060117 99	060117 99	060117 99	060118 99	060119 99
	Date Sampled:		99/10/06	99/10/06	99/10/06	99/10/06	99/10/06	99/10/06
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.		
Mercury - filter	0.010	ug	0.55	110	0.54	100	0.67	0.61
Mercury - KCl	0.030	"	13	99	13	98	5.4	5.8
Mercury - KMnO4	0.030	"	13	97	13	97	5.1	5.4
Mercury - H202	0.010	"	2.7	110	2.9	110	<0.25	0.25

000007

Batch Code:	**1202MSA1**	
Mercury - filter	060115 99	
	060116 99	
	060117 99	
	060118 99	
	060119 99	
Run Date:	99/12/02	
Date of Sample Prep:	99/12/02	
Batch Code:	**11011NKC**	
Mercury - KCl	060115 99	
	060116 99	
	060117 99	
	060118 99	
	060119 99	
Run Date:	99/11/01	
Date of Sample Prep:	99/11/01	
Batch Code:	**11023NM4**	**11023NM4**
Mercury - KMnO4	060115 99	060118 99
	060116 99	060119 99
	060117 99	
Run Date:	99/11/02	99/11/03
Date of Sample Prep:	99/11/02	99/11/02
Batch Code:	**1026ABP1**	
Mercury - H202	060115 99	
	060116 99	
	060117 99	
	060118 99	
	060119 99	
Run Date:	99/10/26	
Date of Sample Prep:	99/10/26	

PSC
PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION

Attention:	Michael P. Martin
Client Name:	TRC Environmental Corporation
Project:	26046
Project Desc:	PG&E
Address:	Boott Mills South, Foot of John Street Lowell, MA MA 01852
Fax Number:	978-453-1995
Phone Number:	978-970-5600

LABORATORY INFORMATION

Contact:	Ron McLeod
Project:	AN990787
Date Received:	99/10/14
Date Reported:	99/11/09
Submission No.:	9J0529
Sample No.:	060263-060265

NOTES: ***'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available***
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)

Methods used by PASC are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Nineteenth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PASC for a period of three weeks from receipt of data or as per contract.

COMMENTS:

Certified by: R.D. McLeod

Philip Analytical Services Corporation
5555 North Service Road, Burlington, Ontario, Canada L7L 5H7 Tel: (905) 332-8788 Fax: (905) 332-9169

			Method	Blank	Blank	BP-OHM-3-IE-4	BP-OHM-3-Iw-4
Client ID:			Blank	Spike	Spike	Ash	Ash
Lab No.:			060263 99	060263 99	060263 99	060264 99	060265 99
Date Sampled:			-	-	-	99/10/06	99/10/06
Component	**MDL**	**Units**			% Recoveries		
Weight of sample	0.0001	g	-	-	-	10.3	11.9
Mercury	0.04	mg/kg	<	1.0	100	0.18	0.14

PASC - Summary of Analysis Pre. Dates

Batch Code:	**1022LTA1**
Mercury	060263 99
	060264 99
	060265 99
Run Date:	99/10/22
Date of Sample Prep:	99/10/22

PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION		LABORATORY INFORMATION	
Attention:	Michael P. Martin	**Contact:**	Ron McLeod
Client Name:	TRC Environmental Corporation	**Project:**	AN990787
Project:	26046	**Date Received:**	99/10/13
Project Desc:	PG&E	**Date Reported:**	99/11/09
Address:	Boott Mills South, Foot of John Street Lowell, MA MA 01852	**Submission No.:** **Sample No.:**	9J0529 060279
Fax Number:	978-453-1995		
Phone Number:	978-970-5600		

NOTES: ***"-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available***
LOQ can by determined for all analytes by multiplying the appropriate MDL X 3.33
Solids data is based on dry weight except for biota analyses.
Organic analyses are not corrected for extraction recovery standards except for isotope dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)

Methods used by PASC are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Nineteenth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PASC for a period of three weeks from receipt of data or as per contract.

COMMENTS:

Certified by: _____

PHILIP ANALYTICAL SERVICES CORPORATION
5555 North Service Road, Burlington, Ontario, Canada L7L 5H7 Tel: (905) 332-8788 Fax: (905) 332-9169

			NIST 1633b	NIST 1633b
	Client ID:		Coal Ash	Coal Ash
	Lab No.:		060279 99	060279 99
	Date Sampled:		99/10/15	99/10/15
Component	**MDL**	**Units**		Certified Value
Mercury	0.04	mg/kg	0.12	0.141

PASC - Summary of Analysis Pre. Dates

Batch Code:	**1022LTA1**
Mercury	060279 99
Run Date:	99/10/22
Date of Sample Prep:	99/10/22

3. RAW DATA

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
060115	TRC-LO	MB R456	Mercury -	PV	-0.010	-99999.0	0.102	102.	0.101	101.	99/12/02	MSA1	99/12/02	MG02	57.	49.	*BLKIMP*
060116	TRC-LO	BP-OHM-3-RB	Mercury -	PV	0.075						99/12/02	MSA1	99/12/02	MG02	57.	49.	
060117	TRC-LO	BP-OHM-3-O-4	Mercury -	PV	-0.050	-0.050	0.551	105.	0.541	103.	99/12/02	MSA1	99/12/02	MG02	57.	49.	
060118	TRC-LO	BP-OHM-3-IE-4	Mercury -	PV	0.665						99/12/02	MSA1	99/12/02	MG02	57.	49.	
060119	TRC-LO	BP-OHM-3-IW-4	Mercury -	PV	0.609						99/12/02	MSA1	99/12/02	MG02	57.	49.	
BL1202	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.102	102.	0.101	101.	99/12/02	MSA1	99/12/02	MG02	$$$	$$$	*BLKIMP*

6 Tests for OHFLT with an MDL of 0.010 ug Validated By CMS Control Chart Updated N/A IO Requirements met N/A

00016

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.12.02(WA) Run Code: MG02 Matrix: Imp.

alyst: MG Units: ug (see comments) MDL: 0.01

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL1202	MSA!		
13			"			
14			BL1202 S			
15			"			
16			BL1202 DS			
17			"			
18			60117			
19			"			
20			60117 D			
21			"			
22			60117 S			
23			"			
24			60117 DS			
25			"			
26			60116			
27			"			
28			60118			
29			"			
30			60119			
31			"			
32			BLANK			
33			"			
34			1633b			
35			"			
36		1/2	1633b			
37			"			
38			CCV			
39			B			
40			D4			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
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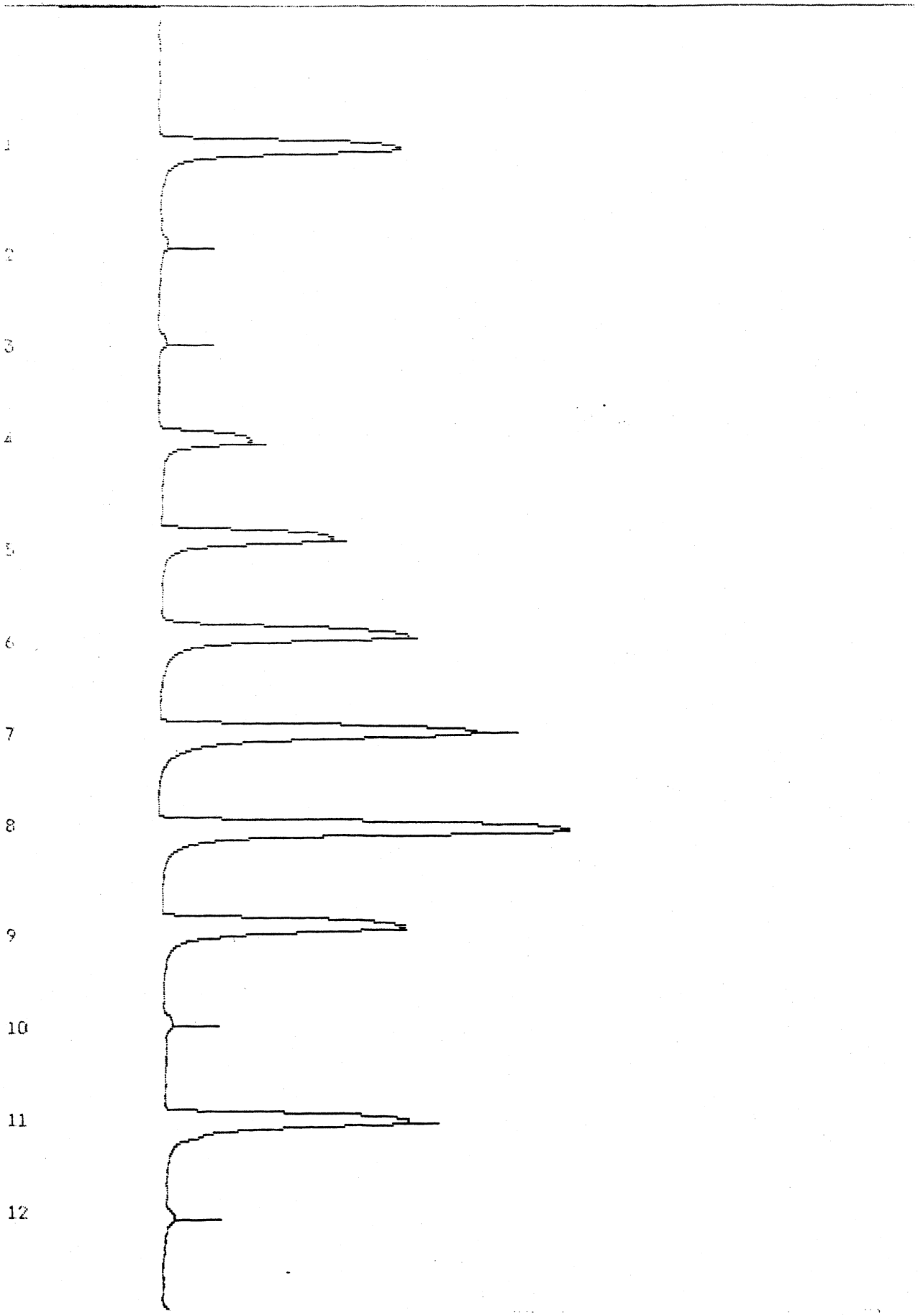
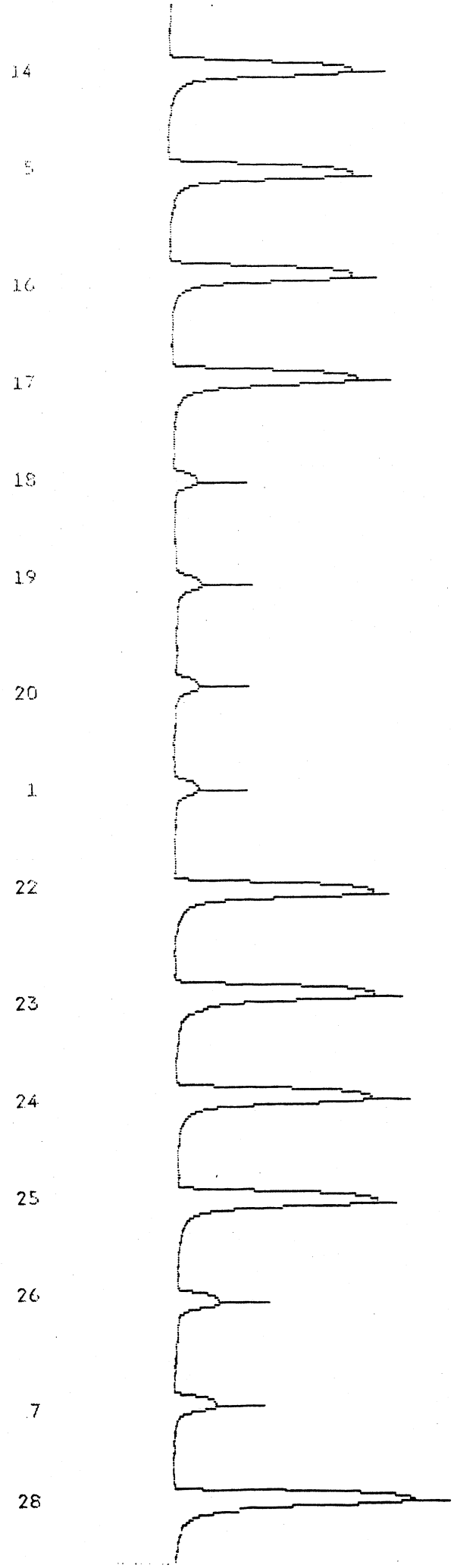
Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

RUN DATE: 12-02-1999 CHART DATE: 12-02-1999
CHART SPEED: 30
DATA FILE NAME: C:\DP4\DATA\991202WA.DAT

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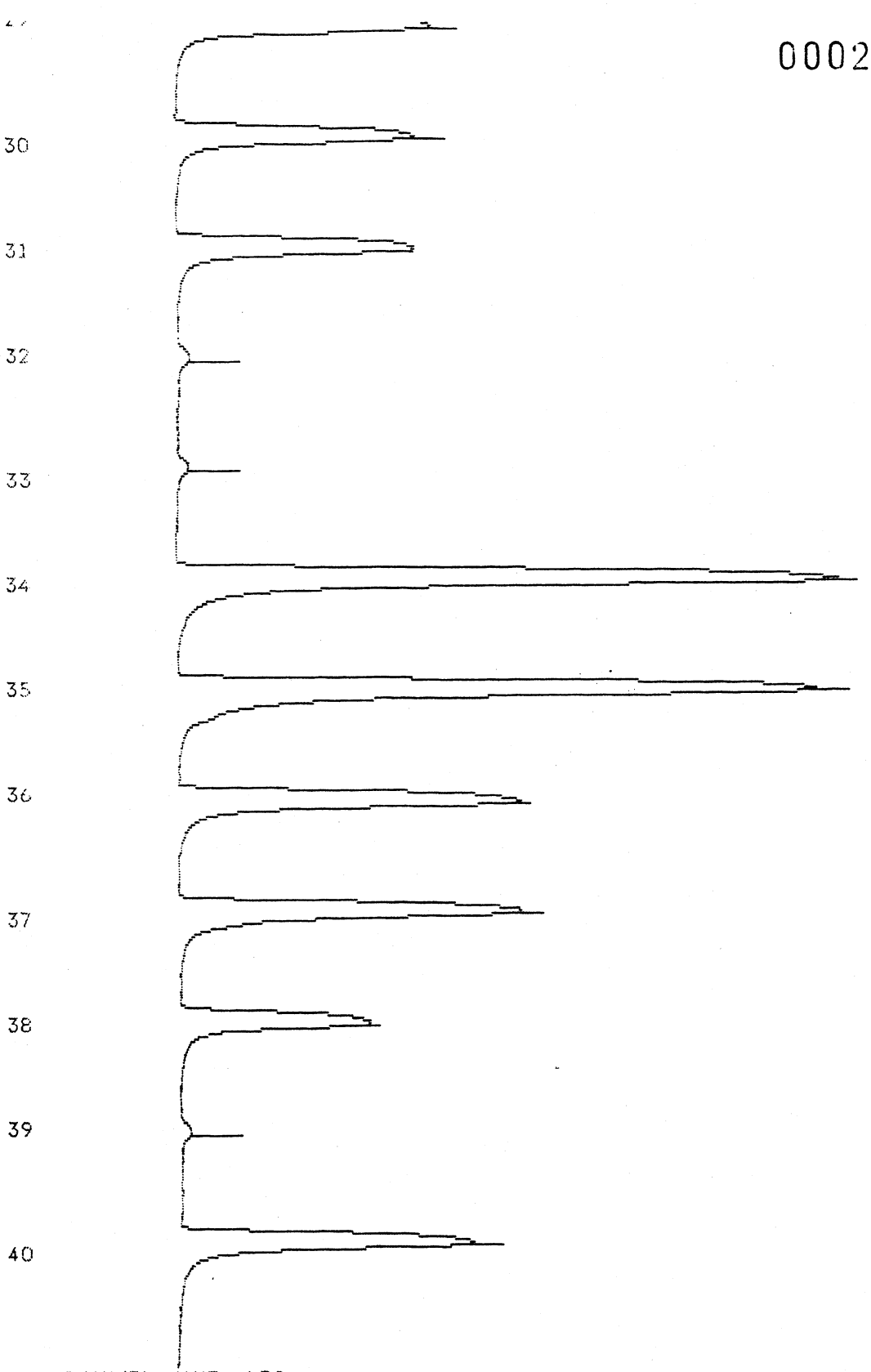
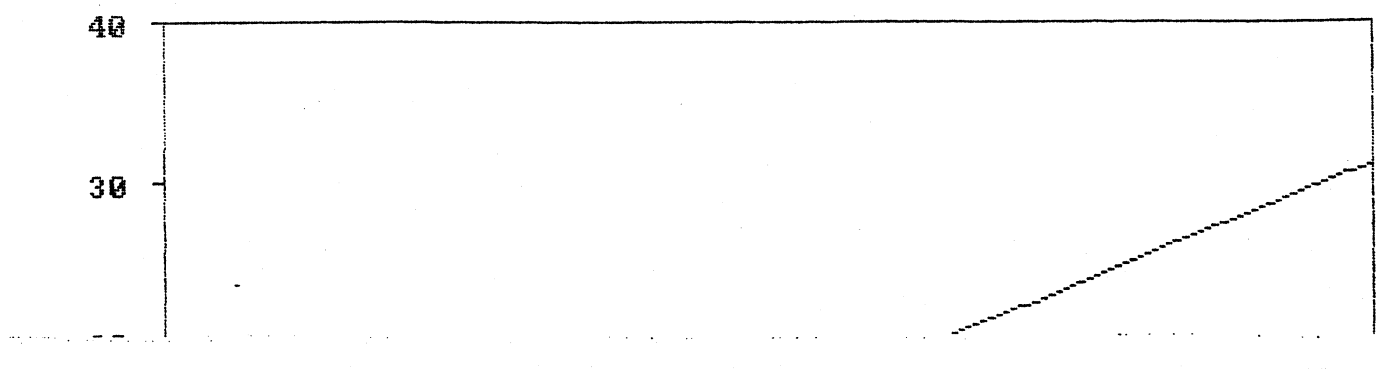
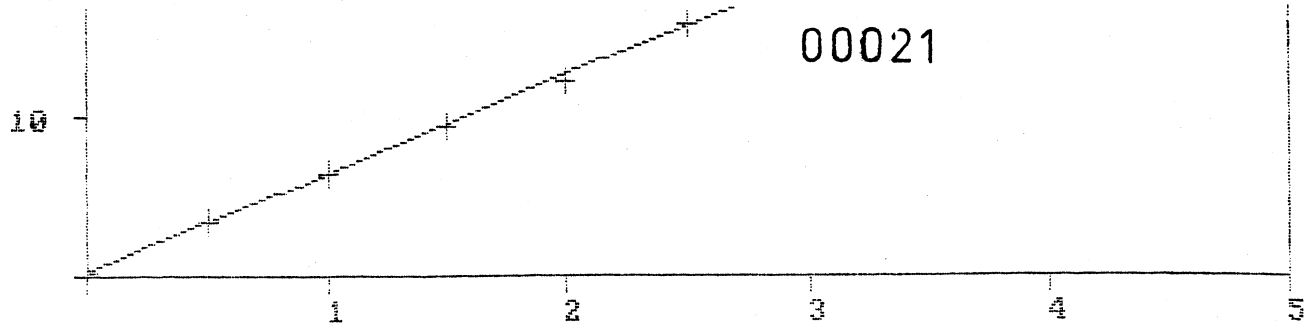


CHANNEL NAME: LDC
RUN NAME: 991202WA





DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.22 SLOPE = 6.177568

CORRELATION: .9994741

CHANNEL NAME: LDC
RUN DATE: 12-02-1999
SAMPLE TABLE NAME: 991202WA
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION ng/L	EF
1	PRIMER	1	1	9.4	1.483	s
2	DUMMY	1	1	0.2	-0.004	I
3	S1: 0	1	1	0.2	-0.008	I
4	S2: .5	1	1	3.4	0.510	
5	S3: 1	1	1	6.5	1.016	
6	S4: 1.5	1	1	9.5	1.502	
7	S5: 2	1	1	12.2	1.945	
8	S6: 2.5	1	1	15.9	2.534	
9	ICV	1	1	9.4	1.487 99%	
10	B	1	1	0.0	-0.035	b
11	D4	1	1	9.5	TNG 1.502	d
12	BL1202-MS#1 60115	1	1	0.0	<0.01 -0.031	I
13	BL1202-MS#1	1	1	0.0	-0.035	I
14	BL1202S	1	1	6.5	0.102 1.012	102%
15	BL1202S	1	1	6.5	1.020	
16	BL1202DS	1	1	6.4	0.101 1.004	101%
17	BL1202DS	1	1	6.5	1.020	
18	60117	1	1	0.4	<0.05 0.036	
19	60117	1	1	0.6	0.059	
20	60117D	1	1	0.5	<0.05 0.044	
21	60117D	1	1	0.5	0.044	I
22	60117S	1	1	7.0	0.551 1.099	105%
23	60117S	1	1	7.0	1.103	
24	60117DS	1	1	6.8	0.541 1.068	103%
25	60117DS	1	1	7.0	1.095	
26	60116	1	1	1.2	0.075 0.154	
27	60116	1	1	1.1	0.146	
28	60118	1	1	8.4	0.665 1.332	
29	60118	1	1	8.4	1.328	
30	60119	1	1	7.8	0.609 1.222	
31	60119	1	1	7.7	1.214	s
32	BLANK	1	1	0.1	<0.01 -0.024	I
33	BLANK	1	1	0.0	-0.027	I
34	1633b	1	1	21.7	3.471	R
35	1633b	1	1	20.7	3.321	R
36	1633b	2	1	11.1	3.519	
37	1633b	2	1	11.0	3.495	
38	CCV	1	1	6.0	0.929 93%	
39	B	1	1	0.0	-0.035	b
40	D4	1	1	9.5	1.502	d

INTERCEPT: 0.22
CORRELATION COEF: .9994741

LINEAR COEF: 6.177568

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
060115	TRC-LO	MB R456	Mercury -	PV	-0.030	-99999.0	0.315	105.	0.323	107.	99/11/01	1NKC	99/11/01	MG01	26.	18.	
060116	TRC-LO	BP-OHM-3-RB	Mercury -	PV	-0.100						99/11/01	1NKC	99/11/01	MG01	26.	18.	
060117	TRC-LO	BP-OHM-3-O-4	Mercury -	PV	6.586	6.514	13.130	99.	13.088	98.	99/11/01	1NKC	99/11/01	MG01	26.	18.	*PDS*
060118	TRC-LO	BP-OHM-3-IE-4	Mercury -	PV	5.368						99/11/01	1NKC	99/11/01	MG01	26.	18.	
060119	TRC-LO	BP-OHM-3-IW-4	Mercury -	PV	5.831						99/11/01	1NKC	99/11/01	MG01	26.	18.	
BL1101	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.315	105.	0.323	107.	99/11/01	1NKC	99/11/01	MG01	$$$	$$$	

6 Tests for OHKCL with an MDL of 0.030 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

000023

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.11.01 Run Code: MG01 Matrix: IMP/WATER

Analyst: MG Units: ug (see comments) MDL:

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21	2/3	1/5	61634			
22	3/3		61634 D			
23			"			
24			61634 S			
25			"			
26			61634 DS			
27			"			
28			61632			
29			"			
30			61633			
31			"			
32		1/4	61635			
33			"			
34			CCV			
35			B			
36			D4			
37	2/3	1/4	61636			
38			"			
39			61637			
40			"			
41	3/3		61638			
42			"			
43			61639			
44			"			
45			61640			
46			"			
47			CCV			
48			B			
49			D4			
50			BL1101	ABA1		
51			BL1101 S			
52			63871			
53			871 D			
54			871 S			
55			869			
56			869 S			
57			877			
58			79			
59			81			
60			83			
61			85			
62			87			
63			89			
64			64453			
65			CCV			
66			B			
67			D4			
68			BL1101	ABA2		
69			BL1101			
70			63827			
71			27 D			
72			27 S			
73			37			
74			41			
75			42			
76			43			
77			44			
78			45			
79	10		47			
80			63845			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.11.01 Run Code: MG01 Matrix: WATER

alyst: MG Units: µg/L (see comments) MDL: 0.05

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
141 21			63246			
22			CCV			
23			B			
24			D4 (Cup MISSED)			
25			BL1101	ABA3		
26			BL1101 S			
27			63248			
28			48 D			
29			48 S			
30			47			
31			49			
32			50			
33			51			
34			52			
35			53			
36			54			
37			55			
38			56			
39			CCV			
40			B			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			D4			
42			BL1101	ABA4		
43			BL1101 S			
44			63257			
45			57 D			
46			57 S			
47			58			
48			63792			
49			64407			
50			08			
51			64788			
52			63823			
53			63968			
54			69			
55			71			
56			WS 378			
57			ORG REF			
58			CCV			
59			B			
60			D4			
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Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

EPA 7470 WATER PREPARATION LOG - MERCURY

00027 DG7470HG
DGHGLEACH, DG29HG***

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
7	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	ABA1	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1101	"	"	"	"	(Processed Blank) 63875
	11	BL 1101 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	63871	"	"	"	"	
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	63869	"	"	"	"	Sample + spike
3	17	63877	"	"	"	"	
4	18	879	"	"	"	"	
5	19	881	"	"	"	"	
6	20	883	"	"	"	"	
7	21	885	"	"	"	"	
8	22	887	"	"	"	"	
9	23	889	"	"	"	"	
10	24	64453	"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	ABA2	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 1101	"	"	"	"	(Processed Blank) 63244
	27	BL 1101 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	63827	"	"	"	"	
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32	63837	"	"	"	"	
3	33	841	"	"	"	"	
4	34	842	"	"	"	"	
5	35	843	"	"	"	"	
6	36	844	"	"	"	"	
7	37	845	"	"	"	"	
8	38	847	"	2ml	30ml	10x	matrix
9	39	63245	"	20ml	30ml	1X	
10	40	246	"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run

Prepare 0.05 ppm standards daily

HNO3 Lot. No. 119060	H2SO4 Lot. No. 317120	Bath Temps. 95.7 °C
Prepared By: AB	Date: 99-11-01	Checked by: AB

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)	A643	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL 1101	"	"	"	"	(Processed Blank)
	43	BL 1101 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44	63248	"	"	"	"	
1	45	D	"	"	"	"	(Duplicate sample)
1	46	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	47	DS	"	"	"	"	(Duplicate Spiked sample)
2	48	63247	"	"	"	"	
3	49	249	"	"	"	"	
4	50	250	"	"	"	"	
5	51	251	"	"	"	"	
6	52	252	"	"	"	"	
7	53	253	"	"	"	"	
8	54	254	"	"	"	"	
9	55	255	"	"	"	"	
10	56	256	"	"	"	"	

Comments

* concentration based on 30 ml final volume, ** concentration based on 20 ml final volume

*** group of several Method 29 testcodes

Dilution factor of 1.5 is corrected by entering the calibration concentrations listed above

Procedure/Methodology:

1 Prepare 25 ppm Intermediate stock (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO3
2 Prepare 0.05 ppm Working stock daily by pipetting 200 ul., of 25 ppm Stock to 100 ml final volume of 2% HNO3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
7 Spike the tubes as indicated in the comment sector of the digestion sheet
8 Add 0.5 ml. of conc. Nitric Acid (HNO3), and 1 ml. of conc. Sulphuric acid, (H2SO4), to each tube
9 Add 3 ml. Potassium Permanganate (KMnO4), colour should remain for at least 15 minutes
10 Add 1.5 ml. of Potassium persulphate, (K2S2O8), to each tube
11 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
12 Remove tubes and allow to cool to room temperature
13 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
14 Recap tubes and shake until the Potassium Permanganate (KMnO4) is destroyed and sample becomes colourless
15 Dilute the sample to a final volume of 30 ml., cap and mix well

REFERENCE STANDARDS/SPIKING SOLUTIONS:
Source: Inorganic Ventures Standard, see standard tracking binder for current lot and expiry date information

ICV/CCV STANDARDS:
Source: High Purity MESS-ZENO 30/QCA Standard, see standard tracking binder for current lot

INTERNAL REFERENCE STANDARD: (2 ppb in 10% HNO3)
Source: EPA WS 378 or SPEX CertiPrep Trace Metal - Water Supply, see standard tracking binder for current source, lot and expiry date information.

All reagents used are of a grade suitable for mercury analyses

EPA 7470 WATER PREPARATION LOG - MERCURY

00029 DG7470HG
DGHGLEACH, DG29HG***

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
7	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	A6A4	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1101	"	"	"	"	(Processed Blank)
	11	BL 1101 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	63257	"	"	"	"	
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	63258	"	"	"	"	
3	17	63792	"	"	"	"	
4	18	64407	"	"	"	"	
5	19	408	"	"	"	"	
6	20	64788	"	"	"	"	
7	21	63823	"	"	"	"	
8	22	63968	"	"	"	"	
9	23	969	"	"	"	"	
10	24	971	"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	A6A5	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 1101	"	"	"	"	(Processed Blank)
	27	BL 1101 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
AB 1	28	[illegible]	"	"	"	"	65013
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32	63988	"	"	"	"	
3	33	64971	"	"	"	"	Filt.
4	34	973	"	"	"	"	
5	35	975	"	"	"	"	
6	36	977	"	"	"	"	
7	37	979	"	"	"	"	
8	38	980	"	"	"	"	
9	39	65015	"	"	"	"	
10	40	65010	"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run — Prepare 0.05 ppm standards daily

HNO3 Lot. No. 119060 | H2SO4 Lot. No. 317120 | Bath Temps. 95 °C

Prepared By: AB | Date: 99.11.01 | Checked by: AB

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)		20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL	"	"	"	"	(Processed Blank)
	43	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44		"	"	"	"	
1	45	D	"	"	"	"	(Duplicate sample)
1	46	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	47	DS	"	"	"	"	(Duplicate Spiked sample)
2	48		"	"	"	"	
3	49		"	"	"	"	
4	50		"	"	"	"	
5	51		"	"	"	"	
6	52		"	"	"	"	
7	53		"	"	"	"	
8	54		"	"	"	"	
9	55		"	"	"	"	
10	56		"	"	"	"	

Comments

* concentration based on 30 ml final volume, ** concentration based on 20 ml final volume

*** group of several Method 29 testcodes

Dilution factor of 1.5 is corrected by entering the calibration concentrations listed above

Procedure/Methodology:

1 Prepare 25 ppm Intermediate stock (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO3
2 Prepare 0.05 ppm Working stock daily by pipetting 200 ul., of 25 ppm Stock to 100 ml final volume of 2% HNO3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
7 Spike the tubes as indicated in the comment sector of the digestion sheet
8 Add 0.5 ml. of conc. Nitric Acid (HNO3), and 1 ml. of conc. Sulphuric acid, (H2SO4), to each tube
9 Add 3 ml. Potassium Permanganate (KMnO4), colour should remain for at least 15 minutes
10 Add 1.5 ml. of Potassium persulphate, (K2S2O8), to each tube
11 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
12 Remove tubes and allow to cool to room temperature
13 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
14 Recap tubes and shake until the Potassium Permanganate (KMnO4) is destroyed and sample becomes colourless
15 Dilute the sample to a final volume of 30 ml., cap and mix well

REFERENCE STANDARDS/SPIKING SOLUTIONS:
Source: Inorganic Ventures Standard, see standard tracking binder for current lot and expiry date information

ICV/CCV STANDARDS:
Source: High Purity MESS-ZENO 30/QCA Standard, see standard tracking binder for current lot

INTERNAL REFERENCE STANDARD: (2 ppb In 10% HNO3)
Source: EPA WS 378 or SPEX CertiPrep Trace Metal - Water Supply, see standard tracking binder for current source, lot and expiry date information.

All reagents used are of a grade suitable for mercury analyses

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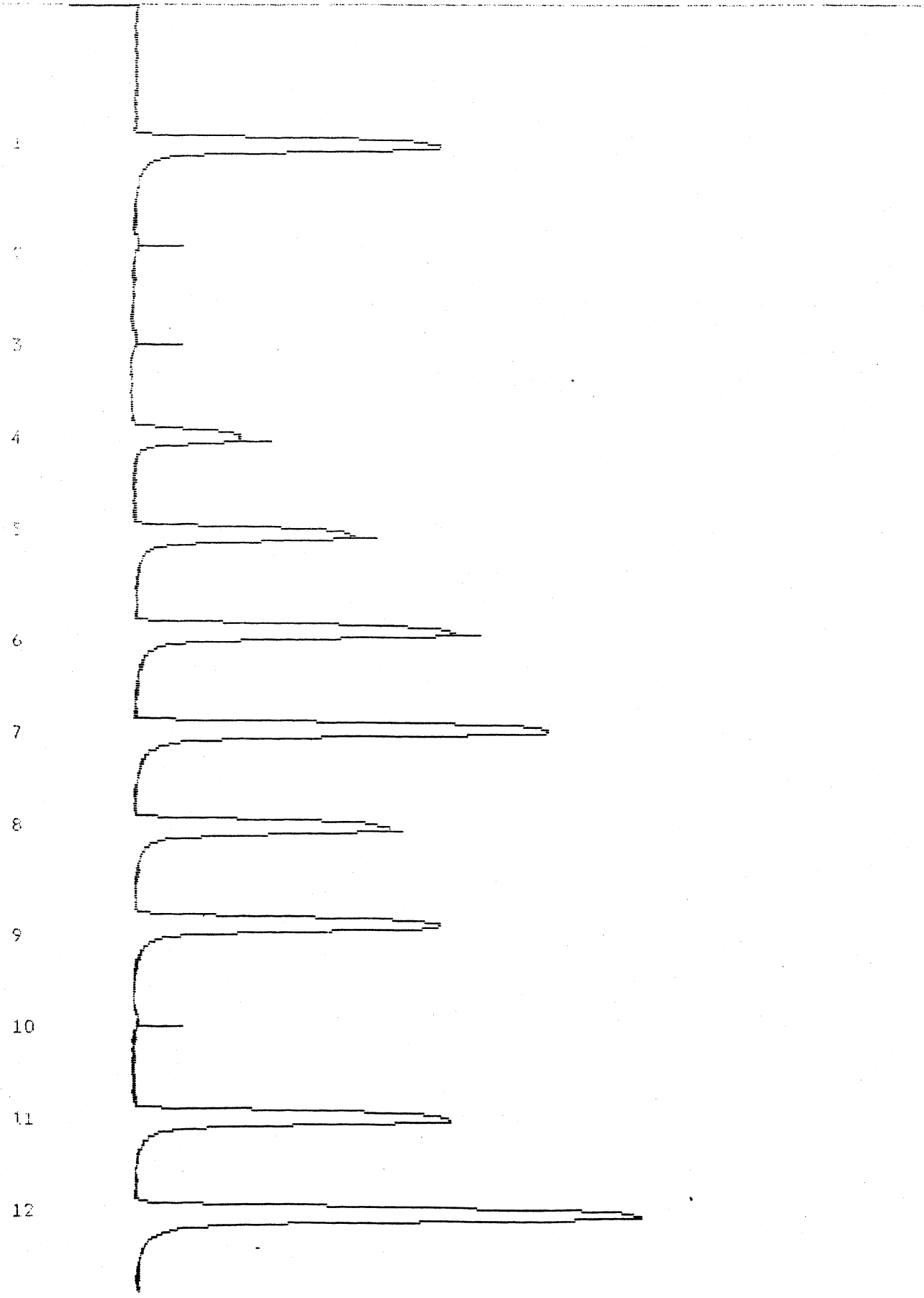

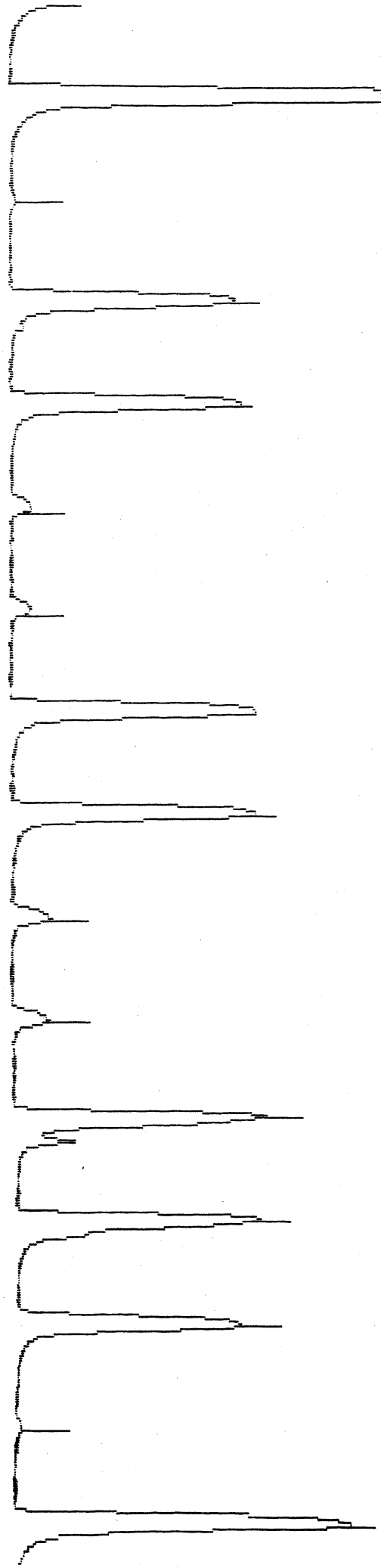
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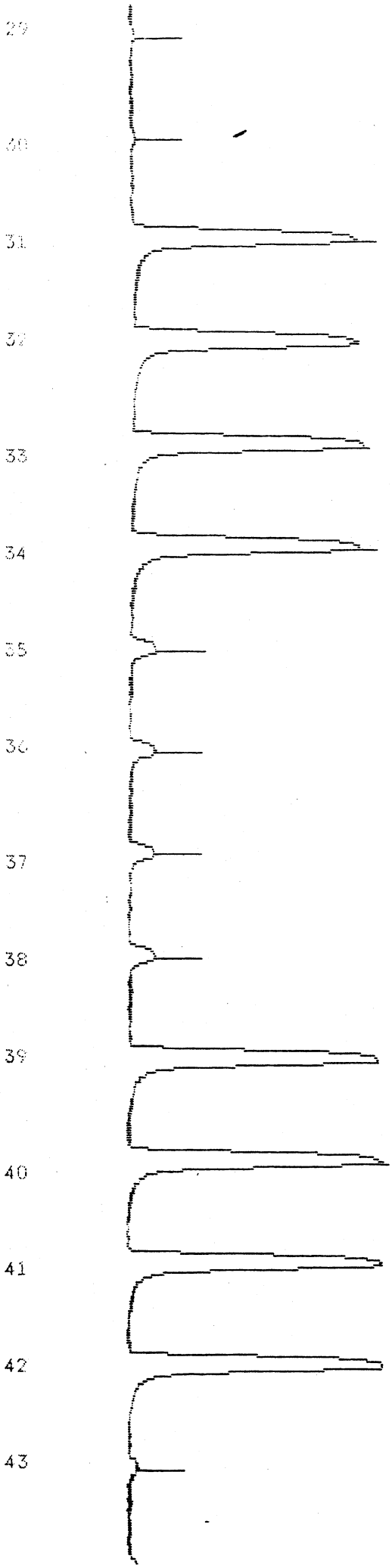
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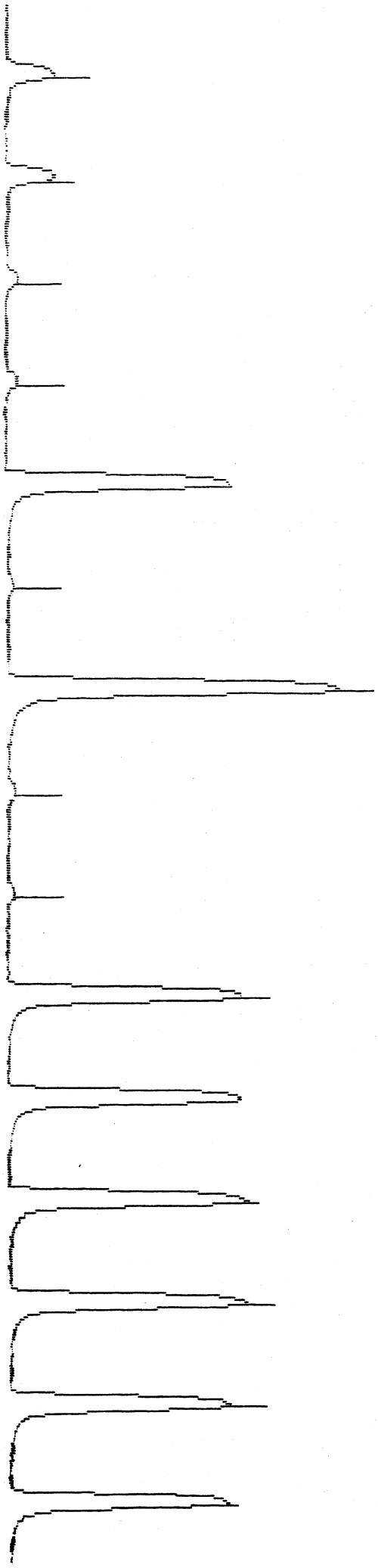
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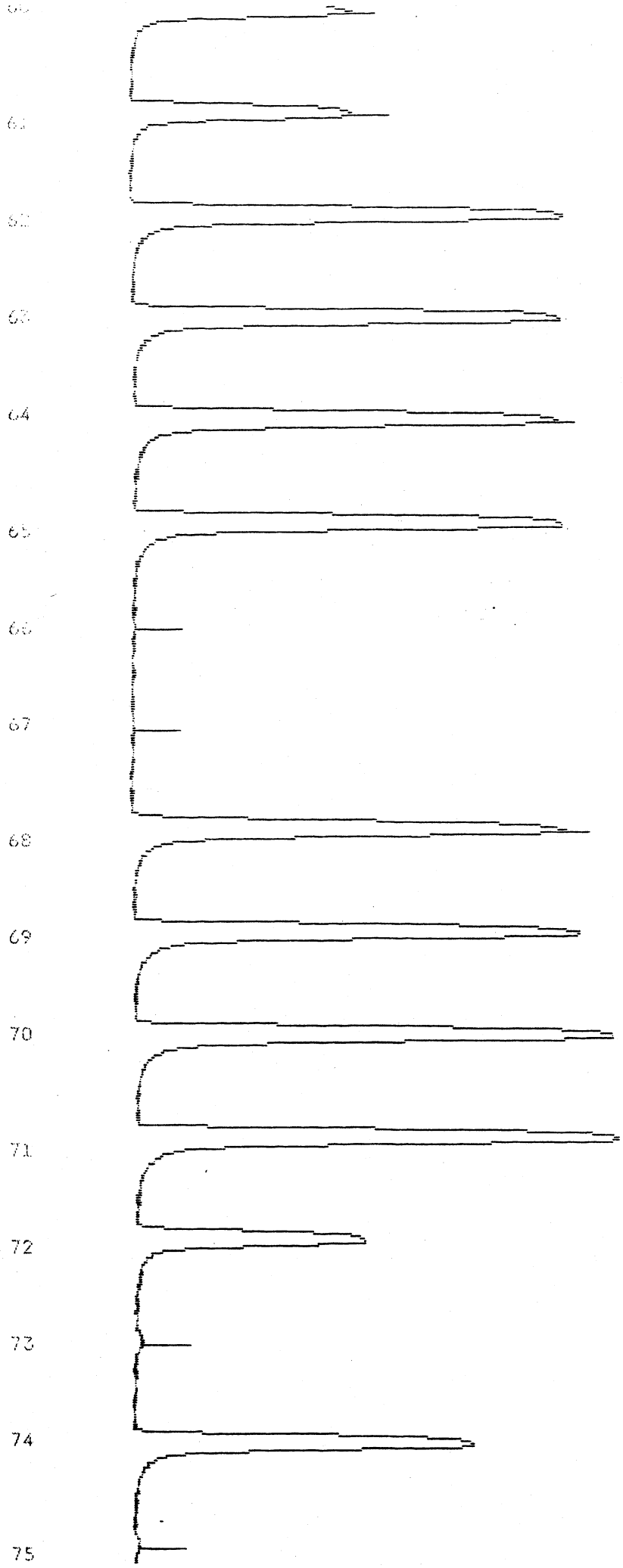
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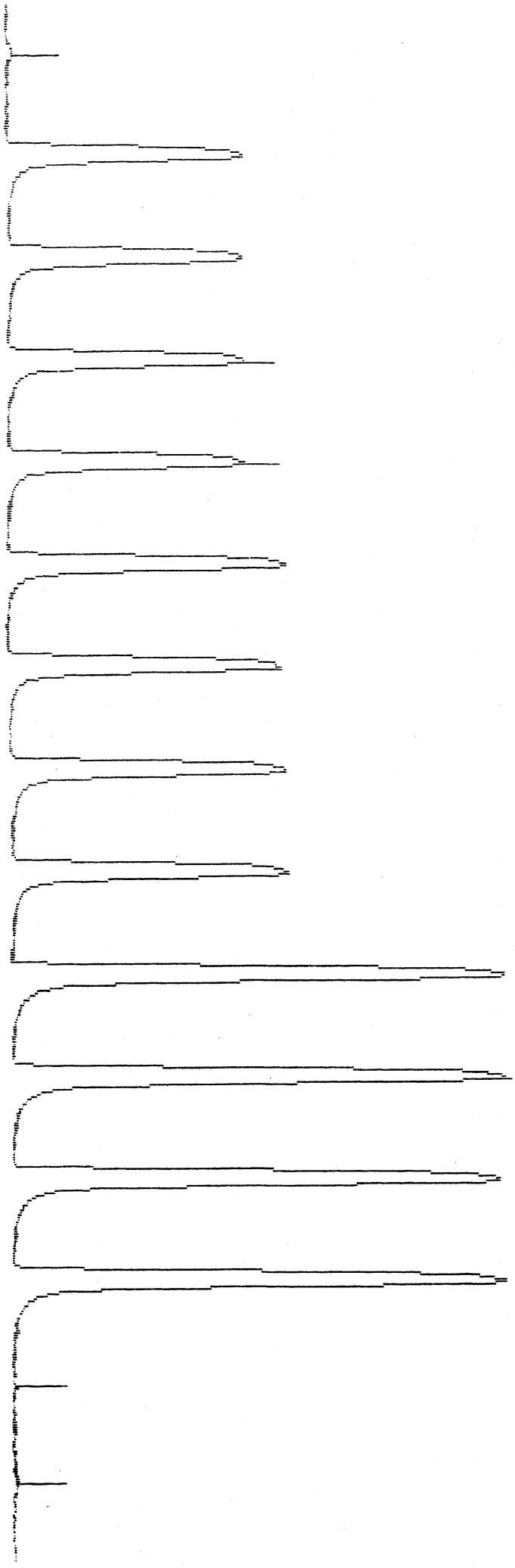

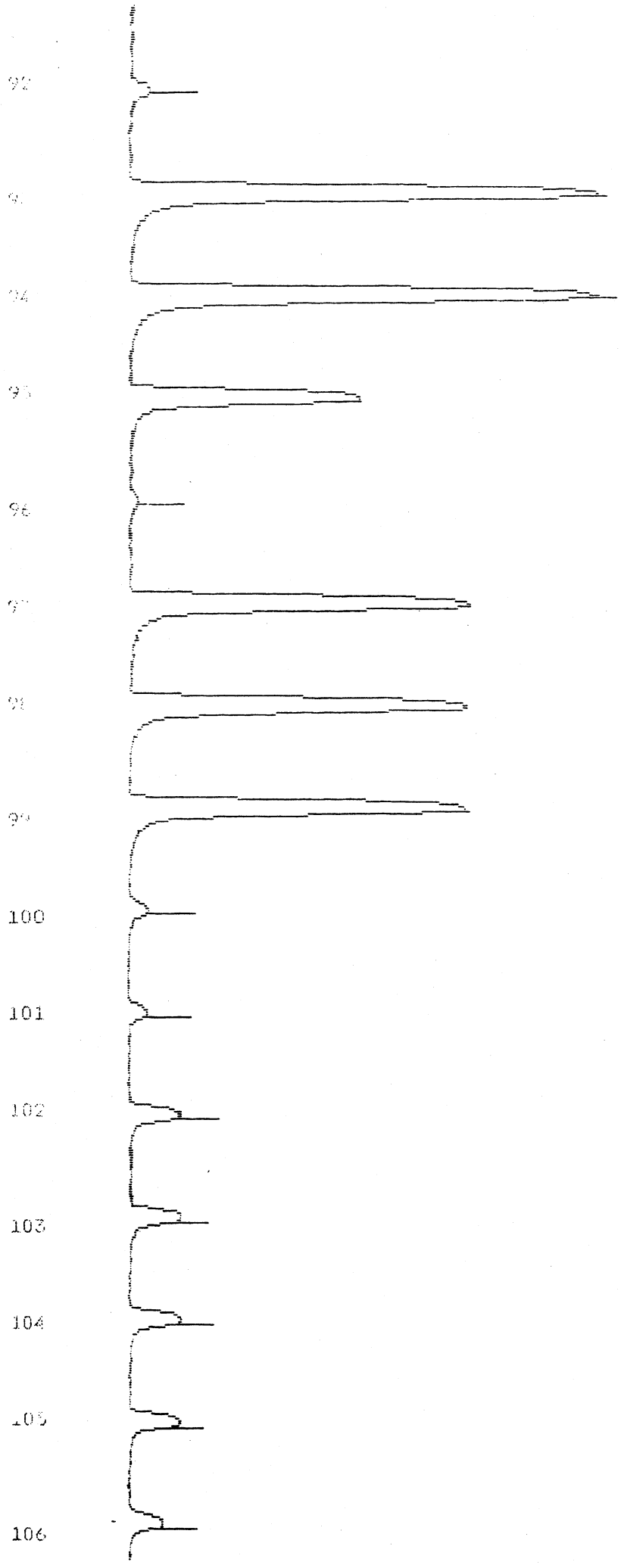
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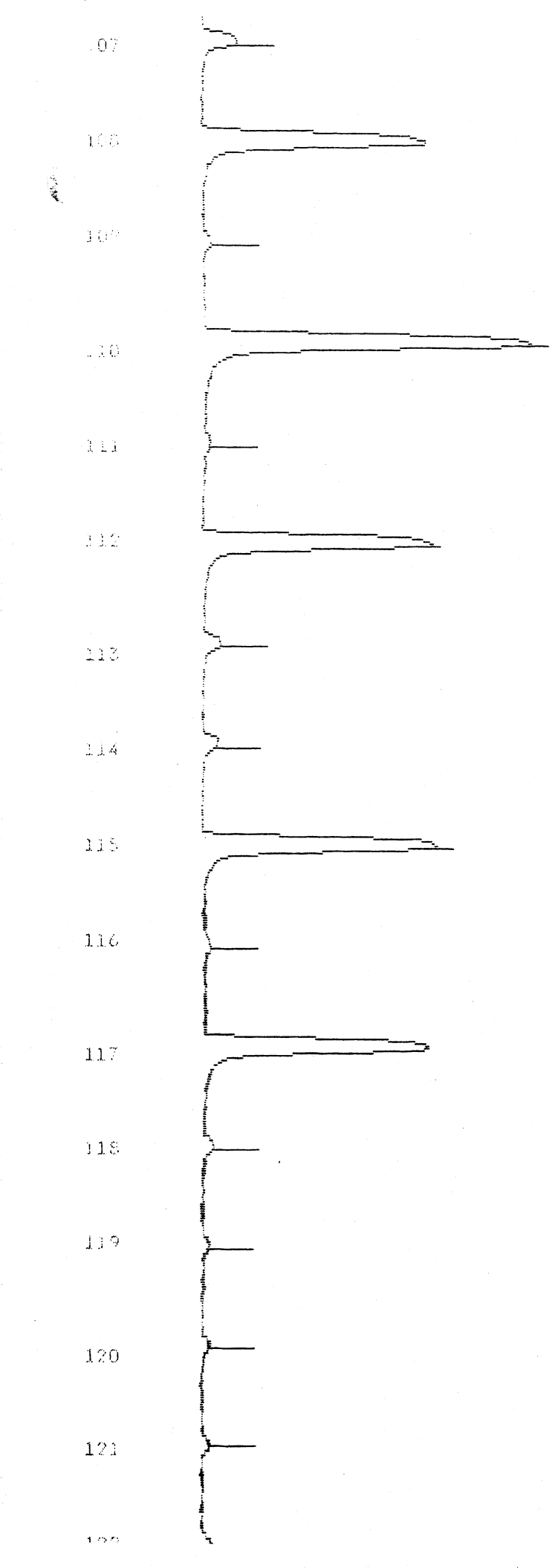
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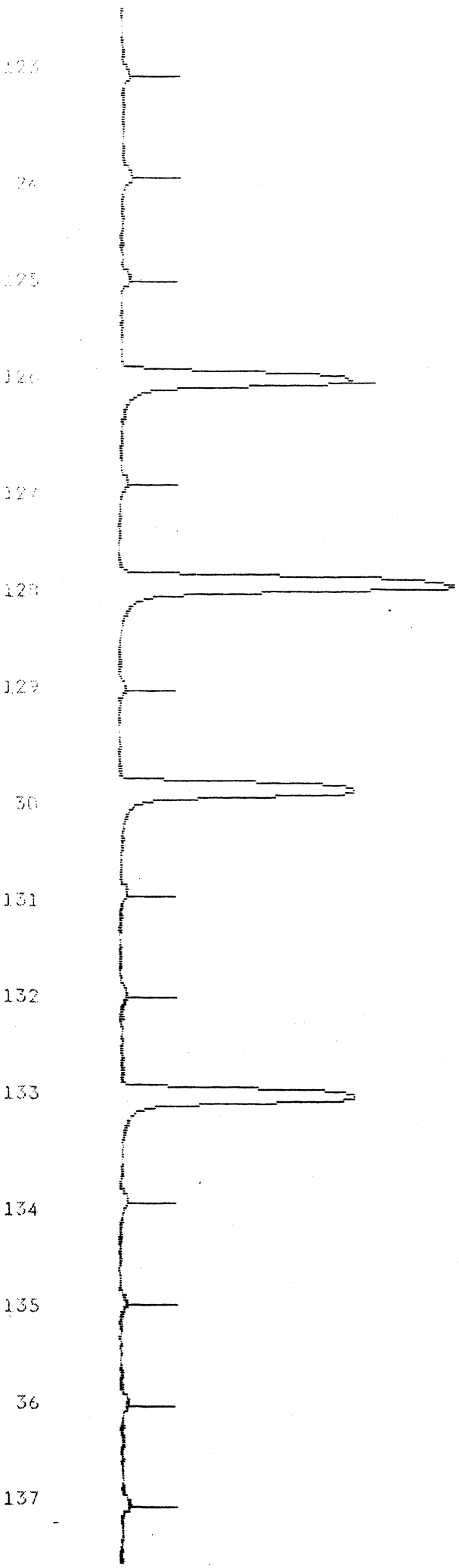
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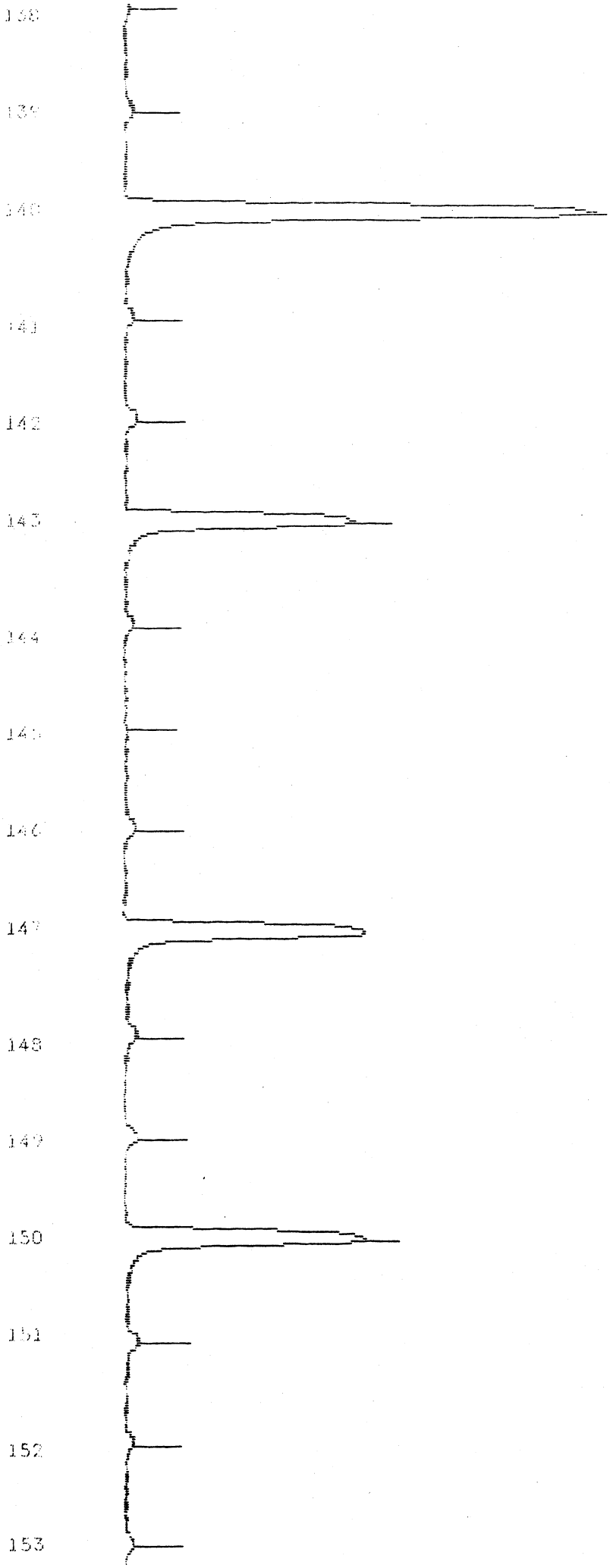
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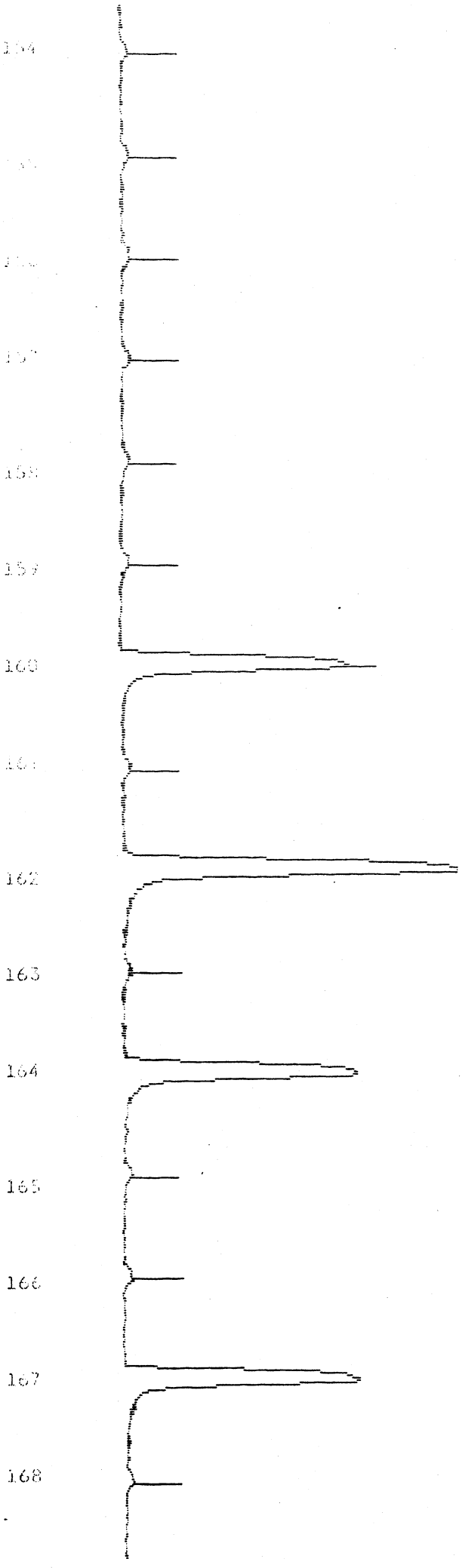
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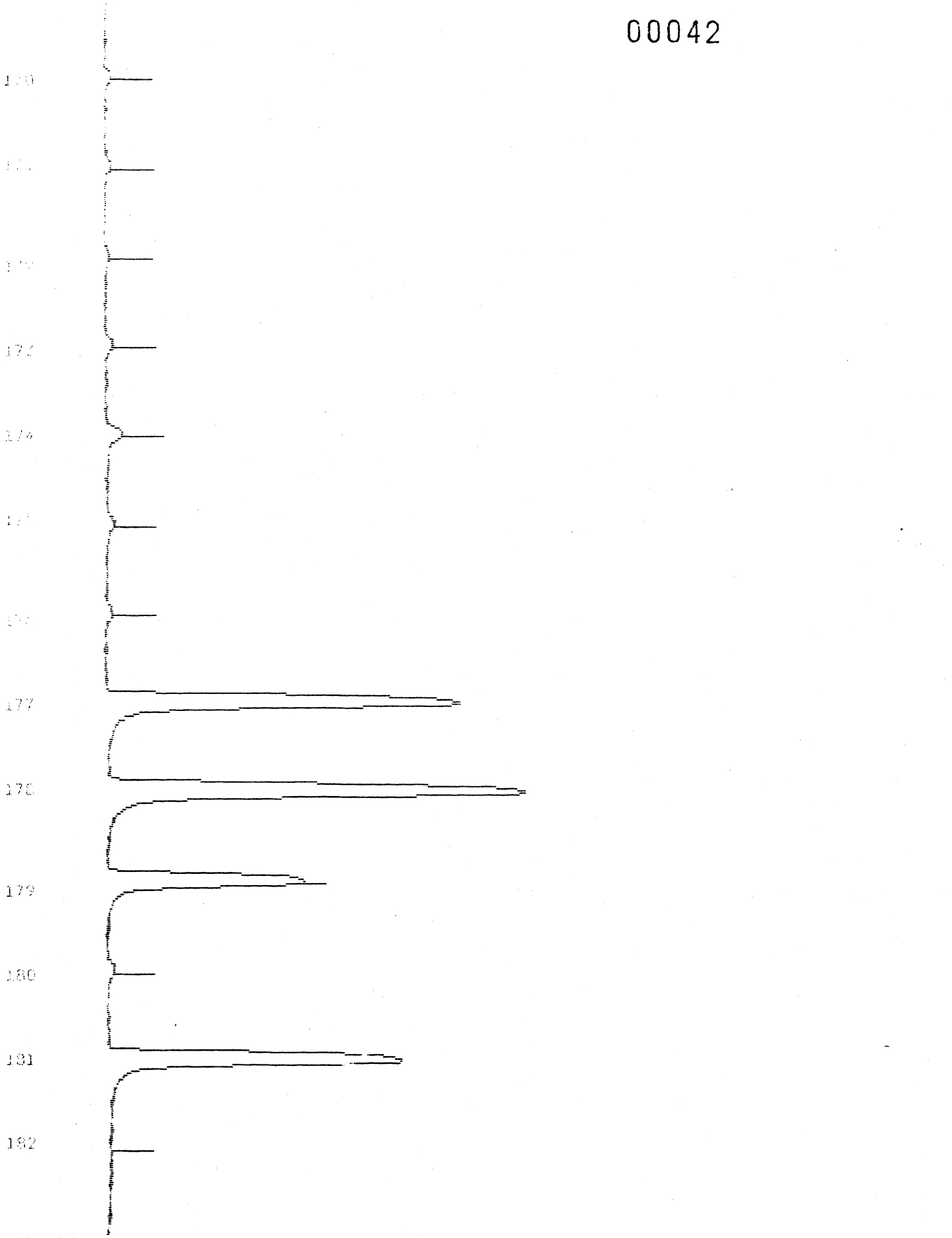
177
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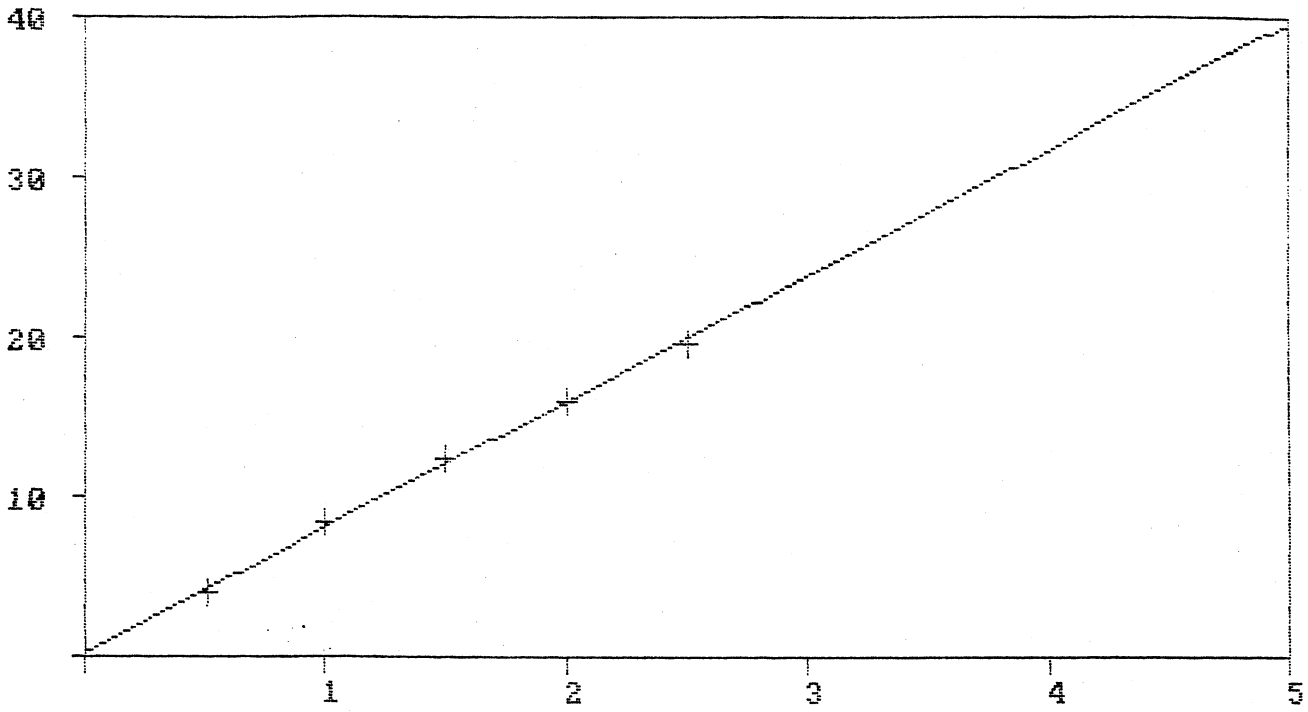
183 CHANNEL NAME: LDC
RUN NAME: 991101w
40

CHANNEL NAME: LDC
RUN NAME: 991101W



DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.21
SLOPE = 7.874412

CORRELATION: .9994826

CHANNEL NAME: LDC
RUN DATE: 11-01-1999
SAMPLE TABLE NAME: 991101W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION	EF
1	PRIMER	1	1	11.9	1.484	s
2	DUMMY	1	1	0.1	-0.011	I
3	S1: 0	1	1	0.1	-0.017	I
4	S2: .5	1	1	4.0	0.476	
5	S3: 1	1	1	8.4	1.034	
6	S4: 1.5	1	1	12.3	1.540	
7	S5: 2	1	1	15.9	1.996	
8	STD6	1	1	9.7	1.208	
9	ICV	1	1	11.7	1.462	
10	B	1	1	0.0	-0.026	b
11	D4	1	1	12.3	1.540	d
12	S6: 2.5	1	1	19.7	2.470	
13	WS 378	1	1	14.4	1.807	
14	ORG REF	1	1	17.5	2.191	
15	BL1101-MNA1	1	1	0.0	-0.026	I
6	BL1101S	1	1	8.3	1.025	s
17	BL1101DS	1	1	8.5	1.053	
18	59401	1	1	0.6	0.045	
19	59401D	1	1	0.5	0.033	
20	59401S	1	1	9.1	1.128	
21	59401DS	1	1	9.0	1.112	
22	59401-KMNO4	1	1	1.3	0.144	

25	59401DS		1	1	8.9	1.109	
26	CCV		1	1	8.1	1.003	
27	B		1	1	0.0	-0.026	b
28	D4		1	1	12.3	1.540	d
29	BL1101-1N8N		1	1	0.0	-0.026	I
30	BL1101-1N8N		1	1	0.0	-0.026	I
31	BL1101S		1	1	8.1	1.003	s
32	BL1101S		1	1	8.1	1.003	
33	BL1101DS		1	1	8.4	1.038	
34	BL1101DS		1	1	8.3	1.025	
35	60669		1	1	0.8	0.070	
36	60669		1	1	0.8	0.070	I
37	60669D		1	1	0.7	0.067	
38	60669D		1	1	0.8	0.070	
39	60669S		1	1	9.1	1.134	
40	60669S		1	1	9.3	1.153	
41	60669DS		1	1	9.3	1.159	
42	60669DS		1	1	9.3	1.149	
43	60668		1	1	0.2	-0.004	I
44	60668		1	1	0.2	-0.004	I
45	60670		1	1	1.7	0.188	
46	60670		1	1	1.7	0.185	s
47	60671		1	1	0.3	0.011	I
48	60671		1	1	0.3	0.011	I
49	CCV		1	1	8.2	1.016	
50	B		1	1	0.0	-0.026	b
51	D4		1	1	12.3	1.540	d
52	BL1101-1NKC	60115	1	1	0.1	-0.008	I
53	BL1101-1NKC		1	1	0.1	-0.017	I
54	BL1101S		1	1	8.5	1.056	
55	BL1101S		1	1	8.4	1.041	
56	BL1101DS		1	1	8.7	1.084	
57	BL1101DS		1	1	8.6	1.072	
58	60117	6.666	1	1	8.0	6.586	
59	60117	6.666	1	1	8.0	6.586	
60	60117D	6.666	1	1	8.0	6.565	
61	60117D	6.666	1	1	7.8	6.462	s
62	60117S	6.666	1	1	15.8	13.222	
63	60117S	6.666	1	1	15.6	13.035	
64	60117DS	6.666	1	1	15.6	13.035	
65	60117DS	6.666	1	1	15.7	13.139	
66	60116	.6666	1	1	0.0	-0.017	I
67	60116	.6666	1	1	0.0	-0.017	I
68	60118	2.666	1	1	15.9	5.304	
69	60118	2.666	1	1	16.2	5.428	
70	60119	2.666	1	1	17.3	5.792	
71	60119	2.666	1	1	17.5	5.867	
72	CCV	1	1	1	8.3	1.025	
73	B	1	1	1	0.0	-0.026	b
74	D4	1	1	1	12.3	1.540	d
75	BL1101-2NKC	1	1	1	0.0	-0.026	I
76	BL1101-2NKC	1	1	1	0.0	-0.026	s
77	BL1101S	1	1	1	8.4	1.047	
78	BL1101S	1	1	1	8.4	1.034	
79	BL1101DS	1	1	1	8.5	1.053	
80	BL1101DS	1	1	1	8.5	1.056	
81	61634	3.333	1	1	10.1	4.192	
82	61634	3.333	1	1	10.0	4.161	
83	61634D	3.333	1	1	9.9	4.120	
84	61634D	3.333	1	1	10.1	4.171	
85	61634S	3.333	1	1	18.0	7.531	
86	61634S	3.333	1	1	18.0	7.520	
87	61634DS	3.333	1	1	17.9	7.469	
88	61634DS	3.333	1	1	18.2	7.603	

00044

TMG

20.03

0.315 105 %

0.323 107 %

6.586

6.514

13.130 99 %.

13.088 98 %.

<0.100

5.368

5.831

103 %.

91	61633	.6666	1	0.4	0.018	s
92	61633	.6666	1	0.4	0.018	I
93	61635	2.666	1	17.2	5.759	
94	61635	2.666	1	17.3	5.792	
95	CCV	1	1	8.2	1.019	
96	B	1	1	0.0	-0.026	b
97	D4	1	1	12.3	1.540	d
98	61636	2.666	1	12.4	4.114	
99	61636	2.666	1	12.2	4.064	
100	61637	.6666	1	0.4	0.016	I
101	61637	.6666	1	0.4	0.016	I
102	61638	.6666	1	1.6	0.115	
103	61638	.6666	1	1.6	0.115	
104	61639	.6666	1	1.6	0.119	
105	61639	.6666	1	1.6	0.119	
106	61640	.6666	1	1.0	0.063	s
107	61640	.6666	1	1.1	0.071	
108	CCV	1	1	8.4	1.041	
109	B	1	1	0.0	-0.026	b
110	D4	1	1	12.3	1.540	d
111	BL1101-ABA1	1	1	0.0	-0.026	I
112	BL1101S	1	1	8.6	1.065	
113	63871	1	1	0.3	0.011	I
114	63871D	1	1	0.3	0.011	I
115	63871S	1	1	8.7	1.084	
116	63769	1	1	0.0	-0.026	I
117	63869S	1	1	8.4	1.044	
118	63877	1	1	0.1	-0.014	I
119	63879	1	1	0.0	-0.026	I
120	63881	1	1	0.0	-0.026	I
121	63883	1	1	0.0	-0.023	s
122	63885	1	1	0.1	-0.011	I
123	63887	1	1	0.0	-0.026	I
124	63889	1	1	0.1	-0.011	I
125	64453	1	1	0.0	-0.023	I
126	CCV	1	1	8.4	1.034	
127	B	1	1	0.0	-0.026	b
128	D4	1	1	12.3	1.540	d
129	BL1101-ABA2	1	1	0.0	-0.026	I
130	BL1101S	1	1	8.5	1.050	
131	63827	1	1	0.0	-0.026	I
132	63827D	1	1	0.0	-0.026	I
133	63827S	1	1	8.5	1.050	
134	63837	1	1	0.0	-0.026	I
135	63841	1	1	0.0	-0.026	I
136	63842	1	1	0.0	-0.026	s
137	63843	1	1	0.0	-0.023	I
138	63844	1	1	0.0	-0.026	I
139	63845	1	1	0.0	-0.020	I
140	63847	10	1	17.4	21.881	
141	63245	1	1	0.0	-0.023	I
142	63246	1	1	0.1	-0.008	I
143	CCV	1	1	8.4	1.041	
144	B	1	1	0.0	-0.026	b
145	CUP MISSED	1	1	0.0	-0.026	I
146	BL1101-ABA3	1	1	0.1	-0.017	I
147	BL1101S	1	1	8.8	1.087	
148	63248	1	1	0.1	-0.014	I
149	63248D	1	1	0.1	-0.017	I
150	63248S	1	1	8.7	1.075	
151	63247	1	1	0.2	-0.004	s
152	63249	1	1	0.0	-0.026	I
153	63250	1	1	0.0	-0.026	I
154	63251	1	1	0.0	-0.026	I

157	63254	1	1	0.0	-0.026	I
158	63255	1	1	0.0	-0.026	I
159	63256	1	1	0.0	-0.026	I
160	CCV	1	1	8.4	1.034	
161	B	1	1	0.0	-0.026	b
162	D4	1	1	12.3	1.540	d
63	BL1101-ABA4	1	1	0.0	-0.026	I
164	BL1101S	1	1	8.6	1.072	
165	63257	1	1	0.0	-0.026	I
166	63257D	1	1	0.0	-0.026	s
167	63257S	1	1	8.6	1.065	
168	63258	1	1	0.0	-0.026	I
169	63792	1	1	0.0	-0.026	I
170	64407	1	1	0.0	-0.026	I
171	64408	1	1	0.0	-0.026	I
172	64788	1	1	0.0	-0.026	I
173	63823	1	1	0.0	-0.023	I
174	63968	1	1	0.4	0.023	I
175	63969	1	1	0.0	-0.023	I
176	63971	1	1	0.0	-0.026	I
177	WS 378	1	1	14.8	1.856	
178	ORG REF	1	1	17.7	2.225	
179	CCV	1	1	8.2	1.013	
180	B	1	1	0.0	-0.026	b
181	D4	1	1	12.3	1.540	s
182	0	1	1	0.0	-0.026	I

INTERCEPT: 0.21 LINEAR COEF: 7.874412
CORRELATION COEF: .9994826

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
060115	TRC-LO	MB R456	Mercury -	PV	-0.030	-99999.0	0.301	100.	0.299	100.	99/11/02	3NM4	99/11/02	MG03	27.	19.	
060116	TRC-LO	BP-OHM-3-RB	Mercury -	PV	-0.100						99/11/02	3NM4	99/11/02	MG03	27.	19.	
060117	TRC-LO	BP-OHM-3-O-4	Mercury -	PV	6.275	6.293	12.762	97.	12.744	97.	99/11/02	3NM4	99/11/02	MG03	27.	19.	*PDS*
BL1102	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.301	97.	0.299	100.	99/11/02	3NM4	99/11/02	MG03	$$$	$$$	

4 Tests for OHMN4 with an MDL of 0.030 ug Validated By CMS Control Chart Updated N/A IO Requirements met N/A

00047

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 09-11-02 (WA) Run Code: MG03 Matrix: IMP.

Analyst: MG Units: _____ (see comments) MDL: _____

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 1)			
12			WS 318			
13			ORG. REF.			
14			BL1102	MNA1.		
15			BL1102 S			
16			BL1102 DS			
17			59401			
18			01 D			
19			01 S			
20			01 DS			
21			59401			
22			01 D			
23			01 S			
24			01 DS			
25			CCV			
26			B			
27			D4			
28			BL1102	INIB		
29			"			
30			BL1102 S			
31			"			
32			BL1102 DS			
33			"			
34	NB	[illegible]	60669			
35			"			
36			60669 D			
37			"			
38			60669 S			
39			"			
40			60669 DS			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			60669 DS			
42			60667			
43			"			
44			60668			
45			"			
46			60670			
47			"			
48		NB	[illegible] CCV			
49			B			
50			D4			
51			60671			
52			"			
53			BL1102	2NIB		
54			"			
55			BL1102 S			
56			"			
57			BL1102 DS			
58			"			
59		1/40	60859			
60			"			
61			60859 D			
62			"			
63			60859 S			
64			"			
65			60859 DS			
66			"			
67		1/200	60858 DS			
68		↓	"			
69			60858			
70			"			
71			CCV			
72			B			
73			D4			
74		NB 1/25	60860			
75		↓	"			
76		NB 1/25	60861			
77		↓	"			
78		1/2 dup	60862			
79		↓	"			
80		1/4	60863			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.11.02 (WA) Run Code: MG03 Matrix: INP

Analyst: MG Units: µg (see comments) MDL:

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21		1/4	60863			
22		↓	60864			
23			"			
24			BL1102			
25			"			
26			BL1102 S			
27			"			
28			BL1102 DS			
29			"			
30	1.5	1/10	60117			
31	↓	↓	"			
32			60117 D			
33	↓	↓	"			
34			CCV			
35			B			
36			D4			
37	1.5	1/10	60117 S			
38		↓	"			
39			60117 DS			
40		↓	"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	1.5		60116			
42	↓		"			
43		1/4	60118			
44		↓	"			
45			60119			
46	↓	↓	"			
47		1/40	60860			
48		↓	"			
49			60861			
50		↓	"			
51			WS 378			
52			ORG. REF.			
53			CCV			
54			B			
55			D4			
56						
57						
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80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

EPA 7470 WATER PREPARATION LOG - MERCURY

00050 DG7470HG
DGHGLEACH, DG29HG***

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
7	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List

- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	(N) B	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1102	"	"	"	"	(Processed Blank)
	11	BL 1102 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	60669	"	"	"	"	FINALVOL 300mL
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	60667	"	"	"	"	
3	17	68	"	"	"	"	
4	18	70	"	"	"	"	
5	19	71	"	"	"	"	
6	20		"	"	"	"	
7	21		"	"	"	"	
8	22		"	"	"	"	
9	23		"	"	"	"	
10	24		"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	ZN B	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 1102	"	"	"	"	(Processed Blank)
	27	BL 1102 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	60859	"	"	"	"	FINALVOL 6000 mL
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32	60858	"	"	"	"	300 mL
3	33	60	"	"	"	"	6000 mL
4	34	61	"	"	"	"	6000 mL
5	35	62	"	"	"	"	300 mL
6	36	63	"	"	"	"	300 mL
7	37	64	"	"	"	"	300 mL
8	38		"	"	"	"	
9	39		"	"	"	"	
10	40		"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run

Prepare 0.05 ppm standards daily

HNO3 Lot. No. 11906P | H2SO4 Lot. No. 317120 | Bath Temps: 1 / 95°C

Prepared By: [signature] Date: 97 11 02 Checked by: [signature]

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)	3NM4	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL 1102	"	"	"	"	(Processed Blank)
	43	BL 1102 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44	~~60115 MB MN~~	"	"	N/A	"	
1	45	D	"	"	"	"	(Duplicate sample)
1	46	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	47	DS	"	"	"	"	(Duplicate Spiked sample)
2	48	60116	"	"	"	"	=FV OF MN4 1000 mL
3	49	60117	"	"	"	"	
4	50	60118	"	"	"	"	
5	51	60119	"	"	"	"	
6	52		"	"	"	"	
7	53		"	"	"	"	
8	54		"	"	"	"	
9	55		"	"	"	"	
10	56		"	"	"	"	

Comments

* concentration based on 30 ml final volume, ** concentration based on 20 ml final volume

*** group of several Method 29 testcodes

Dilution factor of 1.5 is corrected by entering the calibration concentrations listed above

Procedure/Methodology:

1 Prepare 25 ppm Intermediate stock (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO3
2 Prepare 0.05 ppm Working stock daily by pipetting 200 ul., of 25 ppm Stock to 100 ml final volume of 2% HNO3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
7 Spike the tubes as indicated in the comment sector of the digestion sheet
8 Add 0.5 ml. of conc. Nitric Acid (HNO3), and 1 ml. of conc. Sulphuric acid, (H2SO4), to each tube
9 Add 3 ml. Potassium Permanganate (KMnO4), colour should remain for at least 15 minutes
10 Add 1.5 ml. of Potassium persulphate, (K2S2O8), to each tube
11 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
12 Remove tubes and allow to cool to room temperature
13 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
14 Recap tubes and shake until the Potassium Permanganate (KMnO4) is destroyed and sample becomes colourless
15 Dilute the sample to a final volume of 30 ml., cap and mix well

REFERENCE STANDARDS/SPIKING SOLUTIONS:
Source: Inorganic Ventures Standard, see standard tracking binder for current lot and expiry date information

ICV/CCV STANDARDS:
Source: High Purity MESS-ZENO 30/QCA Standard, see standard tracking binder for current lot

INTERNAL REFERENCE STANDARD: (2 ppb in 10% HNO3)
Source: EPA WS 378 or SPEX CertiPrep Trace Metal - Water Supply, see standard tracking binder for current source, lot and expiry date information.

All reagents used are of a grade suitable for mercury analyses

RUN DATE: 11-02-1999 CHART DATE: 11-03-1999
CHART SPEED: 30
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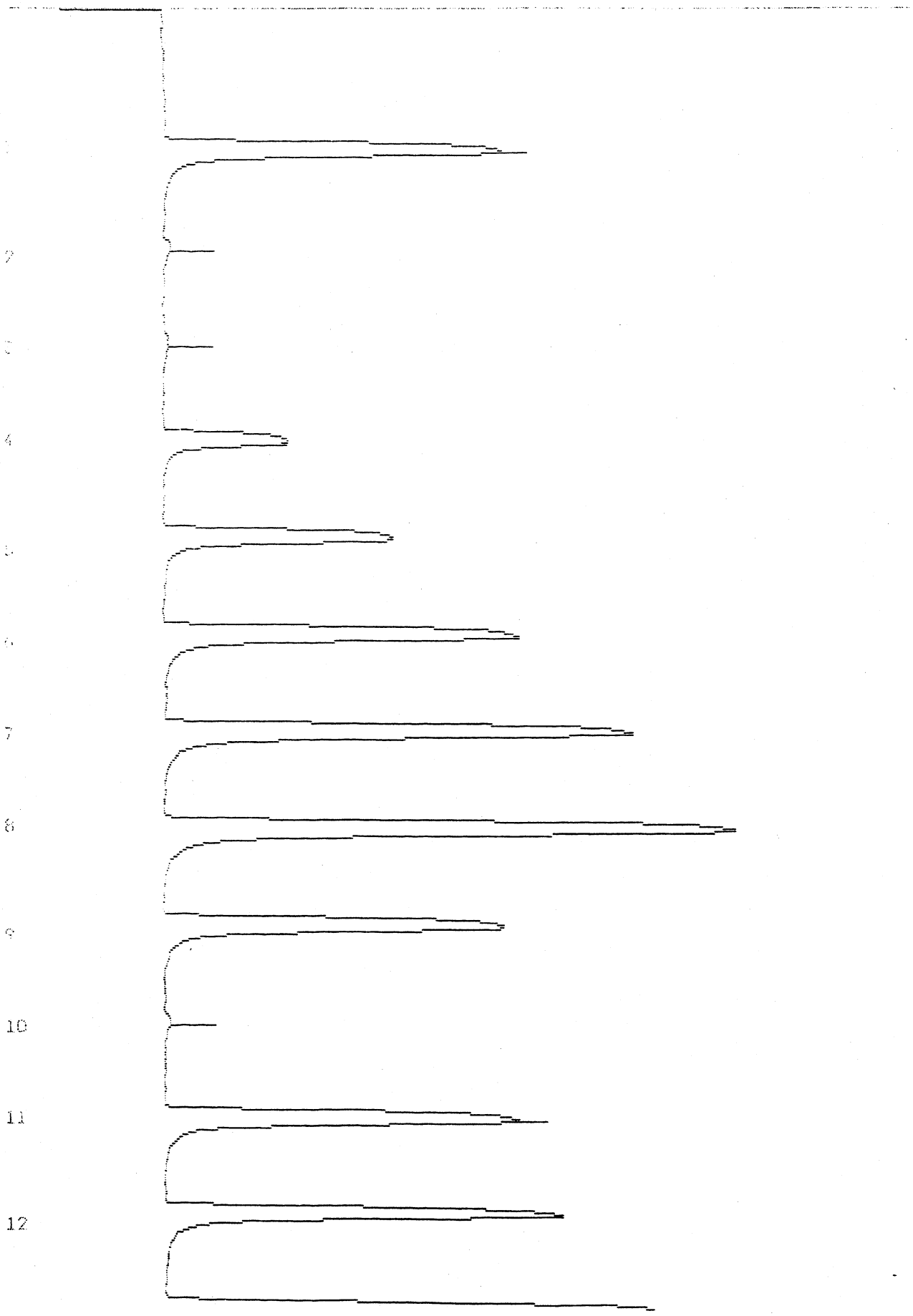

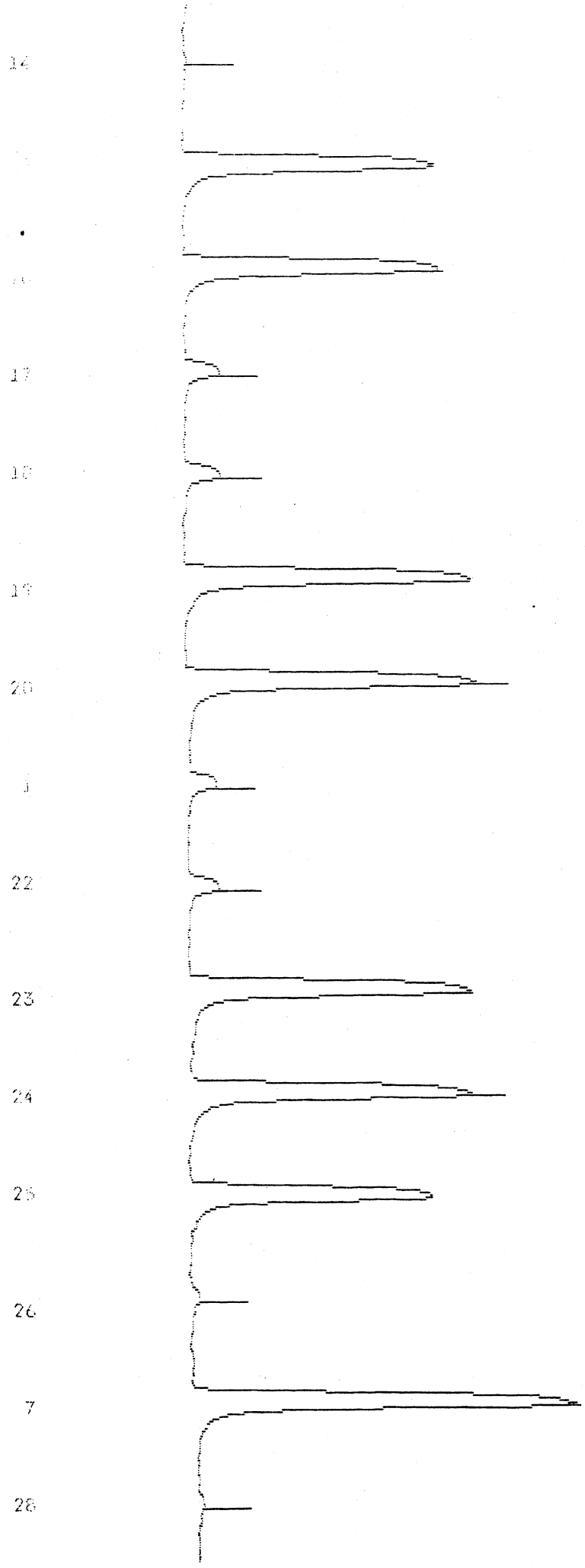
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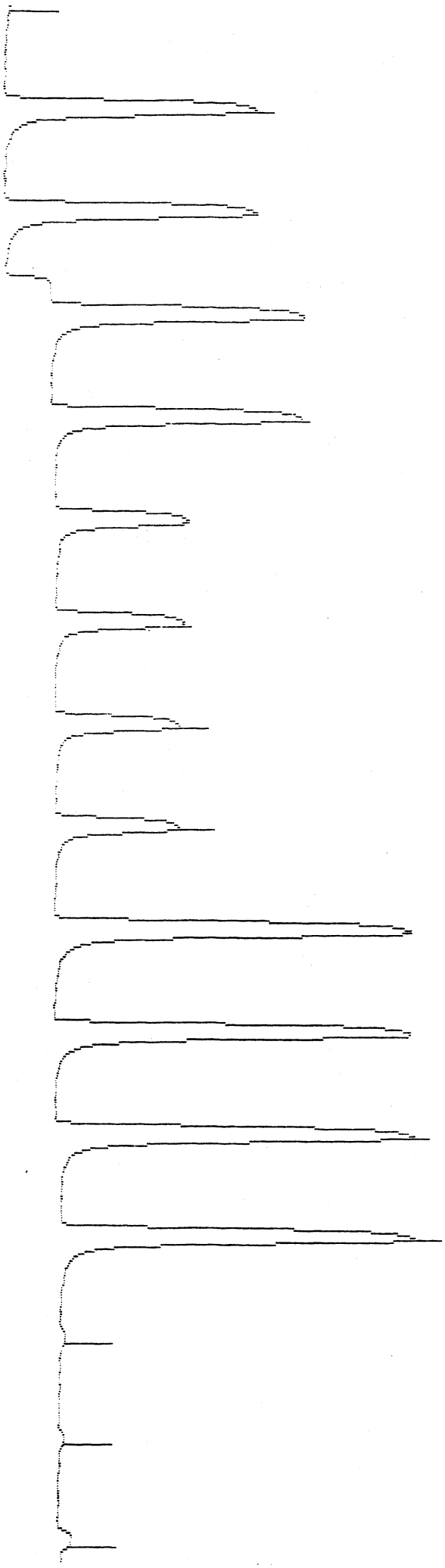
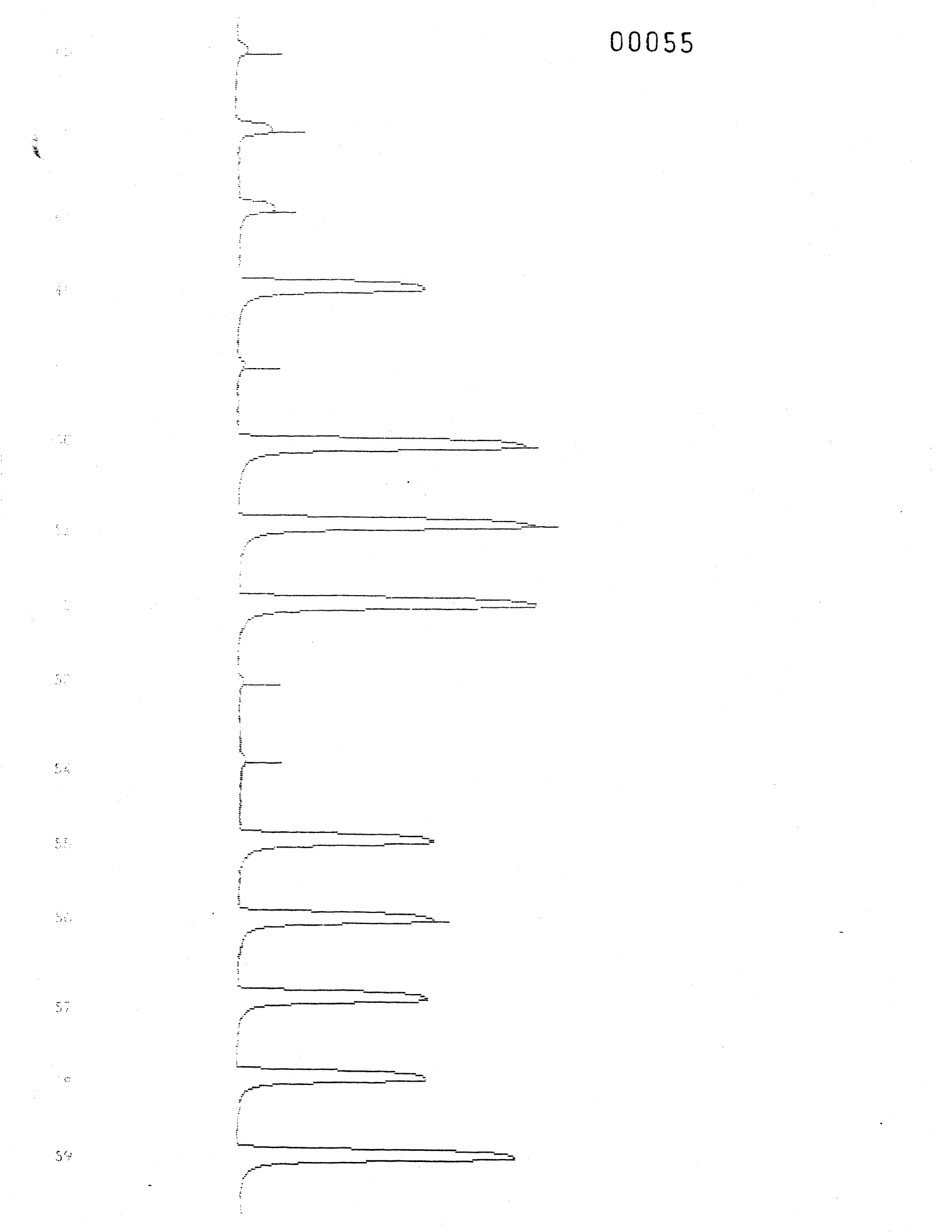
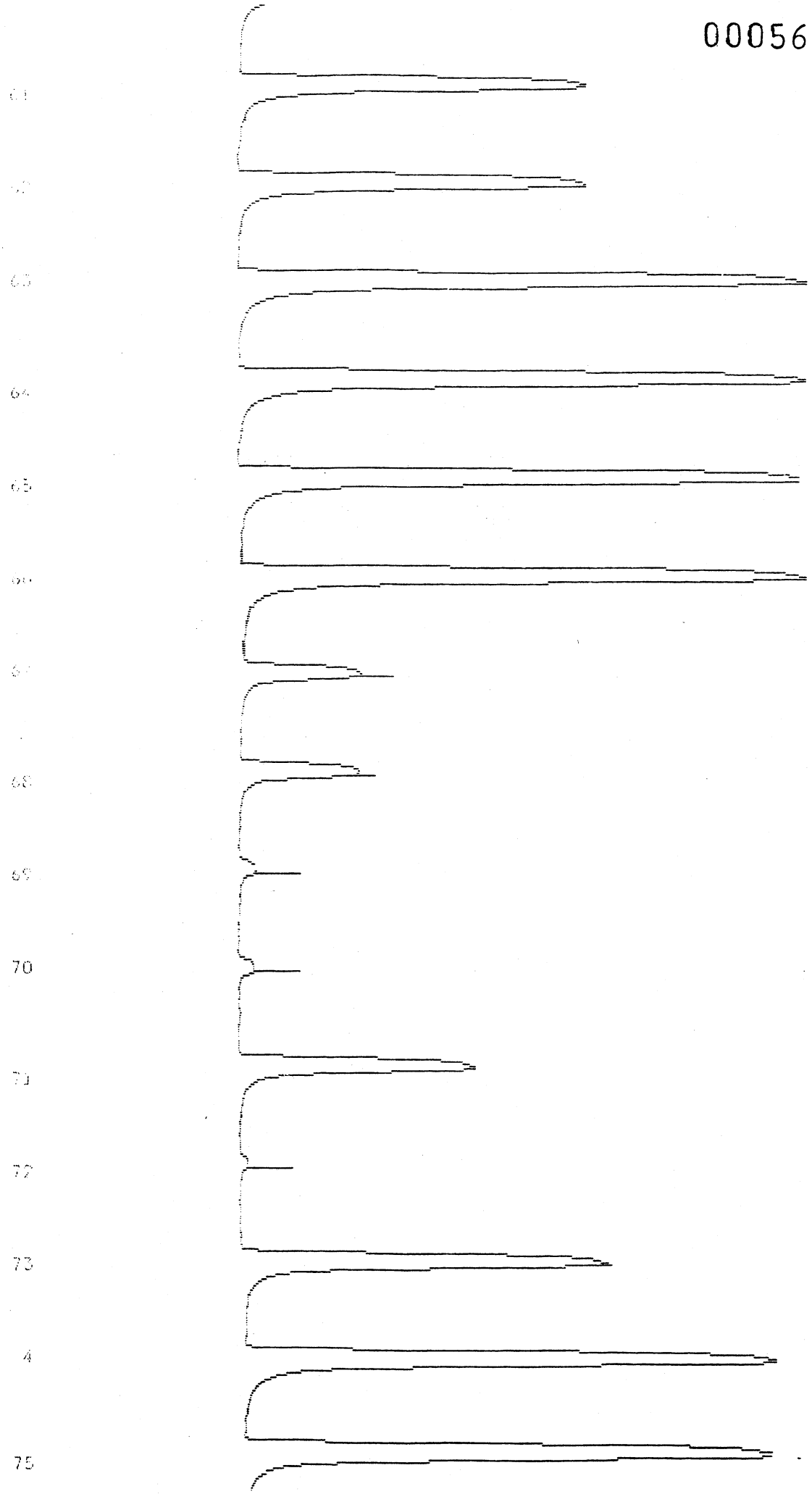
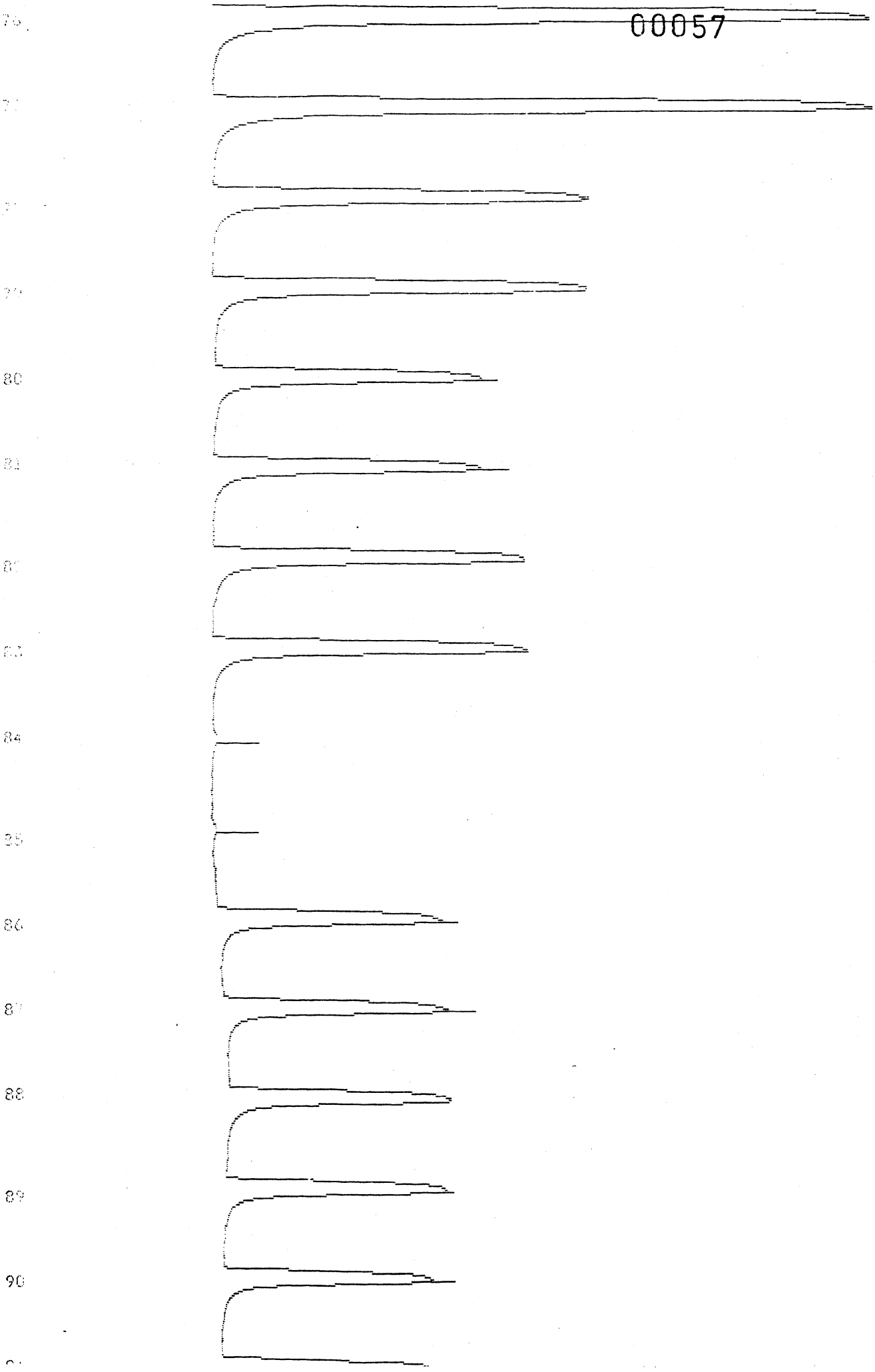
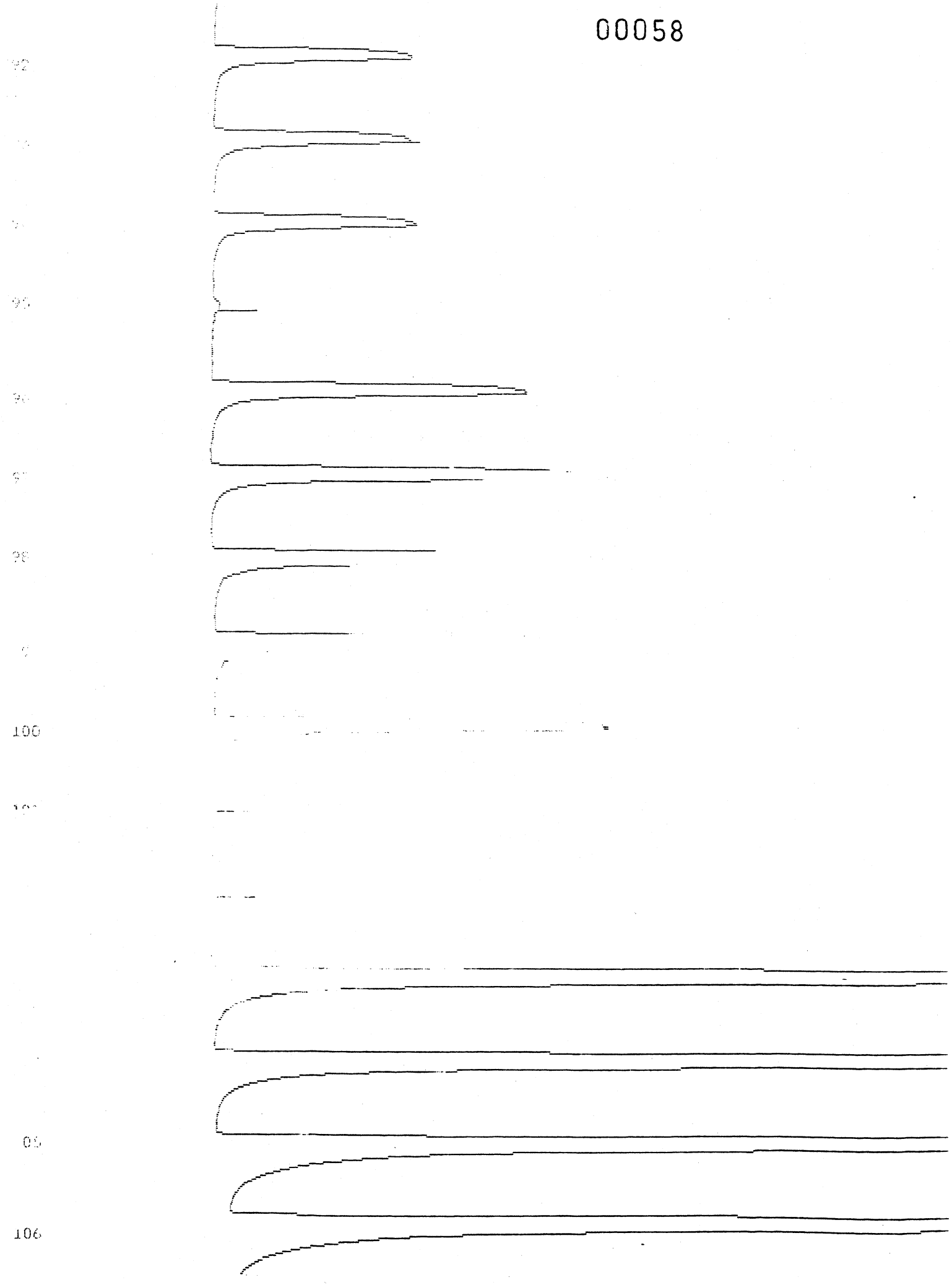


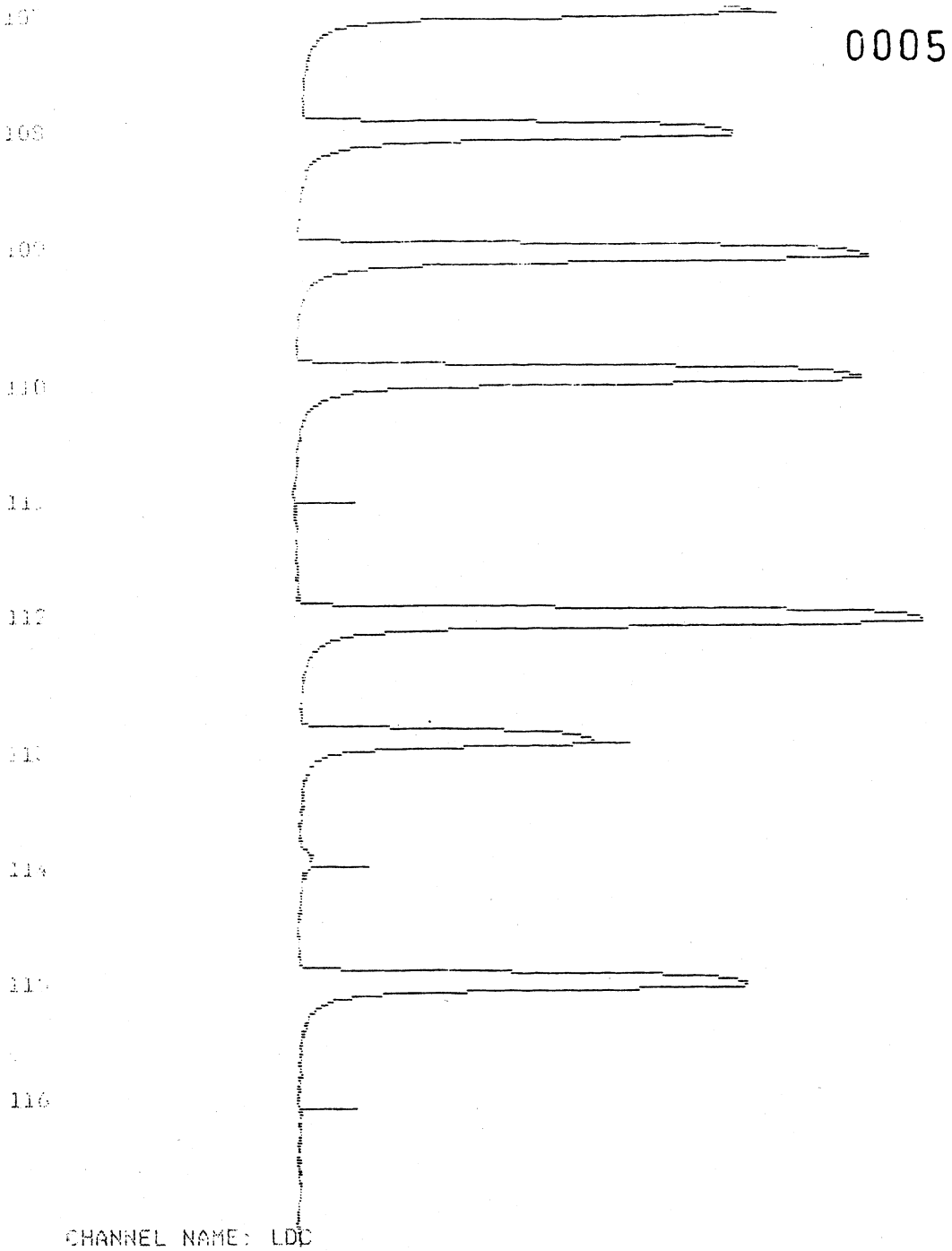








00059



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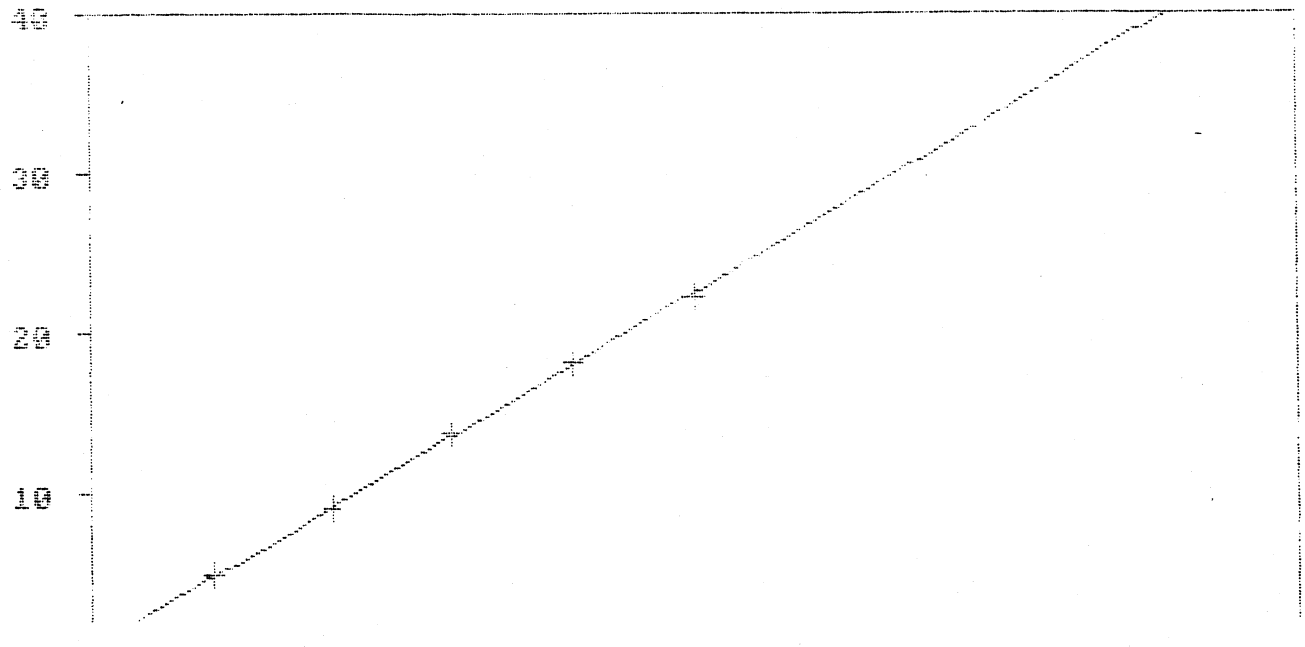
RUN NAME: 991102WA



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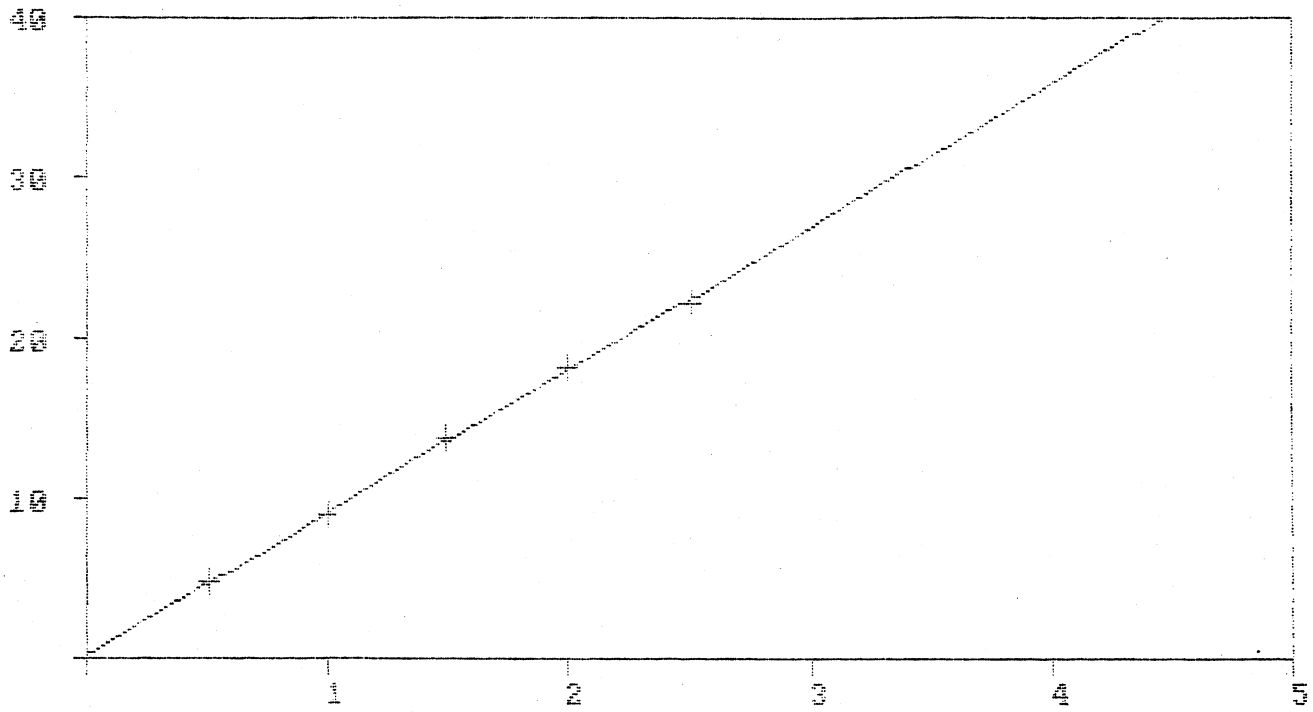
RUN NAME: 991102WA



DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.19
SLOPE = 8.908424

CORRELATION: .9997317

CHANNEL NAME: LDC
RUN DATE: 11-02-1999
SAMPLE TABLE NAME: 991102WA
METHOD NAME: HGWATER

ng/L

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION	EF
1	PRIMER	1	1	13.2	1.462	s
2	DUMMY	1	1	0.1	-0.005	I
3	S1: 0	1	1	0.1	-0.013	I
4	S2: .5	1	1	4.8	0.514	
5	S3: 1	1	1	8.9	0.980	
6	S4: 1.5	1	1	13.8	1.528	
7	S5: 2	1	1	18.1	2.016	
8	S6: 2.5	1	1	22.2	2.476	
9	ICV	1	1	13.3	1.473	98%
10	B	1	1	0.0	-0.021	b
11	D4	1	1	13.8	1.528	d
12	WS 378	1	1	15.6	1.725	
13	ORG REF	1	1	19.0	2.117	
14	BL1102-MNA1	1	1	0.0	-0.021	I
15	BL1102S	1	1	9.1	0.999	
16	BL1102DS	1	1	9.3	1.018	s
17	59401	1	1	1.0	0.094	
18	59401D	1	1	1.0	0.094	
19	59401S	1	1	10.3	1.139	
20	59401DS	1	1	10.4	1.149	
21	59401	1	1	0.7	0.058	
22	59401D	1	1	0.8	0.067	
23	59401S	1	1	10.1	1.117	

00061

25	CCV	1	1	8.8		0.977	
26	B	1	1	0.0		-0.021	b
27	D4	1	1	13.8		1.528	d
28	BL1102-1N1B	1	1	0.0		-0.021	I
29	BL1102-1N1B	1	1	0.0		-0.021	I
30	BL1102S	1	1	9.2		1.007	
31	BL1102S	1	1	9.1		1.004	s
32	BL1102DS	1	1	10.1		1.108	
33	BL1102DS	1	1	9.0		0.993	
34	60669	1	1	4.7		0.505	
35	60669	1	1	4.5		0.486	
36	60669D	1	1	4.3		0.467	
37	60669D	1	1	4.4		0.472	
38	60669S	1	1	13.0		1.440	
39	60669S	1	1	13.0		1.443	
40	60669DS	1	1	13.0		1.435	
41	60669DS	1	1	12.8		1.413	
42	60667	1	1	0.0		-0.021	I
43	60667	1	1	0.0		-0.021	I
44	60668	1	1	0.1		-0.005	I
45	60668	1	1	0.2		0.001	I
46	60670	1	1	1.3		0.127	s
47	60670	1	1	1.5		0.149	
48	CCV	1	1	8.8		0.969	
49	B	1	1	0.0		-0.021	b
50	D4	1	1	13.8		1.528	d
51	60671	1	1	14.2		1.572	
52	60671	1	1	14.2		1.569	
53	BL1102-2N1B	1	1	0.0		-0.021	I
54	BL1102-2N1B	1	1	0.0		-0.021	I
55	BL1102S	1	1	9.2		1.015	
56	BL1102S	1	1	9.2		1.010	
57	BL1102DS	1	1	8.9		0.982	
58	BL1102DS	1	1	8.9		0.982	
59	60859	40	1	13.0		57.712	
60	60859	40	1	13.3		58.699	
61	60859D	40	1	13.2		58.589	s
62	60859D	40	1	13.3		59.028	
63	60859S	40	1	21.9		97.405	
64	60859S	40	1	21.8		97.186	
65	60859DS	40	1	21.8		96.966	
66	60859DS	40	1	21.6		96.308	
67	60859DS	200	1	4.4		95.577	
68	60859DS	200	1	4.5		96.674	
69	60858	1	1	0.4		0.026	I
70	60858	1	1	0.4		0.020	I
71	CCV	1	1	8.9		0.977	
72	B	1	1	0.0		-0.021	b
73	D4	1	1	13.8		1.528	d
74	60860	25	1	20.2		56.287	
75	60860	25	1	20.1		55.944	
76	60861	25	1	27.5		76.572	s
77	60861	25	1	27.5		76.777	R
78	60862	2	1	15.6		3.467	
79	60862	2	1	15.5		3.445	
80	60863	4	1	10.9		4.817	
81	60863	4	1	10.9		4.828	
82	60864	4	1	12.8	TMG	5.683	
83	60864	4	1	12.9		5.694	
84	BL1102-1NM4 60115	1	1	0.0	<0.03	-0.021	I
85	BL1102-1NM4	1	1	0.0		-0.021	I
86	BL1102S	1	1	9.1	0.301	1.004	100%
87	BL1102S	1	1	9.1		1.001	
88	BL1102DS	1	1	9.1	0.299	1.001	100%
89	BL1102DS	1	1	9.0		0.990	

91	60117	6.666	1	8.6		6.310	s
92	60117D	6.666	1	8.6	6.293	6.310	
93	60117D	6.666	1	8.6		6.274	
94	CCV	1	1	8.9		0.977	97%
95	B	1	1	0.0		-0.021	b
96	D4	1	1	13.8		1.528	d
97	60117S	6.666	1	17.2	12.762	12.742	97%
98	60117S	6.666	1	17.3		12.779	
99	60117DS	6.666	1	17.2	12.744	12.761	97%
100	60117DS	6.666	1	17.2		12.724	
101	60116	.6666	1	0.0	<0.100	-0.014	I
102	60116	.6666	1	0.0		-0.014	I
103	60118	.6666	1	61.7		4.605	R
104	60118	.6666	1	61.8		4.607	R
105	60119	.6666	1	55.7		4.152	R
106	60119	.6666	1	55.8		4.160	s
107	60860	40	1	13.3		58.699	
108	60860	40	1	13.2		58.589	
109	60861	40	1	17.5		77.558	
110	60861	40	1	17.4		77.339	
111	NO CUP	1	1	0.0		-0.021	I
112	ORG REF	1	1	19.0		2.114	
113	CCV	1	1	8.8		0.966	97%
114	B	1	1	0.0		-0.021	b
115	D4	1	1	13.8		1.528	d

VOID; RERUN ON 4x DIL. MA.

INTERCEPT: 0.19 LINEAR COEF: 8.908424
CORRELATION COEF: .9997317

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
060118	TRC-LO	BP-OHM-3-IE-4	Mercury -	PV	5.057						99/11/02	3NM4	99/11/03	MG01	27.	19.	
060119	TRC-LO	BP-OHM-3-IW-4	Mercury -	PV	5.370						99/11/02	3NM4	99/11/03	MG01	27.	19.	

2 Tests for OHMN4 with an MDL of 0.030 ug Validated By CMS Control Chart Updated N/A IO Requirements met N/A

00063

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.11.03 Run Code: MG01 Matrix: IMP

Analyst: MG Units: µg (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			WS 378			
13			ORG REF			
14			BL1103	2NM4		
15			"			
16			BL1103 S			
17			"			
18			BL1103 DS			
19			"			
20	2/3	1/10	61634			
21	↓	↓	"			
22			61634 D			
23			"			
24			61634 S			
25			"			
26			61634 DS			
27			"			
28			61632			
29			"			
30		1/2	61633			
31		↓	"			
32			61635			
33	↓		"			
34			CCV			
35			B			
36			D4			
37	2/3		61636			
38	↓		"			
39			61637			
40			"			
41	2/3		61638			
42	↓		"			
43			61639			
44			"			
45		1/4	61640			
46		↓	"			
47			60118			
48			"			
49			60119			
50	↓	↓	"			
51			CCV			
52			B			
53			D4			
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Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

00065

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG***

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
7	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	2NM4	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1103	"	"	"	"	(Processed Blank) 61631 MB
	11	BL 1103 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	61632	"	"	"	"	FVOHMN4 1000ml
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	61633	"	"	"	"	
3	17	34	"	"	"	"	
4	18	35	"	"	"	"	
5	19	36	"	"	"	"	
6	20	37	"	"	"	"	
7	21	38	"	"	"	"	
8	22	39	"	"	"	"	
9	23	40	"	"	"	"	
10	24		"	"	"	"	
	25	CCV (Cont. Calib. Verif.)		20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL	"	"	"	"	(Processed Blank)
	27	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28		"	"	"	"	
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32		"	"	"	"	
3	33		"	"	"	"	
4	34		"	"	"	"	
5	35		"	"	"	"	
6	36		"	"	"	"	
7	37		"	"	"	"	
8	38		"	"	"	"	
9	39		"	"	"	"	
10	40		"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

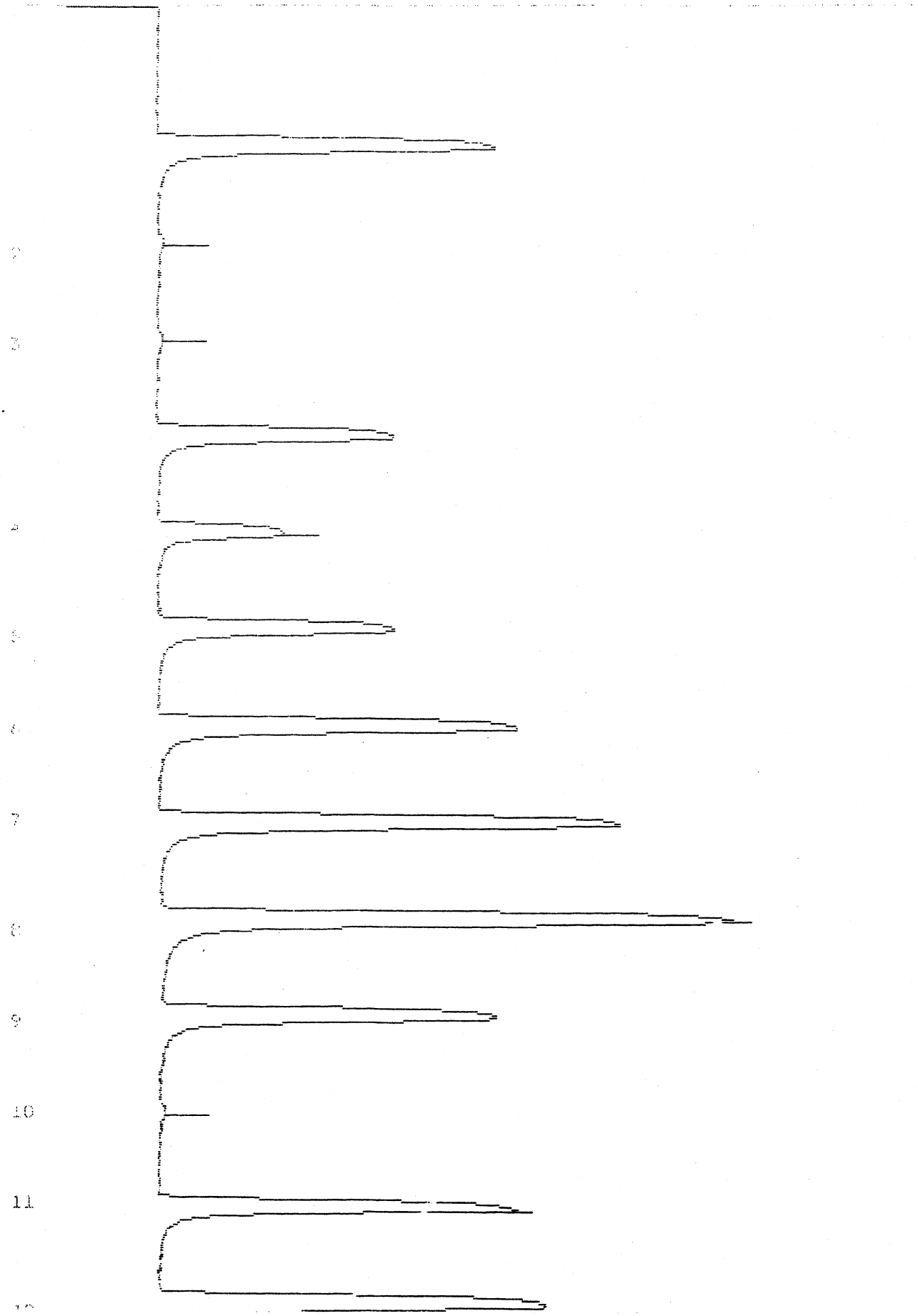
Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run

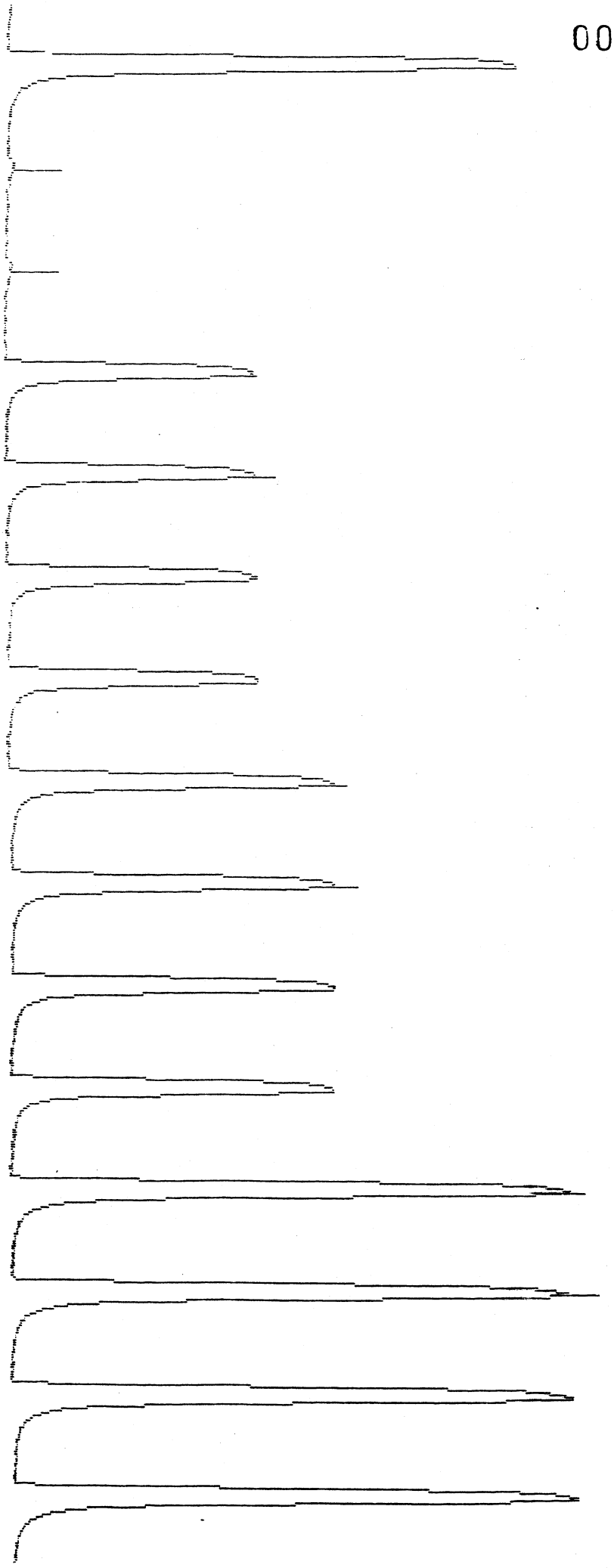
Prepare 0.05 ppm standards daily

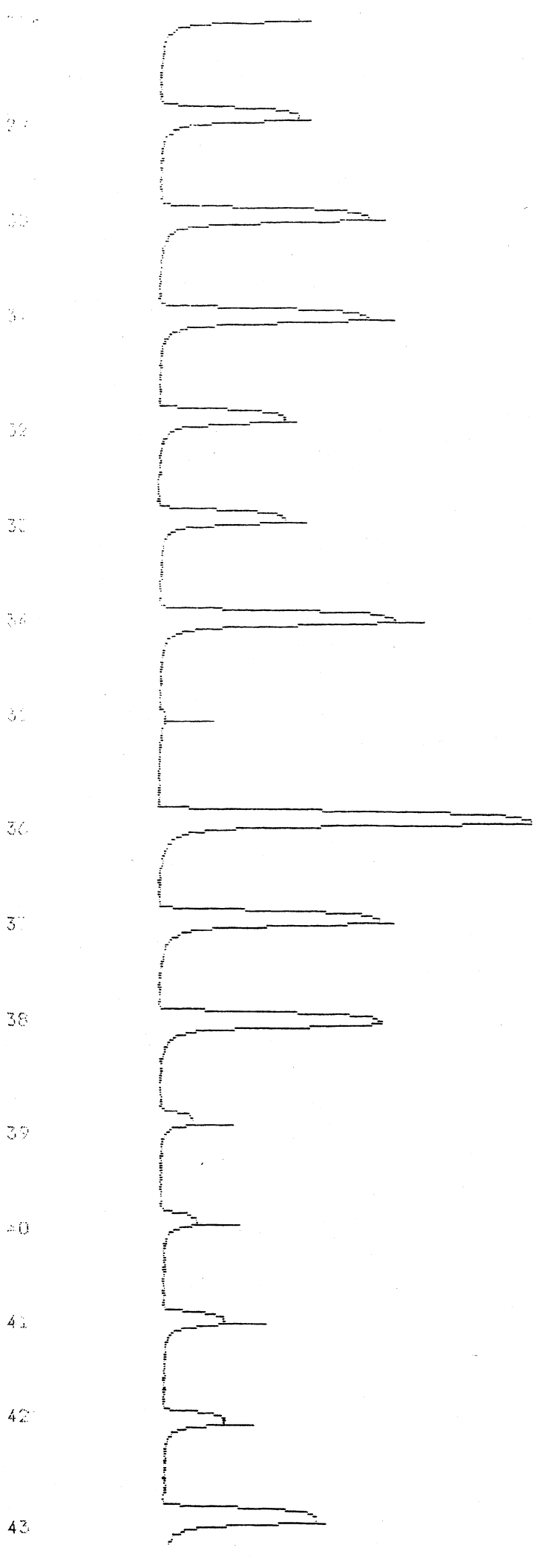
HNO3 Lot. No. 119060	H2SO4 Lot. No. 319060	Bath Temps. / 195°C

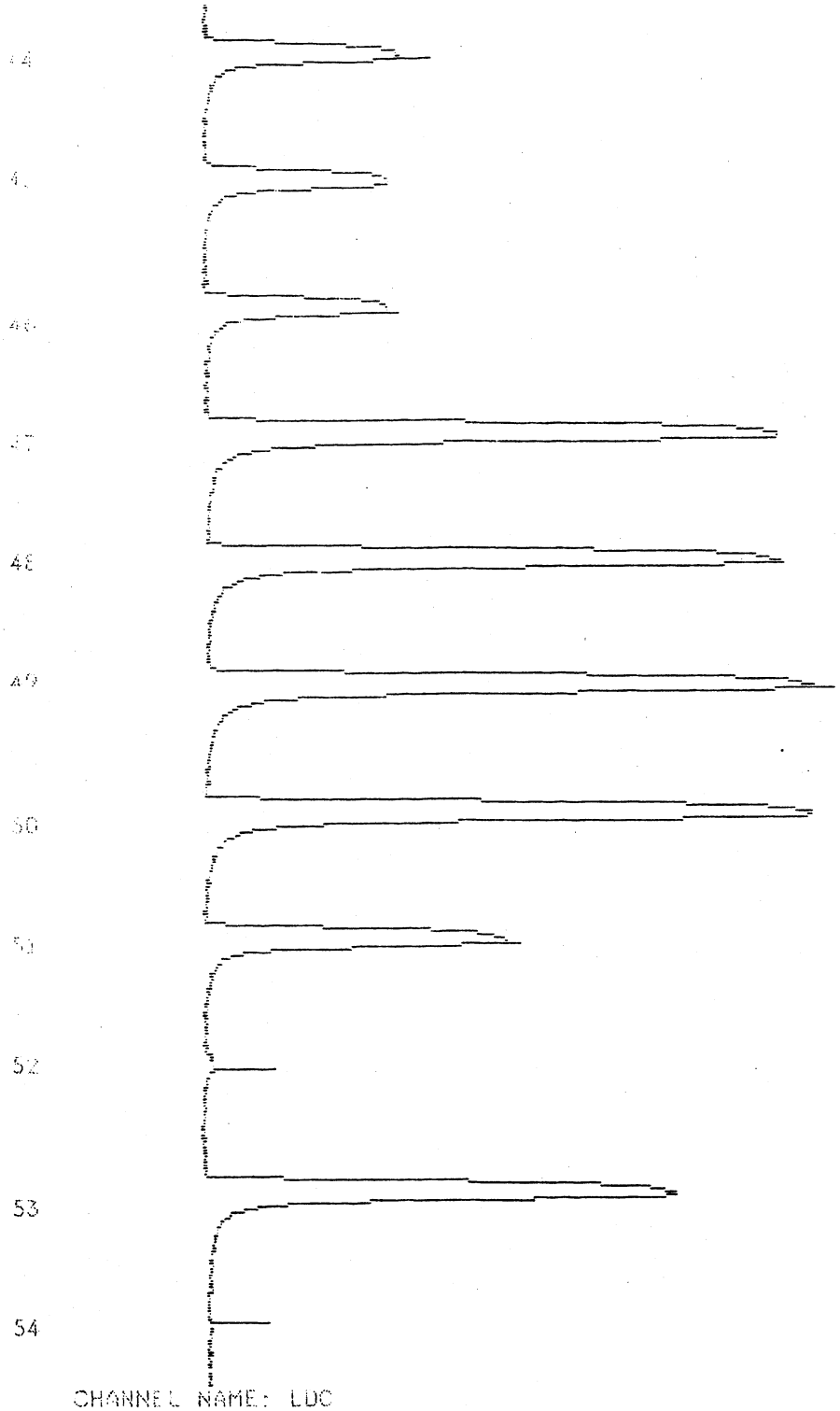
Prepared By: M. Shaperos Date: 991103 Checked by: M. Shaperos

RUN DATE: 11-03-1999 CHART DATE: 11-03-1999
CHART SPEED: .5"
DATA FILE NAME: C:\CP4\DATA\991103W.DAT

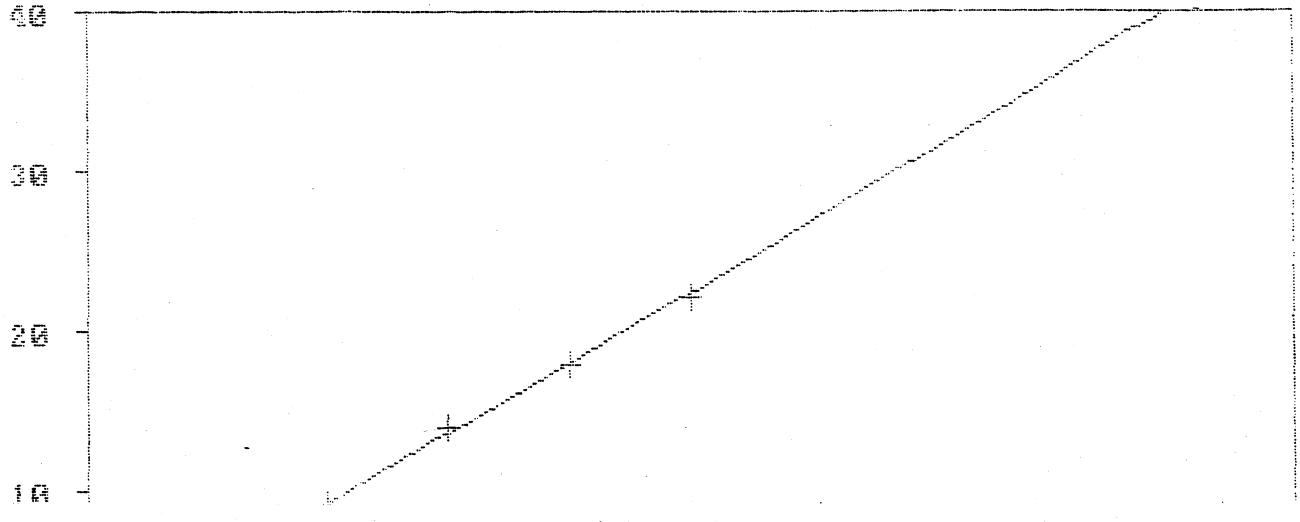




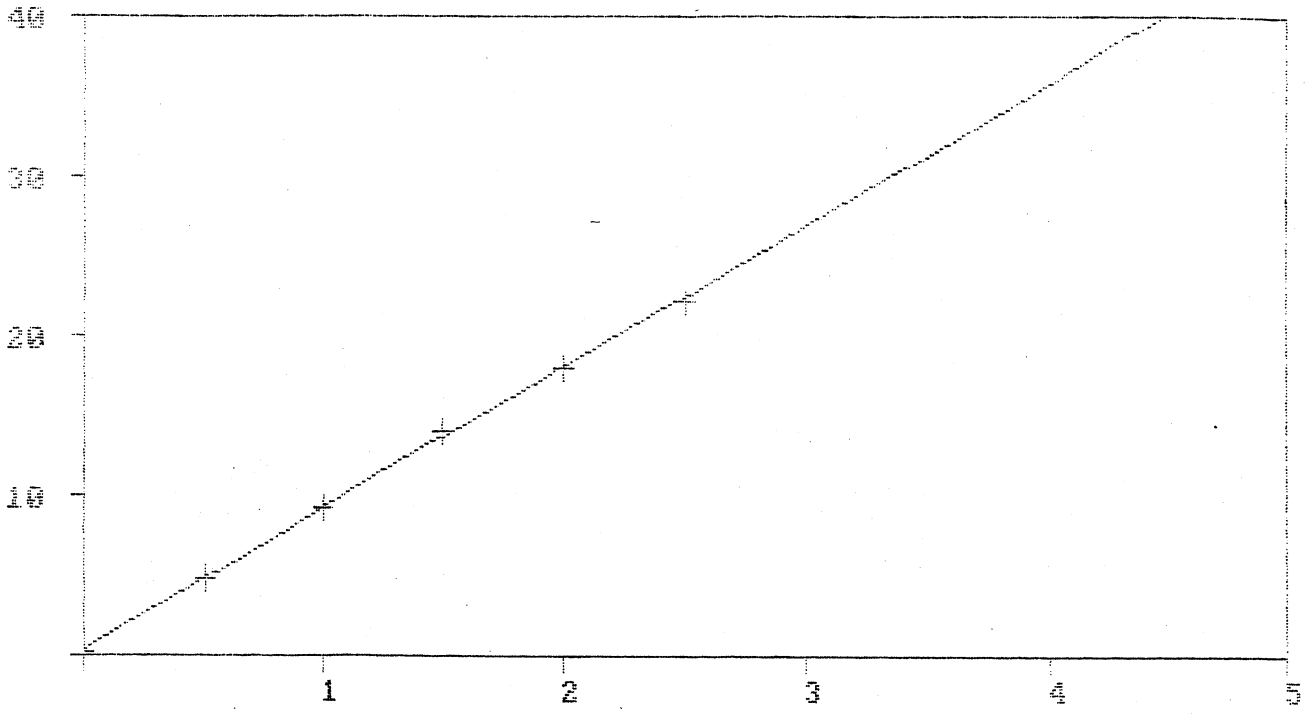




CHANNEL NAME: LDC
RUN NAME: 991103W



CHANNEL NAME: LDC
RUN NAME: 991103W



DATA TYPE: F1A
CALIBRATION ORDER: 1
INTERCEPT = 0.34
SLOPE = 8.845631

CORRELATION: .9995673

CHANNEL NAME: LDC
RUN DATE: 11-03-1999
SAMPLE TABLE NAME: 991103W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION ng/L	EF
1	PRIMER	1	1	13.3	1.469	s
2	DUMMY	1	1	0.2	-0.014	I
3	S1: 0	1	1	0.1	-0.025	I
4	S2: .5	1	1	4.8	0.505	
5	S3: 1	1	1	9.2	1.005	
6	S4: 1.5	1	1	14.0	1.549	
7	S5: 2	1	1	18.0	1.993	
8	S6: 2.5	1	1	22.2	2.473	
9	ICV	1	1	13.1	1.444 96%	
10	B	1	1	0.0 TMG	-0.039	b
11	D4	1	1	14.0	1.549	d
12	WS 378	1	1	15.3	1.687	
13	ORG REF	1	1	18.9	2.104	
14	BL1103-1NM4	1	1	0.1 20.03	-0.030	I
15	BL1103-1NM4	1	1	0.1	-0.030	s
16	BL1103S	1	1	9.1	0.988	I
17	BL1103S	1	1	9.2	0.996	
18	BL1103DS	1	1	9.2	0.999	
19	BL1103DS	1	1	9.3	1.013	
20	61634	6.666	1	11.9	8.740	
21	61634	6.666	1	11.9	8.722	
22	61634D	6.666	1	12.0	8.814	

24	616343	6.666	1	20.6	15.292	
25	616343	6.666	1	20.6	15.292	
26	61634DS	6.666	1	20.7	15.310	
27	61634DS	6.666	1	20.8	15.384	
28	61632	.6666	1	5.0	0.351	
29	61632	.6666	1	5.0	0.353	
30	61633	1.333	1	7.8	1.119	s
31	61633	1.333	1	7.8	1.130	
32	61635	.6666	1	4.6	0.322	
33	61635	.6666	1	4.7	0.326	
34	CCV	1	1	8.9	0.963	
35	B	1	1	0.0	-0.039	b
36	D4	1	1	14.0	1.549	d
37	61636	.6666	1	8.2	0.592	
38	61636	.6666	1	8.3	0.602	
39	61637	.6666	1	1.1	0.057	
40	61637	.6666	1	1.1	0.061	
41	61638	.6666	1	2.1	0.134	
42	61638	.6666	1	2.1	0.136	
43	61639	.6666	1	5.6	0.396	
44	61639	.6666	1	5.6	0.399	
45	61640	.6666	1	5.3	0.370	s
46	61640	.6666	1	5.3	0.375	
47	60118	2.666	1	17.1	5.056	
48	60118	2.666	1	17.1	5.056	
49	60119	2.666	1	18.1	5.365	
50	60119	2.666	1	18.2	5.372	
51	CCV	1	1	9.0	0.974	
52	B	1	1	0.0	-0.039	b
53	D4	1	1	14.0	1.549	d

00071

5.056

5.370

96%

97%

INTERCEPT: 0.34 LINEAR COEF: 8.845631

CORRELATION COEF: .9995673

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
060115	TRC-LO	MB R456	Mercury -	PV	-0.0100	-99999.0	0.1030	103.	0.1050	105.	99/10/26	ABP1	99/10/26	MG02	20.	12.	*BLKIMP*
060116	TRC-LO	BP-OHM-3-RB	Mercury -	PV	-0.2500						99/10/26	ABP1	99/10/26	MG02	20.	12.	
060117	TRC-LO	BP-OHM-3-O-4	Mercury -	PV	-0.2500	-0.2500	2.7370	105.	2.8870	111.	99/10/26	ABP1	99/10/26	MG02	20.	12.	
060118	TRC-LO	BP-OHM-3-IE-4	Mercury -	PV	-0.2500						99/10/26	ABP1	99/10/26	MG02	20.	12.	
060119	TRC-LO	BP-OHM-3-IW-4	Mercury -	PV	0.2500						99/10/26	ABP1	99/10/26	MG02	20.	12.	
BL1026	INTERNAL		Mercury -	PV	-0.0100	-99999.0	0.1030	103.	0.1050	105.	99/10/26	ABP1	99/10/26	MG02	$$$	$$$	*BLKIMP*

6 Tests for OHPOX with an MDL of 0.010 ug Validated By CMS Control Chart Updated N/A IO Requirements met N/A

00072

LDC AUTOSAMPLER RUN LOG (MERCURY)

e: 99.10.26 (W) Run Code: MG02 Matrix: IMP.

Analyst: MG Units: ~~ug~~ (see comments) MDL: _____

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			WS 378			
13			ORG. REF.			
14			BL1026	INAI.		
15			"			
16			BL1026 S			
17			"			
18			BL1026 DS			
19			"			
20			53751			
21			"			
22			53751 D			
23			"			
24			53751 S			
25			"			
26			53751 DS			
27			"			
28	5		51090			
29	↓		"			
30			51090D			
31			"			
32		1/80	59395			
33		↓	"			
34			CCV			
35			B			
36			D4			
37		1/80	59395 D			
38		↓	"			
39			59395 S			
40		↓	"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41		1/80	59395 DS			
42		↓	"			
43		1/400	59395 DS			
44			"			
45			59393			
46			"			
47			59394			
48			"			
49			59396			
50			"			
51		1/2	59397			
52		↓	"			
53		1/20	59398			
54			"			
55			59399			
56		↓	"			
57			CCV			
58			B			
59			D4			
60		1/4	59400			
61		↓	"			
62			BL1026	ZNSB		
63			"			
64			BL1026 S			
65			"			
66			BL1026 DS			
67			"			
68			60669			
69			"			
70			60669 D			
71			"			
72			60669 S			
73			"			
74			60669 DS			
75			"			
76			60667			
77			"			
78			60668			
79			"			
80			CCV			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L.

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

:: 99.10.26 Run Code: MG02 Matrix: IMP

Analyst: MG Units: ug (see comments) MDL: _____

up	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
19						
20						
81 21			B			
22			D4			
23			60670			
24			"			
25			60671			
26			"			
27			BL1026	ABP1		
28			"			
29			BL1026 S			
30			"			
31			BL1026 DS			
32			"			
33	10		60117			
34			"			
35			60117 D			
36			"			
37			60117 S			
38			"			
39			60117 DS			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	10		60116			
42	↓		"			
43			CCV			
44			B			
45			D4			
46	10		60118			
47			"			
48			60119			
49			"			
50			BL1026	ABP2		
51			BL1026 D			
52			BL1026 S			
53			"			
54			BL1026 DS			
55			"			
56	10		61634			
57			"			
58			61634 D			
59			"			
60			61634 S			
61			"			
62			61634 DS			
63			"			
64			61632			
65			"			
66			CCV			
67			B			
68			D4			
69	10		61633			
70			"			
71			61635			
72			"			
73			61636			
74			"			
75			61637			
76			"			
77			61638			
78			"			
79			61639			
80			"			

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.26 Run Code: MG02 Matrix: IMP/WATER

Analyst: MG Units: ug (see comments) MDL: _____

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
141 21	10		61640			
22	↓		11			
23			CCV			
24			B			
25			D4			
26			BL1026	ABA1		
27			BL1026 S			
28			63026			
29			026 D			
30			026 S			
31			022			
32			022 S			
33			62668			
34	10		62596			
35	↓		598			
36			62901			
37			63687			
38			WS 378			
39			ORG. REF			
40			CCV			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			B			
42			D4			
43						
44						
45						
46						
47						
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Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L.

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

00076

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DGHGLEACH, DG29HG***

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy	0 ppb	None	0.0
2	Standard 1	0 ppb	None	0.0
3	Standard 2	0.33	200 ul of 0.05 ppm IV working standard	0.5
4	Standard 3	0.67	400 ul of 0.05 ppm IV working standard	1.0
5	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
6	Standard 4	1.0	600 ul of 0.05 ppm IV working standard	1.5
7	Standard 5	1.33	800 ul of 0.05 ppm IV working standard	2.0
7	Standard 6	1.67	1000 ul of 0.05 ppm IV working standard	2.5

Check List
- ✓ Digest Code/labels
- ✓ Samples poured out
- ✓ Acids added
- ✓ Reagents added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxylamine HCl added
- ✓ Samples bulked and mixed
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	9	ICV (Init. Calib. Verif.)	AGP1	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1026	"	"	"	"	(Processed Blank) 60115
	11	BL 1026 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	60117	"	"	"	10X	FV=250ml
1	13	D	"	"	"	"	(Duplicate sample)
1	14	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	15	DS	"	"	"	"	(Duplicate Spiked sample)
2	16	60116	"	"	"	"	
3	17	118	"	"	"	"	
4	18	119	"	"	"	"	
5	19		"	"	"	"	
6	20		"	"	"	"	
7	21		"	"	"	"	
8	22		"	"	"	"	
9	23		"	"	"	"	
10	24		"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	AGP2	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 1026	"	"	"	"	(Processed Blank) 61631
	27	BL 1026 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	61634	"	"	"	10X	FVPOX = 250ml
1	29	D	"	"	"	"	(Duplicate sample)
1	30	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	31	DS	"	"	"	"	(Duplicate Spiked sample)
2	32	61632	"	"	"	"	
3	33	633	"	"	"	"	
4	34	635	"	"	"	"	
5	35	636	"	"	"	"	
6	36	637	"	"	"	"	
7	37	638	"	"	"	"	
8	38	639	"	"	"	"	
9	39	640	"	"	"	"	
10	40		"	"	"	"	

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run — Prepare 0.05 ppm standards daily

HNO3 Lot. No. 119060 | H2SO4 Lot. No. 317120 | Bath Temps. 195 °C

Prepared By: AB | Date: 99.10.26 | Checked by: AB

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)		20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL	"	"	"	"	(Processed Blank)
	43	BL S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44		"	"	"	"	
1	45	D	"	"	"	"	(Duplicate sample)
1	46	S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	47	DS	"	"	"	"	(Duplicate Spiked sample)
2	48		"	"	"	"	
3	49		"	"	"	"	
4	50		"	"	"	"	
5	51		"	"	"	"	
6	52		"	"	"	"	
7	53		"	"	"	"	
8	54		"	"	"	"	
9	55		"	"	"	"	
10	56		"	"	"	"	

Comments

* concentration based on 30 ml final volume, ** concentration based on 20 ml final volume

*** group of several Method 29 testcodes

Dilution factor of 1.5 is corrected by entering the calibration concentrations listed above

Procedure/Methodology:

1 Prepare 25 ppm Intermediate stock (if required) by pipetting 625 ul., of 1000 ppm Stock to 25 ml final volume of 2% HNO3
2 Prepare 0.05 ppm Working stock daily by pipetting 200 ul., of 25 ppm Stock to 100 ml final volume of 2% HNO3
3 Using the LIMS Screen "SCNDIG" enter the required samples into LIMS
4 Using the labeling program, "DIGLBL", retreive the "SCNDIG" list and create labels for the required samples.
5 Label the falcon tubes appropriately
6 Transfer a 20 ml. aliquot of well mixed sample into the designated falcon tube
7 Spike the tubes as indicated in the comment sector of the digestion sheet
8 Add 0.5 ml. of conc. Nitric Acid (HNO3), and 1 ml. of conc. Sulphuric acid, (H2SO4), to each tube
9 Add 3 ml. Potassium Permanganate (KMnO4), colour should remain for at least 15 minutes
10 Add 1.5 ml. of Potassium persulphate, (K2S2O8), to each tube
11 Mix samples, cap loosely and place in a water bath @ 95 degrees C for 2 hours
12 Remove tubes and allow to cool to room temperature
13 Add 1.0 ml. 20% Hydroxylamine Hydrochloride to each tube
14 Recap tubes and shake until the Potassium Permanganate (KMnO4) is destroyed and sample becomes colourless
15 Dilute the sample to a final volume of 30 ml., cap and mix well

REFERENCE STANDARDS/SPIKING SOLUTIONS:

Source: Inorganic Ventures Standard, see standard tracking binder for current lot and expiry date information

ICV/CCV STANDARDS:

Source: High Purity MESS-ZENO 30/QCA Standard, see standard tracking binder for current lot

INTERNAL REFERENCE STANDARD: (2 ppb in 10% HNO3)

Source: EPA WS 378 or SPEX CertiPrep Trace Metal - Water Supply, see standard tracking binder for current source, lot and expiry date information.

All reagents used are of a grade suitable for mercury analyses

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CHART SPEED: 30
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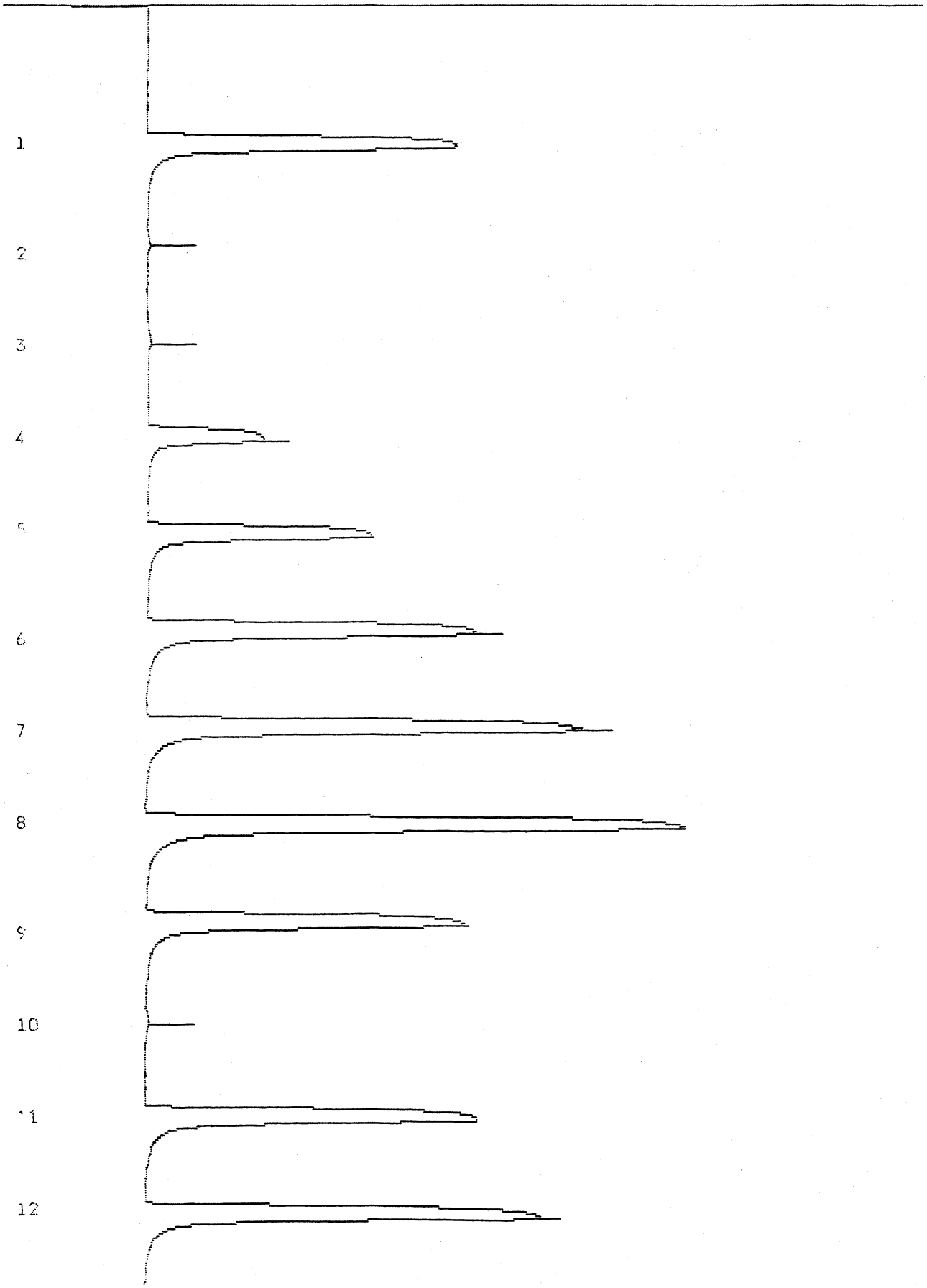

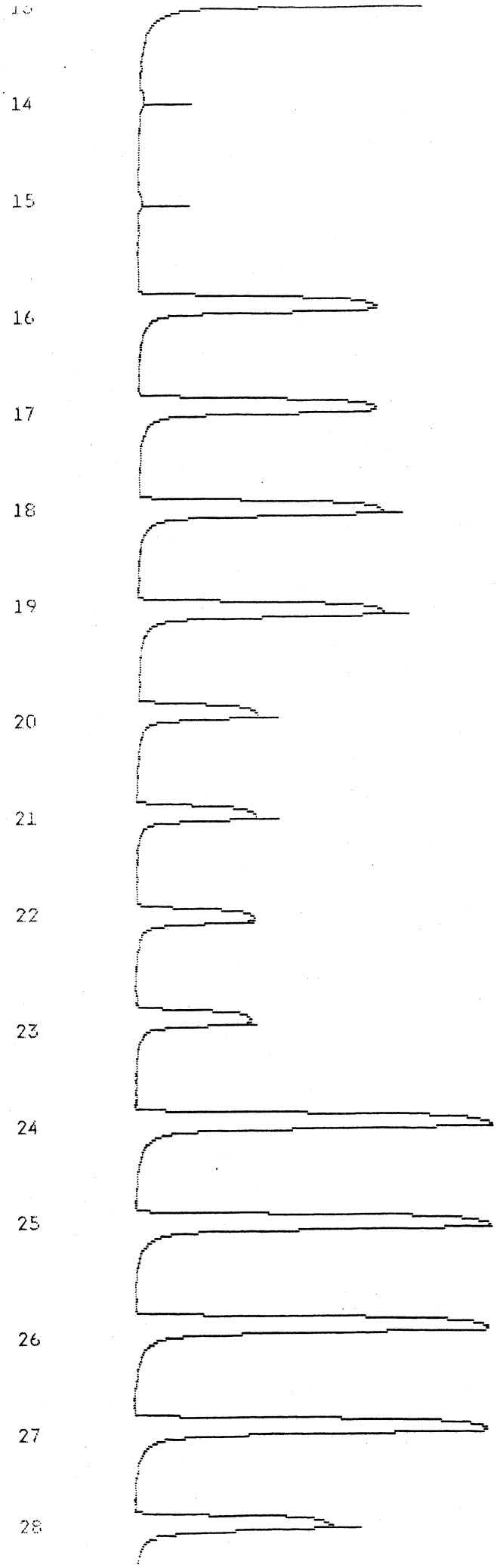
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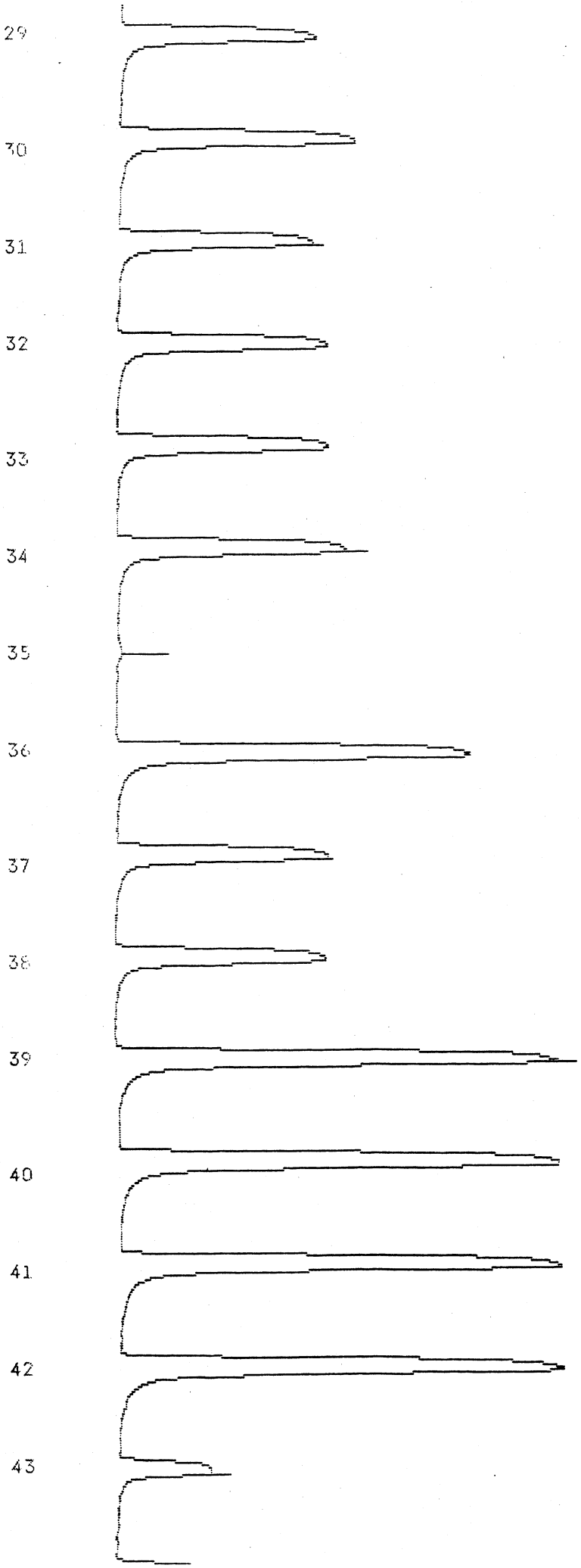
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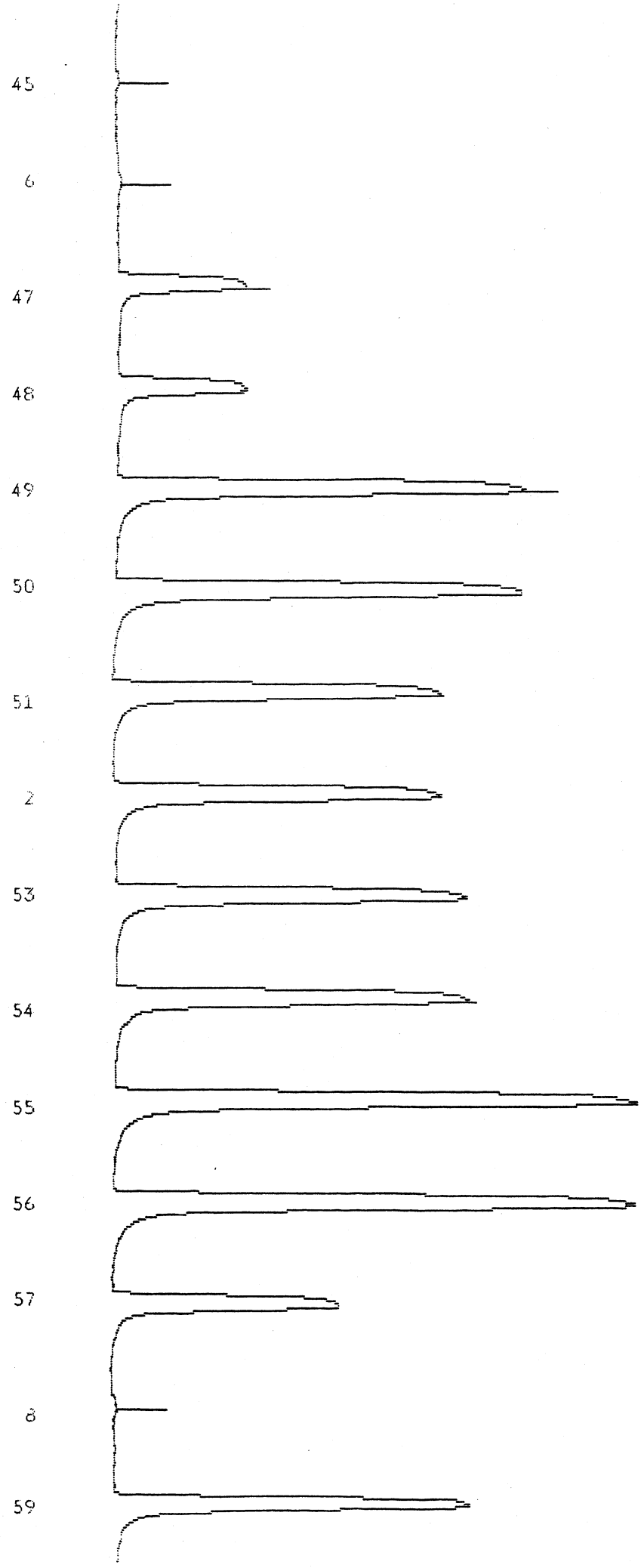
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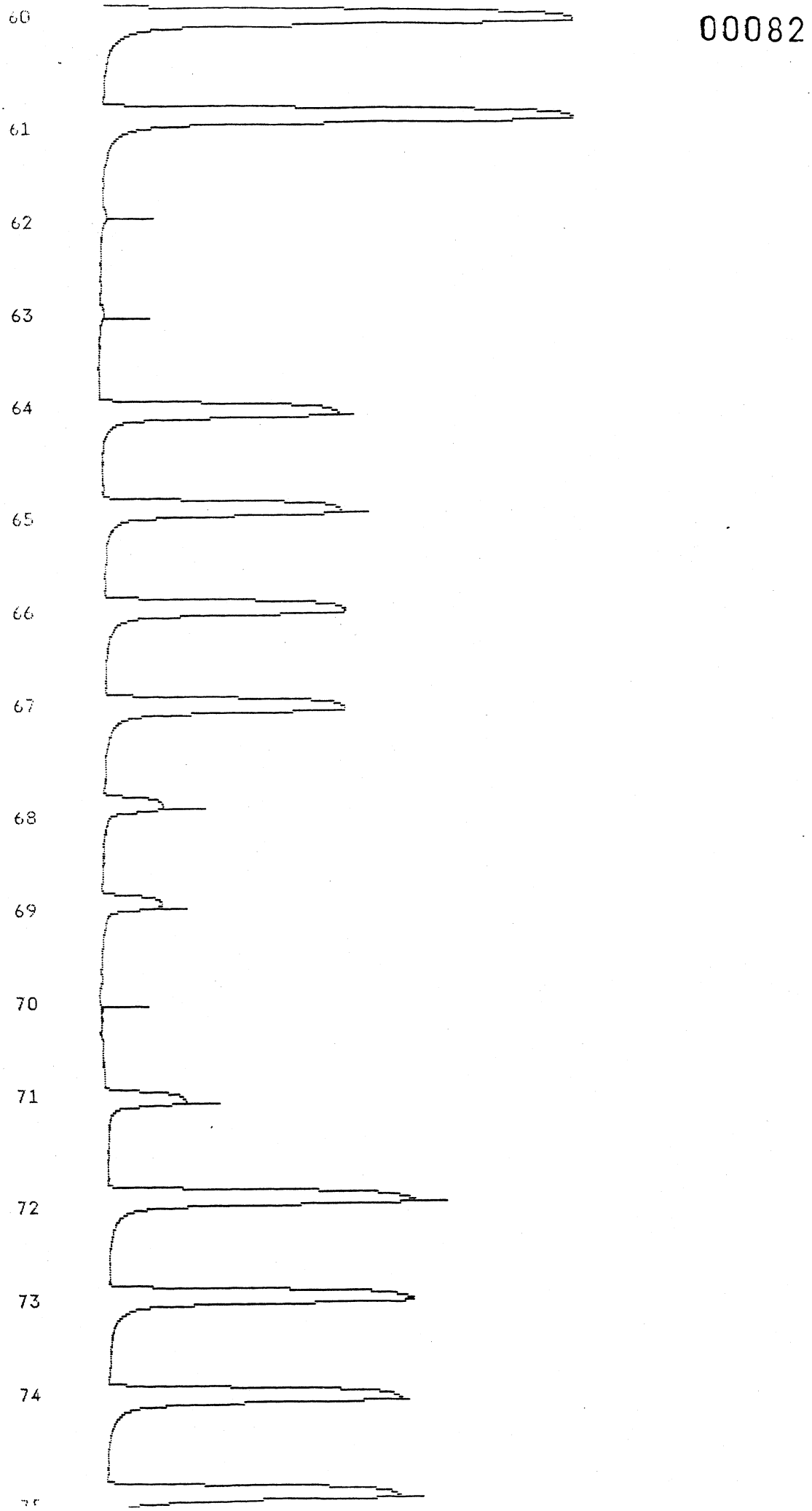
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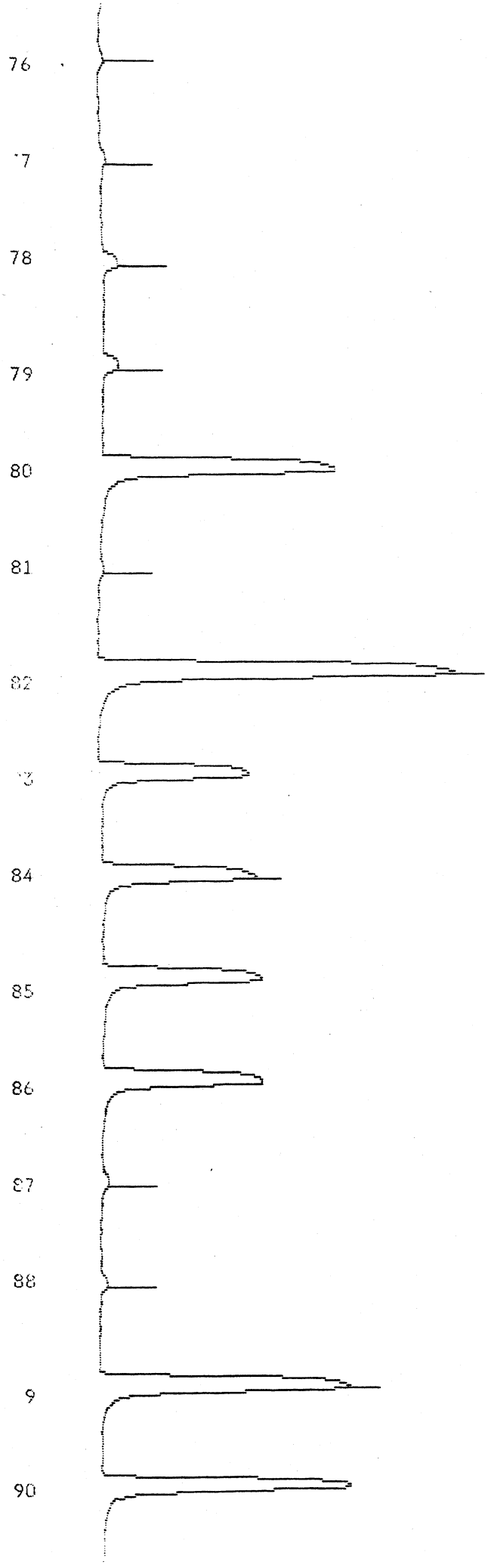
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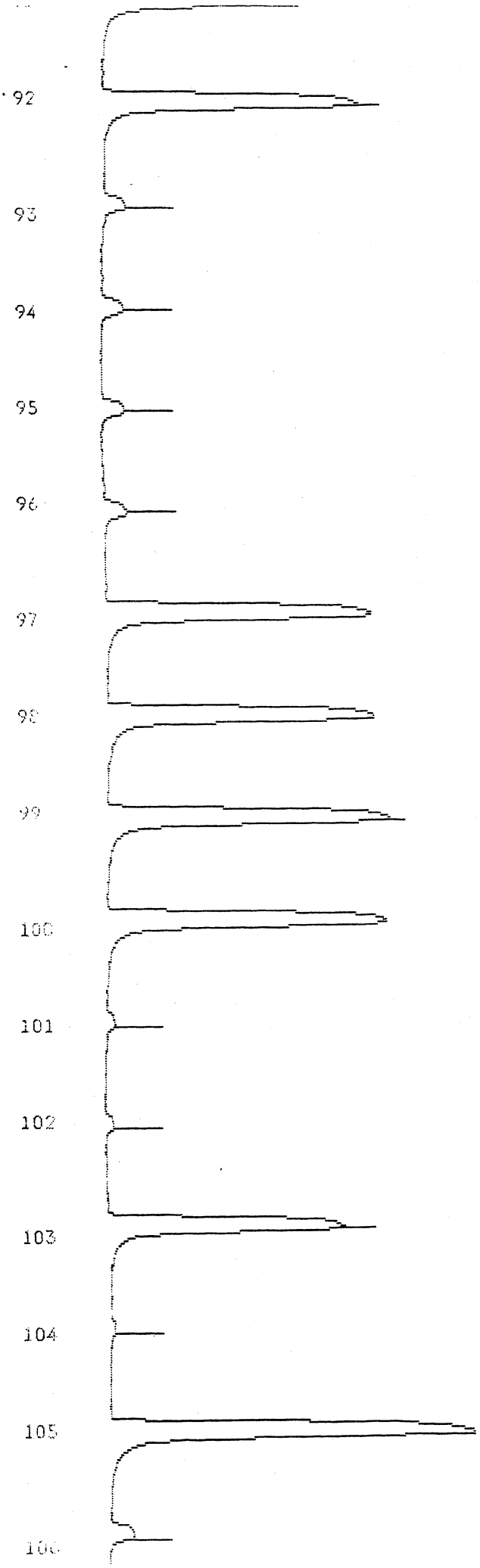
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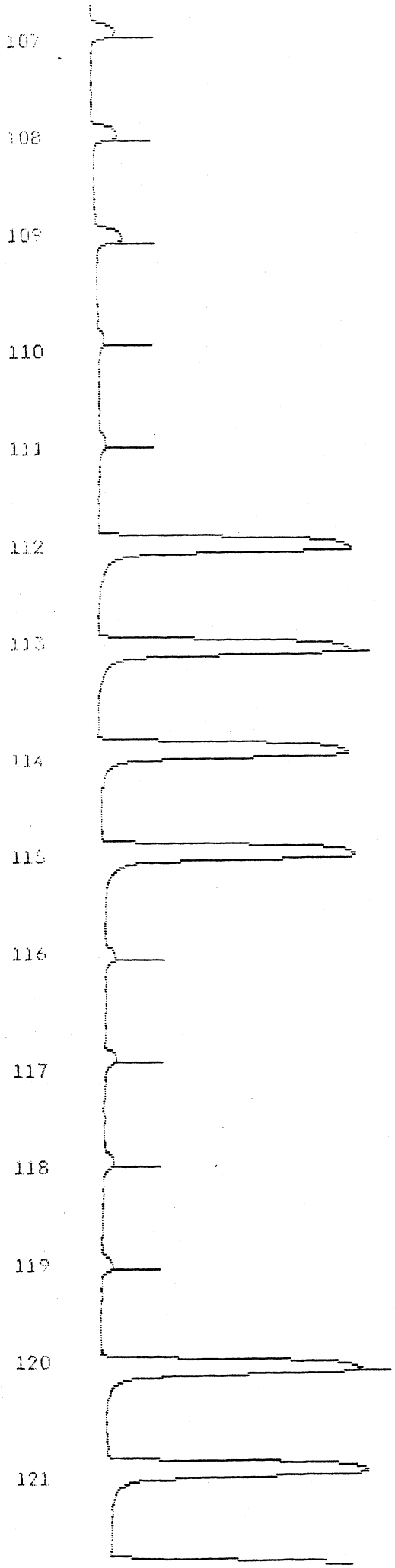
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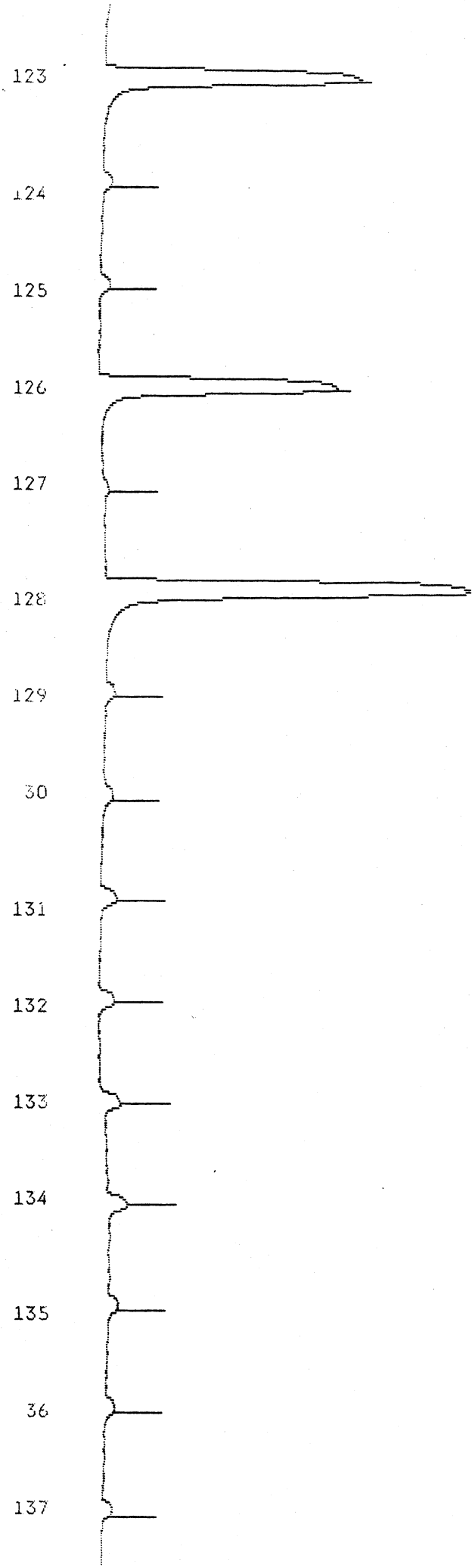
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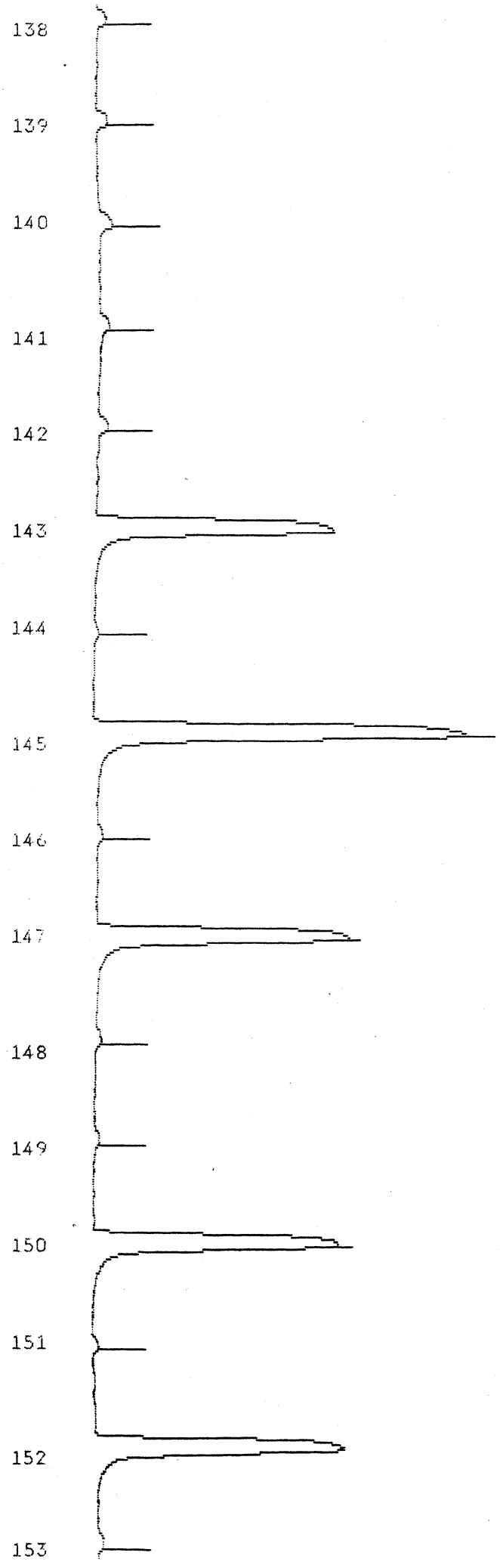
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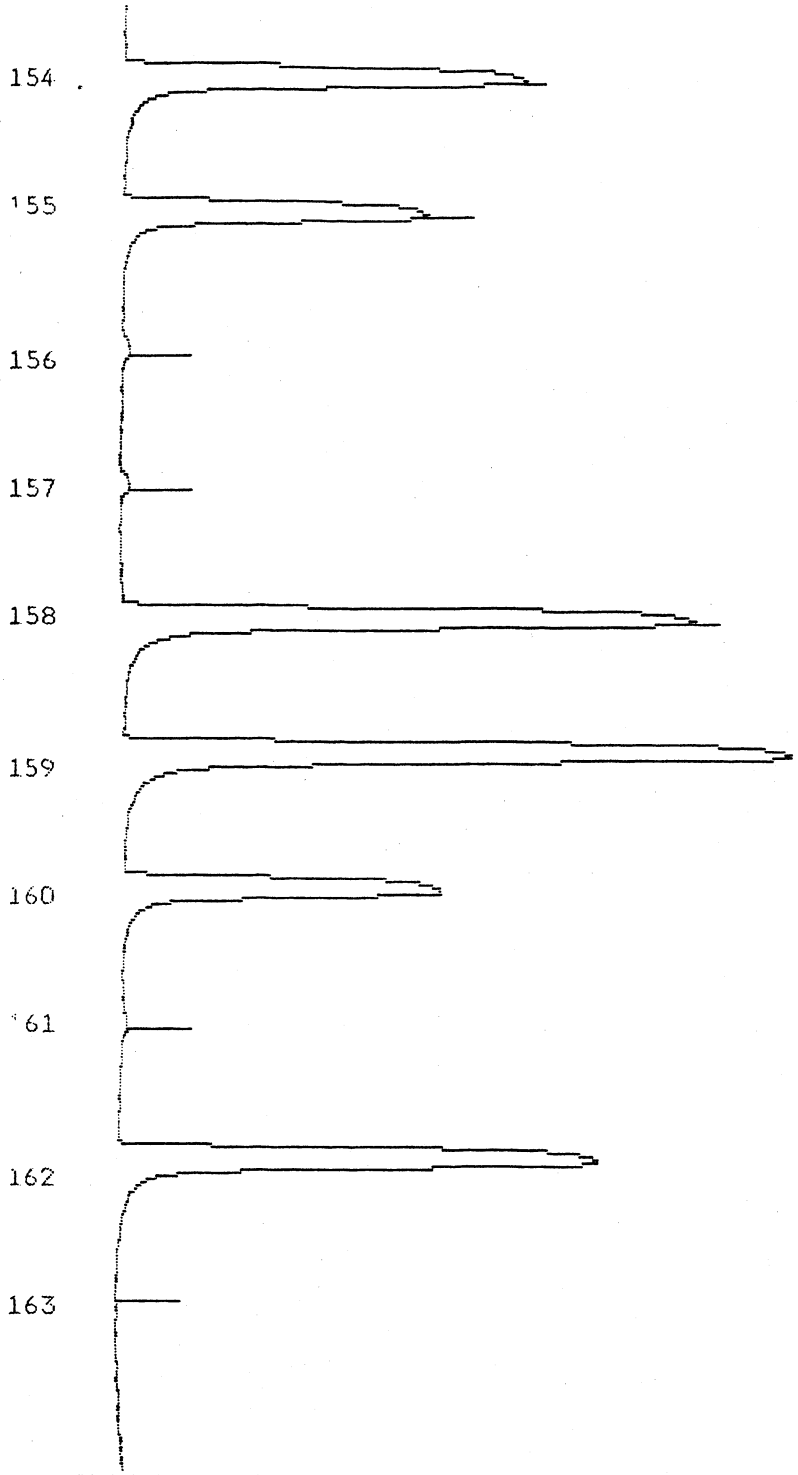
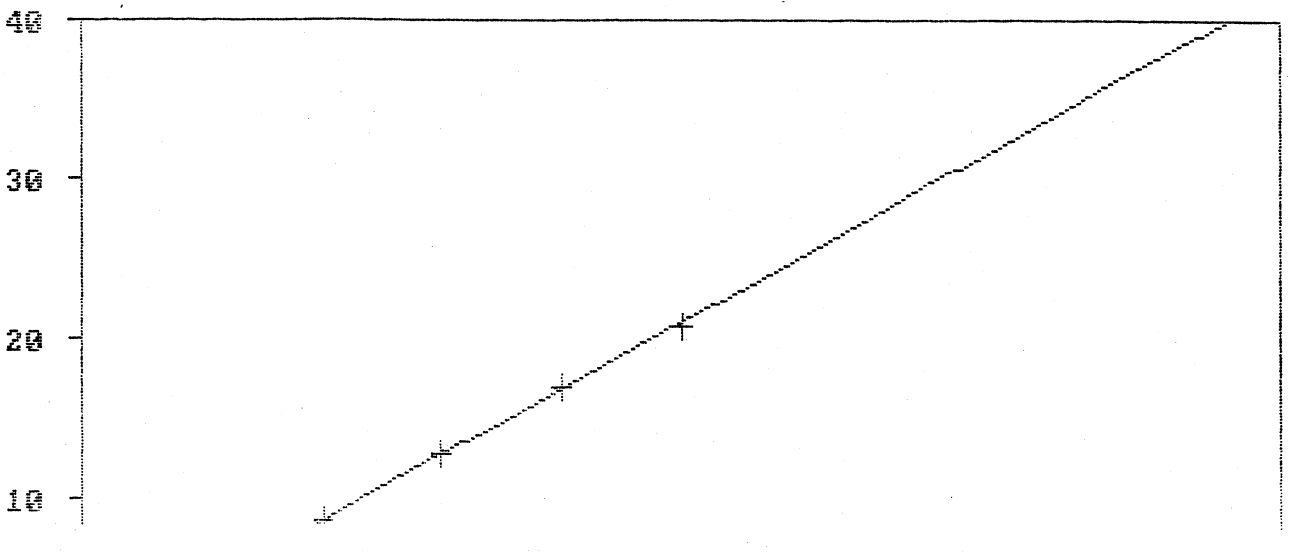
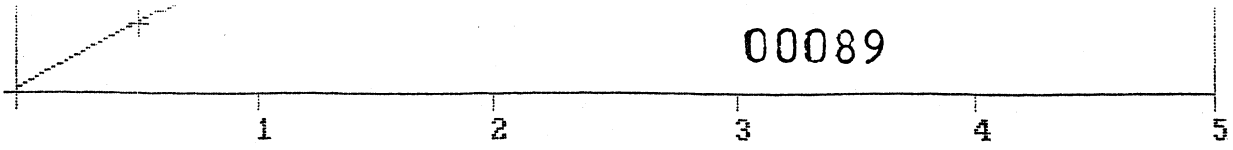


CHANNEL NAME: LDC
RUN NAME: 991026W





DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.25 SLOPE = 8.30839

CORRELATION: .9998331

CHANNEL NAME: LDC
RUN DATE: 10-26-1999
SAMPLE TABLE NAME: 991026W
METHOD NAME: HGWATER

PPb

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION	EF
1	PRIMER	1	1	12.1		1.431	s
2	DUMMY	1	1	0.0		-0.027	I
3	S1: 0	1	1	0.1		-0.021	I
4	S2: .5	1	1	4.4		0.505	
5	S3: 1	1	1	8.7		1.017	
6	S4: 1.5	1	1	12.8		1.511	
7	S5: 2	1	1	16.9		2.010	
8	S6: 2.5	1	1	20.8		2.478	
9	ICV	1	1	12.3		1.446	96%
10	B	1	1	0.0		-0.030	b
11	D4	1	1	12.8	TLG	1.511	d
12	WS 378	1	1	15.0		1.781	89%
13	ORG REF	1	1	17.5		2.081	104%
14	BL1026-1NA1 59393	1	1	0.0	<0.05	-0.027	I
15	BL1026-1NA1	1	1	0.0		-0.030	I
16	BL1026S	1	1	8.7	0.508	1.014	101%
17	BL1026S	1	1	8.6		1.005	
18	BL1026DS	1	1	8.9	0.520	1.037	104%
19	BL1026DS	1	1	8.9		1.043	
20	53751	1	1	4.2		0.479	
21	53751	1	1	4.1		0.467	
22	53751D	1	1	4.2		0.473	
23	53751D	1	1	4.1		0.458	
24	53751S	1	1	13.0		1.537	
25	53751S	1	1	12.9		1.525	
26	53751DS	1	1	13.0		1.531	
27	53751DS	1	1	12.8		1.514	
28	51090	5	1	7.0		4.085	
29	51090	5	1	7.0		4.055	
30	51090D	5	1	8.4		4.922	
31	51090D	5	1	6.9		4.026	s
32	59395	80	1	7.5	33.094	70.059	
33	59395	80	1	7.6		70.765	
34	CCV	1	1	8.2		0.961	96%
35	B	1	1	0.0		-0.030	b
36	D4	1	1	12.8		1.511	d
37	59395D	80	1	7.5	32.928	70.059	
38	59395D	80	1	7.5		70.059	
39	59395S	80	1	16.0	71.276	151.416	101%
40	59395S	80	1	16.0		151.887	
41	59395DS	80	1	16.0	71.276	151.652	101%
42	59395DS	80	1	16.0		151.652	
43	59395DS Dil. check	400	1	3.3		146.904	3% RPD
44	59395DS	400	1	3.3		148.080	
45	59393	1	1	0.0	<0.05	-0.030	I
46	59393	1	1	0.0		-0.027	s

48	59394	1	1	4.4		0.502	
49	59396	1	1	14.7	0.828	1.643	
50	59396	1	1	14.7		1.743	
51	59397	2	1	11.9	1.325	2.798	
52	59397	2	1	11.8		2.780	
53	59398	20	1	12.6	16.439	29.742	
54	59398	20	1	12.7		30.036	
55	59399	20	1	18.8	23.422	44.614	
56	59399	20	1	18.8		44.614	
57	CCV	1	1	8.0		0.937	94%
58	B	1	1	0.0		-0.030	b
59	D4	1	1	12.8		1.511	d
60	59400	4	1	17.5	4.479	8.311	
61	59400	4	1	17.4		8.276	s
62	BL1026-2N3B 60667	1	1	0.0	<0.05	-0.030	I
63	BL1026-2N3B	1	1	0.0		-0.030	I
64	BL1026S	1	1	8.7	0.509	1.014	101%
65	BL1026S	1	1	8.7		1.020	
66	BL1026DS	1	1	8.9	0.518	1.040	103%
67	BL1026DS	1	1	8.8		1.032	
68	60669	1	1	2.0		0.214	
69	60669	1	1	2.0		0.214	
70	60669D	1	1	0.0		~~-0.030~~	VOID; CUP MISSED.
71	60669D	1	1	2.8		0.308	RERUN ON Oct. 27, 1999
72	60669S	1	1	11.4		1.337	
73	60669S	1	1	11.3		1.325	
74	60669DS	1	1	10.9		1.278	
75	60669DS	1	1	10.9		1.287	
76	60667	1	1	0.1	<0.100	-0.018	s
77	60667	1	1	0.1		-0.018	I
78	60668	1	1	0.5	<0.100	0.026	I
79	60668	1	1	0.5		0.026	I
80	CCV	1	1	8.3		0.964	96%
81	B	1	1	0.0		-0.030	b
82	D4	1	1	12.8		1.511	d
83	60670	1	1	5.2	0.606	0.594	
84	60670	1	1	5.4		0.617	
85	60671	1	1	5.5	0.638	0.632	
86	60671	1	1	5.6		0.644	
87	BL1026-ABP1 60115	1	1	0.1	<0.01	-0.012	I
88	BL1026-ABP1	1	1	0.1		-0.012	I
89	BL1026S	1	1	8.8	0.103	1.029	103%
90	BL1026S	1	1	8.7		1.023	
91	BL1026DS	1	1	9.0	0.105	1.052	105
92	BL1026DS	1	1	8.9		1.043	
93	60117	10	1	0.6	<0.250	0.381	
94	60117	10	1	0.5		0.322	
95	60117D	10	1	0.5	<0.250	0.351	
96	60117D	10	1	0.6		0.410	
97	60117S	10	1	9.3	2.737	10.903	105%
98	60117S	10	1	9.4		10.991	
99	60117DS	10	1	9.9	2.887	11.638	111%
100	60117DS	10	1	9.8		11.461	
101	60116	10	1	0.2	<0.250	-0.090	I
102	60116	10	1	0.1		-0.119	I
103	CCV	1	1	8.2		0.955	95%
104	B	1	1	0.0		-0.030	b
105	D4	1	1	12.8		1.511	d
106	60118	10	1	0.7	<0.250	0.528	s
107	60118	10	1	0.7		0.528	
108	60119	10	1	0.7	<0.250	0.586	
109	60119	10	1	0.8		0.675	
110	BL1026-ABP2 61631	1	1	0.0	<0.01	-0.027	I
111	BL1026-ABP2	1	1	0.1		-0.021	I
112	BL1026S	1	1	8.7		1.020	101%

114	BL1026DS	1	1	8.6		1.008	101%
115	BL1026DS	1	1	8.8		1.026	
116	61634	10	1	0.2	<0.250	-0.001	I
117	61634	10	1	0.2		-0.001	I
118	61634D	10	1	0.2	<0.250	-0.031	I
119	61634D	10	1	0.2		-0.001	I
20	61634S	10	1	9.0	2.638	10.580	105%
21	61634S	10	1	9.0		10.521	s
122	61634DS	10	1	8.9	2.597	10.374	103%
123	61634DS	10	1	8.9		10.403	
124	61632	10	1	0.2	<0.250	-0.060	I
125	61632	10	1	0.2		-0.090	I
126	CCV	1	1	8.2		0.958	95%
127	B	1	1	0.0		-0.030	b
128	D4	1	1	12.8		1.511	d
129	61633	10	1	0.2	<0.250	-0.060	I
130	61633	10	1	0.2		-0.001	I
131	61635	10	1	0.3	<0.250	0.087	I
132	61635	10	1	0.2		-0.001	I
133	61636	10	1	0.3	<0.250	0.116	
134	61636	10	1	0.5		0.263	I
135	61637	10	1	0.2	<0.250	-0.060	I
136	61637	10	1	0.2		-0.060	s
137	61638	10	1	0.2	<0.250	-0.060	I
138	61638	10	1	0.2		-0.060	I
139	61639	10	1	0.3	<0.250	0.057	I
140	61639	10	1	0.3		0.116	I
141	61640	10	1	0.2	<0.250	-0.060	I
142	61640	10	1	0.2		-0.060	I
143	CCV	1	1	8.1		0.946	95%
144	B	1	1	0.0		-0.030	b
145	D4	1	1	12.8		1.511	d
46	BL1026-ABA1	1	1	0.0		-0.027	I
147	BL1026S	1	1	8.6		1.005	101%
148	63026	1	1	0.1		-0.021	I
149	63026D	1	1	0.1		-0.021	I
150	63026S	1	1	8.4		0.979	98%
151	63022	1	1	0.1		-0.021	s
152	63022S	1	1	8.5		0.99?	100%
153	62668	1	1	0.0		-0.030	I
154	62596	10	1	10.5		12.402	
155	62598	10	1	7.9		9.228	
156	62901	1	1	0.1		-0.021	I
157	62687	1	1	0.0		-0.024	I
158	WS 378	1	1	15.3		1.807	90%
159	ORG REF	1	1	17.8		2.107	105%
160	CCV	1	1	8.3		0.967	97%
161	B	1	1	0.0		-0.030	b
162	D4	1	1	12.8		1.511	d

INTERCEPT: 0.25 LINEAR COEF: 8.30839
CORRELATION COEF: .9998331

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
060263	TRC-LO	MB R456	Mercury	PV	-0.04	-99999.0	1.01	101.			99/10/22	LTA1	99/10/22	MG01	16.	9.	
060264	TRC-LO	BP-OHM-3-IE-4 Ash	Mercury	PV	0.18						99/10/22	LTA1	99/10/22	MG01	16.	9.	
060265	TRC-LO	BP-OHM-3-Iw-4 Ash	Mercury	PV	0.14						99/10/22	LTA1	99/10/22	MG01	16.	9.	
060279	TRC-LO	NIST 1633b Coal Ash	Mercury	PV	0.12	0.11	1.13	101.			99/10/22	LTA1	99/10/22	MG01	7.	7.	
BL1022	INTERNAL		Mercury	PV	-0.04	-99999.0	1.01	101.			99/10/22	LTA1	99/10/22	MG01	$$$	$$$	

5 Tests for 7471HG-S with an MDL of 0.04 mg/kg Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00092

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.22 Run Code: MG01 Matrix: SOIL

alyst: MG Units: MG/KG (see comments) MDL: 0.04

up	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL1022	LTA1		
13			BL1022 S			
14			60279			
15			279 D			
16			279 S			
17			264			
18			265			
19			61932			
20			60308			
21			09			
22			10			
23			11			
24			12			
25			CCV			
26			B			
27			D4			
28			BL1022	LTA2		
29			BL1022 S			
30			60313			
31			313 D			
32			313 S			
33			314			
34			15			
35			16			
36			17			
37			18			
38			19			
39			20			
40			21			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			60322			
42			CCV			
43			B			
44			D4			
45			BL1022	LTA3		
46			BL1022 S			
47			60323			
48			23 D			
49			23 S			
50			24			
51			25			
52			61833			
53			34			
54			35			
55			36			
56			CCV			
57			B			
58			D4			
59			BL1022	LTA4		
60			BL1022 S			
61			62369			
62			69 D			
63			69 S			
64			68			
65			71			
66			72			
67			ERA 240			
68			CCV			
69			B			
70			D4			
71						
72						
73						
74						
75						
76						
77						
78						
79						
80						

Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.6 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

EPA 7471 SOIL PREPARATION LOG - MERCURY

00094 DG7471HG

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy/Std 1	0 ppb	None	0 mg/kg
2	Standard 2	2.5	200 ul of 0.5 ppm IV working stock std.	0.5
3	Standard 3	5	400 ul of 0.5 ppm IV working stock std.	1.0
4	Standard 4	7.5	600 ul of 0.5 ppm IV working stock std.	1.5
5	Standard 5	10	800 ul of 0.5 ppm IV working stock std.	2.0
6	Standard 6	12.5	1000 ul of 0.5 ppm IV working stock std	2.5

Check List

- ✓ Digest Code/labels
- ✓ Samples weighed
- ✓ Acids added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxyamine HCl added
- ✓ Samples bulked, mixed, and centrifuged
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Wt.	F. Vol.	Dil	Comment
	7	ICV (Init. Calib. Verif.)	LTB1	0.2gm	40 ml	200X	7.5 ppb or 1.5 mg/kg = 600 ul. of 0.5 ppm HP MESS-ZENO 30/QCA Std.
	8	BL 10/22	"	"	"	"	(Processed Blank) 60263
	9	BL 10/22 S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	10	60279	"	0.198	"	"	
1	11	D	"	0.200	"	"	(Duplicate sample)
1	12	S	"	0.200	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	13	~~DS~~	"	—	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
2	14	60263 R2	"	"	"	"	method blk
3	15	60264	"	0.199	"	"	
4	16	60265	"	0.200	"	"	
5	17	61932	"	0.200	"	"	
6	18	60306	"	0.201	"	"	
7	19	60309	"	0.202	"	"	
8	20	60310	"	0.202	"	"	
9	21	60311	"	0.199	"	"	
10	22	60312	"	0.201	"	"	
	23	CCV (Cont. Calib. Verif.)	LTB2	0.2gm	40 ml	200X	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	24	BL 10/22	"	"	"	"	(Processed Blank)
	25	BL 10/22 S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	26	60313	"	0.200	"	"	
1	27	D	"	0.202	"	"	(Duplicate sample)
1	28	S	"	0.202	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	29	~~DS~~	"	—	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
2	30	60314	"	0.200	"	"	
3	31	315	"	0.201	"	"	
4	32	16	"	0.202	"	"	
5	33	17	"	0.201	"	"	
6	34	18	"	0.200	"	"	
7	35	19	"	0.200	"	"	
8	36	20	"	0.202	"	"	
9	37	21	"	0.201	"	"	
10	38	22	"	0.200	"	"	

HCL Lot No. 419030 | HNO3 Lot No. 119060 | Bath Temps. 195 °C

Notes:

* concentration based on 40 ml final volume, ** concentration based on 1 gram of sample

Prepare 0.5 ppm standards daily

Include one External Reference Material (ERA 230 or NRC PACS-1) per run

Prepared By: [signature] Date: 99.10.22 Checked by: [signature]

00095

#		Sample I.D.	B.Code	Init.Wt.	F. Vol.	Dil	Comment
	39	CCV (Cont. Calib. Verif.)	VT83	0.2gm	40 ml	200X	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	40	BL 10/22	"	"	"	"	(Processed Blank) 61831
	41	BL 10/22 S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	42	60323	"	0.200	"	"	
1	43	D	"	0.202	"	"	(Duplicate sample)
1	44	S	"	0.201	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	45	~~DS~~	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
2	46	60324	"	0.201	"	"	
3	47	25	"	0.200	"	"	
4	48	61835	"	0.202	"	"	
5	49	32	"	0.200	"	"	
6	50	34	"	0.199	"	"	
7	51	61836	"	0.201	"	"	
8	52		"	"	"	"	
9	53	ERA 240	"	0.198	"	"	
10	54		"	"	"	"	

Other Information:

Procedure/Methodology:

1 Prepare 25 ppm Intermediate stocks (if needed): pipet 625 ul. of 1000 ppm source to 25 ml final volume of 2% HNO3
2 Prepare 0.5 ppm Working stocks daily: pipet 1000 ul. of 25 ppm interm. stock to 50 ml final volume of 2% HNO3
3 Label Falcon tubes and place into water bath digestion racks
(see # column for tube designations; tube locations are numbered 3 in a row front to back , left to right)
4 Accurately weigh 0.200g (+/- 0.005 g) of homogeinized solid into designated Falcon tube. Record weights on the preparation log record sheet. Process 0.200g of ERA 230 or NRC PACS-1 as well
5 Spike the tubes as indicated in the comment sector of the digestion sheet.
6 Add 5ml of RODI and 5ml of aqua-regia (or add separately 1.25 ml conc. HNO3 and 3.75 ml conc. HCl) to each tube.
7 Mix each tube and place into the water bath at 95 degrees Celsius for 2 minutes.
8 Slowly add 5 ml of 6% of potassium permanganate, ***reaction can be vigorous.***
Repeat the 5ml of 6% potassium permanganate addition step two more times.
9 Place the samples in the water bath and digest @95 C for 30 minutes.
10 Remove tubes from the water bath and allow to cool to room temperature.
11 Add 5 mL of 20% hydroxylamine HCl , mix and ensure that all KMnO4 is reduced.
12 Bulk each sample to 40 mL final volume with RODI, cap and mix each sample.
13 Centrifuge samples at 2500 rpm for ***3-5 min***.

REFERENCE STANDARDS/SPIKING SOLUTIONS
Source: Inorganic Ventures Standard, see standard tracking binder for preparation date, current lot and expiry date information

QC STANDARDS
Source: High Purity MESS-ZENO 30/QCA Standard, see standard tracking binder for preparation date and current lot

EXTERNAL REFERENCE STANDARD
Source: Environmental Resource Associates (ERA) or National Research Council of Canada (NRC), see CRM/SRM binder in ICP Laboratory for performance limits.

All reagents used are of a grade suitable for mercury analyses

Revision 980722LD

EPA 7471 SOIL PREPARATION LOG - MERCURY

00096 DG7471HG

Calibration Solutions:

#	I.D.	*Conc.	Spike	**Conc. Entered
1	Blank/Dummy/Std 1	0 ppb	None	0 mg/kg
2	Standard 2	2.5	200 ul of 0.5 ppm IV working stock std.	0.5
3	Standard 3	5	400 ul of 0.5 ppm IV working stock std.	1.0
4	Standard 4	7.5	600 ul of 0.5 ppm IV working stock std.	1.5
5	Standard 5	10	800 ul of 0.5 ppm IV working stock std.	2.0
6	Standard 6	12.5	1000 ul of 0.5 ppm IV working stock std	2.5

Check List

- ✓ Digest Code/labels
- ✓ Samples weighed
- ✓ Acids added
- ✓ Samples spiked
- ✓ Bath at 95 degrees C
- ✓ Samples digested
- ✓ Hydroxyamine HCl added
- ✓ Samples bulked, mixed, and centrifuged
- ✓ Rack order checked

	#	Sample I.D.	B.Code	Init.Wt.	F. Vol.	Dil	Comment
	7	ICV (Init. Calib. Verif.)	LTA1	0.2gm	40 ml	200X	7.5 ppb or 1.5 mg/kg = 600 ul. of 0.5 ppm HP MESS-ZENO 30/QCA Std.
	8	BL 10/22	"	"	"	"	(Processed Blank) 62367 -
	9	BL 10/22 S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	10	62369	"	0.199	"	"	
1	11	D	"	0.199	"	"	(Duplicate sample)
1	12	S	"	0.201	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	13	DS	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
2	14	62368	"	0.200	"	"	
3	15	62371	"	0.202	"	"	
4	16	62372	"	0.201	"	"	
5	17		"	"	"	"	
6	18		"	"	"	"	
7	19		"	"	"	"	
8	20		"	"	"	"	
9	21		"	"	"	"	
10	22		"	"	"	"	
	23	CCV (Cont. Calib. Verif.)		0.2gm	40 ml	200X	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	24	BL	"	"	"	"	(Processed Blank)
	25	BL S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	26		"	"	"	"	
1	27	D	"	"	"	"	(Duplicate sample)
1	28	S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	29	DS	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
2	30		"	"	"	"	
3	31		"	"	"	"	
4	32		"	"	"	"	
5	33		"	"	"	"	
6	34		"	"	"	"	
7	35		"	"	"	"	
8	36		"	"	"	"	
9	37		"	"	"	"	
10	38		"	"	"	"	

HCL Lot No. 419030 HNO3 Lot No. 119060 Bath Temps. 195 °C

Notes:

* concentration based on 40 ml final volume, ** concentration based on 1 gram of sample

Prepare 0.5 ppm standards daily

Include one External Reference Material (ERA 230 or NRC PACS-1) per run

Prepared By: [signature] Date: 99 10 22 Checked by: [signature]

00097

	#	Sample I.D.	B.Code	Init.Wt.	F. Vol.	Dil	Comment
	39	CCV (Cont. Calib. Verif.)		0.2gm	40 ml	200X	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
	40	BL	"	"	"	"	(Processed Blank)
	41	BL S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	42		"	"	"	"	
1	43	D	"	"	"	"	(Duplicate sample)
1	44	S	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
1	45	DS	"	"	"	"	5 ppb or 1 mg/kg = 400 ul. of 0.5 ppm Inorg. Ventures working stock std.
2	46		"	"	"	"	
3	47		"	"	"	"	
4	48		"	"	"	"	
5	49		"	"	"	"	
6	50		"	"	"	"	
7	51		"	"	"	"	
8	52		"	"	"	"	
9	53		"	"	"	"	
10	54		"	"	"	"	

Other Information:

Procedure/Methodology:

1 Prepare 25 ppm Intermediate stocks (if needed): pipet 625 ul. of 1000 ppm source to 25 ml final volume of 2% HNO3
2 Prepare 0.5 ppm Working stocks daily: pipet 1000 ul. of 25 ppm interm. stock to 50 ml final volume of 2% HNO3
3 Label Falcon tubes and place into water bath digestion racks
(see # column for tube designations; tube locations are numbered 3 in a row front to back , left to right)
4 Accurately weigh 0.200g (+/- 0.005 g) of homogeinized solid into designated Falcon tube. Record weights on the preparation log record sheet. Process 0.200g of ERA 230 or NRC PACS-1 as well
5 Spike the tubes as indicated in the comment sector of the digestion sheet.
6 Add 5ml of RODI and 5ml of aqua-regia (or add separately 1.25 ml conc. HNO3 and 3.75 ml conc. HCl) to each tube.
7 Mix each tube and place into the water bath at 95 degrees Celsius for 2 minutes.
8 Slowly add 5 ml of 6% of potassium permanganate, ***reaction can be vigorous.***
Repeat the 5ml of 6% potassium permanganate addition step two more times.
9 Place the samples in the water bath and digest @95 C for 30 minutes.
10 Remove tubes from the water bath and allow to cool to room temperature.
11 Add 5 mL of 20% hydroxylamine HCl , mix and ensure that all KMnO4 is reduced.
12 Bulk each sample to 40 mL final volume with RODI, cap and mix each sample.
13 Centrifuge samples at 2500 rpm for ***3-5 min***.

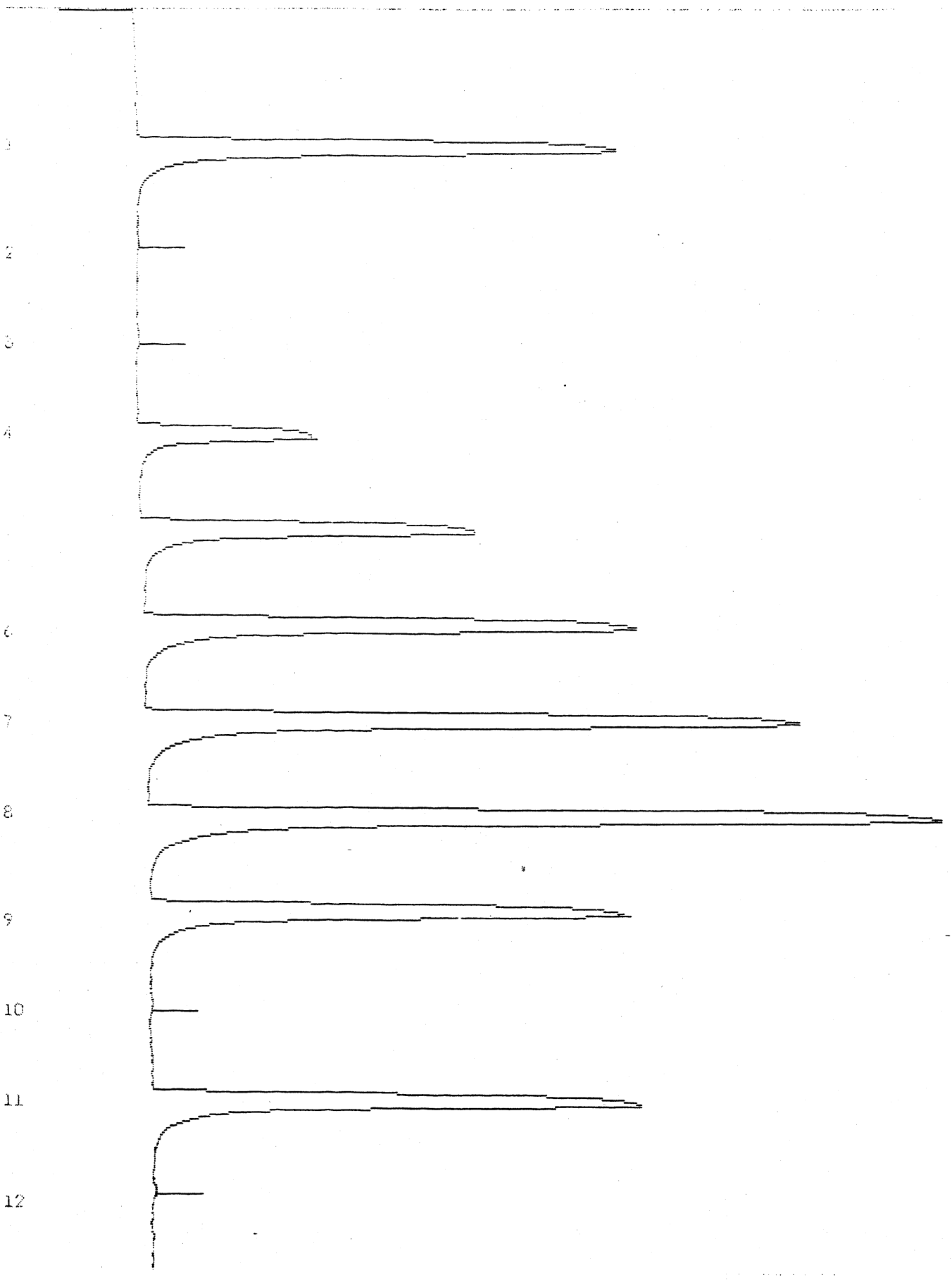
REFERENCE STANDARDS/SPIKING SOLUTIONS
Source: Inorganic Ventures Standard, see standard tracking binder for preparation date, current lot and expiry date information

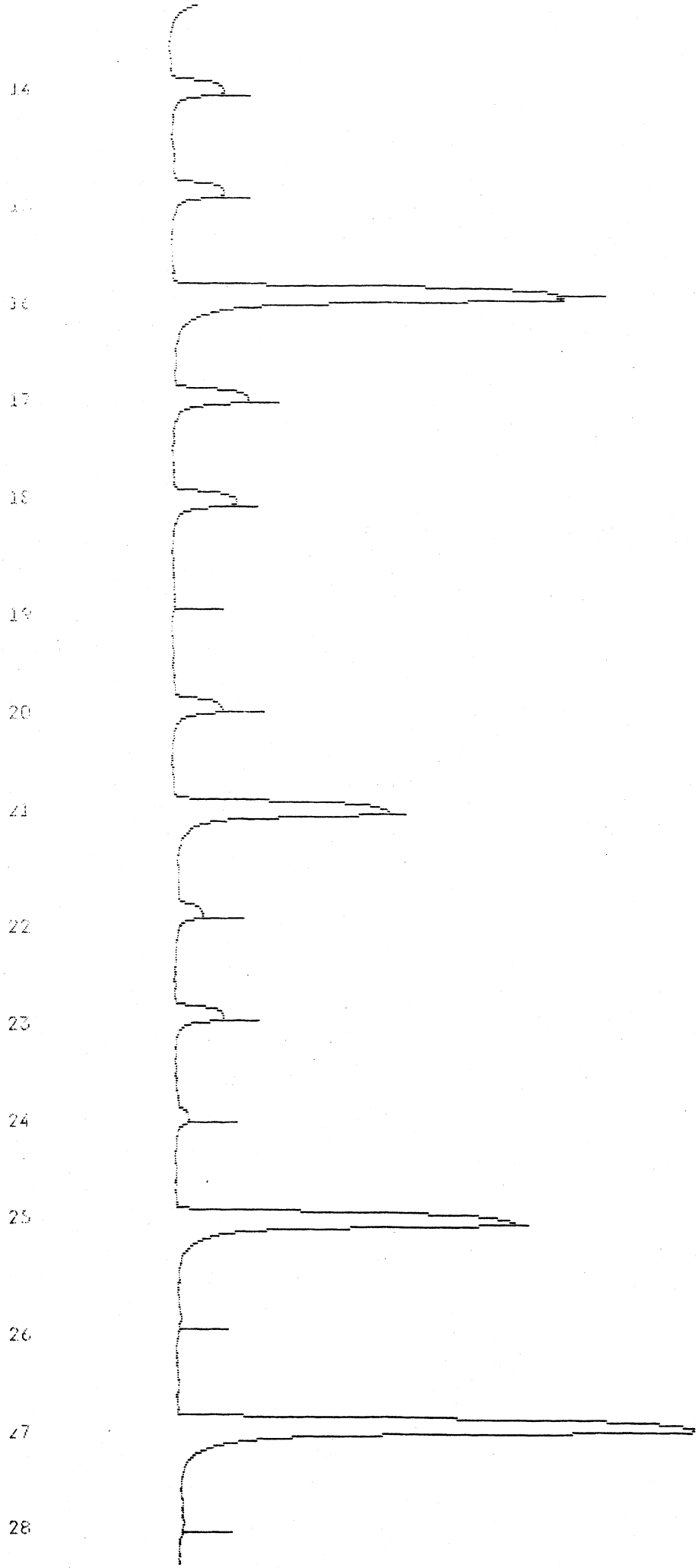
QC STANDARDS
Source: High Purity MESS-ZENO 30/QCA Standard, see standard tracking binder for preparation date and current lot

EXTERNAL REFERENCE STANDARD
Source: Environmental Resource Associates (ERA) or National Research Council of Canada (NRC), see CRM/SRM binder in ICP Laboratory for performance limits.

All reagents used are of a grade suitable for mercury analyses

RUN DATE: 10-22-1999 CHART DATE: 10-22-1999
CHART SPEED: 30
DATA FILE NAME: C:\OPI\DATA\9910220.DAT

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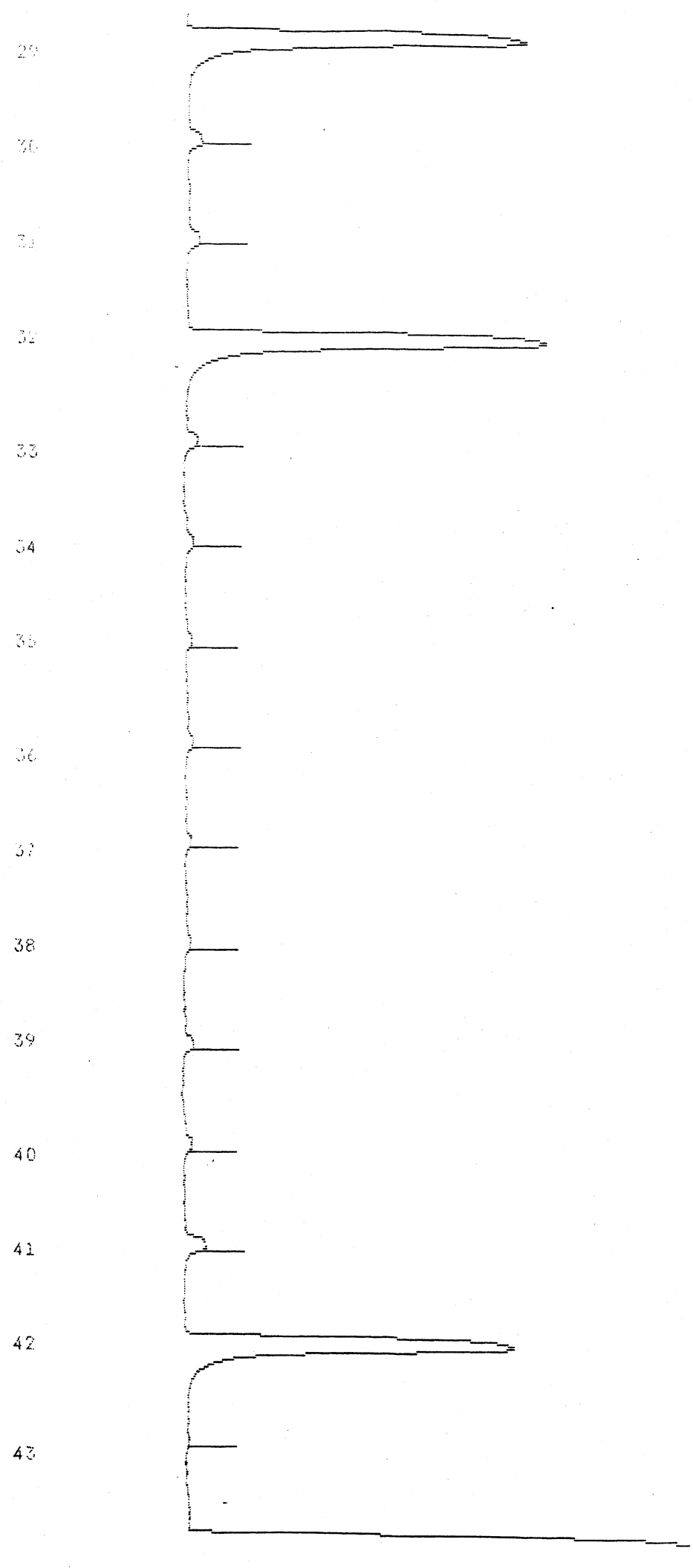
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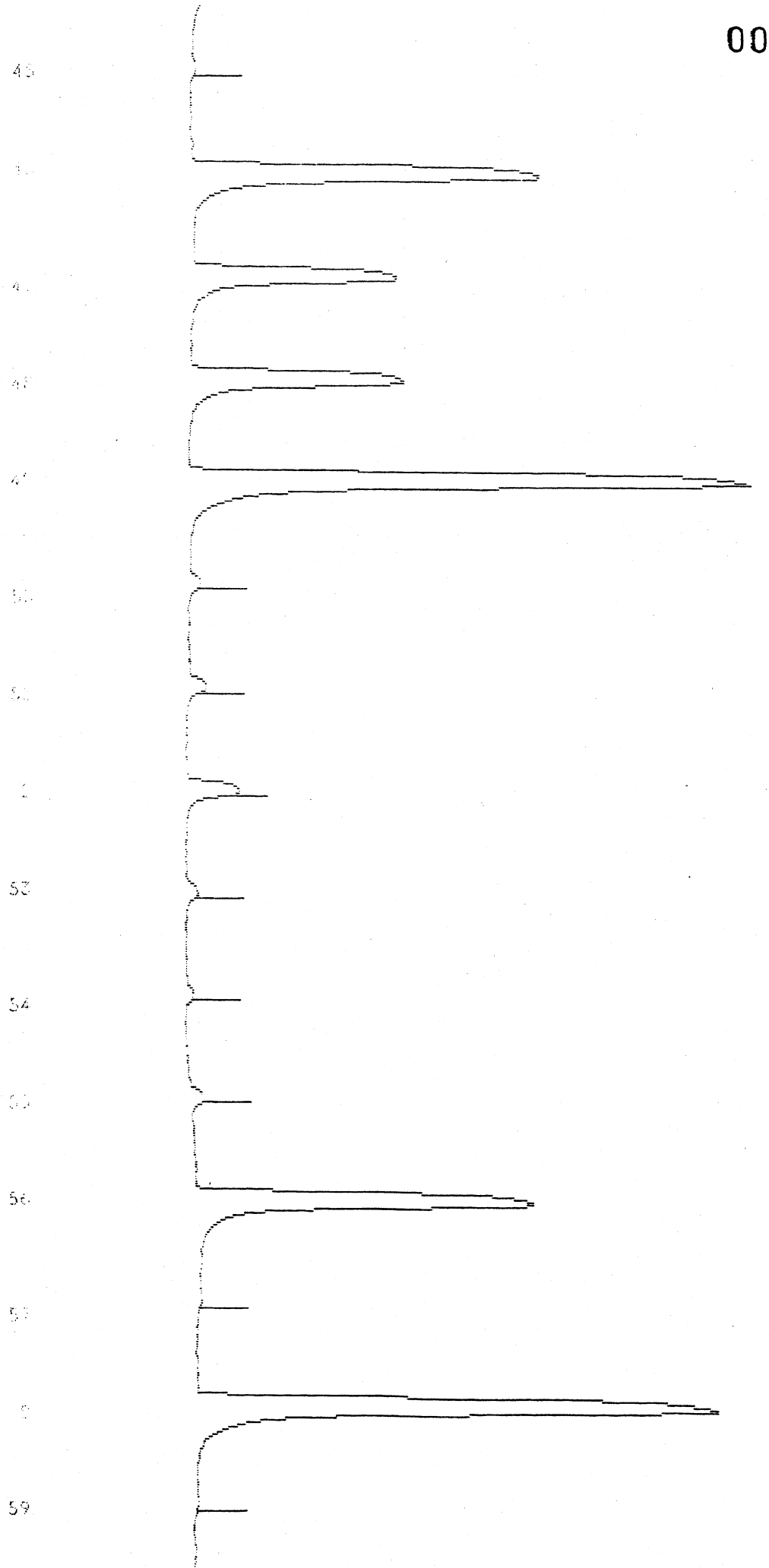
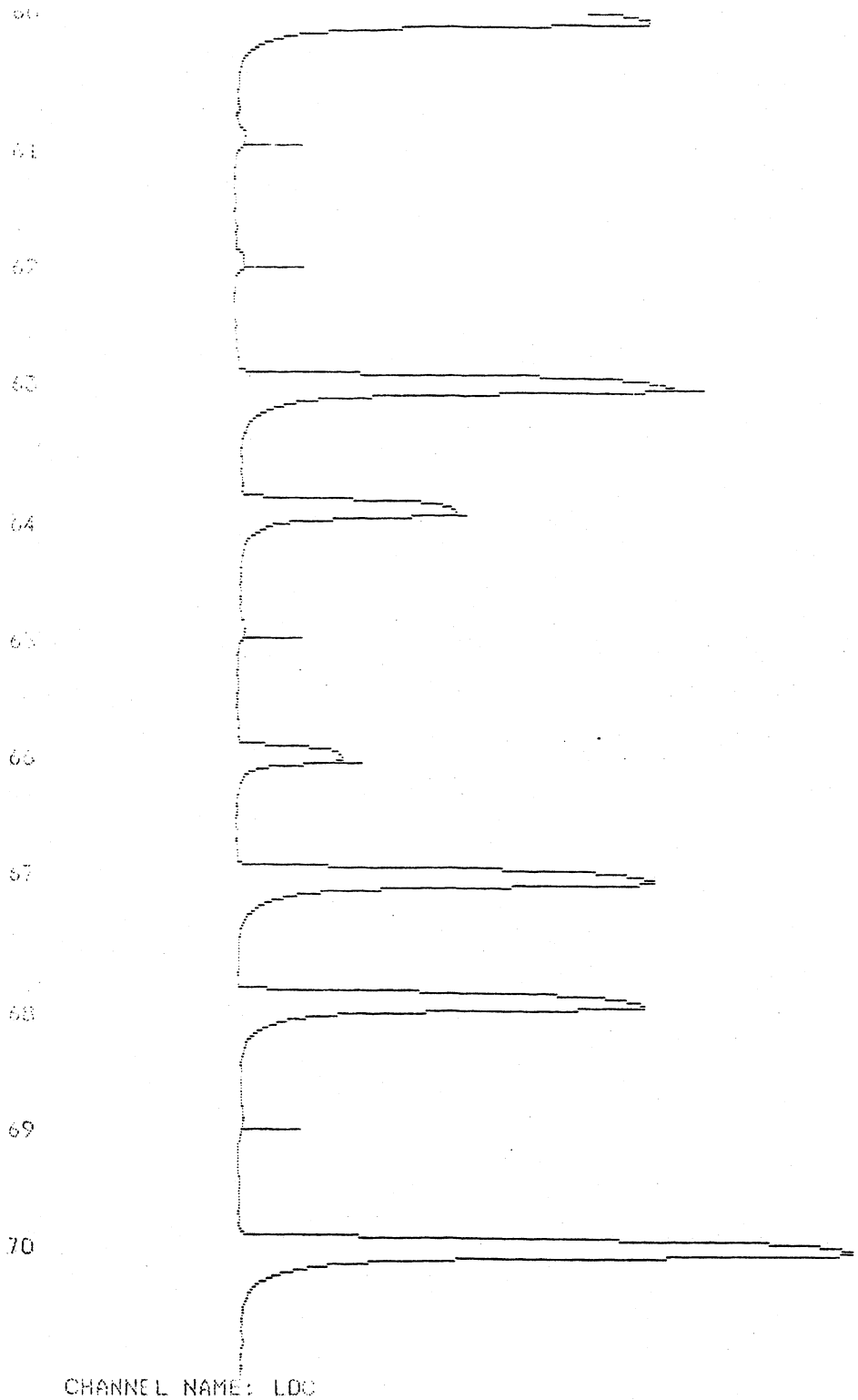
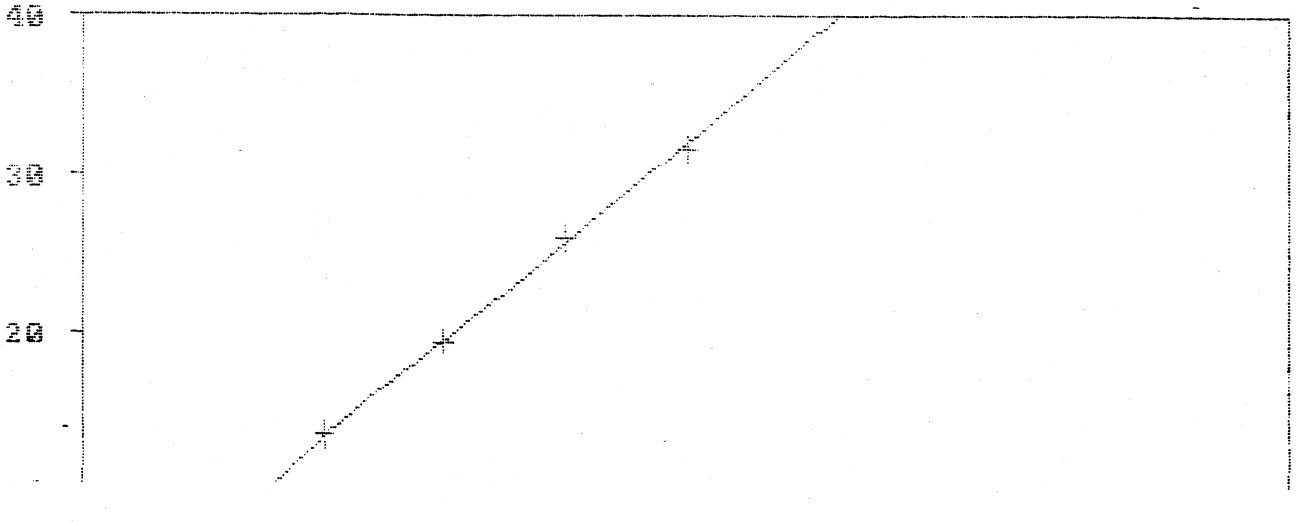
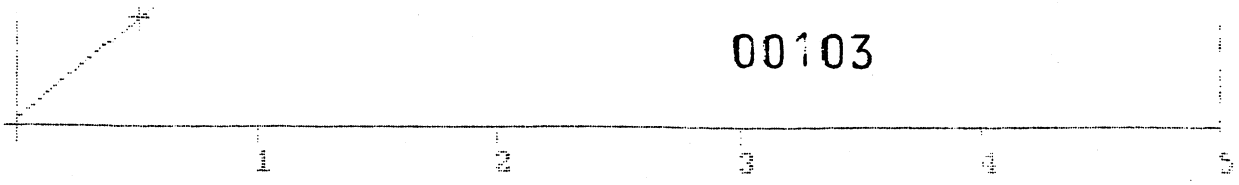




CHANNEL NAME: LDC
RUN NAME: 9910228





DATA TYPE: FIA
INTERCEPT = 0.37

CALIBRATION ORDER: 1
SLOPE = 12.455 [illegible]

CORRELATION: .9997256

CHANNEL NAME: LDC
RUN DATE: 10-22-1999
SAMPLE TABLE NAME: 9910228
METHOD NAME: HGSOIL

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION	EF
1	PRIMER	1	1	19.1	1.480	s
2	DUMMY	1	1	0.1	-0.023	I
3	S1: 0	1	1	0.0	-0.025	I
4	S2: .5	1	1	6.8	0.509	
5	S3: 1	1	1	13.2	1.017	
6	S4: 1.5	1	1	19.5	1.509	
7	S5: 2	1	1	25.9	2.020	
8	S6: 2.5	1	1	31.6	2.470	
9	ICV	1	1	18.9	1.463	98%
10	B	1	1	0.0	-0.029	b
11	D4	1	1	19.5	1.509	d
12	BL1022-LTA1 60263	1	1	0.0	-0.027	I
13	BL1022S	1	1	13.2	1.011	101
14	60279	1	1	1.8	0.116	
15	60279D	1	1	1.8	0.112	
16	60279S	1	1	14.[illegible]	1.133	101%
17	60264	1	1	2.6	0.177	
18	60265	1	1	2.2	0.143	
19	61932	1	1	0.0	-0.029	I
20	60308	1	1	1.7	0.104	
21	60309	1	1	8.0	0.606	
22	60310	1	1	0.9	0.039	
23	60311	1	1	1.7	0.102	
24	60312	1	1	0.3	-0.002	I
25	CCV	1	1	12.6	0.969	97%
26	B	1	1	0.0	-0.029	b
27	D4	1	1	19.5	1.509	d
28	BL1022-LTA2	1	1	0.0	-0.027	I
29	BL1022S	1	1	13.1	1.009	101%
30	60313	1	1	0.4	0.006	I
31	60313D	1	1	0.3	-0.002	s
32	60313S	1	1	13.9	1.067	107%
33	60314	1	1	0.3	-0.002	I
34	60315	1	1	0.2	-0.014	I
35	60316	1	1	0.1	-0.019	I
36	60317	1	1	0.2	-0.016	I
37	60318	1	1	0.1	-0.017	I
38	60319	1	1	0.1	-0.017	I
39	60320	1	1	0.3	-0.004	I
40	60321	1	1	0.3	-0.008	I
41	60322	1	1	0.8	0.033	
42	CCV	1	1	12.7	0.972	97%
43	B	1	1	0.0	-0.029	b
44	D4	1	1	19.5	1.509	d
45	BL1022-LTA3 60321	1	1	0.0	-0.027	I

00104

47	60323	1	1	7.8	0.585	
48	60323B	1	1	8.1	0.610	
49	60323C	1	1	20.9	1.621	102%
50	60324	1	1	0.3	-0.004	I
51	60325	1	1	0.6	0.015	
52	60832	1	1	1.9	0.118	
53	60834	1	1	0.4	0.000	I
54	61835	1	1	0.1	0.017	I
55	61836	1	1	0.3	-0.006	I
56	CCV	1	1	12.4	0.971	97%
57	B	1	1	0.0	0.021	L
58	D4	1	1	19.5	1.509	d
59	BL1022-LTA4 62367	1	1	0.0	-0.027	L
60	BL1022S	1	1	13.1	1.005	101%
61	52369	1	1	0.2	-0.014	S
62	623690	1	1	0.2	-0.014	I
63	623693	1	1	13.7	1.050	105%
64	62368	1	1	6.8	0.507	
65	62371	1	1	0.0	-0.025	I
66	62372	1	1	3.2	0.222	
67	ERA 240	1	1	13.2	1.013	
68	CCV	1	1	12.8	0.980	98%
69	B	1	1	0.0	-0.027	L
70	D4	1	1	19.5	1.509	d

INTERCEPT: 0.37 LINEAR COEF: 12.60515
CORRELATION COEF: .9997256

4. SHIPPING/RECEIVING DOCUMENTS

Airbills (No. of shipments)
Chain-of-Custody Records
Sample Log-In Sheets
Miscellaneous Shipping/Receiving Records (describe or list)
fax notification

MB- 115

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton Point
Project No.: 26046
Sampling Date(s): 10/6/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-3-RB-PF-Hg	10/6/99	Petri						X		Reagent Blank	X	X									60116
PG&E-BP-OHM-3-RB-HNO_3-Hg		250ml	CG			X					X	X									
PG&E-BP-OHM-3-RB-HNO_3/HCl-Hg		250ml				X					X	X									
PG&E-BP-OHM-3-RB-$KMnO_4$-Hg		250ml				X					X	X									
PG&E-BP-OHM-3-RB-KCl-Hg		250ml		X							X	X									
PG&E-BP-OHM-3-O-4-PF-Hg	10/6/99	Petri						X		Boiler #3 Run 4	X	X									60117
PG&E-BP-OHM-3-O-4-PR-Hg		250ml	CG			X				Outlet	X	X									
PG&E-BP-OHM-3-O-4-KCl-Hg		950ml	AG			X					X	X									
PG&E-BP-OHM-3-O-4-HNO_3/HCl-Hg		250ml	CG			X					X	X									
PG&E-BP-OHM-3-O-4-$KMnO_4$-Hg		950ml	AG			X					X	X									

00106

Relinquished by:	Date/Time: 10/12/99 1700	Relinquished by:	Date/Time:
Received by: - PASL	Date/Time: 991013 0:45	Received by:	Date/Time:

REMARKS (*):

№ 02569

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton Point
Project No.: 26046
Sampling Date(s): 10/6/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

MB-60263

Sample Code	Sampled Date	Container Size	Container G/P	MATRIX: Aqueous	Organic Solvent	Ash/Soil/Sediment	Acidic	Basic	Other	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-3-IE4-PF-Hg	10/6	Petri						X		Boiler #3 Run 4	✓	X									60118
PG&E-BP-OHM-3-IE4-PR-Hg	↓	250ml	CG			X				Inlet East	✓	X									
PG&E-BP-OHM-3-IE4-KCl-Hg		950ml	AG			X				↓	✓	X									
PG&E-BP-OHM-3-IE4-HNO3/H2O2-Hg		250ml	CG			X					✓	X									
PG&E-BP-OHM-3-IE4-KMnO4-Hg		950ml	AG			X					✓	X									
PG&E-BP-OHM-3-IE4-A-Hg	↓	250ml	CG		X					↓	✓	X									60264
PG&E-BP-OHM-3-IW4-PF-Hg	10/6	Petri						X		Boiler #3 Run 4	✓	X									60119
PG&E-BP-OHM-3-IW4-PR-Hg	↓	250ml	CG			X				Inlet West	✓	X									
PG&E-BP-OHM-3-IW4-KCl-Hg		950ml	AG			X				↓	✓	X									
PG&E-BP-OHM-3-IW4-HNO3/H2O2-Hg		250ml	CG			X					✓	X									
PG&E-BP-OHM-3-IW4-KMnO4-Hg		950ml	AG			X					✓	X									
PG&E-BP-OHM-3-IW4-A-Hg	↓	250ml	CG		X					↓	✓	X									60265

Relinquished by:	Date/Time: 10/12/99 1700	Relinquished by:	Date/Time:
Received by: - PASL	Date/Time: 99/10/13 12:45	Received by:	Date/Time:

REMARKS (*):

№ 02562

WHITE — LABORATORY YELLOW — LABORATORY COPY PINK — OFFICE COPY GOLD — FIELD COPY

TRC Environmental Corporation

00107

00108

Page ___ of ___

US SAMPLE LOG IN SHEET

TRC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Carano

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent ___	Samples received.
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	4428 7837 2357	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	13-10-99	
Time Received	12:45	

Temperature of Coolers

Cooler ID:	Temperature
1 Cooler	16°C

Relinquished By: L Jones

Date: 13-10-99

Logbook No: ___

Logbook Page No

** TX STATUS REPORT ** AS OF OCT 15 1999 08:21 PAGE.01

PHILIP ANALYTICAL

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	JOB#	STATUS
20	10/15	08:21	19784531995	EC--S	00'25"	002	024	OK

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: OH Trains off 14 were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
060116	BP-OHM-3-RB	99/10/06	99/10/14
060117	BP-OHM-3-O-4	99/10/06	99/10/14
060118	BP-OHM-3-IE-4	99/10/06	99/10/14
060119	BP-OHM-3-IW-4	99/10/06	99/10/14

Comments: _____

_____

_____

Date 99/10/15

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: OH Trains for 14
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
060116	BP-OHM-3-RB	99/10/06	99/10/14
060117	BP-OHM-3-O-4	99/10/06	99/10/14
060118	BP-OHM-3-IE-4	99/10/06	99/10/14
060119	BP-OHM-3-IW-4	99/10/06	99/10/14

Comments: _____

_____

_____

Date 99/10/15

** TX STATUS REPORT ** AS OF OCT 18 1999 11:07 PAGE.01

PHILIP ANALYTICAL

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	JOB#	STATUS
09	10/18	11:07	19784531995	EC--S	00'17"	001	170	OK

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: Ifr in Ash
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
060264	BP-OHM-3-IE-4 Ash	99/10/06	99/10/13
060265	BP-OHM-3-Iw-4 Ash	99/10/06	99/10/13
060279	NIST 1633b Coal Ash	99/10/15	99/10/15

Comments: _____

_____

_____

Date 99/10/15

NOTICE OF SAMPLE RECEIPT-PHILIP ANALYTICAL SERVICES

Attention: Michael P. Martin
Client: TRC Environmental Corporation
Re Client Project: 26046
FAX #: 978-453-1995
Phone #: 978-970-5600

Samples for: Hg in Ash
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
060264	BP-OHM-3-IE-4 Ash	99/10/06	99/10/13
060265	BP-OHM-3-Iw-4 Ash	99/10/06	99/10/13
060279	NIST 1633b Coal Ash	99/10/15	99/10/15

Comments: _____

_____

_____

Date 99/10/15

Appendix D.2

Process Streams

COMMERCIAL TESTING & ENGINEERING CO.

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

SINCE 1905

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

ADDRESS ALL CORRESPONDENCE TO:
RT. 2, BOX 162A
MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

October 12, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P G & E-SG-OHM-1-C-1

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis Report No. 49-122695

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	10.47	xxxxx		
% Ash	35.58	39.74		
% Volatile	19.26	21.51		
% Fixed Carbon	34.69	38.75		
	100.00	100.00		
Btu/lb	7618	8509	MAF	14120
% Sulfur	1.33	1.49		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler
Middlesboro Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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

SINCE 1908

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

ADDRESS ALL CORRESPONDENCE TO:
RT. 2, BOX 162A
MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

October 12, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P G & E-SG-OHM-1-C-1

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122695

PARAMETER	RESULTS
Mercury, Hg	0.55 ppm
Chlorine, Cl	0.06 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Middlesboro Laboratory

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October 12, 1999

TRC ENVIRONMENTAL CORPORATION
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WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P G & E-SG-OHM-2-C-1

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis Report No. 49-122694

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	11.21	xxxxx		
% Ash	35.37	39.84		
% Volatile	20.56	23.16		
% Fixed Carbon	32.86	37.00		
	100.00	100.00		
Btu/lb	7565	8520	MAF	14162
% Sulfur	1.35	1.52		

Respectfully submitted,
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ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P G & E-SG-OHM-2-C-1

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122694

PARAMETER	RESULTS
Mercury, Hg	0.52 ppm
Chlorine, Cl	0.06 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
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Sample identification by
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SAMPLE BROUGHT IN
P G & E-SG-OHM-3-C-1

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis Report No. 49-122696

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	9.06	xxxxx		
% Ash	39.15	43.05		
% Volatile	18.40	20.23		
% Fixed Carbon	33.39	36.72		
	100.00	100.00		
Btu/lb	7272	7996	MAF	14040
% Sulfur	1.27	1.40		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P G & E-SG-OHM-3-C-1

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122696

PARAMETER	RESULTS
Mercury, Hg	0.51 ppm
Chlorine, Cl	0.06 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
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ACCOUNTS PAYABLE

Sample identification by
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SAMPLE BROUGHT IN
P G & E-L-OHM-1-C -2 mpm

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis Report No. 49-122701

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	10.91	xxxxx		
% Ash	35.54	39.89		
% Volatile	19.69	22.10		
% Fixed Carbon	33.86	38.01		
	100.00	100.00		
Btu/lb	7621	8554	MAF	14231
% Sulfur	1.40	1.57		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P G & E-L-OHM-1-C

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122701

PARAMETER	RESULTS
Mercury, Hg	0.50 ppm
Chlorine, Cl	0.07 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
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WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
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SAMPLE BROUGHT IN
P G & E-L-OHM-2-C-2

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis Report No. 49-122697

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	8.87	xxxxx		
% Ash	39.56	43.41		
% Volatile	22.25	24.42		
% Fixed Carbon	29.32	32.17		
	100.00	100.00		
Btu/lb	7203	7904	MAF	13967
% Sulfur	1.17	1.28		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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October 12, 1999

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ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P G & E-L-OHM-2-C-2

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122697

PARAMETER	RESULTS
Mercury, Hg	0.42 ppm
Chlorine, Cl	0.06 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
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WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P G & E-L-OHM-3-C-2

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis Report No. 49-122698

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	9.98	xxxxx		
% Ash	38.97	43.29		
% Volatile	18.18	20.19		
% Fixed Carbon	32.87	36.52		
	100.00	100.00		
Btu/lb	7178	7974	MAF	14061
% Sulfur	1.32	1.47		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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October 12, 1999

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5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P G & E-L-OHM-3-C-2

Kind of sample reported to us COAL

Sample taken at SCRUBGRASS GENERATING STATION

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122698

PARAMETER	RESULTS
Mercury, Hg	0.52 ppm
Chlorine, Cl	0.06 %

Procedure: The sample was prepared according to ASTM, Part 05.05, Method D 3683. The sample was analyzed for trace elements by Inductively Coupled Plasma Emission Spectroscopy.
Mercury was determined by Manual Coal Vapor Atomic Absorption.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
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October 8, 1999

TRC ENVIRONMENTAL CORPORATION
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WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-1-L-1
UNIT COMPOSITE-RUN NO. 1-LIMESTONE

Kind of sample reported to us LIMESTONE

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122786

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:33 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-2-L-1
UNIT NO.1 COMPOSITE-RUN-2-LIMESTONE

Kind of sample reported to us LIMESTONE

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122788

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:37 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

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October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-3-L-1
UNIT NO. 1 COMPOSITE-RUN NO. 3-LIMESTONE

Kind of sample reported to us LIMESTONE

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122790

ANALYZED PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:40 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
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October 8, 1999

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5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-1-L-2
UNIT NO. 2 COMPOSITE-RUN NO. 1-LIMESTONE

Kind of sample reported to us LIMESTONE

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122787

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:35 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
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October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-OHM-2-L-2
UNIT NO.2 COMPOSITE-RUN NO.2-LIMESTONE

Kind of sample reported to us LIMESTONE

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122789

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:39 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
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October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-3-L-2
UNIT NO.2 COMPOSITE-RUN NO.3-LIMESTONE

Kind of sample reported to us LIMESTONE

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122791

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:42 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-1-A-1/2
UNIT 1/2-NH4OH-RUN 1

Kind of sample reported to us

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122783

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.002	mg/L	SW7470	9/30/99 14:13 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Middlesboro Laboratory

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COMMERCIAL TESTING & ENGINEERING CO.

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MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-2-A-1/2
UNIT NO. 1/2-NH4OH-RUN NO. 2

Kind of sample reported to us

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122784

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.002	mg/L	SW7470	9/30/99 14:15 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
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FAX: (606) 248-0044

October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-3A-1/2
UNIT 1/2-NH4OH-RUN NO. 3

Kind of sample reported to us

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122785

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.002	mg/L	SW7470	9/30/99 14:16 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

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FAX: (606) 248-0044

October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-1-BA-1
BOTTOM ASH UNIT NO. 1 RUN NO. 1

Kind of sample reported to us BOTTOM ASH

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122777

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:19 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler
Middlesboro Laboratory

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FAX: (606) 248-0044

October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-2-BA-1
BOTTOM ASH UNIT NO. 1 RUN NO. 2

Kind of sample reported to us BOTTOM ASH

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122779

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:22 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
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Middlesboro Laboratory

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FAX: (606) 248-0044

October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-3-BA-1
BOTTOM ASH UNIT NO. 1 RUN NO. 3

Kind of sample reported to us BOTTOM ASH

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122781

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:30 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
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FAX: (606) 248-0044

October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-1-BA-2
BOTTOM ASH UNIT NO. 2 RUN NO. 1

Kind of sample reported to us BOTTOM ASH

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122778

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:20 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler
Middlesboro Laboratory

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FAX: (606) 248-0044

October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-OHM-2-BA-2
BOTTOM ASH UNIT NO. 2 RUN NO. 2

Kind of sample reported to us BOTTOM ASH

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122780

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:24 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

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FAX: (606) 248-0044

October 8, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E-SG-OHM-3-BA-2
BOTTOM ASH UNIT NO. 2 RUN NO. 3

Kind of sample reported to us BOTTOM ASH

Sample taken at

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122782

PARAMETER	CAS NO.	RESULT	LOQ	UNITS	METHODS	ANALYZED DATE/TIME/ANALYST
METALS-TOTAL BASIS						
MERCURY (Hg)	7439-97-6	ND	0.10	mg/kg	SW7471	9/30/99 15:31 JC2

ND: Not detected at a concentration greater than the LOQ - Limit of Quantitation.

Method Reference: USEPA: Test Methods For Evaluating Solid Waste;
3rd Edition; Nov. 1986

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Middlesboro Laboratory

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APPENDIX E

AUDIT DATA SHEETS

COMMERCIAL TESTING & ENGINEERING CO.

ROUTE 2, BOX 162-A

MIDDLESBORO, KENTUCKY 40965

FAX NO. (606) 248-0044

FAX TRANSMISSION COVER SHEET

FROM: Jerry Wheeler

TO: Ed

COMPANY: TRC

FAX NO.: 978-453-4215

DATE: 11-22-99

NUMBER OF PAGES: 1
(Not including
cover sheet)

If you do not receive all of these pages, please contact us immediately at (606) 248-4205.

Thank you!

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ICE 19066

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RT. 2, BOX 162A, MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

NIST Standard Results for Mercury

Nist 1630A (0.10C) ± .023

Date	Lab Results
9/3/99	0.11
9/15/99	0.09
9/22/99	0.09
9/28/99	0.11
10/8/99	0.10
10/12/99	0.09
10/20/99	0.10

Mercury Standard used NIST 1630a
Standard Results (0.106) ± .023

Test run Results.

Date	Results
9-3-99	0.11
9-15-99	0.09
9-22-99	0.09
9-24-99	0.11
10-8-99	0.10
10-12-99	0.09
10-20-99	0.10

PARAMETER REPORT: Calorific Value, Dry BTU/lb

6H0035: High Rank Coal - 60 Mesh
Sample ID: 1

Customer No: 004900

Issued Date: 10/20/99
mm/dd/yy

COMMERCIAL TESTING & ENGINEERING
Middlesboro

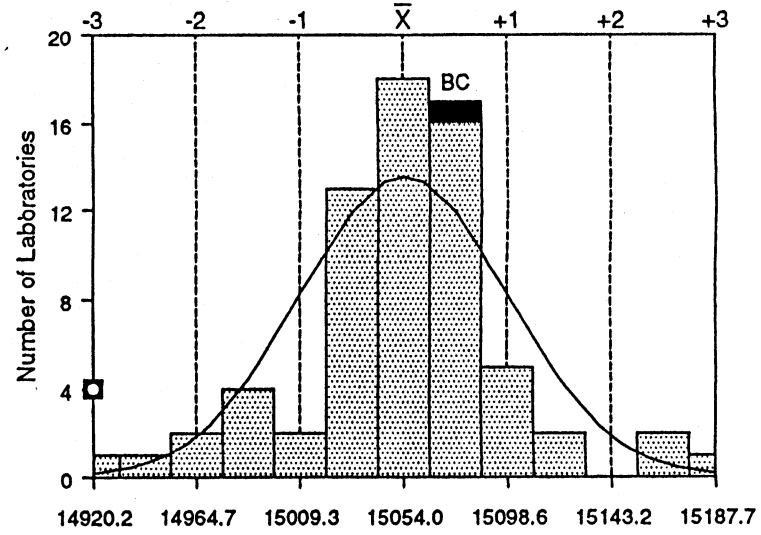
STATISTICS

Lab Value	
Mean	SD
15078	16.3

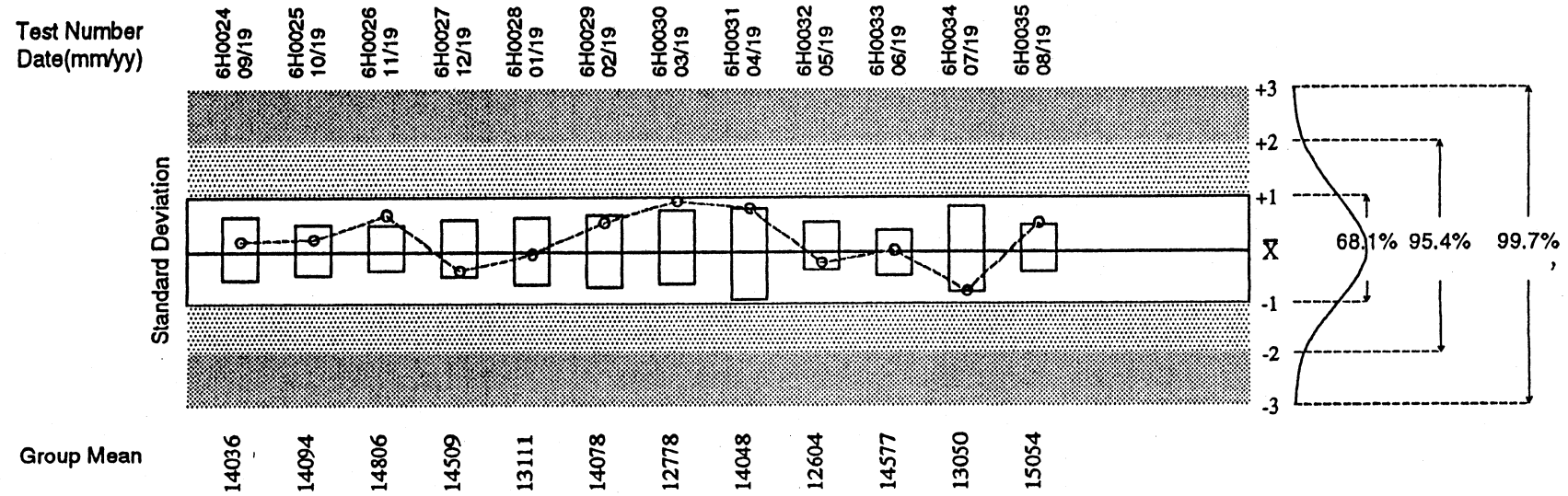
Group Value		
Mean	SD	n
15054	44.6	68

	Precision Estimates		Precision Factors	
Accuracy	Laboratory	Ref. Standard		Group
Mean Difference	24.0	within +/- 89.2	Repeatability (r)	45.03358
Standard Score	0.52	within +/- 2.0	Reproducibility (R)	128.9395
Relative Difference(%)	0.159	within +/- 0.592	Confidence Interval	21.6023
Precision Ratio	1.0	< 2.8		

FREQUENCY DISTRIBUTION



HISTORICAL PERFORMANCE



Laboratory Quality Services International
A Division of Commercial Testing & Engineering Co.

PARAMETER REPORT: Calorific Value, As Rec'd BTU/lb

6H0035: High Rank Coal - 60 Mesh
Sample ID: 1

Customer No: 004900
COMMERCIAL TESTING & ENGINEERING
Middlesboro

Issued Date: 10/20/99
mm/dd/yy

STATISTICS

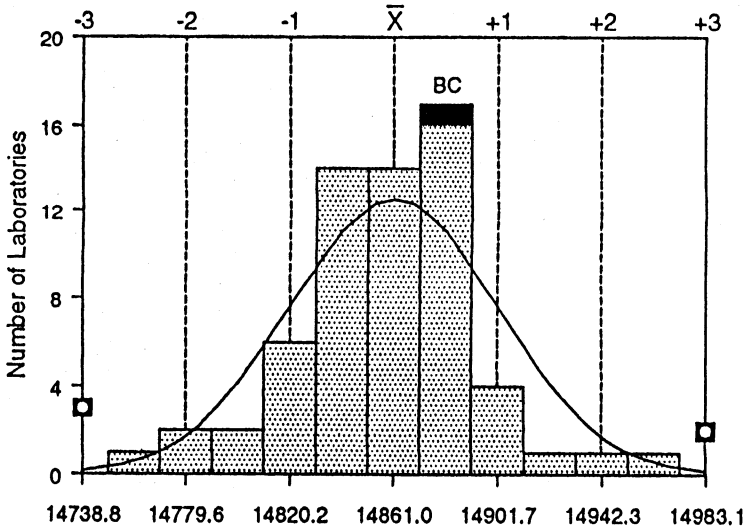
Lab Value	
Mean	SD
14888	21.9

Group Value		
Mean	SD	n
14861	40.7	64

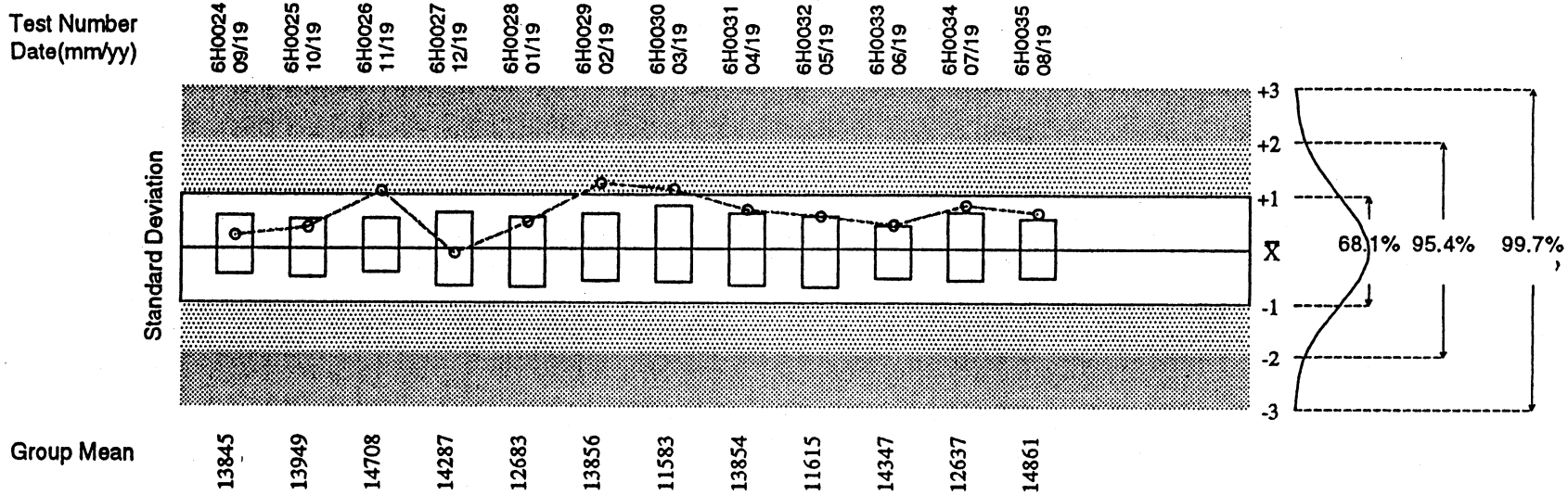
Precision Estimates		
Accuracy	Laboratory	Ref. Standard
Mean Difference	27.0	within +/- 81.4
Standard Score	0.64	within +/- 2.0
Relative Difference(%)	0.181	within +/- 0.547
Precision Ratio	1.3	< 2.8

Precision Factors	
	Group
Repeatability (r)	43.80387
Reproducibility (R)	117.9812
Confidence Interval	20.3118

FREQUENCY DISTRIBUTION



HISTORICAL PERFORMANCE



Laboratory Quality Services International
A Division of Commercial Testing & Engineering Co.

PARAMETER REPORT: Sulfur % by wt

6H0035: High Rank Coal - 60 Mesh
Sample ID: 1

Customer No: 004900
COMMERCIAL TESTING & ENGINEERING
Middlesboro

Issued Date: 10/20/99
mm/dd/yy

STATISTICS

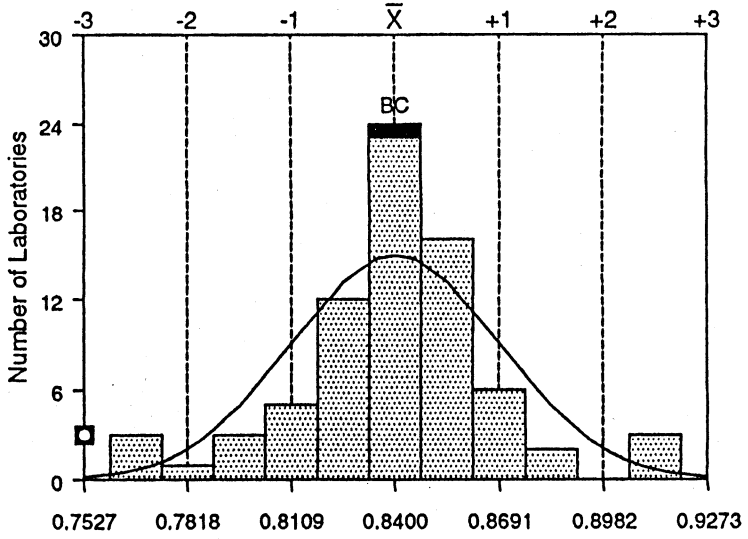
Lab Value	
Mean	SD
0.835	0.0071

Group Value		
Mean	SD	n
0.840	0.0291	74

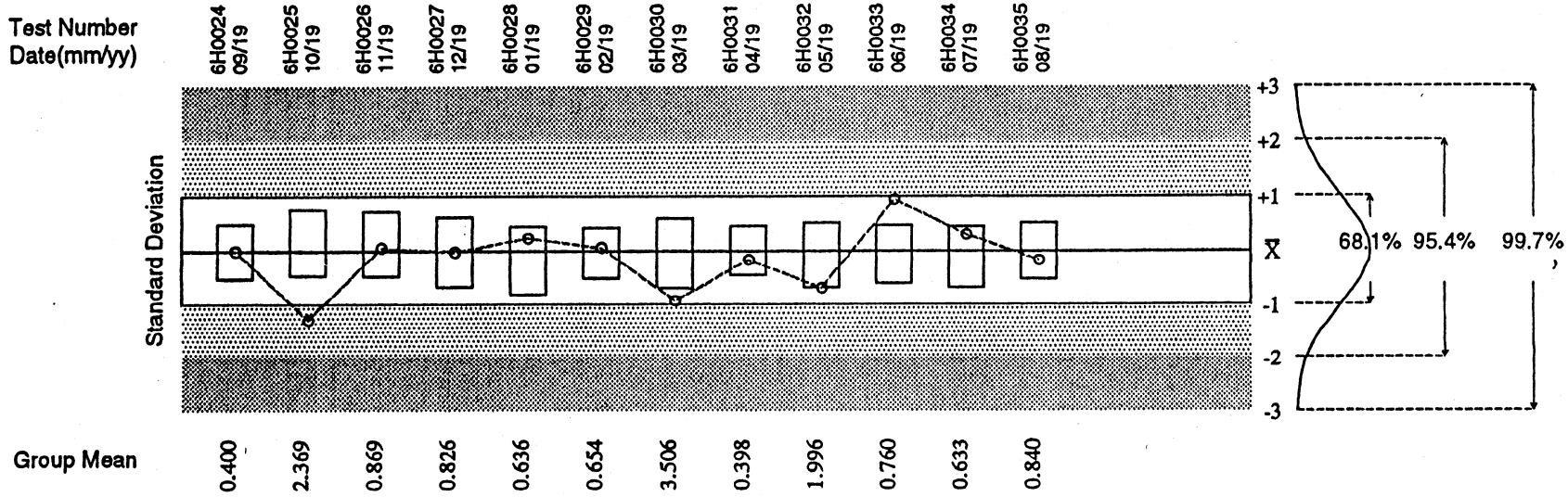
Accuracy	Precision Estimates: Laboratory	Precision Estimates: Ref. Standard
Mean Difference	-0.00500	within +/- 0.0582
Standard Score	-0.17	within +/- 2.0
Relative Difference(%)	-0.595	within +/- 6.9
Precision Ratio	0.759	< 2.8

Precision Factors	Group
Repeatability (r)	0.02616
Reproducibility (R)	0.08369
Confidence Interval	0.0135

FREQUENCY DISTRIBUTION



HISTORICAL PERFORMANCE



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A Division of Commercial Testing & Engineering Co.

LQ

PARAMETER REPORT: Ash % by wt

6H0035: High Rank Coal - 60 Mesh
Sample ID: 1

Customer No: 004900

COMMERCIAL TESTING & ENGINEERING
Middlesboro

Issued Date: 10/20/99
mm/dd/yy

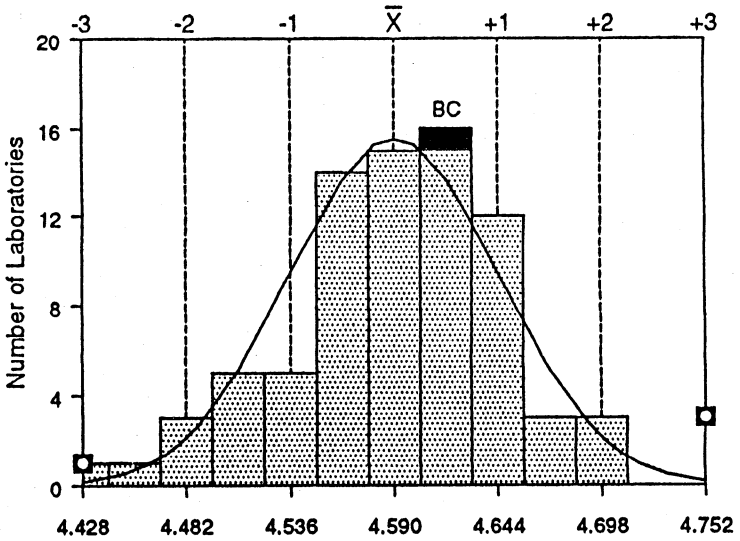
STATISTICS

Lab Value	
Mean	SD
4.63	0.035

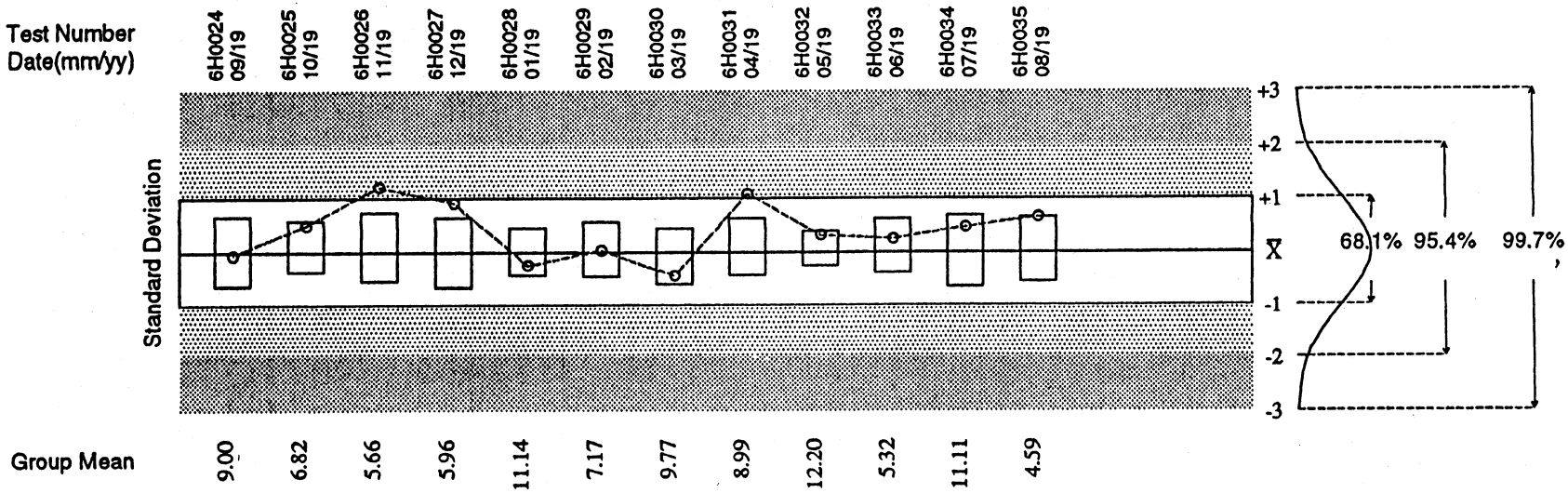
Group Value		
Mean	SD	n
4.59	0.054	77

	Precision Estimates		Precision Factors	
Accuracy	Laboratory	Ref. Standard		Group
Mean Difference	0.0400	within +/- 0.108	Repeatability (r)	0.08971
Standard Score	0.65	within +/- 2.0	Reproducibility (R)	0.16359
Relative Difference(%)	0.871	within +/- 2.3	Confidence Interval	0.0244
Precision Ratio	1.0	< 2.8		

FREQUENCY DISTRIBUTION



HISTORICAL PERFORMANCE



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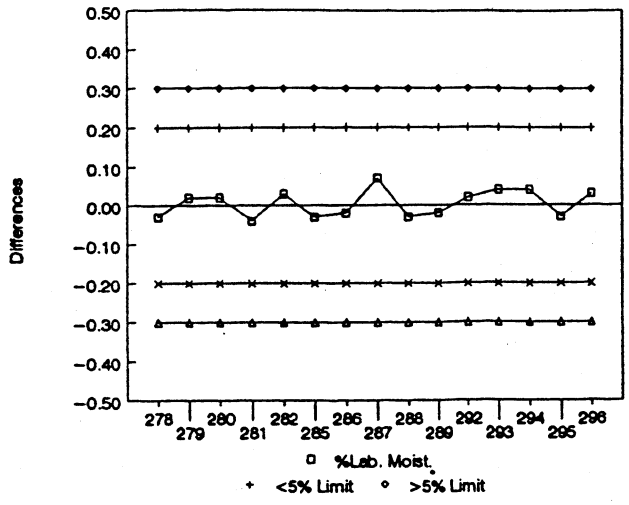
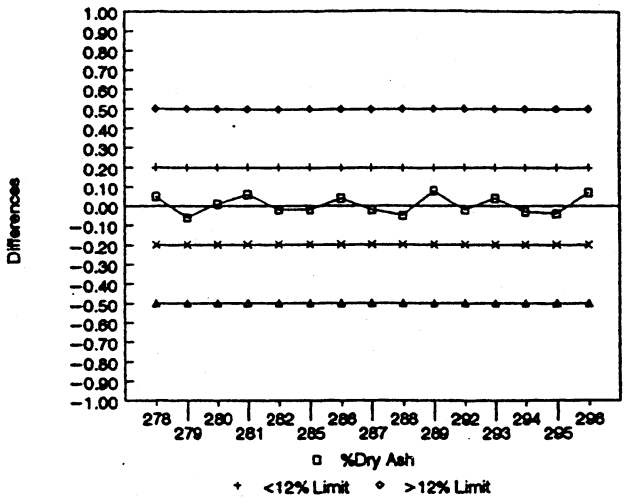
A Division of Commercial Testing & Engineering Co.

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

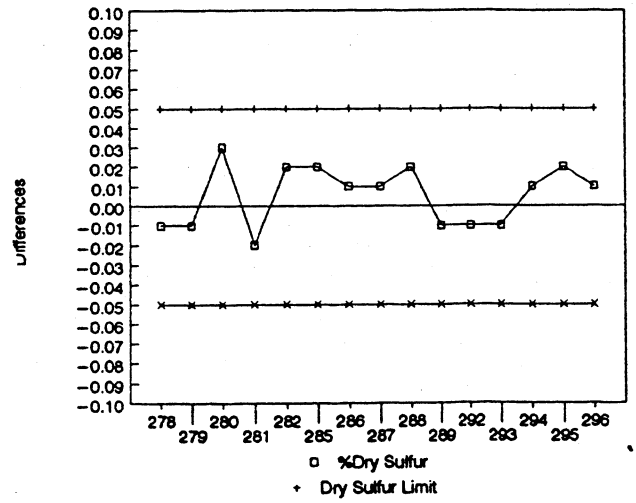
Daily 60 Mesh – %Lab. Moisture



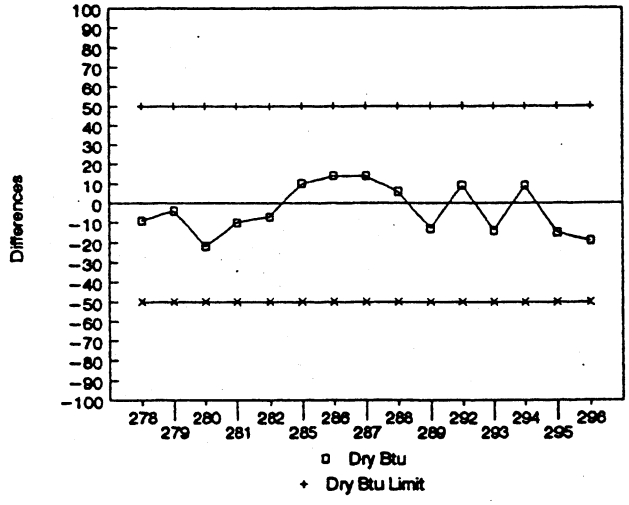
Daily 60 Mesh – %Dry Ash



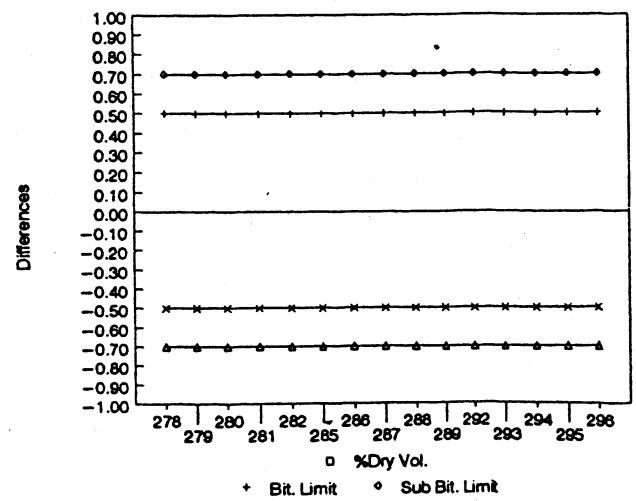
Daily 60 Mesh – %Dry Sulfur



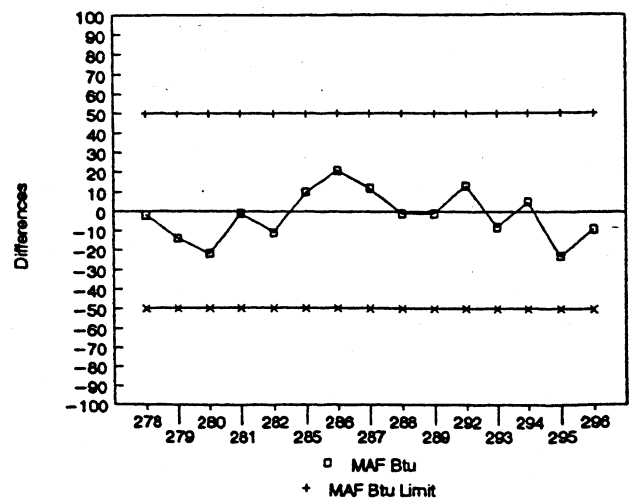
Daily 60 Mesh – Dry Btu/lb



Daily 60 Mesh – %Dry Volatile



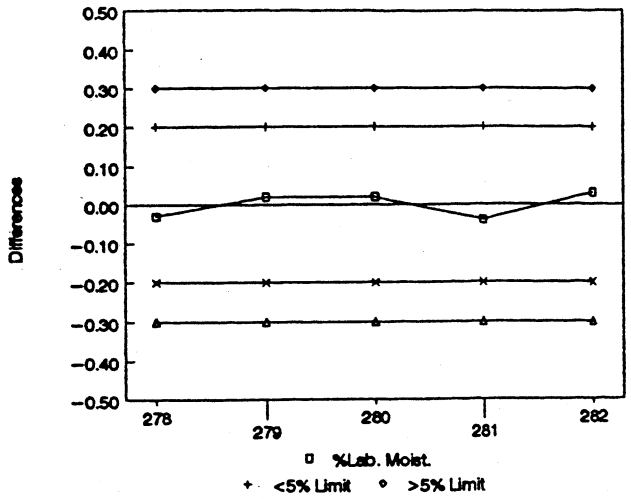
Daily 60 Mesh – MAF Btu/lb



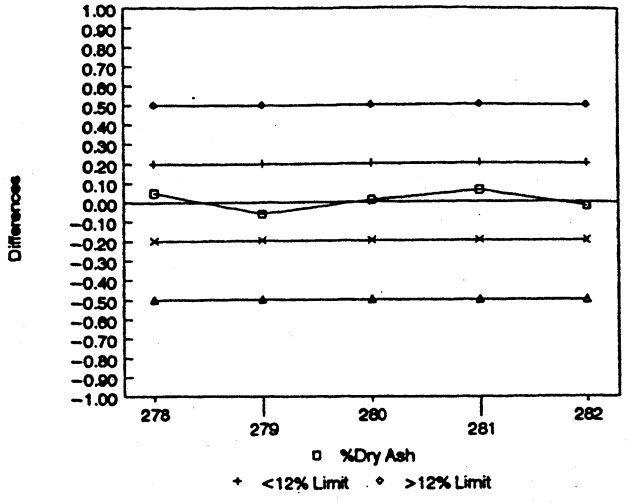
From: October 5, 1998 To: October 23, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

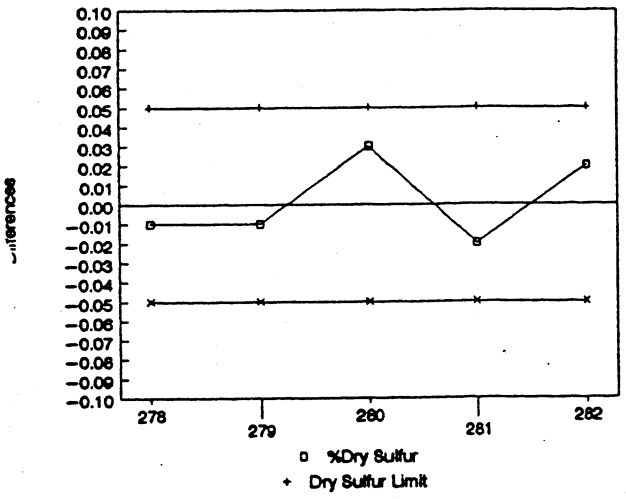
Daily 60 Mesh – %Lab. Moisture



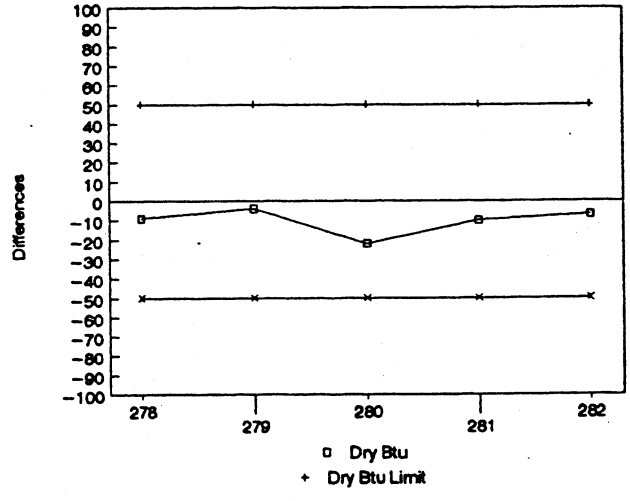
Daily 60 Mesh – %Dry Ash



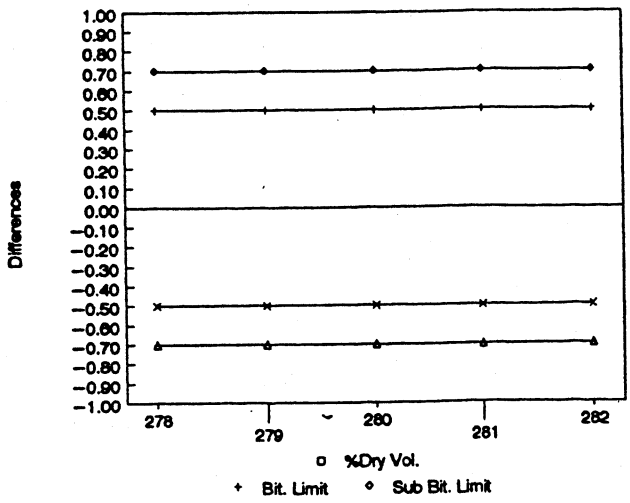
Daily 60 Mesh – %Dry Sulfur



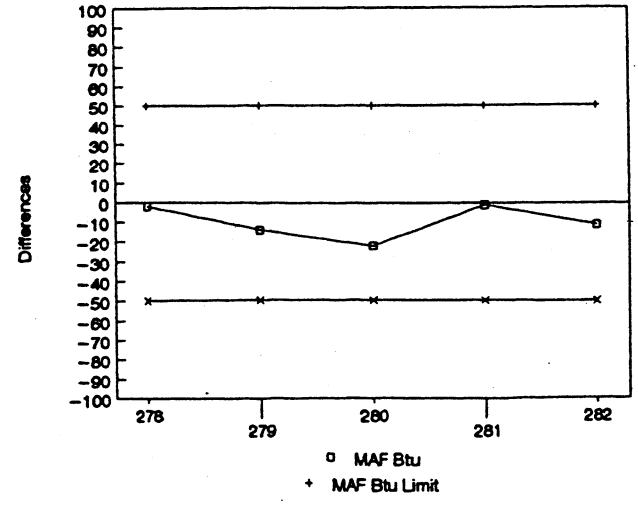
Daily 60 Mesh – Dry Btu/lb



Daily 60 Mesh – %Dry Volatile



Daily 60 Mesh – MAF Btu/lb

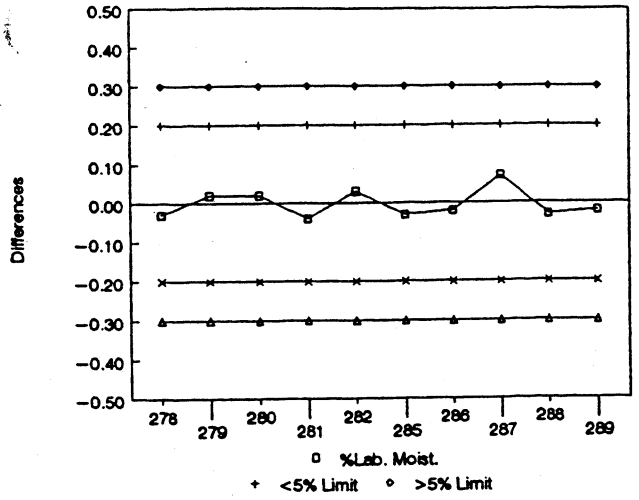


From: October 5, 1998 To: October 9, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

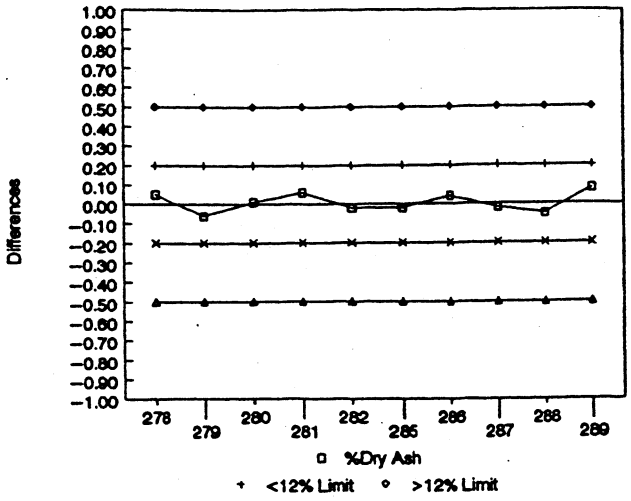
Daily 60 Mesh – %Lab. Moisture

Actual Difference



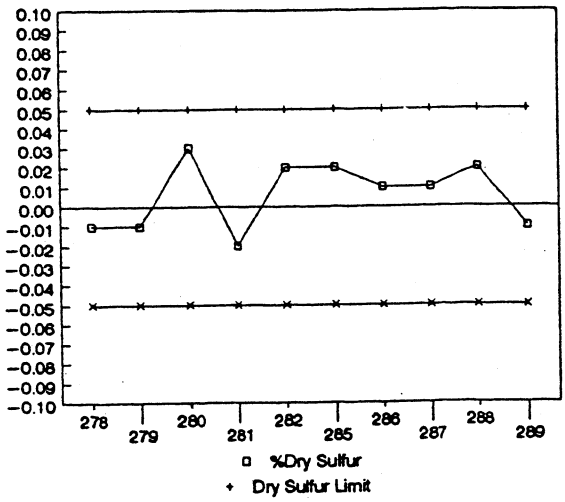
Daily 60 Mesh – %Dry Ash

Actual Difference



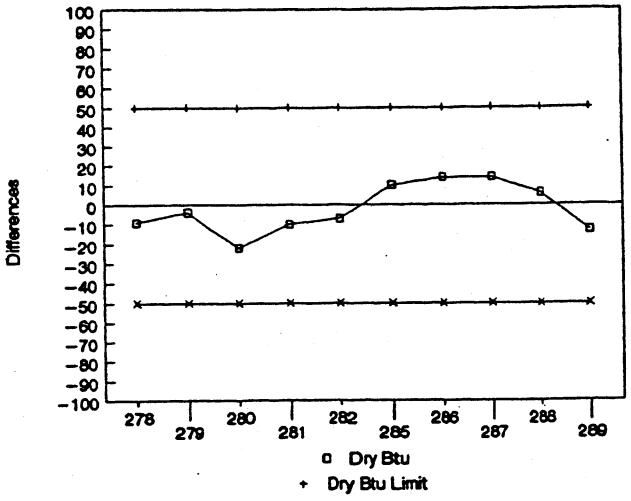
Daily 60 Mesh – %Dry Sulfur

Actual Difference



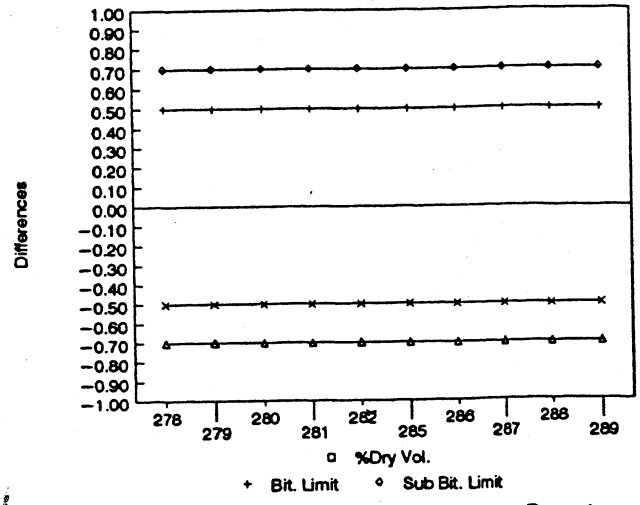
Daily 60 Mesh – Dry Btu/lb

Actual Difference



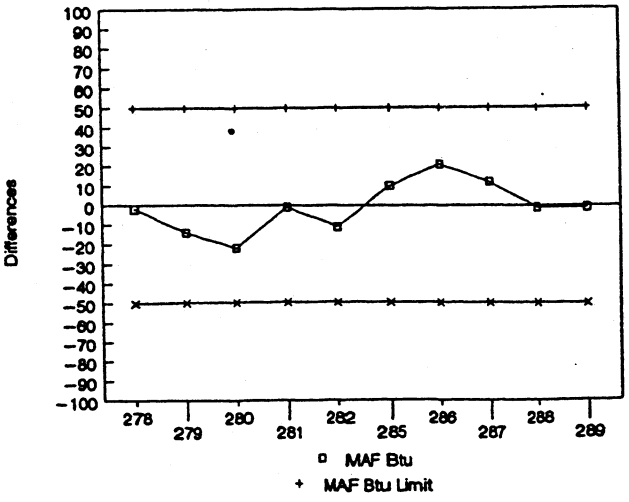
Daily 60 Mesh – %Dry Volatile

Actual Difference



Daily 60 Mesh – MAF Btu/lb

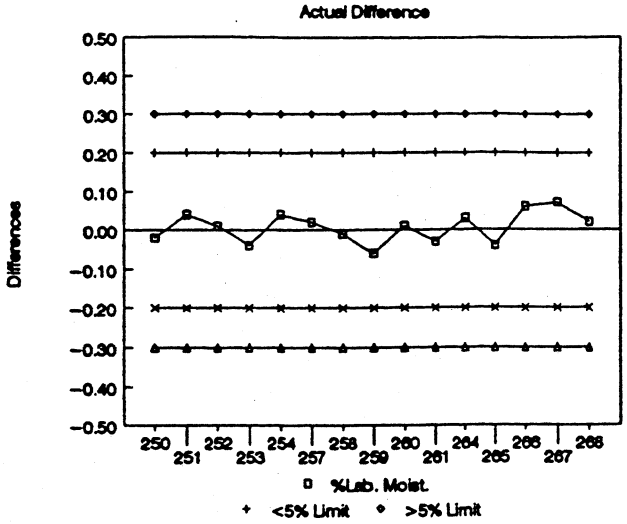
Actual Difference



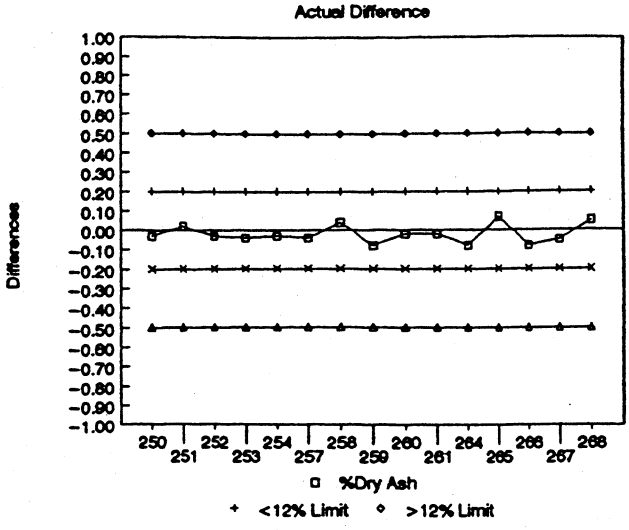
From: October 5, 1998 To: October 16, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

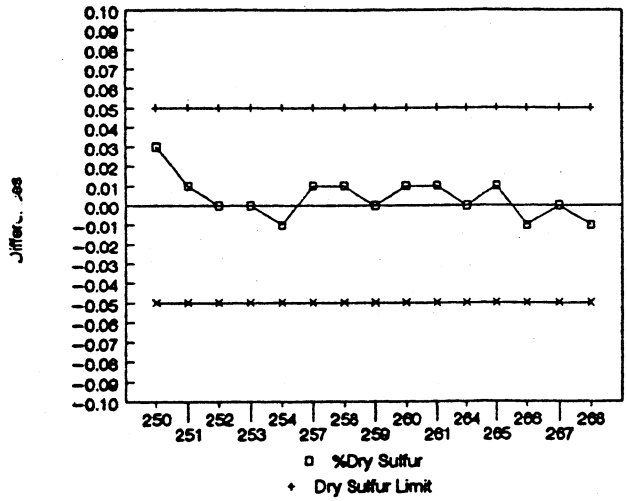
Daily 60 Mesh – %Lab. Moisture



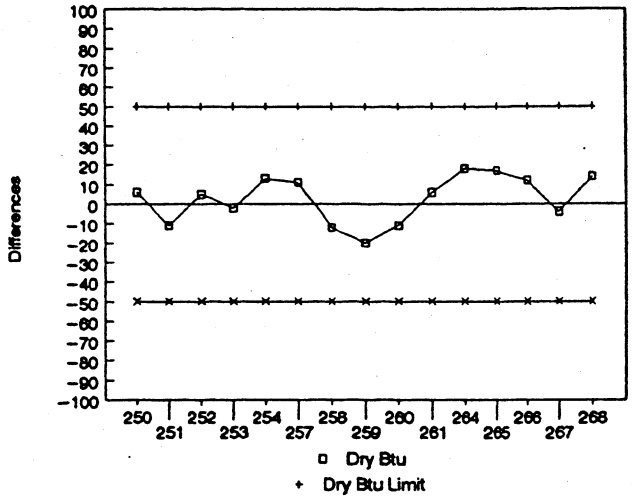
Daily 60 Mesh – %Dry Ash



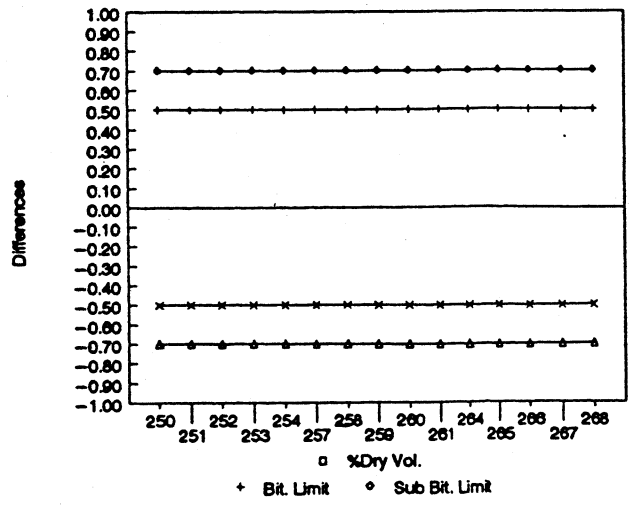
Daily 60 Mesh – %Dry Sulfur



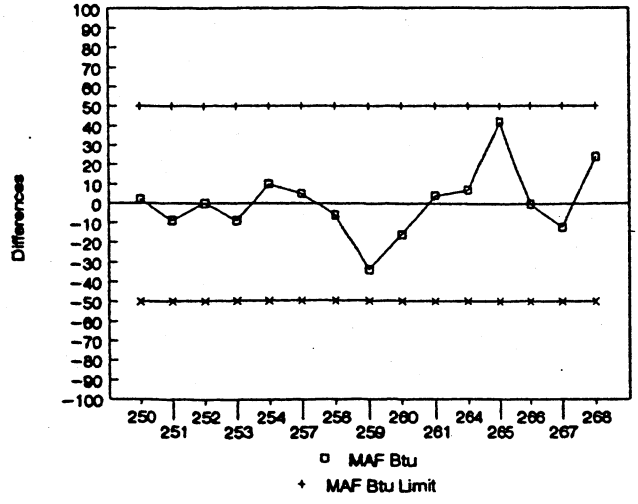
Daily 60 Mesh – Dry Btu/lb



Daily 60 Mesh – %Dry Volatile



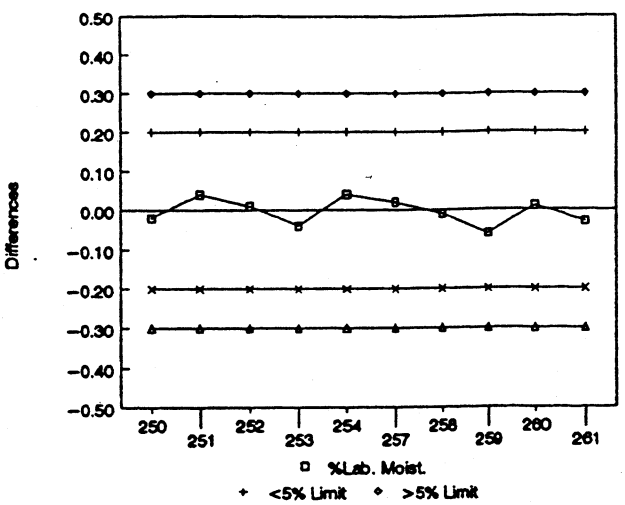
Daily 60 Mesh – MAF Btu/lb



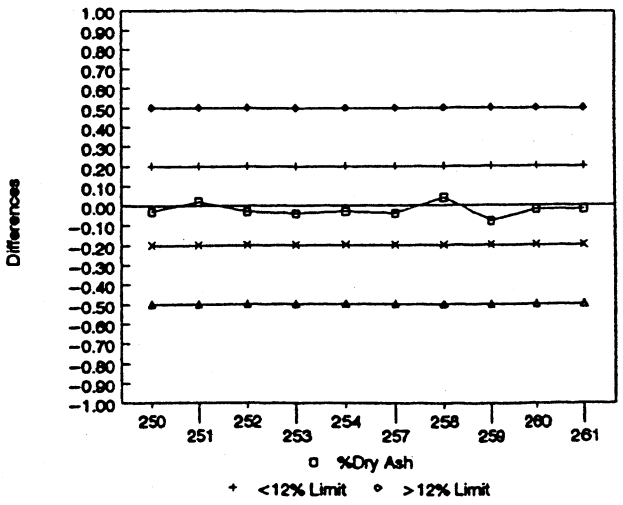
From: September 7, 1998 To: September 25, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

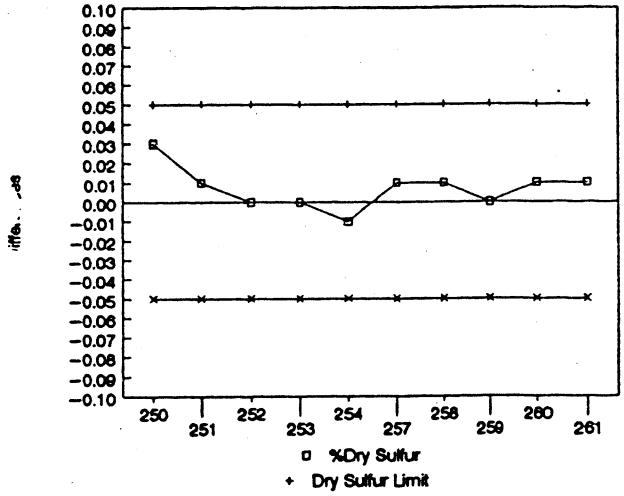
Daily 60 Mesh – %Lab. Moisture



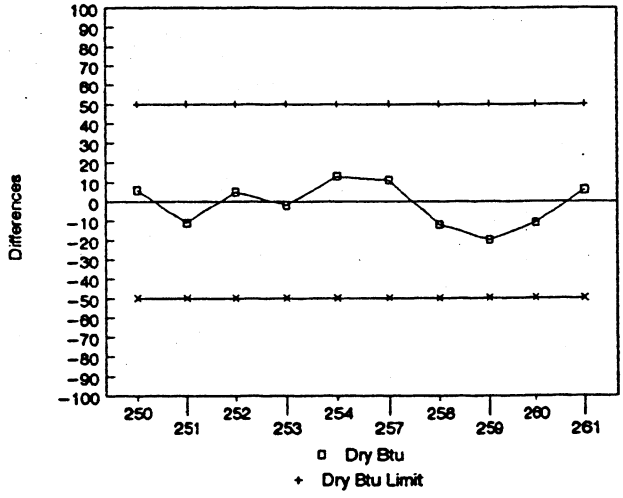
Daily 60 Mesh – %Dry Ash



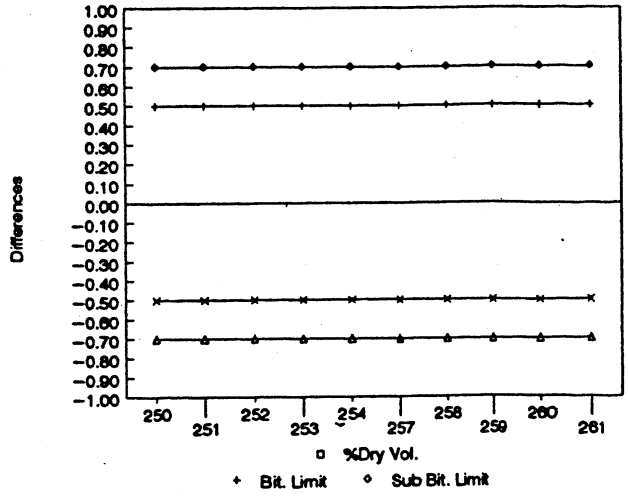
Daily 60 Mesh – %Dry Sulfur



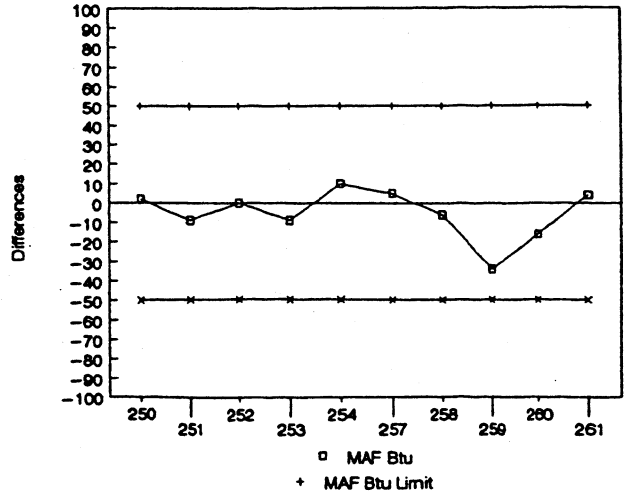
Daily 60 Mesh – Dry Btu/lb



Daily 60 Mesh – %Dry Volatile



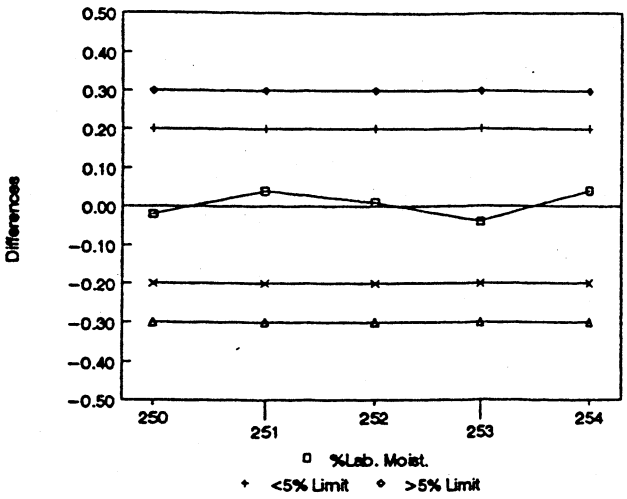
Daily 60 Mesh – MAF Btu/lb



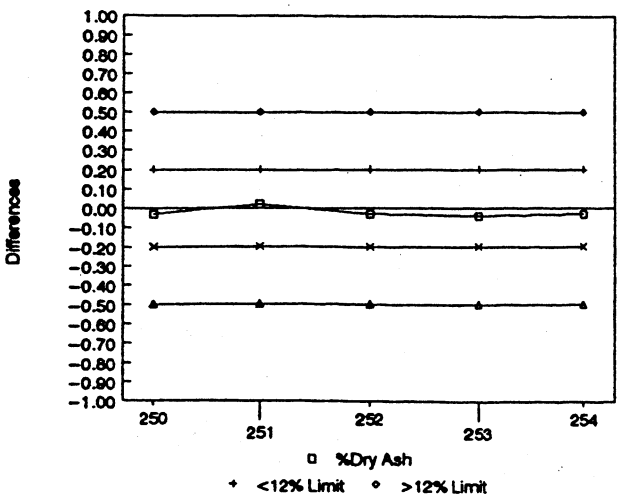
From: September 7, 1998 To: September 18, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

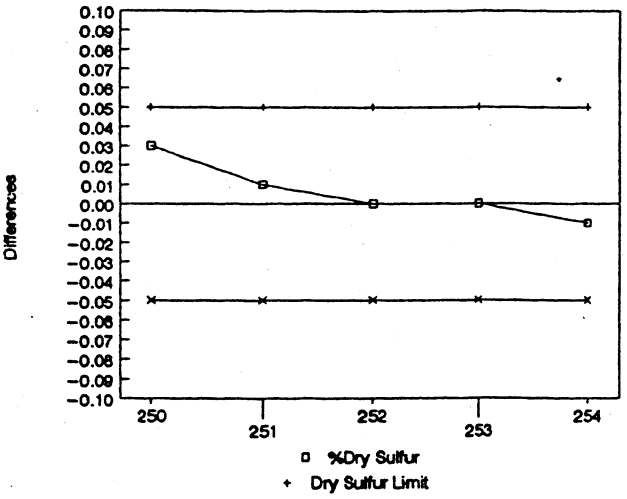
Daily 60 Mesh – %Lab. Moisture



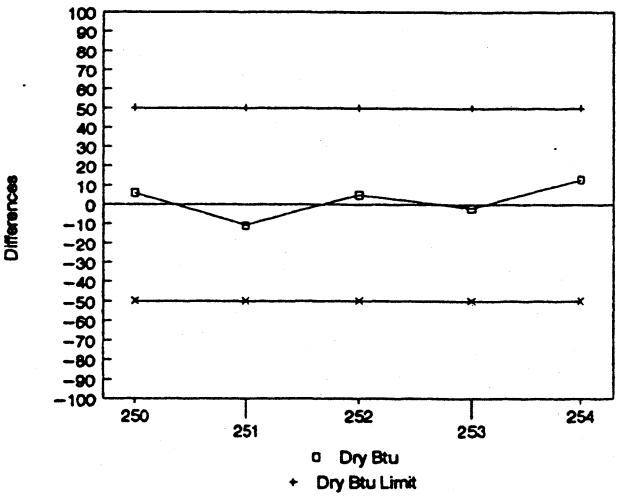
Daily 60 Mesh – %Dry Ash



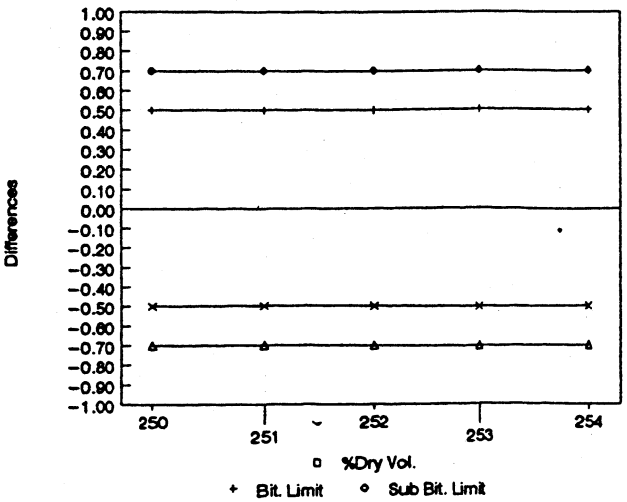
Daily 60 Mesh – %Dry Sulfur



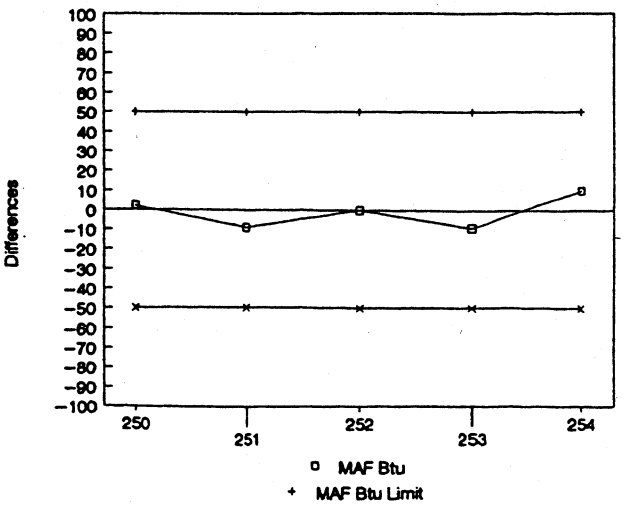
Daily 60 Mesh – Dry Btu/lb



Daily 60 Mesh – %Dry Volatile



Daily 60 Mesh – MAF Btu/lb



From: September 7, 1998 To: September 11, 1998

APPENDIX F

LIST OF PARTICIPANTS

Michael Martin - Field Team Coordinator

Edward MacKinnon - Sample Setup and Recovery

Scott Tibbetts - Baghouse Inlet Sampling

Greg Mendoza - Baghouse Inlet Sampling

David Gill - Baghouse Inlet Sampling

Robert Rebello - Baghouse Inlet Sampling

Robert Nixon - Exhaust Stack Sampling

Clyde Perkins - Exhaust Stack Sampling

Scott James - Exhaust Stack Sampling

Joe Zuzolo - Unit 2 Flow Rate

Clay O'Brien - Unit 2 Flow Rate

Howard Schiff - Process Sampling/QA

APPENDIX G

ADDITIONAL INFORMATION

Date: 4/21/99
Sender: BILL MAXWELL <MAXWELL.BILL@epamail.epa.gov>
To: Howard Schiff
cc: AUTRY.LARA@epamail.epa.gov, GRIMLEY.WILLIAM@epamail.epa.gov, VETTER.RICK@epamail.epa.gov
Priority: Normal
Subject: Testing at Scrubgrass

Based on the information you provided to Bill Grimley and myself, it would be OK to test at the stack as long as the flow in both inlets were tested and there was some assurance that both units and control devices are operating normally. Ideally, it would be best to test mercury in both inlets. In addition, process and control information would need to be collected as if the two units were one. Feel free to contact either Bill or myself if you have any questions.

Apr 22 '99

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SCRUBGRASS STATION
26046-0030-00004

FUEL TOTALIZER DATA LOG

RUN No. 1

DATE	TIME	FUEL TOTALIZER (TONS)			
		~~1B1~~	~~TB~~ 2	~~1B~~ 3	~~1B2~~ 4
~~9-15-99~~	~~10:49~~	~~1620805~~	~~8195716~~		
9-16-99	11:00	1B2(82410305)	1B1(2077094)	1A2(46946711	1A1(30633935) START
9-16-99	17:30	82529743	2195359	47045729	30732612 END

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26046-0030-00004

FUEL TOTALIZER DATA LOG

9-17-99 UNIT 1

RUN No. 2

DATE	TIME	FUEL TOTALIZER (TONS)				
		(1B2)	(1B1)2	1A2 3	1A1 4	
9-17-99	0825	82789540	2462452	47288191	30967400	START
9-17-99	0930	82810930	2483695	47309383	30990560	~~END~~ HOLD
9-17-99	10:55	82832567	2505103	47330742	31011838	HOLD
9-17-99	12:55	82870036	2542251	47367814	31048812	END

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SCRUBGRASS STATION
26046-0030-00004

FUEL TOTALIZER DATA LOG

Unit 1 RUN No. 3

	DATE	TIME	FUEL TOTALIZER (TONS) 1B2	1B1 2	142 3	1A1 4
START	9-17-99	13:55	82889126	25611460	47386692	31067672
FINISH	9-17-99	→	82960820	26321500	47457650	31138390
			(17:41)	(17:42)	(17:42)	(17:43)

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SCRUBGRASS STATION
26046-0030-00004

FUEL TOTALIZER DATA LOG

RUN No. _____

DATE	TIME	BEGIN FUEL TOTALIZER (TONS)		END	
		~~2A1~~	~~2A2~~	~~3A1~~	~~4A2~~
~~9-15-99~~	~~10:47~~	[redacted]	[redacted]		
9-16-99	11:00	81296491	87404143		
9-16-99	11:01	73482535	73539099		
9-16-99	11:02	49382512	49495555		
9-16-99	11:03	30214004	30321049		
		BEGINNING	ENDING		

2A1
2A2
2B1
2B2

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26046-0030-00004

FUEL TOTALIZER DATA LOG

RUN No. 2

			2A1	2A2	2B1	2B2
			FUEL TOTALIZER (TONS)			
	DATE	TIME	1	2	3	4
START	9-~~07~~-99	0825	87655990	73343892	49755769	30569148
	HOLD	0935	87675198	73862990	49775273	30588509
	HOLD	0955	87697593	73885183	49797533	30610523
END	END	12:55	87733965	73920954	49833668	30646395

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26046-0030-00004

FUEL TOTALIZER DATA LOG

RUN No. 3

			2A1	2A2	2B1	2B2
			↑	FUEL TOTALIZER (TONS)		↑
	DATE	TIME	[redacted]	[redacted]	[redacted]	[redacted]
START	9-17-99	13:55	37751123	73933253	49851295	30663749
FINISH	9-17-99	17:42	87819638	74008979	49921932	30732838

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26046-0030-00004

LIME

RUN No. 1

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment	Lime Totalizer / Ton	
1A	9/16/99	1100	[illegible]	1 Qt		42077280	87
2A	9/16/99	1100	[illegible]	"	START ⇒	76451794	800
1B	9/16/99	1100	[illegible]	"		98915453	463
2B	9/16/99	1105	[illegible]	"		29739175	186
1A	9/16/99	1130	[illegible]	"		42080116	128
2A	9/16/99	1130	[illegible]	"		76454247	253
1B	9/16/99	1135	[illegible]	"		98918377	388
2B	9/16/99	1135	[illegible]	"		29742207	219
1A	9/16/99	1200	[illegible]	"		42083732	799
2A	9/16/99	1200	[illegible]	"		76459467	476
1B	9/16/99	1200	[illegible]	"		98922026	037
2B	9/16/99	1200	[illegible]	"		29747567	579
1A	9/16/99	1230	[illegible]	"		42087505	513
2A	9/16/99	1230	[illegible]	"		76465254	263
1B	9/16/99	1230	[illegible]	"		98925761	771
2B	9/16/99	1230	[illegible]	"		29753328	339
1A	9/16/99	1300	[illegible]	"		42090921	940
2A	9/16/99	1300	[illegible]	"		76469911	929
1B	9/16/99	1300	[illegible]	"		98929546	557
2B	9/16/99	1300	[illegible]	"		29757685	699
1A	9/16/99	1330	[illegible]	"		42094545	502
2A	9/16/99	1330	[illegible]	"		76474570	588
1B	9/16/99	1330	[illegible]	"		98933026	041
2B	9/16/99	1330	[illegible]	"		29762314	329
1A	9/16/99	1500	[illegible]	"		42105588	
2A	9/16/99	1500	[illegible]	"		76487977	
1B	9/16/99	1500	[illegible]	"		98944027	
2B	9/16/99	1500	[illegible]	"		29775876	

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SCRUBGRASS STATION
26046-0030-00004

LIME

RUN No. 1

Feeder no.	DATE	Time	Sampler	Approx. Volume	Comment	Tons Lime Totalizer
1A	9/16/99	1530	[illegible]	1 Gt		42109506
2A	9/16/99	1530	[illegible]	"		76492665
1B	9/16/99	1530	[illegible]	"	Stopped Samples	
2B	9/16/99	1530	[illegible]	"	"	
1A	9/16/99	1615	[illegible]	"		42115266
2A	9/16/99	1615	[illegible]	"		76499310
1B	9/16/99	1615	[illegible]	"		98953662
2B	9/16/99	1615	[illegible]	"		29787137
1A	9/16/99	1645	[illegible]	"		42119438
2A	9/16/99	1645	[illegible]	"		76504123
1B	9/16/99	1645	[illegible]	"		98957726
2B	9/16/99	1645	[illegible]	"		29791853
1A	9/16/99	1715	[illegible]	"		42123193
2A	9/16/99	1715	[illegible]	"	End Run	76508587
1B	9/16/99	1715	[illegible]	"		98961566
2B	9/16/99	1715	[illegible]	"		29796313

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SCRUBGRASS STATION
26046-0030-00004

LIME TOTALIZER DATA LOG

RUN No. 2

	DATE	TIME	LIME TOTALIZER (TONS) 1 start	2 Finish
1A	9/17/99	0825	42237448	42265761
2A	9/17/99	0825	76648511	76686261
1B	9/17/99	0825	99059378	99087757
2B	9/17/99	0825	29931538	29969377

Finish at end of Peen time
[illegible]

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SCRUBGRASS STATION
26046-0030-00004

LIME TOTALIZER DATA LOG

RUN No. 3

	DATE	TIME	LIME TOTALIZER (TONS) 1 Start	2 Finish	
1A	9/17/99	1355	42277225	42364803	@ 1740
2A	9/17/99	1355	7669930	7673408	@ 1740
1B	9/17/99	1355	99099250	9912.6648	@ 1741
2B	9/17/99	1355	2998.2931	3001.6804	@ 1741

2																				
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow (Klb/hr)	Unit 1 Main Steam Temp (Deg F)	Unit 1 Main Steam Pressure (psig)	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp (Deg F)	Unit 1 Air Heater Air Outlet Temp (Deg F)	Unit 1 Air Heater Gas Inlet Temp (Deg F)	Unit 1 Air Heater Gas Outlet Temp (Deg F)	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp (Deg F)	Unit 1 Baghouse Outlet Temp (Deg F)	Unit 1 Baghouse Pressure Drop (In H2O)	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate (%)	
9/16/99 11:00	.....	68.92	15.52	398.98	959.97	1314.81	392.07	-0.28	39.05	104.54	352.03	525.72	268.20	109.90	316.80	314.97	5.78	N/A	N/A	
9/16/99 11:02	.....	68.46	15.47	396.82	959.45	1317.63	389.20	-0.39	38.95	104.58	352.30	525.34	267.97	110.07	317.66	314.59	5.62	N/A	N/A	
9/16/99 11:04	.....	68.21	15.14	401.37	959.19	1318.56	388.97	-0.67	38.67	104.63	351.16	524.91	267.64	110.34	317.67	314.09	5.16	N/A	N/A	
9/16/99 11:06	.....	68.05	15.30	400.47	958.48	1317.63	391.42	-0.34	39.62	104.60	351.58	524.81	267.38	110.24	317.81	313.83	5.03	N/A	N/A	
9/16/99 11:08	.....	68.21	14.66	399.07	958.13	1313.69	392.71	-0.35	40.17	104.55	351.17	524.94	267.16	109.85	316.88	313.64	5.28	N/A	N/A	
9/16/99 11:10	.....	66.41	14.34	390.03	958.47	1312.50	387.46	-0.88	39.69	104.61	350.78	524.31	266.72	108.84	316.70	313.31	5.50	N/A	N/A	
9/16/99 11:12	.....	67.26	13.75	390.86	958.28	1306.63	382.22	-1.17	37.98	104.66	350.03	523.13	265.78	107.85	315.53	313.09	5.52	N/A	N/A	
9/16/99 11:14	.....	68.27	14.59	392.74	958.97	1301.63	383.28	-0.15	39.32	104.72	349.75	522.50	265.39	109.71	316.48	312.91	5.84	N/A	N/A	
9/16/99 11:16	.....	68.30	14.01	391.30	961.81	1301.88	384.68	-0.53	39.06	104.65	349.66	522.50	265.58	109.88	316.61	312.47	5.48	N/A	N/A	
9/16/99 11:18	.....	67.83	14.29	391.29	963.27	1304.44	382.80	-0.65	38.57	104.67	350.20	522.75	265.59	109.75	316.63	312.64	5.09	N/A	N/A	
9/16/99 11:20	.....	67.53	13.61	390.71	962.48	1307.88	382.45	-0.86	38.33	104.67	350.25	522.41	265.61	109.64	316.20	312.66	5.02	N/A	N/A	
9/16/99 11:22	.....	67.54	13.80	390.09	960.19	1307.38	381.16	-0.63	39.55	104.66	350.00	522.09	265.28	109.28	316.42	312.67	5.16	N/A	N/A	
9/16/99 11:24	.....	68.15	13.40	391.98	959.31	1304.88	382.98	-0.42	40.04	104.67	349.61	521.94	265.00	109.45	316.23	312.69	5.49	N/A	N/A	
9/16/99 11:26	.....	68.09	14.02	388.45	959.52	1305.44	382.84	-0.27	40.00	104.69	349.22	521.94	264.83	109.50	315.97	312.69	5.77	N/A	N/A	
9/16/99 11:28	.....	67.87	13.99	390.90	960.11	1307.38	380.57	-0.33	40.20	104.70	348.94	521.91	264.66	109.59	316.02	312.47	5.61	N/A	N/A	
9/16/99 11:30	.....	67.72	13.71	390.59	960.22	1309.19	381.41	-0.71	39.70	104.71	348.84	521.78	264.55	109.21	316.05	312.56	5.13	N/A	N/A	
9/16/99 11:32	.....	67.55	13.77	388.99	960.25	1310.38	381.48	-0.83	39.58	104.73	349.03	521.88	264.48	109.17	314.86	313.23	4.95	N/A	N/A	
9/16/99 11:34	.....	67.41	14.04	390.33	960.44	1310.75	381.07	-0.66	40.91	104.73	349.19	521.81	264.31	109.19	314.97	313.41	5.11	N/A	N/A	
9/16/99 11:36	.....	67.60	14.44	388.52	959.89	1308.13	381.52	-0.23	41.25	104.74	349.31	521.91	264.31	109.05	315.23	313.33	5.38	N/A	N/A	
9/16/99 11:38	.....	67.89	13.93	388.25	959.77	1306.56	379.95	0.29	41.35	104.75	349.64	521.94	264.42	109.27	315.34	312.92	5.76	N/A	N/A	
9/16/99 11:40	.....	67.60	14.45	387.67	960.94	1309.13	380.63	-0.71	40.60	104.72	349.47	522.16	264.73	109.52	315.75	312.55	5.42	N/A	N/A	
9/16/99 11:42	.....	67.23	14.47	389.26	961.30	1311.63	380.10	-1.00	40.59	104.69	349.22	522.44	264.91	109.72	316.72	312.50	4.96	N/A	N/A	
9/16/99 11:44	.....	67.01	14.38	388.23	960.52	1311.88	379.85	-1.02	40.36	104.69	348.92	522.50	264.88	108.85	316.20	312.61	5.12	N/A	N/A	
9/16/99 11:46	.....	67.44	14.49	388.56	959.05	1309.25	381.22	-0.68	40.43	104.71	349.73	522.56	264.89	108.43	316.22	312.75	5.32	N/A	N/A	
9/16/99 11:48	.....	67.97	14.73	390.23	958.98	1306.63	379.66	-0.49	40.99	104.68	349.41	522.44	265.06	109.06	316.94	312.61	5.36	N/A	N/A	
9/16/99 11:50	.....	68.13	14.41	387.95	959.61	1305.69	380.92	-0.72	40.40	104.67	349.00	522.56	265.14	109.07	316.72	312.53	4.98	N/A	N/A	
9/16/99 11:52	.....	68.77	15.00	393.80	961.22	1304.88	382.41	-0.55	40.72	104.66	348.70	522.66	265.33	109.34	316.75	312.48	4.99	N/A	N/A	
9/16/99 11:54	.....	69.21	15.29	393.48	961.44	1306.13	384.22	-0.16	40.75	104.64	348.64	522.69	265.70	109.77	317.36	312.73	5.28	N/A	N/A	
9/16/99 11:56	.....	68.82	15.52	396.63	961.44	1309.25	385.88	0.12	41.21	104.67	348.70	522.59	266.16	110.61	317.31	312.97	5.63	N/A	N/A	
9/16/99 11:58	.....	68.71	15.89	396.13	960.56	1312.19	386.19	0.24	41.76	104.69	349.78	522.91	266.64	111.17	318.28	313.00	5.78	N/A	N/A	
9/16/99 12:00	.....	67.19	14.72	389.66	959.44	1316.56	386.01	-0.56	41.03	104.74	350.72	523.66	267.08	110.71	318.09	312.89	5.38	N/A	N/A	
9/16/99 12:02	.....	65.62	14.61	387.05	957.34	1318.50	381.75	-1.27	41.15	104.80	350.91	523.56	266.48	108.74	316.89	313.09	4.93	N/A	N/A	
9/16/99 12:04	.....	67.48	14.65	388.36	955.89	1309.00	378.88	-1.18	39.28	104.97	351.42	522.97	265.88	108.25	316.55	313.11	4.94	N/A	N/A	
9/16/99 12:06	.....	68.73	14.75	388.99	958.00	1301.88	380.22	-0.29	39.60	105.14	352.64	522.84	266.13	109.15	317.31	313.06	5.21	N/A	N/A	
9/16/99 12:08	.....	69.09	14.71	393.54	962.03	1301.38	381.13	0.34	40.38	105.09	351.33	523.19	266.53	110.99	317.92	313.09	5.58	N/A	N/A	
9/16/99 12:10	.....	69.52	14.43	393.47	964.58	1304.06	384.10	0.36	40.43	105.01	350.69	523.72	266.84	111.09	318.53	312.97	5.60	N/A	N/A	
9/16/99 12:12	.....	68.48	14.50	393.85	963.86	1311.00	385.42	-0.32	39.70	105.03	350.84	524.06	267.28	111.33	319.16	313.08	5.21	N/A	N/A	
9/16/99 12:14	.....	67.88	13.86	394.42	960.41	1315.13	384.91	-0.86	39.48	105.03	352.28	524.34	267.72	110.62	318.02	313.97	4.90	N/A	N/A	
9/16/99 12:16	.....	68.20	14.05	397.65	957.08	1315.38	386.63	-0.50	40.75	105.02	353.48	523.97	267.83	110.70	318.23	314.58	5.19	N/A	N/A	
9/16/99 12:18	.....	69.06	14.24	397.61	956.55	1309.25	388.35	-0.41	41.04	105.07	353.00	524.03	267.42	110.34	318.52	314.59	5.38	N/A	N/A	
9/16/99 12:20	.....	69.58	14.40	397.74	958.00	1305.13	388.73	0.02	41.05	105.03	352.72	523.97	267.50	110.93	318.66	314.64	5.66	N/A	N/A	
9/16/99 12:22	.....	69.57	14.18	398.21	960.30	1304.19	388.30	-0.04	40.87	104.97	352.16	524.09	267.72	111.13	317.58	314.55	5.73	N/A	N/A	
9/16/99 12:24	.....	69.11	14.33	391.16	962.34	1307.81	387.82	-0.69	40.19	104.93	352.70	524.38	268.13	111.32	318.78	314.50	5.23	N/A	N/A	
9/16/99 12:26	.....	65.30	13.75	387.16	962.02	1315.13	382.13	-1.64	39.51	105.02	353.13	524.50	267.88	109.00	317.34	314.41	4.75	N/A	N/A	
9/16/99 12:28	.....	67.91	13.66	395.20	958.44	1310.13	381.90	-0.78	38.22	105.09	352.47	524.09	266.83	109.52	317.58	314.16	4.96	N/A	N/A	
9/16/99 12:30	.....	70.25	14.22	398.64	957.36	1303.75	385.94	-0.11	38.93	105.11	351.78	524.00	266.55	110.73	317.72	314.11	5.29	N/A	N/A	
9/16/99 12:32	.....	69.68	14.91	394.27	959.97	1303.44	387.77	-0.02	38.97	105.11	350.78	524.00	266.67	110.80	318.22	314.16	5.55	N/A	N/A	
9/16/99 12:34	.....	68.82	14.31	394.01	962.64	1306.88	387.04	-0.32	38.41	105.12	352.72	523.94	267.06	110.40	318.05	314.09	5.66	N/A	N/A	
9/16/99 12:36	.....	68.90	14.50	397.75	962.52	1308.63	386.00	-0.54	38.44	105.17	356.59	523.44	267.31	110.27	318.69	313.97	5.19	N/A	N/A	
9/16/99 12:38	.....	69.16	15.33	397.36	961.77	1309.50	387.83	-0.62	38.08	105.17	356.52	523.56	267.72	110.22	319.22	313.95	4.93	N/A	N/A	
9/16/99 12:40	.....	69.35	14.17	400.42	960.44	1309.31	388.98	-0.66	38.05	105.17	354.08	523.47	267.67	109.87	318.30	313.98	5.00	N/A	N/A	
9/16/99 12:42	.....	69.87	15.64	400.04	958.97	1308.88	390.54	-0.07	38.77	105.20	352.72	523.56	267.53	110.46	319.69	314.11	5.38	N/A	N/A	
9/16/99 12:44	.....	69.61	15.19	402.02	959.11	1310.88	391.48	-0.12	39.54	105.12	351.53	523.78	267.66	110.54	319.52	314.23	5.57	N/A	N/A	
9/16/99 12:46	.....	69.58	15.09	400.45	959.19	1310.38	391.73	-0.16	39.20	105.11	350.91	523.66	267.53	110.34	318.53	314.28	5.74	N/A	N/A	
9/16/99 12:48	.....	69.11	15.42	397.13	959.97	1310.88	390.91	-0.50	39.03	105.04	350.98	523.44	267.42	110.55	318.53	314.13	5.38	N/A	N/A	
9/16/99 12:50	.....	69.00	14.95	398.51	960.44	1311.38	388.17	-0.78	38.66	105.02	351.05	523.09	267.28	110.41	319.00	314.19	5.08	N/A	N/A	
9/16/99 12:52	.....	68.37	15.18	396.65	960.27	1312.06	388.84	-0.84	38.40	105.06	351.30	523.09	267.05	109.75	318.14	314.53	5.07	N/A	N/A	

2																				
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow (Klb/hr)	Unit 1 Main Steam Temp (Deg F)	Unit 1 Main Steam Pressure (psig)	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp (Deg F)	Unit 1 Air Heater Air Outlet Temp (Deg F)	Unit 1 Air Heater Gas Inlet Temp (Deg F)	Unit 1 Air Heater Gas Outlet Temp (Deg F)	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp (Deg F)	Unit 1 Baghouse Outlet Temp (Deg F)	Unit 1 Baghouse Pressure Drop (In H2O)	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate (%)	
9/16/99 12:54	.....	68.81	14.72	396.91	959.80	1309.75	388.23	-0.55	38.17	105.04	351.27	522.88	266.73	110.06	317.88	314.45	5.29	N/A	N/A	
9/16/99 12:56	.....	68.76	15.33	397.68	959.63	1308.38	387.80	-0.33	39.11	105.02	350.86	522.47	266.55	109.92	317.56	314.42	5.62	N/A	N/A	
9/16/99 12:58	.....	68.93	14.73	394.67	960.08	1306.75	387.97	-0.10	40.64	104.95	350.59	522.19	266.42	110.31	318.02	314.39	5.83	N/A	N/A	
9/16/99 13:00	.....	68.85	14.74	395.47	960.72	1306.63	386.71	-0.27	40.69	104.88	350.53	522.09	266.28	110.43	317.06	314.55	5.66	N/A	N/A	
9/16/99 13:02	.....	68.37	14.84	394.55	961.11	1309.38	387.30	-0.56	40.18	104.75	350.34	522.31	266.41	110.77	317.61	315.27	5.17	N/A	N/A	
9/16/99 13:04	.....	67.82	14.27	393.80	960.75	1309.88	383.59	-0.81	40.24	104.71	351.52	522.69	266.64	110.46	318.27	315.11	4.89	N/A	N/A	
9/16/99 13:06	.....	68.07	14.64	392.33	960.14	1309.88	384.36	-0.74	40.20	104.67	351.59	522.69	266.66	110.13	317.31	314.97	5.05	N/A	N/A	
9/16/99 13:08	.....	68.59	14.67	393.98	959.19	1307.38	385.23	-0.46	40.10	104.69	351.16	522.59	266.58	110.10	317.30	314.83	5.37	N/A	N/A	
9/16/99 13:10	.....	69.35	14.55	395.21	959.11	1303.81	385.55	0.00	40.98	104.66	350.91	522.47	266.53	111.00	318.14	314.70	5.67	N/A	N/A	
9/16/99 13:12	.....	69.49	14.41	396.49	960.95	1302.81	386.20	-0.14	40.32	104.70	350.67	522.72	266.84	110.97	317.70	314.53	5.62	N/A	N/A	
9/16/99 13:14	.....	69.69	14.53	399.63	962.02	1304.56	388.03	-0.34	40.40	104.61	350.33	522.94	267.16	111.33	318.58	314.27	5.23	N/A	N/A	
9/16/99 13:16	.....	69.37	14.48	396.23	961.44	1307.69	387.93	-0.64	40.05	104.48	350.80	523.25	267.38	111.44	318.91	314.08	4.93	N/A	N/A	
9/16/99 13:18	.....	68.79	14.40	395.11	960.81	1311.56	386.90	-0.67	40.17	104.49	351.41	523.81	267.36	111.02	318.31	314.16	5.13	N/A	N/A	
9/16/99 13:20	.....	68.33	13.93	395.46	959.50	1313.31	386.47	-0.39	39.86	104.51	353.28	524.06	267.19	110.82	318.55	314.23	5.31	N/A	N/A	
9/16/99 13:22	.....	68.33	14.47	393.11	958.66	1311.75	387.12	-0.02	40.73	104.55	355.53	523.88	267.16	110.09	318.34	314.16	5.71	N/A	N/A	
9/16/99 13:24	.....	68.51	13.93	393.64	959.14	1309.75	385.16	-0.19	40.97	104.59	354.45	523.75	266.88	110.71	318.23	313.70	5.89	N/A	N/A	
9/16/99 13:26	.....	68.23	14.42	394.84	960.22	1310.06	385.10	-0.64	40.19	104.58	353.05	523.25	266.78	110.31	317.73	313.64	5.40	N/A	N/A	
9/16/99 13:28	.....	68.15	14.38	393.72	960.41	1311.25	385.67	-1.01	39.42	104.58	352.16	522.97	266.56	110.59	318.64	313.47	5.06	N/A	N/A	
9/16/99 13:30	.....	68.31	14.13	394.70	959.97	1309.44	385.34	-0.87	40.03	104.59	351.80	522.69	266.23	110.45	318.73	313.50	5.03	N/A	N/A	
9/16/99 13:32	.....	68.84	13.89	393.92	959.73	1305.88	385.91	-0.64	39.78	104.53	352.14	522.94	266.31	110.50	318.47	313.77	5.32	N/A	N/A	
9/16/99 13:34	.....	69.42	13.89	395.05	959.73	1304.00	386.03	-0.30	39.25	104.58	352.41	523.00	266.78	110.64	318.91	313.89	5.50	N/A	N/A	
9/16/99 13:36	.....	69.99	14.33	396.30	961.09	1303.19	387.56	-0.38	39.72	104.51	351.75	523.06	266.92	111.14	318.59	314.31	5.30	N/A	N/A	
9/16/99 13:38	.....	69.60	14.54	398.40	962.28	1305.63	388.50	-0.57	39.88	104.47	351.16	523.19	267.08	111.24	318.31	315.09	5.07	N/A	N/A	
9/16/99 13:40	.....	68.71	14.72	394.70	961.86	1310.13	387.02	-0.62	39.53	104.48	351.27	523.44	267.05	110.52	317.89	315.22	5.39	N/A	N/A	
9/16/99 13:42	.....	68.23	14.31	392.77	960.63	1312.88	384.52	-0.63	39.54	104.52	351.84	523.69	266.95	110.23	317.55	315.03	5.57	N/A	N/A	
9/16/99 13:44	.....	68.01	14.10	394.42	959.08	1313.88	384.72	-0.53	39.67	104.59	352.73	523.34	266.73	109.74	317.33	314.89	5.66	N/A	N/A	
9/16/99 13:46	.....	68.29	14.71	393.93	957.94	1312.06	385.34	-0.92	39.05	104.59	352.78	522.94	266.56	109.66	317.64	314.84	5.21	N/A	N/A	
9/16/99 13:48	.....	68.76	14.63	395.03	958.41	1309.06	385.16	-0.58	39.82	104.60	352.77	522.50	266.38	110.05	317.11	314.53	5.22	N/A	N/A	
9/16/99 13:50	.....	68.95	15.01	394.30	960.00	1305.75	386.96	-0.42	39.77	104.54	351.78	522.09	266.23	110.08	317.19	314.30	5.44	N/A	N/A	
9/16/99 13:52	.....	69.20	14.99	395.26	961.02	1305.25	387.20	-0.22	39.77	104.57	350.84	521.81	266.09	110.65	316.47	314.16	5.66	N/A	N/A	
9/16/99 13:54	.....	69.19	15.02	396.27	961.22	1305.31	386.45	-0.58	39.66	104.54	351.02	521.66	266.16	110.23	317.84	313.81	5.25	N/A	N/A	
9/16/99 13:56	.....	69.66	15.14	397.12	961.45	1305.81	387.89	-0.43	39.67	104.49	351.05	521.72	266.38	110.63	318.53	313.81	5.16	N/A	N/A	
9/16/99 13:58	.....	69.53	15.27	399.48	961.27	1308.00	388.02	-0.27	39.97	104.44	350.61	521.91	266.53	110.62	317.88	313.92	5.38	N/A	N/A	
9/16/99 14:00	.....	69.99	15.42	401.03	960.89	1309.94	389.52	-0.15	39.83	104.50	351.09	522.00	266.75	110.62	317.47	313.94	5.69	N/A	N/A	
9/16/99 14:02	.....	69.53	15.10	404.27	959.89	1313.25	390.45	-0.43	39.75	104.48	353.33	522.28	267.20	111.02	318.11	313.73	5.35	N/A	N/A	
9/16/99 14:04	.....	69.65	15.91	401.10	958.75	1312.56	393.20	-0.53	40.11	104.52	354.78	522.81	267.59	110.50	318.52	313.89	5.03	N/A	N/A	
9/16/99 14:06	.....	69.71	15.26	400.39	958.72	1312.38	393.13	-0.54	39.91	104.48	354.00	523.56	267.84	110.98	319.28	314.08	4.93	N/A	N/A	
9/16/99 14:08	.....	68.45	15.16	398.66	959.55	1314.75	391.13	-0.79	39.80	104.49	352.47	523.94	267.52	110.15	318.45	314.09	5.14	N/A	N/A	
9/16/99 14:10	.....	68.91	15.67	397.15	959.17	1311.63	390.13	-0.47	39.65	104.51	352.25	523.72	267.02	110.10	317.88	314.16	5.45	N/A	N/A	
9/16/99 14:12	.....	68.89	15.50	397.80	959.78	1310.38	388.38	-0.20	40.03	104.56	351.86	523.63	267.03	110.27	317.98	314.16	5.65	N/A	N/A	
9/16/99 14:14	.....	68.99	16.09	395.46	960.52	1308.88	388.47	-0.31	39.83	104.61	352.09	523.53	266.97	110.09	318.05	313.97	5.77	N/A	N/A	
9/16/99 14:16	.....	68.41	15.58	395.42	961.09	1309.44	387.52	-0.55	39.76	104.63	352.41	523.44	266.95	110.20	318.66	314.03	5.39	N/A	N/A	
9/16/99 14:18	.....	68.68	15.66	396.91	960.61	1308.75	387.38	-0.87	39.87	104.65	351.53	523.41	266.77	109.80	317.75	314.53	4.99	N/A	N/A	
9/16/99 14:20	.....	68.80	15.53	397.55	959.77	1308.13	387.91	-0.55	39.64	104.77	350.91	523.41	266.64	110.24	317.97	314.97	5.18	N/A	N/A	
9/16/99 14:22	.....	68.92	15.46	394.49	959.61	1306.69	387.78	-0.56	39.55	104.86	350.66	523.44	266.73	110.03	317.47	314.95	5.36	N/A	N/A	
9/16/99 14:24	.....	69.92	15.45	397.74	960.36	1303.19	387.38	-0.17	39.64	104.90	350.63	523.41	266.78	110.39	317.47	314.81	5.68	N/A	N/A	
9/16/99 14:26	.....	70.09	15.45	398.01	961.81	1303.38	388.74	-0.25	39.56	104.92	350.33	523.63	266.92	110.86	319.08	314.80	5.49	N/A	N/A	
9/16/99 14:28	.....	70.33	15.59	400.97	962.27	1305.38	389.98	-0.50	39.53	104.95	351.44	523.69	267.47	110.94	319.55	314.89	5.06	N/A	N/A	
9/16/99 14:30	.....	69.95	15.34	400.09	961.31	1310.25	390.19	-0.58	39.74	105.02	352.16	523.56	267.86	111.11	319.48	314.67	4.91	N/A	N/A	
9/16/99 14:32	.....	68.81	15.73	398.70	959.97	1313.88	389.23	-0.67	39.97	105.03	354.16	523.31	268.20	110.49	319.02	314.69	5.10	N/A	N/A	
9/16/99 14:34	.....	68.96	15.00	397.92	958.09	1312.38	389.28	-0.66	39.57	105.10	355.11	523.06	268.05	109.93	318.91	314.64	5.24	N/A	N/A	
9/16/99 14:36	.....	67.87	15.06	392.70	958.11	1313.13	386.47	-0.58	39.59	105.20	353.47	522.22	267.63	109.71	318.28	314.53	5.52	N/A	N/A	
9/16/99 14:38	.....	68.39	14.55	393.48	958.80	1310.63	385.12	-0.54	39.64	105.30	352.52	521.25	267.00	110.17	317.75	314.44	5.58	N/A	N/A	
9/16/99 14:40	.....	68.93	14.71	395.95	959.50	1307.31	385.69	-0.80	39.19	105.32	351.95	520.94	266.69	109.80	318.41	314.11	5.06	N/A	N/A	
9/16/99 14:42	.....	69.76	15.16	396.23	960.61	1304.19	386.99	-0.44	39.36	105.39	351.52	520.97	266.81	110.40	318.31	313.97	5.29	N/A	N/A	
9/16/99 14:44	.....	69.52	14.91	396.72	961.98	1305.13	387.05	-0.24	40.66	105.45	352.45	521.06	267.13	110.27	318.36	314.05	5.48	N/A	N/A	
9/16/99 14:46	.....	69.10	15.00	397.68	962.02	1308.63	387.75	-0.24	40.42	105.56	351.97	521.34	267.22	110.33	318.59	314.05	5.69	N/A	N/A	

2																				
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow (Klb/hr)	Unit 1 Main Steam Temp (Deg F)	Unit 1 Main Steam Pressure (psig)	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp (Deg F)	Unit 1 Air Heater Air Outlet Temp (Deg F)	Unit 1 Air Heater Gas Inlet Temp (Deg F)	Unit 1 Air Heater Gas Outlet Temp (Deg F)	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp (Deg F)	Unit 1 Baghouse Outlet Temp (Deg F)	Unit 1 Baghouse Pressure Drop (In H2O)	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate (%)	
9/16/99 14:48	.....	69.19	15.04	398.10	960.56	1309.31	387.36	-0.56	39.50	105.69	352.25	521.66	267.16	110.07	319.02	314.09	5.28	N/A	N/A	
9/16/99 14:50	.....	69.59	14.90	397.03	959.77	1309.31	388.97	-0.52	39.46	105.72	351.86	521.88	267.41	110.50	319.33	314.17	5.22	N/A	N/A	
9/16/99 14:52	.....	69.75	14.98	400.94	959.98	1308.69	389.04	-0.37	39.55	105.75	351.78	522.06	267.41	110.26	318.67	314.22	5.44	N/A	N/A	
9/16/99 14:54	.....	70.15	15.35	399.84	959.86	1308.50	391.44	-0.12	39.52	105.83	351.59	522.34	267.61	110.65	318.38	314.38	5.70	N/A	N/A	
9/16/99 14:56	.....	69.85	15.15	399.52	959.69	1308.81	391.34	-0.34	39.67	105.89	352.20	522.63	267.78	110.78	320.02	314.19	5.32	N/A	N/A	
9/16/99 14:58	.....	69.15	14.80	397.69	960.11	1311.63	390.29	-0.62	40.21	105.92	351.91	522.94	268.06	110.55	319.08	314.69	5.00	N/A	N/A	
9/16/99 15:00	.....	68.95	15.22	398.09	960.86	1313.69	389.88	-0.69	39.46	105.92	351.69	523.13	267.84	110.57	318.70	315.42	4.90	N/A	N/A	
9/16/99 15:02	.....	69.28	14.97	399.30	960.81	1312.75	388.17	-0.34	39.45	106.06	351.89	523.09	267.61	110.00	318.72	315.47	5.29	N/A	N/A	
9/16/99 15:04	.....	69.33	14.80	399.70	960.66	1312.63	389.45	-0.36	39.61	106.10	352.16	523.06	267.58	110.35	318.25	315.22	5.44	N/A	N/A	
9/16/99 15:06	.....	70.81	15.61	403.68	960.31	1308.75	392.19	-0.09	39.60	106.11	353.52	523.16	267.69	110.43	319.16	315.22	5.76	N/A	N/A	
9/16/99 15:08	.....	70.83	16.06	404.68	960.72	1308.81	394.40	-0.12	39.70	106.23	354.88	523.44	268.27	110.93	318.97	315.34	5.54	N/A	N/A	
9/16/99 15:10	.....	70.59	15.76	405.26	961.14	1311.25	395.03	-0.38	39.46	106.15	354.33	523.81	268.84	111.32	320.22	315.42	5.13	N/A	N/A	
9/16/99 15:12	.....	70.03	16.43	404.86	961.27	1314.56	394.77	-0.60	40.14	106.13	353.47	524.09	269.22	110.99	320.11	315.16	4.87	N/A	N/A	
9/16/99 15:14	.....	69.83	16.05	405.82	960.59	1315.94	396.14	-0.52	40.65	106.19	352.66	524.03	269.22	110.81	320.30	315.27	5.09	N/A	N/A	
9/16/99 15:16	.....	69.78	16.04	405.23	959.27	1315.81	396.40	-0.36	41.11	106.17	352.70	524.00	269.13	110.92	320.05	315.41	5.38	N/A	N/A	
9/16/99 15:18	.....	70.18	15.74	405.43	959.09	1312.63	395.69	-0.14	41.48	106.22	352.78	523.97	269.09	110.96	319.97	315.47	5.73	N/A	N/A	
9/16/99 15:20	.....	70.28	16.39	406.82	960.05	1312.44	396.77	-0.21	41.23	106.29	352.50	524.22	269.34	111.10	320.91	315.41	5.64	N/A	N/A	
9/16/99 15:22	.....	70.14	15.68	409.02	960.13	1313.88	396.62	-0.53	40.76	106.25	352.53	524.56	269.67	111.59	320.42	315.27	5.26	N/A	N/A	
9/16/99 15:24	.....	70.04	16.05	406.02	959.67	1314.81	397.66	-0.60	41.24	106.31	352.92	525.13	270.05	111.30	321.25	315.47	4.98	N/A	N/A	
9/16/99 15:26	.....	69.98	15.68	407.38	959.66	1314.38	396.61	-0.51	41.29	106.37	353.33	525.53	270.28	111.38	320.16	315.72	5.20	N/A	N/A	
9/16/99 15:28	.....	69.92	15.80	404.98	960.05	1314.06	397.09	-0.27	41.39	106.38	354.52	525.69	270.55	111.18	320.64	315.86	5.48	N/A	N/A	
9/16/99 15:30	.....	69.63	15.94	405.73	960.09	1312.38	397.11	-0.08	41.46	106.43	354.80	525.53	270.64	110.87	320.95	315.95	5.82	N/A	N/A	
9/16/99 15:32	.....	69.97	15.71	407.31	960.22	1311.44	396.79	-0.24	41.30	106.45	354.11	525.19	270.67	111.44	320.41	315.78	5.70	N/A	N/A	
9/16/99 15:34	.....	70.07	15.82	406.52	960.63	1310.94	397.57	-0.37	40.77	106.46	353.41	524.94	270.84	111.37	321.20	315.63	5.36	N/A	N/A	
9/16/99 15:36	.....	69.99	15.62	407.44	961.09	1311.88	397.39	-0.86	40.72	106.42	353.13	525.06	270.97	111.78	320.80	316.03	5.00	N/A	N/A	
9/16/99 15:38	.....	69.75	15.83	405.91	960.27	1312.88	396.66	-0.94	41.09	106.45	353.89	525.41	270.92	111.37	319.58	316.91	4.75	N/A	N/A	
9/16/99 15:40	.....	69.70	15.89	404.77	959.84	1312.19	395.96	-0.69	41.34	106.55	354.88	525.56	270.98	111.28	320.91	317.28	4.96	N/A	N/A	
9/16/99 15:42	.....	69.92	15.77	406.13	960.02	1310.38	396.01	-0.55	41.27	106.58	354.47	525.56	270.95	111.04	320.36	317.23	5.30	N/A	N/A	
9/16/99 15:44	.....	70.17	15.90	405.24	960.50	1309.00	396.00	-0.32	41.44	106.66	354.05	525.63	270.92	111.35	320.16	317.27	5.53	N/A	N/A	
9/16/99 15:46	.....	70.20	16.04	406.53	960.34	1309.75	395.59	-0.13	41.61	106.66	355.94	525.69	271.16	111.29	319.59	317.30	5.78	N/A	N/A	
9/16/99 15:48	.....	70.16	16.23	406.80	959.91	1310.44	396.34	-0.24	41.35	106.63	356.61	525.59	271.34	111.15	320.53	317.47	5.54	N/A	N/A	
9/16/99 15:50	.....	70.14	16.17	407.47	960.25	1311.31	397.01	-0.53	40.99	106.59	355.42	525.63	271.45	111.66	319.86	317.34	5.12	N/A	N/A	
9/16/99 15:52	.....	70.15	16.02	405.83	959.84	1311.06	397.59	-0.68	41.50	106.52	357.22	525.72	271.66	111.77	320.30	317.13	4.94	N/A	N/A	
9/16/99 15:54	.....	70.18	15.97	404.06	960.00	1310.19	396.09	-0.46	41.58	106.58	358.17	525.78	271.80	111.21	319.63	317.09	5.14	N/A	N/A	
9/16/99 15:56	.....	70.22	15.67	404.98	961.06	1310.00	395.41	-0.27	41.38	106.53	357.78	525.69	271.75	111.45	320.19	317.09	5.35	N/A	N/A	
9/16/99 15:58	.....	70.28	15.65	405.42	961.19	1309.75	396.19	-0.14	41.36	106.54	359.73	525.84	272.09	111.16	321.22	317.16	5.66	N/A	N/A	
9/16/99 16:00	.....	70.35	15.78	406.23	960.53	1309.44	395.85	-0.02	41.69	106.50	359.47	526.06	272.19	111.53	320.81	317.14	5.89	N/A	N/A	
9/16/99 16:02	.....	70.34	15.58	407.36	960.31	1310.56	395.04	-0.34	41.47	106.50	357.72	526.16	272.22	111.52	321.58	316.98	5.57	N/A	N/A	
9/16/99 16:04	.....	70.21	15.70	406.76	960.09	1312.75	396.78	-0.52	41.32	106.50	355.69	526.16	272.06	112.05	321.70	316.80	5.19	N/A	N/A	
9/16/99 16:06	.....	69.81	15.44	406.63	960.09	1313.75	396.76	-0.76	41.54	106.45	355.34	526.44	271.98	111.94	322.44	317.03	4.89	N/A	N/A	
9/16/99 16:08	.....	69.78	15.48	406.84	959.73	1314.81	397.16	-0.77	41.18	106.45	356.08	526.56	271.91	111.76	321.53	317.13	4.92	N/A	N/A	
9/16/99 16:10	.....	69.76	15.80	407.31	959.22	1314.63	396.94	-0.54	41.43	106.52	357.17	526.91	271.91	111.64	321.55	317.09	5.30	N/A	N/A	
9/16/99 16:12	.....	69.85	15.32	404.72	959.44	1312.44	397.43	-0.49	41.26	106.56	356.11	527.03	271.73	111.39	321.59	317.17	5.61	N/A	N/A	
9/16/99 16:14	.....	70.17	15.38	405.13	960.17	1309.81	397.09	-0.25	41.55	106.67	355.39	526.81	271.42	111.52	321.44	317.23	5.85	N/A	N/A	
9/16/99 16:16	.....	70.29	15.62	406.68	961.02	1310.13	396.48	-0.11	41.55	106.69	355.47	526.50	271.47	111.45	322.22	317.05	5.51	N/A	N/A	
9/16/99 16:18	.....	70.21	15.45	407.52	962.06	1311.44	396.65	-0.37	41.63	106.66	355.31	526.56	271.59	112.14	321.25	317.38	5.16	N/A	N/A	
9/16/99 16:20	.....	69.93	15.62	407.80	961.91	1313.94	398.35	-0.71	42.30	106.71	357.88	526.72	272.03	111.78	321.03	318.30	5.05	N/A	N/A	
9/16/99 16:22	.....	69.56	15.96	407.53	960.86	1315.50	397.67	-0.51	42.55	106.75	359.22	526.78	272.22	111.25	321.73	318.69	5.20	N/A	N/A	
9/16/99 16:24	.....	69.65	15.47	405.66	959.55	1313.81	397.27	-0.49	42.70	106.80	357.59	526.44	271.95	111.03	321.22	318.53	5.49	N/A	N/A	
9/16/99 16:26	.....	69.93	15.77	407.30	959.75	1312.38	396.63	-0.27	42.63	106.90	356.52	526.31	271.80	111.39	321.72	318.48	5.73	N/A	N/A	
9/16/99 16:28	.....	69.89	16.10	405.30	960.56	1311.88	397.14	-0.29	42.69	106.94	355.91	526.34	271.80	111.07	321.63	318.53	5.72	N/A	N/A	
9/16/99 16:30	.....	70.01	16.16	408.84	961.36	1311.50	396.93	-0.48	42.50	106.95	355.53	526.44	271.91	111.47	322.42	318.42	5.28	N/A	N/A	
9/16/99 16:32	.....	69.63	16.00	409.79	961.11	1315.50	397.97	-0.79	42.51	106.98	355.33	526.41	272.06	111.79	322.41	318.22	4.88	N/A	N/A	
9/16/99 16:34	.....	69.44	16.45	406.41	959.81	1314.31	398.42	-0.78	42.50	106.98	354.58	526.28	272.06	111.18	322.03	318.17	5.06	N/A	N/A	
9/16/99 16:36	.....	69.93	15.67	409.35	959.66	1311.06	397.80	-0.49	42.73	107.04	354.42	526.00	271.78	111.63	321.52	318.28	5.36	N/A	N/A	
9/16/99 16:38	.....	70.02	16.49	408.14	959.73	1311.44	398.98	-0.27	42.71	107.09	356.05	525.56	271.95	111.22	320.72	318.17	5.64	N/A	N/A	
9/16/99 16:40	.....	70.05	16.38	407.94	960.11	1310.00	397.88	-0.13	42.75	107.07	356.66	525.44	272.08	111.43	321.55	318.19	5.84	N/A	N/A	

2																				
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow (Klb/hr)	Unit 1 Main Steam Temp (Deg F)	Unit 1 Main Steam Pressure (psig)	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp (Deg F)	Unit 1 Air Heater Air Outlet Temp (Deg F)	Unit 1 Air Heater Gas Inlet Temp (Deg F)	Unit 1 Air Heater Gas Outlet Temp (Deg F)	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp (Deg F)	Unit 1 Baghouse Outlet Temp (Deg F)	Unit 1 Baghouse Pressure Drop (In H2O)	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate (%)	
9/16/99 16:42	.....	70.07	16.29	408.85	960.22	1310.50	398.31	-0.36	42.89	107.02	355.97	525.28	271.98	111.71	321.00	317.92	5.45	N/A	N/A	
9/16/99 16:44	.....	70.13	16.31	407.95	959.81	1309.63	397.59	-0.58	42.67	107.00	356.91	525.16	272.14	111.38	322.66	317.83	5.11	N/A	N/A	
9/16/99 16:46	.....	70.15	16.30	408.39	959.97	1310.69	398.59	-0.56	42.96	106.98	357.16	525.19	272.41	111.94	322.22	317.91	5.17	N/A	N/A	
9/16/99 16:48	.....	70.08	16.15	407.80	960.34	1312.38	397.76	-0.59	42.93	107.05	357.66	525.09	272.64	111.40	322.05	318.02	5.39	N/A	N/A	
9/16/99 16:50	.....	70.07	16.57	406.75	960.36	1312.13	397.28	-0.19	43.38	107.01	356.59	524.88	272.64	111.56	322.73	318.08	5.62	N/A	N/A	
9/16/99 16:52	.....	69.88	16.02	407.70	960.97	1314.25	395.87	-0.31	43.26	107.01	355.80	524.91	272.73	111.40	322.80	318.16	5.73	N/A	N/A	
9/16/99 16:54	.....	69.27	16.17	406.75	960.66	1316.63	396.23	-0.60	43.22	106.97	355.50	524.81	272.72	111.49	322.80	318.03	5.44	N/A	N/A	
9/16/99 16:56	.....	69.42	16.11	405.55	959.63	1314.88	397.23	-0.90	42.72	106.98	355.55	524.81	272.64	111.31	323.02	318.17	5.01	N/A	N/A	
9/16/99 16:58	.....	69.89	15.62	406.30	958.61	1311.63	396.53	-0.64	42.70	106.92	355.72	524.63	272.58	111.59	323.17	318.42	5.15	N/A	N/A	
9/16/99 17:00	.....	69.60	16.07	405.20	959.06	1311.13	397.32	-0.48	43.00	106.92	355.84	524.56	272.50	111.93	322.72	318.33	5.39	N/A	N/A	
9/16/99 17:02	.....	69.52	16.18	398.95	959.41	1308.13	394.71	-0.12	42.87	106.91	356.66	524.50	272.41	111.00	322.25	318.38	5.74	N/A	N/A	
9/16/99 17:04	.....	67.67	15.30	398.18	960.47	1311.31	390.79	-0.81	42.42	106.89	356.53	524.09	272.17	110.79	321.39	318.41	5.45	N/A	N/A	
9/16/99 17:06	.....	68.09	15.59	397.98	960.03	1311.00	389.82	-1.04	41.52	106.91	356.28	523.56	271.84	110.47	320.81	318.84	5.03	N/A	N/A	
9/16/99 17:08	.....	68.58	15.51	398.54	959.33	1309.00	390.49	-0.62	41.08	106.93	356.13	523.25	271.31	110.78	320.67	318.83	5.22	N/A	N/A	
9/16/99 17:10	.....	68.90	15.06	398.45	959.14	1306.38	389.71	-0.49	40.62	106.86	356.02	522.97	271.09	110.99	320.20	318.67	5.50	N/A	N/A	
9/16/99 17:12	.....	69.16	15.38	399.84	960.09	1305.38	390.03	-0.17	40.65	106.82	355.73	522.69	271.16	111.32	320.34	318.63	5.84	N/A	N/A	
9/16/99 17:14	.....	69.01	15.86	398.16	961.11	1305.88	390.24	-0.42	40.58	106.77	355.78	522.69	271.25	111.30	321.36	318.28	5.49	N/A	N/A	
9/16/99 17:16	.....	69.11	15.40	398.45	961.61	1305.88	390.45	-0.82	38.97	106.72	356.66	522.69	271.38	110.98	321.22	317.81	5.03	N/A	N/A	
9/16/99 17:18	.....	68.80	15.47	397.33	961.66	1308.94	389.63	-0.84	38.54	106.63	355.75	522.78	271.25	111.24	321.11	317.70	4.97	N/A	N/A	
9/16/99 17:20	.....	69.90	15.92	403.75	961.53	1307.50	389.91	-0.53	38.49	106.60	354.70	523.06	271.34	110.92	320.88	317.61	5.15	N/A	N/A	
9/16/99 17:22	.....	71.25	16.02	404.54	961.25	1305.13	393.59	0.01	38.69	106.54	354.41	523.53	271.66	111.97	321.83	317.70	5.46	N/A	N/A	
9/16/99 17:24	.....	70.70	16.40	405.05	961.88	1308.94	394.77	0.05	38.87	106.47	355.20	524.19	272.34	111.65	322.17	317.77	5.76	N/A	N/A	
9/16/99 17:26	.....	69.25	16.23	403.16	961.02	1316.13	394.48	-0.30	39.18	106.43	356.09	524.94	272.66	111.92	321.28	317.69	5.62	N/A	N/A	
9/16/99 17:28	.....	68.18	16.10	401.55	959.42	1321.38	393.05	-0.87	39.09	106.34	356.48	525.38	272.53	111.20	321.53	317.61	5.13	N/A	N/A	
9/16/99 17:30	.....	67.86	15.79	399.98	957.73	1322.44	391.30	-1.07	38.81	106.32	356.59	525.50	272.22	110.46	321.41	317.72	4.91	N/A	N/A	
9/16/99 17:32	.....	68.92	15.95	404.71	957.81	1318.19	391.41	-0.58	38.12	106.23	355.63	525.00	271.47	110.64	321.22	317.59	5.14	N/A	N/A	
9/16/99 17:34	.....	69.99	16.65	404.33	959.08	1312.69	394.96	-0.29	38.28	106.17	355.59	524.75	271.30	111.33	321.97	317.34	5.45	N/A	N/A	
9/16/99 17:36	.....	69.89	16.32	404.31	960.48	1310.94	395.59	-0.12	38.52	106.13	358.14	524.69	271.88	111.37	321.34	317.38	5.72	N/A	N/A	
9/16/99 17:38	.....	69.81	16.53	405.05	961.02	1311.38	395.38	-0.21	38.35	106.03	358.22	524.78	272.22	111.36	321.16	317.28	5.64	N/A	N/A	
9/16/99 17:40	.....	69.72	16.38	403.41	960.75	1312.44	395.64	-0.43	38.91	106.05	357.13	525.41	272.47	111.53	321.86	317.47	5.29	N/A	N/A	
9/16/99 17:42	.....	69.67	16.06	406.38	960.80	1312.69	394.44	-0.72	39.14	105.94	355.63	525.91	272.50	111.47	320.91	318.17	4.90	N/A	N/A	
9/16/99 17:44	.....	69.58	16.76	403.71	960.52	1314.00	394.77	-0.65	38.77	105.80	354.45	526.13	272.47	111.44	320.95	318.59	5.12	N/A	N/A	
9/16/99 17:46	.....	69.58	16.38	403.33	960.19	1312.63	394.13	-0.45	38.53	105.75	354.28	526.28	272.20	111.51	319.84	318.50	5.47	N/A	N/A	
9/16/99 17:48	.....	69.57	16.37	403.49	960.19	1312.44	393.59	-0.40	38.79	105.73	355.17	526.34	272.16	111.38	320.09	318.45	5.72	N/A	N/A	
9/16/99 17:50	.....	69.58	16.38	404.88	959.73	1312.31	393.14	-0.44	38.69	105.68	356.69	526.34	271.94	111.30	320.91	318.42	5.58	N/A	N/A	
9/16/99 17:52	.....	69.46	16.38	402.26	959.91	1314.31	393.89	-0.60	38.54	105.67	356.67	526.56	272.05	111.60	321.33	318.25	5.13	N/A	N/A	
9/16/99 17:54	.....	69.37	16.40	401.65	960.09	1314.38	393.42	-0.83	38.97	105.72	355.66	526.72	272.08	111.35	321.19	317.92	4.85	N/A	N/A	
9/16/99 17:56	.....	69.28	16.08	402.98	960.30	1315.31	393.29	-0.75	38.65	105.72	355.42	526.19	271.88	111.21	320.70	317.84	5.03	N/A	N/A	
9/16/99 17:58	.....	69.22	15.99	404.27	960.31	1314.63	393.91	-0.48	38.79	105.68	355.31	525.63	271.53	111.15	321.05	317.78	5.34	N/A	N/A	
Average	*	**69.14**	**15.23**	**399.31**	**960.18**	**1310.30**	**390.15**	**-0.47**	**40.27**	**105.55**	**353.23**	**523.92**	**268.69**	**110.66**	**319.19**	**315.39**	**5.34**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**

* ~~Data~~ Injection Rate Assumed to be 100% of capacity (1500 lb/Hr)
Approx 3.12 gallons per minute @ 8 pounds/gallon.

2																					
MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow (Klb/hr)	Unit 2 Main Steam Temp (Deg F)	Unit 2 Main Steam Pressure (psig)	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp (Deg F)	Unit 1 Air Heater Air Outlet Temp (Deg F)	Unit 1 Air Heater Gas Inlet Temp (Deg F)	Unit 1 Air Heater Gas Outlet Temp	Unit 2 Combustion Air Flow (Klb/hr)	Unit 2 Baghouse Inlet Temp (Deg F)	Unit 2 Baghouse Outlet Temp (Deg F)	Unit 2 Baghouse Pressure Drop (In H2O)	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate (%)		Gross Electric Generation (KW)
9/16/99 11:00	.....	68.46	19.71	403.37	959.95	1327.25	394.26	-0.37	48.16	100.28	353.34	510.05	307.78	111.24	308.66	301.45	5.34	N/A	N/A		95214.84
9/16/99 11:02	.....	67.98	20.12	403.53	958.89	1330.13	394.18	-0.52	47.64	100.25	353.73	510.05	307.84	111.04	308.50	301.50	5.07	N/A	N/A		95085.94
9/16/99 11:04	.....	67.71	20.10	399.98	958.42	1329.00	395.24	-0.48	47.77	100.26	353.42	509.97	307.97	110.80	308.42	301.47	5.29	N/A	N/A		95011.72
9/16/99 11:06	.....	67.54	20.02	398.58	958.80	1326.38	393.00	-0.46	48.23	100.39	353.14	509.81	307.86	110.57	308.08	301.50	5.31	N/A	N/A		94851.56
9/16/99 11:08	.....	67.70	19.91	400.05	959.53	1321.25	392.69	-0.65	47.66	100.39	352.84	509.73	307.84	110.94	307.70	301.42	5.01	N/A	N/A		94722.66
9/16/99 11:10	.....	66.01	19.63	392.46	959.36	1321.31	390.73	-0.86	47.07	100.43	352.72	509.48	308.05	110.02	307.33	301.38	5.12	N/A	N/A		93695.31
9/16/99 11:12	.....	66.68	19.38	393.73	958.34	1313.88	389.47	-0.84	47.63	100.48	352.58	509.00	307.97	109.73	306.97	301.22	5.32	N/A	N/A		93042.97
9/16/99 11:14	.....	67.75	19.59	392.27	959.88	1311.25	387.63	-0.65	47.69	100.44	352.55	508.84	307.78	110.21	306.91	301.09	5.26	N/A	N/A		93078.13
9/16/99 11:16	.....	67.80	19.51	390.76	961.98	1312.63	386.31	-0.77	47.31	100.43	352.39	508.77	307.73	110.18	307.13	301.00	5.05	N/A	N/A		93167.97
9/16/99 11:18	.....	67.35	19.61	391.76	961.47	1317.31	385.84	-0.59	47.77	100.42	352.03	508.77	307.66	110.07	307.56	300.92	5.27	N/A	N/A		93191.41
9/16/99 11:20	.....	67.04	19.51	392.02	960.20	1319.50	386.06	-0.56	47.49	100.39	352.16	508.52	307.48	109.93	307.30	300.84	5.40	N/A	N/A		93218.75
9/16/99 11:22	.....	67.03	19.06	392.95	959.27	1315.63	386.19	-0.78	46.57	100.38	352.25	508.59	307.33	110.04	307.09	300.78	5.19	N/A	N/A		93136.72
9/16/99 11:24	.....	67.62	19.14	392.70	959.91	1315.25	385.93	-0.69	46.12	100.38	352.28	508.59	307.23	109.81	307.09	300.59	5.15	N/A	N/A		93109.38
9/16/99 11:26	.....	67.60	19.43	396.30	961.30	1317.56	386.22	-0.45	47.33	100.41	352.30	508.67	307.25	109.92	307.28	300.53	5.39	N/A	N/A		93152.34
9/16/99 11:28	.....	67.38	19.83	393.17	960.05	1319.31	387.41	-0.58	46.44	100.40	352.27	508.59	307.19	109.96	307.05	300.50	5.15	N/A	N/A		93164.06
9/16/99 11:30	.....	67.24	19.65	395.30	960.05	1321.44	387.57	-0.74	46.37	100.45	352.41	508.84	307.16	109.97	307.23	300.53	4.87	N/A	N/A		93175.78
9/16/99 11:32	.....	67.07	19.82	394.73	959.84	1322.31	387.73	-0.69	47.00	100.52	352.23	509.00	307.09	109.36	307.02	300.63	5.15	N/A	N/A		93171.88
9/16/99 11:34	.....	66.92	20.14	393.74	959.39	1320.69	387.89	-0.50	47.69	100.55	351.64	508.92	306.97	109.75	307.09	300.64	5.43	N/A	N/A		93164.06
9/16/99 11:36	.....	67.07	20.33	396.13	960.08	1318.50	387.89	-0.56	47.62	100.54	351.23	508.77	306.94	109.55	306.59	300.41	5.38	N/A	N/A		93101.56
9/16/99 11:38	.....	67.40	20.27	396.36	960.39	1318.38	388.81	-0.46	45.74	100.54	351.41	508.59	306.92	109.94	306.72	300.41	5.01	N/A	N/A		93144.53
9/16/99 11:40	.....	67.12	20.43	395.77	960.17	1321.06	388.52	-0.64	46.26	100.57	351.48	508.11	306.84	109.25	306.67	300.30	5.29	N/A	N/A		93179.69
9/16/99 11:42	.....	66.75	20.65	395.06	959.58	1325.25	387.75	-0.56	46.28	100.56	351.66	507.80	306.66	109.29	306.72	300.20	5.41	N/A	N/A		93195.31
9/16/99 11:44	.....	66.51	20.84	395.63	958.66	1321.75	388.72	-0.90	45.62	100.59	351.59	507.55	306.63	109.30	306.61	300.17	5.23	N/A	N/A		93148.44
9/16/99 11:46	.....	66.92	20.86	395.38	959.92	1319.13	389.41	-0.85	46.31	100.63	351.72	507.47	306.72	109.31	306.22	300.11	4.92	N/A	N/A		93109.38
9/16/99 11:48	.....	67.44	21.20	396.05	960.05	1317.56	390.32	-0.54	46.29	100.68	351.84	507.72	306.70	109.35	306.80	300.13	5.22	N/A	N/A		93167.97
9/16/99 11:50	.....	67.63	21.58	397.68	960.69	1316.75	390.17	-0.50	46.25	100.77	351.91	507.72	306.72	109.40	307.03	300.25	5.33	N/A	N/A		93332.03
9/16/99 11:52	.....	68.21	22.19	398.96	960.69	1317.19	390.94	-0.55	46.50	100.87	351.45	507.72	306.67	109.69	307.16	300.31	4.99	N/A	N/A		93585.94
9/16/99 11:54	.....	68.74	22.68	400.40	960.69	1319.00	393.07	-0.39	45.84	100.86	351.61	508.11	306.95	109.79	307.81	300.41	5.13	N/A	N/A		94304.69
9/16/99 11:56	.....	68.33	23.17	400.05	960.86	1320.94	393.34	-0.31	46.09	101.05	351.66	508.44	307.28	109.42	307.91	300.48	5.34	N/A	N/A		94441.41
9/16/99 11:58	.....	68.23	23.75	402.51	961.11	1325.88	392.56	-0.18	45.86	101.08	351.95	508.92	307.47	109.95	308.03	300.59	5.29	N/A	N/A		94679.69
9/16/99 12:00	.....	66.84	23.60	396.95	960.59	1331.56	393.45	-0.69	46.69	100.98	352.02	509.00	307.66	109.33	308.13	300.61	5.04	N/A	N/A		94398.44
9/16/99 12:02	.....	65.08	22.74	398.22	957.97	1326.88	390.91	-1.24	45.30	101.05	352.41	508.59	307.72	108.25	307.22	300.72	4.73	N/A	N/A		93203.13
9/16/99 12:04	.....	66.88	22.87	401.05	957.02	1317.50	391.92	-0.73	44.78	101.15	351.98	508.11	307.52	108.61	306.84	300.75	5.02	N/A	N/A		93066.41
9/16/99 12:06	.....	68.21	23.55	400.37	959.70	1313.25	393.82	-0.17	45.63	101.25	351.97	508.44	307.53	109.11	307.39	300.72	5.37	N/A	N/A		93390.63
9/16/99 12:08	.....	68.54	23.63	401.77	962.05	1313.81	393.18	-0.04	45.14	101.27	351.91	508.77	307.61	109.54	307.56	300.86	5.29	N/A	N/A		93714.84
9/16/99 12:10	.....	69.06	23.99	400.40	962.36	1318.94	394.41	0.16	45.70	101.25	351.73	509.33	307.83	109.59	308.55	300.86	5.24	N/A	N/A		94554.69
9/16/99 12:12	.....	68.04	23.89	401.57	961.44	1326.25	393.40	0.02	45.70	101.23	351.67	509.89	308.20	110.01	308.78	300.94	5.47	N/A	N/A		94660.16
9/16/99 12:14	.....	67.37	23.54	403.28	959.61	1327.63	393.70	-0.37	45.77	101.20	351.80	510.05	308.25	110.00	308.53	301.09	5.14	N/A	N/A		94625.00
9/16/99 12:16	.....	67.66	23.41	402.26	957.89	1324.81	395.16	-0.58	45.64	101.11	351.91	510.05	308.22	109.63	308.22	301.08	5.11	N/A	N/A		94718.75
9/16/99 12:18	.....	68.54	23.28	403.16	958.23	1318.19	396.23	-0.39	46.04	101.11	352.41	509.97	308.27	109.58	308.03	301.03	5.30	N/A	N/A		94730.47
9/16/99 12:20	.....	69.10	23.38	402.17	959.95	1316.00	396.43	-0.18	46.19	101.11	352.55	510.05	308.22	110.02	308.05	301.09	5.20	N/A	N/A		94750.00
9/16/99 12:22	.....	69.07	23.31	402.28	961.88	1316.13	395.65	-0.26	46.16	101.09	352.50	510.61	308.38	110.24	308.59	301.09	5.08	N/A	N/A		94707.03
9/16/99 12:24	.....	68.72	23.21	395.02	962.17	1324.50	395.12	-0.19	46.07	101.16	352.48	510.53	308.58	110.04	309.03	301.25	5.36	N/A	N/A		94882.81
9/16/99 12:26	.....	64.84	22.00	396.74	959.36	1327.06	391.04	-0.94	45.72	101.18	352.55	510.30	308.72	108.49	308.02	301.39	5.57	N/A	N/A		93289.06
9/16/99 12:28	.....	67.21	21.67	400.84	956.67	1316.81	389.21	-0.84	46.13	101.27	352.22	509.73	308.44	108.65	307.25	301.33	5.20	N/A	N/A		93320.31
9/16/99 12:30	.....	69.77	22.23	401.16	959.58	1314.06	391.69	-0.29	46.28	101.29	352.47	509.89	308.38	110.03	308.23	301.22	5.05	N/A	N/A		94570.31
9/16/99 12:32	.....	69.22	22.25	401.63	961.44	1316.94	394.26	-0.04	46.77	101.20	353.28	510.45	308.41	110.10	308.78	301.22	5.38	N/A	N/A		94722.66
9/16/99 12:34	.....	68.33	21.86	400.49	960.66	1319.69	393.62	-0.22	46.44	101.18	353.25	510.78	308.47	110.13	308.75	301.27	5.43	N/A	N/A		94472.66
9/16/99 12:36	.....	68.40	21.46	399.64	959.92	1319.56	393.55	-0.39	46.71	101.35	352.91	510.94	308.66	110.36	308.95	301.28	5.15	N/A	N/A		94472.66
9/16/99 12:38	.....	68.65	21.39	400.93	959.27	1321.31	393.45	-0.52	46.32	101.30	352.56	511.34	308.67	110.40	308.95	301.27	4.79	N/A	N/A		94644.53
9/16/99 12:40	.....	68.80	20.98	401.60	959.23	1318.19	393.69	-0.32	47.61	101.23	352.83	511.73	308.66	110.40	309.02	301.47	4.93	N/A	N/A		94714.84
9/16/99 12:42	.....	69.38	21.10	403.26	960.30	1321.44	393.88	-0.07	47.44	101.23	353.03	511.98	308.72	110.49	309.45	301.69	5.25	N/A	N/A		95007.81
9/16/99 12:44	.....	69.13	21.08	401.16	960.02	1321.94	394.58	-0.21	46.59	101.20	353.00	511.66	308.95	110.71	309.23	301.84	5.20	N/A	N/A		95218.75
9/16/99 12:46	.....	69.07	20.87	400.86	959.30	1319.94	395.91	-0.19	46.80	101.18	352.97	511.50	309.03	110.67	309.34	301.92	5.38	N/A	N/A		95257.81
9/16/99 12:48	.....	68.63	20.58	402.23	959.27	1322.81	394.57	-0.23	47.36	101.23	353.03	511.73	309.16	110.93	309.39	301.84	5.37	N/A	N/A		94945.31
9/16/99 12:50	.....	68.51	20.40	401.52	958.55	1323.63	394.56	-0.41	47.52	101.18	352.83	511.73	309.13	110.89	309.08	301.94	5.15	N/A	N/A		94871.09
9/16/99 12:52	.....	67.91	19.97	399.53	958.64	1321.31	393.55	-0.65	47.15	101.04	353.20	511.73	309.17	110.91	309.06	301.81	4.87	N/A	N/A		94550.78

2																					
MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow (Klb/hr)	Unit 2 Main Steam Temp (Deg F)	Unit 2 Main Steam Pressure (psig)	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp (Deg F)	Unit 1 Air Heater Air Outlet Temp (Deg F)	Unit 1 Air Heater Gas Inlet Temp (Deg F)	Unit 1 Air Heater Gas Outlet Temp	Unit 2 Combustion Air Flow (Klb/hr)	Unit 2 Baghouse Inlet Temp (Deg F)	Unit 2 Baghouse Outlet Temp (Deg F)	Unit 2 Baghouse Pressure Drop (In H2O)	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate (%)		Gross Electric Generation (KW)
9/16/99 12:54	.....	68.28	19.65	399.41	958.95	1319.13	393.38	-0.52	47.34	100.95	353.61	511.66	309.09	110.82	308.84	301.91	5.04	N/A	N/A		94382.81
9/16/99 12:56	.....	68.27	19.75	396.74	959.58	1317.56	392.23	-0.35	47.79	100.90	353.64	511.58	309.03	110.83	308.91	301.91	5.29	N/A	N/A		94144.53
9/16/99 12:58	.....	68.41	19.68	398.41	960.48	1316.38	391.18	-0.31	48.26	100.93	353.91	511.50	308.92	110.73	308.67	301.88	5.27	N/A	N/A		94070.31
9/16/99 13:00	.....	68.36	19.42	395.24	960.05	1317.50	391.22	-0.50	48.20	100.90	353.70	511.58	308.84	110.85	308.64	301.91	5.07	N/A	N/A		93929.69
9/16/99 13:02	.....	67.89	19.09	395.45	960.30	1319.56	388.35	-0.72	47.63	100.94	353.56	511.50	308.81	110.80	308.53	301.89	4.77	N/A	N/A		93886.72
9/16/99 13:04	.....	67.36	18.88	394.66	959.17	1320.50	388.59	-0.71	46.96	100.88	353.36	511.09	308.69	110.51	308.06	301.84	5.12	N/A	N/A		93605.47
9/16/99 13:06	.....	67.55	18.81	395.48	958.58	1321.13	388.28	-0.46	47.24	100.86	353.41	510.78	308.50	110.68	307.91	301.73	5.24	N/A	N/A		93519.53
9/16/99 13:08	.....	68.05	18.97	396.34	958.83	1315.38	388.34	-0.32	48.24	100.79	353.05	510.61	308.39	110.50	308.03	301.63	5.49	N/A	N/A		93605.47
9/16/99 13:10	.....	68.83	19.03	396.66	960.42	1314.25	389.86	-0.32	47.96	100.65	353.02	510.86	308.45	111.03	308.39	301.53	5.27	N/A	N/A		93800.78
9/16/99 13:12	.....	68.96	19.30	395.77	960.83	1313.19	389.86	-0.48	48.37	100.59	352.98	511.02	308.47	111.02	308.34	301.47	4.88	N/A	N/A		93867.19
9/16/99 13:14	.....	69.21	19.21	395.02	961.33	1315.06	389.68	-0.29	48.30	100.54	353.09	511.17	308.70	111.16	308.73	301.53	5.02	N/A	N/A		94097.66
9/16/99 13:16	.....	68.88	19.07	397.49	961.17	1320.13	388.76	-0.20	48.24	100.55	352.72	511.17	308.81	111.01	308.59	301.63	5.23	N/A	N/A		94125.00
9/16/99 13:18	.....	68.30	19.27	397.27	959.42	1323.69	389.88	-0.20	48.82	100.55	353.14	511.17	308.97	111.10	308.45	301.70	5.34	N/A	N/A		94148.44
9/16/99 13:20	.....	67.88	19.27	395.81	958.86	1324.06	389.81	-0.46	47.51	100.54	353.14	511.50	309.17	111.06	308.86	301.58	5.06	N/A	N/A		94039.06
9/16/99 13:22	.....	67.81	18.89	397.69	958.72	1321.13	388.95	-0.49	47.32	100.52	352.91	511.34	309.27	111.15	308.22	301.81	5.14	N/A	N/A		93816.41
9/16/99 13:24	.....	68.04	18.92	393.95	958.61	1320.94	390.13	-0.33	47.08	100.48	352.78	510.86	309.08	110.75	307.97	301.73	5.47	N/A	N/A		93742.19
9/16/99 13:26	.....	67.72	19.12	394.27	959.30	1321.31	388.38	-0.45	47.68	100.60	352.33	510.53	308.81	110.42	307.77	301.53	5.37	N/A	N/A		93507.81
9/16/99 13:28	.....	67.66	19.14	393.95	959.80	1321.06	387.60	-0.73	47.10	100.63	351.64	510.20	308.70	110.87	307.59	301.45	5.13	N/A	N/A		93515.63
9/16/99 13:30	.....	67.79	19.16	394.12	958.72	1317.94	388.60	-0.78	47.32	100.65	351.47	510.05	308.45	110.27	307.38	301.47	5.17	N/A	N/A		93457.03
9/16/99 13:32	.....	68.35	18.99	394.60	959.70	1315.19	387.58	-0.50	46.43	100.69	351.84	509.81	308.30	110.50	307.69	301.41	5.48	N/A	N/A		93441.41
9/16/99 13:34	.....	68.85	19.35	398.47	960.30	1313.75	388.44	-0.57	46.32	100.66	352.19	509.81	308.28	110.66	307.72	301.36	5.18	N/A	N/A		93593.75
9/16/99 13:36	.....	69.50	19.99	396.92	961.02	1313.56	390.50	-0.45	47.70	100.62	352.16	509.73	308.28	110.90	307.84	301.39	5.10	N/A	N/A		94042.97
9/16/99 13:38	.....	69.15	19.87	393.30	961.20	1318.38	388.72	-0.35	47.57	100.58	352.53	509.81	308.20	110.67	307.88	301.39	5.45	N/A	N/A		94066.41
9/16/99 13:40	.....	68.23	19.83	396.84	960.55	1321.94	387.13	-0.39	47.83	100.62	352.50	509.97	308.17	110.53	307.78	301.38	5.47	N/A	N/A		93914.06
9/16/99 13:42	.....	67.76	19.98	394.88	959.42	1323.13	388.80	-0.63	47.62	100.60	352.06	510.13	308.25	110.52	307.39	301.28	5.21	N/A	N/A		93789.06
9/16/99 13:44	.....	67.50	19.48	393.87	958.31	1323.31	388.16	-0.95	46.47	100.63	351.81	510.13	308.16	110.38	307.33	301.19	4.87	N/A	N/A		93511.72
9/16/99 13:46	.....	67.77	19.30	395.70	958.31	1320.94	387.11	-0.68	46.24	100.75	351.70	509.89	308.02	110.29	307.17	301.11	5.09	N/A	N/A		93464.84
9/16/99 13:48	.....	68.24	19.69	393.52	958.75	1317.56	388.30	-0.46	46.87	100.77	351.67	509.81	307.80	110.13	306.94	301.08	5.40	N/A	N/A		93484.38
9/16/99 13:50	.....	68.44	19.39	393.77	960.22	1314.38	386.86	-0.45	47.06	100.78	351.64	509.81	307.58	110.25	306.97	300.97	5.41	N/A	N/A		93429.69
9/16/99 13:52	.....	68.70	19.35	391.94	961.20	1314.94	386.63	-0.68	47.01	100.78	351.53	509.97	307.52	110.24	307.39	300.94	5.02	N/A	N/A		93480.47
9/16/99 13:54	.....	68.67	19.78	393.80	960.42	1315.44	387.14	-0.51	46.68	100.73	351.56	509.97	307.48	110.50	307.61	300.94	5.08	N/A	N/A		93515.63
9/16/99 13:56	.....	69.16	19.75	392.73	960.25	1315.38	386.86	-0.29	46.89	100.70	351.50	510.05	307.44	110.48	307.81	301.03	5.44	N/A	N/A		93796.88
9/16/99 13:58	.....	69.01	19.78	396.44	960.95	1319.13	386.70	-0.39	46.94	100.68	351.17	510.05	307.47	110.60	307.42	300.83	5.30	N/A	N/A		93898.44
9/16/99 14:00	.....	69.50	20.14	397.74	959.91	1321.44	388.69	-0.46	46.82	100.63	351.17	510.30	307.61	110.78	307.23	300.86	5.08	N/A	N/A		94492.19
9/16/99 14:02	.....	69.05	20.10	395.16	959.58	1322.06	389.18	-0.27	47.15	100.58	351.52	510.53	307.72	110.48	307.88	300.86	5.32	N/A	N/A		94585.94
9/16/99 14:04	.....	69.14	20.03	398.75	959.70	1321.44	388.99	-0.21	46.60	100.61	351.67	510.69	307.98	110.61	308.03	300.98	5.34	N/A	N/A		94738.28
9/16/99 14:06	.....	69.24	20.41	395.38	959.80	1323.63	390.02	-0.46	47.27	100.64	352.14	510.78	308.16	110.53	307.91	301.09	5.10	N/A	N/A		94742.19
9/16/99 14:08	.....	67.97	20.00	396.35	958.78	1324.31	388.87	-0.57	46.91	100.70	352.64	510.78	308.20	110.45	307.83	301.06	5.19	N/A	N/A		94179.69
9/16/99 14:10	.....	68.40	19.69	395.24	957.98	1319.75	389.13	-0.41	46.96	100.65	352.41	510.69	308.16	110.37	307.72	301.09	5.38	N/A	N/A		94023.44
9/16/99 14:12	.....	68.40	19.94	394.18	958.67	1318.88	388.67	-0.47	47.30	100.66	352.09	510.38	308.17	110.35	307.73	301.09	5.18	N/A	N/A		93847.66
9/16/99 14:14	.....	68.50	19.84	393.91	959.36	1319.19	387.72	-0.70	47.25	100.72	351.88	510.30	308.22	110.29	307.55	301.00	4.95	N/A	N/A		93816.41
9/16/99 14:16	.....	67.92	19.36	393.04	959.58	1319.31	386.94	-0.71	45.78	100.75	351.69	510.30	308.09	110.42	307.39	300.91	4.94	N/A	N/A		93542.97
9/16/99 14:18	.....	68.17	19.29	390.08	959.70	1316.44	385.85	-0.60	46.24	100.82	351.83	510.30	308.00	110.15	307.28	300.91	5.20	N/A	N/A		93488.28
9/16/99 14:20	.....	68.31	19.41	390.60	960.17	1315.63	384.42	-0.40	45.51	100.91	352.03	509.97	307.95	109.93	307.20	300.88	5.41	N/A	N/A		93480.47
9/16/99 14:22	.....	68.41	19.37	393.88	959.23	1314.75	385.38	-0.53	46.30	101.04	352.28	509.89	307.81	109.87	307.44	300.78	5.46	N/A	N/A		93449.22
9/16/99 14:24	.....	69.38	19.32	391.89	959.30	1311.50	387.15	-0.52	46.43	101.13	352.36	509.97	307.92	110.29	307.66	300.78	5.02	N/A	N/A		93691.41
9/16/99 14:26	.....	69.58	19.51	393.50	960.86	1314.63	386.69	-0.27	47.07	101.20	352.11	510.30	308.16	110.67	307.94	300.94	5.28	N/A	N/A		93835.94
9/16/99 14:28	.....	69.83	19.95	395.45	960.56	1316.81	387.38	-0.22	47.26	101.23	351.61	510.30	308.45	110.75	308.06	301.11	5.31	N/A	N/A		94195.31
9/16/99 14:30	.....	69.46	20.15	396.35	960.33	1322.44	387.44	-0.39	48.36	101.26	351.95	510.78	308.78	110.89	308.53	300.98	4.92	N/A	N/A		94367.19
9/16/99 14:32	.....	68.35	19.78	393.94	959.30	1322.81	387.74	-0.40	47.85	101.26	351.84	511.09	309.00	110.94	308.59	301.34	5.19	N/A	N/A		94117.19
9/16/99 14:34	.....	68.45	19.48	394.21	958.69	1320.69	386.99	-0.31	48.76	101.29	351.75	511.02	309.11	110.72	308.41	301.50	5.51	N/A	N/A		93921.88
9/16/99 14:36	.....	67.42	19.27	392.15	958.58	1321.88	386.44	-0.57	48.27	101.27	352.06	511.02	309.05	110.70	308.00	301.42	5.25	N/A	N/A		93398.44
9/16/99 14:38	.....	67.87	19.09	391.22	958.58	1318.75	385.58	-0.64	47.20	101.38	352.03	511.02	309.09	110.52	307.89	301.53	5.05	N/A	N/A		93121.09
9/16/99 14:40	.....	68.38	18.96	391.93	959.09	1314.56	384.88	-0.51	47.32	101.52	352.41	510.61	309.05	110.50	307.91	301.56	5.29	N/A	N/A		93109.38
9/16/99 14:42	.....	69.25	19.20	392.04	960.80	1313.75	385.60	-0.29	47.47	101.67	352.47	510.45	309.14	110.63	308.31	301.59	5.53	N/A	N/A		93417.97
9/16/99 14:44	.....	69.04	19.48	390.88	961.39	1315.81	385.50	-0.46	48.06	101.70	352.23	510.53	309.16	110.70	308.67	301.59	5.22	N/A	N/A		93507.81
9/16/99 14:46	.....	68.62	19.29	389.85	961.70	1318.50	384.17	-0.60	47.84	101.70	352.05	510.45	309.25	110.87	308.77	301.66	5.00	N/A	N/A		93539.06

2																					
MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow (Klb/hr)	Unit 2 Main Steam Temp (Deg F)	Unit 2 Main Steam Pressure (psig)	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp (Deg F)	Unit 1 Air Heater Air Outlet Temp (Deg F)	Unit 1 Air Heater Gas Inlet Temp (Deg F)	Unit 1 Air Heater Gas Outlet Temp	Unit 2 Combustion Air Flow (Klb/hr)	Unit 2 Baghouse Inlet Temp (Deg F)	Unit 2 Baghouse Outlet Temp (Deg F)	Unit 2 Baghouse Pressure Drop (In H2O)	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate (%)		Gross Electric Generation (KW)
9/16/99 14:48	.....	68.66	19.11	391.93	960.66	1317.38	384.41	-0.37	47.10	101.84	352.17	510.61	309.31	110.76	308.98	301.61	5.08	N/A	N/A		93582.03
9/16/99 14:50	.....	69.11	19.65	393.91	959.64	1318.69	385.26	-0.18	47.42	101.93	352.84	510.61	309.39	110.70	309.16	301.64	5.29	N/A	N/A		93816.41
9/16/99 14:52	.....	69.22	19.27	394.25	959.20	1318.50	386.97	-0.24	47.14	101.96	352.83	510.69	309.52	110.92	309.13	301.75	5.34	N/A	N/A		93902.34
9/16/99 14:54	.....	69.65	19.22	394.60	960.14	1317.69	387.23	-0.35	46.85	102.01	352.59	510.78	309.69	111.01	309.22	301.81	5.15	N/A	N/A		94167.97
9/16/99 14:56	.....	69.37	19.40	393.12	959.88	1319.19	386.97	-0.38	48.23	102.04	352.39	511.09	309.72	111.31	309.33	301.91	4.81	N/A	N/A		94113.28
9/16/99 14:58	.....	68.67	19.01	393.53	959.39	1321.75	385.77	-0.21	48.08	102.08	352.14	511.09	309.53	111.06	309.50	302.06	5.23	N/A	N/A		93898.44
9/16/99 15:00	.....	68.45	18.70	392.70	959.88	1324.25	386.77	-0.09	48.30	102.19	352.20	510.86	309.42	111.29	309.55	302.09	5.35	N/A	N/A		93847.66
9/16/99 15:02	.....	68.76	19.19	394.47	959.17	1320.50	386.96	-0.37	48.40	102.29	352.47	510.69	309.44	111.23	309.28	302.02	5.13	N/A	N/A		94007.81
9/16/99 15:04	.....	68.83	19.26	395.18	959.42	1321.44	387.13	-0.59	48.13	102.44	352.14	510.61	309.50	111.10	308.83	302.09	4.99	N/A	N/A		94082.03
9/16/99 15:06	.....	70.23	19.43	397.99	960.08	1317.50	387.88	-0.17	48.59	102.52	351.84	510.73	309.34	111.58	309.14	302.23	5.33	N/A	N/A		94703.13
9/16/99 15:08	.....	70.36	19.62	397.84	960.69	1318.19	389.75	-0.06	48.80	102.51	352.08	510.69	309.19	111.50	309.42	302.25	5.36	N/A	N/A		95097.66
9/16/99 15:10	.....	70.11	19.81	399.55	960.33	1322.94	390.69	-0.16	49.32	102.64	352.22	511.17	309.42	112.14	310.03	302.36	5.13	N/A	N/A		95238.28
9/16/99 15:12	.....	69.54	19.95	396.90	959.30	1323.88	391.09	-0.16	48.37	102.61	352.91	511.34	309.66	112.00	310.25	302.55	5.35	N/A	N/A		95160.16
9/16/99 15:14	.....	69.33	19.78	397.73	959.02	1324.81	390.02	-0.11	47.97	102.65	353.28	511.58	309.88	112.11	310.33	302.78	5.52	N/A	N/A		95105.47
9/16/99 15:16	.....	69.27	19.55	398.30	959.08	1323.69	389.83	-0.28	48.36	102.65	353.44	511.66	310.16	112.21	310.41	302.88	5.27	N/A	N/A		95121.09
9/16/99 15:18	.....	69.67	19.65	398.36	959.27	1320.56	391.88	-0.42	48.40	102.61	353.72	511.73	310.27	112.30	310.45	303.00	4.99	N/A	N/A		95195.31
9/16/99 15:20	.....	69.78	19.64	398.09	959.45	1322.13	390.48	-0.16	48.13	102.65	354.28	511.91	310.23	112.43	310.64	303.08	5.05	N/A	N/A		95292.97
9/16/99 15:22	.....	69.65	19.57	396.27	959.73	1322.06	390.55	-0.19	48.73	102.63	354.59	511.83	310.34	112.21	310.53	303.14	5.45	N/A	N/A		95414.06
9/16/99 15:24	.....	69.55	19.59	399.72	960.36	1323.88	390.20	-0.02	48.98	102.69	354.14	512.13	310.47	112.44	311.16	303.20	5.47	N/A	N/A		95535.16
9/16/99 15:26	.....	69.49	19.23	397.77	959.17	1322.94	392.21	-0.46	48.96	102.73	354.02	512.06	310.50	112.31	310.77	303.28	5.21	N/A	N/A		95488.28
9/16/99 15:28	.....	69.43	19.07	397.58	958.69	1322.44	391.09	-0.31	48.95	102.71	354.16	512.06	310.47	112.30	310.66	303.28	5.40	N/A	N/A		95367.19
9/16/99 15:30	.....	69.13	19.02	396.23	958.72	1320.31	390.85	-0.33	47.88	102.68	353.89	511.73	310.30	112.21	310.09	303.23	5.47	N/A	N/A		95007.81
9/16/99 15:32	.....	69.46	18.94	395.45	959.50	1319.50	389.81	-0.57	47.67	102.71	353.95	511.83	310.00	112.10	310.09	303.27	5.01	N/A	N/A		95070.31
9/16/99 15:34	.....	69.57	18.97	396.69	960.52	1319.88	389.84	-0.40	48.02	102.79	354.00	511.91	309.97	111.94	310.56	303.28	5.19	N/A	N/A		95144.53
9/16/99 15:36	.....	69.47	19.15	394.38	960.36	1319.94	389.73	-0.33	48.46	102.95	353.95	511.83	309.91	111.91	310.39	303.33	5.37	N/A	N/A		95175.78
9/16/99 15:38	.....	69.25	19.22	396.82	959.88	1321.31	388.45	-0.54	47.80	102.98	354.09	511.83	310.03	112.11	310.23	303.28	5.17	N/A	N/A		95148.44
9/16/99 15:40	.....	69.22	19.06	397.21	959.23	1319.50	389.25	-0.57	47.74	102.97	353.91	511.83	309.97	112.13	310.02	303.28	5.08	N/A	N/A		95132.81
9/16/99 15:42	.....	69.41	18.99	396.13	959.20	1317.50	389.88	-0.42	48.12	102.96	353.53	511.73	309.94	112.10	309.94	303.28	5.37	N/A	N/A		95097.66
9/16/99 15:44	.....	69.67	19.14	396.09	959.88	1317.56	389.21	-0.51	48.14	102.94	353.42	511.73	309.84	111.92	309.97	303.28	5.36	N/A	N/A		95062.50
9/16/99 15:46	.....	69.70	19.34	395.72	960.58	1318.69	388.91	-0.69	47.01	103.00	353.56	511.58	309.89	111.70	309.94	303.25	5.08	N/A	N/A		95070.31
9/16/99 15:48	.....	69.66	19.28	395.46	960.42	1319.13	389.41	-0.70	47.64	103.00	353.66	511.66	310.09	111.89	310.22	303.33	5.02	N/A	N/A		95117.19
9/16/99 15:50	.....	69.65	19.45	394.97	960.17	1319.19	389.12	-0.51	47.68	103.07	353.64	511.50	310.08	111.88	310.08	303.34	5.29	N/A	N/A		95164.06
9/16/99 15:52	.....	69.65	19.59	397.33	960.17	1320.38	389.19	-0.39	47.50	103.00	353.47	511.42	310.03	111.75	310.13	303.28	5.41	N/A	N/A		95164.06
9/16/99 15:54	.....	69.70	19.49	398.86	959.67	1319.38	390.07	-0.33	47.06	102.98	353.30	511.50	309.89	111.62	309.97	303.16	5.21	N/A	N/A		95167.97
9/16/99 15:56	.....	69.71	19.59	397.48	959.33	1318.75	390.38	-0.57	47.15	103.05	353.36	511.25	309.77	111.81	309.91	303.06	5.11	N/A	N/A		95183.59
9/16/99 15:58	.....	69.78	19.50	396.33	959.88	1318.19	390.13	-0.58	47.18	103.04	353.63	511.25	309.78	111.74	309.75	302.97	4.80	N/A	N/A		95164.06
9/16/99 16:00	.....	69.85	19.58	396.13	959.98	1318.50	389.13	-0.52	47.16	103.03	353.92	511.34	309.78	111.52	309.95	302.98	4.92	N/A	N/A		95140.63
9/16/99 16:02	.....	69.83	19.51	395.80	960.33	1319.56	389.21	-0.49	46.70	103.08	354.38	511.17	309.77	111.25	309.77	303.02	5.29	N/A	N/A		95160.16
9/16/99 16:04	.....	69.73	19.71	395.66	959.55	1321.44	389.67	-0.38	47.19	103.11	354.47	511.17	309.75	111.56	310.34	303.11	5.41	N/A	N/A		95261.72
9/16/99 16:06	.....	69.33	19.39	395.58	960.14	1322.94	388.59	-0.64	46.67	103.12	354.33	511.25	309.72	111.83	310.36	303.03	5.14	N/A	N/A		95078.13
9/16/99 16:08	.....	69.29	19.44	395.94	959.77	1324.00	388.34	-0.87	47.04	103.15	353.92	511.25	309.53	111.72	309.72	303.08	4.93	N/A	N/A		95117.19
9/16/99 16:10	.....	69.24	19.45	395.50	959.33	1322.44	389.96	-0.69	46.97	103.20	353.34	511.17	309.41	111.41	309.78	302.97	5.00	N/A	N/A		95132.81
9/16/99 16:12	.....	69.34	19.33	396.87	959.39	1320.50	390.19	-0.53	47.12	103.27	353.28	510.86	309.33	111.34	309.97	303.02	5.32	N/A	N/A		95097.66
9/16/99 16:14	.....	69.66	19.53	396.66	959.92	1318.56	390.19	-0.48	46.82	103.27	354.06	510.78	309.23	111.17	309.56	303.03	5.43	N/A	N/A		95066.41
9/16/99 16:16	.....	69.79	19.64	395.39	960.77	1319.56	389.55	-0.59	47.52	103.38	354.22	510.94	309.11	111.21	309.47	303.03	5.11	N/A	N/A		95113.28
9/16/99 16:18	.....	69.71	19.65	396.10	960.75	1321.13	389.61	-0.40	46.85	103.44	353.89	511.02	309.28	111.38	309.88	303.03	5.26	N/A	N/A		95226.56
9/16/99 16:20	.....	69.46	19.71	395.41	959.98	1323.81	388.70	-0.40	46.66	103.48	354.16	510.86	309.47	111.26	309.84	303.09	5.52	N/A	N/A		95242.19
9/16/99 16:22	.....	69.05	19.63	395.09	959.39	1322.94	388.17	-0.54	46.80	103.60	354.06	510.78	309.52	111.08	309.63	303.16	5.22	N/A	N/A		95109.38
9/16/99 16:24	.....	69.13	19.46	396.59	959.27	1320.88	388.80	-0.73	46.10	103.65	353.94	510.78	309.56	111.24	309.75	303.03	4.98	N/A	N/A		95085.94
9/16/99 16:26	.....	69.43	19.44	395.80	959.61	1320.69	388.92	-0.70	46.55	103.67	354.19	510.69	309.66	111.13	309.72	303.06	5.03	N/A	N/A		95117.19
9/16/99 16:28	.....	69.38	19.77	397.04	959.98	1319.13	389.43	-0.46	47.19	103.69	354.14	510.78	309.53	110.99	309.84	303.05	5.43	N/A	N/A		95128.91
9/16/99 16:30	.....	69.51	19.76	394.44	959.88	1320.75	389.82	-0.33	47.59	103.75	353.88	510.86	309.59	110.98	310.19	303.02	5.55	N/A	N/A		95148.44
9/16/99 16:32	.....	69.15	19.62	392.72	959.98	1323.25	387.44	-0.61	47.07	103.86	353.30	510.78	309.69	111.23	310.33	302.97	5.21	N/A	N/A		95191.41
9/16/99 16:34	.....	68.92	19.40	396.73	959.98	1319.75	387.75	-0.83	46.57	103.98	353.08	510.69	309.89	111.22	310.19	303.11	4.81	N/A	N/A		95101.56
9/16/99 16:36	.....	69.42	19.56	394.85	959.36	1318.88	389.17	-0.58	46.53	104.02	353.20	510.53	310.13	111.19	310.03	303.20	4.96	N/A	N/A		95085.94
9/16/99 16:38	.....	69.52	19.73	395.82	960.36	1318.56	387.85	-0.40	46.80	103.98	353.84	510.61	310.28	110.76	310.38	303.34	5.37	N/A	N/A		95121.09
9/16/99 16:40	.....	69.56	19.87	394.96	959.81	1317.56	388.86	-0.43	46.41	104.01	354.13	510.69	310.31	111.03	309.78	303.23	5.47	N/A	N/A		95078.13

2																					
MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow (Klb/hr)	Unit 2 Main Steam Temp (Deg F)	Unit 2 Main Steam Pressure (psig)	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp (Deg F)	Unit 1 Air Heater Air Outlet Temp (Deg F)	Unit 1 Air Heater Gas Inlet Temp (Deg F)	Unit 1 Air Heater Gas Outlet Temp	Unit 2 Combustion Air Flow (Klb/hr)	Unit 2 Baghouse Inlet Temp (Deg F)	Unit 2 Baghouse Outlet Temp (Deg F)	Unit 2 Baghouse Pressure Drop (In H2O)	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate (%)		Gross Electric Generation (KW)
9/16/99 16:42	.....	69.57	19.79	393.41	959.58	1317.38	387.37	-0.60	46.50	104.11	354.28	510.69	310.38	111.19	309.78	303.27	5.14	N/A	N/A		95074.22
9/16/99 16:44	.....	69.62	19.76	394.74	960.33	1317.75	387.48	-0.30	47.59	104.10	354.16	510.86	310.58	111.34	310.02	303.22	5.31	N/A	N/A		95042.97
9/16/99 16:46	.....	69.66	20.08	395.16	961.20	1319.94	386.71	-0.26	47.88	104.09	353.80	511.02	310.59	111.48	310.22	303.23	5.49	N/A	N/A		95085.94
9/16/99 16:48	.....	69.57	20.06	395.89	960.39	1320.38	388.04	-0.47	47.53	104.03	353.72	511.25	310.66	111.59	310.47	303.34	5.30	N/A	N/A		95277.34
9/16/99 16:50	.....	69.60	20.02	397.77	959.91	1321.13	388.59	-0.58	47.48	103.95	353.91	511.25	310.78	111.71	310.72	303.53	5.02	N/A	N/A		95273.44
9/16/99 16:52	.....	69.38	20.12	395.02	958.98	1323.69	389.81	-0.50	47.18	103.97	353.98	511.34	310.94	111.71	310.69	303.75	5.14	N/A	N/A		95292.97
9/16/99 16:54	.....	68.78	20.17	396.09	959.47	1325.44	389.14	-0.28	48.40	104.01	354.06	511.34	311.00	111.32	310.72	303.81	5.35	N/A	N/A		95074.22
9/16/99 16:56	.....	68.90	19.94	397.29	958.66	1321.06	389.30	-0.39	48.43	103.97	354.34	511.02	310.97	111.37	310.73	303.72	5.35	N/A	N/A		95085.94
9/16/99 16:58	.....	69.37	19.88	394.77	958.98	1319.94	390.42	-0.46	48.88	103.89	354.55	510.94	310.88	111.81	310.72	303.69	5.08	N/A	N/A		95042.97
9/16/99 17:00	.....	69.12	20.14	394.04	960.59	1318.56	388.97	-0.30	48.07	103.86	354.17	511.09	310.80	111.83	310.83	303.73	5.29	N/A	N/A		94742.19
9/16/99 17:02	.....	69.05	20.07	392.37	960.45	1317.69	389.23	-0.25	48.35	103.84	354.03	511.09	310.73	111.60	310.47	303.72	5.39	N/A	N/A		94570.31
9/16/99 17:04	.....	67.22	19.31	390.30	959.77	1320.38	385.99	-0.75	47.72	103.76	354.17	510.94	310.61	111.29	310.11	303.67	5.05	N/A	N/A		93585.94
9/16/99 17:06	.....	67.57	19.04	389.39	958.31	1316.94	383.52	-0.79	48.53	103.72	354.27	510.61	310.50	110.65	309.63	303.69	5.25	N/A	N/A		93390.63
9/16/99 17:08	.....	68.06	19.00	389.19	959.42	1316.94	382.48	-0.57	47.47	103.85	353.89	510.30	310.30	110.92	309.44	303.64	5.37	N/A	N/A		93335.94
9/16/99 17:10	.....	68.39	18.87	390.31	959.61	1313.19	382.77	-0.76	47.94	103.83	353.30	509.97	310.30	111.00	309.03	303.39	5.14	N/A	N/A		93378.91
9/16/99 17:12	.....	68.66	18.78	388.69	960.92	1314.00	382.50	-0.65	48.45	103.83	352.91	509.81	310.41	111.23	309.00	303.34	5.09	N/A	N/A		93382.81
9/16/99 17:14	.....	68.52	18.63	388.22	960.89	1314.19	382.19	-0.44	47.82	103.78	353.16	509.81	310.44	111.20	309.44	303.34	5.38	N/A	N/A		93398.44
9/16/99 17:16	.....	68.62	18.82	389.23	960.86	1316.00	382.65	-0.54	48.03	103.69	353.88	509.89	310.48	111.31	309.64	303.30	5.31	N/A	N/A		93382.81
9/16/99 17:18	.....	68.31	18.76	391.19	959.98	1318.19	382.41	-0.63	47.41	103.63	353.95	509.81	310.53	111.16	309.59	303.33	5.08	N/A	N/A		93433.59
9/16/99 17:20	.....	69.28	18.71	394.62	958.39	1313.25	384.77	-0.35	47.99	103.57	353.89	509.89	310.53	111.15	309.53	303.38	5.25	N/A	N/A		93710.94
9/16/99 17:22	.....	70.90	19.38	395.91	960.52	1315.38	387.97	-0.08	47.93	103.50	353.67	510.45	310.72	111.79	310.66	303.34	5.34	N/A	N/A		94699.22
9/16/99 17:24	.....	71.18	19.81	396.48	961.41	1319.69	388.33	-0.06	48.18	103.41	353.84	510.86	310.86	112.17	311.03	303.53	5.13	N/A	N/A		95000.00
9/16/99 17:26	.....	69.85	19.55	395.63	961.61	1327.63	387.32	-0.19	48.93	103.34	354.59	511.09	310.95	111.71	311.23	303.75	5.35	N/A	N/A		94789.06
9/16/99 17:28	.....	68.73	19.57	394.98	959.81	1332.13	387.46	-0.40	48.04	103.27	354.50	511.09	310.91	111.53	310.84	303.77	5.34	N/A	N/A		94503.91
9/16/99 17:30	.....	68.36	19.48	396.06	958.11	1330.56	388.00	-0.72	48.27	103.23	354.92	510.86	310.92	111.21	310.59	303.77	5.11	N/A	N/A		94210.94
9/16/99 17:32	.....	69.33	19.70	399.41	956.98	1325.06	389.82	-0.36	48.92	103.23	354.59	510.53	310.88	111.17	310.23	303.77	5.30	N/A	N/A		94367.19
9/16/99 17:34	.....	70.50	20.26	398.49	959.20	1320.31	391.83	-0.40	47.95	103.20	353.86	510.45	310.63	111.48	310.25	303.52	5.28	N/A	N/A		95007.81
9/16/99 17:36	.....	70.39	20.61	398.30	961.17	1320.38	392.15	-0.71	47.76	103.14	353.83	510.69	310.69	111.46	310.48	303.48	4.95	N/A	N/A		95085.94
9/16/99 17:38	.....	70.31	21.07	398.48	960.95	1320.94	392.02	-0.83	48.11	103.09	354.31	510.69	310.78	110.54	310.38	303.72	5.16	N/A	N/A		95121.09
9/16/99 17:40	.....	70.23	21.38	399.30	960.89	1321.75	391.69	-0.35	47.17	102.99	354.41	510.94	310.91	111.59	310.81	303.86	5.31	N/A	N/A		95203.13
9/16/99 17:42	.....	70.17	21.70	399.15	959.61	1322.88	392.91	-0.93	46.51	102.90	354.30	510.69	310.83	110.79	310.34	303.80	5.01	N/A	N/A		95175.78
9/16/99 17:44	.....	70.09	21.91	401.10	960.14	1323.50	392.20	-0.59	47.45	102.82	354.30	510.78	310.69	111.35	310.33	304.03	5.10	N/A	N/A		95242.19
9/16/99 17:46	.....	70.09	22.23	400.58	960.33	1321.69	394.31	-0.26	47.32	102.75	354.50	510.78	310.72	111.26	310.77	304.08	5.39	N/A	N/A		95210.94
9/16/99 17:48	.....	70.07	22.28	399.14	959.88	1321.06	393.13	-0.60	46.67	102.73	354.41	510.78	310.83	110.68	310.36	304.09	5.35	N/A	N/A		95218.75
9/16/99 17:50	.....	70.08	22.26	399.77	960.02	1322.44	392.92	-0.64	47.08	102.70	354.34	510.78	310.72	110.92	310.16	304.13	5.11	N/A	N/A		95238.28
9/16/99 17:52	.....	69.96	22.41	402.45	960.66	1325.00	392.88	-0.15	47.82	102.65	354.28	511.02	310.70	111.45	310.72	304.22	5.36	N/A	N/A		95394.53
9/16/99 17:54	.....	69.89	22.62	402.94	960.05	1325.50	394.70	-0.24	48.06	102.59	354.78	511.09	310.75	111.40	311.06	304.22	5.35	N/A	N/A		95445.31
9/16/99 17:56	.....	69.78	22.52	402.00	958.83	1325.25	395.51	-0.50	47.76	102.57	355.11	511.02	310.61	111.28	310.81	304.28	5.05	N/A	N/A		95437.50
9/16/99 17:58	.....	69.75	22.49	402.43	958.58	1324.69	395.45	-0.40	47.74	102.57	355.25	510.78	310.30	111.15	310.38	304.34	5.33	N/A	N/A		95378.91
Average	.....	**68.73**	**20.11**	**398.29**	**959.81**	**1320.00**	**389.43**	**-0.46**	**47.29**	**101.90**	**352.98**	**510.47**	**309.05**	**110.82**	**308.90**	**302.09**	**5.21**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**94336.25**

2																			
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow	Unit 1 Main Steam Temp	Unit 1 Main Steam Pressure	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp	Unit 1 Baghouse Outlet Temp	Unit 1 Baghouse Pressure Drop	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate
9/17/99 8:00	.....	71.29	16.70	405.62	959.19	1317.63	395.42	-0.32	39.07	98.74	346.38	525.06	264.97	110.54	318.72	314.25	5.67	N/A	N/A
9/17/99 8:02	.....	71.30	16.67	403.56	958.52	1315.31	395.34	-0.71	38.75	98.77	346.78	525.16	264.77	110.35	319.02	314.61	5.21	N/A	N/A
9/17/99 8:04	.....	71.32	15.97	401.75	958.92	1312.81	391.86	-0.90	38.81	98.80	349.25	525.06	265.11	110.10	318.69	315.16	4.90	N/A	N/A
9/17/99 8:06	.....	71.37	16.00	399.00	960.19	1310.38	391.51	-1.00	38.47	99.00	348.53	524.88	265.05	109.10	318.09	315.11	5.01	N/A	N/A
9/17/99 8:08	.....	71.51	15.97	398.77	960.16	1308.06	390.88	-0.79	38.37	99.11	346.09	524.56	264.77	109.19	317.38	314.86	5.35	N/A	N/A
9/17/99 8:10	.....	71.62	15.92	399.68	960.27	1307.13	390.42	-0.42	39.05	99.23	344.58	524.28	264.53	109.34	316.84	314.66	5.57	N/A	N/A
9/17/99 8:12	.....	71.62	15.96	395.31	960.94	1307.44	389.45	-0.25	38.93	99.20	343.56	524.25	264.22	109.36	317.75	314.47	5.80	N/A	N/A
9/17/99 8:14	.....	69.50	15.53	391.03	961.73	1312.19	386.18	-0.92	38.89	99.18	343.17	524.00	263.94	108.66	317.73	314.22	5.41	N/A	N/A
9/17/99 8:16	.....	69.96	15.34	395.11	960.06	1311.56	383.38	-1.05	38.86	99.26	343.09	523.69	263.61	108.67	317.59	313.73	5.05	N/A	N/A
9/17/99 8:18	.....	70.70	15.23	396.50	957.94	1308.50	384.30	-0.51	39.71	99.30	345.16	523.44	263.53	109.14	317.64	313.53	5.32	N/A	N/A
9/17/99 8:20	.....	70.89	15.18	390.66	958.00	1306.56	386.31	-0.28	40.20	99.46	347.16	523.38	263.94	109.29	316.86	313.53	5.59	N/A	N/A
9/17/99 8:22	.....	71.68	14.85	394.26	959.09	1303.56	384.99	0.03	40.53	99.63	347.25	523.38	263.97	109.79	316.97	313.39	5.82	N/A	N/A
9/17/99 8:24	.....	72.11	14.82	396.56	961.06	1303.88	386.44	-0.06	40.45	99.66	348.97	523.81	264.67	110.25	317.64	313.22	5.60	N/A	N/A
9/17/99 8:26	.....	71.38	14.98	394.99	962.08	1308.63	386.38	-0.40	40.34	99.66	349.16	524.28	265.05	110.03	317.84	313.16	5.20	N/A	N/A
9/17/99 8:28	.....	70.91	14.26	394.67	960.88	1311.63	384.95	-0.20	40.51	99.65	346.92	524.56	265.03	110.01	318.23	313.19	5.15	N/A	N/A
9/17/99 8:30	.....	70.77	14.79	394.17	959.81	1313.44	384.59	-0.43	40.43	99.70	345.48	524.56	264.56	109.68	317.63	313.06	5.35	N/A	N/A
9/17/99 8:32	.....	71.01	14.82	394.78	959.19	1313.38	385.00	-0.21	41.21	99.77	344.66	524.69	264.33	109.67	317.59	313.13	5.65	N/A	N/A
9/17/99 8:34	.....	71.26	15.01	394.02	958.84	1310.19	385.24	-0.21	41.30	99.77	344.38	524.59	264.25	109.65	317.47	313.16	5.82	N/A	N/A
9/17/99 8:36	.....	71.35	14.89	393.41	959.58	1310.44	385.66	-0.34	41.25	99.82	344.41	524.69	264.13	110.33	317.39	313.19	5.48	N/A	N/A
9/17/99 8:38	.....	71.21	15.18	393.88	960.44	1309.88	385.32	-0.68	41.04	99.93	345.67	525.09	264.30	110.10	318.70	313.00	5.06	N/A	N/A
9/17/99 8:40	.....	71.12	14.52	391.55	961.16	1310.56	384.97	-0.79	40.83	100.13	348.27	525.53	265.09	109.67	319.38	313.34	5.09	N/A	N/A
9/17/99 8:42	.....	71.05	14.57	392.28	961.56	1310.63	383.98	-0.47	41.27	100.29	349.66	525.69	265.59	109.93	318.31	313.48	5.33	N/A	N/A
9/17/99 8:44	.....	70.97	14.89	394.11	960.83	1311.06	384.92	-0.28	41.58	100.34	348.72	525.69	265.38	109.50	318.50	313.67	5.62	N/A	N/A
9/17/99 8:46	.....	71.55	14.70	396.86	958.73	1308.25	386.45	-0.16	42.21	100.30	347.03	525.44	264.88	109.98	318.34	313.80	5.84	N/A	N/A
9/17/99 8:48	.....	71.71	14.87	394.60	958.00	1307.94	385.82	-0.40	42.30	100.36	348.02	525.25	265.03	110.50	318.80	314.52	5.45	N/A	N/A
9/17/99 8:50	.....	71.59	14.69	394.12	959.33	1308.94	386.09	-0.67	41.98	100.40	349.97	525.28	265.72	110.12	318.72	314.95	4.98	N/A	N/A
9/17/99 8:52	.....	71.60	14.34	395.08	960.48	1309.38	385.28	-0.54	42.07	100.44	350.19	525.25	266.19	110.47	319.16	314.84	5.00	N/A	N/A
9/17/99 8:54	.....	71.58	14.20	394.25	960.78	1309.31	385.63	-0.42	42.37	100.55	350.52	525.28	266.58	110.03	319.06	314.81	5.30	N/A	N/A
9/17/99 8:56	.....	71.58	14.21	394.25	960.06	1309.56	386.16	-0.18	42.26	100.58	350.23	525.19	266.47	109.87	319.03	314.80	5.59	N/A	N/A
9/17/99 8:58	.....	71.61	14.06	392.05	959.83	1308.56	384.13	0.03	42.72	100.74	348.41	525.16	266.06	110.08	318.33	314.53	5.77	N/A	N/A
9/17/99 9:00	.....	71.67	14.08	392.23	960.22	1307.88	383.06	-0.49	42.86	100.89	348.33	525.25	266.23	110.78	319.59	313.84	5.38	N/A	N/A
9/17/99 9:02	.....	71.61	14.08	395.34	960.50	1309.81	383.68	-0.91	42.56	101.00	350.13	525.47	266.78	110.11	319.58	313.73	4.99	N/A	N/A
9/17/99 9:04	.....	72.04	14.13	391.58	959.69	1310.88	383.09	-0.74	42.84	101.09	351.05	525.41	266.97	110.38	319.59	313.72	5.07	N/A	N/A
9/17/99 9:06	.....	72.53	14.23	391.36	959.28	1309.31	382.80	-0.41	43.24	101.13	351.34	525.38	267.03	109.81	319.75	313.91	5.39	N/A	N/A
9/17/99 9:08	.....	72.64	14.28	392.54	959.83	1307.88	382.90	-0.20	43.28	101.19	351.75	525.31	267.19	110.11	320.53	313.97	5.64	N/A	N/A
9/17/99 9:10	.....	72.72	14.29	392.39	959.95	1307.13	383.99	-0.16	43.44	101.29	351.66	525.28	267.30	109.83	319.28	314.03	5.83	N/A	N/A
9/17/99 9:12	.....	72.72	14.30	394.19	960.11	1307.63	383.94	-0.34	43.55	101.30	349.50	525.44	266.98	110.31	320.53	314.16	5.46	N/A	N/A
9/17/99 9:14	.....	72.73	14.28	393.46	960.31	1308.75	385.84	-0.69	43.98	101.38	347.81	525.66	266.80	110.02	320.39	314.28	5.08	N/A	N/A
9/17/99 9:16	.....	72.84	14.16	396.45	959.83	1307.06	385.74	-0.52	44.18	101.43	346.64	525.59	266.44	110.34	319.52	314.41	5.18	N/A	N/A
9/17/99 9:18	.....	72.91	14.21	393.75	959.41	1306.75	385.90	-0.40	44.04	101.48	346.16	525.34	266.39	110.11	319.25	314.47	5.50	N/A	N/A
9/17/99 9:20	.....	72.99	15.09	393.88	959.34	1306.00	384.30	-0.10	44.48	101.57	345.81	525.19	266.45	110.17	319.91	314.58	5.82	N/A	N/A
9/17/99 9:22	.....	73.15	14.57	394.39	959.88	1304.56	385.75	-0.21	44.41	101.75	345.31	525.19	266.42	110.51	319.91	314.91	5.82	N/A	N/A
9/17/99 9:24	.....	73.35	15.08	394.50	959.77	1301.88	385.76	-0.48	44.32	101.86	345.09	525.31	266.83	110.50	319.33	315.34	5.40	N/A	N/A
9/17/99 9:26	.....	73.61	14.29	394.43	960.02	1300.19	384.66	-0.67	44.59	101.98	345.17	525.66	267.23	110.78	318.84	315.98	5.03	N/A	N/A
9/17/99 9:28	.....	73.80	14.72	394.30	959.36	1300.56	386.46	-0.46	45.19	101.95	345.25	525.59	267.23	110.86	319.92	316.03	5.25	N/A	N/A
9/17/99 9:30	.....	73.98	14.20	392.17	959.13	1300.13	384.73	-0.37	45.48	101.97	346.05	525.69	267.41	110.87	319.97	316.06	5.58	N/A	N/A
9/17/99 9:32	.....	74.12	13.72	393.36	960.00	1301.00	383.43	-0.18	45.72	102.04	349.09	525.63	267.91	110.80	319.70	315.94	5.69	N/A	N/A
9/17/99 9:34	.....	74.19	14.33	395.38	961.09	1303.63	384.62	-0.46	45.37	102.07	351.63	525.50	268.41	111.03	320.33	315.59	5.31	N/A	N/A
9/17/99 9:36	.....	74.19	14.76	395.74	961.33	1306.25	385.98	-0.37	45.84	102.13	351.02	525.59	268.72	110.93	321.03	315.20	5.11	N/A	N/A
9/17/99 9:38	.....	74.12	13.79	396.93	960.55	1308.75	387.22	-0.55	45.95	102.21	349.16	525.69	268.84	111.24	321.03	315.16	5.11	N/A	N/A
9/17/99 9:40	.....	74.10	14.14	397.65	959.77	1310.06	387.51	-0.26	47.41	102.27	350.81	525.72	269.14	111.30	320.45	315.33	5.40	N/A	N/A
9/17/99 9:42	.....	73.97	14.79	399.10	959.94	1312.38	386.93	-0.16	47.66	102.36	352.83	525.72	269.61	111.25	321.56	315.39	5.71	N/A	N/A
9/17/99 9:44	.....	73.82	14.86	398.98	959.94	1315.13	389.11	-0.19	47.56	102.42	354.52	525.63	270.09	111.12	321.73	315.55	5.76	N/A	N/A
9/17/99 9:46	.....	73.60	14.73	398.77	959.31	1317.50	389.91	-0.63	47.35	102.50	354.28	525.59	270.34	111.03	321.36	315.41	5.44	N/A	N/A
9/17/99 9:48	.....	73.41	14.56	400.95	958.41	1317.69	390.09	-0.77	47.14	102.56	353.73	525.66	270.47	111.14	321.16	315.61	5.16	N/A	N/A
9/17/99 9:50	.....	73.37	14.50	399.20	957.72	1315.88	391.49	-0.87	47.44	102.64	353.73	525.50	270.44	111.09	321.41	315.52	4.90	N/A	N/A

2																			
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow	Unit 1 Main Steam Temp	Unit 1 Main Steam Pressure	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp	Unit 1 Baghouse Outlet Temp	Unit 1 Baghouse Pressure Drop	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate
9/17/99 9:52	.....	73.46	14.48	397.01	957.73	1311.75	391.25	-0.64	47.63	102.73	352.59	525.34	270.34	110.62	321.09	315.59	5.15	N/A	N/A
9/17/99 9:54	.....	73.55	13.77	396.16	958.81	1309.19	389.68	-0.47	48.21	102.80	350.92	525.16	270.03	111.17	321.64	315.66	5.44	N/A	N/A
9/17/99 9:56	.....	73.68	14.38	396.50	960.97	1307.25	388.04	-0.32	48.78	102.95	352.03	524.94	270.05	110.62	321.47	315.64	5.68	N/A	N/A
9/17/99 9:58	.....	73.76	14.11	398.49	962.33	1307.25	388.86	-0.35	48.40	103.07	353.55	524.91	270.20	110.65	321.47	315.84	5.63	N/A	N/A
9/17/99 10:00	.....	73.81	14.39	399.52	962.22	1307.69	389.08	-0.56	48.31	103.14	354.22	525.00	270.38	110.92	321.38	316.28	5.25	N/A	N/A
9/17/99 10:02	.....	73.79	14.76	401.98	961.47	1309.56	389.43	-0.79	48.04	103.29	353.72	525.16	270.80	110.97	321.63	316.92	4.98	N/A	N/A
9/17/99 10:04	.....	73.68	14.56	398.72	960.25	1311.38	391.77	-0.54	48.30	103.40	353.31	525.28	271.05	111.17	321.53	317.03	5.25	N/A	N/A
9/17/99 10:06	.....	72.13	14.03	397.63	959.78	1313.50	390.41	-0.59	48.81	103.57	353.31	525.28	270.91	110.48	320.58	316.95	5.57	N/A	N/A
9/17/99 10:08	.....	71.91	14.41	392.34	960.06	1314.25	387.95	-0.50	48.72	103.81	353.28	525.22	270.81	109.95	320.09	316.73	5.80	N/A	N/A
9/17/99 10:10	.....	71.04	13.60	395.16	960.58	1315.13	386.57	-0.89	47.80	103.98	351.23	525.16	270.25	109.77	319.84	316.41	5.56	N/A	N/A
9/17/99 10:12	.....	71.88	13.58	396.02	959.27	1310.44	386.01	-0.86	46.86	104.20	349.56	524.69	269.34	109.68	320.16	315.80	5.15	N/A	N/A
9/17/99 10:14	.....	72.10	14.65	394.69	959.31	1306.31	386.52	-0.92	45.81	104.28	350.03	524.13	268.86	109.79	320.47	315.39	4.94	N/A	N/A
9/17/99 10:16	.....	72.64	13.72	394.26	960.72	1302.50	386.53	-0.66	45.05	104.35	351.80	523.94	269.09	109.77	321.03	315.53	5.15	N/A	N/A
9/17/99 10:18	.....	72.64	13.98	394.84	962.73	1303.13	386.71	-0.27	45.20	104.39	352.53	523.72	269.66	110.17	322.19	315.66	5.44	N/A	N/A
9/17/99 10:20	.....	72.52	14.48	394.88	963.61	1304.13	386.78	-0.05	46.51	104.48	352.77	523.75	269.97	109.71	321.86	315.69	5.83	N/A	N/A
9/17/99 10:22	.....	72.42	14.34	397.37	962.31	1306.69	387.31	-0.64	46.86	104.52	353.25	523.69	270.06	110.06	320.91	315.17	5.50	N/A	N/A
9/17/99 10:24	.....	72.02	14.60	394.47	961.31	1309.56	386.23	-0.88	46.27	104.58	353.28	523.69	270.22	109.61	321.80	315.36	5.17	N/A	N/A
9/17/99 10:26	.....	72.34	14.37	398.76	960.69	1308.69	385.63	-0.80	45.88	104.69	353.55	523.69	270.39	109.83	321.58	315.55	5.06	N/A	N/A
9/17/99 10:28	.....	72.60	14.95	398.91	959.66	1307.56	389.25	-0.47	46.10	104.77	353.80	523.81	270.34	109.88	321.55	315.69	5.28	N/A	N/A
9/17/99 10:30	.....	72.87	14.83	398.43	959.28	1305.56	390.02	-0.28	46.13	104.78	354.11	523.91	270.42	109.71	321.50	315.78	5.60	N/A	N/A
9/17/99 10:32	.....	73.24	15.13	401.83	960.50	1304.63	388.29	-0.11	46.36	104.79	354.16	523.97	270.53	109.88	321.14	315.84	5.82	N/A	N/A
9/17/99 10:34	.....	75.42	16.10	405.03	961.69	1301.06	392.52	0.01	47.68	104.86	354.47	524.31	270.78	110.82	322.27	315.81	5.53	N/A	N/A
9/17/99 10:36	.....	75.02	16.28	403.07	962.95	1303.00	395.18	-0.21	47.26	104.88	354.56	524.94	271.34	110.94	322.88	316.25	5.24	N/A	N/A
9/17/99 10:38	.....	71.25	15.24	395.29	962.86	1313.88	390.55	-0.80	46.81	104.91	354.30	525.47	271.73	110.35	320.53	317.16	5.16	N/A	N/A
9/17/99 10:40	.....	71.36	15.06	398.48	960.61	1319.00	387.74	-0.83	45.89	104.97	354.50	525.28	271.47	109.56	320.89	317.34	5.35	N/A	N/A
9/17/99 10:42	.....	73.50	15.65	398.62	957.56	1313.88	388.37	-0.24	46.51	105.05	355.63	525.00	271.16	110.15	321.28	316.98	5.69	N/A	N/A
9/17/99 10:44	.....	73.68	15.17	403.83	958.52	1309.56	390.38	0.03	46.87	105.14	355.86	524.94	271.06	110.20	321.31	316.88	5.84	N/A	N/A
9/17/99 10:46	.....	74.98	15.85	402.91	960.55	1306.19	392.67	-0.02	46.53	105.18	355.41	525.00	271.16	110.60	321.84	316.63	5.50	N/A	N/A
9/17/99 10:48	.....	74.65	16.02	402.80	962.19	1307.75	393.33	-0.34	46.85	105.29	353.44	525.44	271.30	111.38	322.75	316.42	5.05	N/A	N/A
9/17/99 10:50	.....	72.34	15.53	397.53	962.55	1314.81	391.84	-0.78	46.60	105.41	354.41	525.81	271.72	110.78	323.03	316.47	5.25	N/A	N/A
9/17/99 10:52	.....	71.66	14.91	392.31	960.63	1319.63	388.10	-0.77	46.27	105.53	355.70	525.63	271.84	110.27	321.34	316.59	5.51	N/A	N/A
9/17/99 10:54	.....	70.44	14.75	391.82	958.30	1321.88	383.98	-0.98	46.26	105.72	355.77	525.13	271.42	109.03	321.00	316.78	5.68	N/A	N/A
9/17/99 10:56	.....	71.06	14.58	391.48	956.78	1317.19	383.02	-0.75	46.50	105.90	355.59	524.47	270.70	108.59	320.56	316.69	5.90	N/A	N/A
9/17/99 10:58	.....	71.88	14.39	391.09	957.44	1311.25	383.41	-0.56	46.50	106.04	353.11	524.22	270.09	109.37	320.92	316.31	5.67	N/A	N/A
9/17/99 11:00	.....	72.49	14.56	392.90	960.31	1308.56	382.51	-0.67	46.79	106.11	350.59	523.94	269.84	109.83	321.23	316.16	5.27	N/A	N/A
9/17/99 11:02	.....	73.22	14.91	394.49	963.08	1306.13	385.58	-0.68	47.11	106.16	348.97	523.88	269.81	110.46	321.58	316.28	4.99	N/A	N/A
9/17/99 11:04	.....	72.08	14.76	389.31	963.56	1309.13	385.38	-0.84	46.86	106.23	348.22	523.81	269.97	109.97	321.25	316.45	4.94	N/A	N/A
9/17/99 11:06	.....	71.06	14.61	390.63	962.11	1312.63	382.70	-0.80	46.33	106.33	348.00	523.66	269.72	109.44	320.95	316.53	5.18	N/A	N/A
9/17/99 11:08	.....	71.41	14.05	391.18	959.33	1312.13	381.56	-0.75	45.95	106.47	347.97	523.19	269.38	108.97	321.00	316.61	5.45	N/A	N/A
9/17/99 11:10	.....	72.05	14.28	392.23	958.02	1308.88	381.96	-0.34	45.93	106.66	347.84	522.78	269.13	109.66	320.61	316.64	5.73	N/A	N/A
9/17/99 11:12	.....	72.25	13.99	393.38	958.61	1308.50	384.38	-0.27	46.22	106.75	347.38	522.59	269.05	109.87	321.50	316.52	5.67	N/A	N/A
9/17/99 11:14	.....	72.33	14.94	391.86	959.73	1304.88	384.23	-0.41	46.52	106.78	347.22	522.66	269.03	109.86	321.28	316.69	5.33	N/A	N/A
9/17/99 11:16	.....	73.27	14.31	398.02	961.02	1304.06	384.41	-0.57	46.79	106.77	347.22	522.69	269.09	110.12	321.30	317.22	4.98	N/A	N/A
9/17/99 11:18	.....	74.85	15.00	397.05	961.33	1301.13	386.38	-0.08	47.04	106.77	347.27	522.94	269.53	110.88	321.72	317.86	5.29	N/A	N/A
9/17/99 11:20	.....	74.36	15.07	398.03	962.52	1302.94	388.53	-0.02	47.21	106.86	348.48	523.34	270.03	111.23	322.69	318.05	5.57	N/A	N/A
9/17/99 11:22	.....	74.37	15.41	398.87	962.11	1305.31	389.53	0.00	47.02	106.92	351.69	523.91	270.88	110.92	323.41	318.20	5.74	N/A	N/A
9/17/99 11:24	.....	74.27	15.20	401.52	960.50	1309.00	390.52	-0.35	46.93	107.02	354.56	524.25	271.59	111.05	322.98	318.27	5.25	N/A	N/A
9/17/99 11:26	.....	74.23	15.22	401.70	959.02	1310.19	390.06	-0.47	46.95	107.11	355.88	524.56	272.28	111.02	323.95	318.06	4.90	N/A	N/A
9/17/99 11:28	.....	74.22	15.07	404.18	958.25	1311.25	392.49	-0.23	47.66	107.17	356.30	524.59	272.84	111.36	323.77	318.20	5.14	N/A	N/A
9/17/99 11:30	.....	74.21	15.89	400.99	958.06	1310.19	392.94	-0.08	47.85	107.26	356.23	524.72	273.31	111.23	324.03	318.36	5.55	N/A	N/A
9/17/99 11:32	.....	74.33	15.26	400.37	959.27	1309.13	391.25	-0.16	47.79	107.34	356.16	524.81	273.55	111.16	323.80	318.53	5.82	N/A	N/A
9/17/99 11:34	.....	74.36	15.05	401.11	960.06	1308.50	391.60	-0.17	47.71	107.47	355.16	524.72	273.38	111.16	324.11	318.41	5.61	N/A	N/A
9/17/99 11:36	.....	74.48	14.99	401.84	960.63	1307.88	391.75	-0.43	47.33	107.50	352.97	524.81	273.34	111.63	323.75	318.34	5.27	N/A	N/A
9/17/99 11:38	.....	74.50	15.40	403.19	960.77	1309.19	393.00	-0.68	47.23	107.54	353.39	525.00	273.48	111.38	324.84	318.41	5.00	N/A	N/A
9/17/99 11:40	.....	74.54	15.52	401.16	960.31	1308.50	393.63	-0.66	47.42	107.59	354.03	525.06	273.67	111.37	323.44	318.53	4.92	N/A	N/A
9/17/99 11:42	.....	74.65	15.01	402.35	960.31	1307.25	393.65	-0.42	47.20	107.64	352.02	525.16	273.48	111.53	323.55	318.70	5.24	N/A	N/A

2																				
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow	Unit 1 Main Steam Temp	Unit 1 Main Steam Pressure	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp	Unit 1 Baghouse Outlet Temp	Unit 1 Baghouse Pressure Drop	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate	
9/17/99 11:44	.....	74.72	15.42	401.73	960.22	1307.50	393.30	-0.14	47.43	107.70	350.48	525.09	273.27	111.63	322.95	318.78	5.55	N/A	N/A	
9/17/99 11:46	.....	74.81	15.01	401.92	960.23	1306.69	392.02	-0.18	47.38	107.77	350.16	525.00	273.16	111.75	323.84	318.84	5.85	N/A	N/A	
9/17/99 11:48	.....	74.92	14.87	401.17	960.27	1307.00	393.20	-0.37	47.27	107.86	350.31	524.97	273.34	111.53	323.77	318.77	5.43	N/A	N/A	
9/17/99 11:50	.....	74.96	15.28	403.34	960.61	1307.25	392.63	-0.53	46.98	107.88	349.91	525.06	273.58	111.74	324.11	319.31	5.14	N/A	N/A	
9/17/99 11:52	.....	75.00	15.30	406.66	960.59	1308.38	392.73	-0.22	47.78	107.88	349.19	525.38	273.77	112.41	324.11	320.16	5.21	N/A	N/A	
9/17/99 11:54	.....	75.41	14.88	402.20	960.02	1310.50	394.68	-0.40	47.76	107.85	348.92	525.66	273.91	112.04	323.08	320.33	5.46	N/A	N/A	
9/17/99 11:56	.....	75.95	15.31	401.01	960.05	1310.13	392.59	-0.63	47.44	107.86	349.53	525.53	273.72	110.52	322.88	320.22	5.72	N/A	N/A	
9/17/99 11:58	.....	75.67	15.29	401.34	961.52	1312.94	392.18	0.23	48.49	107.79	349.53	525.63	273.88	112.70	324.44	320.33	5.89	N/A	N/A	
9/17/99 12:00	.....	74.31	14.97	403.63	961.94	1318.88	391.72	-0.71	47.81	107.79	349.56	525.91	273.84	111.73	323.81	320.39	5.33	N/A	N/A	
9/17/99 12:02	.....	72.86	14.52	401.11	960.34	1326.25	392.13	-0.73	48.62	107.80	349.33	526.03	273.64	112.40	324.58	320.09	5.09	N/A	N/A	
9/17/99 12:04	.....	72.72	14.26	398.52	957.50	1324.19	392.88	-1.26	47.75	107.90	349.47	525.75	273.27	109.99	323.72	320.03	5.22	N/A	N/A	
9/17/99 12:06	.....	74.91	14.09	400.84	955.72	1313.50	391.38	-0.72	47.65	108.02	349.16	525.00	272.52	110.21	322.89	319.92	5.48	N/A	N/A	
9/17/99 12:08	.....	75.84	15.03	405.42	958.25	1306.13	394.14	0.39	50.31	108.11	348.77	524.88	272.72	112.96	324.70	319.80	5.79	N/A	N/A	
9/17/99 12:10	.....	75.49	14.63	404.08	961.86	1308.13	395.97	-0.06	50.55	108.17	349.61	525.22	273.58	112.86	324.38	319.84	5.38	N/A	N/A	
9/17/99 12:12	.....	75.34	14.88	404.76	963.48	1311.06	396.15	-0.27	50.42	108.19	351.14	525.66	274.14	113.33	325.27	319.94	5.11	N/A	N/A	
9/17/99 12:14	.....	74.86	14.77	403.20	962.66	1313.31	394.52	-0.28	50.21	108.36	354.28	526.06	274.84	112.77	325.94	320.28	5.32	N/A	N/A	
9/17/99 12:16	.....	74.58	14.77	403.52	960.97	1314.13	393.07	-0.33	50.40	108.47	353.88	526.13	275.11	112.04	325.47	320.45	5.62	N/A	N/A	
9/17/99 12:18	.....	74.90	14.72	405.56	959.33	1313.13	394.61	-0.20	49.91	108.57	353.16	525.94	274.97	112.43	325.34	320.55	5.75	N/A	N/A	
9/17/99 12:20	.....	75.17	15.21	407.47	959.56	1310.75	396.74	-0.47	49.62	108.70	353.64	525.91	274.92	111.99	326.17	320.47	5.35	N/A	N/A	
9/17/99 12:22	.....	75.25	15.03	406.05	960.22	1310.31	396.37	-0.58	49.04	108.70	353.08	526.06	275.03	112.53	325.86	320.78	5.07	N/A	N/A	
9/17/99 12:24	.....	75.14	15.26	406.92	960.27	1311.13	396.40	-0.85	48.35	108.67	352.63	526.19	275.11	112.20	324.89	321.38	4.87	N/A	N/A	
9/17/99 12:26	.....	75.23	15.62	406.17	959.55	1309.19	396.52	-0.70	48.15	108.65	351.80	525.94	274.66	111.75	324.81	321.59	5.10	N/A	N/A	
9/17/99 12:28	.....	75.47	15.28	407.34	959.72	1307.81	394.98	-0.55	48.09	108.71	352.98	525.78	274.34	112.07	324.50	321.45	5.41	N/A	N/A	
9/17/99 12:30	.....	75.55	15.27	404.59	960.08	1306.94	395.48	-0.33	48.20	108.73	353.94	525.34	274.20	111.62	324.52	321.22	5.68	N/A	N/A	
9/17/99 12:32	.....	75.61	16.06	404.20	960.64	1307.88	395.74	-0.26	48.19	108.85	352.53	525.19	273.86	111.65	324.38	321.14	5.71	N/A	N/A	
9/17/99 12:34	.....	75.66	15.57	405.08	960.94	1308.00	394.81	-0.57	48.09	108.97	351.42	525.13	273.78	112.11	324.94	321.23	5.34	N/A	N/A	
9/17/99 12:36	.....	75.61	15.63	404.55	961.16	1310.63	395.05	-0.74	48.37	109.00	353.11	525.06	274.09	112.43	324.80	320.97	5.03	N/A	N/A	
9/17/99 12:38	.....	75.52	15.25	407.30	960.94	1311.75	394.31	-0.67	47.19	109.00	354.56	525.06	274.34	111.68	324.59	320.88	5.25	N/A	N/A	
9/17/99 12:40	.....	75.51	15.23	405.80	959.91	1311.75	396.04	-0.44	47.11	109.00	353.53	525.03	274.27	111.66	324.09	320.91	5.56	N/A	N/A	
9/17/99 12:42	.....	75.36	15.05	404.82	959.38	1312.38	396.52	-0.21	47.50	109.12	353.34	525.09	274.22	111.60	325.02	320.84	5.83	N/A	N/A	
9/17/99 12:44	.....	74.98	15.23	403.59	958.81	1314.19	395.20	-0.54	47.01	109.14	352.52	524.97	273.92	111.46	324.72	320.75	5.66	N/A	N/A	
9/17/99 12:46	.....	74.98	15.25	404.13	958.83	1313.88	394.52	-0.73	46.97	109.22	351.78	524.91	273.53	111.76	324.72	320.48	5.32	N/A	N/A	
9/17/99 12:48	.....	75.09	15.01	404.70	959.72	1313.13	395.84	-0.85	47.31	109.17	351.05	524.97	273.41	111.40	325.09	320.41	5.14	N/A	N/A	
9/17/99 12:50	.....	75.20	15.46	404.29	960.47	1312.50	395.59	-0.60	47.46	109.29	350.48	524.81	273.33	111.45	324.77	320.48	5.42	N/A	N/A	
9/17/99 12:52	.....	75.36	15.35	404.29	960.59	1310.06	396.61	-0.40	47.73	109.42	351.03	524.44	273.09	111.54	324.41	320.55	5.70	N/A	N/A	
9/17/99 12:54	.....	75.45	15.08	404.90	960.19	1310.31	395.76	-0.40	47.66	109.48	351.50	524.19	273.09	111.43	324.69	320.41	5.64	N/A	N/A	
9/17/99 12:56	.....	75.24	15.27	402.79	959.02	1310.69	396.03	-0.61	47.67	109.57	352.27	524.06	273.30	111.26	324.84	320.09	5.33	N/A	N/A	
9/17/99 12:58	.....	74.99	14.55	403.55	958.27	1310.88	394.67	-0.87	47.10	109.63	351.36	523.94	273.28	111.46	324.44	320.33	5.02	N/A	N/A	
Average		**73.25**	**14.87**	**398.34**	**960.14**	**1309.62**	**389.20**	**-0.47**	**45.65**	**104.45**	**350.68**	**524.88**	**269.88**	**110.67**	**321.49**	**316.80**	**5.39**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**

2																					
MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limeston e Feeders (Klb/hr)	Unit 2 Main Steam Flow	Unit 2 Main Steam Temp	Unit 2 Main Steam Pressure	Unit 2 Feedwate r Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 2 Combusti on Air Flow	Unit 2 Baghouse Inlet Temp	Unit 2 Baghouse Outlet Temp	Unit 2 Baghouse Pressure Drop	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate		Gross Electric Generation (KW)
9/17/99 8:00	.....	73.32	21.45	401.21	958.98	1325.69	394.88	-0.30	47.65	95.45	352.48	512.47	305.95	110.02	306.28	300.16	5.42	N/A	N/A		95890.63
9/17/99 8:02	.....	73.30	21.03	402.45	959.09	1325.63	395.16	-0.35	47.23	95.48	352.45	512.38	305.81	109.79	306.39	300.16	5.28	N/A	N/A		95675.78
9/17/99 8:04	.....	73.31	21.04	403.09	959.36	1322.31	397.06	-0.54	47.66	95.52	352.28	512.63	305.81	110.13	306.55	300.22	5.07	N/A	N/A		95523.44
9/17/99 8:06	.....	73.38	21.35	403.76	959.64	1320.06	397.38	-0.66	47.92	95.58	352.66	512.63	305.97	110.23	306.58	300.25	4.96	N/A	N/A		95367.19
9/17/99 8:08	.....	73.52	21.42	402.70	960.59	1318.19	395.88	-0.49	47.62	95.71	352.67	512.63	306.17	109.95	306.72	300.31	5.22	N/A	N/A		95218.75
9/17/99 8:10		73.64	21.42	401.45	960.83	1317.94	395.55	-0.38	47.53	95.84	352.48	512.28	306.20	109.82	306.59	300.36	5.44	N/A	N/A		95195.31
9/17/99 8:12	.....	73.62	21.76	400.23	961.55	1319.19	394.80	-0.48	47.33	95.87	352.34	512.38	306.34	110.01	306.48	300.41	5.21	N/A	N/A		95234.38
9/17/99 8:14	.....	71.63	21.38	400.05	961.09	1324.44	393.07	-0.94	47.04	95.88	352.33	512.22	306.47	109.38	306.33	300.34	4.91	N/A	N/A		94414.06
9/17/99 8:16	.....	71.91	21.20	397.92	958.58	1321.44	392.03	-0.85	47.50	95.99	352.20	511.73	306.48	109.08	305.78	300.34	4.96	N/A	N/A		94156.25
9/17/99 8:18	.....	72.65	21.09	397.46	959.50	1318.13	391.92	-0.52	47.86	96.14	352.50	511.42	306.25	109.31	305.59	300.39	5.30	N/A	N/A		94160.16
9/17/99 8:20	.....	72.90	21.40	402.64	960.72	1318.19	391.66	-0.47	47.70	96.23	352.11	511.02	306.05	109.16	305.64	300.33	5.42	N/A	N/A		94175.78
9/17/99 8:22	.....	73.61	21.86	403.00	960.77	1313.88	394.79	-0.52	47.27	96.32	352.06	511.02	306.09	109.47	305.44	300.03	5.02	N/A	N/A		94417.97
9/17/99 8:24	.....	73.20	22.25	402.66	961.27	1321.31	395.18	-0.16	47.45	96.46	352.39	511.83	306.91	109.46	306.70	300.20	5.42	N/A	N/A		94824.22
9/17/99 8:26	.....	73.20	22.25	401.95	961.27	1321.31	395.18	-0.16	47.45	96.46	352.39	511.83	306.91	109.46	306.70	300.20	5.42	N/A	N/A		94878.91
9/17/99 8:28	.....	72.93	22.29	403.62	961.23	1325.00	395.88	-0.16	47.50	96.53	352.48	511.91	307.00	109.63	306.70	300.28	5.46	N/A	N/A		94824.22
9/17/99 8:30	.....	72.77	22.60	406.75	959.94	1325.00	396.95	-0.38	47.86	96.63	352.44	511.83	307.20	109.80	306.77	300.44	5.15	N/A	N/A		94828.13
9/17/99 8:32	.....	73.01	22.84	405.54	958.95	1324.00	397.43	-0.44	47.56	96.74	352.86	511.83	307.31	109.80	306.84	300.53	4.89	N/A	N/A		95003.91
9/17/99 8:34	.....	73.25	23.06	406.70	959.78	1322.31	398.64	-0.30	47.23	96.81	353.09	511.83	307.16	109.66	306.80	300.53	5.20	N/A	N/A		95000.00
9/17/99 8:36	.....	73.35	23.23	407.66	960.19	1322.88	398.80	0.01	47.70	96.88	353.05	511.73	307.22	109.54	306.97	300.59	5.50	N/A	N/A		95046.88
9/17/99 8:38	.....	73.19	23.34	405.88	960.66	1322.81	399.15	-0.29	46.98	97.01	353.03	511.58	307.34	109.59	307.22	300.55	5.23	N/A	N/A		95023.44
9/17/99 8:40	.....	72.18	23.44	407.08	960.75	1323.81	399.59	-0.56	47.14	97.07	352.89	511.83	307.59	109.85	307.47	300.48	5.00	N/A	N/A		95058.59
9/17/99 8:42	.....	72.04	23.37	406.78	958.31	1322.81	399.56	-0.60	47.33	97.15	352.39	511.58	307.72	109.72	307.06	300.59	5.00	N/A	N/A		95046.88
9/17/99 8:44	.....	71.97	22.94	405.60	959.02	1322.25	398.80	-0.29	48.68	97.23	352.55	511.42	307.69	109.76	307.00	300.69	5.25	N/A	N/A		95011.72
9/17/99 8:46	.....	72.53	23.25	405.41	959.30	1319.38	398.69	-0.22	47.12	97.28	352.56	511.17	307.56	109.65	306.77	300.61	5.38	N/A	N/A		95117.19
9/17/99 8:48	.....	72.69	23.41	408.07	960.36	1321.69	398.79	-0.45	46.90	97.35	352.42	510.94	307.44	109.90	307.03	300.52	5.08	N/A	N/A		95179.69
9/17/99 8:50	.....	72.60	23.81	407.73	960.42	1321.44	399.82	-0.37	47.15	97.46	352.81	511.02	307.47	109.82	307.31	300.64	5.13	N/A	N/A		95273.44
9/17/99 8:52	.....	72.59	24.17	407.69	959.42	1322.88	400.83	-0.19	47.10	97.52	352.78	511.09	307.44	109.74	307.31	300.75	5.45	N/A	N/A		95304.69
9/17/99 8:54	.....	72.59	24.21	409.16	959.56	1322.81	400.69	-0.37	47.42	97.61	353.09	511.25	307.41	109.76	307.55	300.78	5.14	N/A	N/A		95328.13
9/17/99 8:56	.....	72.59	24.30	409.23	960.08	1322.94	401.05	-0.47	47.16	97.65	353.39	511.42	307.66	109.79	307.28	300.89	4.93	N/A	N/A		95386.72
9/17/99 8:58	.....	72.55	24.39	409.83	959.97	1321.44	402.22	-0.26	48.53	97.75	353.59	511.42	307.94	109.86	307.06	301.14	5.24	N/A	N/A		95367.19
9/17/99 9:00	.....	71.70	24.18	410.45	959.88	1322.31	403.00	-0.25	47.83	97.90	353.48	511.50	307.88	109.88	307.13	301.13	5.33	N/A	N/A		95296.88
9/17/99 9:02	.....	71.62	24.13	410.10	959.91	1324.81	403.16	-0.46	47.23	97.98	353.48	511.66	307.78	109.99	307.58	301.14	5.05	N/A	N/A		95414.06
9/17/99 9:04	.....	71.30	24.08	412.21	960.22	1325.25	403.85	-0.45	47.74	98.04	353.94	511.73	307.94	109.79	307.83	301.31	5.12	N/A	N/A		95507.81
9/17/99 9:06	.....	70.53	23.85	411.55	958.61	1323.13	405.09	-0.37	47.93	98.15	354.00	511.50	308.08	109.63	307.59	301.42	5.37	N/A	N/A		95398.44
9/17/99 9:08	.....	70.63	23.87	409.89	959.13	1321.50	405.46	-0.28	47.64	98.22	353.33	511.50	308.11	109.76	307.27	301.34	5.29	N/A	N/A		95242.19
9/17/99 9:10	.....	70.15	23.77	409.08	960.59	1320.50	402.70	-0.24	47.86	98.36	352.75	511.73	308.27	109.86	307.59	301.25	5.40	N/A	N/A		95164.06
9/17/99 9:12	.....	69.75	23.62	407.88	960.33	1322.31	401.94	-0.54	47.29	98.49	352.70	511.73	308.31	110.24	306.97	301.25	5.16	N/A	N/A		95214.84
9/17/99 9:14	.....	69.73	23.63	408.53	959.67	1320.38	400.85	-0.55	47.43	98.54	352.75	511.91	308.03	110.35	307.19	301.16	5.04	N/A	N/A		95324.22
9/17/99 9:16	.....	69.83	23.55	407.01	959.70	1319.69	400.77	-0.35	47.24	98.64	352.53	511.91	307.97	110.17	307.34	301.22	5.35	N/A	N/A		95195.31
9/17/99 9:18	.....	69.32	23.48	407.41	959.33	1319.31	399.50	-0.37	47.15	98.77	352.80	511.98	307.77	110.38	307.27	301.16	5.32	N/A	N/A		95171.88
9/17/99 9:20	.....	68.99	23.26	407.09	958.58	1318.13	400.37	-0.49	47.18	98.88	353.14	512.06	307.80	110.42	307.06	301.05	5.09	N/A	N/A		95117.19
9/17/99 9:22	.....	69.13	22.93	405.59	959.09	1316.56	399.32	-0.34	47.41	98.91	353.03	512.22	307.72	110.63	307.34	300.97	5.28	N/A	N/A		94992.19
9/17/99 9:24	.....	69.34	22.63	403.16	959.30	1313.00	398.50	-0.32	47.40	98.95	352.83	512.06	307.66	110.51	307.41	301.03	5.30	N/A	N/A		94796.88
9/17/99 9:26	.....	69.60	22.23	403.90	960.25	1312.50	396.59	-0.33	46.91	99.13	353.03	511.98	307.52	110.54	307.47	301.08	5.34	N/A	N/A		94621.09
9/17/99 9:28	.....	69.79	22.13	403.27	960.63	1311.88	395.63	-0.32	46.53	99.24	353.19	511.73	307.42	110.72	307.16	301.16	5.36	N/A	N/A		94648.44
9/17/99 9:30	.....	69.97	21.99	405.76	960.14	1313.00	396.80	-0.52	46.75	99.29	353.25	511.83	307.44	110.99	307.14	300.95	5.07	N/A	N/A		94671.88
9/17/99 9:32	.....	70.12	22.05	404.79	959.98	1314.25	396.88	-0.39	46.31	99.38	353.30	512.22	307.59	111.21	307.20	301.14	5.07	N/A	N/A		94765.63
9/17/99 9:34	.....	70.18	22.05	405.20	959.78	1317.19	396.88	-0.15	46.90	99.54	353.11	512.38	307.88	111.02	307.78	301.34	5.38	N/A	N/A		94960.94
9/17/99 9:36	.....	70.20	21.87	406.57	959.73	1320.13	396.56	-0.22	46.87	99.69	353.13	512.63	308.06	111.15	308.05	301.42	5.26	N/A	N/A		95144.53
9/17/99 9:38	.....	70.13	21.68	406.05	959.91	1320.31	397.49	-0.33	47.62	99.75	353.55	512.88	308.38	111.10	308.28	301.67	5.08	N/A	N/A		95304.69
9/17/99 9:40	.....	70.09	21.76	406.99	960.25	1322.50	397.83	-0.26	47.74	99.83	353.73	512.88	308.52	110.95	308.41	301.88	5.37	N/A	N/A		95351.56
9/17/99 9:42	.....	69.99	21.89	406.78	960.11	1326.25	398.44	-0.25	48.15	99.94	354.05	512.88	308.50	110.91	308.28	301.88	5.22	N/A	N/A		95445.31
9/17/99 9:44	.....	69.83	21.93	407.53	959.84	1328.13	399.09	-0.39	47.88	99.99	353.84	512.94	308.59	111.26	308.06	301.84	5.01	N/A	N/A		95617.19
9/17/99 9:46	.....	69.62	22.21	409.67	959.73	1330.50	399.95	-0.60	47.43	100.11	353.94	513.19	308.72	111.19	308.72	301.86	4.82	N/A	N/A		95781.25
9/17/99 9:48	.....	69.42	22.33	407.20	958.52	1329.75	401.61	-0.35	47.82	100.20	354.00	513.09	308.61	111.26	308.58	301.97	5.06	N/A	N/A		95820.31
9/17/99 9:50	.....	69.37	22.18	406.71	959.02	1325.50	401.65	-0.27	47.65	100.32	354.19	512.94	308.72	110.95	308.53	302.08	5.34	N/A	N/A		95726.56

2																					
MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limeston e Feeders (Klb/hr)	Unit 2 Main Steam Flow	Unit 2 Main Steam Temp	Unit 2 Main Steam Pressure	Unit 2 Feedwate r Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 2 Combusti on Air Flow	Unit 2 Baghouse Inlet Temp	Unit 2 Baghouse Outlet Temp	Unit 2 Baghouse Pressure Drop	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate		Gross Electric Generation (KW)
9/17/99 9:52	.....	69.46	22.15	406.95	959.84	1322.31	400.82	-0.24	47.53	100.47	354.22	512.94	308.72	111.20	308.75	302.14	5.33	N/A	N/A		95429.69
9/17/99 9:54	.....	69.55	22.05	405.73	959.91	1320.38	399.70	-0.31	47.27	100.59	354.03	512.63	308.75	111.11	308.38	302.22	5.43	N/A	N/A		95238.28
9/17/99 9:56	.....	69.67	22.14	403.66	959.09	1317.38	399.70	-0.42	46.89	100.77	353.83	512.38	308.75	111.06	308.16	302.14	5.25	N/A	N/A		95101.56
9/17/99 9:58	.....	69.77	21.78	402.61	959.41	1318.31	397.74	-0.48	46.60	100.85	353.95	511.98	308.66	111.26	308.13	302.13	5.06	N/A	N/A		95035.16
9/17/99 10:00	.....	69.81	21.52	402.45	960.19	1319.00	396.15	-0.28	47.00	100.99	353.92	512.06	308.72	110.95	308.61	302.23	5.27	N/A	N/A		95113.28
9/17/99 10:02	.....	69.80	21.31	401.91	959.91	1320.50	395.00	-0.54	46.92	101.09	353.66	511.91	308.75	110.99	308.31	302.28	5.13	N/A	N/A		95289.06
9/17/99 10:04	.....	69.72	21.24	400.16	959.47	1322.06	394.47	-0.43	47.08	101.29	353.83	511.98	308.53	110.94	308.23	302.31	5.29	N/A	N/A		95414.06
9/17/99 10:06	.....	68.18	20.53	398.82	959.56	1324.00	393.09	-0.60	47.01	101.39	354.06	511.98	308.47	110.82	307.86	302.20	5.35	N/A	N/A		94636.72
9/17/99 10:08	.....	68.00	19.87	396.91	958.48	1325.81	390.63	-0.88	46.45	101.54	353.78	511.83	308.52	110.85	307.19	302.19	5.03	N/A	N/A		94328.13
9/17/99 10:10	.....	67.00	19.26	394.24	957.30	1321.88	389.28	-0.99	46.12	101.68	353.41	511.25	308.41	109.92	306.80	302.00	5.18	N/A	N/A		93562.50
9/17/99 10:12	.....	67.86	19.04	390.91	957.94	1317.13	387.12	-0.72	46.15	101.88	353.30	510.38	308.25	109.91	306.73	301.83	5.48	N/A	N/A		93386.72
9/17/99 10:14	.....	68.08	18.62	391.98	959.47	1313.63	386.30	-0.82	46.10	102.08	353.19	510.20	308.05	109.90	306.89	301.73	5.28	N/A	N/A		93132.81
9/17/99 10:16	.....	68.61	18.24	390.21	960.45	1310.81	385.37	-0.86	45.52	102.17	352.63	509.89	308.05	110.04	306.97	301.63	4.95	N/A	N/A		93117.19
9/17/99 10:18	.....	68.66	18.06	389.89	960.75	1313.25	384.19	-0.76	47.03	102.30	352.64	509.73	308.02	110.25	306.77	301.67	4.91	N/A	N/A		93187.50
9/17/99 10:20	.....	68.51	18.05	388.76	960.95	1313.38	382.64	-0.57	46.47	102.36	352.73	509.56	307.94	109.97	306.75	301.59	5.18	N/A	N/A		93203.13
9/17/99 10:22	.....	68.44	17.75	388.30	960.66	1317.56	382.49	-0.52	46.63	102.44	352.77	509.41	307.94	110.20	306.88	301.56	5.20	N/A	N/A		93214.84
9/17/99 10:24	.....	68.04	17.42	390.16	959.33	1317.81	382.27	-0.66	46.88	102.42	352.53	509.41	307.78	110.21	306.78	301.45	5.12	N/A	N/A		93195.31
9/17/99 10:26	.....	68.32	17.51	388.28	958.11	1316.56	382.46	-0.45	46.44	102.45	352.38	509.08	307.73	110.15	306.59	301.42	5.44	N/A	N/A		93167.97
9/17/99 10:28	.....	68.59	17.30	387.38	960.25	1314.25	381.21	-0.49	46.46	102.43	352.41	508.92	307.61	110.10	306.36	301.36	5.19	N/A	N/A		93144.53
9/17/99 10:30	.....	68.84	17.01	387.79	960.72	1313.06	380.88	-0.73	45.87	102.39	352.44	509.25	307.67	110.21	306.44	301.22	4.84	N/A	N/A		93144.53
9/17/99 10:32	.....	69.16	16.78	392.98	959.97	1310.25	381.32	-0.43	47.91	102.31	352.08	509.41	307.72	110.30	306.59	301.30	4.92	N/A	N/A		93238.28
9/17/99 10:34	.....	71.40	17.28	393.02	959.98	1308.75	384.51	-0.01	47.83	102.32	352.03	509.64	307.66	110.86	306.97	301.34	5.28	N/A	N/A		94382.81
9/17/99 10:36	.....	71.05	17.47	390.44	961.41	1315.00	384.58	0.00	47.03	102.35	352.22	509.97	307.59	111.13	307.53	301.45	5.25	N/A	N/A		94699.22
9/17/99 10:38	.....	68.38	17.05	387.12	961.09	1325.63	382.21	-0.47	47.10	102.41	352.44	509.97	307.83	110.64	307.84	301.58	5.23	N/A	N/A		93578.13
9/17/99 10:40	.....	68.27	16.40	392.19	958.00	1325.81	381.13	-0.54	46.77	102.48	352.53	509.56	308.03	110.15	307.19	301.66	5.29	N/A	N/A		93164.06
9/17/99 10:42	.....	70.45	17.16	396.24	957.59	1320.50	385.19	-0.50	46.14	102.48	352.70	509.41	307.98	110.54	306.83	301.63	5.17	N/A	N/A		93902.34
9/17/99 10:44	.....	71.63	18.76	394.84	961.38	1318.56	390.50	-0.08	48.33	102.77	352.52	509.89	308.34	111.09	308.14	301.80	5.33	N/A	N/A		94058.59
9/17/99 10:46	.....	71.63	18.76	397.53	961.38	1318.56	390.50	-0.08	48.33	102.77	352.52	509.89	308.34	111.09	308.14	301.80	5.33	N/A	N/A		94804.69
9/17/99 10:48	.....	71.63	18.76	396.33	961.38	1318.56	390.50	-0.08	48.33	102.77	352.52	509.89	308.34	111.09	308.14	301.80	5.33	N/A	N/A		95070.31
9/17/99 10:50	.....	69.53	18.64	394.76	961.95	1327.63	388.19	-0.31	47.65	102.93	352.53	509.97	308.44	110.77	308.22	301.89	5.35	N/A	N/A		94425.78
9/17/99 10:52	.....	68.74	18.63	394.39	959.84	1332.50	387.65	-0.73	47.32	103.17	352.72	509.81	308.28	110.49	307.95	302.03	5.15	N/A	N/A		94078.13
9/17/99 10:54	.....	67.43	18.34	393.99	957.63	1330.81	387.87	-0.97	46.33	103.45	352.75	509.25	308.45	109.39	307.47	302.13	5.23	N/A	N/A		93316.41
9/17/99 10:56	.....	68.01	18.75	393.80	957.19	1324.63	387.31	-0.75	46.28	103.62	352.91	508.59	308.38	109.43	307.16	302.09	5.35	N/A	N/A		93109.38
9/17/99 10:58	.....	68.86	18.82	394.94	959.64	1320.94	388.09	-0.56	47.29	103.71	352.94	508.44	308.41	109.76	307.44	301.95	5.21	N/A	N/A		93101.56
9/17/99 11:00	.....	70.04	20.32	397.75	961.41	1316.19	390.30	-0.45	45.56	103.98	353.13	508.44	308.67	110.37	308.27	301.92	5.08	N/A	N/A		93339.84
9/17/99 11:02	.....	70.04	20.32	396.35	961.41	1316.19	390.30	-0.45	45.56	103.98	353.13	508.44	308.67	110.37	308.27	301.92	5.08	N/A	N/A		93945.31
9/17/99 11:04	.....	69.23	20.85	394.75	961.61	1321.69	389.50	-0.36	46.20	104.07	353.22	508.67	308.89	110.25	308.66	302.05	5.19	N/A	N/A		93855.47
9/17/99 11:06	.....	68.04	20.70	393.40	959.47	1323.69	388.52	-0.57	46.29	104.24	353.22	508.52	309.16	109.53	308.08	302.20	5.44	N/A	N/A		93230.47
9/17/99 11:08	.....	68.37	20.28	394.29	958.05	1320.75	388.16	-0.61	46.31	104.48	353.53	508.52	309.16	109.66	308.14	302.22	5.18	N/A	N/A		93136.72
9/17/99 11:10	.....	69.03	20.14	393.71	958.61	1316.75	388.69	-0.80	44.88	104.63	353.92	508.52	309.23	109.78	308.25	302.42	4.90	N/A	N/A		93121.09
9/17/99 11:12	.....	69.29	20.20	392.71	960.66	1314.56	387.14	-0.49	46.14	104.72	354.20	508.59	309.34	109.71	308.53	302.53	5.19	N/A	N/A		93128.91
9/17/99 11:14	.....	69.31	20.39	393.27	961.17	1316.00	387.38	-0.36	47.03	104.74	354.06	508.84	309.48	110.00	308.64	302.59	5.34	N/A	N/A		93156.25
9/17/99 11:16	.....	70.10	20.48	400.15	961.20	1312.44	388.27	-0.47	46.59	104.79	353.42	509.00	309.47	110.09	308.34	302.61	5.13	N/A	N/A		93562.50
9/17/99 11:18	.....	71.88	21.57	402.21	961.58	1312.88	391.74	-0.03	47.12	104.71	353.19	509.48	309.47	110.77	309.41	302.72	5.09	N/A	N/A		94742.19
9/17/99 11:20	.....	71.38	21.82	400.91	961.47	1314.25	393.59	-0.07	46.70	104.88	353.47	510.13	309.72	110.77	309.97	302.98	5.34	N/A	N/A		94890.63
9/17/99 11:22	.....	71.37	21.81	402.86	960.66	1317.75	392.63	-0.19	46.12	105.06	353.78	510.61	309.94	110.90	310.53	303.25	5.04	N/A	N/A		94968.75
9/17/99 11:24	.....	71.29	21.47	401.55	959.47	1320.50	392.88	-0.17	46.86	105.11	354.53	511.17	310.33	110.86	310.94	303.52	5.17	N/A	N/A		95117.19
9/17/99 11:26	.....	71.24	21.35	401.38	958.89	1320.31	393.16	0.11	47.67	105.17	354.58	511.25	310.61	111.33	311.03	303.91	5.42	N/A	N/A		95132.81
9/17/99 11:28	.....	71.21	21.16	400.46	959.17	1321.25	393.44	0.12	46.81	105.09	354.34	511.25	310.64	110.86	310.69	304.08	5.38	N/A	N/A		95121.09
9/17/99 11:30	.....	71.23	20.74	401.68	960.02	1319.31	392.90	-0.20	46.84	105.21	354.33	511.58	310.78	111.04	311.06	304.03	5.12	N/A	N/A		95148.44
9/17/99 11:32	.....	71.32	20.48	402.65	959.23	1320.31	394.66	-0.23	46.67	105.28	354.45	511.66	311.09	111.57	311.03	304.09	5.07	N/A	N/A		95128.91
9/17/99 11:34	.....	71.35	20.33	401.33	959.36	1318.13	395.04	-0.07	46.29	105.30	354.84	511.58	311.22	111.23	311.36	304.23	5.26	N/A	N/A		95148.44
9/17/99 11:36	.....	71.48	20.01	399.99	959.94	1317.69	393.24	-0.24	46.57	105.43	355.06	511.66	311.06	111.15	311.31	304.28	5.24	N/A	N/A		95125.00
9/17/99 11:38	.....	71.49	19.47	400.21	960.14	1319.75	391.99	-0.36	46.35	105.52	354.64	511.73	311.05	111.48	311.50	304.34	4.97	N/A	N/A		95199.22
9/17/99 11:40	.....	71.54	19.06	399.87	959.73	1317.56	392.92	-0.08	47.56	105.54	354.84	511.83	310.95	111.56	311.52	304.55	5.22	N/A	N/A		95136.72
9/17/99 11:42	.....	71.65	19.15	400.22	960.36	1317.31	392.83	-0.26	47.19	105.62	354.78	511.73	311.00	111.68	311.77	304.77	5.16	N/A	N/A		94972.66

2																					
MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow	Unit 2 Main Steam Temp	Unit 2 Main Steam Pressure	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 2 Combustion Air Flow	Unit 2 Baghouse Inlet Temp	Unit 2 Baghouse Outlet Temp	Unit 2 Baghouse Pressure Drop	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate		Gross Electric Generation (KW)
9/17/99 11:44	.....	71.72	18.80	399.91	960.42	1317.13	392.59	-0.20	47.00	105.55	354.92	511.66	310.88	111.76	311.63	304.98	5.35	N/A	N/A		94964.84
9/17/99 11:46	.....	71.81	18.50	398.83	959.42	1316.19	393.06	-0.31	46.58	105.58	355.59	511.58	310.72	112.08	311.08	304.91	5.15	N/A	N/A		94921.88
9/17/99 11:48	.....	71.91	18.52	400.23	959.94	1316.81	391.64	-0.48	46.94	105.70	355.70	511.50	310.72	111.75	311.28	304.95	5.03	N/A	N/A		94960.94
9/17/99 11:50	.....	71.96	18.33	398.11	960.48	1317.00	391.68	-0.31	46.95	105.84	355.59	511.34	310.73	111.48	311.56	304.98	5.31	N/A	N/A		95039.06
9/17/99 11:52	.....	72.00	18.01	396.84	960.75	1318.56	391.16	-0.27	46.83	105.88	356.08	511.58	310.89	111.93	311.95	305.11	5.19	N/A	N/A		95128.91
9/17/99 11:54	.....	72.30	17.84	401.30	960.48	1320.69	390.19	-0.28	46.83	105.75	356.06	511.73	310.97	111.99	311.84	305.19	5.04	N/A	N/A		95289.06
9/17/99 11:56	.....	72.94	18.23	401.96	959.77	1320.50	393.80	-0.17	46.75	105.64	355.83	511.83	311.00	111.89	312.00	305.28	5.34	N/A	N/A		95273.44
9/17/99 11:58	.....	72.75	18.17	398.48	960.14	1325.38	393.88	-0.10	47.42	105.58	355.84	511.83	310.84	112.13	311.95	305.48	5.29	N/A	N/A		95183.59
9/17/99 12:00	.....	71.31	17.79	397.60	960.05	1330.81	391.09	-0.57	47.22	105.57	356.02	511.91	310.83	111.79	311.80	305.48	5.14	N/A	N/A		94789.06
9/17/99 12:02	.....	69.97	17.50	393.20	959.39	1335.94	388.73	-0.60	46.92	105.55	355.97	511.58	310.81	111.33	311.28	305.48	5.43	N/A	N/A		94554.69
9/17/99 12:04	.....	69.67	17.34	396.16	957.80	1329.94	387.71	-0.94	46.51	105.70	355.84	510.86	310.72	110.61	310.47	305.38	5.36	N/A	N/A		94082.03
9/17/99 12:06	.....	71.74	17.98	400.91	956.88	1318.19	390.84	-0.79	47.05	105.89	355.94	510.53	310.52	110.74	310.47	305.22	5.12	N/A	N/A		94351.56
9/17/99 12:08	.....	72.86	18.16	395.59	960.58	1315.75	393.09	-0.18	46.95	105.91	355.78	510.45	310.44	111.04	311.00	305.09	5.31	N/A	N/A		94804.69
9/17/99 12:10	.....	72.51	18.57	398.12	962.33	1318.75	390.26	-0.35	46.48	106.07	355.41	510.53	310.34	111.39	311.22	305.11	5.32	N/A	N/A		95039.06
9/17/99 12:12	.....	72.34	18.69	398.20	962.48	1321.50	391.40	-0.55	46.38	106.26	354.86	510.94	310.22	111.42	312.02	305.28	4.99	N/A	N/A		95281.25
9/17/99 12:14	.....	71.89	18.89	397.79	960.59	1323.44	390.84	-0.47	47.10	106.40	354.47	511.02	310.41	111.41	312.13	305.55	5.20	N/A	N/A		95167.97
9/17/99 12:16	.....	71.57	18.77	398.89	959.09	1322.81	390.87	-0.48	46.57	106.65	354.53	510.86	310.47	111.21	311.84	305.59	5.33	N/A	N/A		94972.66
9/17/99 12:18	.....	71.88	18.74	398.75	958.72	1321.25	391.17	-0.44	46.59	106.71	355.02	511.02	310.50	111.22	311.67	305.69	5.26	N/A	N/A		95023.44
9/17/99 12:20	.....	72.15	18.59	396.24	959.05	1318.56	390.54	-0.39	47.33	106.63	355.56	511.17	310.72	111.26	311.69	305.78	5.42	N/A	N/A		95007.81
9/17/99 12:22	.....	72.25	18.41	397.55	959.84	1318.31	389.44	-0.46	46.31	106.64	355.39	511.17	310.73	111.56	311.72	305.77	5.18	N/A	N/A		95078.13
9/17/99 12:24	.....	72.15	18.42	394.70	960.11	1318.31	389.27	-0.35	46.96	106.60	355.39	511.42	310.70	111.43	311.86	305.84	5.30	N/A	N/A		95082.03
9/17/99 12:26	.....	72.19	18.28	395.73	959.17	1316.19	388.98	-0.36	46.47	106.67	355.44	511.25	310.81	111.29	311.89	305.91	5.43	N/A	N/A		94988.28
9/17/99 12:28	.....	72.45	17.80	395.22	959.13	1316.56	389.06	-0.56	46.62	106.84	355.59	511.25	310.75	111.27	311.73	305.92	5.19	N/A	N/A		94906.25
9/17/99 12:30	.....	72.55	18.02	396.90	959.80	1316.19	389.23	-0.41	46.85	106.98	355.73	511.02	310.73	111.23	311.70	306.03	5.26	N/A	N/A		94820.31
9/17/99 12:32	.....	72.60	18.55	396.97	960.63	1315.56	389.63	-0.29	46.90	106.88	356.03	511.09	310.73	111.42	311.86	305.98	5.39	N/A	N/A		94851.56
9/17/99 12:34	.....	72.67	18.19	397.11	960.89	1318.69	389.31	-0.45	47.56	107.02	355.80	511.34	310.83	111.45	312.14	305.91	5.14	N/A	N/A		94867.19
9/17/99 12:36	.....	72.60	18.29	399.38	959.81	1321.44	389.98	-0.56	47.43	107.05	355.41	511.17	310.88	111.59	312.00	305.91	5.02	N/A	N/A		95085.94
9/17/99 12:38	.....	72.52	18.51	397.19	958.72	1321.75	391.83	-0.46	47.35	107.02	354.81	511.09	310.91	111.56	312.05	305.95	5.16	N/A	N/A		95207.03
9/17/99 12:40	.....	72.52	18.47	397.47	959.05	1320.06	391.06	-0.26	46.98	107.02	354.97	511.25	310.81	111.70	312.17	305.91	5.38	N/A	N/A		95207.03
9/17/99 12:42	.....	72.38	18.20	398.22	960.17	1322.50	390.53	-0.45	46.72	107.00	355.06	511.25	310.84	111.59	312.45	306.05	5.05	N/A	N/A		95062.50
9/17/99 12:44	.....	71.99	18.03	399.00	960.11	1322.81	390.66	-0.51	47.67	107.06	355.06	511.42	310.97	111.62	312.50	306.14	5.02	N/A	N/A		95042.97
9/17/99 12:46	.....	71.99	18.63	399.85	959.09	1322.31	391.95	-0.26	47.41	107.18	355.05	511.25	310.92	111.39	312.66	306.25	5.40	N/A	N/A		95023.44
9/17/99 12:48	.....	72.08	18.48	398.94	959.45	1322.25	391.45	-0.40	46.67	107.26	354.91	510.94	310.81	111.47	312.41	306.11	5.32	N/A	N/A		95027.34
9/17/99 12:50	.....	72.19	18.34	398.60	960.08	1320.69	390.86	-0.47	47.22	107.31	355.34	510.94	310.80	111.75	312.16	306.17	5.17	N/A	N/A		95058.59
9/17/99 12:52	.....	72.34	18.52	398.72	960.39	1319.31	391.56	-0.36	47.23	107.34	355.48	510.94	310.81	111.57	312.02	306.20	5.43	N/A	N/A		94992.19
9/17/99 12:54	.....	72.44	18.59	398.17	959.88	1319.56	390.59	-0.41	46.98	107.41	354.94	511.09	310.53	111.59	312.11	306.20	5.22	N/A	N/A		95031.25
9/17/99 12:56	.....	72.27	18.42	398.60	959.95	1320.13	389.74	-0.45	46.52	107.43	354.95	511.25	310.58	111.72	312.52	306.28	5.07	N/A	N/A		94945.31
9/17/99 12:58	.....	71.96	18.32	397.48	960.02	1318.00	390.50	-0.42	47.01	107.50	355.38	511.25	310.67	111.45	312.47	306.34	5.37	N/A	N/A		94792.97
Average	.....	**70.99**	**20.40**	**400.25**	**959.88**	**1320.15**	**393.15**	**-0.41**	**47.05**	**102.01**	**353.74**	**511.13**	**308.82**	**110.63**	**308.80**	**302.65**	**5.21**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**94718.78**

2																			
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow	Unit 1 Main Steam Temp	Unit 1 Main Steam Pressure	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp	Unit 1 Baghouse Outlet Temp	Unit 1 Baghouse Pressure Drop	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate
9/17/99 13:00	.....	75.59	14.66	401.56	957.56	1307.56	393.77	-0.83	47.04	109.57	350.84	523.81	272.94	111.26	323.48	320.78	4.86	N/A	N/A
9/17/99 13:02	.....	75.74	14.29	401.20	957.88	1305.44	392.85	-0.51	47.76	109.58	351.59	523.75	272.91	111.96	323.81	320.95	5.19	N/A	N/A
9/17/99 13:04	.....	75.90	14.01	398.70	958.66	1302.94	391.73	-0.38	48.00	109.67	353.00	523.69	273.16	111.24	324.41	320.78	5.47	N/A	N/A
9/17/99 13:06	.....	76.10	13.81	402.10	960.52	1302.38	391.22	-0.16	48.00	109.74	351.84	523.59	273.28	111.40	323.88	320.72	5.76	N/A	N/A
9/17/99 13:08	.....	76.18	14.59	401.32	961.61	1304.38	391.70	-0.30	47.67	109.91	351.95	523.47	273.25	111.75	324.31	320.78	5.54	N/A	N/A
9/17/99 13:10	.....	76.18	15.01	403.29	961.05	1306.88	391.84	-0.45	47.61	110.03	352.33	523.44	273.53	111.73	325.64	320.69	5.18	N/A	N/A
9/17/99 13:12	.....	76.15	14.11	403.06	959.52	1309.44	392.59	-0.67	47.35	110.16	351.92	523.69	273.73	111.71	325.28	320.47	4.99	N/A	N/A
9/17/99 13:14	.....	76.05	15.05	402.26	958.73	1310.75	393.21	-0.39	47.73	110.22	351.23	523.78	273.86	111.64	325.45	320.48	5.31	N/A	N/A
9/17/99 13:16	.....	75.76	14.39	402.48	959.56	1311.06	393.39	-0.32	48.29	110.44	350.97	523.78	273.92	111.67	324.77	320.52	5.60	N/A	N/A
9/17/99 13:18	.....	75.84	14.80	403.20	960.09	1312.38	393.09	-0.11	48.13	110.55	352.58	523.69	274.06	111.72	325.05	320.56	5.83	N/A	N/A
9/17/99 13:20	.....	75.94	15.35	403.80	960.06	1312.31	394.57	-0.27	47.70	110.50	352.83	523.63	274.28	111.60	325.17	320.44	5.77	N/A	N/A
9/17/99 13:22	.....	75.94	14.85	405.08	958.86	1313.25	394.14	-0.53	47.86	110.50	351.75	523.81	274.05	111.85	325.53	320.20	5.38	N/A	N/A
9/17/99 13:24	.....	75.89	14.69	403.69	958.33	1312.56	396.15	-0.72	47.67	110.54	351.83	524.09	273.97	112.05	325.77	320.28	5.06	N/A	N/A
9/17/99 13:26	.....	75.95	14.59	403.83	959.05	1310.63	395.50	-0.72	47.62	110.59	352.22	524.16	274.13	111.54	326.33	320.47	5.06	N/A	N/A
9/17/99 13:28	.....	76.08	14.53	403.83	960.33	1310.25	394.73	-0.48	47.75	110.80	352.22	524.03	274.05	111.91	326.34	320.59	5.40	N/A	N/A
9/17/99 13:30	.....	76.95	14.91	402.80	962.00	1311.06	393.74	-0.23	48.61	110.98	352.83	524.19	274.36	111.75	325.98	320.83	5.70	N/A	N/A
9/17/99 13:32	.....	76.91	14.80	403.50	961.88	1312.88	393.56	-0.34	48.06	111.14	353.11	524.34	274.47	111.10	326.05	320.72	5.78	N/A	N/A
9/17/99 13:34	.....	76.23	15.15	403.14	961.27	1315.44	393.34	-0.66	47.89	111.27	352.98	524.41	274.53	111.12	326.63	320.70	5.40	N/A	N/A
9/17/99 13:36	.....	75.96	15.22	404.25	960.02	1316.63	394.32	-1.01	47.47	111.32	352.64	524.38	274.59	111.00	325.47	321.23	5.07	N/A	N/A
9/17/99 13:38	.....	76.47	14.86	405.34	957.52	1312.75	394.91	-0.80	47.29	111.47	353.28	524.19	274.42	110.72	325.63	321.84	5.17	N/A	N/A
9/17/99 13:40	.....	76.91	14.64	402.98	957.22	1308.94	394.75	-0.48	47.54	111.55	353.66	524.03	274.53	110.85	325.22	321.83	5.43	N/A	N/A
9/17/99 13:42	.....	76.96	15.01	402.89	959.53	1307.75	393.99	-0.20	48.32	111.69	353.78	523.97	274.63	110.51	325.25	321.75	5.72	N/A	N/A
9/17/99 13:44	.....	76.85	14.96	401.95	961.83	1310.50	392.17	-0.43	48.92	111.80	352.81	523.72	274.61	111.07	325.56	321.81	5.42	N/A	N/A
9/17/99 13:46	.....	76.65	14.90	403.90	961.86	1314.50	392.91	-0.74	48.41	111.81	352.06	523.56	274.55	111.25	326.27	321.55	5.03	N/A	N/A
9/17/99 13:48	.....	75.81	14.24	402.38	960.50	1318.13	392.13	-0.86	48.45	111.87	351.72	523.44	274.55	110.77	325.66	321.38	4.98	N/A	N/A
9/17/99 13:50	.....	75.51	14.01	402.92	959.14	1317.94	391.62	-0.73	48.75	111.89	351.55	523.25	274.27	110.29	325.86	321.39	5.28	N/A	N/A
9/17/99 13:52	.....	75.94	14.06	402.83	959.02	1314.63	392.36	-0.58	48.65	111.98	351.59	522.94	273.98	110.08	325.67	321.30	5.54	N/A	N/A
9/17/99 13:54	.....	76.45	14.62	402.41	958.69	1310.38	394.54	-0.23	48.90	111.99	351.03	522.94	273.75	110.04	325.75	321.31	5.88	N/A	N/A
9/17/99 13:56	.....	76.59	13.73	399.95	958.47	1307.94	393.90	-0.12	49.77	112.00	351.25	522.88	273.66	110.87	325.05	321.17	5.73	N/A	N/A
9/17/99 13:58	.....	76.63	13.81	400.01	959.53	1307.13	391.34	-0.55	49.43	112.06	354.06	522.81	274.06	110.88	326.17	320.86	5.36	N/A	N/A
9/17/99 14:00	.....	76.60	13.76	403.96	961.64	1309.13	391.90	-0.72	48.19	112.09	354.86	522.91	274.70	110.81	326.48	320.69	5.03	N/A	N/A
9/17/99 14:02	.....	76.52	14.17	402.76	961.63	1311.19	393.55	-0.69	47.57	112.12	353.31	523.16	274.78	110.82	326.67	320.83	4.91	N/A	N/A
9/17/99 14:04	.....	76.41	14.41	403.62	960.86	1313.31	392.94	-0.46	47.19	112.06	351.70	523.31	274.67	110.88	326.63	320.84	5.29	N/A	N/A
9/17/99 14:06	.....	75.91	14.47	401.01	960.63	1315.38	393.02	-0.36	47.00	112.13	351.25	523.53	274.66	110.63	326.16	320.95	5.54	N/A	N/A
9/17/99 14:08	.....	75.58	14.35	400.48	959.86	1314.56	391.90	-0.43	46.92	112.21	350.92	523.50	274.33	110.22	326.09	320.95	5.87	N/A	N/A
9/17/99 14:10	.....	76.19	14.61	402.27	959.14	1311.50	391.73	-0.32	47.82	112.44	350.97	523.44	274.19	110.64	326.44	320.72	5.61	N/A	N/A
9/17/99 14:12	.....	76.44	13.85	400.33	959.03	1309.38	392.23	-0.73	47.60	112.54	350.97	523.78	274.34	110.69	326.16	321.23	5.18	N/A	N/A
9/17/99 14:14	.....	76.44	14.19	402.38	960.27	1309.75	392.40	-0.60	47.39	112.53	350.75	524.00	274.55	111.08	325.47	322.06	5.13	N/A	N/A
9/17/99 14:16	.....	76.40	14.05	400.88	961.02	1309.88	393.60	-0.57	47.42	112.43	351.00	524.16	274.58	110.51	325.56	322.16	5.47	N/A	N/A
9/17/99 14:18	.....	76.39	13.85	403.20	961.11	1310.44	393.17	-0.28	47.62	112.45	350.84	524.19	274.53	110.79	324.67	322.06	5.69	N/A	N/A
9/17/99 14:20	.....	76.38	14.39	404.16	960.83	1311.13	393.95	-0.22	47.59	112.48	350.94	524.06	274.48	110.61	325.92	322.14	5.80	N/A	N/A
9/17/99 14:22	.....	76.35	14.46	405.14	960.77	1311.31	395.05	-0.50	47.30	112.55	351.39	524.09	274.53	110.86	326.92	322.08	5.40	N/A	N/A
9/17/99 14:24	.....	76.29	14.49	405.22	961.14	1313.44	396.39	-0.80	47.78	112.64	351.41	524.19	274.75	110.86	326.66	321.97	5.05	N/A	N/A
9/17/99 14:26	.....	75.47	15.22	404.23	961.08	1316.88	395.16	-0.72	47.47	112.81	351.63	524.09	274.84	110.52	327.22	321.86	5.16	N/A	N/A
9/17/99 14:28	.....	75.22	15.44	406.27	961.19	1318.13	394.62	-0.37	47.38	113.09	352.00	523.97	274.94	110.01	326.45	321.84	5.46	N/A	N/A
9/17/99 14:30	.....	75.48	15.49	405.91	960.33	1316.13	396.26	-0.53	47.55	113.18	352.13	523.81	274.80	109.91	326.22	321.70	5.69	N/A	N/A
9/17/99 14:32	.....	75.77	15.58	406.49	959.36	1313.81	396.09	-0.09	47.76	113.27	352.34	523.69	274.41	110.11	326.52	321.63	5.93	N/A	N/A
9/17/99 14:34	.....	76.02	15.97	408.80	960.17	1311.88	395.77	-0.54	47.58	113.26	352.02	523.63	274.53	110 35	327.02	321.34	5.50	N/A	N/A
9/17/99 14:36	.....	75.81	16.11	405.27	961.27	1313.88	397.57	-0.77	47.91	113.22	353.02	523.78	274.91	110.77	327.72	321.28	5.14	N/A	N/A
9/17/99 14:38	.....	75.40	15.86	405.75	961.64	1315.63	397.04	-0.89	47.68	113.19	355.11	523.84	275.28	110.44	327.36	321.53	4.90	N/A	N/A
9/17/99 14:40	.....	75.19	15.66	405.31	961.41	1315.19	395.19	-0.82	47.70	113.14	356.11	523.72	275.45	109.77	326.73	321.59	5.17	N/A	N/A
9/17/99 14:42	.....	75.23	15.87	405.22	960.77	1314.94	395.30	-0.52	47.94	113.19	355.19	523.69	275.28	109.97	326.86	321.63	5.39	N/A	N/A
9/17/99 14:44	.....	73.21	15.19	397.29	960.08	1317.31	395.06	-0.78	47.69	113.30	353.56	523.69	275.23	109.29	327.08	321.72	5.65	N/A	N/A
9/17/99 14:46	.....	72.32	14.60	399.71	958.89	1316.63	390.06	-0.92	47.40	113.55	354.06	523.19	274.84	107.88	325.36	321.64	5.80	N/A	N/A
9/17/99 14:48	.....	75.47	15.32	402.77	957.31	1307.88	391.57	-0.42	47.18	113.64	353.53	522.53	274.36	109.10	325.41	321.16	5.61	N/A	N/A
9/17/99 14:50	.....	76.25	16.09	404.55	963.94	1301.94	393.84	-0.25	47.85	113.64	356.36	522.22	275.16	110.29	326.47	322.25	5.15	N/A	N/A
9/17/99 14:52	.....	76.25	16.09	404.55	963.94	1301.94	393.84	-0.25	47.85	113.64	356.36	522.22	275.16	110.29	326.47	322.25	5.15	N/A	N/A
9/17/99 14:54	.....	76.06	15.75	408.91	965.83	1307.50	395.84	0.10	48.45	113.53	357.16	522.81	275.92	110.93	327.30	322.47	5.44	N/A	N/A

2																			
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow	Unit 1 Main Steam Temp	Unit 1 Main Steam Pressure	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp	Unit 1 Baghouse Outlet Temp	Unit 1 Baghouse Pressure Drop	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate
9/17/99 14:56	.....	75.90	16.14	411.88	964.80	1312.38	398.77	0.13	48.53	113.47	355.53	523.56	276.59	111.07	327.47	322.78	5.66	N/A	N/A
9/17/99 14:58	.....	75.96	16.04	418.73	960.44	1310.44	403.27	-0.46	48.07	113.39	354.00	524.19	276.59	110.51	326.78	322.89	5.33	N/A	N/A
9/17/99 15:00	.....	76.67	16.25	421.74	955.94	1297.38	411.93	-0.42	47.74	113.39	353.31	524.75	276.53	111.13	327.14	322.78	5.21	N/A	N/A
9/17/99 15:02	.....	77.90	16.15	416.22	954.19	1280.00	412.00	-0.03	48.43	113.48	353.59	524.81	276.72	111.10	326.81	322.84	5.60	N/A	N/A
9/17/99 15:04	.....	77.63	16.13	411.52	956.44	1271.19	406.52	-0.02	49.13	113.53	353.33	524.69	276.72	111.71	327.20	322.58	5.70	N/A	N/A
9/17/99 15:06	.....	76.01	15.66	391.27	962.09	1281.69	394.84	-0.53	48.38	113.52	353.78	524.69	276.92	111.31	327.53	322.34	5.35	N/A	N/A
9/17/99 15:08	.....	76.02	15.20	394.84	969.20	1311.88	381.04	-0.85	48.20	113.51	353.13	524.63	276.98	111.43	327.23	322.16	5.00	N/A	N/A
9/17/99 15:10	.....	75.73	15.39	404.21	969.44	1332.88	384.47	-0.82	48.62	113.60	352.80	524.53	276.58	110.63	327.16	321.95	5.10	N/A	N/A
9/17/99 15:12	.....	74.69	14.73	405.30	961.69	1339.94	391.59	-0.79	48.32	113.67	352.56	524.44	276.23	110.77	326.34	321.97	5.39	N/A	N/A
9/17/99 15:14	.....	73.37	13.95	408.19	954.00	1338.00	395.81	-0.90	48.44	113.69	352.63	524.06	275.69	109.94	325.95	321.94	5.65	N/A	N/A
9/17/99 15:16	.....	75.78	14.21	409.39	950.17	1319.38	400.34	-0.46	48.32	113.75	352.89	523.44	275.30	110.17	325.86	321.83	5.81	N/A	N/A
9/17/99 15:18	.....	76.87	14.10	405.63	952.17	1301.13	402.20	-0.30	49.02	113.84	352.50	522.97	275.36	111.06	326.44	321.91	5.49	N/A	N/A
9/17/99 15:20	.....	77.17	14.25	405.45	957.31	1290.19	400.76	-0.32	49.02	113.78	351.64	522.97	275.47	111.33	327.31	321.80	5.15	N/A	N/A
9/17/99 15:22	.....	77.76	13.97	405.11	962.03	1286.19	397.13	-0.41	48.90	113.67	351.70	523.06	275.84	111.81	326.80	321.98	5.02	N/A	N/A
9/17/99 15:24	.....	78.11	13.87	404.28	964.41	1289.63	394.47	-0.15	49.10	113.61	352.25	523.34	276.09	111.78	327.50	322.27	5.18	N/A	N/A
9/17/99 15:26	.....	78.22	13.68	405.80	964.28	1295.88	393.11	0.03	49.31	113.72	352.44	523.66	276.38	111.94	327.28	322.42	5.51	N/A	N/A
9/17/99 15:28	.....	78.18	13.78	406.64	961.66	1303.13	394.13	0.20	49.42	113.67	352.28	523.75	276.56	111.91	327.11	322.31	5.85	N/A	N/A
9/17/99 15:30	.....	77.96	13.46	407.20	958.89	1310.50	395.16	-0.24	49.19	113.65	352.56	524.09	276.83	112.48	326.88	322.80	5.36	N/A	N/A
9/17/99 15:32	.....	76.54	13.02	407.49	957.77	1318.75	395.49	-0.61	49.70	113.61	353.66	524.25	277.34	112.09	326.75	323.14	5.00	N/A	N/A
9/17/99 15:34	.....	76.43	13.59	406.05	957.56	1321.25	397.15	-0.66	48.39	113.52	353.20	524.06	277.14	111.45	326.55	322.91	5.07	N/A	N/A
9/17/99 15:36	.....	77.16	12.86	409.63	958.55	1317.63	396.65	-0.46	48.76	113.49	352.22	524.09	276.88	111.78	326.13	322.78	5.35	N/A	N/A
9/17/99 15:38	.....	77.34	13.68	409.50	960.00	1317.56	399.88	-0.28	48.96	113.42	352.52	524.25	276.66	111.90	326.61	322.63	5.69	N/A	N/A
9/17/99 15:40	.....	76.92	14.88	407.32	960.98	1319.44	398.51	-0.19	49.04	113.39	352.67	524.41	276.80	111.60	327.33	322.44	5.75	N/A	N/A
9/17/99 15:42	.....	75.34	13.81	405.59	961.69	1326.94	397.98	-0.81	48.64	113.44	352.09	524.53	276.78	111.34	325.97	322.16	5.36	N/A	N/A
9/17/99 15:44	.....	74.13	13.90	404.59	960.50	1331.44	395.79	-1.18	48.73	113.55	351.78	524.28	276.45	110.61	325.95	321.98	5.05	N/A	N/A
9/17/99 15:46	.....	74.01	13.84	403.13	958.16	1329.19	396.06	-1.08	48.29	113.67	351.77	523.50	275.94	110.23	325.84	321.72	5.20	N/A	N/A
9/17/99 15:48	.....	74.74	13.57	403.41	957.86	1321.88	394.00	-0.67	48.51	113.69	351.53	522.56	275.69	110.15	325.59	321.73	5.44	N/A	N/A
9/17/99 15:50	.....	75.04	14.33	405.01	959.73	1318.00	394.92	-0.45	48.59	113.72	351.67	521.84	275.36	110.11	326.14	321.56	5.67	N/A	N/A
9/17/99 15:52	.....	75.45	14.40	406.53	962.53	1313.94	396.87	-0.34	48.67	113.80	351.73	521.75	275.36	110.50	326.86	321.53	5.59	N/A	N/A
9/17/99 15:54	.....	75.57	15.22	408.57	964.47	1314.63	397.27	-0.47	48.64	113.80	352.20	521.94	275.53	110.60	327.22	321.73	5.26	N/A	N/A
9/17/99 15:56	.....	75.13	15.77	408.13	964.73	1317.56	397.74	-0.71	48.44	113.82	353.09	522.34	275.84	110.40	327.34	321.73	5.10	N/A	N/A
9/17/99 15:58	.....	74.68	15.78	406.91	962.88	1319.69	398.50	-0.34	49.58	113.85	353.73	522.50	275.92	110.06	326.50	321.84	5.50	N/A	N/A
9/17/99 16:00	.....	74.42	15.66	406.93	960.34	1319.94	397.70	-0.59	48.90	113.84	353.66	522.44	275.61	110.02	326.30	321.78	5.65	N/A	N/A
9/17/99 16:02	.....	74.34	16.30	407.67	958.89	1318.38	397.68	-0.62	48.67	113.88	352.92	522.22	275.36	109.61	326.66	321.84	5.76	N/A	N/A
9/17/99 16:04	.....	74.54	16.36	407.05	959.27	1315.81	397.20	-0.73	48.54	113.79	352.66	522.09	275.19	110.10	325.86	322.20	5.40	N/A	N/A
9/17/99 16:06	.....	74.25	15.92	407.34	960.20	1317.63	397.36	-0.86	48.51	113.79	352.27	522.19	275.27	110.10	325.45	322.72	5.07	N/A	N/A
9/17/99 16:08	.....	73.92	15.85	404.19	961.23	1317.63	395.54	-0.94	48.60	113.81	353.09	522.06	275.33	109.55	325.61	322.89	5.01	N/A	N/A
9/17/99 16:10	.....	74.30	16.21	407.22	961.45	1314.38	395.80	-0.56	48.56	113.77	353.55	521.97	275.23	109.62	325.09	322.69	5.37	N/A	N/A
9/17/99 16:12	.....	74.35	15.99	406.20	960.11	1311.56	399.04	-0.29	49.53	113.80	353.05	522.06	275.38	109.64	325.81	322.59	5.63	N/A	N/A
9/17/99 16:14	.....	73.75	15.74	404.77	958.72	1310.50	397.27	-0.21	49.15	113.77	352.80	522.06	275.30	109.67	325.28	322.53	5.85	N/A	N/A
9/17/99 16:16	.....	73.77	15.12	403.92	958.67	1309.06	395.64	-0.47	48.55	113.90	352.72	521.97	275.09	110.13	325.39	322.13	5.37	N/A	N/A
9/17/99 16:18	.....	73.90	15.23	402.98	959.84	1307.31	393.35	-0.70	47.98	114.05	352.84	521.94	275.11	109.82	325.41	321.66	5.05	N/A	N/A
9/17/99 16:20	.....	73.92	15.18	401.82	961.41	1308.19	393.08	-0.72	48.12	114.00	352.48	522.34	275.25	109.85	325.83	321.52	5.08	N/A	N/A
9/17/99 16:22	.....	73.95	14.43	402.55	960.77	1308.94	391.89	-0.53	48.03	114.00	352.61	522.47	275.09	110.18	325.88	321.48	5.29	N/A	N/A
9/17/99 16:24	.....	73.95	14.94	402.09	960.08	1309.38	391.90	-0.36	48.21	114.00	354.45	522.53	275.16	109.48	326.17	321.50	5.62	N/A	N/A
9/17/99 16:26	.....	73.99	14.55	400.51	960.44	1309.88	392.73	-0.22	49.28	114.09	354.02	522.69	275.09	109.69	325.81	321.48	5.80	N/A	N/A
9/17/99 16:28	.....	73.94	14.34	404.59	960.61	1311.00	392.60	-0.62	47.95	114.07	353.42	522.81	274.91	110.18	326.03	321.08	5.43	N/A	N/A
9/17/99 16:30	.....	73.80	15.21	405.32	960.42	1314.13	393.38	-0.83	47.65	114.04	352.81	522.84	274.91	109.73	325.81	321.17	5.08	N/A	N/A
9/17/99 16:32	.....	73.63	14.64	404.30	959.89	1315.50	394.57	-0.76	47.69	114.02	352.42	523.09	275.00	110.03	326.38	321.31	5.06	N/A	N/A
9/17/99 16:34	.....	72.88	14.72	400.07	959.30	1317.31	393.49	-0.74	47.44	114.00	352.53	523.06	274.88	109.14	325.28	321.45	5.31	N/A	N/A
9/17/99 16:36	.....	72.91	13.92	403.11	958.67	1317.13	392.55	-0.41	47.90	114.09	352.30	522.84	274.66	109.36	325.55	321.47	5.61	N/A	N/A
9/17/99 16:38	.....	73.09	14.59	401.65	958.55	1314.63	393.69	-0.12	48.39	114.09	351.77	522.81	274.53	109.65	325.94	321.34	5.86	N/A	N/A
9/17/99 16:40	.....	73.27	14.14	402.31	960.48	1312.25	393.27	-0.47	48.70	114.00	351.72	523.03	274.53	109.49	325.66	321.16	5.46	N/A	N/A
9/17/99 16:42	.....	73.24	14.19	403.08	961.50	1312.50	393.63	-0.67	48.06	114.01	353.14	523.25	274.70	110.09	325.14	321.67	5.06	N/A	N/A
9/17/99 16:44	.....	73.10	14.30	401.77	960.80	1312.94	393.52	-0.67	47.25	113.99	353.56	523.09	274.81	109.96	325.25	322.27	5.07	N/A	N/A
9/17/99 16:46	.....	73.04	13.59	401.22	959.22	1312.75	393.45	-0.63	47.55	114.04	353.53	523.25	274.81	109.27	324.50	322.34	5.36	N/A	N/A
9/17/99 16:48	.....	73.39	13.59	402.41	958.09	1310.00	393.56	-0.22	47.24	114.16	353.09	523.13	274.59	109.71	325.05	322.19	5.62	N/A	N/A
9/17/99 16:50	.....	73.55	13.88	401.44	958.56	1307.81	392.90	-0.22	47.44	114.12	352.06	522.94	274.48	109.71	325.56	322.11	5.79	N/A	N/A

2																			
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow	Unit 1 Main Steam Temp	Unit 1 Main Steam Pressure	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp	Unit 1 Baghouse Outlet Temp	Unit 1 Baghouse Pressure Drop	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate
9/17/99 16:52	.....	73.66	13.97	403.15	960.33	1306.25	392.64	-0.32	48.20	113.95	352.06	522.84	274.44	110.18	326.14	322.28	5.38	N/A	N/A
9/17/99 16:54	.....	73.79	15.05	402.54	962.59	1305.81	394.29	-0.65	48.17	113.82	353.31	523.19	274.91	110.01	326.30	322.03	4.99	N/A	N/A
9/17/99 16:56	.....	73.83	14.19	405.26	962.73	1307.63	393.43	-0.61	47.64	113.79	352.84	523.41	274.81	110.36	325.66	321.86	4.97	N/A	N/A
9/17/99 16:58	.....	73.71	15.59	403.32	961.59	1311.13	394.26	-0.38	47.66	113.70	352.14	523.34	274.70	110.26	325.69	321.86	5.30	N/A	N/A
9/17/99 17:00	.....	73.62	14.85	401.52	960.23	1312.81	392.69	-0.28	47.72	113.73	351.84	523.44	274.81	109.96	326.09	321.78	5.54	N/A	N/A
9/17/99 17:02	.....	72.84	14.54	402.55	959.56	1316.38	391.48	-0.24	47.46	113.77	352.09	523.44	275.19	109.91	325.77	321.77	5.90	N/A	N/A
9/17/99 17:04	.....	72.71	15.12	401.77	959.70	1316.56	391.07	-0.49	47.44	113.76	352.53	523.34	275.09	109.29	325.80	321.61	5.45	N/A	N/A
9/17/99 17:06	.....	72.94	14.82	399.83	960.34	1315.19	391.55	-0.61	47.98	113.86	352.94	523.31	275.03	109.56	325.97	321.41	5.11	N/A	N/A
9/17/99 17:08	.....	73.32	15.36	401.87	961.56	1312.88	392.39	-0.60	47.06	113.92	352.66	523.31	275.00	109.85	326.25	321.33	5.10	N/A	N/A
9/17/99 17:10	.....	73.26	15.08	402.70	961.50	1313.19	393.80	-0.38	46.88	113.95	352.39	523.41	275.11	109.53	326.41	321.47	5.45	N/A	N/A
9/17/99 17:12	.....	73.17	15.46	403.61	960.45	1313.63	393.84	-0.25	46.95	113.94	352.27	523.44	275.22	109.76	326.16	321.44	5.70	N/A	N/A
9/17/99 17:14	.....	73.13	15.71	402.55	959.50	1313.13	394.17	-0.34	46.86	114.02	352.44	523.41	275.27	109.55	327.11	321.55	5.58	N/A	N/A
9/17/99 17:16	.....	73.10	15.96	402.47	960.41	1312.50	393.99	-0.68	46.33	114.14	352.91	523.53	275.36	109.68	326.41	321.52	5.17	N/A	N/A
9/17/99 17:18	.....	73.13	15.77	402.91	961.27	1311.94	394.20	-0.80	46.30	114.14	353.41	523.50	275.28	109.35	326.67	321.84	4.99	N/A	N/A
9/17/99 17:20	.....	73.11	16.43	402.92	961.42	1311.31	394.02	-0.73	46.86	114.15	353.30	523.50	275.17	109.23	326.06	321.98	5.20	N/A	N/A
9/17/99 17:22	.....	73.20	15.58	403.29	960.33	1310.25	393.75	-0.42	46.55	114.22	352.98	523.47	274.81	109.21	325.34	321.95	5.48	N/A	N/A
9/17/99 17:24	.....	72.72	16.03	403.83	959.72	1309.19	393.34	-0.38	46.48	114.18	352.66	523.22	274.42	109.07	325.03	321.83	5.71	N/A	N/A
9/17/99 17:26	.....	72.38	15.47	404.48	959.47	1307.69	393.91	-0.47	46.10	114.04	352.52	523.44	274.25	109.64	325.25	322.11	5.45	N/A	N/A
9/17/99 17:28	.....	72.45	15.79	404.28	960.16	1307.50	393.98	-0.83	45.75	113.95	352.41	523.78	274.22	109.41	324.50	322.48	4.98	N/A	N/A
9/17/99 17:30	.....	72.60	15.44	403.30	960.56	1306.25	394.79	-0.82	45.14	113.80	352.61	523.94	274.38	109.39	324.98	322.27	4.86	N/A	N/A
9/17/99 17:32	.....	72.80	15.11	404.77	960.09	1304.31	394.57	-0.45	46.21	113.79	352.20	523.97	274.44	109.41	324.97	322.19	5.14	N/A	N/A
9/17/99 17:34	.....	72.95	15.66	400.93	959.83	1303.88	395.11	-0.33	46.63	113.73	352.09	524.13	274.59	109.57	324.69	322.03	5.42	N/A	N/A
9/17/99 17:36	.....	73.13	14.80	401.47	960.50	1303.31	392.00	-0.15	46.65	113.64	351.77	524.13	274.39	109.64	325.33	321.84	5.62	N/A	N/A
9/17/99 17:38	.....	73.12	15.20	401.66	961.08	1306.69	391.25	-0.64	46.18	113.58	351.95	524.03	274.28	109.69	325.69	321.38	5.20	N/A	N/A
9/17/99 17:40	.....	73.14	14.48	401.52	961.22	1307.50	392.08	-0.59	45.28	113.59	352.47	523.97	274.45	109.72	325.56	321.22	5.10	N/A	N/A
9/17/99 17:42	.....	73.16	14.65	401.48	959.73	1308.56	392.55	-0.38	45.17	113.54	351.34	524.00	274.44	109.97	325.31	321.39	5.42	N/A	N/A
9/17/99 17:44	.....	73.25	14.21	399.39	957.45	1307.25	392.42	-0.27	45.26	113.53	350.61	524.03	274.42	109.42	325.61	321.44	5.66	N/A	N/A
9/17/99 17:46	.....	73.36	13.85	401.17	957.53	1306.13	392.18	-0.12	46.36	113.48	350.84	524.13	274.30	110.03	324.78	321.39	5.75	N/A	N/A
9/17/99 17:48	.....	73.48	14.17	400.14	959.06	1305.13	391.29	-0.65	46.32	113.42	351.31	524.31	274.19	109.76	325.14	321.08	5.36	N/A	N/A
9/17/99 17:50	.....	73.54	13.93	400.36	960.83	1306.94	391.34	-0.66	45.77	113.38	352.16	524.50	274.42	109.93	325.72	321.17	5.11	N/A	N/A
9/17/99 17:52	.....	73.56	14.08	401.28	961.31	1308.19	391.91	-0.62	44.66	113.32	351.47	524.50	274.44	109.69	324.50	321.23	5.21	N/A	N/A
9/17/99 17:54	.....	73.57	14.36	401.36	961.20	1308.75	392.52	-0.32	45.18	113.27	350.66	524.44	274.48	109.95	324.97	321.13	5.54	N/A	N/A
9/17/99 17:56	.....	73.55	13.89	402.07	959.63	1309.88	392.23	-0.17	45.38	113.23	350.11	524.31	274.28	109.78	324.27	321.03	5.80	N/A	N/A
9/17/99 17:58	.....	73.57	13.87	399.45	958.36	1309.56	391.84	-0.35	45.17	113.07	349.78	524.25	274.14	109.81	324.89	320.81	5.49	N/A	N/A
Average		**75.01**	**14.80**	**403.89**	**960.20**	**1311.15**	**394.45**	**-0.49**	**47.79**	**113.03**	**352.54**	**523.48**	**274.96**	**110.43**	**325.95**	**321.66**	**5.39**	**#DIV/0!**	**#DIV/0!**

2 MM/DD/YY HH:MM		Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow	Unit 2 Main Steam Temp	Unit 2 Main Steam Pressure	Unit 2 Feedwate r Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 2 Combusti on Air Flow	Unit 2 Baghouse Inlet Temp	Unit 2 Baghouse Outlet Temp	Unit 2 Baghouse Pressure Drop	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate		Gross Electric Generatio n (KW)
9/17/99 13:00		.....	72.56	18.45	399.18	959.91	1317.13	391.09	-0.44	46.57	107.42	355.33	511.34	310.53	111.89	312.70	306.50	5.12	N/A	N/A		94898.44
9/17/99 13:02		.....	72.72	18.39	398.46	958.83	1314.81	392.73	-0.43	46.69	107.43	355.91	511.34	310.53	111.58	312.30	306.47	5.06	N/A	N/A		94734.38
9/17/99 13:04		.....	72.89	18.25	398.95	959.70	1311.63	392.30	-0.22	47.11	107.36	356.11	511.34	310.67	111.53	312.47	306.47	5.36	N/A	N/A		94554.69
9/17/99 13:06		.....	73.10	18.44	396.83	960.66	1313.00	391.97	-0.32	47.24	107.42	355.41	511.25	310.72	111.76	312.16	306.42	5.22	N/A	N/A		94460.94
9/17/99 13:08		.....	73.17	18.43	398.36	961.55	1315.25	390.14	-0.30	46.79	107.38	355.09	511.58	310.88	111.74	312.39	306.30	5.05	N/A	N/A		94644.53
9/17/99 13:10		.....	73.17	18.49	397.78	960.80	1317.00	390.95	-0.24	47.42	107.37	354.95	511.50	310.97	111.72	312.41	306.34	5.35	N/A	N/A		94855.47
9/17/99 13:12		.....	73.14	18.59	400.10	960.25	1320.13	390.13	-0.41	47.08	107.49	355.13	511.50	310.91	111.65	312.64	306.50	5.05	N/A	N/A		95074.22
9/17/99 13:14		.....	73.07	18.50	399.91	959.80	1321.56	392.30	-0.36	47.73	107.62	355.95	511.66	311.20	111.73	312.91	306.66	5.01	N/A	N/A		95195.31
9/17/99 13:16		.....	72.76	18.21	400.51	959.20	1321.31	392.66	-0.33	47.28	107.81	356.02	511.58	311.39	111.65	312.66	306.73	5.40	N/A	N/A		94996.09
9/17/99 13:18		.....	72.84	18.09	400.55	958.66	1322.25	392.46	-0.37	47.20	108.09	355.70	511.50	311.42	111.94	312.28	306.61	5.21	N/A	N/A		95121.09
9/17/99 13:20		.....	72.93	18.07	400.05	959.53	1321.56	392.31	-0.46	45.98	108.06	356.11	511.58	311.64	112.22	312.58	306.55	5.02	N/A	N/A		95148.44
9/17/99 13:22		.....	72.92	18.00	400.30	959.36	1323.81	392.95	-0.42	45.73	108.02	356.19	511.66	311.91	111.91	312.89	306.63	4.97	N/A	N/A		95191.41
9/17/99 13:24		.....	72.90	17.89	400.62	959.77	1321.75	392.95	-0.17	45.81	108.07	356.03	511.66	312.14	112.36	313.14	306.78	5.38	N/A	N/A		95171.88
9/17/99 13:26		.....	72.96	17.94	399.52	960.08	1319.31	393.51	-0.17	46.18	108.03	355.84	511.83	312.20	112.01	313.27	306.86	5.28	N/A	N/A		95062.50
9/17/99 13:28		.....	72.99	17.89	399.63	961.17	1319.69	392.44	-0.26	46.00	107.91	356.14	511.83	312.31	112.59	313.33	307.02	5.10	N/A	N/A		95078.13
9/17/99 13:30		.....	73.90	18.28	401.06	961.27	1321.56	392.30	-0.21	46.13	107.93	356.45	512.06	312.44	112.73	313.59	307.06	4.89	N/A	N/A		95203.13
9/17/99 13:32		.....	73.90	18.57	400.45	960.48	1322.94	392.33	-0.14	46.43	107.98	356.69	511.91	312.47	112.40	313.78	307.09	5.24	N/A	N/A		95410.16
9/17/99 13:34		.....	73.30	18.49	398.60	959.45	1326.38	392.19	-0.30	45.25	108.27	356.39	511.91	312.69	112.31	313.61	307.14	5.48	N/A	N/A		95226.56
9/17/99 13:36		.....	72.96	18.42	398.80	958.55	1324.63	391.63	-0.66	44.56	108.51	355.98	511.66	312.59	112.20	313.63	307.19	5.16	N/A	N/A		95101.56
9/17/99 13:38		.....	73.42	18.50	398.78	959.17	1320.38	391.76	-0.50	45.88	108.69	356.03	511.73	312.47	112.00	313.59	307.23	5.34	N/A	N/A		95066.41
9/17/99 13:40		.....	73.89	18.44	399.00	959.92	1316.81	392.24	-0.58	44.88	108.83	356.50	511.50	312.53	111.44	313.66	307.30	5.29	N/A	N/A		94960.94
9/17/99 13:42		.....	73.97	18.70	399.84	961.98	1318.69	392.49	-0.66	44.29	108.96	356.64	511.66	312.83	111.73	314.13	307.48	4.91	N/A	N/A		94855.47
9/17/99 13:44		.....	73.85	19.31	402.41	961.50	1322.69	393.16	-0.30	44.14	108.90	356.30	511.73	312.91	112.04	314.13	307.66	5.22	N/A	N/A		95097.66
9/17/99 13:46		.....	73.65	19.32	402.94	960.56	1327.19	394.13	-0.37	44.77	108.95	356.45	511.83	313.16	112.15	314.17	307.58	5.29	N/A	N/A		95425.78
9/17/99 13:48		.....	72.88	19.59	400.45	958.95	1329.38	394.25	-0.68	44.36	108.91	356.41	511.73	313.25	111.97	314.11	307.64	5.03	N/A	N/A		95355.47
9/17/99 13:50		.....	72.47	19.47	401.13	958.28	1326.38	394.55	-0.71	43.71	108.94	356.75	511.50	313.41	111.38	313.67	307.72	5.15	N/A	N/A		95082.03
9/17/99 13:52		.....	72.90	19.48	399.58	958.69	1322.06	394.99	-0.63	43.48	108.94	357.17	511.17	313.48	111.28	313.45	307.77	5.31	N/A	N/A		95085.94
9/17/99 13:54		.....	73.45	19.70	400.63	960.63	1319.69	394.52	-0.44	44.18	108.94	357.42	510.94	313.50	111.47	313.41	307.70	5.13	N/A	N/A		95054.69
9/17/99 13:56		.....	73.58	20.10	400.92	962.08	1316.81	394.67	-0.47	45.16	108.82	357.44	511.02	313.52	111.41	313.41	307.61	4.96	N/A	N/A		94933.59
9/17/99 13:58		.....	73.63	20.17	401.13	961.14	1318.31	394.44	-0.59	44.26	108.75	357.28	511.09	313.63	111.43	313.34	307.64	5.27	N/A	N/A		94863.28
9/17/99 14:00		.....	73.60	20.63	398.58	960.45	1320.06	393.93	-0.32	44.34	108.81	357.44	511.02	313.55	111.43	313.75	307.64	5.41	N/A	N/A		95011.72
9/17/99 14:02		.....	73.52	20.53	400.93	961.55	1320.75	392.26	-0.47	43.43	108.82	357.38	510.94	313.72	111.33	313.94	307.47	5.16	N/A	N/A		95222.66
9/17/99 14:04		.....	73.42	20.69	401.34	960.63	1324.06	393.43	-0.45	44.01	108.83	357.36	510.94	313.58	111.27	313.72	307.50	5.21	N/A	N/A		95398.44
9/17/99 14:06		.....	72.96	20.78	400.68	960.42	1326.19	392.81	-0.49	44.01	108.91	357.69	510.94	313.55	111.12	313.91	307.52	5.40	N/A	N/A		95285.16
9/17/99 14:08		.....	72.55	20.79	402.42	958.89	1323.63	394.23	-0.54	44.93	108.94	358.06	511.02	313.53	111.14	314.03	307.47	5.33	N/A	N/A		95050.78
9/17/99 14:10		.....	73.17	20.57	401.60	958.80	1320.56	394.84	-0.62	45.33	108.82	357.88	510.86	313.61	110.88	313.56	307.53	5.20	N/A	N/A		95085.94
9/17/99 14:12		.....	73.44	20.82	401.95	960.33	1319.50	394.66	-0.64	43.92	108.86	357.66	511.02	313.72	111.43	314.09	307.73	4.92	N/A	N/A		95054.69
9/17/99 14:14		.....	73.43	20.66	401.19	960.80	1320.06	394.12	-0.56	44.81	108.86	357.45	510.86	313.84	110.97	314.02	307.88	5.19	N/A	N/A		95058.59
9/17/99 14:16		.....	73.40	20.48	401.45	960.56	1320.31	393.18	-0.53	43.98	108.89	357.41	510.94	313.78	111.12	313.86	307.78	5.34	N/A	N/A		95093.75
9/17/99 14:18		.....	73.39	20.40	400.45	959.33	1320.69	393.66	-0.71	44.13	109.02	357.31	510.86	313.92	111.11	313.59	307.78	5.11	N/A	N/A		95156.25
9/17/99 14:20		.....	73.38	20.21	399.11	960.05	1321.44	392.62	-0.66	44.40	109.10	357.20	510.61	314.02	110.90	313.56	307.70	5.23	N/A	N/A		95234.38
9/17/99 14:22		.....	73.36	20.18	398.34	959.70	1320.69	392.44	-0.44	45.26	109.17	357.47	510.45	313.92	111.10	313.63	307.73	5.26	N/A	N/A		95257.81
9/17/99 14:24		.....	73.30	19.82	397.05	960.08	1322.44	391.37	-0.61	44.43	109.16	357.77	510.53	314.03	111.08	313.89	307.84	5.16	N/A	N/A		95394.53
9/17/99 14:26		.....	72.52	19.38	397.69	960.33	1326.75	390.81	-0.70	44.29	109.39	357.59	510.38	314.16	110.89	313.81	307.86	5.27	N/A	N/A		95199.22
9/17/99 14:28		.....	72.21	19.17	396.75	958.69	1325.88	390.62	-0.54	43.75	109.67	357.91	510.05	314.09	110.53	313.70	307.95	5.39	N/A	N/A		95121.09
9/17/99 14:30		.....	72.46	19.01	396.95	958.55	1324.06	390.43	-0.82	43.92	109.82	358.17	510.05	314.02	110.65	313.70	307.91	5.23	N/A	N/A		95105.47
9/17/99 14:32		.....	72.77	18.98	396.89	959.30	1320.31	390.61	-0.70	43.20	109.80	357.78	509.64	313.78	110.49	313.39	307.84	5.25	N/A	N/A		95136.72
9/17/99 14:34		.....	72.99	19.17	395.05	959.78	1321.13	390.47	-0.54	43.24	109.72	357.48	509.41	313.67	110.61	313.94	307.81	5.38	N/A	N/A		95125.00
9/17/99 14:36		.....	72.83	19.24	398.73	960.42	1323.25	389.69	-0.68	44.03	109.70	357.80	509.41	313.72	110.76	313.91	307.83	5.19	N/A	N/A		95242.19
9/17/99 14:38		.....	72.40	19.26	398.16	960.14	1326.06	390.18	-0.73	43.68	109.62	357.95	509.64	313.59	110.74	313.88	307.78	4.75	N/A	N/A		95179.69
9/17/99 14:40		.....	72.21	19.19	398.16	959.91	1324.88	391.62	-0.71	44.06	109.51	357.86	509.97	313.61	110.45	313.66	307.91	5.01	N/A	N/A		95156.25
9/17/99 14:42		.....	72.23	19.39	397.84	959.36	1322.69	391.68	-0.63	43.62	109.45	357.66	509.56	313.59	110.13	313.25	307.91	5.36	N/A	N/A		95156.25
9/17/99 14:44		.....	70.43	19.27	389.93	959.81	1328.56	388.16	-1.14	42.45	109.69	357.88	509.00	313.50	109.57	312.91	307.83	5.11	N/A	N/A		94378.91
9/17/99 14:46		.....	69.23	18.46	387.87	957.83	1320.50	383.68	-1.51	41.80	109.89	357.67	507.95	313.27	108.40	311.47	307.53	4.83	N/A	N/A		93074.22
9/17/99 14:48		.....	72.28	18.66	394.21	959.27	1312.44	383.66	-0.56	42.02	109.95	357.58	507.80	312.97	109.27	311.70	307.31	5.11	N/A	N/A		93542.97
9/17/99 14:50		.....	73.21	19.42	395.10	961.50	1309.31	387.88	-0.18	41.51	109.83	357.53	508.03	312.80	109.87	312.86	307.20	5.42	N/A	N/A		94558.59
9/17/99 14:52		.....	73.19	19.60	395.10	962.33	1312.63	388.54	-0.17	41.96	109.77	357.61	508.44	312.91	110.40	313.19	307.22	5.15	N/A	N/A		94558.59
9/17/99 14:54		.....	73.10	19.57	392.40	960.72	1317.38	387.41	-0.43	41.44	109.67	357.55	508.52	313.06	110.47	312.89	307.34	5.08	N/A	N/A		94960.94

2																					
MM/DD/YY HH:MM		Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow	Unit 2 Main Steam Temp	Unit 2 Main Steam Pressure	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 2 Combustion Air Flow	Unit 2 Baghouse Inlet Temp	Unit 2 Baghouse Outlet Temp	Unit 2 Baghouse Pressure Drop	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate		Gross Electric Generation (KW)
9/17/99 14:56		.....	72.91	19.36	391.53	955.80	1319.38	385.73	-0.56	40.45	109.66	357.42	507.95	312.73	110.92	311.66	307.23	5.34	N/A	N/A		95273.44
9/17/99 14:58		.....	72.95	18.92	380.34	951.72	1308.75	384.15	-0.77	39.93	109.50	357.23	507.31	312.36	110.70	310.69	306.89	5.21	N/A	N/A		95039.06
9/17/99 15:00		.....	71.76	18.22	367.07	948.92	1286.63	374.90	-1.00	38.45	109.46	356.56	506.34	311.89	111.08	309.28	306.48	4.90	N/A	N/A		93925.78
9/17/99 15:02		.....	75.11	17.13	365.26	958.52	1273.38	365.14	-0.20	38.47	109.56	355.84	506.34	311.52	111.57	309.72	306.03	4.89	N/A	N/A		92488.28
9/17/99 15:04		.....	72.95	16.95	361.41	964.02	1270.25	362.10	0.06	38.25	109.54	355.33	506.98	311.48	112.72	310.97	305.86	5.32	N/A	N/A		91851.56
9/17/99 15:06		.....	75.75	16.21	352.89	970.20	1297.31	354.71	0.20	38.51	109.42	354.73	507.95	311.52	112.35	311.89	305.80	5.35	N/A	N/A		89824.22
9/17/99 15:08		.....	73.68	15.57	370.09	974.08	1329.81	349.37	-0.10	37.59	109.42	355.02	509.48	312.09	112.15	314.25	306.00	5.20	N/A	N/A		89179.69
9/17/99 15:10		.....	72.73	14.86	390.88	963.25	1343.75	361.67	-0.46	37.21	109.45	356.34	510.38	312.67	111.68	314.67	306.34	4.95	N/A	N/A		92902.34
9/17/99 15:12		.....	71.84	14.93	394.38	953.78	1349.81	375.22	-0.49	37.17	109.50	357.00	510.20	313.19	111.13	314.34	306.84	5.13	N/A	N/A		95316.41
9/17/99 15:14		.....	70.29	14.59	394.16	949.00	1338.63	381.52	-0.98	36.77	109.58	357.09	509.16	313.16	109.80	313.03	307.09	5.32	N/A	N/A		95140.63
9/17/99 15:16		.....	72.66	14.99	395.89	949.11	1317.38	386.22	-0.75	37.14	109.62	357.13	508.20	312.91	110.58	311.95	306.92	5.06	N/A	N/A		94820.31
9/17/99 15:18		.....	73.86	15.78	388.88	954.89	1302.56	388.26	-0.68	37.03	109.67	356.98	507.63	312.52	111.05	311.53	306.69	5.00	N/A	N/A		94058.59
9/17/99 15:20		.....	74.15	15.69	384.08	961.03	1292.75	384.13	-0.31	37.68	109.64	357.09	507.23	312.14	111.35	311.72	306.63	5.25	N/A	N/A		93058.59
9/17/99 15:22		.....	75.12	15.75	383.77	964.08	1293.56	380.23	-0.04	36.60	109.42	356.55	507.23	311.61	111.52	311.88	306.47	5.29	N/A	N/A		92742.19
9/17/99 15:24		.....	76.09	16.68	386.91	964.02	1298.50	379.73	-0.10	37.44	109.41	356.19	507.39	311.39	111.81	312.03	306.41	5.20	N/A	N/A		93246.09
9/17/99 15:26		.....	76.22	16.93	389.62	962.22	1307.50	381.70	0.05	36.65	109.43	356.09	508.03	311.45	111.79	312.77	306.48	5.19	N/A	N/A		94132.81
9/17/99 15:28		.....	76.17	17.12	393.43	960.80	1314.38	383.55	0.03	36.70	109.42	355.61	508.67	311.67	111.88	313.13	306.61	5.31	N/A	N/A		94953.13
9/17/99 15:30		.....	75.98	17.44	393.70	960.42	1321.94	384.68	-0.12	37.71	109.50	355.56	509.25	311.89	112.37	313.66	306.77	5.04	N/A	N/A		95492.19
9/17/99 15:32		.....	71.98	16.82	394.96	960.14	1329.19	384.79	-0.46	37.60	109.44	355.91	509.48	312.14	111.95	313.48	306.86	4.84	N/A	N/A		95214.84
9/17/99 15:34		.....	77.04	19.32	398.04	957.77	1328.38	386.08	-0.40	37.33	109.36	356.80	509.89	312.09	112.16	313.30	307.02	4.83	N/A	N/A		95093.75
9/17/99 15:36		.....	75.12	18.26	397.60	957.63	1324.81	390.20	-0.19	37.85	109.32	357.34	510.20	312.17	111.98	313.81	307.09	5.20	N/A	N/A		95039.06
9/17/99 15:38		.....	75.53	18.11	398.08	959.77	1326.56	388.85	-0.11	37.96	109.27	357.28	510.45	312.22	111.86	314.00	307.16	5.42	N/A	N/A		95140.63
9/17/99 15:40		.....	75.95	19.03	399.27	961.84	1331.88	390.88	-0.25	37.32	109.22	357.70	510.69	312.61	111.67	314.17	307.25	5.11	N/A	N/A		95273.44
9/17/99 15:42		.....	74.41	19.76	399.26	961.88	1339.19	391.28	-0.63	37.57	109.29	357.81	511.09	313.09	111.24	314.47	307.47	4.78	N/A	N/A		95316.41
9/17/99 15:44		.....	73.16	19.28	395.55	960.02	1340.63	391.31	-0.85	37.56	109.39	357.59	510.94	313.38	110.69	314.28	307.72	4.97	N/A	N/A		95253.91
9/17/99 15:46		.....	72.98	18.94	396.81	957.91	1334.75	390.89	-0.88	37.13	109.53	357.73	510.38	313.33	109.91	313.28	307.78	5.26	N/A	N/A		95160.16
9/17/99 15:48		.....	73.71	19.68	399.30	958.42	1329.94	392.89	-0.72	37.95	109.58	357.73	510.13	313.05	110.01	312.81	307.48	5.28	N/A	N/A		95058.59
9/17/99 15:50		.....	74.04	20.44	396.81	959.36	1325.38	392.95	-0.87	37.38	109.62	357.64	509.81	312.95	109.76	312.56	307.41	5.10	N/A	N/A		95101.56
9/17/99 15:52		.....	74.43	20.54	395.79	960.63	1321.31	392.22	-0.59	37.15	109.60	357.33	509.73	312.86	109.98	312.67	307.22	5.32	N/A	N/A		95070.31
9/17/99 15:54		.....	74.56	20.82	396.13	961.64	1324.69	390.25	-0.52	37.26	109.63	357.28	509.73	312.84	110.07	313.14	307.27	5.27	N/A	N/A		95171.88
9/17/99 15:56		.....	74.16	20.67	395.62	961.81	1326.81	390.15	-0.61	37.49	109.69	357.56	510.05	312.91	110.34	313.84	307.25	5.07	N/A	N/A		95214.84
9/17/99 15:58		.....	73.69	20.35	396.92	959.98	1327.81	388.69	-0.58	37.80	109.68	357.61	510.05	313.03	109.96	313.44	307.36	5.32	N/A	N/A		95195.31
9/17/99 16:00		.....	73.43	20.27	397.88	958.69	1327.56	389.45	-0.63	37.76	109.61	357.30	510.05	313.28	110.26	313.36	307.45	5.38	N/A	N/A		95175.78
9/17/99 16:02		.....	73.33	19.91	395.56	958.42	1324.63	389.51	-0.90	37.53	109.54	357.44	510.05	313.45	109.45	312.78	307.47	5.05	N/A	N/A		95152.34
9/17/99 16:04		.....	73.52	20.05	396.50	959.61	1325.00	389.56	-0.72	38.33	109.62	357.34	509.81	313.34	109.38	312.81	307.39	5.27	N/A	N/A		95160.16
9/17/99 16:06		.....	73.27	20.02	396.52	959.88	1327.38	390.14	-0.63	38.15	109.61	357.48	509.64	313.11	109.90	312.81	307.28	5.29	N/A	N/A		95218.75
9/17/99 16:08		.....	72.90	19.87	398.62	959.05	1325.38	390.61	-0.94	37.61	109.59	357.34	509.48	313.00	109.18	312.78	307.23	5.11	N/A	N/A		95148.44
9/17/99 16:10		.....	73.28	20.03	395.77	959.36	1320.69	391.28	-0.64	38.03	109.55	356.91	509.33	312.97	109.02	312.63	307.13	5.28	N/A	N/A		95089.84
9/17/99 16:12		.....	73.75	20.12	397.10	961.09	1319.38	389.72	-0.48	38.06	109.50	356.52	509.08	312.89	109.45	312.78	307.09	5.36	N/A	N/A		95050.78
9/17/99 16:14		.....	73.74	20.51	397.30	961.03	1318.19	391.69	-0.56	38.17	109.53	356.66	509.33	312.91	109.35	312.80	307.20	5.03	N/A	N/A		94984.38
9/17/99 16:16		.....	73.79	20.61	398.90	960.75	1319.00	391.65	-0.66	37.90	109.61	356.92	509.25	312.98	109.34	312.91	307.17	5.04	N/A	N/A		94894.53
9/17/99 16:18		.....	73.88	20.64	397.52	960.05	1316.75	392.55	-0.36	38.04	109.66	357.19	509.25	313.13	109.50	313.25	307.31	5.38	N/A	N/A		94871.09
9/17/99 16:20		.....	73.94	20.80	399.84	960.22	1318.50	391.65	-0.41	38.34	109.78	357.45	509.25	313.16	109.36	312.89	307.23	5.33	N/A	N/A		95000.00
9/17/99 16:22		.....	73.95	21.04	400.22	960.36	1320.50	392.41	-0.49	38.22	109.74	357.59	509.16	313.17	109.65	312.72	307.25	5.07	N/A	N/A		95128.91
9/17/99 16:24		.....	73.95	21.21	399.90	959.53	1318.88	393.11	-0.66	38.57	109.67	357.73	509.25	313.25	109.24	312.69	307.16	4.99	N/A	N/A		95191.41
9/17/99 16:26		.....	73.99	21.09	402.38	960.39	1321.25	392.48	-0.32	38.76	109.72	358.09	509.48	313.11	109.73	313.06	307.27	5.18	N/A	N/A		95167.97
9/17/99 16:28		.....	73.95	21.35	398.82	961.20	1321.69	393.81	-0.36	38.23	109.74	357.95	509.16	313.34	109.09	313.03	307.38	5.41	N/A	N/A		95191.41
9/17/99 16:30		.....	73.80	21.95	400.46	961.67	1325.38	392.53	-0.36	38.19	109.82	357.41	509.41	313.47	109.65	313.50	307.41	5.18	N/A	N/A		95332.03
9/17/99 16:32		.....	73.64	21.99	400.36	960.45	1327.81	393.80	-0.59	38.49	109.82	357.41	509.48	313.44	109.10	313.06	307.53	5.06	N/A	N/A		95371.09
9/17/99 16:34		.....	72.90	22.00	404.35	958.63	1328.63	394.67	-0.37	39.00	109.82	357.38	509.64	313.41	109.27	313.06	307.50	5.27	N/A	N/A		95121.09
9/17/99 16:36		.....	72.92	22.12	400.43	957.94	1325.88	396.47	-0.49	38.65	109.69	357.30	509.81	313.34	109.36	312.77	307.41	5.23	N/A	N/A		95136.72
9/17/99 16:38		.....	73.07	21.96	401.23	959.05	1323.25	394.95	-0.44	38.67	109.66	357.28	509.97	313.25	109.78	312.66	307.38	5.08	N/A	N/A		95132.81
9/17/99 16:40		.....	73.27	21.94	399.92	960.08	1322.13	395.06	-0.23	38.68	109.70	357.02	509.97	313.09	109.41	312.83	307.34	5.33	N/A	N/A		95148.44
9/17/99 16:42		.....	73.26	21.94	399.75	960.20	1323.25	394.01	-0.28	39.05	109.66	357.20	510.05	313.08	109.38	312.97	307.14	5.29	N/A	N/A		95183.59
9/17/99 16:44		.....	73.10	21.91	400.29	960.25	1323.81	393.27	-0.53	38.72	109.62	357.02	510.20	312.91	109.65	312.81	307.03	5.04	N/A	N/A		95179.69
9/17/99 16:46		.....	73.04	21.59	401.03	959.50	1320.94	393.74	-0.53	38.43	109.60	357.09	510.20	312.81	109.39	312.72	307.14	5.30	N/A	N/A		95136.72
9/17/99 16:48		.....	73.38	21.40	400.58	958.41	1319.88	393.83	-0.54	38.27	109.65	356.97	510.13	312.81	109.67	312.83	307.25	5.15	N/A	N/A		95054.69
9/17/99 16:50		.....	73.54	21.25	398.73	958.00	1316.38	393.88	-0.64	38.55	109.63	357.08	510.30	312.88	109.82	312.69	307.03	5.00	N/A	N/A		94886.72

2																					
MM/DD/YY HH:MM		Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow	Unit 2 Main Steam Temp	Unit 2 Main Steam Pressure	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 2 Combustion Air Flow	Unit 2 Baghouse Inlet Temp	Unit 2 Baghouse Outlet Temp	Unit 2 Baghouse Pressure Drop	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate		Gross Electric Generation (KW)
9/17/99 16:52		.....	73.66	20.89	397.70	957.97	1315.63	393.17	-0.52	38.66	109.56	357.56	510.20	312.80	109.69	312.23	307.13	5.20	N/A	N/A		94726.56
9/17/99 16:54		.....	73.79	20.36	396.98	959.98	1315.19	390.84	-0.36	39.28	109.44	357.09	510.13	312.69	110.00	312.75	307.08	5.29	N/A	N/A		94750.00
9/17/99 16:56		.....	73.83	20.21	396.78	961.30	1318.19	389.63	-0.46	38.39	109.38	357.03	510.13	312.41	109.98	312.59	307.16	5.03	N/A	N/A		94925.78
9/17/99 16:58		.....	73.72	20.13	399.79	961.03	1321.31	390.56	-0.60	38.85	109.38	357.23	510.30	312.38	110.05	312.66	307.16	4.85	N/A	N/A		95257.81
9/17/99 17:00		.....	73.63	19.94	402.77	959.59	1325.00	393.31	-0.51	39.02	109.48	357.17	510.20	312.48	109.98	312.80	307.16	5.09	N/A	N/A		95414.06
9/17/99 17:02		.....	72.88	19.86	400.06	959.50	1328.00	393.18	-0.44	39.45	109.50	357.31	510.05	312.66	109.52	312.50	307.16	5.28	N/A	N/A		95195.31
9/17/99 17:04		.....	72.70	19.99	401.88	958.98	1326.81	394.55	-0.44	40.18	109.52	356.84	509.81	312.50	109.48	312.52	307.17	5.17	N/A	N/A		95101.56
9/17/99 17:06		.....	72.93	20.33	403.53	958.92	1325.06	395.45	-0.37	39.78	109.50	357.08	509.97	312.47	109.66	312.63	307.16	5.02	N/A	N/A		95132.81
9/17/99 17:08		.....	73.31	20.23	403.13	959.30	1323.88	396.63	-0.46	40.05	109.52	357.33	509.64	312.53	109.28	312.83	307.11	5.33	N/A	N/A		95246.09
9/17/99 17:10		.....	73.26	20.33	400.13	960.17	1322.31	395.58	-0.49	39.67	109.59	357.72	509.33	312.31	109.45	312.55	307.13	5.21	N/A	N/A		95304.69
9/17/99 17:12		.....	73.19	20.25	400.99	960.63	1323.50	394.66	-0.48	39.06	109.64	357.72	509.48	312.22	109.56	312.75	307.02	5.01	N/A	N/A		95351.56
9/17/99 17:14		.....	73.13	20.10	401.52	959.64	1322.06	394.83	-0.45	39.41	109.67	357.47	509.25	312.30	109.47	312.42	306.92	5.23	N/A	N/A		95367.19
9/17/99 17:16		.....	73.11	19.96	401.27	959.70	1322.06	394.77	-0.54	39.27	109.65	357.34	509.08	312.38	109.39	312.83	306.91	5.16	N/A	N/A		95343.75
9/17/99 17:18		.....	73.12	19.92	401.78	959.42	1322.06	394.70	-0.56	39.71	109.59	357.27	509.25	312.33	109.80	312.89	307.08	4.94	N/A	N/A		95308.59
9/17/99 17:20		.....	73.12	19.85	400.52	959.06	1319.88	394.34	-0.69	40.44	109.55	356.84	509.41	312.09	109.48	312.55	307.16	5.14	N/A	N/A		95285.16
9/17/99 17:22		.....	73.21	19.59	399.15	959.73	1319.31	393.30	-0.37	39.80	109.57	356.66	509.73	312.08	109.75	312.53	307.05	5.32	N/A	N/A		95136.72
9/17/99 17:24		.....	72.82	19.39	397.26	959.33	1317.31	392.63	-0.78	39.62	109.46	356.91	509.73	312.17	109.44	312.11	307.03	5.06	N/A	N/A		95042.97
9/17/99 17:26		.....	72.38	18.77	397.80	958.75	1316.94	391.27	-0.71	39.46	109.44	356.84	509.73	312.19	109.92	311.94	306.84	4.84	N/A	N/A		94910.16
9/17/99 17:28		.....	72.46	18.63	395.70	958.75	1316.00	391.49	-0.76	40.03	109.30	356.86	509.64	312.23	109.64	311.98	306.77	5.02	N/A	N/A		94914.06
9/17/99 17:30		.....	72.59	18.36	396.66	958.72	1314.25	389.58	-0.38	39.81	109.26	356.97	509.33	312.08	109.87	311.73	306.70	5.28	N/A	N/A		94863.28
9/17/99 17:32		.....	72.80	18.02	394.16	959.61	1312.81	389.70	-0.22	40.18	109.25	357.19	509.33	311.84	109.82	311.94	306.66	5.33	N/A	N/A		94726.56
9/17/99 17:34		.....	72.94	17.80	397.48	960.36	1312.50	387.96	-0.44	39.76	109.17	357.16	509.25	311.70	110.01	311.83	306.59	5.16	N/A	N/A		94726.56
9/17/99 17:36		.....	73.13	17.64	398.60	961.23	1314.06	390.11	-0.56	39.56	109.08	356.89	509.64	311.59	110.07	312.16	306.64	5.05	N/A	N/A		94652.34
9/17/99 17:38		.....	73.13	18.04	399.40	960.63	1318.69	390.62	-0.44	39.80	109.06	356.59	509.81	311.72	110.33	312.53	306.63	5.11	N/A	N/A		94882.81
9/17/99 17:40		.....	73.14	18.23	400.25	959.39	1318.19	392.00	-0.27	39.94	109.06	356.50	509.48	311.81	110.13	312.38	306.67	5.32	N/A	N/A		94960.94
9/17/99 17:42		.....	73.15	18.07	399.34	958.61	1317.56	393.02	-0.29	40.29	109.04	356.53	509.48	311.81	110.12	312.20	306.72	5.30	N/A	N/A		94992.19
9/17/99 17:44		.....	73.26	17.88	401.78	959.53	1317.56	392.74	-0.37	40.30	109.05	356.42	509.73	311.92	110.48	312.64	306.66	5.14	N/A	N/A		94894.53
9/17/99 17:46		.....	73.36	17.96	399.28	959.67	1316.00	394.01	-0.25	40.46	109.00	356.47	509.56	312.05	110.08	312.42	306.72	5.36	N/A	N/A		94781.25
9/17/99 17:48		.....	73.47	18.07	400.31	960.02	1316.81	393.68	-0.21	39.80	108.89	356.41	509.48	311.86	110.51	312.39	306.66	5.22	N/A	N/A		94761.72
9/17/99 17:50		.....	73.54	18.75	401.55	960.89	1318.56	393.67	-0.20	39.93	108.81	356.03	509.41	311.78	110.60	312.66	306.78	5.30	N/A	N/A		94914.06
9/17/99 17:52		.....	73.54	19.11	400.60	960.56	1319.38	393.23	-0.41	40.26	108.78	356.19	509.48	311.91	110.46	313.14	306.84	5.13	N/A	N/A		95050.78
9/17/99 17:54		.....	73.57	18.77	400.92	959.47	1319.88	392.98	-0.35	39.94	108.76	356.05	509.08	311.88	110.35	312.50	306.84	5.27	N/A	N/A		95093.75
9/17/99 17:56		.....	73.55	18.80	400.84	960.08	1321.69	393.66	-0.44	40.09	108.74	356.20	509.33	311.73	110.60	312.22	306.88	5.04	N/A	N/A		95148.44
9/17/99 17:58		.....	73.55	19.10	402.52	959.94	1320.06	394.84	-0.47	41.28	108.74	356.70	509.33	311.83	110.43	311.97	306.80	5.16	N/A	N/A		95101.56
Average	**#DIV/0!**	**.....**	**73.36**	**19.23**	**396.99**	**959.80**	**1320.19**	**390.11**	**-0.48**	**40.98**	**109.19**	**356.94**	**509.94**	**312.65**	**110.64**	**312.93**	**307.13**	**5.17**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**94865.57**

2																				
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow	Unit 1 Main Steam Temp	Unit 1 Main Steam Pressure	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp	Unit 1 Baghouse Outlet Temp	Unit 1 Baghouse Pressure Drop	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate	
9/17/99 18:00	.....	73.64	14.43	402.20	959.58	1308.44	391.84	-0.44	46.09	112.96	349.34	524.19	274.16	110.47	324.78	320.98	5.24	N/A	N/A	
9/17/99 18:02	.....	73.70	12.41	404.59	961.05	1309.19	392.23	-0.72	46.08	112.92	349.22	524.31	274.23	110.26	323.78	321.47	5.00	N/A	N/A	
9/17/99 18:04	.....	73.59	12.60	403.77	960.97	1311.88	394.16	-0.58	46.43	112.86	349.95	524.28	274.42	110.23	324.03	321.64	5.25	N/A	N/A	
9/17/99 18:06	.....	72.78	12.71	402.47	960.23	1314.81	393.66	-0.41	46.58	112.84	352.31	523.97	274.63	109.86	324.39	321.59	5.55	N/A	N/A	
9/17/99 18:08	.....	71.13	11.09	396.20	959.73	1319.25	391.63	-0.81	46.61	112.80	352.78	523.69	274.48	108.97	322.97	321.38	5.76	N/A	N/A	
9/17/99 18:10		70.13	11.52	396.05	958.27	1319.94	388.26	-1.23	46.07	112.82	354.22	522.97	273.95	108.06	322.41	321.16	5.30	N/A	N/A	
9/17/99 18:12	.....	71.23	11.55	397.45	957.56	1314.25	387.93	-0.90	45.40	112.85	354.39	522.31	273.20	108.51	321.97	320.78	5.05	N/A	N/A	
9/17/99 18:14	.....	71.14	12.77	394.13	958.95	1310.69	387.55	-0.68	46.83	112.78	351.84	521.91	272.63	108.33	322.84	320.55	5.28	N/A	N/A	
9/17/99 18:16	.....	71.50	10.96	393.35	961.53	1307.88	385.95	-0.41	46.27	112.76	350.27	521.75	272.30	108.79	322.45	320.25	5.55	N/A	N/A	
9/17/99 18:18	.....	71.27	11.91	393.73	962.97	1309.56	385.31	-0.41	46.00	112.69	349.42	521.44	272.02	108.43	321.31	319.97	5.83	N/A	N/A	
9/17/99 18:20	.....	71.14	12.47	394.79	962.02	1309.88	385.06	-0.52	45.21	112.64	348.63	521.19	271.53	108.61	321.59	319.58	5.54	N/A	N/A	
9/17/99 18:22	.....	71.94	10.97	397.30	960.77	1310.19	386.07	-0.89	45.21	112.63	350.73	521.00	271.41	108.57	322.19	319.22	5.23	N/A	N/A	
9/17/99 18:24	.....	72.29	12.59	398.38	959.94	1308.25	388.07	-0.80	45.12	112.59	353.47	520.81	271.91	108.74	323.13	318.98	4.98	N/A	N/A	
9/17/99 18:26	.....	73.46	12.87	402.03	960.47	1304.38	391.07	-0.31	45.95	112.47	354.84	520.81	272.53	108.84	323.92	318.98	5.26	N/A	N/A	
9/17/99 18:28	.....	73.66	13.72	401.95	961.81	1305.19	392.10	-0.06	47.07	112.41	355.34	521.09	273.25	109.48	324.11	319.17	5.54	N/A	N/A	
9/17/99 18:30	.....	73.41	12.65	401.40	961.31	1308.25	392.44	0.02	46.95	112.26	356.13	521.28	273.63	109.56	323.53	319.25	5.86	N/A	N/A	
9/17/99 18:32	.....	73.29	12.52	401.79	959.61	1310.63	392.20	-0.20	46.75	112.13	356.78	521.56	273.63	109.79	323.34	319.28	5.59	N/A	N/A	
9/17/99 18:34	.....	73.15	13.36	404.16	958.77	1313.63	392.24	-0.19	47.03	112.03	356.95	521.88	273.84	110.24	323.53	319.28	5.23	N/A	N/A	
9/17/99 18:36	.....	72.42	12.52	403.76	958.73	1317.31	394.25	-0.07	47.53	111.93	354.53	522.50	273.89	111.15	323.77	319.11	5.19	N/A	N/A	
9/17/99 18:38	.....	71.63	11.65	401.37	958.48	1318.13	392.64	-0.37	47.50	111.85	352.66	522.81	273.61	110.31	322.78	319.23	5.44	N/A	N/A	
9/17/99 18:40	.....	72.29	11.99	401.19	957.64	1313.06	392.20	-0.01	48.08	111.81	351.63	522.84	273.14	110.39	322.45	319.25	5.78	N/A	N/A	
9/17/99 18:42	.....	72.51	10.82	400.52	957.94	1310.13	391.11	-0.19	47.93	111.70	350.94	522.69	272.80	110.16	322.63	319.41	5.68	N/A	N/A	
9/17/99 18:44	.....	72.76	12.27	401.45	959.77	1307.63	390.83	-0.50	47.50	111.65	350.33	522.53	272.50	110.16	321.67	319.73	5.27	N/A	N/A	
9/17/99 18:46	.....	73.32	11.61	401.31	961.09	1307.44	391.27	-0.53	47.27	111.60	349.78	522.50	272.31	110.90	322.59	320.27	4.92	N/A	N/A	
9/17/99 18:48	.....	73.18	11.48	403.00	961.23	1308.81	391.80	-0.36	47.93	111.42	349.78	522.38	272.16	110.85	322.50	320.27	5.17	N/A	N/A	
9/17/99 18:50	.....	73.15	12.91	402.07	960.38	1309.13	392.81	-0.01	47.91	111.33	350.19	522.31	271.98	110.71	322.59	319.95	5.55	N/A	N/A	
9/17/99 18:52	.....	73.14	12.27	403.14	960.19	1310.63	392.88	-0.13	47.90	111.25	350.36	522.31	272.09	110.70	323.00	319.78	5.76	N/A	N/A	
9/17/99 18:54	.....	73.17	13.38	403.69	960.08	1309.63	393.45	-0.11	47.95	111.17	350.41	522.28	272.27	111.06	323.59	319.66	5.69	N/A	N/A	
9/17/99 18:56	.....	73.20	12.35	403.71	960.06	1310.06	394.29	-0.58	47.77	111.12	350.19	522.47	272.55	110.98	323.61	319.39	5.28	N/A	N/A	
9/17/99 18:58	.....	73.09	12.82	402.37	959.30	1311.94	394.09	-0.64	47.53	111.07	350.47	522.34	272.75	110.92	324.03	319.22	5.01	N/A	N/A	
9/17/99 19:00	.....	72.74	12.37	403.29	959.19	1311.94	392.71	-0.65	47.73	110.98	350.34	522.34	272.78	110.43	323.70	319.31	5.29	N/A	N/A	
9/17/99 19:02	.....	73.17	13.23	404.64	958.88	1308.56	394.81	-0.27	47.75	110.88	350.23	522.28	272.58	110.87	323.28	319.34	5.62	N/A	N/A	
9/17/99 19:04	.....	73.48	15.51	404.73	959.77	1306.38	393.91	-0.09	48.21	110.89	349.84	522.38	272.53	110.92	323.91	319.28	5.75	N/A	N/A	
9/17/99 19:06	.....	73.59	14.12	405.63	960.86	1305.88	395.56	-0.32	48.08	110.80	349.66	522.63	272.84	111.09	323.92	319.23	5.37	N/A	N/A	
9/17/99 19:08	.....	73.26	14.91	405.42	961.66	1305.88	396.43	-0.56	48.02	110.66	349.83	522.81	272.98	111.25	323.97	319.34	5.12	N/A	N/A	
9/17/99 19:10	.....	72.76	15.24	405.01	960.97	1306.19	395.54	-0.52	47.64	110.58	350.11	522.84	273.09	111.58	324.27	319.47	5.24	N/A	N/A	
9/17/99 19:12	.....	72.87	14.87	407.15	959.91	1306.31	395.34	-0.22	47.88	110.50	350.33	522.94	273.09	111.72	323.97	319.66	5.51	N/A	N/A	
9/17/99 19:14	.....	72.96	14.54	405.32	958.56	1306.38	396.24	-0.13	48.06	110.41	350.00	523.00	272.98	111.46	322.97	319.56	5.85	N/A	N/A	
9/17/99 19:16	.....	73.11	14.19	404.33	958.27	1305.13	395.16	-0.27	47.94	110.36	349.55	523.06	272.98	111.57	324.08	319.39	5.70	N/A	N/A	
9/17/99 19:18	.....	73.25	14.48	403.23	959.39	1304.88	394.00	-0.37	47.88	110.30	350.16	522.94	272.91	111.96	323.80	319.67	5.28	N/A	N/A	
9/17/99 19:20	.....	73.40	14.21	402.93	960.94	1304.38	393.13	-0.40	48.05	110.20	351.28	523.09	273.16	111.65	322.56	320.28	5.03	N/A	N/A	
9/17/99 19:22	.....	73.42	13.53	402.75	961.20	1306.94	393.91	-0.41	47.49	110.11	351.05	523.31	273.27	111.96	323.59	320.41	4.96	N/A	N/A	
9/17/99 19:24	.....	70.78	13.48	394.11	961.41	1312.88	390.21	-0.74	46.91	110.05	350.34	523.25	273.28	111.04	322.72	320.19	5.30	N/A	N/A	
9/17/99 19:26	.....	69.99	13.32	395.51	959.94	1315.44	386.48	-0.95	47.18	110.04	350.06	522.81	272.64	109.96	322.66	319.78	5.42	N/A	N/A	
9/17/99 19:28	.....	71.37	12.87	394.78	957.52	1309.63	386.55	-1.07	45.86	110.03	349.92	522.06	271.92	108.69	320.81	319.56	5.65	N/A	N/A	
9/17/99 19:30	.....	73.26	13.55	398.70	957.73	1301.19	387.61	-0.49	46.04	109.89	348.95	521.44	271.34	109.54	321.58	319.27	5.87	N/A	N/A	
9/17/99 19:32	.....	74.53	13.89	403.52	960.39	1298.56	390.30	-0.01	46.95	109.81	348.47	521.53	271.53	111.72	323.05	318.95	5.49	N/A	N/A	
9/17/99 19:34	.....	73.67	14.53	403.09	963.53	1306.38	393.90	-0.10	47.79	109.67	350.52	522.06	272.41	112.40	324.09	318.75	5.25	N/A	N/A	
9/17/99 19:36	.....	72.90	14.04	398.88	963.64	1314.56	392.57	-0.52	47.25	109.57	352.16	522.44	272.98	111.68	323.27	318.72	5.01	N/A	N/A	
9/17/99 19:38	.....	71.36	13.43	396.21	961.56	1321.75	388.70	-0.96	47.38	109.45	350.91	522.59	272.73	110.74	322.81	318.63	5.01	N/A	N/A	
9/17/99 19:40	.....	71.59	13.38	397.63	958.77	1321.38	386.92	-0.81	47.14	109.45	350.17	522.44	271.88	110.27	322.06	318.52	5.26	N/A	N/A	
9/17/99 19:42	.....	71.93	13.34	396.38	957.69	1318.38	388.33	-0.58	47.26	109.50	349.83	522.44	271.31	110.21	322.14	318.47	5.55	N/A	N/A	
9/17/99 19:44	.....	72.65	13.44	398.34	957.84	1310.63	388.31	-0.79	46.71	109.52	349.41	522.31	270.81	109.16	322.22	318.41	5.84	N/A	N/A	
9/17/99 19:46	.....	72.94	13.74	397.68	959.22	1307.19	389.02	-0.58	46.60	109.51	348.56	522.03	270.84	109.43	321.64	318.47	5.74	N/A	N/A	
9/17/99 19:48	.....	72.93	13.91	399.34	961.77	1306.63	389.80	-0.67	46.77	109.41	348.11	521.97	270.97	110.13	322.16	318.47	5.36	N/A	N/A	
9/17/99 19:50	.....	72.92	14.18	402.14	962.89	1308.38	388.71	-0.57	47.31	109.20	347.83	522.09	270.95	110.65	321.92	318.34	5.14	N/A	N/A	
9/17/99 19:52	.....	72.51	14.11	401.20	962.67	1313.75	391.78	-0.40	47.71	109.15	347.91	522.59	271.19	111.30	323.53	318.66	5.00	N/A	N/A	
9/17/99 19:54	.....	71.40	13.96	400.34	961.53	1317.81	390.77	-0.53	47.86	109.14	348.66	522.91	271.27	110.50	323.34	318.86	5.23	N/A	N/A	

2																				
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow	Unit 1 Main Steam Temp	Unit 1 Main Steam Pressure	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp	Unit 1 Baghouse Outlet Temp	Unit 1 Baghouse Pressure Drop	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate	
9/17/99 19:56	.....	71.38	13.80	400.70	959.59	1318.38	390.11	-0.49	47.57	109.11	349.66	523.00	271.11	109.84	322.72	318.81	5.55	N/A	N/A	
9/17/99 19:58	.....	71.99	13.93	400.59	958.34	1313.69	391.24	-0.87	46.43	109.10	349.72	522.91	270.97	108.88	322.22	318.72	5.67	N/A	N/A	
9/17/99 20:00	.....	72.51	14.26	402.52	958.73	1309.63	390.73	-0.70	46.23	109.05	348.88	522.81	270.72	109.14	322.53	318.75	5.72	N/A	N/A	
9/17/99 20:02	.....	72.52	14.90	402.42	960.41	1309.38	391.77	-0.75	46.57	108.94	348.23	522.78	270.67	109.75	321.91	319.34	5.33	N/A	N/A	
9/17/99 20:04	.....	72.51	15.24	401.93	961.52	1308.88	392.79	-0.82	46.34	108.87	347.94	522.88	270.84	110.15	322.34	319.59	4.94	N/A	N/A	
9/17/99 20:06	.....	72.47	14.55	399.84	961.34	1310.06	392.04	-0.53	47.15	108.80	349.53	523.00	271.08	110.62	322.34	319.48	5.05	N/A	N/A	
9/17/99 20:08	.....	71.98	15.14	400.46	961.20	1312.19	391.58	-0.29	47.46	108.68	350.19	523.19	271.17	110.40	322.55	319.45	5.40	N/A	N/A	
9/17/99 20:10	.....	71.91	14.65	402.67	960.09	1312.13	391.38	-0.22	47.39	108.59	350.53	523.47	271.31	109.84	321.73	319.42	5.62	N/A	N/A	
9/17/99 20:12	.....	72.48	14.80	401.39	958.84	1308.19	394.30	-0.09	47.62	108.52	349.72	523.63	271.19	110.49	321.42	319.28	5.84	N/A	N/A	
9/17/99 20:14	.....	72.82	14.85	402.86	958.83	1304.38	394.21	-0.13	47.84	108.49	349.03	523.81	271.02	110.62	322.28	318.77	5.46	N/A	N/A	
9/17/99 20:16	.....	72.94	14.52	401.66	959.83	1303.50	393.47	-0.54	47.70	108.40	348.75	524.03	271.27	110.79	323.11	318.56	5.07	N/A	N/A	
9/17/99 20:18	.....	73.08	14.98	402.07	961.06	1303.81	392.27	-0.39	47.45	108.33	348.78	524.19	271.39	111.19	323.19	318.47	5.14	N/A	N/A	
9/17/99 20:20	.....	73.20	14.57	401.70	961.63	1303.50	392.19	-0.34	47.67	108.20	349.48	524.38	271.59	110.95	323.16	318.61	5.42	N/A	N/A	
9/17/99 20:22	.....	73.35	14.46	401.73	960.77	1303.81	393.57	-0.09	47.73	108.07	351.41	524.44	271.84	111.07	323.53	318.70	5.73	N/A	N/A	
9/17/99 20:24	.....	73.41	14.12	402.84	958.80	1305.25	392.95	-0.09	47.77	107.99	351.03	524.38	271.73	110.82	322.73	318.67	5.80	N/A	N/A	
9/17/99 20:26	.....	73.49	13.91	400.85	957.73	1305.25	391.57	-0.37	47.29	107.89	349.88	524.31	271.53	111.24	323.39	318.73	5.42	N/A	N/A	
9/17/99 20:28	.....	73.66	13.47	401.62	958.28	1304.19	391.90	-0.55	47.71	107.79	349.72	524.09	271.53	111.71	322.84	318.55	5.10	N/A	N/A	
9/17/99 20:30	.....	73.73	13.44	398.01	959.45	1304.69	391.13	-0.51	48.17	107.67	350.88	523.94	271.66	111.37	322.77	318.41	5.34	N/A	N/A	
9/17/99 20:32	.....	73.86	13.34	398.66	960.75	1304.56	389.46	-0.25	47.90	107.51	351.34	523.50	271.69	111.31	323.02	318.41	5.59	N/A	N/A	
9/17/99 20:34	.....	73.90	13.07	399.86	960.89	1306.13	389.16	-0.17	48.11	107.41	350.19	522.81	271.36	111.43	322.30	318.44	5.86	N/A	N/A	
9/17/99 20:36	.....	73.93	13.19	400.61	959.58	1307.19	391.23	-0.24	48.13	107.27	349.22	522.41	271.09	111.63	322.17	318.70	5.67	N/A	N/A	
9/17/99 20:38	.....	73.98	12.58	397.11	958.09	1307.31	390.20	-0.70	47.72	107.20	348.83	522.50	271.06	111.52	321.53	319.09	5.25	N/A	N/A	
9/17/99 20:40	.....	74.01	12.04	397.81	957.80	1307.25	388.50	-0.72	47.59	107.08	348.47	522.41	270.83	112.20	321.30	319.38	5.06	N/A	N/A	
9/17/99 20:42	.....	74.07	12.38	395.15	958.89	1307.50	387.17	-0.54	48.38	107.02	350.08	522.44	270.78	111.82	321.47	319.09	5.37	N/A	N/A	
9/17/99 20:44	.....	74.03	11.90	397.63	960.09	1308.63	386.93	-0.08	48.52	106.93	351.39	522.44	271.11	111.66	321.72	318.84	5.73	N/A	N/A	
9/17/99 20:46	.....	74.06	11.77	399.20	960.19	1308.88	388.34	-0.69	48.05	106.93	350.48	522.50	271.03	111.83	320.81	318.41	5.47	N/A	N/A	
9/17/99 20:48	.....	73.96	12.08	398.73	959.61	1311.81	389.94	-0.83	47.78	106.88	350.17	522.50	270.64	111.64	321.73	317.92	5.05	N/A	N/A	
9/17/99 20:50	.....	73.91	12.07	397.91	958.47	1311.56	389.70	-0.96	47.63	106.84	349.23	522.59	270.28	111.69	321.06	317.80	4.94	N/A	N/A	
9/17/99 20:52	.....	73.94	12.08	396.20	957.81	1309.69	388.50	-0.56	47.78	106.73	348.42	522.69	269.89	111.95	321.66	317.77	5.20	N/A	N/A	
9/17/99 20:54	.....	73.98	11.21	397.22	958.19	1309.00	387.98	-0.32	48.14	106.55	348.09	523.00	269.66	111.44	320.52	317.73	5.56	N/A	N/A	
9/17/99 20:56	.....	74.02	11.43	398.31	959.19	1309.44	386.88	-0.08	48.74	106.41	348.22	523.16	269.63	112.18	320.77	317.53	5.82	N/A	N/A	
9/17/99 20:58	.....	73.94	12.66	397.34	960.45	1310.25	387.84	-0.42	48.66	106.19	348.44	523.19	269.55	111.58	320.88	317.16	5.57	N/A	N/A	
9/17/99 21:00	.....	73.96	12.22	398.12	961.19	1310.25	388.70	-0.52	48.28	105.98	347.81	523.41	269.77	112.10	320.34	317.09	5.26	N/A	N/A	
9/17/99 21:02	.....	73.86	12.02	399.41	960.64	1311.94	389.84	-0.87	48.08	105.99	347.09	523.22	269.83	111.77	320.45	317.06	4.90	N/A	N/A	
9/17/99 21:04	.....	73.84	12.75	400.53	959.03	1312.50	390.12	-0.67	48.20	105.97	347.69	523.06	269.77	111.86	320.77	316.95	4.94	N/A	N/A	
9/17/99 21:06	.....	73.76	12.41	399.00	957.89	1312.69	390.89	-0.60	48.10	105.85	347.34	522.91	269.70	111.47	320.09	316.91	5.24	N/A	N/A	
9/17/99 21:08	.....	73.80	13.10	397.97	958.36	1311.25	390.95	-0.19	48.51	105.63	346.83	522.97	269.41	112.07	320.53	316.94	5.49	N/A	N/A	
9/17/99 21:10	.....	73.81	12.56	397.18	959.81	1310.50	389.96	-0.19	48.27	105.39	346.98	523.13	269.28	111.81	320.06	316.81	5.84	N/A	N/A	
9/17/99 21:12	.....	73.79	13.14	399.19	961.41	1311.25	389.41	-0.30	48.38	105.11	346.64	522.88	268.91	111.78	319.97	316.95	5.70	N/A	N/A	
9/17/99 21:14	.....	73.76	13.25	400.68	961.59	1312.00	390.30	-0.57	48.31	104.87	346.84	522.81	268.78	112.04	319.86	317.19	5.25	N/A	N/A	
9/17/99 21:16	.....	73.67	12.93	399.70	960.53	1312.88	391.34	-0.82	48.17	104.72	347.06	522.91	268.72	111.56	319.53	317.56	5.07	N/A	N/A	
9/17/99 21:18	.....	73.60	13.12	402.03	959.27	1313.38	390.53	-0.36	48.62	104.55	346.67	522.84	268.48	112.09	319.52	317.38	5.34	N/A	N/A	
9/17/99 21:20	.....	73.38	12.67	397.88	958.95	1313.38	390.88	-0.40	48.53	104.39	347.03	523.03	268.77	111.46	319.84	317.20	5.61	N/A	N/A	
9/17/99 21:22	.....	72.79	12.92	398.30	959.61	1315.31	388.95	-0.37	49.06	104.21	346.75	523.03	268.36	111.52	319.09	316.94	5.76	N/A	N/A	
9/17/99 21:24	.....	72.97	13.13	400.42	959.77	1312.06	389.94	-0.84	48.43	104.13	346.14	522.84	267.77	110.90	318.58	316.52	5.29	N/A	N/A	
9/17/99 21:26	.....	73.71	12.87	398.02	959.27	1307.06	390.37	-1.17	46.91	104.08	345.64	522.56	267.53	110.24	318.63	315.97	4.94	N/A	N/A	
9/17/99 21:28	.....	73.74	13.00	397.70	960.36	1307.44	389.16	-0.97	47.05	104.05	345.20	522.25	267.55	110.79	317.92	315.75	5.03	N/A	N/A	
9/17/99 21:30	.....	73.70	13.26	397.34	961.58	1308.44	389.29	-0.64	47.36	104.06	345.69	522.09	267.73	110.96	318.91	315.77	5.31	N/A	N/A	
9/17/99 21:32	.....	73.68	13.84	396.44	962.31	1308.75	388.48	-0.18	47.58	104.02	348.11	521.97	268.30	110.75	318.73	315.69	5.63	N/A	N/A	
9/17/99 21:34	.....	72.71	13.27	396.70	962.80	1312.94	387.67	-0.27	47.57	104.12	350.13	522.00	268.66	110.35	319.77	315.28	5.79	N/A	N/A	
9/17/99 21:36	.....	72.13	13.26	396.76	961.19	1316.69	387.96	-0.76	47.95	104.05	350.59	521.94	268.73	110.27	318.89	314.91	5.45	N/A	N/A	
9/17/99 21:38	.....	72.61	13.29	399.35	958.66	1315.38	388.64	-0.92	47.62	103.92	349.83	521.81	268.80	110.44	318.91	314.95	5.13	N/A	N/A	
9/17/99 21:40	.....	73.00	13.39	399.88	957.39	1313.19	390.77	-0.54	47.79	103.71	349.09	521.69	268.66	110.68	318.72	315.09	5.24	N/A	N/A	
9/17/99 21:42	.....	73.08	12.85	399.95	958.36	1311.81	390.93	-0.39	47.89	103.16	347.05	521.66	268.09	110.84	318.23	315.09	5.51	N/A	N/A	
9/17/99 21:44	.....	73.23	12.90	399.27	959.56	1309.13	390.74	-0.15	48.46	102.55	345.33	521.66	267.25	110.68	317.47	315.00	5.79	N/A	N/A	
9/17/99 21:46	.....	73.32	13.31	399.92	960.98	1309.94	390.96	-0.39	48.22	102.03	344.16	521.69	266.53	111.18	317.92	314.59	5.45	N/A	N/A	
9/17/99 21:48	.....	72.91	13.34	398.55	962.02	1312.38	390.18	-0.68	47.88	101.75	343.33	521.72	266.14	110.75	317.16	314.81	5.12	N/A	N/A	
9/17/99 21:50	.....	72.65	12.61	398.27	961.31	1313.63	389.70	-0.66	50.76	101.72	342.72	521.88	265.98	110.54	316.70	315.28	5.00	N/A	N/A	

2																				
MM/DD/YY HH:MM	Unit 1 Ammonia Flow (Gal/min)	Unit 1 Coal Feeders (Klb/hr)	Unit 1 Limestone Feeders (Klb/hr)	Unit 1 Main Steam Flow	Unit 1 Main Steam Temp	Unit 1 Main Steam Pressure	Unit 1 Feedwater Flow (Klb/hr)	Unit 1 Furnace Draft (In H2O)	Unit 1 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 1 Combustion Air Flow (Klb/hr)	Unit 1 Baghouse Inlet Temp	Unit 1 Baghouse Outlet Temp	Unit 1 Baghouse Pressure Drop	Unit 1 Reheater Steam Flow	Unit 1 Gas Recirc Rate	
9/17/99 21:52	.....	72.74	13.03	398.48	960.11	1311.00	389.21	-0.75	50.83	101.92	342.36	521.75	265.64	110.44	316.53	315.23	5.25	N/A	N/A	
9/17/99 21:54	.....	73.32	13.99	398.82	959.31	1307.13	388.76	-0.39	49.57	102.06	342.23	521.56	265.09	110.54	317.11	315.00	5.53	N/A	N/A	
9/17/99 21:56	.....	73.45	12.92	398.62	959.53	1307.13	389.88	-0.14	48.54	102.02	342.16	521.56	265.20	111.14	317.83	314.92	5.69	N/A	N/A	
9/17/99 21:58	.....	73.28	13.87	397.12	960.72	1310.00	388.93	-0.44	48.42	101.73	343.48	521.56	265.50	110.99	318.38	314.91	5.35	N/A	N/A	
9/17/99 22:00	.....	72.67	13.35	397.16	961.73	1313.13	388.15	-0.72	47.59	101.36	346.00	521.72	266.17	111.13	318.41	314.77	4.94	N/A	N/A	
9/17/99 22:02	.....	71.02	13.28	395.03	961.52	1316.88	386.95	-0.92	47.17	101.12	346.84	521.69	266.50	109.89	318.16	314.41	4.94	N/A	N/A	
9/17/99 22:04	.....	71.40	13.36	396.16	959.81	1315.31	387.48	-0.79	46.93	101.04	345.83	521.38	266.00	109.98	317.34	314.16	5.24	N/A	N/A	
9/17/99 22:06	.....	72.12	12.85	396.87	958.33	1310.75	386.49	-0.52	47.17	100.90	344.84	520.91	265.25	110.11	316.64	314.09	5.44	N/A	N/A	
9/17/99 22:08	.....	72.15	13.13	395.41	958.91	1309.63	387.60	-0.25	47.01	100.82	343.55	520.56	264.75	110.52	316.47	313.97	5.76	N/A	N/A	
9/17/99 22:10	.....	72.61	13.55	398.38	960.11	1307.13	387.34	-0.26	47.01	100.71	342.44	520.41	264.50	110.51	317.09	313.73	5.69	N/A	N/A	
9/17/99 22:12	.....	72.63	12.71	395.72	961.02	1307.38	388.15	-0.49	46.91	100.68	341.81	520.44	264.48	110.88	316.72	313.58	5.31	N/A	N/A	
9/17/99 22:14	.....	72.58	13.20	397.12	961.64	1307.63	388.23	-0.65	46.74	100.71	341.94	520.44	264.47	110.89	316.66	313.55	5.00	N/A	N/A	
9/17/99 22:16	.....	72.48	13.18	397.79	960.92	1308.13	387.88	-0.75	46.74	100.64	342.00	520.22	264.67	111.06	316.86	313.63	4.82	N/A	N/A	
9/17/99 22:18	.....	72.53	12.51	395.02	960.16	1306.94	387.13	-0.65	47.13	100.48	341.80	520.16	264.75	110.49	316.67	313.64	5.05	N/A	N/A	
9/17/99 22:20	.....	72.03	12.33	395.30	960.09	1308.19	386.41	-0.54	47.12	100.46	341.92	520.06	264.48	110.56	316.48	313.59	5.33	N/A	N/A	
9/17/99 22:22	.....	71.44	12.71	391.73	959.86	1310.75	385.36	-0.46	47.07	100.52	341.91	519.97	264.16	110.32	316.97	313.48	5.54	N/A	N/A	
9/17/99 22:24	.....	71.95	11.92	392.68	960.16	1309.88	383.73	-0.43	47.51	100.63	343.11	520.06	264.19	110.08	315.72	313.45	5.79	N/A	N/A	
9/17/99 22:26	.....	71.96	12.35	394.77	960.69	1311.25	384.16	-0.33	47.17	100.62	345.14	520.13	264.50	110.46	316.72	313.16	5.70	N/A	N/A	
9/17/99 22:28	.....	71.70	12.62	393.70	960.78	1312.38	384.81	-0.77	46.93	100.60	347.61	520.09	264.89	110.03	316.97	313.33	5.26	N/A	N/A	
9/17/99 22:30	.....	71.86	12.92	395.63	960.45	1311.63	386.24	-0.67	47.47	100.55	348.39	520.06	265.28	110.65	316.16	313.92	5.04	N/A	N/A	
9/17/99 22:32	.....	72.27	12.36	396.07	959.80	1308.94	387.14	-0.66	47.43	100.51	347.22	520.19	265.41	109.89	315.16	314.23	5.26	N/A	N/A	
9/17/99 22:34	.....	72.61	13.06	396.09	959.52	1308.44	386.95	-0.14	47.29	100.45	345.22	520.16	265.11	110.53	316.44	314.14	5.56	N/A	N/A	
9/17/99 22:36	.....	72.88	13.22	398.63	959.27	1307.31	389.70	-0.06	47.66	100.32	343.70	520.25	264.77	110.54	316.41	314.06	5.78	N/A	N/A	
9/17/99 22:38	.....	73.37	12.97	398.59	959.69	1308.13	389.88	-0.15	47.76	99.86	342.95	520.38	264.64	111.34	316.73	314.03	5.43	N/A	N/A	
9/17/99 22:40	.....	73.14	13.03	400.22	960.61	1309.88	389.71	-0.23	47.33	99.30	342.69	520.69	264.73	111.46	316.67	313.88	5.19	N/A	N/A	
9/17/99 22:42	.....	73.01	13.55	399.06	961.11	1311.38	390.98	-0.22	47.38	98.93	342.44	521.09	264.66	111.29	316.44	313.80	5.53	N/A	N/A	
9/17/99 22:44	.....	73.05	12.52	400.84	960.31	1310.06	390.75	-0.12	48.92	98.79	342.45	521.25	264.41	111.12	315.77	313.67	5.80	N/A	N/A	
9/17/99 22:46	.....	73.02	12.65	398.58	959.70	1311.00	389.67	-0.49	48.14	98.73	342.34	521.28	264.47	110.89	316.45	313.27	5.49	N/A	N/A	
9/17/99 22:48	.....	72.97	12.96	398.74	959.53	1312.13	389.82	-0.60	47.85	98.92	341.97	521.44	264.41	111.18	316.63	313.06	5.17	N/A	N/A	
9/17/99 22:50	.....	72.92	12.54	399.33	959.89	1312.25	389.65	-0.87	47.67	99.13	341.56	521.63	264.58	111.05	317.41	312.73	5.06	N/A	N/A	
9/17/99 22:52	.....	72.95	12.80	399.59	959.75	1310.31	390.43	-0.53	48.00	99.31	341.55	521.56	264.70	111.00	316.84	312.72	5.26	N/A	N/A	
9/17/99 22:54	.....	72.98	12.72	399.53	959.81	1310.31	390.23	-0.46	48.09	99.35	341.78	521.56	264.72	110.84	316.28	312.70	5.58	N/A	N/A	
9/17/99 22:56	.....	72.60	13.50	397.34	959.78	1310.94	389.46	-0.20	48.52	99.37	341.84	521.19	264.45	111.22	315.78	312.67	5.80	N/A	N/A	
9/17/99 22:58	.....	71.26	12.75	394.15	960.75	1314.13	385.67	-0.89	47.89	99.35	341.97	520.97	264.16	110.21	315.64	312.63	5.46	N/A	N/A	
Average		**72.86**	**13.12**	**399.40**	**960.02**	**1310.05**	**390.18**	**-0.48**	**47.53**	**100.78**	**348.21**	**522.24**	**269.78**	**110.70**	**320.72**	**317.47**	**5.39**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**

2 MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow	Unit 2 Main Steam Temp	Unit 2 Main Steam Pressure	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 2 Combustion Air Flow	Unit 2 Baghouse Inlet Temp	Unit 2 Baghouse Outlet Temp	Unit 2 Baghouse Pressure Drop	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate		Gross Electric Generation (KW)
9/17/99 18:00	.....	73.64	18.94	399.74	959.30	1318.38	394.89	-0.18	40.83	108.69	357.17	509.48	311.88	110.82	311.95	306.78	5.34	N/A	N/A		95000.00
9/17/99 18:02	.....	73.69	18.98	397.96	960.52	1319.94	393.05	-0.46	40.98	108.66	356.88	509.41	311.81	110.74	312.05	306.72	5.17	N/A	N/A		95023.44
9/17/99 18:04	.....	73.61	19.77	400.37	960.86	1323.25	392.25	-0.38	40.57	108.65	356.36	509.48	311.91	110.70	312.00	306.70	5.20	N/A	N/A		95226.56
9/17/99 18:06	.....	72.84	19.71	397.94	961.17	1326.81	392.29	-0.35	40.50	108.57	357.09	509.81	312.11	110.35	312.30	306.73	5.38	N/A	N/A		95070.31
9/17/99 18:08	.....	71.22	19.20	394.20	959.81	1331.38	391.18	-0.67	40.63	108.56	356.95	509.81	312.16	110.03	311.84	306.77	5.30	N/A	N/A		94539.06
9/17/99 18:10		70.08	18.71	391.76	957.08	1325.50	388.13	-1.12	39.05	108.56	356.55	508.92	311.84	108.44	310.69	306.67	5.33	N/A	N/A		93566.41
9/17/99 18:12	.....	71.25	18.53	388.95	957.73	1322.63	386.55	-0.98	39.30	108.71	356.53	508.36	311.55	109.02	310.56	306.39	5.14	N/A	N/A		93363.28
9/17/99 18:14	.....	71.10	18.51	391.63	960.08	1318.56	385.44	-0.98	38.91	108.69	356.03	507.80	311.33	108.88	310.41	306.16	4.93	N/A	N/A		93132.81
9/17/99 18:16	.....	71.50	19.04	392.23	961.95	1317.94	385.82	-0.65	38.74	108.66	355.53	507.55	311.41	109.24	310.34	305.92	5.01	N/A	N/A		93148.44
9/17/99 18:18	.....	71.30	18.80	390.31	961.84	1318.75	385.23	-0.66	38.49	108.63	355.50	507.55	311.47	108.83	310.41	305.77	5.34	N/A	N/A		93203.13
9/17/99 18:20	.....	71.14	18.64	390.02	961.09	1320.56	384.62	-0.84	37.89	108.60	355.31	507.39	311.33	108.22	310.19	305.59	5.25	N/A	N/A		93195.31
9/17/99 18:22	.....	71.89	19.04	394.40	959.84	1318.69	386.43	-0.59	38.49	108.55	355.41	507.23	311.09	108.76	310.42	305.56	5.21	N/A	N/A		93585.94
9/17/99 18:24	.....	72.30	19.30	394.20	959.50	1316.19	387.99	-0.40	38.84	108.47	355.34	507.47	310.89	109.13	310.91	305.59	5.22	N/A	N/A		93957.03
9/17/99 18:26	.....	73.38	19.35	396.83	960.05	1312.50	388.00	-0.23	39.18	108.36	355.11	507.80	310.91	109.39	311.23	305.63	5.20	N/A	N/A		94304.69
9/17/99 18:28	.....	73.70	19.45	399.16	961.81	1316.94	390.12	-0.20	39.73	108.22	355.08	508.28	310.84	109.97	311.11	305.63	5.25	N/A	N/A		94816.41
9/17/99 18:30	.....	73.42	19.96	401.18	961.33	1320.50	391.95	-0.25	39.11	108.15	355.17	508.84	310.91	109.96	311.39	305.77	4.97	N/A	N/A		95066.41
9/17/99 18:32	.....	73.30	20.33	402.59	959.39	1322.69	394.15	-0.21	39.41	108.13	355.33	509.08	311.14	109.76	311.48	305.84	5.21	N/A	N/A		95218.75
9/17/99 18:34	.....	73.15	20.31	401.24	958.48	1324.81	393.47	-0.09	39.76	108.04	355.58	509.33	311.23	110.31	312.09	305.97	5.23	N/A	N/A		95390.63
9/17/99 18:36	.....	72.48	20.18	397.27	958.86	1327.94	392.70	-0.47	39.70	107.94	355.61	509.41	311.30	109.75	311.70	306.14	4.99	N/A	N/A		95320.31
9/17/99 18:38	.....	71.64	19.70	398.97	959.09	1326.38	392.49	-0.66	38.76	107.87	355.53	509.33	311.25	109.83	311.48	306.14	4.75	N/A	N/A		94890.63
9/17/99 18:40	.....	72.25	19.58	399.16	958.45	1322.06	392.80	-0.51	39.85	107.89	355.58	509.08	311.09	109.39	310.97	306.14	5.09	N/A	N/A		94812.50
9/17/99 18:42	.....	72.52	19.37	398.09	959.42	1318.38	392.02	-0.33	38.99	107.77	355.22	509.00	311.03	109.56	311.17	306.05	5.25	N/A	N/A		94675.78
9/17/99 18:44	.....	72.71	19.34	400.12	960.14	1316.38	392.49	-0.46	39.08	107.77	355.41	508.92	310.91	109.66	311.16	305.92	5.09	N/A	N/A		94656.25
9/17/99 18:46	.....	73.32	19.48	400.39	960.95	1318.31	392.45	-0.33	39.85	107.68	355.55	509.08	310.78	109.94	311.41	305.97	4.95	N/A	N/A		95007.81
9/17/99 18:48	.....	73.18	19.86	399.16	960.72	1318.69	393.28	-0.14	40.58	107.59	355.88	509.08	310.78	109.76	311.61	306.03	5.29	N/A	N/A		95156.25
9/17/99 18:50	.....	73.16	19.65	400.44	959.84	1320.13	393.70	-0.24	39.11	107.57	356.34	509.33	310.73	109.93	311.48	305.95	5.17	N/A	N/A		95183.59
9/17/99 18:52	.....	73.13	19.54	400.64	959.22	1320.38	393.45	-0.44	39.89	107.48	356.72	509.56	310.78	110.34	311.48	305.95	4.87	N/A	N/A		95257.81
9/17/99 18:54	.....	73.16	19.49	399.30	958.86	1319.13	394.30	-0.56	39.20	107.37	356.47	509.48	310.83	110.12	311.30	306.03	4.81	N/A	N/A		95195.31
9/17/99 18:56	.....	73.20	19.31	399.79	960.20	1319.38	391.96	-0.26	39.23	107.36	356.02	509.56	310.75	110.41	311.55	306.08	5.08	N/A	N/A		95175.78
9/17/99 18:58	.....	73.10	19.17	400.36	960.42	1322.81	391.80	-0.13	39.55	107.30	355.72	509.64	310.67	110.41	311.64	306.03	5.39	N/A	N/A		95246.09
9/17/99 19:00	.....	72.75	19.14	398.77	958.34	1320.06	393.08	-0.56	39.07	107.19	355.59	509.48	310.59	110.04	311.05	305.88	5.16	N/A	N/A		95093.75
9/17/99 19:02	.....	73.13	18.55	396.41	956.84	1316.56	392.21	-0.61	39.10	107.14	355.50	509.16	310.48	110.23	310.31	305.73	5.09	N/A	N/A		95042.97
9/17/99 19:04	.....	73.48	17.94	395.47	958.02	1315.06	391.06	-0.27	39.61	107.02	355.95	509.16	310.16	110.62	310.45	305.55	5.31	N/A	N/A		94914.06
9/17/99 19:06	.....	73.60	17.63	394.39	959.73	1314.94	388.97	-0.29	40.04	106.88	356.06	509.33	309.95	110.58	310.47	305.47	5.19	N/A	N/A		94871.09
9/17/99 19:08	.....	73.65	17.24	394.96	960.72	1314.63	388.09	-0.23	40.72	106.82	355.97	509.33	309.91	110.49	310.63	305.47	5.39	N/A	N/A		94898.44
9/17/99 19:10	.....	73.76	17.06	395.38	960.63	1314.75	387.99	-0.44	40.26	106.75	355.59	509.41	310.03	110.55	310.66	305.41	5.17	N/A	N/A		94929.69
9/17/99 19:12	.....	73.88	17.02	393.89	959.94	1315.56	388.95	-0.52	40.17	106.67	355.25	509.56	309.84	110.86	310.72	305.41	4.98	N/A	N/A		94933.59
9/17/99 19:14	.....	73.95	16.65	394.72	959.19	1315.06	388.38	-0.49	39.97	106.66	355.34	509.81	309.84	110.77	310.86	305.31	5.00	N/A	N/A		94914.06
9/17/99 19:16	.....	74.11	16.54	396.11	959.88	1314.38	388.16	-0.28	40.22	106.65	355.48	509.64	309.83	110.88	310.61	305.28	5.34	N/A	N/A		94851.56
9/17/99 19:18	.....	74.24	16.69	396.97	959.81	1313.81	388.96	-0.14	40.57	106.57	355.16	509.64	309.78	110.98	310.91	305.30	5.38	N/A	N/A		94839.84
9/17/99 19:20	.....	74.41	16.34	395.82	960.45	1314.06	389.16	-0.24	40.95	106.47	355.39	509.73	309.89	111.00	311.20	305.27	5.19	N/A	N/A		94832.03
9/17/99 19:22	.....	74.42	16.76	399.01	960.86	1317.50	388.85	-0.41	41.00	106.32	355.41	509.73	310.06	111.11	311.34	305.27	4.91	N/A	N/A		95015.63
9/17/99 19:24	.....	71.99	16.30	388.97	960.25	1325.25	388.46	-0.61	40.74	106.24	355.48	509.41	310.02	110.64	310.77	305.41	5.21	N/A	N/A		94226.56
9/17/99 19:26	.....	70.93	15.68	388.98	957.94	1322.06	383.23	-0.81	40.11	106.11	355.34	508.36	309.75	109.64	309.22	305.28	5.35	N/A	N/A		93046.88
9/17/99 19:28	.....	72.30	15.79	391.27	957.50	1315.00	382.81	-0.89	40.05	106.08	355.16	507.72	309.31	109.79	308.97	305.00	5.15	N/A	N/A		93039.06
9/17/99 19:30	.....	74.11	15.65	396.19	958.92	1307.13	384.43	-0.36	40.73	106.01	354.53	507.55	308.92	110.30	309.05	304.83	5.41	N/A	N/A		93367.19
9/17/99 19:32	.....	75.56	16.31	394.12	962.02	1310.06	388.53	-0.07	40.87	105.98	354.36	507.95	308.77	111.14	309.72	304.53	5.31	N/A	N/A		94429.69
9/17/99 19:34	.....	74.71	16.83	399.79	964.89	1319.75	387.73	-0.21	41.68	105.91	354.33	508.59	309.05	111.25	310.33	304.55	5.09	N/A	N/A		95046.88
9/17/99 19:36	.....	73.97	18.21	399.82	964.42	1329.56	391.52	-0.19	41.81	105.77	354.69	509.33	309.42	110.97	310.86	304.66	5.05	N/A	N/A		95492.19
9/17/99 19:38	.....	72.40	18.11	404.72	960.98	1335.06	393.32	-0.41	42.08	105.73	354.77	509.64	309.70	110.12	311.06	304.84	5.35	N/A	N/A		95164.06
9/17/99 19:40	.....	72.42	18.62	406.27	958.02	1332.00	397.22	-0.64	41.30	105.68	354.47	509.48	309.83	110.01	310.36	304.97	5.18	N/A	N/A		95101.56
9/17/99 19:42	.....	71.93	19.18	406.55	956.84	1327.00	398.84	-0.87	41.21	105.68	354.22	509.08	309.61	109.66	309.63	304.95	5.03	N/A	N/A		95082.03
9/17/99 19:44	.....	72.62	19.73	403.67	958.28	1319.31	399.90	-0.51	41.08	105.60	354.34	508.67	309.48	109.98	309.50	304.88	5.26	N/A	N/A		95023.44
9/17/99 19:46	.....	72.94	20.17	404.81	960.69	1318.31	398.77	-0.30	42.14	105.39	354.78	509.08	309.64	110.63	310.13	304.73	5.28	N/A	N/A		95007.81
9/17/99 19:48	.....	72.94	20.61	401.64	961.67	1317.31	397.89	-0.51	41.73	105.27	354.81	509.08	309.77	110.35	310.00	304.69	5.09	N/A	N/A		95078.13
9/17/99 19:50	.....	72.90	20.79	401.48	961.95	1322.13	395.38	-0.24	42.07	105.19	354.42	509.16	309.75	110.74	310.22	304.72	5.25	N/A	N/A		95246.09
9/17/99 19:52	.....	72.56	21.07	399.87	960.95	1326.19	394.50	-0.26	41.42	105.10	354.20	509.25	309.42	110.31	309.97	304.66	5.44	N/A	N/A		95523.44
9/17/99 19:54	.....	71.41	20.83	401.44	960.05	1329.81	393.16	-0.63	41.66	105.04	354.34	509.33	309.25	110.24	309.75	304.53	5.13	N/A	N/A		95148.44

2																					
MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow	Unit 2 Main Steam Temp	Unit 2 Main Steam Pressure	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 2 Combustion Air Flow	Unit 2 Baghouse Inlet Temp	Unit 2 Baghouse Outlet Temp	Unit 2 Baghouse Pressure Drop	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate		Gross Electric Generation (KW)
9/17/99 19:56	.....	71.38	20.68	401.24	958.45	1327.19	394.34	-0.79	41.63	105.04	353.89	509.16	309.09	109.37	309.36	304.48	5.23	N/A	N/A		95093.75
9/17/99 19:58	.....	71.95	20.59	402.00	958.86	1322.44	394.81	-0.62	41.85	105.07	353.91	509.08	309.03	109.81	309.41	304.47	5.41	N/A	N/A		95050.78
9/17/99 20:00	.....	72.49	20.79	400.57	960.25	1319.56	395.88	-0.72	42.39	104.82	354.20	509.25	309.08	110.10	309.84	304.34	5.04	N/A	N/A		95105.47
9/17/99 20:02	.....	72.53	21.10	400.34	961.23	1320.13	395.46	-0.62	42.51	104.75	354.41	509.41	309.17	109.99	309.66	304.45	5.08	N/A	N/A		95136.72
9/17/99 20:04	.....	72.52	21.29	399.49	960.59	1318.94	394.09	-0.54	42.50	104.69	354.64	509.33	309.28	109.60	309.59	304.47	5.38	N/A	N/A		95187.50
9/17/99 20:06	.....	72.48	21.01	400.93	960.63	1321.50	393.78	-0.28	42.22	104.66	354.50	509.48	309.36	110.00	309.88	304.44	5.42	N/A	N/A		95281.25
9/17/99 20:08	.....	72.00	20.73	401.28	959.39	1323.44	393.38	-0.71	42.40	104.52	354.03	509.48	309.47	109.70	309.45	304.44	5.12	N/A	N/A		95148.44
9/17/99 20:10	.....	71.89	20.28	399.19	957.11	1319.75	393.80	-0.81	41.73	104.42	353.64	509.41	309.34	110.12	309.16	304.41	4.95	N/A	N/A		95109.38
9/17/99 20:12	.....	72.47	19.90	399.44	957.45	1316.00	392.69	-0.56	42.86	104.39	353.30	509.25	309.06	109.85	308.84	304.25	5.08	N/A	N/A		95027.34
9/17/99 20:14	.....	72.79	19.58	396.35	959.77	1312.81	391.48	-0.25	42.79	104.34	354.00	509.25	309.03	109.96	309.16	304.11	5.37	N/A	N/A		94781.25
9/17/99 20:16	.....	72.94	19.27	397.55	960.08	1313.44	389.35	-0.45	43.07	104.32	354.28	509.25	308.94	110.02	309.16	304.09	5.29	N/A	N/A		94695.31
9/17/99 20:18	.....	73.06	18.91	397.38	960.22	1313.38	390.52	-0.48	42.73	104.35	354.03	509.48	308.70	110.21	309.28	304.00	5.09	N/A	N/A		94718.75
9/17/99 20:20	.....	73.22	18.57	396.46	959.64	1312.44	389.99	-0.29	43.51	104.26	353.83	509.41	308.77	110.21	309.48	303.97	5.34	N/A	N/A		94796.88
9/17/99 20:22	.....	73.33	18.21	397.61	959.64	1314.38	389.12	-0.32	42.97	104.25	353.88	509.25	308.41	110.44	309.14	303.91	5.32	N/A	N/A		94804.69
9/17/99 20:24	.....	73.40	18.22	398.09	959.23	1315.63	388.99	-0.46	42.45	104.16	353.81	509.08	308.11	110.16	308.66	303.75	5.07	N/A	N/A		94914.06
9/17/99 20:26	.....	73.47	17.89	398.73	958.83	1314.19	391.25	-0.22	43.59	104.10	353.61	509.00	307.91	110.48	309.05	303.64	5.34	N/A	N/A		94964.84
9/17/99 20:28	.....	73.65	17.62	399.13	959.70	1315.44	390.63	-0.12	43.24	103.99	353.72	509.00	307.94	110.75	309.30	303.58	5.23	N/A	N/A		94835.94
9/17/99 20:30	.....	73.73	17.60	400.74	959.64	1315.38	392.45	-0.24	42.56	103.72	353.47	509.08	308.05	110.71	309.19	303.59	5.39	N/A	N/A		94875.00
9/17/99 20:32	.....	73.85	17.60	400.51	959.47	1316.44	394.04	-0.21	42.53	103.59	353.39	508.84	307.86	110.98	309.09	303.63	5.25	N/A	N/A		94851.56
9/17/99 20:34	.....	73.90	17.92	400.59	959.80	1317.19	394.04	-0.14	43.08	103.41	353.28	508.92	307.97	111.08	309.17	303.58	5.42	N/A	N/A		94957.03
9/17/99 20:36	.....	73.93	17.66	400.16	960.14	1317.75	394.86	-0.31	42.67	103.05	353.64	508.67	308.06	110.80	308.78	303.45	5.26	N/A	N/A		95031.25
9/17/99 20:38	.....	73.97	17.49	404.57	960.33	1318.94	395.06	-0.17	43.31	102.63	353.72	508.84	308.03	111.53	308.94	303.41	5.13	N/A	N/A		95097.66
9/17/99 20:40	.....	74.03	17.56	404.05	959.98	1319.31	396.73	-0.16	44.24	102.10	353.83	508.77	308.02	111.19	308.91	303.36	5.41	N/A	N/A		95109.38
9/17/99 20:42	.....	74.05	18.03	407.39	959.67	1320.25	397.50	-0.14	44.02	101.54	353.34	509.08	307.78	111.59	308.83	303.31	5.22	N/A	N/A		95152.34
9/17/99 20:44	.....	74.04	17.97	404.93	958.98	1320.38	398.78	-0.23	43.61	101.20	353.05	509.41	307.73	111.63	308.81	303.25	5.16	N/A	N/A		95242.19
9/17/99 20:46	.....	74.06	17.90	404.11	959.88	1320.94	397.64	-0.31	43.69	100.96	352.81	509.56	307.63	111.23	308.66	303.20	5.40	N/A	N/A		95222.66
9/17/99 20:48	.....	73.98	18.21	406.09	959.98	1324.44	397.11	-0.26	44.14	101.34	352.39	509.41	307.47	111.52	308.98	303.16	5.32	N/A	N/A		95359.38
9/17/99 20:50	.....	73.90	18.29	406.52	959.09	1323.06	398.08	-0.50	43.46	101.31	352.31	509.41	307.45	111.52	308.84	303.19	4.98	N/A	N/A		95390.63
9/17/99 20:52	.....	73.95	18.28	406.52	959.33	1323.25	399.46	-0.41	43.93	100.73	352.41	509.64	307.33	111.89	308.41	303.05	4.87	N/A	N/A		95242.19
9/17/99 20:54	.....	73.97	18.59	406.59	959.36	1321.13	399.97	-0.10	44.64	99.99	352.63	509.89	307.17	111.92	308.19	302.97	5.29	N/A	N/A		95183.59
9/17/99 20:56	.....	74.01	18.85	406.07	960.14	1323.69	399.99	-0.04	44.77	99.49	352.77	509.97	306.83	112.25	307.75	302.80	5.41	N/A	N/A		95210.94
9/17/99 20:58	.....	73.96	18.70	405.93	959.88	1322.50	399.28	-0.51	44.31	98.93	352.70	509.89	306.59	111.79	307.27	302.64	5.15	N/A	N/A		95375.00
9/17/99 21:00	.....	73.98	18.67	405.09	959.61	1323.63	398.56	-0.79	43.79	98.52	352.53	509.81	306.30	111.62	306.97	302.50	4.80	N/A	N/A		95382.81
9/17/99 21:02	.....	73.85	19.08	405.45	960.25	1323.63	397.76	-0.66	44.17	98.05	352.45	509.56	306.20	111.49	306.84	302.34	5.03	N/A	N/A		95515.63
9/17/99 21:04	.....	73.84	18.99	404.59	960.36	1324.69	397.66	-0.40	44.04	97.73	351.98	509.48	306.03	111.58	306.78	302.30	5.38	N/A	N/A		95476.56
9/17/99 21:06	.....	73.78	19.05	404.51	960.17	1323.50	397.54	-0.65	44.53	97.69	351.47	509.41	305.88	111.20	306.47	301.95	5.25	N/A	N/A		95472.66
9/17/99 21:08	.....	73.79	19.37	405.34	960.14	1323.13	398.48	-0.64	43.91	97.79	351.09	509.41	305.75	111.66	306.34	301.72	5.00	N/A	N/A		95339.84
9/17/99 21:10	.....	73.81	19.10	405.83	960.08	1321.88	398.76	-0.86	44.65	97.93	350.97	509.48	305.83	111.27	306.48	301.56	4.93	N/A	N/A		95304.69
9/17/99 21:12	.....	73.80	19.25	405.12	960.02	1323.06	398.06	-0.49	44.94	98.04	351.39	509.41	305.97	111.39	306.69	301.48	5.11	N/A	N/A		95371.09
9/17/99 21:14	.....	73.77	19.62	403.52	959.70	1322.88	397.75	-0.39	44.78	98.00	351.73	509.41	306.16	111.11	306.61	301.53	5.29	N/A	N/A		95468.75
9/17/99 21:16	.....	73.68	19.41	404.99	960.17	1325.00	396.65	-0.42	45.19	97.75	351.22	509.33	306.16	111.51	306.77	301.45	5.25	N/A	N/A		95570.31
9/17/99 21:18	.....	73.60	19.23	404.21	959.98	1325.63	397.21	-0.63	44.45	97.46	351.03	509.41	306.22	111.53	306.53	301.47	5.09	N/A	N/A		95621.09
9/17/99 21:20	.....	73.41	19.35	404.54	959.98	1324.81	397.21	-0.64	45.09	97.26	351.17	509.33	305.94	111.33	306.02	301.28	5.10	N/A	N/A		95535.16
9/17/99 21:22	.....	72.80	19.42	403.14	959.33	1326.19	397.27	-0.43	45.21	96.98	351.34	509.48	305.70	111.39	305.91	301.11	5.37	N/A	N/A		95167.97
9/17/99 21:24	.....	72.94	19.13	401.92	958.11	1320.50	397.33	-0.64	44.87	96.79	351.03	509.16	305.39	110.92	305.28	300.89	5.35	N/A	N/A		95070.31
9/17/99 21:26	.....	73.70	19.16	402.98	960.17	1317.69	396.73	-0.68	44.64	96.61	351.02	509.48	305.20	111.20	305.91	300.66	5.11	N/A	N/A		95027.34
9/17/99 21:28	.....	73.75	19.32	404.98	960.86	1318.94	396.40	-0.72	44.49	96.50	350.98	509.56	305.19	111.39	305.81	300.61	4.84	N/A	N/A		95089.84
9/17/99 21:30	.....	73.69	19.31	404.55	960.42	1320.13	396.26	-0.54	44.43	96.41	351.00	509.64	305.22	111.27	305.78	300.64	5.16	N/A	N/A		95242.19
9/17/99 21:32	.....	73.69	19.29	406.26	959.73	1321.31	397.23	-0.26	44.90	96.28	351.02	509.73	305.39	111.44	305.97	300.64	5.33	N/A	N/A		95332.03
9/17/99 21:34	.....	72.78	19.43	401.40	960.33	1326.00	396.96	-0.57	45.35	96.11	350.95	509.48	305.34	111.14	305.84	300.58	5.08	N/A	N/A		95093.75
9/17/99 21:36	.....	72.13	19.11	401.47	959.73	1327.81	394.30	-0.99	44.25	95.88	350.80	509.25	305.41	110.73	305.16	300.42	4.84	N/A	N/A		94882.81
9/17/99 21:38	.....	72.57	19.16	402.05	959.05	1324.81	394.04	-0.87	44.14	95.76	350.97	509.00	305.59	110.57	305.36	300.25	4.84	N/A	N/A		94984.38
9/17/99 21:40	.....	73.02	19.17	402.16	959.61	1322.06	394.05	-0.43	44.44	95.68	350.73	508.84	305.69	110.73	305.41	300.16	5.15	N/A	N/A		95117.19
9/17/99 21:42	.....	73.05	18.96	402.77	959.67	1321.56	395.66	-0.45	44.70	95.65	350.47	508.84	305.56	110.73	305.09	300.09	5.33	N/A	N/A		95140.63
9/17/99 21:44	.....	73.24	19.15	403.30	960.05	1320.06	396.98	-0.51	44.57	95.59	350.52	508.92	305.42	110.58	304.88	300.02	5.25	N/A	N/A		95132.81
9/17/99 21:46	.....	73.33	19.46	403.56	960.63	1322.69	396.22	-0.33	44.61	95.55	350.56	508.84	305.36	110.83	305.13	300.02	5.40	N/A	N/A		95199.22
9/17/99 21:48	.....	72.93	19.46	403.05	960.86	1323.81	395.97	-0.45	45.52	95.59	350.34	509.00	305.28	110.69	305.09	299.91	5.19	N/A	N/A		95210.94
9/17/99 21:50	.....	72.65	19.53	402.26	960.02	1324.44	396.20	-0.73	44.42	95.61	349.86	509.08	305.14	110.67	304.84	299.91	4.86	N/A	N/A		95179.69

2																				
MM/DD/YY HH:MM	Unit 2 Ammonia Flow (Gal/min)	Unit 2 Coal Feeders (Klb/hr)	Unit 2 Limestone Feeders (Klb/hr)	Unit 2 Main Steam Flow	Unit 2 Main Steam Temp	Unit 2 Main Steam Pressure	Unit 2 Feedwater Flow (Klb/hr)	Unit 2 Furnace Draft (In H2O)	Unit 2 Windbox Pressure (psig)	Unit 1 Air Heater Air Inlet Temp	Unit 1 Air Heater Air Outlet Temp	Unit 1 Air Heater Gas Inlet Temp	Unit 1 Air Heater Gas Outlet	Unit 2 Combustion Air Flow	Unit 2 Baghouse Inlet Temp	Unit 2 Baghouse Outlet Temp	Unit 2 Baghouse Pressure Drop	Unit 2 Reheater Steam Flow	Unit 2 Gas Recirc Rate		Gross Electric Generation (KW)
9/17/99 21:52	.....	72.73	19.62	402.66	959.20	1320.13	396.82	-0.83	44.33	95.61	349.39	509.00	305.03	110.34	304.78	299.84	4.91	N/A	N/A		95117.19
9/17/99 21:54	.....	73.29	19.91	402.68	959.73	1318.13	396.49	-0.56	44.72	95.59	349.09	509.08	304.95	110.34	304.98	299.72	5.27	N/A	N/A		95093.75
9/17/99 21:56	.....	73.45	20.29	403.74	961.02	1319.00	396.01	-0.29	45.70	95.51	349.20	509.08	304.98	110.59	305.31	299.67	5.49	N/A	N/A		95144.53
9/17/99 21:58	.....	73.29	20.51	404.56	960.86	1323.50	396.14	-0.34	44.72	95.32	349.56	509.41	305.03	110.88	305.56	299.66	5.26	N/A	N/A		95312.50
9/17/99 22:00	.....	71.91	20.34	405.09	960.36	1326.44	395.78	-0.81	44.75	95.26	349.17	509.25	305.05	110.34	305.34	299.59	4.98	N/A	N/A		95195.31
9/17/99 22:02	.....	70.06	19.77	399.42	959.33	1326.44	394.51	-0.93	45.21	95.27	349.48	508.77	304.72	109.80	305.11	299.64	4.91	N/A	N/A		94617.19
9/17/99 22:04	.....	70.39	19.56	399.98	958.61	1323.81	392.63	-0.83	44.12	95.29	349.91	508.36	304.22	109.28	304.23	299.53	5.17	N/A	N/A		94296.88
9/17/99 22:06	.....	71.07	19.90	397.89	959.36	1320.06	393.25	-0.61	44.62	95.34	350.22	508.03	303.78	109.53	304.34	299.44	5.26	N/A	N/A		94281.25
9/17/99 22:08	.....	71.18	20.03	399.25	960.08	1318.69	392.20	-0.72	43.61	95.21	350.31	508.03	303.69	109.72	304.30	299.17	5.02	N/A	N/A		94335.94
9/17/99 22:10	.....	71.58	19.90	397.99	960.02	1317.00	393.29	-0.53	44.58	95.16	350.16	508.11	303.53	110.10	304.14	299.17	5.04	N/A	N/A		94476.56
9/17/99 22:12	.....	71.64	19.55	399.39	960.17	1317.56	391.75	-0.36	44.85	94.96	350.16	508.03	303.33	109.94	304.38	299.06	5.35	N/A	N/A		94585.94
9/17/99 22:14	.....	71.59	20.14	398.48	959.70	1318.38	392.66	-0.27	45.25	94.82	349.97	508.03	303.09	110.36	304.19	298.94	5.33	N/A	N/A		94578.13
9/17/99 22:16	.....	71.48	19.93	398.55	959.70	1317.56	391.95	-0.60	44.45	94.73	349.52	508.11	302.88	109.81	304.16	298.89	5.05	N/A	N/A		94472.66
9/17/99 22:18	.....	71.52	19.58	399.29	960.36	1317.75	391.49	-0.30	45.86	94.68	349.58	508.20	302.78	110.43	304.28	298.91	5.16	N/A	N/A		94335.94
9/17/99 22:20	.....	71.07	19.53	395.47	960.36	1320.31	392.18	-0.30	44.81	94.56	349.80	508.36	302.92	109.86	304.25	298.84	5.39	N/A	N/A		94101.56
9/17/99 22:22	.....	70.44	19.11	398.11	959.98	1322.13	389.40	-0.72	44.69	94.71	349.91	508.28	302.84	109.50	303.97	298.69	5.19	N/A	N/A		93789.06
9/17/99 22:24	.....	70.91	19.19	400.14	959.02	1320.88	390.82	-0.73	44.60	94.85	349.52	508.11	302.75	109.63	303.66	298.61	5.04	N/A	N/A		93902.34
9/17/99 22:26	.....	70.98	19.44	397.27	960.08	1323.69	391.50	-0.47	44.24	94.77	349.45	508.11	302.73	109.72	304.09	298.64	5.38	N/A	N/A		94132.81
9/17/99 22:28	.....	70.69	19.51	400.22	960.11	1323.44	391.56	-0.43	44.91	94.61	349.70	507.95	302.73	109.77	304.14	298.61	5.43	N/A	N/A		94246.09
9/17/99 22:30	.....	70.85	19.56	397.79	960.02	1321.44	391.71	-0.73	44.26	94.50	349.42	507.80	302.80	109.38	304.02	298.44	5.08	N/A	N/A		94328.13
9/17/99 22:32	.....	71.22	19.73	400.37	960.14	1318.00	391.95	-0.46	43.92	94.30	349.02	507.72	302.70	109.96	303.98	298.48	5.14	N/A	N/A		94351.56
9/17/99 22:34	.....	71.62	20.06	400.78	960.89	1318.75	392.76	-0.20	44.47	94.10	348.83	507.88	302.75	109.82	304.30	298.42	5.47	N/A	N/A		94539.06
9/17/99 22:36	.....	71.84	20.49	402.67	960.73	1317.56	393.25	-0.13	44.21	93.94	348.88	508.03	302.81	110.01	304.44	298.41	5.50	N/A	N/A		94636.72
9/17/99 22:38	.....	72.39	20.76	403.15	960.86	1319.94	394.61	-0.26	45.22	93.89	348.84	508.20	302.81	110.32	304.66	298.38	5.12	N/A	N/A		95097.66
9/17/99 22:40	.....	72.15	20.84	404.07	960.11	1322.13	395.81	-0.47	44.49	93.88	349.20	508.52	302.97	110.40	304.95	298.52	4.83	N/A	N/A		95265.63
9/17/99 22:42	.....	72.02	20.90	404.34	959.05	1321.50	396.01	-0.35	44.67	93.87	349.33	508.77	303.14	110.30	304.89	298.66	5.09	N/A	N/A		95472.66
9/17/99 22:44	.....	72.05	21.01	402.96	960.30	1321.75	396.70	-0.09	45.25	93.88	349.38	509.16	303.39	110.29	305.09	298.78	5.38	N/A	N/A		95398.44
9/17/99 22:46	.....	72.02	21.18	404.82	960.14	1322.44	396.56	-0.31	44.36	93.88	349.66	509.16	303.50	110.60	304.86	298.70	5.33	N/A	N/A		95496.09
9/17/99 22:48	.....	71.96	21.24	404.87	959.88	1323.69	397.06	-0.49	43.75	93.85	349.83	509.33	303.58	110.47	304.72	298.80	4.98	N/A	N/A		95539.06
9/17/99 22:50	.....	71.91	21.50	403.52	959.39	1321.94	397.13	-0.44	43.92	93.95	349.78	509.48	303.70	110.02	305.14	298.84	5.24	N/A	N/A		95546.88
9/17/99 22:52	.....	71.96	21.18	403.83	959.42	1321.06	396.81	-0.36	44.88	94.03	349.48	509.00	303.83	109.97	304.78	298.84	5.32	N/A	N/A		95382.81
9/17/99 22:54	.....	71.98	21.21	403.13	960.05	1320.56	396.30	-0.59	44.19	93.93	349.17	509.16	303.73	109.82	304.53	298.78	5.06	N/A	N/A		95324.22
9/17/99 22:56	.....	71.67	21.14	401.10	960.59	1325.38	397.21	-0.42	44.98	93.84	349.55	509.25	303.53	110.12	304.53	298.70	5.21	N/A	N/A		95195.31
9/17/99 22:58	.....	70.26	20.86	402.22	958.83	1325.44	396.20	-0.71	43.77	93.83	349.97	508.77	303.30	108.98	303.48	298.63	5.43	N/A	N/A		94574.22
Average	**.....**	**72.77**	**19.17**	**400.33**	**959.88**	**1320.60**	**393.45**	**-0.46**	**42.55**	**101.66**	**352.96**	**509.00**	**307.60**	**110.39**	**308.15**	**302.89**	**5.18**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**94883.96**

PREVENTIVE MAINTENANCE WORK ORDER

Date: 09/15/99 Work Order No.: 909722

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Equipment No. : JC-B-H1500A Criteria: C3 Work Priority: 5
Equip Location: Safety (Y/N): N
Equipment Desc: FEEDER COAL 1A1 Equipment Code: FDR
C/C-Labor Acct: 605-601100 Orig Date: 4/17/99
Work Location : AT FEEDERS Orig Time: 7:39
Requested By : PM Fault Code: PM Action Code: M DUE DATE: 5/05/99
Planned By : DFS LPM Date: 4/24/99 SCHED DATE: 4/26/99
Approved By : WEG SCHED TIME: : 0

WORK REQUESTED/PROBLEM: DO ATTACHED SEMI-ANNUAL PM ON THIS EQUIPMENT.

Support Required: 153, 140, 131 METER READING: _____

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PROBLEMS FOUND/ COMMENTS

SELF TEST 1) -.05 TRIM 0) 201 8) 1897 1898
2) .72 1) 996.4 9) 7637 7647
3) .59

GREASED AND CHECKED IT OVER. CHANGED OIL IN

_____

_____

_____

_____

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_____

Completed By: _____ Completed Date: ____/____/____

SIGN OFF: Production ____/____/____ ___:___ Maint ____/____/____ ___:___
mo day yr time mo day yr time

Signed: _____ Signed: _____

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STATUS CHANGES

Status:____ Date:__/__/__ Time:___:___ Status:____ Date:__/__/__ Time:___:___

EMPLOYEE #	LABOR ACTIVITY	HOURS	TYPE	MATERIAL PART/STOCK #_____	QTY	ACCOUNT #
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

Equipment No.: JC-B-H1500A Work Order No.: 909722

ADDITIONAL NOTES

gear boxes. Cleaned light bulb.

Equipment No. : JC-B-H1500A
Equipment Desc: FEEDER COAL 1A1

Work Order No.: 909722
Date: 09/15/99

PROCEDURE: JCS1

Revised by: D. Stairs 1/20/99 Approved:

PURPOSE

The following procedure is a guide for plant instrumentation and electrical technicians for calibrating the Stock Gravimetric Gob and Limestone Feeders.

SCOPE

The Stock Equipment Company Gravimetric Gob and Limestone Feeders for Unit 1 and Unit 2 CFBs at Scrubgrass Generating Plant.

RESPONSIBILITY

The gravimetric feeder calibrations will be performed by Scrubgrass Generating Plant Instrumentation and Electrical Technicians.

REFERENCES

Information for this procedure was obtained from the Stock Equipment Company vendor O&M manual for the limestone and gob gravimetric feeders.

DESCRIPTION

Limestone and Gob Gravimetric Feeder Calibration

The gravimetric feeder should be calibrated at start-up, after one month of operation, after every six months thereafter, and after any of the following occurrences: belt replacement, weigh roller adjustment, or replacement of the load cell module, the CPU board, or the microprocessor program chip.

Calibration consists of the elimination of system tare, which includes the weight of the weigh roller, load cell support assembly, and the feeder belt. It also involves measuring belt speed and its relationship to motor speed; and calibrating the load cell output with a known weight.

Cancellation of the feeder tare is performed by measuring the average weighing system output over exactly one belt revolution and then subtracting this amount from the total weight measurement. When the belt is running empty, it produces a zero average contribution to the totalized weight. In normal operation, the average tare is automatically subtracted from the gross weight of

the belt. Therefore, only the weight on the belt is reflected as totalized weight.

During the same time the empty belt is being weighed, the belt speed is accurately measured. This is done by measuring the time it takes the retroreflective tape marker on the belt to travel between two fixed points. This parameter is measured a number of times to determine repeatability and to compensate for variations in belt thickness. From this data, the belt speed is calculated and the relationship between belt speed and motor speed is established. The feeder operates with zero belt slippage. Therefore, the ratio of the belt speed to average motor speed is constant. The ratio is stored in memory and is used to determine the belt speed for any motor speed.

The span of the weighing system is set after the tare has been measured. A known weight is applied to the weigh roller and average output over exactly one belt revolution is measured. This calibrated span factor is stored in memory and used to accurately determine the value of the weight of the material on the belt.

T calibrate the feeder, the Stock Equipment Company supplied ibration kit is required. In principle, the calibration procedure involves placing a test weight on the weigh roller and precisely measuring one revolution of the belt and the weight on a fixed length of belt. This data is processed using an algorithm developed from the results of the material tests and guarantees the specified feeder accuracy without the need of test chains or other material tests.

Limestone and Gob Feeder Calibration Procedure

BEFORE CALIBRATING THE FEEDER, ALLOW IT TO OPERATE FOR 15 TO 30 MINUTES TO LIMBER THE BELT.

1. OBTAIN A SAFETY CLEARANCE FROM OPERATIONS FOR THE INLET VALVE ABOVE THE FEEDER AND THE FEEDER DISCHARGE VALVE. BEFORE RED TAGGING THE FEEDER INLET AND DISCHARGE VALVES, CLOSE THE INLET VALVE ABOVE THE FEEDER AND EMPTY THE FEEDER BELT. Press the OFF (white) key. CLOSE THE FEEDER DISCHARGE VALVE AND HANG THE RED TAGS ON THE INLET AND DISCHARGE VALVES.

2. Using a 9/16" socket wrench, open the feeder weigh span and access doors. Also open the door the microprocessor control cabinet.

Adjust the belt to proper tension and tracking according to the procedure listed below:

a. Belt Tension

PROCEDURE: JCS1 (Continued)

Belt tensioning is accomplished by means of a stack of Belleville washers located in each belt take-up assembly at the inlet of the feeder. Take-up dimensions are calculated using the average spring rate Belleville washers and average required belt tension. Actual belt tension required in operation may vary. Therefore, a belt is properly tensioned when the minimum tension necessary to start the belt fully-loaded without slippage is being applied. If the feeder was in operation without any maintenance performed on the belt, feeder idlers or drive rollers, the belt tension should not have to be adjusted.

Belt tension adjustments, when necessary, can be made most efficiently while the feeder is operating. Adjust tension by turning both adjustment screws in the same direction until the proper measurement is obtained.

b. Belt Tracking

The purpose of the belt tracking is to center the belt on the drive and take-up pulleys. This prevents possible damage from the belt running off the pulley sides. It also allows smooth, uninterrupted movement of the belt through the weigh span area, so that weighing accuracy is not compromised.

Tracking Procedure: Feeder Not In Operation

1. Open the feeder end doors and turn on the work lights.

2. If the belt has just been replaced, verify that the take-up pulley is square with the feeder body.
3. Adjust the belt tension.

4. Make a chalk mark across the width of the belt surface to indicate one revolution of the belt. Remove the ice cube relay labeled FB and operate the feeder in LOCAL with a speed set point of 200 RPM in address 01 in the feeder set-up. Observe the belt closely for at least 20 belt revolutions for signs of humping. Operate the feeder in local at maximum speed (1700 RPM in address 01) for at least 20 belt revolutions. If no humping appears the belt can be considered properly tracked.

5. In the event that humping occurs at the pulleys, the belt is first tracked on the drive pulley. Tighten one turn on the appropriate belt tension screw to steer the belt in the desired direction.

PROCEDURE: JCS1 (Continued)

The effect of this adjustment should be observed for at least five belt revolutions at slow speed. If no humping appears, operate the feeder at maximum speed for at least 20 belt revolutions. continue this procedure until the belt is properly tracked on the drive pulley.

6. After tracking adjustments are complete, recheck belt tension adjustments.

c. Weigh Roller

The alignment between the weigh roller and the two span rollers should be within + 0.002" on each side for an accurate weight reading.

1. Mount the calibration weight beneath both load cells.

2. Insert the checking bars (A2451-1) through the discharge end access door of the feeder, adjacent to the sides of the belt, and with their machined surfaces at the weigh span and weigh rollers.

3. Beginning on either side, insert a .005 inch shim between each roller and the machined surface of the checking bar (three places).

4. Loosen the jam nut, then turn the adjustment block to lower the weigh roller.

5. Slowly turn the adjustment block to raise the weigh roller until the shim tension at all three points is equal. Then tighten the jam nut.

6. Similarly adjust the weigh roller on the opposite side of the feeder.

7. Remove the checking bars and calibration weight.

8. The feeder must be calibrated after the weigh roller adjustment.

4. Apply four strips of retroreflective adhesive tape from the calibration kit to the belt curb on the same side as the control enclosure. Each strip should be oriented vertically on the belt curb and located entirely located entirely between two flexing slits in the belt, rather than spanning over a slit. Place one strip each outboard of the drive and take-up pulleys, a third adjacent to the weigh roller, and the fourth on the return belt beneath the third.

5. Verify that all four tapes are spaced at distance greater

PROCEDURE: JCS1 (Continued)

than one calibration probe span length (36") from each other. (If four tapes cannot fit on the belt at a separation of greater than one calibration probe span length from each other, two tapes spaced equidistantly from each other are to be used.) Two tapes can only be used on the limestone feeders.

NOTE

THE TAPES MAY STAY ATTACHED TO THE BELT FROM ONE CALIBRATION TO THE NEXT. BEFORE SUBSEQUENT CALIBRATIONS, INSPECT AND CLEAN OFF THE TAPES AT THIS POINT IN THE PROCEDURE.

6. Align the weigh roller and clean off any dirt accumulation at each drag link pivot point.

7. Remove the protective caps from the calibration probes (Y8406-1) and thread one probe into each hole in the weigh plate weldment.

NOTE

ALTHOUGH THE TWO PROBES ARE NOT DEDICATED TO PARTICULAR LOCATIONS, NOTE THAT THE PROBE LOCATION NEAREST TO THE FEEDER INLET IS DESIGNATED LOCATION A AND THE PROBE LOCATION NEAREST TO THE DISCHARGE IS DESIGNATED LOCATION B.

CAUTION

DISCONNECT POWER TO THE FEEDER BY OPENING THE MAIN CIRCUIT BREAKER OR DISCONNECT SWITCH BEFORE CONNECTING THE PROBE CABLES TO THE RECEPTACLES CAL A AND CAL B. REAPPLY POWER AFTER THE PROBE CABLES ARE CONNECTED.

8. Connect the probe cables (X9633-3) to the probes and the receptacles in the microprocessor control cabinet. Connect probe A to receptacle CAL A and probe B to receptacle CAL B.

9. Compare the calibration weight against the value that is stored in the microprocessor memory. The correct value is stamped on the calibration weight (our calibration weight weighs 73.33 lbs.). To display the value stored in memory, press: SHIFT(yellow) SET-UP(yellow) 13(blue).

10. If the calibration weight displayed from memory is incorrect, enter the correct calibration weight as follows. Press: 71.33(blue) ENTER(blue).

Compare the desired calibration speed against the value stored in the microprocessor memory. To display the value stored in memory, press: SHIFT(yellow) SET-UP(yellow) 01(blue), and the set-up address value will be displayed.

PROCEDURE: JCS1 (Continued)

If the calibration speed is incorrect, enter the desired value as follows, press: 1000(blue) ENTER(blue), and the set-up address and the new value will be displayed.

12. Verify that the calibration weight is removed from both load cells.

13. Initiate tare and belt travel calibration. Press: SHIFT(yellow) CAL 1(yellow). The feeder will now begin to operate under control of the microprocessor. Observe the TOTALIZED WEIGHT display to verify that the calibration is proceeding in the following manner:

a. The display will clear and a zero will be shown at the extreme right of the display.

b. The amber calibration light is energized.

c. A 25-second delay is initiated while the belt drive motor is brought up to calibration rpm and is stabilized there.

d. When the display expires the first tape passing probe A causes the display to read ".1". The decimal point is turned off when the tape passes probe B. Each following tape turns on the decimal point when it passes probe A and turns it off when it passes probe B. In addition, as each tape passes probe A, the number on the display increases by one.

e. As the ninth tape crosses probe A, the belt will have traveled exactly two revolutions (or four revolutions if only two tapes were applied). The drive motor is deenergized and the display shows the percentage repeatability of the error of the eight belt speed measurements just performed.

f. If the error is greater than the programmed limit (0.2), the display returns to zero and the calibration is repeated until a measurement accuracy within the programmed limits is obtained. If this happens, exit the calibration by pressing: SHIFT(yellow) EXIT(yellow) and examine the tapes applied to the belt or the calibration probes to see if there is problem. Also troubleshoot for problems in the motor speed control or with belt travel. Correct the problem and restart the calibration of the tare and belt travel by pressing: SHIFT(yellow) CAL 1(yellow).

14. If the tare and belt travel calibration are successful, the amber ADD WEIGHT indicator is energized and the expected value of the calibration weight appears on the display

PROCEDURE: JCS1 (Continued)

(71.33). If the value shown is incorrect, press SHIFT(yellow) EXIT(yellow) to stop the calibration. Refer to section 10 of this procedure to enter the correct calibration weight value.

15. When the correct calibration weight is displayed, mount the calibration weight beneath both load cells.

16. Initiate span calibration. Press: SHIFT(yellow) CAL 2 (yellow).

a. The belt drive motor is energized and, after approximately 25 seconds, the display shows zero and begins to count the passage of the eight tapes (i.e., tare and belt travel calibration).

b. After the passage of the ninth tape (not displayed), the feeder is deenergized and its displays return to their normal functions.

17. CALIBRATION CHECK

P comparing the current calibration to the one done vious to it, the operator can determine how repeatable the calibration is and how it may have changed since the last time the feeder was calibrated. The microprocessor controls calculate the percentage change between the two calibrations when the commands are entered as follows:

a. To compare and record the tare percent change, press: SHIFT(yellow) SELF TEST(yellow) 1(blue).

b. To compare and record belt travel percent change, press: SHIFT(yellow) SELF TEST(yellow) 2(blue).

c. To compare and record span percent change, press: SHIFT(yellow) SELF TEST(yellow) 3(blue).

The results of all three calibrations should be + 1.5%. If they fall outside these limits, check the suspension of the calibration weight from the load cell for sticking or other unusual characteristics; see if mechanical maintenance was performed since the last calibration that may have caused the difference; or troubleshoot the feeder; then repeat the entire calibration procedure.

NOTE

NUMBERS 99 AT THE EXTREME LEFT OF THE DISPLAY REPRESENT A NEGATIVE SIGN, MEANING THAT THE INDICATION IS LESS THAN 0. THE SIGN OF THE CHANGE (PLUS OR MINUS) IS SHOWN IN SUCH A WAY THAT A POSITIVE ERROR INDICATES THAT THERE WAS TO MUCH MATERIAL BEING

PROCEDURE: JCS1 (Continued)

DELIVERED BEFORE THE CALIBRATION AND A NEGATIVE ERROR INDICATES THAT THERE WAS NOT ENOUGH MATERIAL BEING DELIVERED.

CAUTION

DISCONNECT THE POWER TO THE FEEDER BY OPENING THE MAIN CIRCUIT BREAKER OR DISCONNECT SWITCH BEFORE DISCONNECTING THE PROBE CABLES FROM RECEPTACLES CAL A AND CAL B.

INPUT AND OUTPUT ALIGNMENT PROCEDURE

The feeder controls can respond to a feedrate demand signal and return an isolated analog feedback signals. When the input and output modules associated with these signals are used with the plants control system, the must be adjusted prior to operating the feeder under remote control. IF THIS IS PERFORMED ON A GOB FEEDER WHILE THE BOILER IS ON LINE AT SCRUBGRASS, THE FEEDER PID CONTROLLER FOR THE FEEDER YOU ARE CALIBRATING (A SIDE OR B SIDE) MUST BE PLACED IN MANUAL CONTROL BEFORE THE INPUT AND OUTPUT ALIGNMENT IS PERFORMED. THIS WILL PREVENT THE BIAS CONTROL FOR ITS PAIRED FEEDER FROM INCREASING AND DECREASING WHEN THE OUTPUT ALIGNMENT IS PERFORMED AND REDUCE A CHANCE OF A PROCESS UPSET IN T[illegible] BOILER. ALSO INFORM THE CONTROL ROOM OPERATOR THAT THE P[illegible]MARY AIR AND UPPER SECONDARY AIR WILL BE EFFECTED WHEN THE OUTPUT SPAN ALIGNMENT IS PERFORMED. THE DCS WILL SEE A FALSE 68.86 KLBS/HR FOR THE FEEDER THAT IS BEING CALIBRATED. THE 68.86 KLBS/HR WILL BE ADDED TO THE TOTAL COAL FOR THAT BOILER AND THE TOTAL AIR WILL BE INCREASED DUE TO THE FUEL TO AIR CURVE PROGRAMMED IN THE DCS. THIS OUTPUT SPAN ALAIGNMENT SHOULD BE PERFORMED EXPEDITIOUSLY TO PREVENT A LARGE PROCESS UPSET. IF THIS IS PERFORMED ON A LIMESTONE FEEDER WHILE THE BOILER IS ON LINE AT SCRUBGRASS, THE LIMESTONE FEEDER PID CONTROLLER FOR THE FEEDER YOU ARE CALIBRATING (UNIT 1 OR UNIT 2) MUST BE PLACED IN MANUAL CONTROL BEFORE THE INPUT AND OUTPUT ALIGNMENT IS PERFORMED. THIS WILL PREVENT THE BIAS CONTROL FOR THE PAIRED FEEDER FROM INCREASING AND DECREASING WHEN THE OUTPUT ALAIGNMENT IS PERFORMED AND REDUCE A CHANCE OF A PROCESS UPSET IN THE BOILER FOR THE SO2 CONTROL. REMEMBER TO REMIND THE CONTROL ROOM OPERATOR WHEN YOU ARE FINISHED WITH THIS STEP SO THAT THE PID CONTROLLERS THAT WERE PLACED IN MANUAL ARE RETURNED TO AUTO OR CASCADE.

1. Feeder Output Adjustment
To adjust the feeder output zero, press: SHIFT(yellow) TRIM(yellow) 0(blue).

The display shows the frequency being sent to the analog conversion card. While the feeder dcs feedback rate is [illegible]erved, press the blue up and down arrow keys to obtain 0.00 KLBS/HR. When the zero adjustment is correct, record the frequency and then press ENTER(blue) OFF(white).

PROCEDURE: JCS1 (Continued)

To adjust the feeder output span, press: SHIFT(yellow) TRIM(yellow) 1(blue).

Adjust the frequency using the up and down arrow keys to obtain 68.86 KLBS/HR for the GOB Feeders or 38.75 KLBS/HR for the limestone feeders. When the span adjustment is correct, record the frequency and then press ENTER(blue) OFF(white).

To exit an adjustment mode without changing any previous value, press: SHIFT(yellow) EXIT(yellow).

2. Feeder Input Adjustment

Apply a minimum demand signal to the feeder from the DCS feeder bias output for the feeder that is being calibrated. Then press: SHIFT(yellow) TRIM(yellow) 8(blue). Then record the value displayed. The display will show the demand signal as an equivalent frequency that corresponds to minimum demand. Perform this twice to record the repeatability.

Apply a maximum analog demand signal to the feeder from the DCS feeder bias output for the feeder that is being calibrated. Then press: SHIFT(yellow) TRIM(yellow) 9(blue). Then record the value displayed. The display will show the demand signal as an equivalent frequency a few thousand counts higher than the minimum reading; however, the absolute maximum frequency of 10KHZ should not be exceeded. Perform this twice to record the repeatability.

INPUT AND OUTPUT LINEARITY CHECK

THE INPUT AND OUTPUT LINEARITY CHECK SHOULD ONLY BE PERFORMED WHEN THE BOILER IS SHUTDOWN.

1. To test the linearity of the demand signal with the feeder running, press: SHIFT(yellow) SELF TEST(yellow) 6(blue). The display will now show the demand signal converted into an equivalent feedrate in tons per hour. All three LED's which indicate RATE, RPM and DENSITY should be deenergized. The feeder bias output from the DCS should be set to zero percent; the display should indicate the minimum feedrate as entered into the set-up parameter at Address 06 (5.01 TPH for the GOB feeders and 1.9 TPH for the limestone feeders). Increase the bias output in steps of 25, 50 and 100 percent and the display should show the corresponding feedrate in tons per hour as soon as the demand signal exceeds the minimum feedrate in Address 06.

To return the display to its normal operating mode, press the RATE(blue) key.

PROCEDURE: JCS1 (Continued)

The feeder will have to be jumpered to run in remote since the boiler will be off-line. Refer to the Stock fuel feeder electrical drawing D28167 and the limestone feeder electrical drawing D28170. To start a fuel feeder in remote, momentarily jumper TB6-4 to TB6-3. This will latch in the remote start from the dcs. The remote start can be unlatched by turning the feeder disconnect switch off. To start a limestone feeder in remote, attach a jumper between TB6-6 to TB6-3. This will latch in the remote start from the dcs. The remote start latch can be removed be removing the jumper attached to TB6-6 and TB6-3. When either the fuel or the limestone feeder is run in remote, they can be shut off by pressing the OFF(white). But remember to remove the remote start latch!

2. To test the linearity of the feedback signal, the feeder should be run in the REMOTE mode with the calibration weight engaged and the material on belt paddle switch (LSFB) closed. If the switch is not closed, linearity will be affected. Until the FEEDING LED is lit, the rate control circuit operates at the belt speed based on the density entered in the set-up parameter at Address 02. This feature prevents the feeder from running at its maximum speed while the belt is being loaded. The material on belt paddle switch (LSFB) can be forced by removing the switch cover and placing an adjustable wrench between the cam roller and cam follower on the switch. The feeder can be ran in the REMOTE mode by following the procedure the input linearity test listed above. The max. span value on the GOB feeders can not be reached with the calibration weight engaged. To achieve the max. span value, the calibration weight should be removed from one of the load cell hooks to force the feeder to change from GRAVIMETRIC to VOLUMETRIC operation. The feeder will then use the density entered in Address 02 instead of the loadcell signal to achieve the desired feedrate. The feedrate should be recorded at feeder demand signals of 0, 25, 50 and 100%. The span for the GOB feeders is 0-34.43TPH and 0-19.4TPH for the limestone feeders.

FEEDER PADDLE SWITCHES

Material On Belt Paddle Switch (LSFB)

1. Verify that the material on belt paddle switch is hanging vertically. Secure it to maintain its position if necessary.

2. Remove the switch cover, loosen the cam set screw(s) and adjust the cam(S) so that they are positioned horizontally; that is, at right angles to the switch paddle.

PROCEDURE: JCS1 (Continued)

3. Tighten the cam set screw(s), making certain that the cam(s) remain in the horizontal position.

4. Remove any device used to secure the switch paddle.

Feeder Discharge Pluggage Switch (LSFD)

1. Verify that the feeder discharge pluggage switch paddle is hanging vertically. Secure it to maintain this position if necessary.

2. Remove the switch cover, loosen the cam set screw(s) and adjust the cam(s) so that they are positioned horizontally; hat is, at right angles to the switch paddle.

3. Tighten the cam set screw(s), making certain that the cam(s) remain in the horizontal position.

4. Remove any device used to secure the switch paddle.

NOTE

R ember to sign off the red tag clearance for the feeder that is b .ng calibrated when the procedure is completed. Inform the control room operator that the calibration is complete so that operations is aware that the feeder is available for service.

Equipment No. : JC-B-H1500A
Equipment Desc: FEEDER COAL 1A1

Work Order No.: 909722
Date: 09/15/99

PROCEDURE: JLS2

U.S. OPERATING SERVICES COMPANY Scrubgrass Power Plant Volume 8 - Plant Maintenance Procedure SEMI ANNUAL INSPECTION COAL (GOB) FEEDERS - JL	Procedure 8.4JLS2 Rev O Page 1 of 2 SV8-4JLS2.DOC

Prepared by: A. Appleby 1/29/93 Approved:

PURPOSE

Preventative maintenance for increased equipment availability.

SCOPE

Stock Equipment Co. gob feeders
Boiler #1, H1500 A,B,C,D
Boiler #2, H2500 A,B,C,D

DESCRIPTION

1. Request clearance from Operations Department using the appropriate form.
2. During clearance tagging or after tags are hung, check for proper tag placement.
3. Place lock on electrical source.
4. Check all rotating parts for evidence of bearing failure or gear wear.
5. Check feeder for excessively worn or corroded parts.
6. Check for freedom of movement of the weigh system (drag links, rollers, load cells).
7. Check belt for excessive wear.
8. Check belt scraper for wear (*and proper operation on start up).
9. Clean out the load cell modules.
10. Remove any material build up on the inside of the feeder body and clean the interior surfaces of all viewing parts.
11. Perform semi-annual lubrication (see Semi Annual Lube Inspection - Procedure 8.4JLS1).
12. Check clean out conveyor chain tension and free any binding links.
13. Check for signs of oil leakage around the drive motor gear boxes.
14. Check all bolts and screws for tightness.
15. Notify Shift Supervisor/Control Room Operator that the job is completed.
16. Remove tag from the electrical source.
17. Sign off clearance and request equipment be run. Observe equipment while running for leaks, heat, noise, etc. If any exist, notify your Supervisor so a work order can be

generated.

SAFETY PRECAUTIONS

1. Follow all Scrubgrass plant clearance procedures.
2. Follow safety precautions for work around rotating equipment.

TOOLS/MATERIALS

Inspection light and extension
Adjustable wrenches
Hammers
Screwdriver
Bar scraper
Shovel
Brush
Rags
Safety lock(s)