APPENDIX A

RESULTS AND CALCULATIONS

Appendix A.1

Unit 1

Appendix A.1.1

Emissions Summary

SUMMARY OF MERCURY EMISSIONS AND REMOVAL EFFICIENCIES[1]
BRAYTON POINT GENERATING STATION (Unit #1)

Method/Component	Units	ESP Inlet[2]					Outlet Stack					I/O Removal Efficiency				
		2	3	4	5	avg	2	3	4	5	avg	2	3	4	5	avg
Ontario Hydro/ Hg																
Particle bound	*ug/dscm*	2.22	1.60	2.06	1.69	1.78	0.0053	0.5873	0.5835	0.5797	0.5835					
	mg/hr	2444	1656	2121	1764	1847	5.72	606.19	600.27	612.73	606	99.77%	63.40%	71.69%	65.27%	66.79%
Oxidized, Hg^{2+}	*ug/dscm*	3.61	2.66	2.91	2.72	2.76	4.1909	2.9366	2.4591	2.2773	2.5576					
	mg/hr	3793	2735	2965	2862	2854	4485.85	3030.95	2529.73	2407.17	2656	-18.27%	-10.84%	14.69%	15.89%	6.58%
Elemental, Hg^{0}	*ug/dscm*	0.35	0.51	0.39	0.41	0.44	0.4396	0.3566	0.3834	0.3644	0.3681					
	mg/hr	379	530	412	440	461	470.57	368.04	394.47	385.15	383	-24.09%	30.55%	4.27%	12.42%	15.75%
Total, Hg	*ug/dscm*	6.18	4.77	5.36	4.82	4.98	4.6359	3.8805	3.4260	3.2213	3.5093					
	mg/hr	6616	4921	5498	5066	5162	4962.14	4005.19	3524.46	3405.05	3645	25.00%	18.61%	35.90%	32.78%	29.10%

Method/Component	Units	Process Samples					Overall Process RE				
		2	3	4	5	avg	2	3	4	5	avg
Coal Samples											
Hg	*ug/g*	0.08	0.05	0.06	0.05	0.05	***24.78%***	***1.89%***	***26.84%***	***16.31%***	***15.01%***
Hg rate	*mg/hr*	6597	4082	4817	4069	4323					
Sulfur	*Wt%*	0.83	0.73	0.76	0.76	0.75					
Chlorine	*%*	0.03	0.07	0.07	0.09	0.08					
HHV	*Btu/lb*	13684	13756	13754	13723	13744					
Total Hg Feed Rate	*mg/hr*	**6597**	**4082**	**4817**	**4069**	**4323**					

1- Run #2 not included in reported avg. - Particlate material carried over into Oxidized fraction during inlet test, results for Run 2 reported for comparison only.

2- Inlet mg/hr calculated using ratio of measured stack exhaust flow rate for each run.

DISTRIBUTION RATIO OF SPECIATED MERCURY EMISSIONS[1]
BRAYTON POINT GENERATING STATION (Unit #1)

Method/Component	Units	ESP Inlet[2]					Outlet Stack					I/O Removal Efficiency				
		2	3	4	5	avg	2	3	4	5	avg	2	3	4	5	avg
Ontario Hydro/ Hg																
Particle bound	*mg/hr*	2444	1656	2121	1764	1847	6	606	600	613	606	99.77%	63.40%	71.69%	65.27%	66.79%
	% of Total	37%	34%	39%	35%	36%	0%	15%	17%	18%	17%					
Oxidized, Hg^{2+}	*mg/hr*	3793	2735	2965	2862	2854	4486	3031	2530	2407	2656	-18.27%	-10.84%	14.69%	15.89%	6.58%
	% of Total	57%	56%	54%	56%	55%	90%	76%	72%	71%	73%					
Elemental, Hg^0	*mg/hr*	379	530	412	440	461	471	368	394	385	383	-24.09%	30.55%	4.27%	12.42%	15.75%
	% of Total	6%	11%	7%	9%	9%	9%	9%	11%	11%	11%					
Total, Hg	*mg/hr*	6616	4921	5498	5066	5162	4962	4005	3524	3405	3645	25.00%	18.61%	35.90%	32.78%	29.10%

1- Run #2 not included in reported avg. - Particlate material carried over into Oxidized fraction during inlet test, results for Run 2 reported for comparison only.

2- Inlet mg/hr calculated using ratio of measured stack exhaust flow rate for each run.

BOILER #1
ESP INLET WEST - OHM - Runs 2, 3, 4 AND 5

Run No.	2	3	4	5	
Date:	31-Aug-99	1-Sep-99	01-Sep-99	02-Sep-99	
Start Time	14:05	08:35	14:15	08:10	
Stop Time	17:42	12:33	17:45	11:29	AVERAGES
Net Sampling Time, (minutes)	156.0	156.0	156.0	156.0	156.0
Volume of Gas Collected, (dscf)	76.940	75.322	74.727	76.385	75.844
Dry Mole Fraction	0.9250	0.9236	0.9203	0.9199	0.9222
CO_2 Concentration, (percent dry)	12.00	12.60	13.20	13.10	12.73
O_2 Concentration, (percent dry)	7.10	6.75	6.40	6.20	6.61
CO and N_2, (percent dry)	80.90	80.65	80.40	80.70	80.66
Stack Pressure, (inches of mercury)	29.39	29.31	29.31	29.27	29.32
Average Stack Temperature, (°F)	306	317	311	306	310
Stack Gas Velocity, (actual feet per minute - afpm)	4,268	4,496	4,328	4,441	4383
Stack Flowrate, (actual cubic feet per minute - acfm)	537,779	566,464	545,323	559,579	552286
Stack Flowrate, (standard cubic feet per minute - scfm)	364,178	377,144	365,894	377,394	371,153
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	336,848	348,339	336,723	347,178	342272
F-Factor	9,780				
EMISSIONS					
Hg^{tp}					
total, ug	2.964	3.056	4.293	4.580	
Concentration, ug/dscf	0.0385	0.0406	0.0574	0.0600	
Concentration, ug/dscm	1.3603	1.4326	2.0285	2.1172	
Emission Rate, mg/hr[1]	677.69	717.84	971.57	1067.08	
Emission Rate, lb/hr[1]	1.47E-03	1.56E-03	2.11E-03	2.32E-03	
Emission Rate, lb/MMBtu	1.26E-06	1.29E-06	1.79E-06	1.84E-06	
Hg^{2+} - (KCL)					
total, ug	10.00	6.20	7.00	6.30	
Concentration, ug/dscf	0.1300	0.0823	0.0937	0.0825	
Concentration, ug/dscm	4.5893	2.9065	3.3076	2.9123	
Emission Rate, mg/hr[1]	2286.40	1456.36	1584.21	1467.82	
Emission Rate, lb/hr[1]	4.97E-03	3.17E-03	3.45E-03	3.19E-03	
Emission Rate, lb/MMBtu	4.24E-06	2.62E-06	2.91E-06	2.53E-06	
Hg^{0}					
total, ug (HNO_3-H_2O_2)	0.25	0.25	0.25	0.25	
total, ug (KMnO4-H2SO4)	0.30	0.50	0.17	0.39	
total, ug	0.55	0.75	0.42	0.64	
Concentration, ug/dscf	0.0071	0.0100	0.0056	0.0084	
Concentration, ug/dscm	0.2524	0.3516	0.1985	0.2958	
Emission Rate, mg/hr[1]	125.75	176.17	95.05	149.11	
Emission Rate, lb/hr[1]	2.74E-04	3.83E-04	2.07E-04	3.24E-04	
Emission Rate, lb/MMBtu	2.33E-07	3.17E-07	1.75E-07	2.57E-07	
Hg^{total}					
total, ug	13.51	10.01	11.71	11.52	
Concentration, ug/dscf	0.1756	0.1328	0.1567	0.1508	
Concentration, ug/dscm	6.2020	4.6907	5.5346	5.3253	
Emission Rate, mg/hr[1]	3089.84	2350.37	2650.84	2684.02	
Emission Rate, lb/hr[1]	6.72E-03	5.11E-03	5.77E-03	5.84E-03	
Emission Rate, lb/MMBtu	5.74E-06	4.23E-06	4.87E-06	4.62E-06	

1- Inlet mg/hr calculated using ratio of measured stack exhaust flow rate for each run.

SUMMARY OF MERCURY EMISSIONS AND REMOVAL EFFICIENCIES[1]
BRAYTON POINT GENERATING STATION (Unit #1)

Method/Component	Units	ESP Inlet					Outlet Stack					I/O Removal Efficiency				
		2	3	4	5	avg	2	3	4	5	avg	2	3	4	5	avg
Ontario Hydro/ Hg																
Particle bound	*ug/dscm*	2.22	1.60	2.06	1.69	1.78	0.0053	0.5873	0.5835	0.5797	0.5835					
	mg/hr	2808	1957	2533	2065	2185	5.72	606.19	600.27	612.73	606	99.80%	69.02%	76.31%	70.33%	71.88%
Oxidized, Hg^{2+}	*ug/dscm*	3.61	2.66	2.91	2.72	2.76	4.1909	2.9366	2.4591	2.2773	2.5576					
	mg/hr	4358	3230	3543	3350	3374	4485.85	3030.95	2529.73	2407.17	2656	-2.94%	6.17%	28.59%	28.14%	20.97%
Elemental, Hg^0	*ug/dscm*	0.35	0.51	0.39	0.41	0.44	0.4396	0.3566	0.3834	0.3644	0.3681					
	mg/hr	436	626	492	515	544	470.57	368.04	394.47	385.15	383	-8.00%	41.21%	19.86%	25.17%	28.75%
Total, Hg	*ug/dscm*	6.18	4.77	5.36	4.82	4.98	4.6359	3.8805	3.4260	3.2213	3.5093					
	mg/hr	7601	5813	6568	5929	6104	4962.14	4005.19	3524.46	3405.05	3645	34.72%	31.10%	46.34%	42.57%	40.00%

Method/Component	Units	Process Samples					Overall Process RE				
		2	3	4	5	avg	2	3	4	5	avg
Coal Samples											
Hg	*ug/g*	0.08	0.05	0.06	0.05	0.05	***24.78%***	***1.89%***	***26.84%***	***16.31%***	***15.01%***
Hg rate	*mg/hr*	6597	4082	4817	4069	4323					
Sulfur	*Wt%*	0.83	0.73	0.76	0.76	0.75					
Chlorine	*%*	0.03	0.07	0.07	0.09	0.08					
HHV	*Btu/lb*	13684	13756	13754	13723	13744					
Total Hg Feed Rate	*mg/hr*	**6597**	**4082**	**4817**	**4069**	**4323**					

1- Run #2 not included in reported avg. - Particlate material carried over into Oxidized fraction during inlet test, results for Run 2 reported for comparison only.

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BRAYTON POINT GENERATING STATION (Unit #1)

Method/Component	Units	ESP Inlet					Outlet Stack					I/O Removal Efficiency				
		2	3	4	5	avg	2	3	4	5	avg	2	3	4	5	avg
Ontario Hydro/ Hg																
Particle bound	*mg/hr*	2808	1957	2533	2065	2185	6	606	600	613	606	99.80%	69.02%	76.31%	70.33%	71.88%
	% of Total	37%	34%	39%	35%	36%	0%	15%	17%	18%	17%					
Oxidized, Hg^{2+}	*mg/hr*	4358	3230	3543	3350	3374	4486	3031	2530	2407	2656	-2.94%	6.17%	28.59%	28.14%	20.97%
	% of Total	57%	56%	54%	56%	55%	90%	76%	72%	71%	73%					
Elemental, Hg^0	*mg/hr*	436	626	492	515	544	471	368	394	385	383	-8.00%	41.21%	19.86%	25.17%	28.75%
	% of Total	6%	11%	7%	9%	9%	9%	9%	11%	11%	11%					
Total, Hg	*mg/hr*	7601	5813	6568	5929	6104	4962	4005	3524	3405	3645	34.72%	31.10%	46.34%	42.57%	40.00%

1- Run #2 not included in reported avg. - Particlate material carried over into Oxidized fraction during inlet test, results for Run 2 reported for comparison only.

BOILER #1
ESP INLET WEST - OHM - Runs 2, 3, 4 AND 5

Run No.	2	3	4	5	
Date:	31-Aug-99	1-Sep-99	01-Sep-99	02-Sep-99	
Start Time	14:05	08:35	14:15	08:10	
Stop Time	17:42	12:33	17:45	11:29	AVERAGES
Net Sampling Time, (minutes)	156.0	156.0	156.0	156.0	156.0
Volume of Gas Collected, (dscf)	76.940	75.322	74.727	76.385	75.844
Dry Mole Fraction	0.9250	0.9236	0.9203	0.9199	0.9222
CO_2 Concentration, (percent dry)	12.00	12.60	13.20	13.10	12.73
O_2 Concentration, (percent dry)	7.10	6.75	6.40	6.20	6.61
CO and N_2, (percent dry)	80.90	80.65	80.40	80.70	80.66
Stack Pressure, (inches of mercury)	29.39	29.31	29.31	29.27	29.32
Average Stack Temperature, (°F)	306	317	311	306	310
Stack Gas Velocity, (actual feet per minute - afpm)	4,268	4,496	4,328	4,441	4383
Stack Flowrate, (actual cubic feet per minute - acfm)	537,779	566,464	545,323	559,579	552286
Stack Flowrate, (standard cubic feet per minute - scfm)	364,178	377,144	365,894	377,394	371,153
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	336,848	348,339	336,723	347,178	342272
F-Factor	9,780				
EMISSIONS					
Hg^{tp}					
total, ug	2.964	3.056	4.293	4.580	
Concentration, ug/dscf	0.0385	0.0406	0.0574	0.0600	
Concentration, ug/dscm	1.3603	1.4326	2.0285	2.1172	
Emission Rate, mg/hr	778.59	847.98	1160.66	1248.99	
Emission Rate, lb/hr	1.69E-03	1.85E-03	2.53E-03	2.72E-03	
Emission Rate, lb/MMBtu	1.26E-06	1.29E-06	1.79E-06	1.84E-06	
Hg^{2+} - (KCL)					
total, ug	10.00	6.20	7.00	6.30	
Concentration, ug/dscf	0.1300	0.0823	0.0937	0.0825	
Concentration, ug/dscm	4.5893	2.9065	3.3076	2.9123	
Emission Rate, mg/hr	2626.83	1720.37	1892.53	1718.05	
Emission Rate, lb/hr	5.72E-03	3.74E-03	4.12E-03	3.74E-03	
Emission Rate, lb/MMBtu	4.24E-06	2.62E-06	2.91E-06	2.53E-06	
Hg^{0}					
total, ug (HNO_3-H_2O_2)	0.25	0.25	0.25	0.25	
total, ug (KMnO4-H2SO4)	0.30	0.50	0.17	0.39	
total, ug	0.55	0.75	0.42	0.64	
Concentration, ug/dscf	0.0071	0.0100	0.0056	0.0084	
Concentration, ug/dscm	0.2524	0.3516	0.1985	0.2958	
Emission Rate, mg/hr	144.48	208.11	113.55	174.53	
Emission Rate, lb/hr	3.14E-04	4.53E-04	2.47E-04	3.80E-04	
Emission Rate, lb/MMBtu	2.33E-07	3.17E-07	1.75E-07	2.57E-07	
Hg^{total}					
total, ug	13.51	10.01	11.71	11.52	
Concentration, ug/dscf	0.1756	0.1328	0.1567	0.1508	
Concentration, ug/dscm	6.2020	4.6907	5.5346	5.3253	
Emission Rate, mg/hr	3549.90	2776.46	3166.74	3141.57	
Emission Rate, lb/hr	7.72E-03	6.04E-03	6.89E-03	6.84E-03	
Emission Rate, lb/MMBtu	5.74E-06	4.23E-06	4.87E-06	4.62E-06	

Appendix A.1.2

Isokinetic Summary

BOILER #1
STACK EXHAUST OHM - Runs 2, 3, 4, AND 5

Run No.	Cal. Check	2	3	4	5	
Date:		31-Aug-99	1-Sep-99	1-Sep-99	2-Sep-99	
Start Time		14:05	8:30	14:15	8:00	
Stop Time		17:42	12:30	17:45	11:23	AVERAGES
Nozzle Diameter, (inches)		0.184	0.184	0.184	0.184	0.184
Barometric Pressure, (inches of mercury)		30.26	30.18	30.18	30.14	30.19
Net Sampling Time, (minutes)		160.0	160.0	160.0	160.0	160.0
Volume Metered, (cubic feet)		87.515	87.398	87.970	89.307	88.048
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	76	85	85	89	84
Average ΔH, (inches of water)		1.12	1.04	1.04	1.10	1.08
Average ΔH, (inches of mercury)		0.0824	0.0765	0.0765	0.0809	0.0790
Dry Gas Meter Calibration Factor (Y) Meterbox # 90341	0.983	0.983	0.983	0.983	0.983	0.983
Dry Gas Meter ΔH @	1.963	1.963	1.963	1.963	1.963	1.963
Volume of Gas Collected, (dscf)		85.940	84.168	84.719	85.280	85.027
Total Water Collected, (mL)		144.7	129.0	144.4	145.0	140.8
Volume of Water Vapor, (scf)		6.823	6.082	6.808	6.837	6.638
Moisture, (percent)		7.4	6.7	7.4	7.4	7.2
Dry Mole Fraction		0.9265	0.9326	0.9256	0.9258	0.9276
CO_2 Concentration, (percent dry)		11.60	12.40	12.60	12.20	12.20
O_2 Concentration, (percent dry)		7.60	7.20	7.10	7.40	7.33
CO and N_2, (percent dry)		80.80	80.40	80.30	80.40	80.48
Dry Molecular Weight, (lb/lb mole)		30.16	30.27	30.30	30.25	30.25
Wet Molecular Weight, (lb/lb mole)		29.27	29.44	29.39	29.34	29.36
Excess Air at Stack, (percent)		55.3	51.3	50.4	53.5	52.6
Stack Area, (square inches) ID(inches) = 195.8		30098.0	30098.0	30098.0	30098.0	30098.0
Static Pressure, (inches of water)		-0.59	-0.43	-0.44	-0.42	-0.47
Stack Pressure, (inches of mercury)		30.22	30.15	30.15	30.11	30.16
Average Stack Temperature, (°F)		288	292	292	286	290
Average Sqroot of ΔP		1.1514	1.1105	1.1141	1.1398	1.1290
SDE Average		31.490	30.453	30.552	31.131	30.907
Pitot Coefficient		0.84	0.84	0.84	0.84	0.84
Stack Gas Velocity, (actual feet per minute - afpm)		4,563	4,404	4,423	4,514	4476
Stack Flowrate, (actual cubic feet per minute - acfm)		953,777	920,581	924,518	943,406	935571
Stack Flowrate, (standard cubic feet per minute - scfm)		679,929	651,299	654,068	671,939	664,309
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		629,921	607,406	605,414	622,069	616203
Isokinetics, Percent		**96.5**	**98.0**	**99.0**	**97.0**	**97.6**
Meterbox Calibration Verifications						
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!					
Post Test: Y_{qa}		1.00	0.99	0.98	1.00	0.99
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		2%	1%	0%	2%	.1%

BOILER #1
ESP EAST INLET - OHM - Runs 2, 3, 4 AND 5

Run No.	Cal. Check	2	3	4	5	
Date:		31-Aug-99	1-Sep-99	1-Sep-99	2-Sep-99	
Start Time		10:00	8:30	14:15	8:08	
Stop Time		14:50	12:30	17:45	11:22	AVERAGES
Nozzle Diameter, (inches)		0.180	0.180	0.180	0.180	0.180
Barometric Pressure, (inches of mercury)		30.26	30.18	30.18	30.14	30.19
Net Sampling Time, (minutes)		160.0	160.0	160.0	160.0	160.0
Volume Metered, (cubic feet)		87.826	85.483	90.014	86.892	87.554
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	86	85	90	90	88
Average ΔH, (inches of water)		1.09	1.00	1.10	1.04	1.06
Average ΔH, (inches of mercury)		0.0801	0.0735	0.0809	0.0765	0.0778
Dry Gas Meter Calibration Factor (Y) Meterbox # 90336	0.981	0.981	0.981	0.981	0.981	0.981
Dry Gas Meter ΔH @	1.981	1.981	1.981	1.981	1.981	1.981
Volume of Gas Collected, (dscf)		84.487	82.149	85.737	82.642	83.754
Total Water Collected, (mL)		147.8	141.4	145.8	153.5	147.1
Volume of Water Vapor, (scf)		6.969	6.667	6.874	7.238	6.937
Moisture, (percent)		7.6	7.5	7.4	8.1	7.7
Dry Mole Fraction		0.9238	0.9249	0.9258	0.9195	0.9235
CO_2 Concentration, (percent dry)		11.50	13.00	12.40	11.70	12.15
O_2 Concentration, (percent dry)		8.20	6.60	7.20	7.80	7.45
CO and N_2, (percent dry)		80.30	80.40	80.40	80.50	80.40
Dry Molecular Weight, (lb/lb mole)		30.17	30.34	30.27	30.18	30.24
Wet Molecular Weight, (lb/lb mole)		29.24	29.42	29.36	29.20	29.31
Excess Air at Stack, (percent)		63.1	45.1	51.3	58.0	54.4
Stack Area, (square inches) ID(inches) = 252x72		18144.0	18144.0	18144.0	18144.0	18144.0
Static Pressure, (inches of water)		-10.71	-11.24	-11.24	-11.24	-11.11
Stack Pressure, (inches of mercury)		29.47	29.35	29.35	29.31	29.37
Average Stack Temperature, (°F)		302	305	304	307	305
Average Sqroot of ΔP		1.1471	1.1010	1.1498	1.1409	1.1347
SDE Average		31.665	30.452	31.781	31.597	31.374
Pitot Coefficient		0.88	0.88	0.88	0.88	0.88
Stack Gas Velocity, (actual feet per minute - afpm)		4,869	4,678	4,887	4,875	4828
Stack Flowrate, (actual cubic feet per minute - acfm)		613,545	589,463	615,777	614,284	608267
Stack Flowrate, (standard cubic feet per minute - scfm)		418,775	399,142	417,506	414,299	412,431
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		386,865	369,180	386,515	380,938	380875
Isokinetics, Percent		**97.3**	**99.2**	**98.9**	**96.7**	**98.0**
Meterbox Calibration Verifications						
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!					
Post Test: Y_{qa}		1.00	0.98	0.98	1.00	0.99
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		2%	-1%	0%	2%	1%

BOILER #1
ESP INLET WEST - OHM - Runs 2, 3, 4 AND 5

Run No.	Cal. Check	2	3	4	5	
Date:		31-Aug-99	1-Sep-99	1-Sep-99	2-Sep-99	
Start Time		14:05	8:35	14:15	8:10	
Stop Time		17:42	12:33	17:45	11:29	AVERAGES
Nozzle Diameter, (inches)		0.180	0.180	0.180	0.180	0.180
Barometric Pressure, (inches of mercury)		30.26	30.18	30.18	30.14	30.19
Net Sampling Time, (minutes)		156.0	156.0	156.0	156.0	156.0
Volume Metered, (cubic feet)		79.422	78.815	77.207	80.177	78.905
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	83	89	82	90	86
Average ΔH, (inches of water)		0.87	0.89	0.83	0.90	0.87
Average ΔH, (inches of mercury)		0.0640	0.0654	0.0610	0.0662	0.0642
Dry Gas Meter Calibration Factor (Y) Meterbox # 90342	0.983	0.983	0.983	0.983	0.983	0.983
Dry Gas Meter ΔH @	1.973	1.973	1.973	1.973	1.973	1.973
Volume of Gas Collected, (dscf)		76.940	75.322	74.727	76.385	75.844
Total Water Collected, (mL)		132.4	132.1	137.3	141.0	135.7
Volume of Water Vapor, (scf)		6.243	6.229	6.474	6.648	6.398
Moisture, (percent)		7.5	7.6	8.0	8.0	7.8
Dry Mole Fraction		0.9250	0.9236	0.9203	0.9199	0.9222
CO_2 Concentration, (percent dry)		12.00	12.60	13.20	13.10	12.73
O_2 Concentration, (percent dry)		7.10	6.75	6.40	6.20	6.61
CO and N_2, (percent dry)		80.90	80.65	80.40	80.70	80.66
Dry Molecular Weight, (lb/lb mole)		30.20	30.29	30.37	30.34	30.30
Wet Molecular Weight, (lb/lb mole)		29.29	29.35	29.38	29.36	29.34
Excess Air at Stack, (percent)		49.8	46.4	43.2	41.0	45.1
Stack Area, (square inches) ID(inches) = 252x72		18144.0	18144.0	18144.0	18144.0	18144.0
Static Pressure, (inches of water)		-11.77	-11.77	-11.77	-11.77	-11.77
Stack Pressure, (inches of mercury)		29.39	29.31	29.31	29.27	29.32
Average Stack Temperature, (°F)		306	317	311	306	310
Average Sqroot of ΔP		1.0023	1.0479	1.0133	1.0420	1.0264
SDE Average		27.740	29.210	28.136	28.839	28.481
Pitot Coefficient		0.88	0.88	0.88	0.88	0.88
Stack Gas Velocity, (actual feet per minute - afpm)		4,268	4,496	4,328	4,441	4383
Stack Flowrate, (actual cubic feet per minute - acfm)		537,779	566,464	545,323	559,579	552286
Stack Flowrate, (standard cubic feet per minute - scfm)		364,178	377,144	365,894	377,394	371,153
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		336,848	348,339	336,723	347,178	342272
Isokinetics, Percent		**104.4**	**98.8**	**101.4**	**100.6**	**101.3**
Meterbox Calibration Verifications						
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!					
Post Test: Y_{qa}		0.96	0.99	0.97	0.97	0.97
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		-2%	0%	-2%	-1%	-1%

Appendix A.1.3

Process Mercury Inflow Calculations

Unit 1

Process Stream	Run No.	TPH	g/hr	hg ug/g	ug/hr	mg/hr
Coal	2	90.9	8.2463E+07	8.00E-02	6.5970E+06	6597
	3	90	8.1647E+07	5.00E-02	4.0823E+06	4082
	4	88.5	8.0286E+07	6.00E-02	4.8172E+06	4817
	5	89.7	8.1374E+07	5.00E-02	4.0687E+06	4069

Appendix A.2

Unit 3

Appendix A.2.1

Emissions Summary

SUMMARY OF MERCURY EMISSIONS AND REMOVAL EFFICIENCIES[1]
BRAYTON POINT GENERATING STATION (Unit #3)

Method/Component	Units	ESP Inlet[2]				Outlet Stack				I/O Removal Efficiency			
		2	3	4	avg	2	3	4	avg	2	3	4	avg
Ontario Hydro/ Hg													
Particle bound	*ug/dscm*	2.25	1.40	1.10	1.58	0.5389	0.6203	0.0188	0.3927				
	mg/hr	6112	3363	2800	4092	1373	1564	47	994	77.54%	53.51%	98.33%	76.46%
Oxidized, Hg^{2+}	*ug/dscm*	2.63	2.40	2.56	2.53	2.1941	1.5895	2.4798	2.0878				
	mg/hr	6399	6118	6419	6312	5589	4007	6185	5260	12.65%	34.51%	3.64%	16.93%
Elemental, Hg^0	*ug/dscm*	0.51	0.52	2.52	1.18	0.6351	0.4807	2.4610	1.1923				
	mg/hr	1302	1373	6315	2997	1618	1212	6138	2989	-24.31%	11.75%	2.80%	-3.25%
Total, Hg	*ug/dscm*	5.39	4.31	6.18	5.30	3.3682	2.6906	4.9596	3.6728				
	mg/hr	13812	10854	15534	13400	8580	6782	12370	9244	37.88%	37.52%	20.36%	31.92%

Method/Component	Units	Process Samples				Overall Process RE			
		2	3	4	avg	2	3	4	avg
Coal Samples									
Hg	*ug/g*	0.10	0.07	0.07	0.08	***50.61%***	***42.39%***	***6.79%***	***33.27%***
Hg rate	*mg/hr*	17373	11773	13272	14139				
Sulfur	*Wt%*	0.77	0.71	0.72	0.73				
Chlorine	*%*	0.09	0.11	0.09	0.10				
HHV	*Btu/lb*	12714	12703	13037	12818				
Total Hg Feed Rate	*mg/hr*	**17373**	**11773**	**13272**	**14139**				

1-INCLUSIVE OF ALL DATA POINTS

2- Inlet lb/hr calculated using ratio of measured stack exhaust flow rate for each run.

DISTRIBUTION OF SPECIATED MERCURY EMISSIONS AND REMOVAL EFFICIENCIES[1]
BRAYTON POINT GENERATING STATION (Unit #3)

Method/Component	Units	ESP Inlet[2]				Outlet Stack				I/O Removal Efficiency			
		2	3	4	avg	2	3	4	avg	2	3	4	avg
Ontario Hydro/ Hg													
Particle bound	*mg/hr*	6112	3363	2800	4092	1373	1564	47	994	77.54%	53.51%	98.33%	76.46%
		44%	31%	18%	31%	16%	23%	0%	13%				
Oxidized, Hg^{2+}	*mg/hr*	6399	6118	6419	6312	5589	4007	6185	5260	12.65%	34.51%	3.64%	16.93%
		46%	56%	41%	48%	65%	59%	50%	58%				
Elemental, Hg^{0}	*mg/hr*	1302	1373	6315	2997	1618	1212	6138	2989	-24.31%	11.75%	2.80%	-3.25%
		9%	13%	41%	21%	19%	18%	50%	29%				
Total, Hg	*mg/hr*	13812	10854	15534	13400	8580	6782	12370	9244	37.88%	37.52%	20.36%	31.92%

1-INCLUSIVE OF ALL DATA POINTS

2- Inlet lb/hr calculated using ratio of measured stack exhaust flow rate for each run.

BOILER #3
ESP INLET WEST - OHM - Runs 2, 3 AND 4

Run No.	1	2	3	
Date:	9-Sep-99	9-Sep-99	06-Oct-99	
Start Time	09:10	16:02	11:05	
Stop Time	13:01	18:20	14:55	AVERAGES
Net Sampling Time, (minutes)	160.0	160.0	160.0	160.0
Volume of Gas Collected, (dscf)	77.870	81.122	82.891	80.627
Dry Mole Fraction	0.9110	0.9083	0.9263	0.9152
CO_2 Concentration, (percent dry)	11.80	11.40	11.80	11.67
O_2 Concentration, (percent dry)	7.50	7.30	7.10	7.30
CO and N_2, (percent dry)	80.70	81.30	81.10	81.03
Stack Pressure, (inches of mercury)	28.20	28.20	28.29	28.23
Average Stack Temperature, (°F)	246	243	247	245
Stack Gas Velocity, (actual feet per minute - afpm)	3,565	3,808	3,940	3771
Stack Flowrate, (actual cubic feet per minute - acfm)	1,069,617	1,142,494	1,181,906	1131339
Stack Flowrate, (standard cubic feet per minute - scfm)	753,893	808,695	834,514	799,034
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	686,814	734,498	773,041	731451
F-Factor	9,780			
EMISSIONS				
Hg^{tp}				
total, ug	3.140	4.212	2.276	
Concentration, ug/dscf	0.0403	0.0519	0.0275	
Concentration, ug/dscm	1.4238	1.8334	0.9695	
Emission Rate, mg/hr[1]	1492	1983	1050	
Emission Rate, lb/hr[1]	3.25E-03	4.32E-03	2.28E-03	
Emission Rate, lb/MMBtu	1.36E-06	1.72E-06	8.97E-07	
Hg^{2+} - (KCL)				
total, ug	7.30	5.00	5.80	
Concentration, ug/dscf	0.0937	0.0616	0.0700	
Concentration, ug/dscm	3.3102	2.1764	2.4707	
Emission Rate, mg/hr[1]	3469	2354	2675	
Emission Rate, lb/hr[1]	7.55E-03	5.12E-03	5.82E-03	
Emission Rate, lb/MMBtu	3.15E-06	2.04E-06	2.28E-06	
Hg^{0}				
total, ug (HNO_3-H_2O_2)	0.25	0.25	0.25	
total, ug (KMnO4-H2SO4)	0.85	0.52	5.40	
total, ug	1.10	0.77	5.65	
Concentration, ug/dscf	0.0141	0.0095	0.0682	
Concentration, ug/dscm	0.4988	0.3352	2.4068	
Emission Rate, mg/hr[1]	523	363	2606	
Emission Rate, lb/hr[1]	1.14E-03	7.89E-04	5.67E-03	
Emission Rate, lb/MMBtu	4.75E-07	3.15E-07	2.23E-06	
Hg^{total}				
total, ug	11.540	9.982	13.726	
Concentration, ug/dscf	0.1482	0.1230	0.1656	
Concentration, ug/dscm	5.2328	4.3449	5.8470	
Emission Rate, mg/hr[1]	5485	4700	6332	
Emission Rate, lb/hr[1]	1.19E-02	1.02E-02	1.38E-02	
Emission Rate, lb/MMBtu	4.98E-06	4.08E-06	5.41E-06	

1- Inlet lb/hr calculated using ratio of measured stack exhaust flow rate for each run.

SUMMARY OF MERCURY EMISSIONS AND REMOVAL EFFICIENCIES[1]
BRAYTON POINT GENERATING STATION (Unit #3)

Method/Component	Units	ESP Inlet				Outlet Stack				I/O Removal Efficiency			
		2	3	4	avg	2	3	4	avg	2	3	4	avg
Ontario Hydro/ Hg													
Particle bound	*ug/dscm*	2.25	1.40	1.10	1.58	0.5389	0.6203	0.0188	0.3927				
	mg/hr	6806	3880	3396	4694	1373	1564	47	994	79.83%	59.71%	98.62%	79.38%
Oxidized, Hg^{2+}	*ug/dscm*	2.63	2.40	2.56	2.53	2.1941	1.5895	2.4798	2.0878				
	mg/hr	7125	7059	7787	7323	5589	4007	6185	5260	21.55%	43.24%	20.56%	28.45%
Elemental, Hg^0	*ug/dscm*	0.51	0.52	2.52	1.18	0.6351	0.4807	2.4610	1.1923				
	mg/hr	1449	1584	7661	3565	1618	1212	6138	2989	-11.64%	23.51%	19.87%	10.58%
Total, Hg	*ug/dscm*	5.39	4.31	6.18	5.30	3.3682	2.6906	4.9596	3.6728				
	mg/hr	15380	12524	18843	15582	8580	6782	12370	9244	44.21%	45.84%	34.35%	41.47%

Method/Component	Units	Process Samples				Overall Process RE			
		2	3	4	avg	2	3	4	avg
Coal Samples									
Hg	*ug/g*	0.10	0.07	0.07	0.08	***50.61%***	***42.39%***	***6.79%***	***33.27%***
Hg rate	*mg/hr*	17373	11773	13272	14139				
Sulfur	*Wt%*	0.77	0.71	0.72	0.73				
Chlorine	*%*	0.09	0.11	0.09	0.10				
HHV	*Btu/lb*	12714	12703	13037	12818				
Total Hg Feed Rate	*mg/hr*	**17373**	**11773**	**13272**	**14139**				

1-INCLUSIVE OF ALL DATA POINTS

DISTRIBUTION OF SPECIATED MERCURY EMISSIONS AND REMOVAL EFFICIENCIES[1]
BRAYTON POINT GENERATING STATION (Unit #3)

Method/Component	Units	ESP Inlet				Outlet Stack				I/O Removal Efficiency			
		2	3	4	avg	2	3	4	avg	2	3	4	avg
Ontario Hydro/ Hg													
Particle bound	*mg/hr*	6806	3880	3396	4694	1373	1564	47	994	79.83%	59.71%	98.62%	79.38%
		44%	31%	18%	31%	16%	23%	0%	13%				
Oxidized, Hg^{2+}	*mg/hr*	7125	7059	7787	7323	5589	4007	6185	5260	21.55%	43.24%	20.56%	28.45%
		46%	56%	41%	48%	65%	59%	50%	58%				
Elemental, Hg^{0}	*mg/hr*	1449	1584	7661	3565	1618	1212	6138	2989	-11.64%	23.51%	19.87%	10.58%
		9%	13%	41%	21%	19%	18%	50%	29%				
Total, Hg	*mg/hr*	15380	12524	18843	15582	8580	6782	12370	9244	44.21%	45.84%	34.35%	41.47%

1-INCLUSIVE OF ALL DATA POINTS

BOILER #3
ESP INLET WEST - OHM - Runs 2, 3 AND 4

Run No.	1	2	3	
Date:	9-Sep-99	9-Sep-99	06-Oct-99	
Start Time	09:10	16:02	11:05	
Stop Time	13:01	18:20	14:55	AVERAGES
Net Sampling Time, (minutes)	160.0	160.0	160.0	160.0
Volume of Gas Collected, (dscf)	77.870	81.122	82.891	80.627
Dry Mole Fraction	0.9110	0.9083	0.9263	0.9152
CO_2 Concentration, (percent dry)	11.80	11.40	11.80	11.67
O_2 Concentration, (percent dry)	7.50	7.30	7.10	7.30
CO and N_2, (percent dry)	80.70	81.30	81.10	81.03
Stack Pressure, (inches of mercury)	28.20	28.20	28.29	28.23
Average Stack Temperature, (°F)	246	243	247	245
Stack Gas Velocity, (actual feet per minute - afpm)	3,565	3,808	3,940	3771
Stack Flowrate, (actual cubic feet per minute - acfm)	1,069,617	1,142,494	1,181,906	1131339
Stack Flowrate, (standard cubic feet per minute - scfm)	753,893	808,695	834,514	799,034
Stack Flowrate, (dry standard cubic feet per minute - dscfm)	686,814	734,498	773,041	731451
F-Factor	9,780			
EMISSIONS				
Hg^{tp}				
total, ug	3.140	4.212	2.276	
Concentration, ug/dscf	0.0403	0.0519	0.0275	
Concentration, ug/dscm	1.4238	1.8334	0.9695	
Emission Rate, mg/hr	1662	2288	1274	
Emission Rate, lb/hr	3.62E-03	4.98E-03	2.77E-03	
Emission Rate, lb/MMBtu	1.36E-06	1.72E-06	8.97E-07	
Hg^{2+} - (KCL)				
total, ug	7.30	5.00	5.80	
Concentration, ug/dscf	0.0937	0.0616	0.0700	
Concentration, ug/dscm	3.3102	2.1764	2.4707	
Emission Rate, mg/hr	3863	2716	3245	
Emission Rate, lb/hr	8.41E-03	5.91E-03	7.06E-03	
Emission Rate, lb/MMBtu	3.15E-06	2.04E-06	2.28E-06	
Hg^{0}				
total, ug (HNO_3-H_2O_2)	0.25	0.25	0.25	
total, ug (KMnO4-H2SO4)	0.85	0.52	5.40	
total, ug	1.10	0.77	5.65	
Concentration, ug/dscf	0.0141	0.0095	0.0682	
Concentration, ug/dscm	0.4988	0.3352	2.4068	
Emission Rate, mg/hr	582	418	3162	
Emission Rate, lb/hr	1.27E-03	9.10E-04	6.88E-03	
Emission Rate, lb/MMBtu	4.75E-07	3.15E-07	2.23E-06	
Hg^{total}				
total, ug	11.540	9.982	13.726	
Concentration, ug/dscf	0.1482	0.1230	0.1656	
Concentration, ug/dscm	5.2328	4.3449	5.8470	
Emission Rate, mg/hr	6107	5423	7681	
Emission Rate, lb/hr	1.33E-02	1.18E-02	1.67E-02	
Emission Rate, lb/MMBtu	4.98E-06	4.08E-06	5.41E-06	

Appendix A.2.2

Isokinetic Summary

BOILER #3
STACK EXHAUST OHM - Runs 2, 3, and4

Run No.	Cal. Check	2	3	4	
Date:		9-Sep-99	9-Sep-99	6-Oct-99	
Start Time		9:10	16:02	11:05	
Stop Time		13:01	19:20	14:56	AVERAGES
Nozzle Diameter, (inches)		0.153	0.153	0.153	0.153
Barometric Pressure, (inches of mercury)		29.93	29.93	30.08	29.98
Net Sampling Time, (minutes)		160.0	160.0	160.0	160.0
Volume Metered, (cubic feet)		95.846	95.349	94.118	95.104
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	83	84	64	77
Average ΔH, (inches of water)		1.21	1.17	1.11	1.16
Average ΔH, (inches of mercury)		0.0890	0.0860	0.0816	0.0855
Dry Gas Meter Calibration Factor (Y) Meterbox # 90343		0.981	0.981	0.983	0.982
Dry Gas Meter ΔH @		1.885	1.885	1.973	1.914
Volume of Gas Collected, (dscf)		91.730	91.078	93.977	92.262
Total Water Collected, (mL)		176.6	159.4	149.2	161.7
Volume of Water Vapor, (scf)		8.327	7.516	7.035	7.626
Moisture, (percent)		8.3	7.6	7.0	7.6
Dry Mole Fraction		0.9168	0.9238	0.9304	0.9236
CO_2 Concentration, (percent dry)		10.60	9.80	10.90	10.43
O_2 Concentration, (percent dry)		8.60	9.40	8.00	8.67
CO and N_2, (percent dry)		80.80	80.80	81.10	80.90
Dry Molecular Weight, (lb/lb mole)		30.04	29.94	30.06	30.02
Wet Molecular Weight, (lb/lb mole)		29.04	29.03	29.22	29.10
Excess Air at Stack, (percent)		67.6	78.8	59.7	68.7
Stack Area, (square inches) ID(inches) = 246		47529.2	47529.2	47529.2	47529.2
Static Pressure, (inches of water)		-0.79	-0.78	2.10	0.18
Stack Pressure, (inches of mercury)		29.87	29.87	30.23	29.99
Average Stack Temperature, (°F)		260	259	250	256
Average Sqroot of ΔP		1.7236	1.6913	1.6467	1.6872
SDE Average		46.249	45.351	43.878	45.159
Pitot Coefficient		0.84	0.84	0.84	0.84
Stack Gas Velocity, (actual feet per minute - afpm)		6,767	6,636	6,361	6588
Stack Flowrate, (actual cubic feet per minute - acfm)		2,233,479	2,190,245	2,099,513	2174412
Stack Flowrate, (standard cubic feet per minute - scfm)		1,635,252	1,605,868	1,577,735	1,606,285
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		1,499,167	1,483,454	1,467,857	1483493
Isokinetics, Percent		**98.9**	**99.2**	**103.4**	**100.5**
Meterbox Calibration Verifications					
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!				
Post Test: Y_{qa}		1.00	0.99	0.93	0.97
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		2%	1%	-5%	-1%

BOILER #3
ESP EAST INLET - OHM - Runs 2, 3 AND 4

Run No.	Cal. Check	2	3	4	
Date:		9-Sep-99	9-Sep-99	6-Oct-99	
Start Time		9:10	16:02	11:05	
Stop Time		13:10	19:10	14:54	AVERAGES
Nozzle Diameter, (inches)		0.196	0.195	0.192	0.194
Barometric Pressure, (inches of mercury)		29.93	29.93	30.02	29.96
Net Sampling Time, (minutes)		154.0	154.0	154.0	154.0
Volume Metered, (cubic feet)		78.335	77.920	74.936	77.064
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	85	91	79	85
Average ΔH, (inches of water)		0.87	0.85	0.84	0.85
Average ΔH, (inches of mercury)		0.0640	0.0625	0.0618	0.0627
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)		74.101	72.902	71.885	72.963
Total Water Collected, (mL)		154.0	160.0	122.9	145.6
Volume of Water Vapor, (scf)		7.261	7.544	5.795	6.867
Moisture, (percent)		8.9	9.4	7.5	8.6
Dry Mole Fraction		0.9108	0.9062	0.9254	0.9141
CO_2 Concentration, (percent dry)		10.60	11.60	12.20	11.47
O_2 Concentration, (percent dry)		8.70	7.20	6.60	7.50
CO and N_2, (percent dry)		80.70	81.20	81.20	81.03
Dry Molecular Weight, (lb/lb mole)		30.04	30.14	30.22	30.13
Wet Molecular Weight, (lb/lb mole)		28.97	29.01	29.30	29.09
Excess Air at Stack, (percent)		69.0	50.6	44.5	54.7
Stack Area, (square inches) ID(inches) = 720X90		64800.0	64800.0	64800.0	64800.0
Static Pressure, (inches of water)		-23.56	-24.09	-22.50	-23.38
Stack Pressure, (inches of mercury)		28.20	28.16	28.37	28.24
Average Stack Temperature, (°F)		260	262	245	256
Average Sqroot of ΔP		0.8184	0.8202	0.8196	0.8194
SDE Average		21.960	22.039	21.762	21.920
Pitot Coefficient		0.88	0.88	0.88	0.88
Stack Gas Velocity, (actual feet per minute - afpm)		3,469	3,481	3,407	3452
Stack Flowrate, (actual cubic feet per minute - acfm)		1,560,880	1,566,605	1,533,361	1553616
Stack Flowrate, (standard cubic feet per minute - scfm)		1,078,756	1,078,206	1,088,728	1,081,897
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		982,484	977,096	1,007,511	989030
Isokinetics, Percent		**105.2**	**105.1**	**103.7**	**104.7**
Meterbox Calibration Verifications					
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!				
Post Test: Y_{qa}		0.97	0.97	0.98	0.98
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		0%	0%	1%	0%

BOILER #3
ESP INLET WEST - OHM - Runs 2, 3 AND 4

Run No.	Cal. Check	2	3	4	
Date:		9-Sep-99	9-Sep-99	6-Oct-99	
Start Time		9:10	16:02	11:05	
Stop Time		13:01	18:20	14:55	AVERAGES
Nozzle Diameter, (inches)		0.193	0.192	0.193	0.193
Barometric Pressure, (inches of mercury)		29.93	29.93	30.02	29.96
Net Sampling Time, (minutes)		160.0	160.0	160.0	160.0
Volume Metered, (cubic feet)		82.872	86.146	85.906	84.975
Average Dry Gas Meter Temperature, (°F)	#DIV/0!	96	95	80	90
Average ΔH, (inches of water)		0.88	1.03	1.06	0.99
Average ΔH, (inches of mercury)		0.0647	0.0757	0.0779	0.0728
Dry Gas Meter Calibration Factor (Y) Meterbox # 90336	0.987	0.987	0.987	0.981	0.985
Dry Gas Meter ΔH @	1.981	1.981	1.981	1.885	1.949
Volume of Gas Collected, (dscf)		77.870	81.122	82.891	80.627
Total Water Collected, (mL)		161.3	173.8	139.8	158.3
Volume of Water Vapor, (scf)		7.605	8.195	6.592	7.464
Moisture, (percent)		8.9	9.2	7.4	8.5
Dry Mole Fraction		0.9110	0.9083	0.9263	0.9152
CO_2 Concentration, (percent dry)		11.80	11.40	11.80	11.67
O_2 Concentration, (percent dry)		7.50	7.30	7.10	7.30
CO and N_2, (percent dry)		80.70	81.30	81.10	81.03
Dry Molecular Weight, (lb/lb mole)		30.19	30.12	30.17	30.16
Wet Molecular Weight, (lb/lb mole)		29.10	29.00	29.28	29.13
Excess Air at Stack, (percent)		54.3	51.5	49.6	51.8
Stack Area, (square inches) ID(inches) = 720*90		43200.0	43200.0	43200.0	43200.0
Static Pressure, (inches of water)		-23.56	-23.56	-23.56	-23.56
Stack Pressure, (inches of mercury)		28.20	28.20	28.29	28.23
Average Stack Temperature, (°F)		246	243	247	245
Average Sqroot of ΔP		0.8515	0.9099	0.9445	0.9020
SDE Average		22.625	24.125	25.114	23.955
Pitot Coefficient		0.88	0.88	0.88	0.88
Stack Gas Velocity, (actual feet per minute - afpm)		3,565	3,808	3,940	3771
Stack Flowrate, (actual cubic feet per minute - acfm)		1,069,617	1,142,494	1,181,906	1131339
Stack Flowrate, (standard cubic feet per minute - scfm)		753,893	808,695	834,514	799,034
Stack Flowrate, (dry standard cubic feet per minute - dscfm)		686,814	734,498	773,041	731451
Isokinetics, Percent		**104.6**	**103.0**	**99.0**	**102.2**
Meterbox Calibration Verifications					
Initial Field: Y_c (Must be $0.97Y < Y_c < 1.03Y$)	#DIV/0!				
Post Test: Y_{qa}		0.941	0.98	1.02	0.98
% Difference (Alternative Meth. 5 post- cal. Must = +/- 5%)		-4.7%	0%	4%	0%

Appendix A.2.3

Process Mercury Inflow Calculations

Unit 3

Process Stream	Run No.	TPH	g/hr	hg ug/g	ug/hr	mg/hr
Coal	2	191.5	1.7373E+08	1.00E-01	1.7373E+07	17373
	3	185.4	1.6819E+08	7.00E-02	1.1773E+07	11773
	4	209	1.8960E+08	7.00E-02	1.3272E+07	13272

APPENDIX B

RAW FIELD DATA AND CALIBRATION DATA SHEETS

Appendix B.1

Unit 1

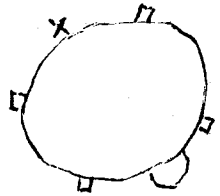
Appendix B.1.1

Raw Field Data Sheets

TRC ENVIRONMENTAL CORPORATION - IS INETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PGrE
Facility: Brayton Point
Source: Unit #1
Sample Location: Outlet
Stack Diameter: N/A
Date: 8/30/99
Run No.: Field Blank
Operator: S. J.
Meterbox No.: #90341
Meterbox ΔH @: ~~2.022~~
Y Factor: ~~0.985~~

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



Sheet 1 of 1
Train Prepared By: E. MacKinnon
Pitot Number and Side: Probe 1-12
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 72°
Bar. Pressure, In. Hg.:
Assumed Moisture, %: Amb. Cond.
Heater Box Setting, °F: —
Nozzle # / Dia., In.: ~~N/A~~
Probe Length / Material: 12' 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
1	1402	0	449.238													
	1602	120	449.609													

Train Leak Check:

Before Test: .010 CF in 60 Seconds at 13.0 In. Hg
After Test: .007 CF in 60 Seconds at 5.0 In. Hg

Comments:

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

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: Outlet

Date: 8/30/99
Run No.: Outlet FB
Train Type: Ontario-Hydro
Recovery Person: GM

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):	708.4	677.9	686.1	707.5	740.2	712.5	697.6
Initial Vol. (ml/g):	708.5	678.0	686.1	707.5	740.1	712.6	697.6
Net Collected (ml/g):	-0.1	-0.1	0	0	0.1	-0.1	0

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	854.5			
Initial Vol. (ml/g):	854.2			
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:** 8/30/99

Location: Outlet **Run:** FB

Sample ID: PG&E-BR-OHm-1-O-1

Train Set Up By:	[signature]	**Date:** 8/30/99	**Time:** 1329
Transported to Location By:	[signature]	**Date:** 8/30/99	**Time:** 1348
Received at Location By:	[signature]	**Date:** 8/30/99	**Time:** 1351
Transported to Recovery Area By:	[signature]	**Date:** 8/30/99	**Time:** 1645
Received at Recovery Area By:	[signature]	**Date:** 8/30/99	**Time:** 1650
Train Recovered By:	[signature]	**Date:** 8/30/99	**Time:** 1650

Comments: Field Blank - Outlet Train

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit #1
Sample Location: Inlet
Stack Diameter:
Date: 8/30/99
Run No.: PG+E-OHM-B-FB-
Operator:
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 _____ of _____
Train Prepared By: E. Mackinnon
Pitot Number and Side:
Pitot Tube CP:
Filter No.:
Ambient Temp., °F:
Bar. Pressure, In. Hg.:
Assumed Moisture, %:
Heater Box Setting, °F:
Nozzle # / Dia., In.:
Probe Length / Material:
Probe Heater Setting:

Point	Clock Time 24-hr	Clock Time min	Dry Gas Meter, (ft^3)	Pitot In. H_2O ΔP^2	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
	1430		494.354													
	1600		494.832													

Train Leak Check:

Comments:

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

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

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: Inlet

Date: 8/30/99
Run No.: Inlet FB
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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	~~7~~ 6
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):	704.0	642.0	693.3	636.5	718.4	704.9	716.3
Initial Vol. (ml/g):	704.0	642.1	693.3	636.4	718.4	704.9	716.3
Net Collected (ml/g):	0	-0.1	0	0.1	0	0	0

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	738.3			
Initial Vol. (ml/g):	738.2			
Net Collected (ml/g):	0.1			

Comments/Notes:

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

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 8/30/99

Location: Inlet **Run:** FB

Sample ID: PG&E-BR-1-I-FB

Train Set Up By:		**Date:** 8/30/99	**Time:** 1310
Transported to Location By:		**Date:** 8/30/99	**Time:** 1419
Received at Location By:		**Date:** 8/30/99	**Time:** 1425
Transported to Recovery Area By:		**Date:** 8/30/99	**Time:** 1616
Received at Recovery Area By:		**Date:** 8/30/99	**Time:** 1624
Train Recovered By:		**Date:** 8/30/99	**Time:** 1626

Comments:

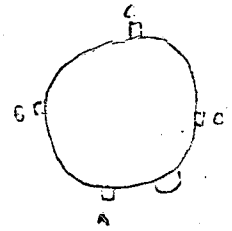
Hg

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	8/30/99
Client:	PG&E
Facility:	Brayton Point
Run No.:	Pre Lim Velocity
Barometric Pressure (in. Hg):	30.20
% Moisture:	
Pitot Tube ID:	P200
Post Leak Check:	✓ Pre: ✓
Measurement Device:	
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	

Project No.:	26046-0030-00003
Sample Location:	Unit 1 exhaust
Load Condition:	Full
Operator:	Sf
Meterbox No.:	#90341
Static (in. H_2O):	-0.67
Pitot Tube Coefficient:	0.84
Stack Diameter (in.):	195.76"

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
1630	A 1	292	1.0	4
	2	293	1.1	2
	3	293	1.2	6
	4	293	1.3	2
	B 1	292	0.99	3
	2	292	1.2	4
	3	292	1.3	5
	4	293	1.3	2
	C 1	291	1.2	4
	2	291	1.1	2
	3	292	1.3	3
	4	291	1.3	0

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
	D 1	291	1.1	5
	2	291	1.2	3
	3	291	1.2	5
	4	292	1.3	0

TRC

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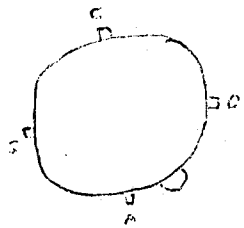
TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PGE
Facility: Brayton Point
Source: Unit # 1
Sample Location: Exhaust Stack
Stack Diameter: 195.76"
Date: 8/31/99
Run No.: PG+E-BP-01M-1-0-1
Operator: 2J
Meterbox No.: #70341
Meterbox ΔH @: ~~2.078~~ 1.963
Y Factor: 0.983

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



Sheet 1 of 2
Train Prepared By: E. Mckenna
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: NA
Ambient Temp., °F: 70°
Bar. Pressure, In. Hg.: 30.26
Assumed Moisture, %: 8%
Heater Box Setting, °F:
Nozzle # / Dia., In.: PGE-N-3 0.184 Glass
Probe Length / Material: 12' Glass
Probe Heater Setting: 250°

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 Jumper ~~XAD Cond~~	Temperatures °F Probe	Temperatures °F Filter Outlet
A1	1010	0	449.787	1.1	0.78	0.78	77	76	3.0	Blue	280	280	61	290	249	273
		5	452.545	1.2	1.01	1.01	77	76	3.0	Blue	280	279	60	290	257	277
2		10	455.060	1.2	1.01	1.01	75	75	3.0	Blue	282	281	58	290	261	273
		15	457.775	1.2	1.01	1.01	77	76	3.0	Blue	283	279	58	290	256	270
3		20	460.445	1.2	1.01	1.01	77	76	3.0	Blue	283	277	60	290	243	269
		25	463.070	1.3	1.09	1.09	76	75	3.0	Blue	281	278	60	290	240	267
4		30	465.870	1.3	1.09	1.09	76	75	3.0	Blue	282	278	61	290	245	270
		35	468.761	1.3	1.09	1.09	77	75	3.0	Blue	282	270	60	290	251	272
STOP	1050	40	471.495													
B1	1117	0	472.783	1.4	1.16	1.16	78	77	3.0	Blue	287	263	63	290	272	268
		5	475.691	1.4	1.16	1.16	80	74	3.0	Blue	287	271	55	290	268	270
2		10	478.713	1.4	1.16	1.16	80	78	3.0	Blue	287	269	52	290	265	269
		15	481.680	1.3	1.09	1.09	79	78	3.0	Blue	288	268	54	290	266	268
3	*	20	484.471	1.3	1.09	1.09	78	78	3.0	Blue	288	269	54	290	263	270

Train Leak Check:

Before Test: .001 CF in 60 Seconds at 10.5 In. Hg
After Test: _____ CF in _____ Seconds at _____ In. Hg

Comments:
Port A .002 60sec. 4.0 in Hg 471.733
Port B .002 60sec 7.0 in Hg 472.783
* 11:40 Stop: Wait Inlet. 11:40
Start:

	Initial	Final	Static Pressure			
Port			B			
Pitot Tube Leak Check	✓	○	Inches H₂O	-0.68		
ORSAT Train Leak Check	○	○	Inches Hg			

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

P ect No.: 26046
t: PG&E
Facility: Brayton
Source: PG&E-BR-OHM-1-O-1 (Outlet)

Date: 8/30/99
Run No.: 1-Outlet
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):	619.0	644.1	680.3	654.0	711.1	725.6	622.6
n Vol. (ml/g):	588.6	630.1	679.0	652.3	710.8	722.6	622.2
Net Collected (ml/g):	30.4	14.0	1.3	1.7	0.3	3.0	0.4

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	841.9			
Initial Vol. (ml/g):	832.9			
Net Collected (ml/g):	9.0			

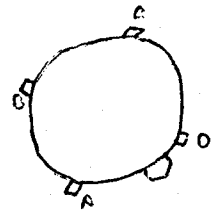
Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 60.1

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG-E
Facility: Brayton Point
Source: Unit #1
Sample Location: Exhaust Stack
Stack Diameter: 195.76"
Date: 8/31/99
Run No.: PGE-BP-OHM-1-0-2
Operator: S. J
Meterbox No.: #9 0341
Meterbox ΔH @: 1.963
Y Factor: 0.983

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



Sheet 1 of 2

Train Prepared By: E. Mackinnon
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: –
Ambient Temp., °F: 70
Bar. Pressure, In. Hg.: 30.26
Assumed Moisture, %: 8%
Heater Box Setting, °F: 285
Nozzle # / Dia., In.: PG-E-N-3 0.184 Glass
Probe Length / Material: 12' Glass
Probe Heater Setting: 280

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 Jumper ~~XAD Cond~~	Temperatures °F Probe	Temperatures °F Filter Outlet
A1	1400	0	485.922	1.30	1.08	1.10	75	74	3.5	Blue	290	287	67	290	267	273
		5	488.830	1.30	1.08	1.10	75	74	3.5	Blue	290	285	65	290	269	275
2		10	491.261	1.40	1.16	1.20	76	75	3.5	Blue	290	284	63	290	271	276
		15	494.565	1.40	1.16	1.20	77	75	3.5	Blue	289	281	60	290	270	279
3		20	497.412	1.40	1.16	1.20	76	75	3.5	Blue	289	280	59	290	269	277
		25	500.350	1.30	1.08	1.10	76	75	3.5	Blue	289	280	58	290	271	275
4		30	503.080	1.20	1.00	1.00	77	75	3.5	Blue	288	281	61	290	271	276
		35	505.868	1.20	1.00	1.00	76	75	3.5	Blue	288	282	64	290	270	275
STOP	1440	40	508.446													
B1	1502	0	509.188	1.30	1.08	1.10	75	74	4.5	Blue	288	280	67	290	270	275
		5	512.231	1.30	1.08	1.10	76	74	4.5	Blue	288	281	65	290	271	274
2		10	515.175	1.40	1.16	1.20	77	75	4.5	Blue	288	281	61	290	271	275
		15	518.182	1.30	1.08	1.10	77	75	4.5	Blue	288	282	60	290	272	276
3		20	521.051	1.30	1.08	1.10	77	75	4.5	Blue	288	282	60	290	272	276

Train Leak Check:

Before Test: .002 CF in 60 Seconds at 11.0 In. Hg
After Test: .0023 CF in 60 Seconds at 6.5 In. Hg

Comments:
Port A .003 60sec. 5.0 in Hg 508.610
Port B .002 60sec. 5.0 in Hg 509.188

	Initial	Final	Static Pressure				
Pitot Tube Leak Check	✓	✓	Port	A			
			Inches H₂O	0.59			
ORSAT Train Leak Check	○	○	Inches Hg				

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit #1

Date: 8/31/99
Run No.: PGE-BP-OHM-1-0-2
Sample Location: Exhaust Stack
Operator: S. J

Sheet 2 of 2

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 Sampler XAD Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
		25	524.071	1.20	1.00	1.00	76	75	4.5	Blue	288	281	61	290	270	274
4		30	526.865	1.20	1.00	1.00	77	75	4.5	Blue	288	280	61	290	271	273
		35	529.552	1.20	1.00	1.00	77	75	4.5	Blue	288	282	62	290	271	275
Stop	1542	40	532.240													
G1	1605	0	532.471	1.30	1.08	1.10	75	75	4.0	Blue	288	280	66	290	272	276
		5	535.368	1.30	1.08	1.10	76	75	4.0	Blue	288	280	58	290	270	275
2		10	538.550	1.30	1.08	1.10	77	75	4.0	Blue	288	281	51	290	273	275
		15	541.071	1.35	1.12	1.10	77	75	4.0	Blue	288	282	52	290	272	276
3		20	543.761	1.35	1.12	1.10	78	76	4.0	Blue	288	282	51	290	272	296
		25	546.730	1.40	1.16	1.20	78	76	4.0	Blue	288	281	51	290	270	274
4		30	549.285	1.40	1.16	1.20	79	77	4.0	Blue	288	282	52	290	270	273
		35	552.103	1.40	1.16	1.20	79	77	4.0	Blue	288	282	52	290	271	274
Stop	1645	40	555.045													
D1	1708	0	555.265	1.40	1.16	1.20	77	77	3.5	Blue	288	280	66	290	270	271
		5	559.045	1.40	1.16	1.20	79	77	3.5	Blue	288	281	60	290	272	273
2		10	561.032	1.40	1.16	1.20	80	77	3.5	Blue	288	282	55	290	272	273
		15	563.940	1.40	1.16	1.20	80	78	3.5	Blue	288	282	50	290	271	275
3		20	566.130	1.35	1.12	1.10	80	78	3.5	Blue	288	282	51	290	270	275
		25	568.875	1.40	1.12	1.10	79	78	3.5	Blue	288	281	51	290	270	273
4		30	571.431	1.30	1.08	1.10	78	78	3.5	Blue	288	282	51	290	269	275
		35	574.360	1.30	1.08	1.10	78	78	3.5	Blue	288	281	53	290	270	275
Stop	1743	40	577.208													

Meter Leak Check During Test:

Port B .002 CF in 60 Seconds at 5.5 In. Hg

Port C .002 CF in 60 Seconds at 5.5 In. Hg

Meter Reading

	Stop	Start
Port B	532.336	532.240
Port C	532.471	532.336

Comments:

Port C .002 60sec 6.0 in Hg 555.163

Port D .002 60sec 6.0 in Hg 555.265

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ORSAT ANALYSIS

Project No.	26046-0030-00003	**Date**	8/31/99
Client	BG&E	**Run**	2
Facility	Brayton Point	**Operator**	M. O'Brien
Source	Unit 1	**Comments**	
Location	Outlet		

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 Actual	O_2 Reading 2 Net	CO Reading 3 Actual	CO Reading 3 Net	F_o	
	1940	~~12.2~~ 11.6	~~20.2~~ 19.2	~~8.0~~ 7.6	—	—	~~1.057~~	
	1955	~~12.0~~ 11.6	~~20.0~~ 19.2	~~8.0~~ 7.6	—	—	~~1.075~~	1.147
	2005	~~12.0~~ 11.6	~~20.0~~ 19.2	~~8.0~~ 7.6	—	—	~~1.075~~	1.147
		[illegible]	[illegible]					

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: Outlet

Date: 8/31/99
Run No.: 2
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	800.7	706.0	691.7	715.9	735.5	714.5	698.2
Initial Vol. (ml/g):	709.5	682.1	686.7	711.5	735.7	713.2	698.9
Net Collected (ml/g):	91.2	23.4	5.0	4.4	-0.2	1.3	-0.7

Silica Gel Impinger:	8		
Final Vol. (ml/g):	874.4		
Initial Vol. (ml/g):	854.6		
Net Collected (ml/g):	19.8		

Comments: ~30% spent

Comments/Notes:

ID: PG&E-BP-OHM-1-O-2

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 144.7

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 8/31/99

Location: Outlet **Run:** 2

Sample ID: PG&E-BP-OHM-1-O-2

Train Set Up By:	[signature]	**Date:** 8/31/99	**Time:** 11:24
Transported to Location By: (HS)		**Date:**	**Time:**
Received at Location By:	S. J	**Date:** 8/31/99	**Time:** 1315
Transported to Recovery Area By:	S. J	**Date:** 8/31/99	**Time:** 1810
Received at Recovery Area By:	[signature]	**Date:** 8/31/99	**Time:** 1815
Train Recovered By:	[signature]	**Date:** 8/31/99	**Time:** 18:20

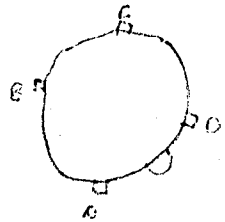
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PGrE
Facility: Brayton Point
Source: Unit # 1
Sample Location: Exhaust Stack
Stack Diameter: 195.76"
Date: 9/1/99
Run No.: PG+E-BP-OHM-1-0-3
Operator: [illegible]
Meterbox No.: # 90341
Meterbox ΔH @: 1.963
Y Factor: 0.983

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



Sheet 1 of 2

Train Prepared By: E. Mackinnon
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 70°
Bar. Pressure, In. Hg.: 30.18
Assumed Moisture, %: 8%
Heater Box Setting, °F:
Nozzle # / Dia., In.: PG+E-N-3 0.189 Glass
Probe Length / Material: 12' 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	Temperatures (°F) Filter Box	Temperatures (°F) Imp Temp	Temperatures (°F) Jumper ~~XAD Cond~~	Temperatures (°F) Probe	Temperatures (°F) Filter Outlet
01	0830	0	577.693	1.2	1.0	1.0	76	74	3.0	Blue	285	280	61	290	273	276
		5	580.530	1.3	1.08	1.10	77	74	3.0	Blue	285	279	57	290	271	274
2		10	583.861	1.3	1.08	1.10	78	75	3.0	Blue	286	279	55	290	272	273
		15	586.140	1.2	1.0	1.0	79	75	3.0	Blue	286	278	56	290	272	273
3		20	588.685	1.3	1.08	1.1	80	77	3.0	Blue	287	276	57	290	270	271
		25	591.570	1.3	1.08	1.1	80	77	3.0	Blue	287	275	59	290	270	271
4		30	594.971	1.2	1.0	1.0	80	78	3.0	Blue	288	275	61	290	272	272
		35	596.760	1.2	1.0	1.0	81	78	3.0	Blue	288	276	63	290	271	272
STOP	0910	40	599.364													
C1	0926	0	599.633	1.2	1.0	1.0	81	79	3.0	Blue	290	275	67	290	271	273
	*	5	602.520	1.3	1.08	1.10	83	81	3.0	Blue	291	271	60	290	268	270
2		10	605.192	1.2	1.0	1.0	84	81	3.0	Blue	292	275	65	290	272	274
		15	608.051	1.2	1.0	1.0	85	81	3.0	Blue	292	277	60	280	273	274
3		20	610.881	1.1	0.91	0.90	86	83	3.0	Blue	293	278	59	271	272	275

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 12.5 In. Hg
After Test: .006 CF in 60 Seconds at 5.0 In. Hg

	Initial	Final	Static Pressure			
Port			C			
Pitot Tube Leak Check	✓	✓	-0.43			
ORSAT Train Leak Check	○	○				
Inches H₂O						
Inches Hg						

Comments:
Port 0 .004 60sec 4.0 in Hg 599.490
Port C .005 60sec 5.0 in Hg 599.633
* Stop 0930 Lost Power
Start 1005

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit #1

Date: 9/1/99
Run No.: PG+E-BP-OHM-1-0-3
Sample Location: Exhaust Stack
Operator: B.G.

Sheet 2 of 2

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	Jumper ~~XAD~~ Cond	Probe	Filter Outlet
		25	613.852	1.1	0.94	0.94	86	83	3.0	Blue	293	276	59	289	274	275
4		30	616.991	1.1	0.94	0.94	85	83	3.0	Blue	291	278	60	297	273	277
		35	618.550	1.2	1.02	1.0	84	83	3.0	Blue	291	280	63	279	275	278
Stop	1040	40	621.283													
B1	1055	0	621.711	1.2	1.02	1.0	84	83	3.0	Blue	292	282	65	271	276	278
		5	624.541	1.3	1.09	1.1	87	83	3.0	Blue	293	283	59	293	277	278
2		10	627.162	1.2	1.02	1.0	87	84	3.0	Blue	294	283	54	298	275	277
		15	629.920	1.2	1.02	1.0	87	84	3.0	Blue	294	284	54	285	276	277
3		20	632.460	1.3	1.09	1.1	89	84	3.0	Blue	294	283	54	278	275	278
		25	635.255	1.25	1.05	1.05	89	85	3.0	Blue	294	283	57	269	277	279
4		30	638.285	1.25	1.05	1.05	92	86	3.0	Blue	294	280	58	281	276	279
		35	640.751	1.3	1.09	1.1	92	86	3.0	Blue	294	280	59	274	276	279
Stop	1135	40	643.476													
A1	1150	0	643.681	1.3	1.09	1.1	92	89	3.0	Blue	295	281	67	285	279	280
		5	646.530	1.3	1.09	1.1	94	89	3.0	Blue	295	283	60	297	279	280
2		10	649.313	1.4	1.18	1.2	93	89	3.0	Blue	295	283	54	310	280	261
		15	652.250	1.3	1.09	1.1	93	89	3.0	Blue	295	283	54	288	280	283
3		20	655.027	1.3	1.09	1.11	95	90	3.0	Blue	295	284	55	274	281	283
		25	657.941	1.3	1.09	1.1	94	89	3.0	Blue	295	284	56	290	281	283
4		30	660.780	1.1	0.92	0.90	95	90	3.0	Blue	295	285	57	305	282	283
		35	663.375	1.1	0.92	0.90	93	90	3.0	Blue	296	285	58	287	283	285
Stop	1230	40	665.993													

Meter Leak Check During Test:

Pitot .004 CF in 60 Seconds at 5.0 In. Hg
Port B .006 CF in 60 Seconds at 5.5 In. Hg

Meter Reading

	Stop	Start
Port B	621.413	621.283
Port A	621.711	621.413

Comments:

Port B .005 60sec. 5.0 in Hg.
Port A .007 60sec. 6.5 in Hg 643.681

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ORSAT ANALYSIS

Project No.	26046-0030-00003	Date	9/1/99
Client	PG&E	Run	3
Facility	Brayton Point	Operator	M.O'Brien
Source	Unit 1	Comments	
Location	Exhaust Stack		

Orsat Leak Checked (yes) / no

Purge System with Sample Gas (yes) / no

Ambient Air Check CO_2 0.0 O_2 20.0

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	
	1615	12.~~0~~3	19.~~0~~2	~~7.0~~ 6.9			
		12.4	19.2	6.8			
		12.4	19.2	6.8			
	1850	12.4	19.6	7.2			1.105
	1905	12.4	19.6	7.2			1.105
	1915	12.4	19.6	7.2			1.105

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: Outlet

Date: 8/31/99 / 9/1/99
Run No.: ~~2~~ 3
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	679.4	651.5	681.3	659.7	711.5	725.1	623.5
Initial Vol. (ml/g):	593.3	631.3	680.7	655.9	711.1	723.1	622.0
Net Collected (ml/g):	86.1	20.2	0.6	3.8	0.4	2.0	1.5

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	856.6			
Initial Vol. (ml/g):	842.2			
Net Collected (ml/g):	14.4			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 129.0

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/1/99

Location: Outlet **Run:** 3

Sample ID: PG&E-BP-OHM-1-O-3

Train Set Up By:	[signature]	**Date:** 9/1/99	**Time:** 0719
Transported to Location By:	S. J	**Date:** 9/1/99	**Time:** 0725
Received at Location By:	S. J	**Date:** 9/1/99	**Time:** 0730
Transported to Recovery Area By:	S. J	**Date:** 9/1/99	**Time:** 1253
Received at Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1259
Train Recovered By:	[signature]	**Date:** 9/1/99	**Time:** 1259

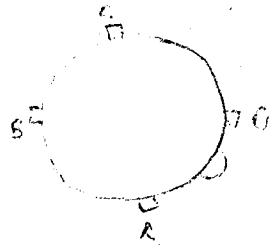
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit # 1
Sample Location: Exhaust Stack
Stack Diameter: 195.76
Date: 7/1/99
Run No.: PG+E-BP-OHM-1-0-4
Operator: B.J.
Meterbox No.: #903341
Meterbox ΔH @: 1.963
Y Factor: 0.983

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



Sheet 1 of 2

Train Prepared By: E. McKinnon
Pitot Number and Side: P 200
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 80°
Bar. Pressure, In. Hg.: 30.18
Assumed Moisture, %: 3%
Heater Box Setting, °F:
Nozzle # / Dia., In.: PG+E-N-3 0.184 Glass
Probe Length / Material: 12' 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F Jumper ~~XAD~~ Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
A 1	1416	0	666.255	1.3	1.09	1.1	81	81	4.0	Blue	296	280	67	273	279	282
		5	669.503	1.2	1.01	1.0	81	81	4.0	Blue	297	282	60	294	280	281
2		10	671.813	1.1	0.92	0.92	83	81	4.0	Blue	296	284	59	312	280	282
		15	674.565	1.1	0.92	0.92	84	81	4.0	Blue	297	285	55	299	281	282
3		20	677.017	1.2	1.01	1.0	85	82	4.0	Blue	296	285	55	285	282	283
		25	679.420	1.2	1.01	1.0	86	83	4.0	Blue	296	284	56	279	282	281
4		30	682.321	1.2	1.01	1.0	86	83	4.0	Blue	297	285	58	290	281	283
		35	684.921	1.1	0.92	0.92	86	83	4.0	Blue	297	285	62	285	282	284
STOP	1456	40	687.456													
B 1	1513	0	687.657	1.2	1.01	1.0	83	83	4.0	Blue	295	285	68	278	280	282
		5	690.360	1.2	1.01	1.0	85	83	4.5	Blue	294	287	60	291	283	284
2		10	694.132	1.2	1.01	1.0	87	84	4.5	Blue	293	286	55	309	279	282
		15	697.113	1.2	1.01	1.0	87	84	4.0	Blue	293	286	55	281	280	282
3		20	700.123	1.3	1.09	1.1	87	84	4.0	Blue	293	286	55	272	279	280

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 11.5 In. Hg
After Test: .003 CF in 60 Seconds at 6.5 In. Hg

Comments:
Port A .002 60 sec 5.0 in Hg
Port B .002 60 sec. 5.5 in Hg 687.657

	Initial	Final	Static Pressure			
Pitot Tube Leak Check	✓	✓	Port	B		
ORSAT Train Leak Check	○	○	Inches H₂O	-0.44		
			Inches Hg			

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit #1

Date: 9/1/99
Run No.: PG+E - BP - OHM - 1 - 0 - 4
Sample Location: Exhaust Stack
Operator: [illegible]

Sheet 2 of 2

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) °C Stack	Filter Box	Imp Temp	Bumper ~~XAD Cond~~	Probe	Filter Outlet
		25	702.348	1.2	1.01	1.0	87	85	4.0	Blue	292	285	55	271	278	282
4		30	704.635	1.3	1.09	1.1	87	84	3.5	Blue	292	284	57	289	279	280
		35	707.321	1.35	1.15	1.15	87	85	3.5	Blue	291	283	57	302	280	282
STOP	1553	40	710.163													
61	1607	0	710.429	1.3	1.09	1.1	85	85	3.5	Blue	291	281	67	273	278	281
		5	713.281	1.3	1.09	1.1	86	85	3.5	Blue	291	280	63	288	276	279
2		10	715.861	1.3	1.09	1.1	87	85	3.5	Blue	291	280	58	299	278	280
		15	718.712	1.4	1.19	1.2	87	85	4.0	Blue	291	281	57	308	276	278
3		20	721.571	1.3	1.09	1.1	87	86	4.0	Blue	290	282	57	283	276	279
		25	724.825	1.3	1.09	1.1	88	86	4.0	Blue	290	282	58	272	277	280
4		30	727.165	1.2	1.01	1.0	88	86	4.0	Blue	290	283	58	281	277	280
		35	729.940	1.2	1.01	1.0	87	86	4.0	Blue	290	283	59	279	278	279
STOP	1647	40	732.641													
01	1705	0	732.928	1.2	1.01	1.0	83	84	4.0	Blue	290	283	66	285	278	280
		5	735.835	1.2	1.01	1.0	84	84	4.0	Blue	290	282	59	302	279	280
2		10	738.391	1.3	1.09	1.1	84	84	4.0	Blue	290	283	57	290	280	281
		15	741.255	1.3	1.09	1.1	85	83	4.0	Blue	290	283	57	285	280	281
3		20	744.570	1.3	1.09	1.1	85	83	4.0	Blue	290	282	57	294	279	280
		25	746.865	1.3	1.09	1.1	85	83	4.0	Blue	290	282	57	303	279	281
4		30	749.502	1.3	1.09	1.1	84	83	4.0	Blue	290	283	58	288	280	282
		35	752.340	1.2	1.01	1.0	84	83	4.0	Blue	290	283	57	279	280	282
STOP	1745	40	754.979													

Meter Leak Check During Test:

Port B .003 CF in 60 Seconds at 5.0 In. Hg

Port C .003 CF in 60 Seconds at 5.5 In. Hg

Meter Reading

	Stop	Start
Port B	710.265	710.163
Port C	710.429	710.265

Comments:

Port C .003 60 sec 6.0 in Hg 732.745

Port D .003 60 sec 6.0 in Hg 732.928

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ORSAT ANALYSIS

Project No. 26646-0030-00003
Client PG+E
Facility Brayton Point
Source Unit 1
Location Outlet stack

Date 9/1/99
Run 4
Operator MOBrien
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	
	1925	12.6	19.8	7.2			1.0573
	1935	12.6	19.6	7.0			1.1032
	1946	12.6	19.6	7.0			1.1032

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

SAMPLING TRAIN SETUP AND RECOVERY SHEET

'ect No.: 26046
nt: PG&E
Facility: Brayton
Source: Outlet

Date: 9/1/99
Run No.: 4
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	809.0	704.0	689.2	717.5	738.4	715.5	695.9
Initial Vol. (ml/g):	711.8	682.4	686.8	713.2	738.6	714.0	695.6
Net Collected (ml/g):	97.2	21.6	2.4	4.3	-0.2	1.5	0.3

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	930.2			
Initial Vol. (ml/g):	913.9			
Net Collected (ml/g):	17.3			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 144.4

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/1/99

Location: Brayton Outlet **Run:** 4

Sample ID: Outlet PG&E-BR-OHM-1-0-4

Train Set Up By:	[signature]	**Date:** 9/1/99	**Time:** 0917
todcontd	[signature]	9/1/99	1250
Transported to Location By:	[signature]	**Date:** 9/1/99	**Time:** 1256
Received at Location By:	[signature]	**Date:** 9/1/99	**Time:** 1259
Transported to Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1806
Received at Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1812
Train Recovered By:	[signature]	**Date:** 9/1/99	**Time:** 1812

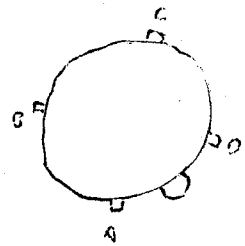
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION OKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG&E
Facility: Brayton Point
Source: Unit 1
Sample Location: Exhaust stack
Stack Diameter: 195.76
Date: 9/2/99
Run No.: PGE-OHM-1-0-5
Operator: S.J.
Meterbox No.: #90341
Meterbox ΔH @: 1.963
Y Factor: 0.983

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



Sheet 1 of 2
Train Prepared By: E. MacKinnon
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 70°
Bar. Pressure, In. Hg.: 30.19
Assumed Moisture, %: 8.0
Heater Box Setting, °F:
Nozzle # / Dia., In.: PGE-N-3 0.184 Glass
Probe Length / Material: 12' 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F Jumper ~~XAD Cond~~	Temperatures °F Probe	Temperatures °F Filter Outlet
D1	0800	0	755.758	1.2	1.0	1.0	78	78	3.0	Blue	283	279	67	282	270	275
		5	758.851	1.2	1.0	1.0	78	79	3.5	Blue	283	280	65	297	271	276
2		10	761.142	1.3	1.12	1.1	78	78	4.0	Blue	283	280	60	309	271	276
		15	764.050	1.3	1.12	1.1	79	78	4.5	Blue	284	280	59	283	270	275
3		20	766.850	1.3	1.12	1.1	81	78	5.0	Blue	284	279	55	271	270	276
		25	770.990	1.3	1.12	1.1	82	80	3.0	Blue	284	280	55	287	271	276
4		30	772.550	1.2	1.0	1.0	83	80	3.0	Blue	284	280	54	298	271	275
		35	775.260	1.2	1.0	1.0	85	82	3.0	Blue	284	279	55	275	270	276
Stop	0840	40	777.886													
C1	0856	0	778.183	1.3	1.12	1.1	83	83	3.0	Blue	285	281	66	268	271	275
		5	781.245	1.3	1.12	1.1	85	83	3.0	Blue	285	280	59	289	272	275
2		10	783.921	1.3	1.12	1.1	86	83	3.0	Blue	285	281	55	293	272	275
		15	787.335	1.3	1.12	1.1	88	84	3.0	Blue	285	281	55	305	272	276
3		20	789.451	1.4	1.20	1.2	89	84	3.0	Blue	285	280	56	289	272	275

Train Leak Check:

Before Test: 0.010 CF in 60 Seconds at 12.0 In. Hg
After Test: .006 CF in 60 Seconds at 6.0 In. Hg

Comments:
Port D .005 60sec 6.0 in Hg 778.036
Port C .008 60sec 6.0 in Hg 778.183

	Initial	Final	Static Pressure			
Pitot Tube Leak Check	✓	✓	Port	0		
ORSAT Train Leak Check	○	○	Inches H₂O	-0.42		
			Inches Hg			

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Benicia Point
Source: Unit 1

Date: 9/2/99
Run No.: PGE-OHM-1-0-5
Sample Location: Exhaust Stack
Operator: S J

Sheet 2 of 2

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	Filter Box	Imp Temp	Jumper ~~XAD~~ Cond	Probe	Filter Outlet
		25	792.312	1.4	1.20	1.2	90	84	3.0	Blue	285	280	57	273	272	277
4		30	795.050	1.3	1.12	1.1	90	85	3.0	Blue	286	281	58	285	273	276
		35	798.130	1.3	1.12	1.1	92	86	3.0	Blue	287	281	60	270	273	277
STOP	0936	40	800.527													
B1	0950	0	800.749	1.2	1.0	1.0	95	89	3.0	Blue	287	281	67	278	273	276
		5	804.265	1.2	1.0	1.0	95	89	3.0	Blue	287	281	60	290	273	276
2		10	806.745	1.3	1.12	1.1	95	88	3.0	Blue	287	280	58	305	272	277
		15	809.295	1.3	1.12	1.1	96	90	3.0	Blue	287	281	57	286	273	277
3		20	811.945	1.3	1.12	1.1	97	91	3.0	Blue	287	280	56	270	271	276
		25	814.512	1.3	1.12	1.1	98	92	3.0	Blue	288	281	56	281	272	275
4		30	817.490	1.4	1.20	1.2	98	93	3.0	Blue	288	282	57	297	272	275
		35	820.176	1.4	1.20	1.2	101	94	3.0	Blue	288	282	60	271	271	276
STOP	1030	40	823.068													
A1	1043	0	823.313	1.4	1.19	1.2	98	95	3.0	Blue	288	282	65	270	272	276
		5	826.314	1.4	1.19	1.2	99	95	3.0	Blue	289	281	55	289	272	275
2		10	829.160	1.4	1.19	1.2	99	95	3.0	Blue	289	281	53	302	271	276
		15	831.830	1.4	1.19	1.2	100	96	3.0	Blue	289	281	53	295	273	277
3		20	835.123	1.3	1.12	1.1	101	96	3.0	Blue	289	282	54	278	273	276
		25	837.518	1.3	1.12	1.1	102	97	3.0	Blue	290	282	55	283	272	276
4		30	840.775	1.2	1.0	1.0	102	98	3.0	Blue	291	281	56	300	273	275
		35	843.060	1.2	1.0	1.0	103	98	3.0	Blue	291	282	58	285	273	276
STOP	1123	40	845.829													

Meter Leak Check During Test:

Port C .007 CF in 60 Seconds at 6.0 In. Hg

Port B .006 CF in 60 Seconds at 6.0 In. Hg

Meter Reading

	Stop	Start
	800.675	800.527
	800.749	800.675

Comments:

Port B .006 60sec. 6.5 in Hg 823.196

Port A .006 60sec. 6.0 in Hg 823.313

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ORSAT ANALYSIS

Project No. 26046-0030-00003
Client PG+E
Facility Brayton Point
Source Unit 1
Location Outlet

Date 9/2/99
Run 5
Operator M.O'Brien
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	
	1308	12.2	19.6	7.4			
	1320	12.2	19.6	7.4			
	1330	12.2	19.6	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

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: Outlet - Boiler #1

Date: 9/1/99 / 9/2/99
Run No.: 5
Train Type: Ontario-Hydro
Recovery Person: Em

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):	677.6	661.2	680.6	659.9	709.0	728.1	625.7
Initial Vol. (ml/g):	588.1	631.4	675.7	654.9	709.0	725.6	622.6
Net Collected (ml/g):	89.5	29.8	4.9	5.0	0.0	2.5	3.1

Silica Gel Impinger:	8		
Final Vol. (ml/g):	927.0		
Initial Vol. (ml/g):	909.4		
Net Collected (ml/g):	17.6		

Comments: ~80% spent

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 152.4

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/2/99

Location: Outlet **Run:** 5

Sample ID: PG&E-BP-OHM-1-O-5

Train Set Up By:	[signature]	**Date:** 9/2/99	**Time:** 0716
Transported to Location By:	[signature]	**Date:** 9/2/99	**Time:** 0716
Received at Location By:	[signature]	**Date:** 9/2/99	**Time:** 0725
Transported to Recovery Area By:	[signature]	**Date:** 9/2/99	**Time:** 1145
Received at Recovery Area By:	[signature]	**Date:** 9/2/99	**Time:** 1148
Train Recovered By:	[signature]	**Date:** 9/2/99	**Time:** 12:15

Comments:

Hg

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	8/30/99
Client:	PG&E
Facility:	Brayton Point
Run No.:	PRelim
Barometric Pressure (in. Hg):	
% Moisture:	
Pitot Tube ID:	
Post Leak Check:	
Measurement Device:	
Micromanometer:	
10" Manometer:	✓
Magnehelic:	
Other:	
Explain:	

Project No.:	26046-0030-00003
Sample Location:	UNIT 2 ~~EAST~~ WEST INlet
Load Condition:	
Operator:	
Meterbox No.:	90338
Static (in. H_2O):	
Pitot Tube Coefficient:	
Stack Diameter (in.):	252" x 72"
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
Port 1 15:00	A_1	318	1.2	
	A_2	325	1.1	
	A_3	324	1.2	
	A_4	319	.76	
Port 2	B_1	314	1.3	
	B_2	319	1.2	
	B_3	318	.94	
	B_4	314	1.1	
Port 3	C_1	321	.81	
	C_2	328	1.2	
	C_3	328	1.2	
	C_4	325	1.1	

* Port 5 is Blocked

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
Port 4	D_1	335	1.2	
	D_2	345	.98	
	D_3	342	.99	
	D_4	330	1.4	
* Port 6	E_1	311	1.4	
	E_2	311	1.6	
	E_3	301	1.5	
	E_4	295	1.1	
Port 7	F_1	298	.79	
	F_2	301	.98	
	F_3	298	.94	
	F_4	288	.80	
Port 8	G_1	289	1.0	
	G_2	293	1.1	
	G_3	292	1.3	
	G_4	288	1.4	

TRC

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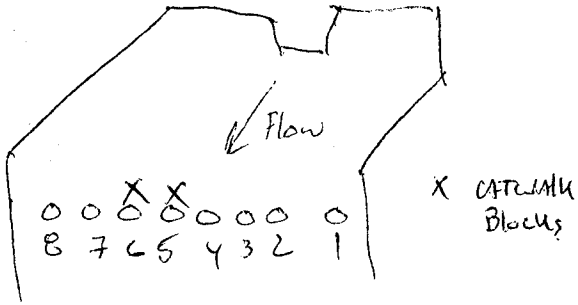
TRC ENVIRONMENTAL CORPORATION - IS[illegible]INETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PGrE
Facility: Brayton Point
Source: Unit # 1
Sample Location: ESP Inlet West
Stack Diameter: 252 x 72"
Date: 8/31/99
Run No.: PGrE-BP-OHM-1-IW-1
Operator: D. Gice
Meterbox No.: 90347
Meterbox ΔH @: 1.973
Y Factor:

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



Sheet 1 of 2
Train Prepared By: E. McKim
Pitot Number and Side: P-1
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 85
Bar. Pressure, In. Hg.:
Assumed Moisture, %: 8
Heater Box Setting, °F: 290
Nozzle # / Dia., In.: PGrE-N 2 / .180
Probe Length / Material:
Probe Heater Setting: 290

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 °C Filter Outlet
1-1	1003	0	299.742	1.1	.935	.93	99	90	3	Good	308	295	66	—	204	253
2		6.5	303.8	1.1	.935	.93	96	92	4		313	295	64		206	252
3		13	307.0	.96	.816	.82	94	93	3.5		311	297	65		207	253
4		19.5	310.4	.94	.799	.80	90	93	4		301	301	67		208	258
		26	313.621													
2-1		26	313.715	.82	.68	.68	90	93	4		321	321	65		201	289
2		32.5	318.2	1.0	.84	.84	89	92	4		314	330	65		195	289
3		39	320.0	.92	~~.97~~	.77	89	90	4		308	342	64		197	285
4		45.5	323.1	1.2	1.08	1.1	89	90	5		301	349	62		201	288
		52	326.721									~~351~~	~~60~~		~~200~~	
3-1	1057	52	326.912	1.1	.891	.89	90	90	5.5		322	351	60		200	299
2		58.5	330.4	1.2	.972	.97	92	90	5.5		321	358	61		209	305
3		65	334.1	1.1	.891	.89	95	91	5.5		321	359	61		210	310
4		71.5	337.4	1.1	.891	.89	96	93	6		302	360	62		206	310

Train Leak Check:

Comments:

Before Test: .002 CF in 60 Seconds at 18 In. Hg
After Test: _____ CF in _____ Seconds at _____ In. Hg

	Initial	Final		Static Pressure			
			Port	-			
Pitot Tube Leak Check	✓	○	Inches H₂O				
ORSAT Train Leak Check	✓	○	~~Inches~~ Hg mm	-22			

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: UNit 1

Date: 8/31/99
Run No.: PGE-BP-OHM-1-IW-1
Sample Location: inlet west
Operator: D. Gill

Sheet 2 of 2

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 °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
3-4		78	341.128							GOOD				—		
4-1		78	341.421	.2	.164	.16	97	97		|		366	61	—	201	300
x2	11.35	84.5	344.21	1.1	.89	.88	97	98		|						
3																
4																

Meter Leak Check During Test:

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

Meter Reading: Stop _____ Start _____

Comments:
* 346.772 Filter Broke.

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: Inlet West (b)

Date: 8/30/99
Run No.: 1 HW - Inlet (b)
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	681.0	641.7	691.2	714.8	720.9	720.9	696.9
Initial Vol. (ml/g):	639.6	624.1	687.5	709.9	716.2	720.3	695.2
Net Collected (ml/g):	~~681.0~~ 41.4	~~641.7~~ 17.6	3.7	1.9	0.4	0.6	1.7

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	815.3			
Initial Vol. (ml/g):	803.7			
Net Collected (ml/g):	11.6			

Comments/Notes: ID = PG&E-BR-OHM-1-Ib-1

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 78.9

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 8/31/99

Location: Inlet-West (b) **Run:** 1

Sample ID: PG&E-BR-OHM-1-Ib-1

Train Set Up By: [illegible] **Date:** 8/30/99 **Time:** 0736

Transported to Location By: [illegible] **Date:** 8/31/99 **Time:** 7:38

Received at Location By: [illegible] **Date:** 8/31/99 **Time:** 800

Transported to Recovery Area By: _____ **Date:** _____ **Time:** _____

Received at Recovery Area By: _____ **Date:** _____ **Time:** _____

Train Recovered By: _____ **Date:** _____ **Time:** _____

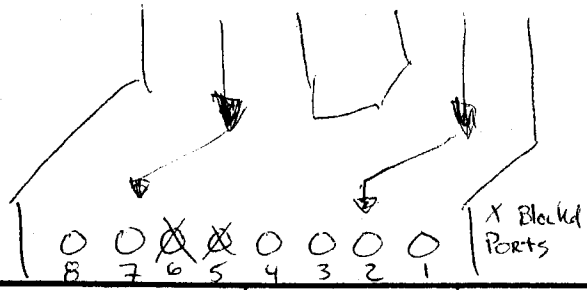
Comments: Run Voided

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit #1
Sample Location: Inlet West
Stack Diameter: 252 x 72
Date: 8/30/99
Run No.: PGE-BP-OHM-1-INV-2
Operator: D. Gill
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 2
Train Prepared By: E Mac
Pitot Number and Side: P1
Pitot Tube CP: 0.88
Filter No.: N/A
Ambient Temp., °F: 80
Bar. Pressure, In. Hg.: 30.15
Assumed Moisture, %: 8
Heater Box Setting, °F: 350
Nozzle # / Dia., In.: PG+E - N - 2 / .180
Probe Length / Material: 10' GL
Probe Heater Setting: 350

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	1404	0	347.532	1.1	.891	.890	81	81	3.5	GOOD	317	330	61	—	171	298
2		6.5	352.1	1.1	.891	.89	81	81	4		317	327	59		182	299
3		13	355.2	1.0	.81	.81	82	81	4		310	328	60		185	299
4		19.5	358.6	1.1	.891	.89	83	82	4.5		303	333	61		194	299
		26	361.821													
2-1		26	362.015	1.0	.81	.81	84	83	4.5		324	331	62		187	308
2		32.5	365.1	1.3	1.04	1.1	83	83	5		319	332	61		185	310
3		39	368.9	1.3	.68	.68	83	82	4.5		308	335	61		186	311
4		45.5	372.1	1.1	.902	.90	82	82	5		302	335	62		181	310
		52	375.418													
3-1	1501	52	375.641	1.2	.96	.96	85	84	5.5		326	331	61		183	311
2		58.5	379.1	1.2	.96	.96	86	84	5.5		320	335	60		187	312
3		65	382.4	1.1	.891	.89	85	84	5.5		315	330	60		189	311
4		71.5	385.9	1.1	.902	.90	85	84	5.5		308	330	60		183	310

Train Leak Check:

Before Test: .001 CF in 60 Seconds at 15 In. Hg
After Test: .002 CF in 60 Seconds at 10 In. Hg

Comments:

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

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit #1

Date: 8/31/99
Run No.: PG+E-BP-OHM-1-IW-2
Sample Location: Inlet west
Operator: D Gill

Sheet 2 of 2

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 (°C) Probe	Temperatures (°C) Filter Outlet
3-4		78	389.421													
4-1	1525	78	389.625	* 1.0	.79	.79	86	85	6	60°>	332	330	61		184	312
2		84.5	392.6	1.1	.869	.87	86	85	6.5		338	333	62		187	313
3		91	395.6	1.3	1.02	1.0	87	86	7		328	335	63		189	312
4		97.5	399.1	1.4	1.13	1.1	86	86	8		311	329	64		185	310
*		104	402.912													
7-1	1650	104	403.615	.63	.52	.52	83	84	5		288	352	66		190	297
2		110.5	406.1	.76	.62	.62	81	83	5.5		292	342	65		194	297
3		117	408.9	.89	.747	.75	82	83	6		285	341	65		198	295
4		123.5	411.9	.94	.799	.80	83	83	6		273	310	62		197	281
		130	415.111													
8-1		130	415.625	.94	.799	.86	83	83	5		285	326	60		193	285
2		136.5	418.7	1.1	.913	.91	83	82	7		287	327	58		197	288
3		143	422.0	1.2	.984	0.98	83	83	7		280	328	57		198	288
4		149.5	425.5	1.2	.984	.98	83	83	7		276	325	57		197	280
		156	428.792													

Meter Leak Check During Test:

** .002 CF in 60 Seconds at 15 In. Hg
.001 CF in 60 Seconds at 10 In. Hg

Meter Reading: Stop ____ Start ____

Comments:
* NON ISO point Actl ΔP = .13
** Remove Probe to move train.

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ORSAT ANALYSIS

Project No. 26046-0030-00003
Client PG&E
Facility Brayton Point
Source ~~West Inlet~~ Unit 1
Location West Inlet

Date 9/1/99
Run 2
Operator MPR
Comments

Orsat Leak Checked yes / no
Purge System with Sample Gas yes / no
Ambient Air Check CO_2 _____ O_2 _____.
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	
		~~12.4~~	~~19.2~~	~~6.8~~	—	—	~~1.137~~
		12.0	19.2	7.2			1.142
		12.1	19.2	7.1			1.140
		12.0	19.2	7.2			1.142

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: West Inlet (b)

Date: 8/31/99
Run No.: 2W - Inlet
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	798.5	657.1	693.4	640.4	716.7	718.8	704.5
Initial Vol. (ml/g):	706.2	643.4	692.2	637.0	716.3	717.6	704.9
Net Collected (ml/g):	92.3	13.7	1.2	3.4	0.4	1.2	-0.4

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	759.0			~40% spent
Initial Vol. (ml/g):	738.4			
Net Collected (ml/g):	20.6			

Comments/Notes:

ID: PG&E-BP-OHM-1-Ib-2

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 132.4

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 8/31/99

Location: West Inlet **Run:** 2 - In-West

Sample ID: PG&E-BP-OHM-1-I6-2

Train Set Up By:	[illegible]	**Date:** 8/31/99	**Time:** 1126
Transported to Location By:	Dave Gill	**Date:** 8/31/99	**Time:** 12:30
Received at Location By:	Dave Gill	**Date:** 8/31/99	**Time:** 12:40
Transported to Recovery Area By:	[illegible]	**Date:** 8/31/99	**Time:** 1610
Received at Recovery Area By:	[illegible]	**Date:** 8/31/99	**Time:** 1615
Train Recovered By:	[illegible]	**Date:** 8/31/99	**Time:** 1858

Comments:

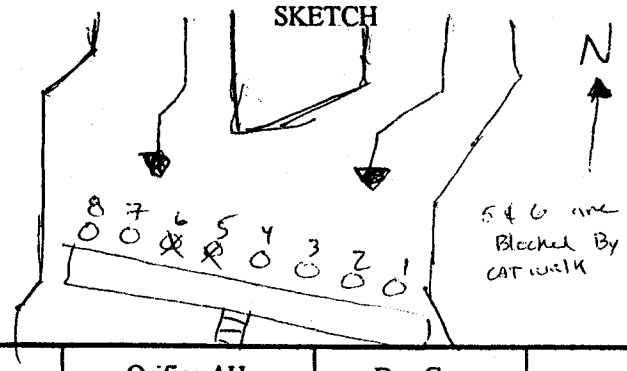
Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG&E
Facility: Brayton Point
Source: Unit # 2
Sample Location: ESP Inlet West
Stack Diameter: 252 x 72
Date: 9-1-99
Run No.: PG&E-BP-014M-1-IW-3
Operator: D. Gill
Meterbox No.: 90342
Meterbox ΔH @: 1.973
Y Factor:

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

SKETCH



Sheet 1 of 2
Train Prepared By: EMAC
Pitot Number and Side: P-3
Pitot Tube CP: 0.88
Filter No.: —
Ambient Temp., °F: ~~80~~ 64
Bar. Pressure, In. Hg.: 30.18
Assumed Moisture, %: 8
Heater Box Setting, °F: 350
Nozzle # / Dia., In.: PG&E - N-2 / .180
Probe Length / Material: 11' / GL
Probe Heater Setting: 350

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 (°C) Probe	Temperatures (°C) Filter Outlet
1-1	835	0	430.215	1.4	1.10	1.1	79	80	4	Good	319	318	54	—	214	310
2		6.5	434.1	1.3	1.04	1.0	82	81	4		321	321	53		232	318
3		13	438.1	1.3	1.04	1.0	84	85	4.5		316	318	57		221	315
4		19.5	440.9	1.2	.984	.98	84	86	4.5		308	318	60		207	318
		26	444.321													
2-1		26	444.641	1.0	.79	.79	84	86	4		335	318	62		220	320
2		32.5	447.9	1.1	.88	.88	86	87	4.5		326	324	63		243	321
3		39	451.1	1.1	.891	.89	87	86	5		316	327	65		241	320
4		45.5	454.7	1.0	.81	.81	86	87	5		313	322	65		225	318
		52	458.325													
3-1	1009	52	458.421	1.1	.858	.86	93	99	6		339	330	66		199	320
2		58.5	461.2	1.3	1.06	1.0	91	98	6		333	332	65		208	320
3		65	464.6	1.2	.972	.97	89	96	6		330	323	65		227	321
4		71.5	468.2	1.1	.902	.90	88	93	6		322	321	64		232	320

Train Leak Check:

Before Test: .002 CF in 60 Seconds at 18 In. Hg
After Test: .002 CF in 60 Seconds at 12 In. Hg

Comments:

	Initial	Final	Static Pressure				
Pitot Tube Leak Check	✓	✓	Port	3			
ORSAT Train Leak Check	✓	✓	Inches H₂O				
			~~Inches~~ Hg mm	-22			

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.. 26046 00030 - 00003
Client: PG&E
Facility: BRAYTON POINT
Source: UNIT 1

Date: 6/99
Run No.: PG&E-BP-OHM-1-1W-3
Sample Location: INLET WEST
Operator: D. GILL

Sheet 2 of

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 (°C) Probe	Temperatures (°C) Filter Outlet
3-4		78	471.592											—		
4-1	1058	78	472.061	1.1	.847	.85	84	87	6	GOOD	352	311	67		211	350
2		84.5	474.6	1.1	.847	.85	83	86	6		350	335	65		221	348
3		91	477.9	1.0	.79	.79	85	85	6.5		338	338	64		221	341
4		97.5	481.1	1.2	.96	.96	86	85	7		323	333	63		225	335
		104	485.42													
* 7-1	1140	104	486.352	.72	.59	.59	92	93	6		305	331	63		224	300
2		110.5	489.0	.94	.789	.79	91	95	6.5		305	328	62		220	300
3		117	492.2	1.0	.82	.82	89	95	7		293	325	60		220	301
4		123.5	495.2	.82	.70	.70	90	95	7		284	320	59		221	295
		130	498.152													
8-1	1207	130	498.542	1.1	.902	.90	91	96	7.5		295	320	61		224	295
2		136.5	501.8	1.1	.902	.90	92	95	8		298	321	61		221	294
3		143	505.0	1.2	1.0	1.0	90	95	9		294	322	62		220	295
4		149.5	508.6	1.1	.935	.94	91	95	9		285	320	62		221	292
	1233	156	512.115													

Meter Leak Check During Test:

.002 CF in 60 Seconds at 12 In. Hg ____ ____
.003 CF in 60 Seconds at 12 In. Hg ____ ____

Meter Reading: Stop / Start

Comments:

* Leak check, Probe removed for port change.

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ORSAT ANALYSIS

Project No. 26046-0030
Client PG&E
Facility Brayton Point
Source UNIT 1
Location Inlet west

Date 9/1/99
Run 3
Operator MPN
Comments Hole in Bag. Use Run 4 & 2 For ~~Total~~ AVG M.W Determination.

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	

N/A

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: Inlet-West (b)

Date: 8/31/99 / 9/1/99
Run No.: 2 - West Inlet
Train Type: Ontario-Hydro
Recovery Person: Gu

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):	729.6	644.7	693.8	712.2	719.2	721.3	697.9
Initial Vol. (ml/g):	640.9	625.1	691.3	709.4	721.2	719.9	695.5
Net Collected (ml/g):	88.7	19.6	2.5	2.8	-2.0	1.4	2.4

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	831.9			
Initial Vol. (ml/g):	815.2			
Net Collected (ml/g):	16.7			

Comments/Notes:

PG&E-BP-OHM-1-In-3

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 132.1

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/1/99

Location: West Inlet **Run:** 3

Sample ID: PG&E-BP-OHM-1-Ib-3

Train Set Up By:	[signature]	**Date:** 9/1/99	**Time:** 0725
Transported to Location By:	[signature]	**Date:** 9/1/99	**Time:** 0800
Received at Location By:	[signature]	**Date:** 9/1/99	**Time:** 0809
Transported to Recovery Area By:	MO'Brien	**Date:** 9/1/99	**Time:** 1300
Received at Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1310
Train Recovered By:	[signature]	**Date:** 9/1/99	**Time:** 1333

Comments:

Hg

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

Project No.: 26046-0030-00003
Client: PGrE
Facility: Brayton Point
Source: Unit #1
Sample Location: Inlet West
Stack Diameter: 252 x 72
Date: 9/1/99
Run No.: PGrE-BP-01M-1-IW-4
Operator: D. Gill
Meterbox No.: 90342
Meterbox ΔH @: 1.973
Y Factor:

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

Sheet 1 of 2
Train Prepared By: EMC
Pitot Number and Side: P-3
Pitot Tube CP: 0.85
Filter No.: -
Ambient Temp., °F: 80
Bar. Pressure, In. Hg.: 30.17
Assumed Moisture, %: 8
Heater Box Setting, °F: 350
Nozzle # / Dia., In.: PGrEN-2 / 436 .180
Probe Length / Material: 11' / 6r
Probe Heater Setting: 350

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 °C Probe	Temperatures °C Filter Outlet
8-1	1417	0	516.321	1.2	.996	1.0	80	81	4.5	Good	294	310	57	—	203	300
2		6.5	520.1	1.1	.891	.89	80	80	4		300	314	52		216	300
3		13	523.4	1.1	.891	.89	81	80	4		298	319	51		243	300
4		19.5	527.1	1.1	~~.90 .891~~ .90	~~.90 .89~~ .90	81	81	4.5		290	322	51		255	295
		26	530.251													
7-1		26	530.542	.62	.49	.49	83	82	3.5		310	321	51		250	299
2		32.5	533.8	.95	.769	.77	83	82	4		310	324	54		247	300
3		39	536.7	.02	.68	.68	82	82	4		290	325	54		261	300
4		45.5	539.2	.85	.70	.70	83	83			268	326	55		258	280
		52	541.521													
* 4-1	1530	52	543.761	1.1	.869	.87	82	83	5		336	319	57		207	330
		58.5	547.2	1.0	.78	.78	82	82	5		341	314	54		230	336
		65	550.3	1.1	.88	.88	83	82	5.5		328	320	55		238	332
		71.5	553.6	1.3	1.05	1.0	83	82	6		311	318	55		235	320

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 19 In. Hg
After Test: .001 CF in 60 Seconds at 12 In. Hg

Comments:

	Initial	Final		Static Pressure			
Pitot Tube Leak Check	✓	✓	Port	4			
			Inches H₂O				
ORSAT Train Leak Check	✓	✓	~~Inches~~ Hg mm	-22			

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit 1

Date: 9/1/99
Run No.: PG+E - BP - OHM - 1 - IW - 4
Sample Location: ~~D. Glu~~ Inlet West
Operator: D. Glu

Sheet 2 of 2

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 °C Probe	Temperatures °C Filter Outlet
4-4		78	557.111							Good				—		
3-1	1611	78	557.827	1.0	.80	.80	83	83	6		324	307	64		224	320
2		84.5	560.1	1.2	.96	.96	83	83	6		323	318	57		228	319
3		91	564.0	1.0	.80	.80	83	83	6		319	321	56		229	320
4		97.5	567.2	1.1	.89	.89	83	83	6.5		311	321	57		225	315
		104	570.411													
2-1	1637	104	570.841	.95	.76	.76	84	84	7		322	325	58		229	317
2		110.5	573.8	.98	.78	.78	83	83	7		320	327	59		230	318
3		117	577.0	.95	.779	.77	83	83	7		308	322	60		230	315
4		123.5	580.1	1.0	.82	.82	83	83	7.5		305	320	62		227	310
		130	583.055													
1-1	1712	130	583.542	1.2	.984	.984	83	84	9		312	322	68		225	310
2		136.5	587.0	1.2	.984	.98	83	84	9		317	321	67		226	312
3		143	590.3	1.0	.81	.81	83	83	8.5		311	325	65		225	310
4		149.5	593.6	.95	.779	.78	83	83	9		304	324	66		220	300
		156	596.692													

Meter Leak Check During Test:

						Meter Reading Stop	Meter Reading Start
** .002	CF in	60	Seconds at	10	In. Hg		
.001	CF in	60	Seconds at	10	In. Hg		

Comments:

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ORSAT ANALYSIS

Project No. 26096-0030-00003
Client PG&E
Facility Brayton Point
Source Unit 1
Location West inlet

Date 9/1/99
Run 4
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	
	2100	13.2	19.6	6.4			1.098
		13.1	19.6	6.4			
		13.2	19.5	6.3			

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

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: West - Inlet

Date: 9/1/99
Run No.: 4-W-Inlet
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	807.1	660.2	695.8	639.1	718.8	716.8	707.0
Initial Vol. (ml/g):	708.1	647.2	694.7	635.0	718.8	716.4	707.7
Net Collected (ml/g):	99.0	13.0	1.1	4.1	0.0	0.4	-0.7

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	846.4			~ 80% spent
Initial Vol. (ml/g):	826.0			
Net Collected (ml/g):	20.4			

Comments/Notes:

PG&E-BP-OHM-1-Ib-4

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 137.3

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/1/99

Location: West - Inlet **Run:** 4

Sample ID: PG&E-BP-OHM-1-Ib-4

Train Set Up By:	[signature]	**Date:** 9/1/99	**Time:** 0920
Transported to Location By:	[signature]	**Date:** 9/1/99	**Time:** 1247
Received at Location By:	[signature]	**Date:** 9/1/99	**Time:** 12:54
Transported to Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1821
Received at Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1825
Train Recovered By:	[signature]	**Date:** 9/1/99	**Time:** 1907

Comments:

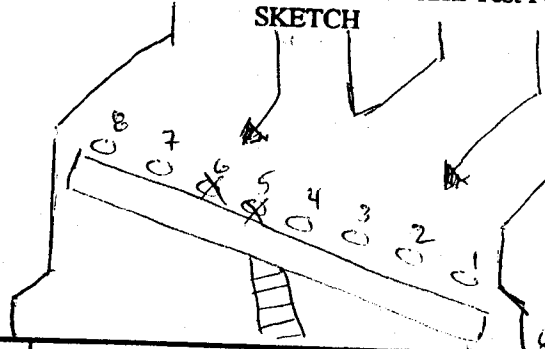
Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG&E
Facility: Brayton Point
Source: Unit 1
Sample Location: ESP Inlet - West
Stack Diameter: 252 x 72
Date: 9/2/99
Run No.: PGE-BP-OHM-1-I~~E~~W-5
Operator: D. Gill
Meterbox No.: 90342
Meterbox ΔH @: 1.973
Y Factor:

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

SKETCH



6&5 Blocked

Sheet 1 of 2

Train Prepared By: E-Mac
Pitot Number and Side: P-3
Pitot Tube CP: 0.88
Filter No.:
Ambient Temp., °F: 80
Bar. Pressure, In. Hg.: 30.14
Assumed Moisture, %: 8.0
Heater Box Setting, °F: 350
Nozzle # / Dia., In.: PG&E-N-7 / 180
Probe Length / Material: 11' / GL
Probe Heater Setting: 350

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 °C Filter Outlet
1-1	810	0	600.000	1.2	.972	.97	80	78	4	Good	306	320	49	—	250	300
2		6.5	603.7	~~0.8~~ 1.3	1.05	1.0	81	81	4		312	325	47		257	307
3		13	607.1	1.1	.902	.90	85	84	4		304	332	46		258*	305
4		19.5	610.6	1.1	.902	.90	84	86	4		305	335	47		248	304
		26	613.943													
2-1	0836	26	614.254	1.0	.80	.80	86	89	4.5		320	332	47		224	318
2		32.5	617.3	1.1	.891	.89	87	90	4.5		316	339	49		236	315
3		39	620.7	1.0	.82	.82	88	90	4.5		305	337	51		240	310
4		45.5	623.9	1.1	.902	.90	90	92	5		304	336	50		242	308
		52	627.231													
3-1	903	52	627.521	1.1	.891	.89	92	93	5.5		324	333	51		226	321
2		58.5	630.6	1.1	.891	.89	94	95	5.5		323	336	52		232	320
3		65	634.1	1.2	.96	.96	92	95	6.5		318	338	52		246	319
4		71.5	637.5	1.1	.913	.91	92	96	7		307	340	52		255	310

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 18 In. Hg
After Test: .002 CF in 60 Seconds at 12 In. Hg

Comments:

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

lowell07

TRC ENVIRONMENTAL CORPORATION OKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit 1

Date: 9/2/99
Run No.: PG&E-BP-OHM-1-1W-5
Sample Location: Inlet - West
Operator: D. Gill

Sheet 2 of 2

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 (°C) Probe	Temperatures (°C) Filter Outlet
3-4		78	640.987							Good						
4-1	950	78	641.442	1.1	.902	.90	96	100	7		337	355	60		250	330
2		84.5	644.5	1.2	.984	.98	96	101	7.5		338	358	54		252	332
3		91	647.8	1.1	.984	.98	95	99	8		326	359	57		276	328
4		97.5	651.5	1.4	1.16	1.1	95	101	8.5		310	352	56		276	317
		104	655.132													
* 7-1	1027	104	656.225	.76	.638	.64	89	96	8		292	350	58		248	300
2		110.5	659.3	1.0	.84	.84	87	95	9		293	347	60		245	301
3		117	662.7	1.0	.85	.85	87	92	9		281	340	61		240	295
4		123.5	665.7	.73	.619	.62	87	91	9		272	320	62		240	280
		130	668.781				~~89~~	~~91~~								
8-1	1053	130	669.073	1.0	.85	.85	89	91	9.5		285	322	63		235	281
2		136.5	672.2	1.1	.924	.92	89	90	10		289	325	62		237	282
3		143	675.3	1.2	.996	1.0	89	90	10.5		294	330	63		238	285
4		149.5	679.0	1.2	.996	1.0	89	92	11		293	333	64		237	287
	1129	156	682.618													

Meter Leak Check During Test:

* .003	CF in	60	Seconds at	10	In. Hg	Stop	Start
.002	CF in	60	Seconds at	12	In. Hg		

Meter Reading

Comments:

* Remove Probe for Port change
Leak check

lowell02

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: West Inlet

Date: 9/1/99 / 9/2/99
Run No.: 5-W-Inlet
Train Type: Ontario-Hydro
Recovery Person: EM

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):	728.6	641.1	691.9	711.1	720.3	719.8	702.1
Initial Vol. (ml/g):	634.3	624.4	688.2	707.0	719.8	719.0	699.8
Net Collected (ml/g):	94.3	16.7	3.7	4.1	0.5	0.8	2.3

Silica Gel Impinger:	8		
Final Vol. (ml/g):	800.5		
Initial Vol. (ml/g):	781.9		
Net Collected (ml/g):	18.6		

Comments: ~30% Spent

Comments/Notes:

PG&E-BP-OHM-1-Ib-5

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 141.0

ORSAT ANALYSIS

Project No. 26046-6030-00003
Client PG+E
Facility Brayton Point
Source Unit 1
Location Inlet West

Date 9/2/99
Run 5
Operator M. O'Brien
Comments

Orsat Leak Checked yes / no
Purge System with Sample Gas yes / no
Ambient Air Check CO_2 _____ O_2 _____.
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	
	1415	13.2	19.4	6.2			
	1425	13.2	19.4	6.2			
	1438	13.0	19.2	6.2			

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 _____

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/2/99

Location: West - Inlet **Run:** 5

Sample ID: PG&E-BP-OHM-1-Ib-5

Train Set Up By:	[signature]	**Date:** 9/2/99	**Time:** 0712
Transported to Location By:	[signature]	**Date:** 9/2/99	**Time:** 0716
Received at Location By:	[signature]	**Date:** 9/2/99	**Time:** 0723
Transported to Recovery Area By:	[signature]	**Date:** 9/2/99	**Time:** 1154
Received at Recovery Area By:	[signature]	**Date:** 9/2/99	**Time:** 1157
Train Recovered By:	[signature]	**Date:** 9/2/99	**Time:** 1245

Comments:

Hg

0.196

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	8/30/99
Client:	PG&E
Facility:	Brayton Point
Run No.:	
Barometric Pressure (in. Hg):	
% Moisture:	
Pitot Tube ID:	
Post Leak Check:	
Measurement Device:	
Micromanometer:	
10" Manometer:	✓
Magnehelic:	
Other:	
Explain:	

Project No.:	26046-0030-00003
Sample Location:	UNIT 1 ~~WEST~~ EAST Inlet A
Load Condition:	
Operator:	
Meterbox No.:	
Static (in. H_2O):	20 mm. Hg
Pitot Tube Coefficient:	
Stack Diameter (in.):	252" x 72"
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
~~15:34~~ 15:45	A_1	329 ~~289~~	1.2 ~~1.0~~	
	A_2	327 ~~293~~	1.2 ~~1.1~~	
	A_3	322 ~~292~~	1.4 ~~1.3~~	
~~15:34~~	A_4	314 ~~288~~	1.3 ~~1.4~~	
	B_1	319	.79	
	B_2	330	1.1	
	B_3	327	1.1	
	B_4	318	.98	
	C_1	323	1.1	
	C_2	330	1.6	
	C_3	325	1.8	
	C_4	315	1.2	

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
	D_1	322	1.7	
	D_2	323	1.1	
	D_3	323	1.3	
	D_4	320	1.3	
	E_1	309	.38	
	E_2	315	1.4	
	E_3	314	1.4	
	E_4	311	1.4	
	F_1	293	1.3	
	F_2	293	1.3	
	F_3	292	1.2	
	F_4	293	1.2	
	G_1	278	1.0	
	G_2	278	1.2	TRC
	G_3	276	1.2	
	G_4	277	1.3	
	H_1	270	1.3	
	H_2	274	1.3	
	H_3	274	1.1	

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit # 1
Sample Location: ESP Inlet East
Stack Diameter: 252 x 72"
Date: 8/31/97
Run No.: PG+E-BP-OHM-1-IE-1
Operator: R Nixon
Meterbox No.: 90336
Meterbox ΔH @: 1.951
Y Factor:

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

Sheet 1 of 2

Train Prepared By: ED
Pitot Number and Side: P-3
Pitot Tube CP: 0.99
Filter No.: N/A
Ambient Temp., °F:
Bar. Pressure, In. Hg.: 30.15
Assumed Moisture, %:
Heater Box Setting, °F: 300
Nozzle # / Dia., In.: 0.180 PG+E-N-1
Probe Length / Material: 10' glass
Probe Heater Setting: 300

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	1000	0	855.535	1.5	1.28	1.3	84	81	6	OK	258	285	68	—	191	260
1-2		5	858.3	1.5	1.28	1.3	84	81	6	OK	261	283	62	—	197	260
1-3		10	861.2	.8	.68	.70	86	81	6	OK	263	281	61	—	198	252
1-4		15	863.6	.85	.72	.70	89	82	5	OK	262	284	64	—	200	252
2-1		20	865.8	1.0	.85	.85	89	83	5	OK	255	282	65	—	199	261
2-2		25	868.2	1.2	1.02	1.00	90	84	5	OK	277	284	66	—	191	259
2-3		30	870.7	1.2	1.02	1.00	91	85	5	OK	264	279	65	—	187	245
2-4		35	873.4	1.2	1.02	1.00	93	87	5	OK	260	285	65	—	193	241
3-1		40	876.0	1.2	1.02	1.00	93	88	5	OK	280	282	65	—	196	265
3-2		45	878.7	1.4	1.19	1.20	95	89	6	OK	293	285	65	—	191	275
3-3		50	881.6	1.2	1.02	1.00	95	90	6	OK	284	282	65	—	195	269
3-4		55	884.4	1.2	1.02	1.00	97	91	6	OK	288	296	65	—	207	271
4-1	*	60	887.0	1.2	1.02	1.00	98	92	6	OK	288	293	66	—	208	271
4-2		65	~~887.793~~ 887.902	1.6	1.32	1.30	101	97	6	OK	307	264	66	—	210	293

Train Leak Check:

Before Test: 0.002 CF in 60 Seconds at 15 In. Hg
After Test: CF in Seconds at In. Hg

Comments:

K factor .85

* Final 887.655 @ 60.52
int 887.793

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

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: UNIT 1

Date: 8/-/99
Run No.:
Sample Location: PG+E-BP-OHM-1-IE-1
Operator: RN/ST

Sheet 2 of 2

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 °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
4-3		70	893.1	1.5	1.25	1.25	104	98	6	OK	311	269	63	—	205	300
4-4		75	896.1	1.6	1.33	1.33	104	98	6	OK	311	276	64	—	208	300
5-1		80	~~899.048~~				104	98	6	OK	298	278		—	212	
5-2		85								OK				—		
5-3		90								OK				—		
5-4		95								OK				—		
~~6-1~~		100								OK				—		
6-2		105								OK				—		
6-3		110								OK				—		
6-4		115								OK				—		
7-1		120								OK				—		
7-2		125								OK				—		
7-3		130								OK				—		
7-4		135								OK				—		
8-1		140								OK				—		
8-2		145								OK				—		
8-3		150								OK				—		
8-4		155								OK				—		
		160								OK				—		
										OK				—		

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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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: Inlet East (a)

Date: 8/30/99
Run No.: 1 ~~2~~ - Inlet
Train Type: Ontario-Hydro
Recovery Person: Gm

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):	743.6	720.9	698.0	661.2	719.0	664.6	704.8
Initial Vol. (ml/g):	704.3	706.2	696.5	659.2	719.8	664.0	703.3
Net Collected (ml/g):	39.3	14.7	1.5	2.0	-0.8	0.6	1.5

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	771.9			
Initial Vol. (ml/g):	761.2			
Net Collected (ml/g):	10.7			

Comments/Notes:

ID = PG&E-BR-OHM-1-Ia-~~2~~ 1

TOTAL MOISTURE (Impingers and Silica Gel) (g) = [redacted] 69.5

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 8/31/99

Location: Inlet - East (a) **Run:** 1

Sample ID: PG&E-BR-OHM-1-Ia-1

Train Set Up By:	[illegible]	**Date:** 8/31/99	**Time:** 0733
Transported to Location By:	[illegible]	**Date:** 8/31/99	**Time:** 0739
Received at Location By:		**Date:**	**Time:**
Transported to Recovery Area By:		**Date:**	**Time:**
Received at Recovery Area By:		**Date:**	**Time:**
Train Recovered By:		**Date:**	**Time:**

Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PGE
Facility: Brayton Point
Source: Unit # 1
Sample Location: Inlet East
Stack Diameter: 252 x 72"
Date: 8/31/97
Run No.: PGE-BP-OHM-1-IE-2
Operator: RN/ST
Meterbox No.: 90336
Meterbox ΔH @: 1.991
Y Factor: 0.987

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

Sheet 1 of 2
Train Prepared By: Ed MacKinnon
Pitot Number and Side: P-3
Pitot Tube CP: 0.88
Filter No.: N/A
Ambient Temp., °F: ~80
Bar. Pressure, In. Hg.: 30.15
Assumed Moisture, %: 8
Heater Box Setting, °F: 300
Nozzle # / Dia., In.: .180 PGE-N-1
Probe Length / Material: 10' glass
Probe Heater Setting: 300

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	1400	0	899.570	1.6	1.36	1.36	84	80	6	OK	263	275	68	—	204	251
2		5	902.2	1.5	1.28	1.28	86	80	6	OK	270	282	68	—	198	260
3		10	905.1	1.2	1.02	1.00	88	81	6	OK	269	287	68	—	198	262
4		15	908.0	.95	.80	.80	89	81	6	OK	269	285	68	—	184	260
2 1		20	910.5	1.1	.94	.95	89	82	5	OK	~~284~~	288	68	—	193	263
2		25	912.9	1.1	.94	.95	88	82	5	OK	285	296	66	—	195	269
3		30	915.6	1.1	.94	.94	88	83	5	OK	272	291	66	—	190	261
4		35	918.0	1.3	1.11	1.10	88	83	5	OK	271	287	65	—	183	261
3 1	1502	40	920.798	1.3	1.11	1.10	82	83	5	OK	279	301	65	—	206	270
2		45	923.8	1.3	1.10	1.10	84	83	6	OK	296	308	59	—	206	279
3		50	926.4	1.2	1.02	1.00	86	83	6	OK	284	301	58	—	192	279
4		55	929.1	1.2	0.99	1.00	88	83	6	OK	288	296	60	—	188	280
4 1		60	931.8	1.4	1.15	1.15	89	83	6	OK	285	298	61	—	192	279
2		65	934.6	1.4	1.15	1.15	88	83	6	OK	308	304	61	—	205	299

Train Leak Check:

Before Test: 0.002 CF in 60 Seconds at 15 In. Hg
After Test: 0.002 CF in 60 Seconds at 10 In. Hg

Comments:

	Initial	Final	Static Pressure
Pitot Tube Leak Check	⊗	⊗	Port 1
ORSAT Train Leak Check	○	○	Inches H₂O
			Inches Hg (mm) -20

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton point
Source: Unit #1

Date: 8/1/99
Run No.: PG+E-BP-OHM-1-IE-2
Sample Location: Inlet East
Operator: RN/ST

Sheet 2 of 2

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 °C Probe	Temperatures °C Filter Outlet
43		70	937.4	1.4	1.13	1.10	84	84	6	OK	312	305	61	—	204	301
4		75	940.2	1.5	1.22	1.20	89	84	6	OK	306	296	61	—	202	300
51	1605	80	943.226	1.7	1.38	1.38	86	85	6.5	OK	315	298	64	—	213	306
2		85	946.0	1.3	1.05	1.10	89	85	6.5	OK	318	297	61	—	213	306
3		90	948.9	1.5	1.22	1.22	90	85	6.5	OK	318	292	61	—	210	307
4		95	951.7	1.5	1.22	1.22	92	86	6.5	OK	314	284	63	—	201	306
61		100	954.5	1.4	1.13	1.13	92	86	7.5	OK	310	291	63	—	200	300
2		105	957.3	1.7	1.34	1.34	92	87	7.5	OK	335	298	64	—	194	320
3		110	960.3	1.7	1.34	1.34	92	87	8.0	OK	327	295	65	—	199	318
4		115	963.4	1.5	1.21	1.21	93	89	8.0	OK	307	291	66	—	201	300
71	1702	120	~~966.287~~ 966.146	.90	.90	.90	87	88	6.5	OK	329	288	68	—	197	312
2		125	968.9	1.2	.95	.95	87	87	6.5	OK	330	264	63	—	203	315
3		130	971.6	1.2	.95	.95	89	87	6.5	OK	327	253	62	—	197	316
4		135	974.1	1.2	.95	.95	90	86	7.0	OK	327	272	63	—	195	316
81		140	976.6	1.2	.95	.95	90	86	7.5	OK	317	300	63	—	204	305
2		145	979.3	1.2	.95	.95	90	86	7.5	OK	323	288	65	—	198	309
3		150	981.8	1.3	1.03	1.03	90	86	8.0	OK	324	288	65	—	194	312
4		155	984.5	1.3	1.03	1.03	89	85	8.0	OK	310	291	65	—	199	300
	1742	1605	987.472													

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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ORSAT ANALYSIS

Project No. 26046-0030-00003
Client BG&E
Facility Brayton Point
Source Unit 1
Location Inlet East

Date 9/1/99
Run 2
Operator M. O'Brien
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	
	700	11.4	19.4	8.0	—	—	1.132
	720	11.6	19.6	8.0	—	—	1.112
	741	11.6	19.6	8.0	—	—	1.112

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

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: East Inlet (a)

Date: 8/31/99
Run No.: 2 - East Inlet
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	819.4	727.6	696.8	708.5	720.1	706.3	699.3
Initial Vol. (ml/g):	716.7	707.6	695.8	704.3	720.7	704.9	699.7
Net Collected (ml/g):	102.7	20.0	1.0	4.2	-0.6	1.4	-0.4

Silica Gel Impinger:	8		
Final Vol. (ml/g):	854.8		
Initial Vol. (ml/g):	835.3		
Net Collected (ml/g):	19.5		

Comments: ~40% spent

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 147.8

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 8/31

Location: East Inlet **Run:** 2 - IN-East

Sample ID: PL8E-BP-OHM-1-Ia-2

Train Set Up By: [signature] **Date:** 8/31/99 **Time:** 1125

Transported to Location By: [signature] **Date:** 8/31/99 **Time:** 1135

Received at Location By: [signature] **Date:** 8/31/99 **Time:** 1140

Transported to Recovery Area By: [signature] **Date:** 8/31/99 **Time:** 1805

Received at Recovery Area By: [signature] **Date:** 8/31/99 **Time:** 1926

Train Recovered By: [signature] **Date:** 8/31/99 **Time:** 1926

Comments:

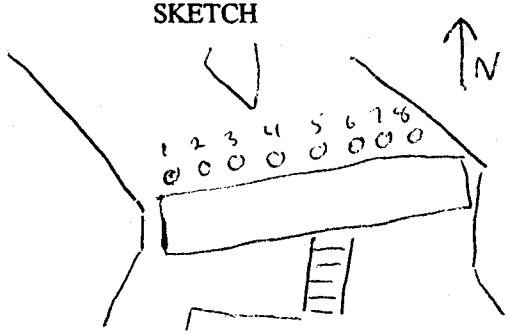
Hg

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

Project No.: 26046-0030-00003
Client: PGrE
Facility: Brayton Point
Source: Unit # 2
Sample Location: ESP Inlet East
Stack Diameter: 252 x 72
Date: 9/1/99
Run No.: PGrE-BP-OHM-1 ~~IX~~ IE-3
Operator: S. Tibbetts
Meterbox No.: 90336
Meterbox ΔH @: 1.981
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: E. Mackinnon
Pitot Number and Side: P-1
Pitot Tube CP: 0.88
Filter No.:
Ambient Temp., °F: 64
Bar. Pressure, In. Hg.: 30.18
Assumed Moisture, %: 8
Heater Box Setting, °F:
Nozzle # / Dia., In.: PGE-N-1 0.180
Probe Length / Material: 10' 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
8-1	0830	0	988.265	1.10	0.89	0.89	72	68	5	✓	312	282	58	NA	191	295
2		5	990.5	0.94	0.75	0.75	74	68	5	✓	318	285	52		195	304
3		10	993.2	1.0	0.81	0.81	76	69	5	✓	311	284	52		196	305
4		15	995.5	1.15	0.954	0.95	80	71	5.5	✓	24[illegible]	285	54		195	303
		20	998.053	~~0.90~~												
9-1	0852	20	998.432	0.90	0.72	0.72	83	73	5.0	✓	324	290	56		198	314
2		25	000.8	1.25	0.987	0.99	83	74	5.5	✓	331	300	58		201	325
3		30	003.425	1.10	0.89	0.89	84	75	5.5	✓	316	298	58		199	320
4	0912	35	006.0	0.78	0.639	0.64	85	76	5.0	✓	306	297	59		195	310
		40	008.108		~~1.027~~	~~1.05~~	~~85~~	~~79~~ 51								
10-1	0926	40	008.67	~~2.0~~ 1.3	1.027	1.05	85	79	6.0	✓	332	298	61		201	320
6-2		45	011.53	1.3	1.014	1.0	87	80	[illegible]	✓	338	301	60		205	328
~~6-3~~	0936	50	14.232													
6-3	1005	50	14.525	1.6	1.28	1.3	86	84	6.5	✓	324	299	65	✓	200	320

Train Leak Check:

Before Test: .005 CF in 60 Seconds at 16 In. Hg
After Test: .003 CF in 60 Seconds at 11 In. Hg

Comments:

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

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brentwood Pl.
Source: Unit #1

Date: 9/1/99
Run No.: PG+E-BP-OHM-1-IE-3
Sample Location: ESP Inlet East
Operator: S. Tibbetts

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 °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
6-4	~~0946~~	6~~0~~55	017.55	1.2	0.984	0.98	89	83	6.0	✓	305	296	64	NA	195	307
~~5-1~~	1015	60	020.205													
5-1	1017	60	20.98	1.7	1.36	1.35	92	84	7.0	✓	326	300	61	NA	201	321
5-2		65	023.98	2.05	1.64	1.65	93	84	7.5	✓	327	300	63		203	322
5-3		70	027.31	1.3	1.04	1.0	93	86	6.0	✓	323	298	63		201	321
5-4		75	030.05	0.82	0.68	0.68	90	86	5.5	✓	301	295	65		195	306
	1037	80	032.382													
4-1	1035	80	033.48	1.15	1.16	1.2	84	84	7.0	✓	318	293	67		195	316
4-2		85	036.17	1.5	1.2	1.2	87	84	7.0	✓	318	294	65		197	317
4-3		90	039.1	1.15	0.93	0.93	88	85	6.5	✓	311	295	62		190	309
4-4		95	041.75	1.1	0.91	0.91	87	84	6.5	✓	302	295	63		186	305
	1115	100	044.294													
3-1	1120	100	045.42	1.1	0.91	0.91	87	84	6.0	✓	294	295	65		176	291
3-2		105	048.0	1.3	1.08	1.1	90	86	6.5	✓	297	295	64		181	293
3-3		110	050.8	1.4	1.16	1.15	91	86	6.5	✓	297	296	64		179	294
3-4	"	115	053.57	0.93	0.688	0.69	93	87	6.5	✓	293	295	65		180	293
	1140	120	055.835													
2-1	1150	120	056.41	1.3	1.1	1.1	92	88	7.0	✓	281	295	66		180	289
2-2		125	059.15	1.3	1.1	1.1	92	88	7.0	✓	283	295	67		181	288
2-3		130	061.93	0.83	0.705	0.71	93	89	6.0	✓	279	293	66		178	284
2-4		135	064.4	1.2	1.02	1.0	93	89	7.0	✓	279	292	65		177	281
	1210	140	067.05													
1-1	1211	140	067.56	1.4	1.1	1.15	93	89	7.5	✓	279	291	65		178	280
1-2		145	070.4	1.5	1.275	1.3	94	89	8.0	✓	280	290	65	✓	179	279

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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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Pt.
Source: Unit #1

Date: 9/1/99
Run No.: PG+E-BP-OHM-1-IE-3
Sample Location: ESP Inlet East
Operator: S.T. Lobeth

Sheet 3 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
1-3		150	073.37	1.0	0.85	0.85	95	90	7.0	✓	280	280	66	NA	180	280
1-4		155	076.01	1.3	1.10	1.1	93	90		✓	279	281	67	NA	178	279
End	1231	X160	078.773													

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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ORSAT ANALYSIS

Project No.	26046-0030-00003	Date	9/1/99
Client	PG&E	Run	3
Facility	Brayton Point	Operator	
Source	Unit 2	Comments	
Location	East Inlet		

Orsat Leak Checked yes / no

Purge System with Sample Gas yes / no

Ambient Air Check CO_2 _____ O_2 _____.

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	
		12.9	19.5	6.6			1.108
		13.0	19.6	6.6			1.100
		13.0	19.6	6.6			1.100

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

ect No.: 26046
nt: PG&E
Facility: Brayton
Source: Inlet-East (a)

Date: 8/31/99 / 9/1/99
Run No.: 3-East Inlet
Train Type: Ontario-Hydro
Recovery Person: SA

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):	794.4	734.5	702.3	666.9	724.9	669.2	702.5
Initial Vol. (ml/g):	704.0	711.3	699.9	661.6	725.9	667.3	701.4
Net Collected (ml/g):	90.4	23.2	2.4	5.3	-1.0	1.9	1.1

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	790.1			~ 50% spent
Initial Vol. (ml/g):	772.0			
Net Collected (ml/g):	18.1			

Comments/Notes:

PG&E-BP-OHM-1-Ia-3

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 141.4

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/1/99

Location: East - Inlet **Run:** 3

Sample ID: P6&E-BP-OHM-1-Ia-3

Train Set Up By:	[signature]	**Date:** 9/1/99	**Time:** 0726
Transported to Location By:	[signature]	**Date:** 9/1/99	**Time:** 0735
Received at Location By:	[signature]	**Date:** 9/1/99	**Time:** 0736
Transported to Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1206
Received at Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1310
Train Recovered By:	[signature]	**Date:** 9/1/99	**Time:** 1413

Comments:

Hg

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

Project No.: 26046-0030-00003
Client: PGrE
Facility: Brayton Point
Source: Unit # 1
Sample Location: ESP Inlet East
Stack Diameter: 252 x 72
Date: 9/1/99
Run No.: PGE-BP-OHM-1-IE-4
Operator: S. Tibbetts
Meterbox No.: 90336
Meterbox ΔH @: 1.981
Y Factor:

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

Sheet 1 of 5
Train Prepared By: E. Mackinnon
Pitot Number and Side: P-1
Pitot Tube CP: 0.88
Filter No.: —
Ambient Temp., °F: 87
Bar. Pressure, In. Hg.: 30.10
Assumed Moisture, %: 8.0
Heater Box Setting, °F:
Nozzle # / Dia., In.: PG-E-N4 / .180
Probe Length / Material: 10' 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
1-1	1415	0	082.532	1.75	1.47	1.5	86	86	6.5	✓	284	280	55	NA	185	275
1-2		5	085.7	1.80	1.5	1.5	90	86	6.5	✓	281	281	62		184	280
1-3		10	089.05	1.2	1.0	1.0	91	86	5.5	✓	282	279	61		184	281
1-4		15	091.9	1.05	0.89	0.89	90	86	5.5	✓	279	281	61		185	280
	1435	20	094.514													
2-1	1436	20	095.218	1.3	1.105	1.1	91	87	6.0	✓	281	280	60		183	281
2-2		25	098.045	1.1	0.935	0.94	91	87	5.5	✓	285	283	60		185	283
2-3		30	100.7	1.4	1.176	1.2	90	87	6.0	✓	284	285	59		186	285
2-4		35	103.5	1.3	1.1	1.1	92	87	6.0	✓	282	284	60		188	283
		40	106.303													
3-1	1512	40	106.849	1.4	1.176	1.2	87	87	6.5	✓	288	285	66		187	284
3-2		45	169.79	1.2	1.0	1.0	88	87	6.0	✓	290	285	61		190	287
3-3		50	112.52	1.0	0.84	0.84	89	87	5.5	✓	290	286	63		193	288
3-4		55	115.0	1.2	1.0	1.0	89	87	6.0	✓	287	285	63	✓	194	287

Train Leak Check:

Before Test: .001 CF in 60 Seconds at 14.5 In. Hg
After Test: .001 CF in 60 Seconds at 12.0 In. Hg

Comments:

	Initial	Final	Static Pressure				
Pitot Tube Leak Check	✓	✓	Port	6			
ORSAT Train Leak Check	✓	✓	Inches H₂O				
			~~Inches~~ mm Hg	-8.1			

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-0003
Client: PG+E
Facility: Brayton Pt.
Source: Unit #1

Date: 9/1/99
Run No.: PG+E-BP-OHM-1-IE-4
Sample Location: ESP Inlet East
Operator: S. + Lbeth

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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
~~3-5~~	1537	60	117.667													
4-1		60	120.132	1.5	1.215	1.2	89	87	7.0	✓	312	293	63	NA	203	306
4-2		65	122.92	1.25	1.013	1.0	90	87	6.5	✓	316	295	63		204	301
4-3		70	125.6	1.4	1.148	1.15	93	89	7.0	✓	305	295	63		201	307
4-4		75	128.47	0.98	0.823	0.82	93	90	6.0	✓	287	293	63		196	301
	1557	80	131.042	~~0.84~~	~~0.712~~	~~0.71~~	~~91~~	~~93~~			~~320~~					
5-1	1607	80	132.368	0.89	~~0.776~~	~~0.785~~ 0.71	91	93	5.0	✓	320	298	68		206	311
5-2		85	135.1	0.97	0.776	0.78	91	92	5.0	✓	324	299	65		210	318
5-3		90	137.54	1.4	1.15	1.15	91	92	5.0	✓	321	298	65		211	319
5-4		95	140.5	1.35	1.09	1.1	93	92	5.5	✓	309	295	64		203	307
	1627	100	143.302										~~63~~			
6-1	1630	100	144.343	1.95	1.56	1.55	97	93	6.5	✓	323	299	64		209	314
6-2		105	147.555	2.05	1.619	1.6	98	94	7.0	✓	330	301	64		214	326
6-3		110	151.0	1.95	1.55	1.55	98	94	7.0	✓	319	300	64		211	321
6-4		115	154.3	1.85	1.498	1.5	98	94	7.0	✓	310	298	64		215	314
	1650	120	157.446													
7-1	1705	120	160.681	1.1	0.88	0.88	90	91	6.0	✓	327	300	65		217	319
7-2		125	163.5	1.15	0.908	0.91	90	90	6.0	✓	328	301	63		219	323
7-3		130	166.2	1.05	0.85	0.85	91	90	6.0	✓	310	300	61		204	309
7-4		135	168.545	0.76	0.623	0.62	92	90	5.5	✓	308	300	61		198	302
	1725	140	170.798													
8-1	1728	140	171.420	1.2	0.972	0.97	90	89	6.5	✓	317	299	63		204	309
8-2		145	174.0	1.2	0.96	0.96	91	89	6.5	✓	321	300	63		213	317
8-3		150	176.6	1.5	1.21	1.2	92	89	7.0	✓	314	298	62	✓	211	313

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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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Pt.
Source: Unit #1

Date: 9/1/4
Run No.: PG+E-BP-OHM-1-IE-4
Sample Location: ESP Inlet East
Operator: S. Tibbetts

Sheet 3 of 2

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
8-4		155	179.43	1.6	1.328	1.35	92	89	7.5	✓	303	301	62	NA	201	305
	1748	160	182.485													

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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ORSAT ANALYSIS

Project No. 26046-0030-00003
Client PG&E
Facility Brayton Point
Source Unit 1
Location East Inlet

Date 9/1/99
Run 4
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	
	2221	12.4	19.6	7.2			1.105
		12.4	19.6	7.2			1.105
		12.4	19.6	7.2			1.105

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

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: East-Inlet

Date: 9/1/99
Run No.: 4-E-Inlet
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	813.2	726.9	702.3	705.6	719.7	707.8	700.4
Initial Vol. (ml/g):	716.6	707.1	700.3	702.1	720.1	706.1	701.5
Net Collected (ml/g):	96.6	19.8	2.0	3.5	-0.4	1.7	-1.1

Silica Gel Impinger:	8		
Final Vol. (ml/g):	976.3		
Initial Vol. (ml/g):	952.6		
Net Collected (ml/g):	23.7		

Comments: ~ 60% spent

Comments/Notes:

PG&E-BP-OHM-1-Ia-4

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 145.8

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/1/99

Location: East - Inlet **Run:** 4

Sample ID: PG&E-BP-OHM-1-Ia-4

Train Set Up By:	[signature]	**Date:** 9/1/99	**Time:** 0919
Transported to Location By:	[signature]	**Date:** 9/1/99	**Time:** 1247
Received at Location By:	[signature]	**Date:** 9/1/99	**Time:** 1259
Transported to Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1820
Received at Recovery Area By:	[signature]	**Date:** 9/1/99	**Time:** 1824
Train Recovered By:	[signature]	**Date:** 9/1/99	**Time:** 1846

Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030 00003
Client: PG+E
Facility: Brayton Point
Source: Unit 1
Sample Location: ESP Inlet - East
Stack Diameter: 252 x 72
Date: 9/2/99
Run No.: PGE-BP-OHM-1-IE-5
Operator: RN/ST
Meterbox No.: 90336
Meterbox ΔH @: 1.981
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: EM
Pitot Number and Side: A-1
Pitot Tube CP: 0.88
Filter No.: N/A
Ambient Temp., °F:
Bar. Pressure, In. Hg.: 30.14
Assumed Moisture, %: 8.0
Heater Box Setting, °F: 300
Nozzle # / Dia., In.: .180
Probe Length / Material: 10' glass
Probe Heater Setting: 300

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
81	0600	0	185.529	1.2	1.02	1.00	77	72	5.0	OK	317	298	61	—	179	301
2		5	187.2	1.2	.96	.96	79	72	5.0	OK	320	302	59	—	172	304
3		10	189.46	1.4 ~~.95~~	.76 ~~1.10~~	.75 ~~1.10~~	82	75	5.0	OK	307	301	58	—	175	294
4		15	192.8	1.2	1.00	1.00	83	76	5.0	OK	307	299	58	—	175	294
71		20	195.402							OK				—		
1		20	196.099	1.2	.96	.96	85	78	5.0	OK	313	~~300~~	60	—	172	302
2		25	198.7	1.2	.96	.96	86	80	5.0	OK	329	306	62	—	175	312
3		30	201.2	1.2	.95	.95	87	81	5.0	OK	328	300	64	—	176	312
4		35	204.0	1.2	.95	.55	87	82	5.5	OK	314	300	65	—	176	306
61		40	206.720				~~83~~	~~82~~		OK		~~302~~	~~68~~	—	~~172~~	
1	8:56	40	207.412	1.7	1.34	1.35	83	82	6.5	OK	330	302	68	—	172	314
2		45	210.4	1.7	1.34	1.34	87	83	6.5	OK	332	302	64	—	172	315
3		50	213.5	1.7	1.34	1.34	89	84	6.5	OK	331	304	63	—	174	319
4		55	216.5	1.4	1.11	1.10	90	84	6.5	OK	318	302	62	—	173	300

Train Leak Check:

Before Test: 0.002 CF in 60 Seconds at 15 In. Hg
After Test: 0.001 CF in 60 Seconds at 15 In. Hg

Comments:

	Initial	Final		Static Pressure			
			Port	2			
Pitot Tube Leak Check	✓	✓	Inches H₂O	21			
ORSAT Train Leak Check	○	○	Inches Hg	21			

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton pt.
Source: Unit 1

Date: 9/2/99
Run No.: PGE-BP-OHM-1-IE-5
Sample Location: ESP Inlet - East
Operator: RN/ST

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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
	~~01~~	60	219.500	~~.90~~	~~.71~~	~~.71~~	~~92~~	~~86~~	~~5.0~~	~~OK~~	~~317~~	~~301~~	~~60~~	—	~~175~~	~~299~~
	5~~0~~1	60	220.205	.90	.71	.71	92	86	5.0	OK	317	301	60	—	175	299
	2	65	222.8	.90	.71	.71	92	86	5.0	OK	321	305	60	—	182	301
	3	70	225.1	1.4	1.11	1.10	92	87	5.0	OK	322	302	60	—	187	305
	4	75	227.7	1.5	1.19	1.20	93	87	6.0	OK	322	301	61	—	194	308
4	~~5~~1	80	230.498	—	—	—	—	—	—	OK	—	—	—	—	—	—
	1	80	231.094	1.6 ~~1.26~~	1.26	1.26	90	88	6.5	OK	315	302	66	—	201	299
	2	85	233.4	1.6	1.26	1.26	92	88	6.5	OK	314	301	61	—	200	297
	3	90	235.9	1.6	1.26	1.26	93	89	7.5	OK	314	304	60	—	205	297
	4	95	239.1	1.0	.79	.79	97	90	7.5	OK	301	304	61	—	215	286
3	~~5~~1	100	241.756	—	—	—	—	—	—	OK	—	—	—	—	—	—
	1	100	242.367	1.6	1.26	1.26	98	91	10.0	OK	300	301	61	—	214	282
	2	105	245.0	1.2	.95	.95	98	91	10.0	OK	300	300	63	—	216	283
	3	110	247.8	1.2	.95	.95	98	92	10.0	OK	291	306	64	—	220	276
	4	115	250.3	1.2	.95	.95	98	92	10.0	OK	290	307	65	—	225	272
1042	~~5~~1	120	253.040	—	—	—	—	—	—	OK	—	—	—	—	—	—
	1	120	253.740	1.2	.95	.95	96	93	12.5	OK	290	304	68	—	200	273
	2	125	256.4	1.2	.95	.95	98	93	12.5	OK	290	302	68	—	205	272
	3	130	259.0	1.2	.95	.95	99	95	11.0	OK	285	304	65	—	208	269
	4	135	262.0	1.2	.95	.95	101	96	10.0	OK	278	306	66	—	212	260
1	~~5~~1	140	264.701	—	—	—	—	—	—	OK	—	—	—	—	—	—
	1	140	265.282	1.6	1.26	1.26	103	97	12.5	OK	280	303	66	—	220	261
	2	145	268.1	1.6	1.26	1.26	104	98	12.5	OK	281	302	68	—	221	264
	3	150	270.8	1.0	.79	.79	103	98	10.0	OK	279	305	68	—	220	260

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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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit 1

Date: 9/2/99
Run No.: PGE-BP-01M-1-IE-5
Sample Location: Esp Inlet - East
Operator: RN/ST

Sheet 3 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °C Filter Outlet
5-4	~~155~~	155	273.6	1.0	.79	.79	102	98	10.0	OK	278	303	66	—	218	260
1	~~160~~	160	276.003													
2																
2	1122															
3																
4																

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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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton
Source: ~~West~~ - Inlet
East

Date: 9/1/99 / 9/2/99
Run No.: 5 - E - Inlet
Train Type: Ontario-Hydro
Recovery Person:

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):	788.3	735.4	696.2	665.2	727.4	664.8	703.3
Initial Vol. (ml/g):	699.4	703.8	694.0	660.2	726.5	662.6	701.2
Net Collected (ml/g):	88.9	31.6	2.2	5.0	0.9	2.3	2.1

Silica Gel Impinger:	8		
Final Vol. (ml/g):	794.6		
Initial Vol. (ml/g):	774.1		
Net Collected (ml/g):	20.5		

Comments: ~40% spent

Comments/Notes:

PG&E-BP-OHM-1-Ia-5
a

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 153.5

ORSAT ANALYSIS

Project No. 26046-0030-00002
Client PG&E
Facility Brayton Point
Source Unit 1
Location Inlet East

Date 9/2/99
Run 5
Operator M. O'Brien
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	
	1345	11.8	19.6	7.8			
	1355	11.8	19.6	7.8			
	1403	11.6	19.4	7.8			

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

Sample Train Tracking Form

Sample Train: OH - Hg

Location: East - Inlet

Sample ID: PG&E-BP-OHM-1-In-5

Date: 9/1/99

Run: 5

Train Set Up By:	[signature]	**Date:** 9/2/99	**Time:** 0713
Transported to Location By:	[signature]	**Date:** 9/2/99	**Time:** 0716
Received at Location By:	[signature]	**Date:** 9/2/99	**Time:** 0725
Transported to Recovery Area By:	[signature]	**Date:** 9/2/99	**Time:** 1144
Received at Recovery Area By:	[signature]	**Date:** 9/2/99	**Time:** 1157
Train Recovered By:	[signature]	**Date:** 9/2/99	**Time:** 1305

Comments:

Hg

Appendix B.1.2

Calibration Data Sheets

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

NOZZLE CALIBRATION

	Nozzle No.	Diameter (in.) a	b	c	Average	Nozzle Set No.
MPM 8/23/99	PG&E-N-1	0.179	0.180	0.180	0.180	~~Salem Harbor~~ 0.180
MPM 8/31/99	PG&E-N-2	0.180	0.180	0.180		
MPM 8/31/99	PGE-N-3	0.184	0.184	0.184	0.184	~~0.18~~
	PGE-N-4	0.185	0.185	0.185	0.185	

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: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: 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 @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_o + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

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: 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

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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: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: 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 @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_o + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

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: 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		1800.0	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: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: 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 @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_a + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

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: 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 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

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Appendix B.2

Unit 3

Appendix B.2.1

Raw Field Data Sheets

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 260460030 00003
Client: PG&E
Facility: Brayton Point
Source: Unit #3
Sample Location: East Inlet
Stack Diameter:
Date: 9/7/99
Run No.: Field Blank
Operator: [illegible]
Meterbox No.:
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: EMcAuliffe
Pitot Number and Side:
Pitot Tube CP:
Filter No.: N/A
Ambient Temp., °F:
Bar. Pressure, In. Hg.:
Assumed Moisture, %:
Heater Box Setting, °F: 250
Nozzle # / Dia., In.:
Probe Length / Material: 10' eff
Probe Heater Setting: 250

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 °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
	1335		625.0													
	1653		683.1													

Train Leak Check:

Before Test: 0.002 CF in 60 Seconds at 3.0 In. Hg
After Test: .002 CF in 60 Seconds at 3.0 In. Hg

Comments:

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

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	9/7/99
Client:	PG&E	Run No.:	Field Blank
Facility:	Brayton	Train Type:	Ontario-Hydro
Source:	West - Inlet	Recovery Person:	CM

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):	703.6	638.5	687.7	633.3	715.9	714.2	709.4
Initial Vol. (ml/g):	703.9	638.9	687.9	639.3	715.9	714.2	709.4
Net Collected (ml/g):	-0.3	-0.4	-0.2	0	0	0	

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	759.9			
Initial Vol. (ml/g):	759.4			
Net Collected (ml/g):	0.5			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = -0.4

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/7/99

Location: Brayton Boiler #3 Inlet **Run:** Field Blank

Sample ID: PG&E-BP-OHM-3-I-FB

Train Set Up By:		**Date:** 9/7/99	**Time:** 12:30
Transported to Location By:		**Date:** 7/7/99	**Time:** 12:37
Received at Location By:		**Date:** 7/7/99	**Time:** 12:50
Transported to Recovery Area By:		**Date:** 7/7/99	**Time:** 1653
Received at Recovery Area By:		**Date:** 7/7/99	**Time:** 1700
Train Recovered By:		**Date:** 7/7/99	**Time:** 1700

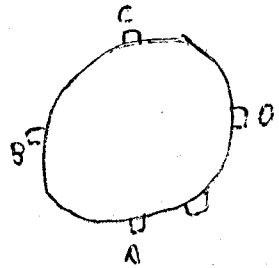
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG&E
Facility: Brayton Point
Source: Unit #3
Sample Location: Exhaust Stack
Stack Diameter:
Date: 9/7/99
Run No.: PGE-BP-OHM-3-0-FB
Operator: SJ
Meterbox No.: #90343
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: Ed McKinnon
Pitot Number and Side: P-203
Pitot Tube CP: 0.84
Filter No.: N/A
Ambient Temp., °F: 75°
Bar. Pressure, In. Hg.:
Assumed Moisture, %: —
Heater Box Setting, °F: 250
Nozzle # / Dia., In.: —
Probe Length / Material: 9' EGE Glass
Probe Heater Setting: 250

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 °C Filter Outlet
Ai	1542	0	63.845													
	1617		64.212													

Train Leak Check:

Before Test: 10.0 CF in 60 Seconds at .025 In. Hg
After Test: CF in Seconds at In. Hg

Comments:

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

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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	9/7/99
Client:	PG&E	Run No.:	Field Blank
Facility:	Brayton	Train Type:	Ontario-Hydro
Source:	Outlet	Recovery Person:	am

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):	705.7	682.5	683.2	711.9	739.2	711.5	698.5
Initial Vol. (ml/g):	705.9	682.9	683.4	711.9	738.9	711.3	698.2
Net Collected (ml/g):	-0.2	-0.4	-0.2	0	0.3	0.2	0.3

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	838.8			
Initial Vol. (ml/g):	838.4			
Net Collected (ml/g):	0.4			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 0.4

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 9/7/99

Location: Brayton Boiler #3 Outlet **Run:** Field Blank

Sample ID: PG&E-BP-OHm-3-O-FB

Train Set Up By:	[signature]	**Date:** 9/7/99	**Time:** 1225
Transported to Location By:	[signature]	**Date:** 9/7/99	**Time:** 1225
Received at Location By:	[signature]	**Date:** 9/7/99	**Time:** 1230
Transported to Recovery Area By:	[signature]	**Date:** 9/7/99	**Time:** 1530
Received at Recovery Area By:	[signature]	**Date:** 9/7/99	**Time:** 1542
Train Recovered By:	[signature]	**Date:** 9/7/99	**Time:** 1542

Comments:

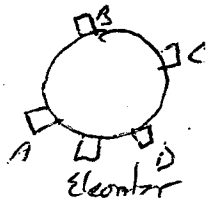
Hg

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	9/7/99
Client:	PA+E
Facility:	Brayton Point
Run No.:	Preliminary
Barometric Pressure (in. Hg):	
% Moisture:	
Pitot Tube ID:	200
Post Leak Check:	✓
Measurement Device:	
Micromanometer:	
10" Manometer:	✓
Magnehelic:	
Other:	
Explain:	

Project No.:	
Sample Location:	Unit 3 outlet
Load Condition:	
Operator:	M. O'Brien
Meterbox No.:	90343
Static (in. H_2O):	0.95
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
1640	A1	258	2.7	4°
	2	259	2.7	3°
	3	258	2.8	1°
	4	258	2.6	4°
	B1	258	1.9	6°
	2	258	2.4	7°
	3	258	2.7	5°
	4	258	2.9	3°
1657	C1	258	2.3	2°
	2	258	2.8	0°
	3	259	2.8	4°
	4	259	2.7	5°

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1710	D1	259	2.7	2°
2	2	259	2.9	3°
	3	259	2.9	1°
1715	4	259	2.8 (2.9)	3°

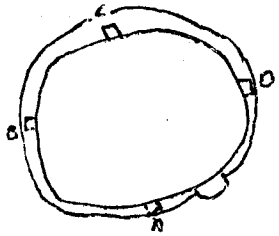
TRC

Lowell01.xls

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG&E
Facility: Brayton Point
Source: UNIT #3
Sample Location: Exhaust Stack
Stack Diameter: 246"
Date: 9/9/99
Run No.: PGE-BP-OHM-3-0-2
Operator: SF
Meterbox No.: #90343
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 2
Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 75°
Bar. Pressure, In. Hg.: 29.93
Assumed Moisture, %: 8%
Heater Box Setting, °F: 250°
Nozzle # / Dia., In.: L-13-G 0.153 Glass
Probe Length / Material: 12' Glass
Probe Heater Setting: 250°

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
A1	0910	0	71.808	2.9	1.19	1.20	75	75	5.0	Blue	260	267	67	N/A	230	258
		5	74.730	2.9	1.19	1.20	75	75	5.0	Blue	259	275	65		235	257
2		10	77.710	3.0	1.23	1.20	77	75	5.0	Blue	259	275	66		239	256
		15	80.840	3.0	1.23	1.20	78	75	5.0	Blue	259	276	63		240	256
3		20	83.671	3.0	1.23	1.20	80	76	5.0	Blue	260	276	60		241	256
		25	86.535	2.8	1.15	1.15	82	77	5.0	Blue	259	275	59		241	254
4		30	89.480	2.8	1.15	1.15	83	77	5.0	Blue	260	275	57		240	254
		35	92.535	2.8	1.15	1.15	84	78	5.0	Blue	260	276	55		241	255
STOP	0950	40	95.375													
B1	1015	0	96.253	2.8	1.15	1.15	82	80	5.0	Blue	260	274	66		239	254
		5	99.165	3.0	1.23	1.20	84	80	5.0	Blue	260	271	60		241	255
2		10	102.391	3.0	1.23	1.20	86	81	5.0	Blue	260	274	65		241	254
		15	105.235	3.0	1.23	1.20	86	81	5.0	Blue	260	273	60		240	254
3		20	108.110	2.9	1.19	1.20	87	81	5.0	Blue	260	275	58		240	253

Train Leak Check:

Before Test: .002 CF in 60 Seconds at 10.5 In. Hg
After Test: .004 CF in 60 Seconds at 6.5 In. Hg

Comments: K_F 260° - 0.41
Port A .0076 0 Sec. 5.5 in Hg
Port B .003 60 Sec. 6.5 in Hg

	Initial	Final	Static Pressure			
Port			A			
Pitot Tube Leak Check	✓	✓	Inches H₂O -0.79			
ORSAT Train Leak Check	○	○	Inches Hg			

lowell02 wn

TRC ENVIRONMENTAL CORPORATION - KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Point
Source: Unit 3

Date: 9/9/99
Run No.: PGE-BP-OHM-3-0-2
Sample Location: Exhaust Stack
Operator: [illegible]

Sheet 2 of 2

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 °C Probe	Temperatures °C Filter Outlet
		25	110.980	3.0	1.23	1.2	87	81	5.0	Blue	260	273	56	N/A	241	254
4		30	113.991	3.0	1.23	1.2	87	82	5.0	Blue	260	270	56		241	253
		35	116.920	3.0	1.23	1.2	87	82	5.0	Blue	260	272	58		240	254
STOP	1055	40	119.893													
C1	1110	0	120.060	2.7	1.11	1.1	84	83	5.0	Blue	259	274	65		242	253
		5	122.910	2.9	1.19	1.2	86	83	5.0	Blue	258	274	60		242	254
2		10	125.920	2.9	1.19	1.2	87	83	5.0	Blue	259	275	59		241	255
		15	128.920	3.0	1.23	1.2	87	83	5.0	Blue	259	275	56		242	255
3	*	20	131.925	3.0	1.23	1.2	86	86	5.0	Blue	260	273	59		242	254
		25	134.950	3.1	1.27	1.3	86	86	5.0	Blue	260	274	57		242	253
4		30	138.575	3.0	1.23	1.2	85	86	5.0	Blue	260	273	56		241	253
		35	141.092	3.0	1.23	1.2	85	86	5.0	Blue	260	272	56		242	254
STOP	1208	40	144.350													
D1	1221	0	144.456	3.0	1.23	1.2	85	85	5.0	Blue	260	272	66		243	253
		5	147.493	3.0	1.23	1.2	86	85	5.0	Blue	260	274	60		242	254
2		10	150.410	3.0	1.23	1.2	87	85	5.0	Blue	260	275	58		245	250
		15	153.390	3.1	1.27	1.3	86	85	5.0	Blue	260	272	60		246	250
3		20	156.475	3.1	1.27	1.3	86	84	5.0	Blue	261	273	61		246	252
		25	159.545	3.0	1.23	1.2	86	84	5.0	Blue	261	273	62		245	253
4		30	162.645	3.2	1.31	1.3	87	84	5.0	Blue	261	272	65		245	253
		35	165.725	3.2	1.31	1.3	87	84	5.0	Blue	261	272	67		246	252
STOP	1301	40	168.805													

Meter Leak Check During Test:

Port B .003 CF in 60 Seconds at 6.0 In. Hg

Port C .003 CF in 60 Seconds at 6.0 In. Hg

Meter Reading

	Stop	Start
	119.972	119.893
	120.060	119.972

Comments:

Port C .003 60sec. 6.5 in Hg 144.427

Port D .004 60sec. 6.0 in Hg 144.456

* STOP 1130 wait Inlet Dmnt. 1148

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ORSAT ANALYSIS

Project No. 2C046-0030-00000
Client PG+E
Facility Brayton Point
Source Unit 3
Location Exhaust STACK

Date 9/4/99
Run PGE-BP-01M-3-0-2
Operator
Comments Bag Analyzed using Paramagnetic O_2 Infrared CO_2
cal'd 0, 10, 18.1 - CO_2
0, 10.1, 22.1 - O_2

Orsat Leak Checked yes / no
Purge System with Sample Gas yes / no
Ambient Air Check CO_2 _____ O_2 _____.
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	
		10.6		8.6			1.160

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton Boiler #3
Source: Outlet

Date: 9/8/99
Run No.: 2
Train Type: Ontario-Hydro
Recovery Person: CM

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):	823.9	709.2	694.3	715.2	735.1	711.3	697.9
Initial Vol. (ml/g):	708.9	682.7	689.0	709.9	734.6	710.9	696.4
Collected (ml/g):	115.0	26.5	4.7	5.3	0.5	0.4	1.5

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	861.3			
Initial Vol. (ml/g):	838.6			
Net Collected (ml/g):	22.7			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 176.6

Sample Train Tracking Form

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

Location: Brayton #3 Outlet **Run:** 2

Sample ID: PG&E-BPOHM-3-0-2

Train Set Up By:	[signature]	**Date:** 9/9/98	**Time:** 0700
Transported to Location By:	S. J	**Date:** 9/9/99	**Time:** 0712
Received at Location By:	S. J	**Date:** 9/9/99	**Time:** 0717
Transported to Recovery Area By:	S. J	**Date:** 9/9/99	**Time:** 1323
Received at Recovery Area By:	[signature]	**Date:** 9/9/99	**Time:** 1332
Train Recovered By:	[signature]	**Date:** 9/9/99	**Time:** 13 32

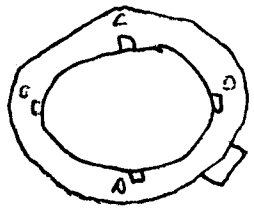
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: BR PGE
Facility: Brayton Point
Source: Unit 3
Sample Location: Exhaust Stack
Stack Diameter: 246"
Date: 9/9/99
Run No.: PGE-BP-OHM-3-0-3
Operator: S J
Meterbox No.: #90343
Meterbox ΔH @: 1.865
Y Factor: 0.981

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



Sheet 1 of 2
Train Prepared By: Ed MacKinnon
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 75°
Bar. Pressure, In. Hg.: 29.93
Assumed Moisture, %: 8%
Heater Box Setting, °F: 250°
Nozzle # / Dia., In.: L-13-6 0.153 Glass
Probe Length / Material: 12' Glass
Probe Heater Setting: 250°

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
01	1602	0	169.216	2.7	1.11	1.1	79	78	4.5	Blue	258	270	68	N/A	241	254
		5	172.185	2.6	1.07	1.0	80	78	4.5	Blue	258	267	65		242	253
2		10	175.355	2.8	1.15	1.15	81	78	4.5	Blue	258	267	64		242	253
		15	178.243	2.8	1.15	1.15	82	79	4.5	Blue	258	266	62		243	254
3		20	180.870	2.8	1.15	1.15	83	80	4.5	Blue	258	267	60		243	254
		25	183.845	2.8	1.15	1.15	84	80	4.5	Blue	257	270	56		242	253
4		30	186.710	2.7	1.11	1.1	84	81	4.5	Blue	257	268	57		242	253
		35	189.655	2.5	1.03	1.0	85	82	4.5	Blue	257	266	59		243	254
Stop	1642	40	192.385													
1	1654	0	192.449	3.0	1.23	1.2	84	83	4.5	Blue	260	274	64		242	253
		5	195.655	2.9	1.19	1.2	84	83	4.5	Blue	260	269	63		242	254
2		10	198.531	2.8	1.15	1.15	85	83	4.5	Blue	260	268	60		243	254
		15	201.660	2.8	1.15	1.15	86	83	4.5	Blue	259	269	57		243	253
3		20	204.512	2.9	1.19	1.2	86	83	4.5	Blue	260	269	56		241	253

Train Leak Check:

Before Test: .006 CF in 60 Seconds at 12.0 In. Hg
After Test: .008 CF in 60 Seconds at 6.0 In. Hg

Comments: Kc 0.41

Port 0 .003 60sec 5.5 in Hg 192.418
Port C .003 60sec 6.0 in Hg 192.449

	Initial	Final	Static Pressure			
Pitot Tube Leak Check	✓	✓	Port	0		
ORSAT Train Leak Check	○	○	Inches H₂O	-0.78		
			Inches Hg			

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG&E
Facility: Brayton Point
Source: Unit 3

Date: 9/9/99
Run No.: PGE-BP-OHM-3-0-3
Sample Location: Exhaust Stack
Operator: BJ

Sheet 2 of 2

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) °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
		25	207.610	3.0	1.23	1.2	86	83	4.5	Blue	260	268	56	N/A	242	254
4		30	210.625	3.1	1.27	1.3	86	83	4.5	Blue	260	269	57		243	253
		35	213.565	3.1	1.27	1.3	87	83	4.5	Blue	260	269	59		243	253
STOP	1734	40	216.709													
B1	1750	0	217.108	2.7	1.11	1.1	85	84	4.5	Blue	258	264	67		242	251
		5	220.300	2.7	1.11	1.1	87	84	4.5	Blue	258	262	66		245	252
2		10	223.180	2.6	1.07	1.10	88	84	4.5	Blue	258	259	65		243	249
		15	226.270	2.7	1.11	1.1	89	84	4.5	Blue	258	257	63		244	250
3		20	229.025	3.0	1.23	1.2	89	84	4.5	Blue	260	258	60		244	248
		25	232.171	3.0	1.23	1.2	89	85	4.5	Blue	259	261	59		243	249
4		30	235.018	3.0	1.23	1.2	89	84	4.5	Blue	260	267	58		244	248
		35	237.915	3.0	1.23	1.2	89	84	4.5	Blue	259	269	59		244	249
STOP	1830	40	240.820													
A1	1840	0	240.980	3.0	1.23	1.2	86	84	4.5	Blue	260	272	64		243	250
		5	244.010	3.0	1.23	1.2	87	84	4.5	Blue	260	270	60		245	252
2		10	247.971	2.9	1.19	1.2	87	84	4.5	Blue	260	270	58		245	252
		15	250.135	3.0	1.23	1.2	89	84	4.5	Blue	260	270	57		244	251
3		20	253.170	3.0	1.23	1.2	89	84	4.5	Blue	260	271	57		244	252
		25	256.155	2.9	1.19	1.2	89	84	4.5	Blue	260	271	58		243	252
4		30	259.143	2.9	1.19	1.2	89	84	4.5	Blue	259	270	58		243	251
		35	262.100	2.9	1.19	1.2	89	84	4.5	Blue	259	270	60		246	252
STOP	1920	40	265.188													

Meter Leak Check During Test:

Point C .010 CF in 60 Seconds at 7.0 In. Hg

Point B .005 CF in 60 Seconds at 5.0 In. Hg

Meter Reading

	Stop	Start
	217.033	216.709
	217.108	7.033

Comments:

Point B .007 60sec. 6.0 in Hg 240.936

Point A .006 60sec 6.5 in Hg 240.980

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ORSAT ANALYSIS

Project No. _____
Client _____
Facility _____
Source _____
Location Exhaust Stack

Date 9/9/99
Run PGE - BP - OHM - 3 - O - 3
Operator MSM
Comments See ~~Pag~~ Data Sheet For Run 2

Orsat Leak Checked yes / no
Purge System with Sample Gas yes / no
Ambient Air Check CO_2 _____ O_2 _____.
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	
		9.8		9.4			1.174

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton Point
Source: Outlet

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

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_2SO_4	100 mls 4% $KMnO_4$/10% H_2SO_4	100 mls 4% $KMnO_4$/10% H_2SO_4
Final Vol. (ml/g):	703.6	653.9	680.4	659.6	711.7	727.2	623.6
Initial Vol. (ml/g):	595.2	632.1	678.4	655.6	713.1	725.3	621.9
Net Collected (ml/g):	108.4	21.8	2.0	4.0	-1.4	1.9	1.7

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	854.1			
Initial Vol. (ml/g):	829.1			
Net Collected (ml/g):	25.0			

Comments/Notes:

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

Sample Train Tracking Form

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

Location: Brayton #3 Outlet **Run:** 3

Sample ID: PG&E-BP-OHM-3-O-3

Train Set Up By:	[signature]	**Date:** 9/9/99	**Time:** 1105
Transported to Location By:	[signature]	**Date:** 9/9/99	**Time:** 1325
Received at Location By:	[signature]	**Date:** 9/9/99	**Time:** 1330
Transported to Recovery Area By:	[signature]	**Date:** 9/9/99	**Time:** 1935
Received at Recovery Area By:	[signature]	**Date:** 9/9/99	**Time:** 1935
Train Recovered By:	[signature]	**Date:** 9/9/99	**Time:** 1935

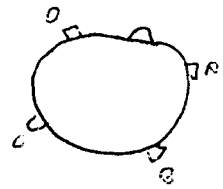
Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: Bn PGE
Facility: Brayton Point
Source: Unit 3
Sample Location: Outlet
Stack Diameter: 246"
Date: 10/6/99
Run No.: PGE-BP-OHM-3-O-4
Operator: SJ
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 2

Train Prepared By: Ed MacKinnon
Pitot Number and Side: P-200
Pitot Tube CP: 0.84
Filter No.: N/A
Ambient Temp., °F: 56°
Bar. Pressure, In. Hg.: 30.08
Assumed Moisture, %: 8%
Heater Box Setting, °F: 250°
Nozzle # / Dia., In.: 0.153 Glass L-13-G
Probe Length / Material: 10' Glass
Probe Heater Setting: 250°

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 °C Filter Outlet
D1	1105	0	971.682	2.8	1.15	1.15	55	54	3.0	Blue	249	258	51	N/A	245	203
		5	974.520	2.8	1.15	1.15	57	54	3.0	Blue	249	267	49		243	235
2		10	977.430	2.9	1.19	1.2	58	55	3.0	Blue	249	260	49		249	241
		15	980.640	2.9	1.19	1.2	60	56	3.0	Blue	249	264	49		254	242
3		20	983.585	2.7	1.11	1.1	61	57	3.0	Blue	249	261	50		255	242
		25	986.512	2.7	1.11	1.1	62	58	3.0	Blue	249	261	51		254	246
4		30	988.143	2.8	1.15	1.15	60	60	3.0	Blue	250	260	54		256	240
		35	990.687	2.8	1.15	1.15	60	59	3.0	Blue	250	260	52		253	248
STOP	1203	40	994.876													
C1	1220	0	995.180	2.9	1.19	1.2	60	59	3.0	Blue	248	251	56		240	216
		5	998.370	2.7	1.11	1.1	62	60	3.0	Blue	250	252	56		242	240
2		10	1001.053	2.7	1.11	1.1	63	60	3.0	Blue	249	250	55		243	248
		15	1004.035	2.7	1.11	1.1	64	61	3.0	Blue	249	251	56		240	247
3		20	1007.514	2.7	1.11	1.1	65	61	3.0	Blue	250	255	56		237	248

Train Leak Check:

Before Test: .005 CF in 60 Seconds at 12.0 In. Hg
After Test: .001 CF in 60 Seconds at 5.5 In. Hg

Comments: ~~5min point~~ 10 min point 5min Recd.

K_p 0.41
Stop 1132 987.276 Wait Inters.
Start 1150 987.276
Point to point 60 sec. 5.0 in

	Initial	Final	Port	A			
Pitot Tube Leak Check	✓	✓	Inches H_2O	+2.1			
SAT Train Leak Check	✓	✓					

Static Pressure

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

Project No.: 26046-0030-00003
Client: PG+E
Facility: Bryron - Pt
Source: Unit 3

Date: 10/6/99
Run No.: PG+E - BP - OHM - 3 - 0 - 4
Sample Location: Outlet
Operator: SJ

Sheet 2 of 2

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 (°C) Probe	Temperatures (°C) Filter Outlet
		25	1010.462	2.7	1.11	1.1	66	62	3.0	Blue	250	254	55	N/A	235	246
4		30	1013.547	2.5	1.05	1.0	66	63	3.0	Blue	250	254	55		233	243
		35	1016.175	2.5	1.05	1.0	66	63	3.0	Blue	250	253	56		231	240
STOP	1300	40	1018.960													
B1	1317	0	1019.146	2.6	1.09	1.1	65	63	3.0	Blue	251	267	63		243	203
		5	1021.023	2.7	1.11	1.1	66	63	3.0	Blue	251	263	57		239	247
2		10	1024.332	2.7	1.11	1.1	67	63	3.0	Blue	251	260	52		242	255
		15	1028.055	2.6	1.09	1.1	68	64	3.0	Blue	251	261	51		248	255
3		20	1030.861	2.7	1.11	1.1	68	64	3.0	Blue	251	260	52		255	254
		25	1034.337	2.6	1.09	1.1	68	65	3.0	Blue	251	260	53		255	251
4		30	1036.550	2.6	1.09	1.1	68	65	3.0	Blue	250	243	54		256	247
		35	1039.641	2.5	1.05	1.0	69	65	3.0	Blue	251	260	54		243	245
STOP	1357	40	1042.394													
1	1416	0	1042.647	2.7	1.11	1.1	68	66	3.0	Blue	252	249	60		230	193
		5	1045.983	2.7	1.11	1.1	69	66	3.0	Blue	252	252	53		233	236
2		10	1049.125	2.8	1.15	1.15	69	67	3.0	Blue	252	251	55		237	236
		15	1052.170	2.7	1.11	1.1	69	66	3.0	Blue	252	255	57		237	237
3		20	1055.045	2.7	1.11	1.1	70	67	3.0	Blue	251	254	57		238	238
		25	1058.043	2.8	1.15	1.15	71	67	3.0	Blue	252	256	56		238	237
4		30	1061.055	2.8	1.15	1.15	71	67	3.0	Blue	252	256	54		243	239
		35	1063.811	2.8	1.15	1.15	71	68	3.0	Blue	252	254	54		242	239
STOP	1456	40	1066.543													

Meter Leak Check During Test:

Port C .001 CF in 60 Seconds at 4.0 In. Hg

Port B .001 CF in 60 Seconds at 4.0 In. Hg

Meter Reading

	Stop	Start
	1019.052	1018.960
	1019.146	1019.052

Comments: Kp 0.42

Port B .001 60sec. 6.0 in Hg

Port A .003 60sec. 6.5 in Hg

lowell02

ORSAT ANALYSIS

Project No. 26046
Client PG+E
Facility Brayton Point
Source Unit 3
Location Outlet

Date 10/6/99
Run 4
Operator
Comments Bag analyzed using Para magnetic O_2 Infrared CO_2

Calibrated 0, 10, 18.1 - CO_2
with 0, 10.1, 22.1 - O_2

Orsat Leak Checked yes / no

Purge System with Sample Gas yes / no

Ambient Air Check CO_2 _____ O_2 _____.

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	
		10.9		8.0			1.183

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

ect No.:	26046	Date:	10/5/99 / 10/6/99
Client:	PG&E	Run No.:	~~3~~ 4
Facility:	Salem Harbor	Train Type:	Ontario-Hydro
Source:	Boiler #3 Outlet	Recovery Person:	[illegible]

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):	791.5	650.9	699.4	640.1	715.2	696.3	689.3
Initial Vol. (ml/g):	695.6	627.5	694.5	635.5	714.9	695.0	689.0
Net Collected (ml/g):	95.9	23.4	4.9	4.6	0.3	1.3	0.3

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	797.4			
Initial Vol. (ml/g):	778.9			
Net Collected (ml/g):	18.5			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 149.2

Sample Train Tracking Form

Sample Train: OH - Hg **Date:** 10/6/99

Location: Boiler #3 Outlet **Run:** 4

Sample ID: PG&E-BP-OHM-3-0-4

Train Set Up By:	[signature]	**Date:** 10/6/99	**Time:** 0716
Transported to Location By:	[signature]	**Date:** 10/6/99	**Time:** 0730
Received at Location By:	[signature]	**Date:** 10/6/99	**Time:** 0815
Transported to Recovery Area By:	[signature]	**Date:** 10/6/99	**Time:** 1535
Received at Recovery Area By:	[signature]	**Date:** 10/6/99	**Time:** 1539
Train Recovered By:	[signature]	**Date:** 10/6/99	**Time:** 1539

Comments:

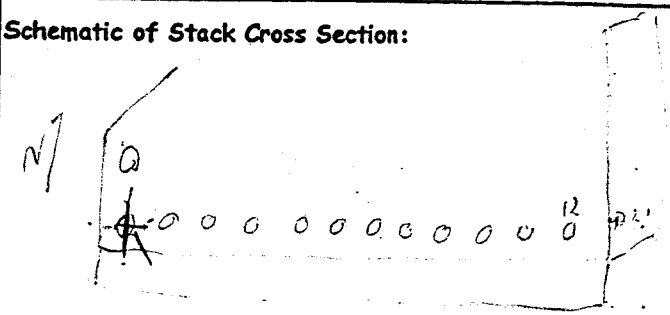
Hg

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	9/7/96
Client:	PG&E
Facility:	Brayton Pt
Run No.:	Unit #3 Prelim
Barometric Pressure (in. Hg):	
% Moisture:	
Pitot Tube ID:	~~P-3~~ P-1
Post Leak Check:	✓
Measurement Device:	
Micromanometer:	
10" Manometer:	
Magnehelic:	
Other:	
Explain:	

Project No.:	
Sample Location:	West ESP Inlet
Load Condition:	
Operator:	S. Tibbetts / D. Gill
Meterbox No.:	90336
Static ~~(in. H_2O)~~:	-42 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 Angle ~~Null Angle~~
	1-1 / 1-2	238 / 243	.15 / .14	135 / 145
	1-3 / 1-4	243 / 232	.42 / .50	135 / 145
	2-1 / 2-2	239 / 232	.60 / .56	45 / 100
	2-3 / 2-4	231 / 225	.15 / .07	135 / 145
	3-1 / 3-2	224 / 230	.18 / .08	10 / 220
	3-3 / 3-4	230 / 207	.13 / .07	275 / 290
	4-1 / 4-2	208 / 234	.28 / .51	35 / 100
	4-3 / 4-4	~~236~~ 229 / ~~230~~	~~.59~~ / ~~.11~~	~~35~~ 60 / 45
	5-1 / 5-2	229 / 233	.40 / .24	45 / 60
	5-3 / 5-4	236 / 231	.12 / .44	85 / 85
	6-1 / 6-2	223 / 224	.46 / .67	30 / 80
	6-3 / 6-4	236 / 242	.68 / .64	45 / 30

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Angle ~~Null Angle~~
7-1 / 7-2		233 / 243	.75 / .71	85 / 55
7-3 / 7-4		250 / 258	.85 / .89	70 / 30
8-1 / 8-2		239 / 248	1.2 / 1.15	45 / 70
8-3 / 8-4		252 / 251	0.62 / 0.53	60 / 60
9-1 / 9-2		248 / 248	1.4 / 1.0	30 / 45
9-3 / 9-4		252 / 251	1.2 / .96	0 / 10
10-1 / 10-2		~~250~~ 45 / 261	~~1.45~~ / 1.2	40 / 45
10-3 / 10-4		260 / 243	0.65 / 0.38	25 / 20
11-1 / 11-2		270 / 272	1.45 / 1.65	45 / 60
11-3 / 11-4		269 / 257	1.2 / 0.67	20 / 0
12-1 / 12-2	12-1 / ~~12-3~~	270 / 270	1.4 / 1.25	20 / 45
~~12-3~~ / 12-4	12-1	~~278~~ / 278	~~1.3~~ / 1.3	~~20~~ / 20
12-3		267	.56	80
12-4		243	.53	350

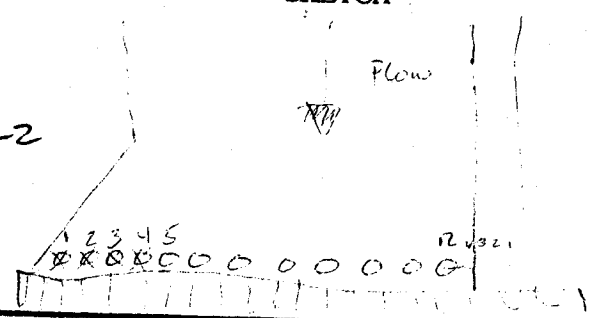
TRC

Lowell01.xls

ARCADIS ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG&E
Facility: Brayton Point
Source: Unit #3
Sample Location: ESP West Inlet
Stack Diameter: 720 x 90"
Date: 9/9/99
Run No.: PG&E-BP-OHM-3-IW-2
Operator: D. Gill
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 Muckowson
Pitot Number and Side: P-1
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F: 80
Bar. Pressure, In. Hg.: 29.93
Assumed Moisture, %: 8
Heater Box Setting, °F: 450
Nozzle # / Dia., In.: L-60-G / .193
Probe Length / Material: 9' EF / GL
Probe Heater Setting: 450

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
5-1	910	0	287.852	.34	.40	.60	87	86	5	Good	220	290	68	—	181	230
2		5	290.2	.23	.28	.60	89	86	5		230	288	67		190	243
3		10	292.2	.10	.117	.50	90	87	5		232	288	65		198	242
4		15	294.1	.38	.446	.48	91	88	5		231	288	64		197	242
		20	296.000													
6-1		20	296.621	.52	.624	.62	94	90	6		215	289	63		197	228
2		25	298.6	.56	.65	.65	94	90	6		227	290	63		198	229
3		30	300.9	.58	.67	.67	95	91	6		235	290	63		201	235
4		34	303.2	.43	.49	.49	96	92	5.5		236	289	61		201	257
	950	40	306.222													
7-1	1015	40	306.465	.45	.52	.52	95	95	6		235	278	62		189	246
2		45	308.6	.85	.986	.98	95	95	8		239	282	61		196	256
3		50	311.1	.96	1.11	1.1	96	95	8.5		245	273	58		194	257
4		55	313.8	.82	.934	.93	96	95			253	274	57		196	255

Train Leak Check:

Before Test: .002 CF in 60 Seconds at 20 In. Hg
After Test: .003 CF in 60 Seconds at 15 In. Hg

Comments:

	Initial	Final		Static Pressure			
Pitot Tube Leak Check	∅	∅	Port	6			
ORSAT Train Leak Check	∅	∅	Inches H₂O				
			Inches Hg	.44			
			mm				

lowell03

TRC ENVIRONMENTAL CORPORATION - IS INETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046 - 0030 - 00003
Client: PG+E
Facility: Brayton Point
Source: Unit #3

Date: 9/9/99
Run No.: PG+E - BP - OHM - 3 - Run - 2
Sample Location: ESP - West - Inlet
Operator: D. Gill

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
7-4		60	316.547													
8-1		60	317.382	.75	.87	.87	98	95	8	Good	237	276	68		197	252
2		65	319.9	1.3	1.49	1.5	99	96	9.5		245	278	61		198	253
3		70	323.5	.20	.23	.55	99	95	6		245	270	61		197	254
4		75	325.4	.45	.51	.51	96	95	6		233	270	63		196	247
	1055	80	327.425													
9-1	1110	80	328.629	1.4	1.61	1.6	96	96	10		249	282	66		188	252
2		85	331.6	1.3	1.49	1.5	98	96	10		249	283	60		194	255
3		90	334.6	1.1	1.26	1.2	99	96	10		251	279	52		198	257
4		95	337.8	.85	.98	.98	99	96	9.5		235	281	51		200	254
	1130	100	340.729													
10-1	1148	100	341.562	.5	.56	.56	96	98	7.5		261	287	54		188	257
2		105	343.71	.1	.112	.40	98	98	6		260	284	52		193	256
3		110	345.6	.87	.99	.99	98	98	9		252	283	51		197	257
4		115	348.2	.50	.58	.58	99	98	8		220	278	49		197	257
	1208	120	350.542													
11-1	1221	120	351.621	2.4	2.79	2.3	99	99	12		275	282	52		188	258
2		125	354.9	1.6	1.76	1.7	101	99	12		277	280	50		191	261
3		130	358.6	1.2	1.32	1.3	102	98	11		267	272	52		190	265
4		135	361.8	.67	.76	.76	101	98	10		251	271	54		190	252
		140	364.42													
12-1	1241	140	365.182	1.5	1.65	1.6	100	98	12		277	275	54		178	267
2		145	368.1	1.5	1.65	1.6	101	98	12.5		279	273	55		183	271
3		150	371.1	.85	.96	.96	100	97			260	275	55		189	266

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____

_____ CF in _____ Seconds at _____

Meter Reading

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

Comments:

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-000003
Client: PG+E
Facility: Brayton Point
Source: Unit 3

Date: 9/9/99
Run No.: PG+E
Sample Location:
Operator:

Sheet 3 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) °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
P-4		155	374.6	.65	.741	.74	98	97	10	600D	251	271	57	—	181	250
	1301	160	377.275	—					—							

Meter Leak Check During Test:

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

Meter Reading
Stop Start
_____ _____

Comments:

lowell02.wp

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
acility: Brayton Boiler #3
Source: West Inlet

Date: 9/8/99
Run No.: 2
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	819.5	667.6	695.9	642.0	717.5	714.2	706.2
Initial Vol. (ml/g):	709.9	645.6	693.3	637.2	716.7	712.2	707.1
Net Collected (ml/g):	109.6	21.0	2.6	4.8	0.8	2.0	-0.9

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	780.5			
Initial Vol. (ml/g):	759.1			
Net Collected (ml/g):	21.4			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 161.3

ORSAT ANALYSIS

Project No.	26046	Date	9/9/99
Client	PG+E	Run	PGE-BP-OHM-3-IA-2
Facility	Burnyton Point	Operator	
Source	Unit 3	Comments	See data sheet
Location	ESP - West Inlet		For outlet Run 2.

Orsat Leak Checked yes / no

Purge System with Sample Gas yes / no

Ambient Air Check CO_2 _____ O_2 _____.

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	
		11.8		7.5			1.130

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

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

Location: Brayton #3 West Inlet **Run:** 2

Sample ID: PG&E-BP-OHM-3-IW-2

Train Set Up By:	[signature]	**Date:** 9/9/99	**Time:** 0654
Transported to Location By:	[signature]	**Date:** 9/9/99	**Time:** 700
Received at Location By:	[signature]	**Date:** 9/9/99	**Time:** 709
Transported to Recovery Area By:	[signature]	**Date:** 9/9/99	**Time:** 1350
Received at Recovery Area By:	[signature]	**Date:** 9/9/99	**Time:** 1400
Train Recovered By:	[signature]	**Date:** 9/9/99	**Time:** 1500

Comments:

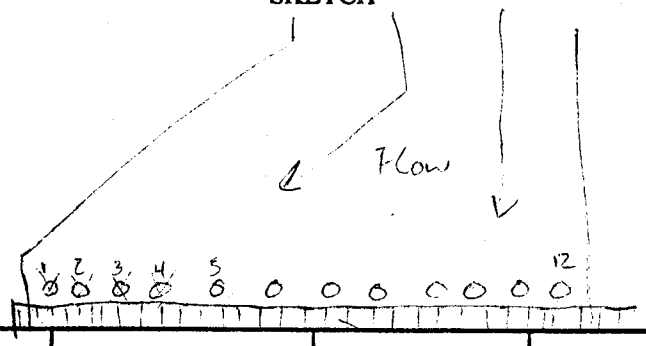
Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PGE
Facility: Boylston Point
Source: Unit 3
Sample Location: ESP West Inlet
Stack Diameter: 720 x 90
Date: 9-9-99
Run No.: PGE-BP-OHM-3-IN-3
Operator: D. Gill
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-1
Pitot Tube CP: 0.84
Filter No.: —
Ambient Temp., °F:
Bar. Pressure, In. Hg.: 29.90
Assumed Moisture, %: 8
Heater Box Setting, °F: 350
Nozzle # / Dia., In.: L-3-G 0.192 L-3-G
Probe Length / Material: 9' EF / GL
Probe Heater Setting: 350

Point	Clock Time 24-hr (1602 DSL)	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 °C Filter Outlet
5-1	~~1504~~	0	383.675	.55	.613	.64	90	91	5	GOOD	213	280	60		200	254
2		5	386.1	.34	.394	.65	91	91	5		226	283	61		202	253
3		10	388.6	.15	.172	.60	93	92	5		232	251	61		211	250
4		15	390.4	.20	.23	.57	94	92	5		230	252	61		214	252
		20	392.565													
6-1		20	393.421	.76	.881	.88	95	92	6		225	252	60		219	251
2		25	395.7	.62	.719	.72	95	92	5.5		227	259	62		216	249
3		30	398.2	.72	.820	.82	95	92	6		233	273	62		217	248
4		35	400.4	.45	.526	.53	96	94	6.5		200	279	61		217	249
	1642	40	402.501													
7-1	1654	40	403.852	.53	.609	.61	94	95	6.5		228	294	62		215	255
2		45	405.1	1.0	1.13	1.13	96	95	8		238	291	60		210	255
3		50	408.0	.96	1.08	1.1	98	95	8		243	291	59		213	258
4		55	410.7	.78	.88	.88	97	95	8		243	265	60		216	261

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 19 In. Hg
After Test: .005 CF in 60 Seconds at 15 In. Hg

Comments:

	Initial	Final	Static Pressure				
Pitot Tube Leak Check	✓	○	Port	8			
			Inches H₂O				

TRC ENVIRONMENTAL CORPORATION - IS .INETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00603
Client: PG+E
Facility: Brayton Point
Source: Unit 3

Date: 9/9/99
Run No.: PG+E - BP - CHM - 3 - INL - 3
Sample Location: Inlet ESP West
Operator: D. Gill

Sheet 3 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) °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
7-4		60	413.236													
8-1		60	414.128	1.1	1.23	1.2	98	95	10	Good	243	266	60	—	214	254
2		65	417.2	1.3	1.45	1.5	99	95	10		246	265	60		216	252
3		70	420.3	.45	.504	.50	99	95	7		243	263	62		213	250
4		75	422.6	.35	.406	.40	97	95	7		225	264	65		203	251
		80	424.485													
9-1	1750	80	424.875	1.3	1.45	1.5	94	95	10		250	264	66		200	246
2		85	428.1	1.1	1.23	1.2	97	95	10		251	263	60		206	252
3		90	431.2	1.0	1.12	1.1	99	95	10		251	267	60		209	252
4		95	434.5	.82	.95	.95	99	95	9		221	264	61		204	251
		100	436.962													
10-1		100	437.821	1.7	1.9	1.9	99	95	9		261	252	61		181	247
2		105	439.2	1.7	1.9	1.9	101	95	9		258	266	61		187	247
3		110	445.0	.81	.90	.90	100	95	7		245	266	62		187	246
4		115	447.3	.45	.50	.50	99	95	6		247	266	64		188	246
	1830	120	449.355													
11-1	1840	120	453.361	2.0	2.16	2.2	96	94	10		275	275	64		177	261
2		125	456.6	1.5	1.62	1.6	99	94	9.5		276	273	64		187	265
3		130	460.0	1.1	1.21	1.2	99	94	9.5		265	273	65		191	261
4		135	463.2	.70	.791	.79	99	94	9.5		243	271	66		190	254
		140	465.734													
12-1		140	466.425	1.6	1.728	1.7	98	94	10		278	268	66		176	269
2		145	469.8	1.5	1.63	1.6	98	93	10		273	273	66		178	268
3		150	473.3	.5	.56	.56	98	93	8		256	271	67		178	

Meter Leak Check During Test:

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

Meter Reading: Stop _____ Start _____

Comments:

lowell02 wp

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0080-00003
Client: PG&E
Facility: Brayton Point
Source: Unit 3

Date: 9/7/99
Run No.: PG&E-BP-OHA-3-Run-3
Sample Location: INLET WEST ESP
Operator: D. Gill

Sheet 3 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) °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
12-4		155	4176.0	.55	.627	.62	96	93	7	GOOD	235	276	67	—	176	251
	1820	160	4177.866													

Meter Leak Check During Test:

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

Meter Reading
Stop Start

Comments:

lowell02.wp

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
acility: Brayton Point
Source: Inlet West

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

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):	754.6	645.0	693.1	710.2	719.8	720.7	695.8
Initial Vol. (ml/g):	638.2	622.5	688.3	707.0	718.4	719.0	694.5
t Collected (ml/g):	116.4	22.5	4.8	2.8	1.4	1.7	1.3

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	809.5			
Initial Vol. (ml/g):	786.6			
Net Collected (ml/g):	22.9			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 173.8

ORSAT ANALYSIS

Project No. 26046
Client PG&E
Facility Brayton Point
Source Unit 3
Location Inlet west - ESP

Date 9/9/99
Run PGE-OHM-3-IN-3
Operator
Comments See Data sheet For Outlet Run 2

Orsat Leak Checked yes / no

Purge System with Sample Gas yes / no

Ambient Air Check CO_2 _____ O_2 _____.

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	
		11.4		7.3			1.193

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

Sample Train: OH - Hg

Date: 9/9/99

Location: Brayton #3 West Inlet

Run: 3

Sample ID: PG&E-BP-OHM-3-IW-3

Train Set Up By: [signature] **Date:** 9/9/99 **Time:** 1107

Transported to Location By: [signature] **Date:** 9/9/99 **Time:** 1340

Received at Location By: [signature] **Date:** 9/9/99 **Time:** 1407

Transported to Recovery Area By: [signature] **Date:** 9/9/99 **Time:** 20:00

Received at Recovery Area By: [signature] **Date:** 9/9/99 **Time:** 20:01

Train Recovered By: [signature] **Date:** 9/9/99 **Time:** 2041

Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: BG PGE
Facility: Brayton Point
Source: Unit 3
Sample Location: ESP West Inlet
Stack Diameter: 720 x 90
Date: 10/6/99
Run No.: PGE-BP-OHM-3-IW-B4
Operator: B Potter / M Winter
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

Train Prepared By: Ed Mackinnon
Pitot Number and Side: P-3
Pitot Tube CP: ~~0.84~~ mem 0.88
Filter No.: NA
Ambient Temp., °F: 30
Bar. Pressure, In. Hg.: 30.02
Assumed Moisture, %: 8
Heater Box Setting, °F: 270
Nozzle # / Dia., In.: 1.379 0.193
Probe Length / Material: 10' 9/255
Probe Heater Setting: 270

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 °C Stack	Filter Box	Imp Temp	HSL ~~XAD Cond~~	Probe	(5) Filter Outlet
1-1	1105	0	989.150	0.31	.315	.500	68	67	6	G	230	260	55	NA	270	238
2		5	991	0.20	.216	.500	68	65	6	G	237	258	49	265	260	237
3		10	993.3	0.35	.380	.500	69	65	6	G	243	258	50	265	260	240
4		15	995.3	0.45	.486	.500	70	66	6	G	239	258	50	260	267	241
	1125	20	997.189	0.90	.972	.970	74	69	7.5	G	236	259	53	265	267	222
2-1	1142	—	998.155	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
2		25	1000.8	0.90	.972	.97	75	70	7.5	G	228	255	52	268	252	236
3		30	1003.4	0.62	.669	.67	77	71	7.0	G	237	250	52	261	251	233
4		35	1005.7	0.80	.864	.860	77	71	7.5	G	227	265	54	260	252	235
	1202	40	1008.223	—	—	—	—	—	—	—	—	—	—	—	—	—
3-1	1220	—	1008.522	0.95	1.026	1.05	80	74	8.0	G	236	260	57	260	255	237
2		45	1011.20	1.00	1.08	1.10	82	74	8.0	G	246	249	55	260	249	236
3		50	1014.00	1.00	1.08	1.10	84	76	8.0	G	248	248	54	260	250	235
4		55	1016.8	1.20	1.26	1.25	85	77	8.0	G	245	257	57	260	260	233

Train Leak Check:

Before Test: 0.01 CF in 60 Seconds at 10 In. Hg
After Test: 0.005 CF in 60 Seconds at 6 In. Hg
post 1

Comments: 5 min Points
Orsat bag labeled as Run 3B 053

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

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

Project No.: 26046-0030-00003
Client: PGE
Facility: Brayton Pt
Source: Units 3

Date: 10/6/99
Run No.: PGE-BP-OHM-3-IW-4
Sample Location: ESP West Inlet
Operator: RPotter/MWinter

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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F ~~XAD Cond~~ HSL	Temperatures °C Probe	Temperatures °C Filter Outlet
	1240	60	~~100~~ 1019.633	—	—	—	—	—	—	—	—	—	—	—	—	—
4-1	1245		1020.240	1.30	1.305	1.35	86	80	8.0	G	233	258	58	NA	—	—
2		65	1022.9	1.40	1.47	1.50	87	80	8.5	G	254	256	58	260	260	236
3		70	1026.3	0.75	0.787	0.79	87	81	7.0	G	257	258	58	260	264	240
4		75	1028.7	0.50	0.54	0.55	87	82	6.5	G	239	258	60	260	260	239
	1300	80	1030.695	—	—	—	—	—	—	—	—	—	—	—	—	—
5-1	1317	—	1030.910	1.50	1.62	1.60	85	84	8.5	G	248	258	58	260	264	235
2		85	1034.20	1.50	1.62	1.60	87	84	8.5	G	251	257	54	260	263	238
3		90	1037.50	1.10	1.19	1.20	88	84	8.0	G	251	258	53	260	261	237
4		95	1040.6	0.88	0.95	0.95	89	85	7.5	G	245	257	53	260	263	237
	1337	100	1043.256	—	—	—	—	—	—	—	—	—	—	—	—	—
6-1	1340	—	1043.420	1.60	1.73	1.75	88	86	9.0	G	253	258	54	260	261	239
2		105	1046.7	0.60	0.64	0.64	88	86	7.5	G	257	255	53	260	261	239
3		110	1049.0	0.63	0.68	0.68	87	86	7.5	G	258	258	54	260	260	237
4		115	1051.3	0.55	0.59	0.59	86	85	7.0	G	247	255	53	260	260	238
	1400	120	1053.202	—	—	—	—	—	—	—	—	—	—	—	—	—
7-1	1415	—	1053.530	0.10	0.108	0.500	80	82	6.5	G	252	260	57	260	260	239
2		125	1055.8	2.00	2.16	2.15	80	82	10.0	G	260	254	55	260	260	239
3		130	1059.7	1.40	1.51	1.50	81	81	9.5	G	255	256	54	260	258	240
4		135	1063.0	0.95	1.026	1.00	82	81	8.0	G	258	254	54	260	261	236
	1435	140	1065.550	—	—	—	—	—	—	—	—	—	—	—	—	—
~~8-1~~		—														
~~2~~		~~145~~	RD													
~~3~~		~~150~~														

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____

_____ CF in _____ Seconds at _____

Meter Reading

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

Comments:

lowell02.wp

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046 0030 00003
Client: PGE
Facility: Brayton P4
Source: Unit 3

Date: 10/6/99
Run No.: PGE-BP-OHM-3-IW-4
Sample Location: ESP West Inlet
Operator: TCPotter / MWinter

Sheet 3 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F ~~XAD Cond~~ HSL	Temperatures °F Probe	Temperatures °F Filter Outlet
1	1438		1065.925	1.80	1.04	1.95	81	81	10	G	261	252	50	260	260	235
2		145	1068.99	1.50	1.62	1.60	83	81	9.5	G	263	250	54	260	260	235
3		150	1072.4	1.30	1.40	1.40	83	81	9.5	G	260	250	54	260	260	237
4		155	1075.6	0.65	0.70	0.70	83	81	8.0	G	254	250	55	260	261	239
	1438	160	1077.920	—	—	—	—	—	—	—	—	—	—	—	—	—

~~Meter Leak Check During Test:~~ final leak check

	Meter Reading Stop	Meter Reading Start
.007 CF in 60 Seconds at 12 In. Hg		
CF in Seconds at In. Hg		

Comments:

lowell02.wp

ORSAT ANALYSIS

Project No.	26046	Date	10/6/99
Client	PG&E	Run	4
Facility	Brayton Point	Operator	
Source	Unit 3	Comments	see run 4
Location	Inlet West		outlet data sheet

Orsat Leak Checked yes / no

Purge System with Sample Gas yes / no

Ambient Air Check CO_2 _____ O_2 _____.

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	
		11.8		7.1			

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	10/5/99 / 10/6/99
Client:	PG&E	Run No.:	~~3~~ 4
Facility:	Salem Harbor	Train Type:	Ontario-Hydro
Source:	Boiler #3 Inlet West	Recovery Person:	[illegible]

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):	803.0	733.9	693.6	715.4	707.3	714.2	695.3
Initial Vol. (ml/g):	714.3	710.5	691.0	711.0	708.3	711.8	694.9
Net Collected (ml/g):	88.7	23.4	2.6	4.4	-1.0	2.4	0.4

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	857.7			
Initial Vol. (ml/g):	838.8			
Net Collected (ml/g):	18.9			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 139.8

Sample Train Tracking Form

Sample Train: OH - Hg

Date: 10/6/99

Location: Boiler #3 West Inlet

Run: ~~3~~ 4

Sample ID: PL&E-BP-OHM-3-IW-~~3~~ 4

Train Set Up By: [signature] Date: 10/6/99 Time: 0722

Transported to Location By: [signature] Date: 10/6/99 Time: 0740

Received at Location By: [signature] Date: 10/6/99 Time: 0745

Transported to Recovery Area By: _____ Date: _____ Time: _____

Received at Recovery Area By: [signature] Date: 10/6/99 Time: 15:54

Train Recovered By: [signature] Date: 10/6/99 Time: 1637

Comments: _____

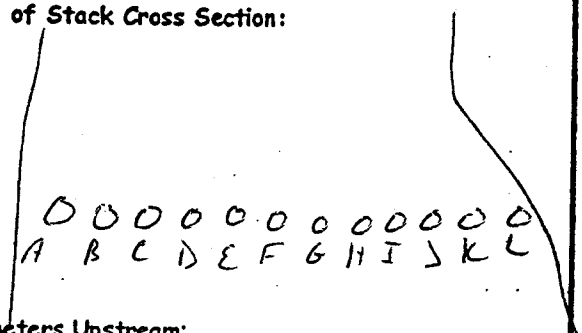
Hg

STACK GEOMETRY AND GAS VELOCITY DATA

Date:	9/7/99
Client:	PG+E
Facility:	Brayton Point
Run No.:	Preliminary
Barometric Pressure (in. Hg):	
% Moisture:	
Pitot Tube ID:	
Post Leak Check:	✓
Measurement Device:	
Micromanometer:	
10" Manometer:	✓
Magnehelic:	
Other:	
Explain:	

Project No.:	
Sample Location:	Inlet East
Load Condition:	
Operator:	M. O'Brien
Meterbox No.:	
Static (in. H_2O):	-44 mm
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
1830	A1	241	0.62	0
	2	240	0.50	0
	3	237	0.93	0
	4	230	1.3	0
	B1	231	0.49	0
	2	234	0.81	0
	3	227	0.94	0
	4	218	0.86	0
	C1	243	0.76	350°
	2	232	1.0	0
	3	223	1.1	0
	4	218	1.5	0

Time (24 hr. clock)	Sample Point	Stack Temp °F or °C	Manom. Reading in H_2O	Cyclonic Flow Null Angle
1908	K1	257	0.1	90°
	2	278	0.7	315°
	3	284	0.63	330°
	4	289	0.54	325
1922	L1	242	0.20	280°
	2	265	0.23	280°
	3	273	0.10	300°
	4	284	0.14	340
	J1	272	0.60	315
	2	282	0.99	330
	3	281	0.60	320
1942	4	285	0.55	310

TRC

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STACK GEOMETRY AND GAS VELOCITY DATA

Date: 9/7/99

Client: U.S. Gen

Facility: Somerset

Run No.:

Barometric Pressure (in. Hg):

% Moisture:

Pitot Tube ID:

Post Leak Check:

Measurement Device:

Micromanometer:

10" Manometer: ✓

Magnehelic:

Other:

Explain:

Project No.:

Sample Location: Inlet East duct

Load Condition:

Operator: R. Rebello

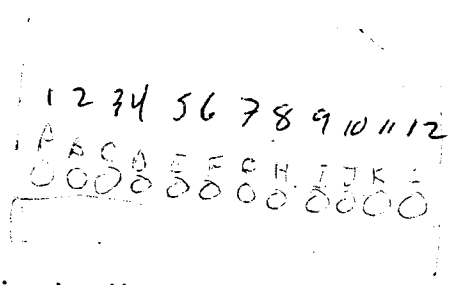
Meterbox No.:

Static (in. H_2O):

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
19:08	F1 / F2	262 / 266	.69 / 1.2	340 / 0
	F3 / F4	266 / 263	.96 / .91	0 / 350
	D1 / D2	235 / 243	1.3 / 1.0	340 / 0
	D3 / D4	248 / 235	.71 / .63	0 / 30
	E1 / E2	235 / 251	1.1 / .89	10 / 0
	E3 / E4	261 / 251	.38 / .85	330 / 0
	G1 / G2	250 / 264	.76 / .92	340 / 340
	G3 / G4	264 / 246	.63 / .43	350 / 350
	H1 / H2	270 / 271	.52 / .41	355 / 310
	H3 / H4	264 / 232	.42 / .32	340 / 350
	I1 / I2	265 / 279	.89 / .71	340 / 350
	I3 / I4	276 / Dead	.84 / Dead	345 / Dead

Point #1 Farthest in

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

TRC

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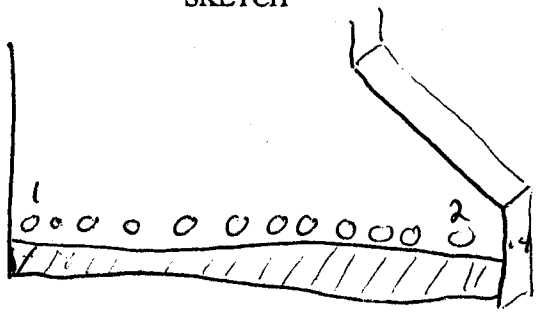
TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG&E
Facility: Brayton Point
Source: Unit #3
Sample Location: ESP East Inlet
Stack Diameter: 720 x 90
Date: 9/9/99
Run No.: PGE-BP-OHM-3-IE-2
Operator: S. Tibbetts
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 Mckinnon
Pitot Number and Side: P-3
Pitot Tube CP: 0.88
Filter No.: NA
Ambient Temp., °F: 80
Bar. Pressure, In. Hg.: 29.93
Assumed Moisture, %:
Heater Box Setting, °F:
Nozzle # / Dia., In.: L-61-G 0.196 L-13-Q 0.195
Probe Length / Material: 10' 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
1-1	0910	0	507.90	0.67	1.05	1.05	81	81	6.5	✓	227	165	66	NA	258	260
1-2		3.5	~~511.5~~	0.25	0.3	0.5	84	81	5.0	✓	243	161	64		243	254
1-3		7.0	511.55	0.91	1.10	1.1	84	81	6.5	✓	~~160~~ 243	160	63		245	248
1-4		10.5	513.4	1.2	1.325	1.35	86	82	7.0	✓	234	160	63		245	243
		14.0	515.51	X												
2-4		14.0	516.48	1.5	1.8	1.8	86	82	8.5	✓	224	160	63		244	244
2-3		17.5	518.8	1.3	1.59	1.6	89	83	8.0	✓	230	162	63		245	240
2-2		21.0	521.23	0.98	1.18	1.2	89	84	7.0	✓	239	159	62		237	241
2-1		24.5	523.5	0.42	0.516	0.55	90	84	5.5	✓	228	163	62		246	252
		28.0	525.33													
3-4		28	525.83	1.35	1.647	1.65	90	84	8.0	✓	234	164	63		250	254
3-3		31.5	526.0	0.95	1.149	1.15	90	84	7.5	✓	239	163	63		250	252
3-2		35.0	530.07	1.0	1.2	1.2	89	84	7.5	✓	245	163	64		246	251
3-1		38.5	532.2	0.57	0.678	0.68	90	86	6.0	✓	249	163	65		247	253

Train Leak Check:

Before Test: .003 CF in 60 Seconds at 15 In. Hg
After Test: .005 CF in 60 Seconds at 15 In. Hg

Comments:

	Initial	Final		Static Pressure			
			Port	3			
Pitot Tube Leak Check	✓	✓	Inches H₂O				
ORSAT Train Check	✓	✓	mm ~~Inches~~ Hg	-44			

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

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton Pt
Source: Unit #3

Date: 9/9/99
Run No.: PGE-BP-OWM-3-IE-2
Sample Location: ESP East Inlet
Operator: S. Tibbetts

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
		42	533.91													
4-4	1015	42	534.26	1.2	1.45	1.45	85	84	8.0	✓	241	163	63	NA	249	252
4-3		45.5	536.48	1.05	1.26	1.25	87	84	8.0	✓	246	163	58		245	255
4-2		49.0	538.89	0.64	0.768	0.77	87	84	6.5	✓	246	163	58		245	255
4-1		52.5	540.5	0.51	0.62	0.62	86	84	6.0	✓	233	161	58		244	254
		56.0	542.11													
6-4		56	542.85	0.35	0.409	0.5	87	85	5.5	✓	264	163	54		242	251
6-3		59.5		1.2	1.39	1.4	87	85	7.5	✓	270	166	60		243	257
6-2		63.0	546.52	0.97	1.12	1.1	87	84	7.0	✓	270	169	60		243	263
6-1		66.5	548.6	0.72	0.84	0.84	86	84	6.5	✓	267	170	58		252	263
		70.0	550.40													
7-4	11:10	70.0	551.01	0.44	0.514	0.51	81	82	8.5	✓	264	170	58		243	271
7-3		73.5	552.6	0.73	0.839	0.84	82	82	6.0	✓	273	166	57		246	267
7-2		77.0	554.27	0.55	0.64	0.64	83	82	6.0	✓	268	169	56		251	264
7-1		80.5	555.85	0.49	0.578	0.58	83	82	6.0		257	171	55		255	266
		84.0	557.295													
8-4		84.0	558.585	0.45	0.508	0.51	83	83	6.0	✓	269	170	61		254	265
8-3		87.5	560.2	0.47	0.526	0.53	83	83	6.0	✓	278	173	58		254	266
8-2		91.0	561.6	0.48	0.54	0.54	83	83	6.0	✓	270	164	57		237	258
8-1		94.5	563.0	0.52	0.6	0.6	83	83	6.5	✓	259	165	57		252	261
		98.0	564.46													
9-4		98.0	565.3	1.05	1.176	1.2	84	83	8.0	✓	281	167	55		264	263
9-3		101.5	567.1	0.95	1.05	1.05	85	83	8.0	✓	284	169	55		269	267
9-2		104.0		0.85	0.952	0.95	87	84	7.5	✓	273	173	55		273	263

Meter Leak Check During Test:

.005 CF in 60 Seconds at 15 Stop In. Hg _____ Start _____
.006 CF in 60 Seconds at 15 In. Hg _____ _____

Comments: L-61-G Nozzle Broken Between ports 7 and 8
Replace with ~~L-Q~~ L-13-Q 0.195

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton PL.
Source: Unit 7 #3

Date: 9/9/99
Run No.: POE-BP-OHM-3-IE-2
Sample Location: ESP East Inlet
Operator: S. Tibbetts

Sheet 3 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 °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
9-1		107.5	570.41	0.49	0.56	0.56	87	84	6.5	✓	262	173	57	NA	272	269
		112	572.49													
10-4	1221	112	573.71	0.53	0.593	0.59	87	85	5.5	✓	275	173	59		251	271
10-3		115.5	575.4	0.69	0.759	0.76	87	85	6.0	✓	288	178	59		242	278
10-2		119.0	577.02	0.96	1.065	1.05	87	85	7.0	✓	286	180	59		236	284
10-1		122.5	578.9	0.55	0.63	0.63	87	85	6.0	✓	245	169	58		243	265
		126.0	580.70													
11-4		126	581.51	0.73	0.80	0.80	87	85	6.5	✓	291	178	58		231	279
11-3		129.5	583	0.70	0.77	0.77	87	85	6.5	✓	292	179	58		219	280
11-2		133.0	584.65	0.67	0.75	0.75	86	84	6.5	✓	280	162	58		207	272
11-1		136.5	586.3	0.63	0.705	0.71	86	84	6.5	✓	278	165	58		206	272
		140.0	587.91													
12-4		140	588.86	0.13		.5	86	84	6.0	✓	277	178	60		215	290
12-3		143.5	590.4	0.12		.5	86	84	6.0	✓	275	173	60		211	285
12-2		147.0	591.74	0.17		.5	87	84	6.0	✓	275	165	61		[illegible]	[illegible]
12-1		150.5	593.1	0.15		.5	87	84	6.0	✓	276	169	62		[illegible]	273
End	~1310	154.0	594.515													
	mm	~~154.0~~														
		157.5														
		161.0														
		164.5														
		168.0														

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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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton Boiler #3
Source: Inlet East

Date: 9/7/99
Run No.: 2
Train Type: Ontario-Hydro
Recovery Person: Sm

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):	809.2	729.0	700.1	663.2	724.3	667.5	700.8
Initial Vol. (ml/g):	706.1	706.6	695.6	660.1	723.7	667.4	700.1
Collected (ml/g):	103.1	22.4	4.5	3.1	0.6	0.1	0.7

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	780.5			
Initial Vol. (ml/g):	761.0			
Net Collected (ml/g):	19.5			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 154

ORSAT ANALYSIS

Project No.	260416	Date	9/9/99
Client	PG&E	Run	PGE-BP-OHM-3-IE-2
Facility	Brayton Point	Operator	
Source	Unit 3	Comments	
Location	ESP - East Inlet		

Orsat Leak Checked yes / no

Purge System with Sample Gas yes / no

Ambient Air Check CO_2 _____ O_2 _____.

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	
		10.6		8.7			1.151

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

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

Location: Brayton #3 East Inlet **Run:** 2

Sample ID: PG&E-BP-OHM-3-IE-2

Train Set Up By:	[signature]	**Date:** 9/9/99	**Time:** 0700
Transported to Location By:	[signature]	**Date:** 9/9/99	**Time:** 0115
Received at Location By:	[signature]	**Date:** 9/9/99	**Time:** 0120
Transported to Recovery Area By:	[signature]	**Date:** 9/9/99	**Time:** 1350
Received at Recovery Area By:	[signature]	**Date:** 9/9/99	**Time:** 1400
Train Recovered By:	[signature]	**Date:** 9/9/99	**Time:** 1409

Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: ~~Bx~~ PGE
Facility: Brayton Point
Source: Unit 3
Sample Location: ESP East Inlet
Stack Diameter: 720 x 90
Date: 9/9/99
Run No.: PGE-BP-OHM-3-IE-3
Operator: S. Tibbetts
Meterbox No.: 9C338
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-3
Pitot Tube CP: 0.85
Filter No.: —
Ambient Temp., °F: 84
Bar. Pressure, In. Hg.: 29.93
Assumed Moisture, %:
Heater Box Setting, °F:
Nozzle # / Dia., In.: L-13-Q 0.195
Probe Length / Material: 10 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °F Probe	Temperatures °C Filter Outlet
~~1-4~~	~~1545~~ 1602	0	597.99	1.2	1.41	1.4	89	86	6.5	✓	232	190	66	NA	263	255
1-3		3.5	600	0.9	1.062	1.1	91	86	6.0	✓	238	192	65		261	253
1-2		7.0	602.25	0.47	0.549	0.55	92	87	5.0	✓	246	220	65		264	261
1-1		10.5	604	0.36	0.42	0.5	93	87	5.0	✓	234	210	66		261	260
		14.0	605.27	X												
2-4		14	606.095	1.6	1.936	1.95	95	88	8.0	✓	222	205	63		265	263
2-3		17.5	608.5	1.2	1.44	1.45	96	89	7.0	✓	232	205	63		252	265
2-2		21.0	610.7	0.81	0.955	0.96	96	89	6.0	✓	239	205	63		251	263
2-1		24.5	612.6	0.48	0.566	0.57	96	90	5.0	✓	240	205	65		254	255
		28.0	614.2													
3-4		28.0	614.67	1.1	1.32	1.3	97	91	7.0	✓	232	206	65		255	249
3-3		31.5	616.5	0.63	0.749	0.75	98	92	5.5	✓	237	205	64		253	247
3-2		35.0	618.4	0.84	0.98	0.98	98	92	6.0	✓	245	205	65		257	245
3-1		38.5	620.25	0.89	1.04	1.0	98	92	6.0	✓	246	205	64		252	245

Train Leak Check:

Before Test: .004 CF in 60 Seconds at 15.5 In. Hg
After Test: .001 CF in 60 Seconds at 14.0 In. Hg

Comments:

	Initial	Final	Static Pressure Port	Inches H_2O
Pitot Tube Leak Check	✓	○	3	
ORSAT Train Leak Check	✓	○		

TRC ENVIRONMENTAL CORPORATION - KINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PGE
Facility: Boyle Pt.
Source: Unit #3

Date: 9/9/99
Run No.: PG+E-BP-04M-3-EE-3
Sample Location: ESP East Inlet
Operator: S. Tibbetts

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 °C Stack	Filter Box	Imp Temp	XAD Cond	Probe	Filter Outlet
		42	622.12													
4-4		42	623.97	1.2	1.41	1.4	96	93	8.0	✓	240	208	65	NA	250	240
4-3		45.5	626.12	0.93	1.07	1.1	97	93	7.0	✓	250	204	63		247	246
4-2		49.0	628.205	0.68	0.80	0.8	97	93	6.5	✓	245	205	64		249	263
4-1		52.5	629.96	0.65	0.76	0.76	97	93	6.5	✓	246	201	64		240	259
		56.0	~~631.65~~	~~0.53~~	~~0.60~~	~~0.60~~	~~97~~	~~93~~	~~6.0~~	✓	~~269~~	~~195~~	~~65~~		~~232~~	~~280~~
6-4		56.0	632.48	0.53	0.60	0.60	97	93	6.0	✓	269	195	65		232	280
6-3		59.5	633.97	1.15	1.299	1.3	97	93	7.5	✓	272	193	65		236	278
6-2		63.0	636.0	0.9	1.02	1.0	97	93	7.0	✓	269	193	63		236	275
6-1		66.5	638.0	0.92	1.039	1.0	96	93	7.0	✓	270	195	63		235	275
		70.0	639.95													
7-4		70	640.03	0.57	0.64	0.64	97	94	6.5	✓	269	198	64		232	260
7-3		73.5	642.8	0.79	0.88	0.88	96	93	7.0	✓	274	203	66		230	262
7-2		77.0	644.51	0.61	0.689	0.69	95	94	6.5	✓	270	207	66		247	265
7-1		80.5	646.15	0.55	0.627	0.63	95	94	6.5	✓	267	215	63		258	263
		84.0	647.71													
8-4	1750	84.0	649.355	0.43	0.485	0.5	92	92	6.0	✓	279	220	60		274	262
8-3		87.5	650.9	0.41	0.459	0.5	90	92	6.0	✓	274	226	60		273	265
8-2		91.0	652.27	0.38	0.43	0.5	90	92	6.0	✓	267	230	60		266	265
8-1		94.5	653.64	0.40	0.45	0.5	90	92	6.0	✓	265	231	60		262	266
		98	655.02	X												
9-4		98	655.545	1.1	1.23	1.2	91	91	8.5	✓	278	232	57		255	268
9-3		101.5	657.5	0.82	0.91	0.91	91	90	8.0	✓	283	240	56		248	281
9-2		105	659.32	0.91	1.01	1.0	90	90	8.0	✓	275	241	57		227	285

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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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG+E
Facility: Brayton PL
Source: Unit #3

Date: 9/9/99
Run No.: PGE-BP-OHM-3-IE-3
Sample Location: Esp Inlet East
Operator: S. Tibbelb

Sheet 3 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F XAD Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
9-1		108.5	661.25	0.94	1.05	1.05	90	90	8.5	✓	279	237	58	NA	211	284
		112	663.17								~~284~~					
10-4		112	663.915	0.50	0.56	0.56	89	90	7.0	✓	284	230	58	NA	229	289
10-3		115.5	665.5	0.55	0.61	0.61	88	89	7.0	✓	287	214	60		216	298
10-2		119.0	666.98	0.91	1.01	1.0	87	89	8.0	✓	284	203	59		213	296
10-1		122.5	668.8	0.89	0.996	1.0	87	89	8.5	✓	279	198	58		214	288
		126.0	670.725													
11-4	1840	126	674.255	0.68	0.76	0.76	87	87	8.0	✓	290	210	59		245	278
11-3		129.5	676.0	0.62	0.68	0.68	87	86	8.0	✓	290	215	60		249	285
11-2		133	677.85	0.63	0.70	0.7	86	86	8.0	✓	277	220	60		246	280
11-1		136.5	679.28	0.61	0.68	0.68	86	86	8.0	✓	278	221	59		243	280
		140	680.89													
12-4		140	681.81	0.15		0.5	85	85	7.5	✓	268	223	60		226	281
12-3		143.5	683.2	0.13		0.5	84	84	7.0	✓	278	223	61		218	282
12-2		147.0	684.6	0.17		0.5	83	84	7.0	✓	270	223	61		216	279
12-1		150.5	685.97	0.18		0.5	83	84	7.0	✓	272	223	61		212	276
	1910	154	687.33													

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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SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.: 26046
Client: PG&E
Facility: Brayton Point
Source: Inlet East

Date: 9/9/99
Run No.: 3
Train Type: Ontario-Hydro
Recovery Person: [illegible]

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):	830.5	723.7	702.0	708.4	719.7	705.4	702.4
Initial Vol. (ml/g):	718.9	703.6	699.3	703.9	720.2	703.6	700.7
Net Collected (ml/g):	111.6	20.1	2.7	4.5	-0.5	1.8	1.7

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	864.5			
Initial Vol. (ml/g):	846.4			
Net Collected (ml/g):	18.1			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 160.0

ORSAT ANALYSIS

Project No. 26046
Client PG+E
Facility Brayton Point
Source Unit 3
Location ESP East Inlet

Date 9/9/99
Run PGE-BP-OHM-3-IE-
Operator MPM
Comments

Orsat Leak Checked yes / no
Purge System with Sample Gas yes / no
Ambient Air Check CO_2 _____ O_2 _____.
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	
		11.6		7.2			1.181

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

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

Location: Brayton #3 East Inlet **Run:** 3

Sample ID: PG&E-BP-OHM-3-IE-3

Train Set Up By:	[signature]	**Date:** 9/9/99	**Time:** 1106
Transported to Location By:	[signature]	**Date:** 9/9/99	**Time:** 1340
Received at Location By:	BT	**Date:** 9/9/99	**Time:** 1350
Transported to Recovery Area By:	BT	**Date:** 9/9/99	**Time:** 1950
Received at Recovery Area By:	[signature]	**Date:** 9/9/99	**Time:** 2000
Train Recovered By:	[signature]	**Date:** 9/9/99	**Time:** ~~0845~~ 2015

Comments:

Hg

TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: BP PGE
Facility: Brayton Point
Source: UNIT 3
Sample Location: ESP East Inlet
Stack Diameter: 720 x 90
Date: 10/6/99
Run No.: PGE-BP-OHM-3-IE-~~3~~4
Operator: M O'Brien
Meterbox No.: 90338
Meterbox ΔH @: ~~1.944~~ 1.934
Y Factor: ~~0.991~~ 0.974

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

0 0 0 0 0 0 0 0 0 0 0 0
1 2 3 4 5 6 7 8 9 10 11 12

Sheet 1 of ____

Train Prepared By: Ed Mackinnon
Pitot Number and Side: 1-1
Pitot Tube CP: ~~Pt~~ 0.88
Filter No.: -
Ambient Temp., °F:
Bar. Pressure, In. Hg.: ~~29.90~~ MS 30.02
Assumed Moisture, %: 8
Heater Box Setting, °F: 250
Nozzle # / Dia., In.: 0.192 Glass
Probe Length / Material: 10' Glass
Probe Heater Setting: 250

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 ~~Stack~~ Filter Box	Temperatures °F Imp Temp	Temperatures °F Line XAD Cond	Temperatures °F Probe	Temperatures °F Filter Outlet
1-1	1105	0	279.880	~~0.8~~ (1.2)	1.9	1.9	71	74	7.0	OK	~~180~~	260	50	260	252	240
1-2		3.5	283.4	1.1	1.2	1.2	72	74	7.0		210	250	47	246	247	235
3		7.0	284.65	1.2	1.3	1.3	73	74	6.0		217	250	47	245	239	228
4		10.5	286.7	0.70	0.77	0.77	74	75	5.0	OK	220	250	47	246	232	212
		14	288.280	Leak Check	0.004	for 60 sec @ 10" Hg										
2-1	1136	14	288.980	1.5	1.7	1.7	76	77	7.0	OK	220	240	53	241	232	226
2-2		17.5		1.3	1.5	1.5	79	76	7.0		210	240	51	241	239	225
2-3		21	293.900	1.0	1.12	1.1	80	76	6.5		217	241	51	241	240	228
2-4		24.5	295.600	0.60	0.66	0.64	80	77	5.5	OK	226		51	241	241	226
		28	297.150													
3-1	1152	28	297.450	1.4	1.58	1.6	80	77	7.5	OK	216		53	255	246	231
3-2		31.5	299.900	0.45	.56	.50	80	77	5.0		218		53	255	237	230
3-3		35	301.8	1.1	1.2	1.2	86	77	6.5		221		53	255	240	232
3-4		38.5	303.8	0.96	1.04	1.0	83	78	6.0	OK	235		54	255	240	236

Train Leak Check:

Before Test: 0.003 CF in 60 Seconds at 15 In. Hg
After Test: ____ CF in ____ Seconds at ____ In. Hg

Comments: 3.5 min Points.

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

TRC ENVIRONMENTAL CORPORATION - IS INETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PG&E
Facility: Brayton Point
Source: Unit 3

Date: 10/6/99
Run No.: PGE-BP-OHM-3-TE-4
Sample Location: East Inlet
Operator: M O'Brien

Sheet 2 of

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 Line Temp. ~~XAD Cond~~	Temperatures °C Probe	Temperatures °C Filter Outlet
		42	305.270													
4-1	1220	42	305.885	1.1	1.22	1.20	81	79	6.5	ok	220		55	255	239	230
4-2		45.5	307.750	1.1	1.2	1.2	81	80	6.5		230		55	255	241	238
4-3		49	309.65	0.65	0.70	0.70	81	79	5.5		238		54	255	240	240
4-4		52.5	311.37	0.67	.72	.72	83	80	5.5	ok	239		55	255	240	236
		56	312.886													
6-1	1237	56	313.200	0.6	.65	.65	83	81	5.0	ok	240		55	255	240	228
6-2		59.5	315.3	1.2	1.26	1.2	83	81	6.5		255		56	255	240	255
6-3		63	316.90	1.1	1.2	1.2	84	81	7.0		256		56	255	239	255
6-4		66.5	319.25	0.96	1.0	1.0	84	81	6.0	ok	253		56	255	236	235
		70	320.810													
7-1	12	70.0	321.100	0.54	0.58	0.58	83	81	5.5	ok	240		60	255	254	229
7-2		73.5	322.80	0.77	0.81	0.81	83	81	6.0		257		58	255	255	235
7-3		~~77.0~~	324.75	0.45	~~0.50~~ 0.47	0.50	83	81	5.0		257		58	255	252	230
7-4		80.5	326.05	.45	.47	.50	83	81	5.5	ok	253		57	253	255	229
		84	327.200													
8-1	1317	84	327.430	0.40	0.43	0.50	81	81	5.5	ok	245		62	253	255	239
8-2		87.5	329.20	0.45	0.47	0.50	81	81	5.5		255		59	255	251	242
8-3		91	330.20	0.46	0.42	0.50	81	81	5.5		254		58	255	255	242
8-4		94.5	331.50	0.35	0.37	0.50	81	81	5.5		257		57	255	255	236
		98	332.870													
9-1	1335	98	333.145	0.82	0.86	0.86	82	82	7.0		255		58	255	254	230
9-2		101.5	235.150	0.84	0.87	0.87	82	81	6.5		270		57	255	252	234
9-3		105	237.0	0.75	.78	.75	82	81	6.5		264		57	255	255	229

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____

_____ CF in _____ Seconds at _____

Meter Reading

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

Comments:

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TRC ENVIRONMENTAL CORPORATION - ISOKINETIC FLUE GAS SAMPLING DATA SHEET

Project No.: 26046-0030-00003
Client: PGE
Facility: Brayton Point
Source: Unit 3

Date: 10/6/96
Run No.: PGE-BP-OHM-3-1E-4
Sample Location: Inlet East
Operator: M. O'Brien

Sheet 3 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	Temperatures °F Filter Box	Temperatures °F Imp Temp	Temperatures °F Line Temp ~~XAD~~ Cond	Temperatures °C Probe	Temperatures °C Filter Outlet
9-4		108.5	338.7	0.80	.83	.83	83	82	7.0	OK	266		57	255	257	228
		112	340.270													
10-1	1352	112	340.630	0.42	0.45	0.50	81	81	6.0	OK	247		58	255	254	234
10-2		115.5	342.08	0.40	0.42	.58	81	81	6.0		266		58	255	251	239
10-3		119	343.53	0.65	0.68	0.68	80	81	6.0		264		58	255	249	231
10-4		122.5	345.1	0.58	0.52	0.52	81	81	6.0	OK	263		58	255	257	234
		126	346.380													
11-1	1423	126	346.670	0.65	0.67	0.67	76	78	7.0	OK	268		59	255	252	232
11-2		129.5	348.24	0.75	0.77	0.77	76	78	7.0		271		58	255	251	238
11-3		133	350.15	0.60	0.62	0.62	77	77	6.0		266		56	255	251	231
11-4		136.5	351.48	0.30	0.31	0.50	77	77	6.0	OK	266			255	253	238
		140	352.775													
12-1	1440	140	352.070	0.17	0.18	0.50	76	76		OK	258		58	255	252	242
12-2		143.5	354.450	0.16	0.17	0.50	76	76			266		57	255	255	245
12-3		147	355.780	0.12	0.12	0.50	77	76			267		57	254	254	242
12-4		150.5	357.13	0.11	0.12	0.50	77	76		OK	260		57	255	253	230
	1454	154	358.485	leak check 0.003 for 60 sec @ 10" Hg												

Meter Leak Check During Test:

_____ CF in _____ Seconds at _____

_____ CF in _____ Seconds at _____

Meter Reading

	Stop	Start
In. Hg		
In. Hg		

Comments:

Post Pitot OK

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ORSAT ANALYSIS

Project No.	26046	**Date**	10/6/99
Client	PG+E	**Run**	4
Facility	Brayton Point	**Operator**	
Source	Unit 3	**Comments**	see Run 4
Location	East Inlet		outlet data sheet

Orsat Leak Checked yes / no

Purge System with Sample Gas yes / no

Ambient Air Check CO_2 _____ O_2 _____.

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	
		12.2		6.6			

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 _____

SAMPLING TRAIN SETUP AND RECOVERY SHEET

Project No.:	26046	Date:	10/5/99 / 10/6/99
Client:	PG&E	Run No.:	3 4
Facility:	Salem Harbor	Train Type:	Ontario-Hydro
Source:	Boiler #3 Inlet East	Recovery Person:	[illegible]

FRONT HALF

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

					Comments:
XAD Trap No.:	N/A				
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):	784.5	666.1	693.0	651.4	659.0	715.5	697.1
Initial Vol. (ml/g):	705.7	646.3	690.6	647.0	660.5	714.2	695.7
Net Collected (ml/g):	78.8	19.8	2.4	4.4	-1.5	1.3	1.4

Silica Gel Impinger:	8			Comments:
Final Vol. (ml/g):	840.2			
Initial Vol. (ml/g):	823.9			
Net Collected (ml/g):	16.3			

Comments/Notes:

TOTAL MOISTURE (Impingers and Silica Gel) (g) = 122.9

Sample Train Tracking Form

Sample Train: OH - Hg

Date: 10/6/99

Location: Boiler #3 East Inlet

Run: ~~3~~ 4

Sample ID: PG&E-BP-OHM-3-IE-~~3~~ 4

Train Set Up By: [signature] Date: 10/6/99 Time: 0719

Transported to Location By: [signature] Date: 10/6/99 Time: 0722

Received at Location By: [signature] Date: 10/6/99 Time: 0730

Transported to Recovery Area By: [signature] Date: 10/6/99 Time: 1552

Received at Recovery Area By: [signature] Date: 10/6/99 Time: 1553

Train Recovered By: [signature] Date: 10/6/99 Time: 1617

Comments:

Hg

Appendix B.2.2

Calibration Data Sheets

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

NOZZLE SET

SET No. 1

MATRIX: Glass

SLOT ID No.	NOZZLE ID No.	DIAMETER (in.)
A	L-1-6	.158
B	L-2-6	.191
C	L-3-6	.192
D	L-4-6	.213
E	L-5-6	.268
F	L-6-6	.311
G	L-7-6	.355
H	L-8-6	.370
I	L-9-6	.436
J	L-10-6	.454
K	L-11-6	.495
L	L-12-6	.625

QUARTZ NOZZLE CALIBRATIONS

Nozzle ID No.	Diameter (in.)			Average	Nozzle Set No.	Calibration Date
	a	b	c			
L-1-Q	0.297	0.297	0.298	0.297	1	4/21/98
L-2-Q	0.227	0.228	0.228	0.228	1	4/21/98
L-3-Q	0.259	0.259	0.259	0.259	1	4/21/98
L-4-Q	0.272	0.271	0.272	0.272	1	4/21/98
L-5-Q	0.309	0.310	0.310	0.310	1	4/21/98
L-6-Q	0.354	0.356	0.356	0.355	1	4/21/98
L-7-Q	0.381	0.382	0.382	0.382	1	4/21/98
L-8-Q	0.399	0.400	0.400	0.400	1	4/21/98
L-9-Q	0.436	0.435	0.437	0.436	1	4/21/98
L-10-Q	0.464	0.459	0.461	0.461	1	4/21/98
L-11-Q	0.400	0.400	0.400	0.400	1	4/21/98
L-12-Q	0.270	0.270	0.270	0.270	1	4/21/98
L-13-Q	0.195	0.195	0.194	0.195	2	4/21/98
L-14-Q	0.227	0.228	0.228	0.228	2	4/21/98
L-15-Q	0.235	0.236	0.235	0.235	2	4/21/98
L-16-Q	0.243	0.243	0.244	0.243	2	4/21/98
L-17-Q	0.261	0.261	0.260	0.261	2	4/21/98
L-18-Q	0.272	0.274	0.274	0.273	2	4/21/98
L-19-Q	0.310	0.310	0.311	0.310	2	4/21/98
L-20-Q	0.385	0.386	0.385	0.385	2	4/21/98
L-21-Q	0.400	0.400	0.400	0.400	2	4/21/98
L-22-Q	0.400	0.400	0.401	0.400	2	4/21/98
L-23-Q	0.432	0.433	0.433	0.433	2	4/21/98
L-24-Q	0.466	0.466	0.467	0.466	2	4/21/98
L-25-Q	0.270	0.271	0.270	0.270	3	4/21/98
L-26-Q	0.453	0.451	0.453	0.452	3	4/21/98
L-27-Q	0.400	0.400	0.400	0.400	3	4/21/98

NOZZLE SET

SET No. 2

MATRIX: Glass

SLOT ID No.	NOZZLE ID No.	DIAMETER (in.)
A	L-13-G	.153
B	L-14-G	.192
C	L-15-G	.239
D	L-16-G	.240
E	L-17-G	.289
F	L-18-G	.310
G	L-19-G	.346
H	L-20-G	.315
I	L-21-G	.268
J	L-22-G	.457
K	L-23-G	.314
L	L-24-G	.504

NOZZLE SET

SET No. 4

MATRIX: Glass

SLOT ID No.	NOZZLE ID No.	DIAMETER (in.)
A	L-36-6	.154
B	L-37-6	.193
C	L-38-6	.318
D	L-39-6	.263
E	L-40-6	.312
F	L-41-6	.355
G	L-42-6	.258
H	L-43-6	.310
I	~~L-44-6~~ L-44	~~.504~~ .435
J	L-45-6	.630
K	L-46-6	.499

NOZZLE SET

SET No. 6

MATRIX: 6195S

SLOT ID No.	NOZZLE ID No.	DIAMETER (in.)
A	L-59-6	.153
B	L-60-6	.193
C	L-61-6	.196
D	L-62-6	221
E	L-63-6	.280
F	L-64-6	.262
G	L-65-6	.352
H	L-66-6	.490
I	L-67-6	.507
J	L-68-6	.628
K		

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: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: 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: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: 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 @
$\frac{Vw \times Pb \times (td_a + 460)}{Vd \times (Pb + dH/13.6) \times (tw + 460)}$	$\frac{0.0319 \times dH}{Pb \times (td_a + 460)} \times \left[\frac{(tw + 460) \times T}{Vw}\right]^2$

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: 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

Lowell14.xls

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: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: 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		1800.0	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

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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: Wet Test Meter tw °F	Temperature: Dry gas meter: Inlet td_i °F	Temperature: Dry gas meter: Outlet td_o °F	Temperature: Dry gas meter: Average td_a °F	Time T min.	Y	delta H @	Deviation: Y	Deviation: 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

Lowell14.xls

APPENDIX C

SAMPLING LOG AND CHAIN-OF-CUSTODY RECORDS

Appendix C.1

Unit 1

Appendix C.1.1

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

fedex Dangerous Goods Airbill

Recipient's Copy

00171

9046951

81000643995 1

Questions? Call 1•800•Go•FedEx® (800)463-3339

1 From

Date 9/13/99 Sender's FedEx Account Number [redacted]

Sender's Name Scott R Jones Phone (978) 970-5600

Company TRC ENVIRONMENTAL CORP

Address 100 FOOT OF JOHN ST Dept./Floor/Suite/Room

City LOWELL State MA ZIP 01852

2 Your Internal Billing Reference Information 26046-0030-00003

3 To

Recipient's Name M. Ron McLeod Phone (905) 332-7591

Company Philip Analytical Services

Address 299 Cayuga Rd Dept./Floor/Suite/Room

(Do not use PO Box or "HOLD" at FedEx location, print FedEx address here)

City Cheektowaga State NY ZIP 14225

☐ Check here if residence (Extra charge applies for FedEx Express Saver)

For HOLD at FedEx Location check here

☐ Hold Weekday ☐ Hold Saturday (Not available at all locations) (Available for FedEx Priority Overnight and FedEx 2Day only)

For WEEKEND Delivery check here (Extra Charge. Not available at all locations)

☐ Saturday Delivery (Available for FedEx Priority Overnight and FedEx 2Day only) ☐ NEW Sunday Delivery (Available for FedEx Priority Overnight only)

4a Express Package Service *Packages under 150 lbs.* Delivery commitment may be later in some areas.

☒ FedEx Priority Overnight (Next business morning) ☐ FedEx Standard Overnight (Next business afternoon)

☐ FedEx 2Day (Second business day) ☐ FedEx Express Saver (Third business day)

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

☐ FedEx Overnight Freight (Next business day) ☐ FedEx 2Day Freight (Second business day) ☐ FedEx Express Saver Freight (Up to 3 business days)

(Call for delivery schedule. Some restrictions apply. See back for detailed descriptions of freight services.)

5 Packaging

☒ Other Packaging

Dangerous Goods cannot be shipped in FedEx packaging.

6 Special Handling

☒ Dangerous Goods as per attached Shipper's Declaration ☒ Cargo Aircraft Only

7 Payment

Bill to: ☒ Sender (Account No. in Section 1 will be billed) ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

(Enter FedEx Account No. or Credit Card No. below)

[redacted]

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	145	$ 20,000.00	$

* When declaring [redacted] you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE [redacted] LIABILITY section for further information.

Credit Card Auth.

Signature Release Unavailable

PART #154251 • Rev. Date 4/98 ©1994-98 FedEx • PRINTED IN U.S.A.

98 SRC

FedEx Tracking Number 81000643995 1 Form I.D. No. 0204 355

Page 1 of 1 Pages

Two completed and signed copies of this Declaration must be handed to the operator.

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.

TRANSPORT DETAILS

This shipment is within the limitations prescribed for: (delete non-applicable)

~~PASSENGER AND CARGO AIRCRAFT~~ CARGO AIRCRAFT ONLY

Airport of Departure: BOSR Boston

Airport of Destination: BUF

Shipment type: (delete non-applicable) NON-RADIOACTIVE ~~RADIOACTIVE~~

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification							
Proper Shipping Name	Class or Division	UN or I.D. No.	Packing Group	Subsidiary Risk	Quantity and Type of Packaging	Packing Inst.	Authorization
Corrosive Liquid, N.O.S. (Nitric Acid/Sulfuric Acid)	8	UN 1760	II		1 Wooden Box x 6L.	812	

Additional Handling Information Cargo Aircraft Only

Prepared for AIR TRANSPORT according to: (Customer MUST check one) ☐ 49 CFR ☒ ICAO / IATA

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked, and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Name/Title of Signatory Scott Jones Environmental Scientist

Place and Date Lowell, MA 9/13/99

Signature (see warning above) Scott R Jones

Emergency Telephone Number (Required for US Origin or Destination Shipments) Chemtrec 1-800-424-9300

IF ACCEPTABLE FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS, OR TREATMENT.

MB-1448

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): 8/30/99 - 8/31/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

25.

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 (Cr-Hydro)	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-1-O-FB-PF-Hg	8/30	Petri							X	Boiler 1, Outlet FB	X	✓		PPD.							51459.
PG&E-BP-OHM-1-O-FB-PR-Hg	↓	125ml	G				X			↓	X	✓		100CC							
PG&E-BP-OHM-1-O-FB-KCl-Hg		500ml	↓				X				X	✓		100CC							
PG&E-BP-OHM-1-O-FB-HNO3/H2O2-Hg		125ml					X				X	✓		500CC							
PG&E-BP-OHM-1-O-FB-KMnO4-Hg	↓	500ml					X				X	✓		500CC							
PG&E-BP-OHM-1-I-FB-PF-Hg	8/30	Petri							X	Boiler #1, Inlet FB	X	✓		PPD.							51450.
PG&E-BP-OHM-1-I-FB-PR-Hg	↓	125ml	G				X			↓	X	✓		100CC							
PG&E-BP-OHM-1-I-FB-KCl-Hg		500ml	↓				X				X	✓		100CC							
PG&E-BP-OHM-1-I-FB-HNO3/H2O2-Hg		125ml					X				X	✓		500CC							
PG&E-BP-OHM-1-I-FB-KMnO4-Hg	↓	500ml					X				X	✓		"							
PG&E-BP-OHM-1-RB-PF-Hg	8/31	Petri							X	Boiler #1, Reagent BLK	X	✓		PPD							51449.
PG&E-BP-OHM-1-RB-KCl-Hg	↓	125ml	G				X			↓	X	✓		100CC							
PG&E-BP-OHM-1-RB-HNO3/H2O2-Hg		125ml	↓				X				X	✓		↓							
PG&E-BP-OHM-1-RB-HNO3-Hg		125ml					X				X	✓									
PG&E-BP-OHM-1-RB-KMnO4-Hg	↓	125ml	↓				X			↓	X	✓		↓							

Relinquished by:	Date/Time: 9/3/99 1126	Relinquished by:	Date/Time:
Received by: -PASL	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

00172

№ 02427

TRC

MB - 51464.

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): ~~9/1/99~~ 8/31/99
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-1-Ia-2-PF-Hg	8/31	Petri							x	Boiler #1 East Inlet	x	✓		PPD							
PG&E-BP-OHM-1-Ia-2-PR-Hg	↓	250ml	G			x				Run 2	x	✓		250mg							
PG&E-BP-OHM-1-Ia-2-KCl-Hg		1L	↓			x				↓	x	✓									51451
PG&E-BP-OHM-1-Ia-2-HNO3/Hg-Hg		250ml				x					x	✓									
PG&E-BP-OHM-1-Ia-2-KMnO4-Hg		1L				x					x	✓									
PG&E-BP-OHM-1-Ia-2-A-Hg	↓	125ml	↓		x					↓	x	✓		- Ash							51465
PG&E-BP-OHM-1-Ib-2-PF-Hg	8/31	Petri							x	Boiler #1 West Inlet	x	✓									51452.
PG&E-BP-OHM-1-Ib-2-PR-Hg	↓	250ml	G			x				Run 2	x	✓									
PG&E-BP-OHM-1-Ib-2-KCl-Hg		1L	↓			x				↓	x	✓									
PG&E-BP-OHM-1-Ib-2-HNO3/Hg-Hg		250ml				x					x	✓									
PG&E-BP-OHM-1-Ib-2-KMnO4/Hg		1L				x					x	✓									
PG&E-BP-OHM-1-Ib-2-A-Hg	↓	125ml	↓		x					↓	x	✓		- Ash.							51466.

Relinquished by:	Date/Time: 9/3/99 1128	Relinquished by:	Date/Time:
Received by: [signature] - PASL	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

00173

№ 2430

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): 9/1/99
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-1-Ia-3-PF-Hg	9/1	Petri							X	Boiler #1, East Inlet	X	✓									
PG&E-BP-OHM-1-Ia-3-PR-Hg		250ml	G			X				Run 3	X	✓									
PG&E-BP-OHM-1-Ia-3-KCL-Hg		1L				X					X	✓				51453					
PG&E-BP-OHM-1-Ia-3-~~HNO3/H2O2~~-Hg		250ml				X					X	✓									
PG&E-BP-OHM-1-Ia-3-KMnO4-Hg		1L				X					X	✓									
PG&E-BP-OHM-1-Ia-3-A-Hg		125ml				X			-	Ash	X	✓									51467.
PG&E-BP-OHM-1-Ib-3-PF-Hg	9/1	Petri								Boiler #1, West Inlet	X										
PG&E-BP-OHM-1-Ib-3-PR-Hg		250ml	G							Run 3	X										
PG&E-BP-OHM-1-Ib-3-KCl-Hg		1L									X					51454					
PG&E-BP-OHM-1-Ib-3-~~HNO3/H2O2~~-Hg		250ml									X										
PG&E-BP-OHM-1-Ib-3-KMnO4-Hg		1L									X										
PG&E-BP-OHM-1-Ib-3-A-Hg		125ml							-	Ash	X										51468.

Relinquished by:	Date/Time: 9/3/99 1126	Relinquished by:	Date/Time:
Received by: PASL	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

00174

№ 02431

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): ~~[illegible]~~ 9/1/99
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-1-Ia-4-A-Hg	9/1	125ml	G			X				Boiler #1 East Inlet	X	✓		- ASH.							- 51469
PG&E-BP-OHM-1-Ia-4-PF-Hg		Petri							X	Run 4	X	✓									
PG&E-BP-OHM-1-Ia-4-PR-Hg		250ml	G				X				X	✓									
PG&E-BP-OHM-1-Ia-4-KCl-Hg		1L					X				X	✓								51455	
PG&E-BP-OHM-1-Ia-4-HNO3/H2O2-Hg		250ml					X				X	✓									
PG&E-BP-OHM-1-Ia-4-KMnO4-Hg		1L					X				X	✓									
PG&E-BP-OHM-1-Ib-4-A-Hg	9/1	125ml	G			X				Boiler #1 West Inlet	X	✓		- ASH.							- 51470
PG&E-BP-OHM-1-Ib-4-PF-Hg		Petri							X	Run 4	X	✓									
PG&E-BP-OHM-1-Ib-4-PR-Hg		250ml	G				X				X	✓									
PG&E-BP-OHM-1-Ib-4-KCl-Hg		1L					X				X	✓								51456	
PG&E-BP-OHM-1-Ib-4-HNO3/H2O2-Hg		250ml					X				X	✓									
PG&E-BP-OHM-1-Ib-4-KMnO4-Hg		1L					X				X	✓									

Relinquished by: [signature]	Date/Time: 9/8/99 1125	Relinquished by:	Date/Time:
Received by: [signature] - PASC	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

00.75

№ 2428

TRC

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): 9/2/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

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 (Ontario-Hydro)	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-1-Ia-5-PF-Hg	9/2	Petri							X	Boiler #1 East Inlet	X	✓									
PG&E-BP-OHM-1-Ia-5-PR-Hg		250ml	G			X				Run 5	X	✓									
PG&E-BP-OHM-1-Ia-5-KCl-Hg		1L				X					X	✓									51457
PG&E-BP-OHM-1-Ia-5-HNO3/H2O2-Hg		250ml				X					X	✓									
PG&E-BP-OHM-1-Ia-5-KMnO4-Hg		1L				X					X	✓									
PG&E-BP-OHM-1-Ia-5-A-Hg	↓	125ml	↓		X					↓	X	✓			ASH						-51471
PG&E-BP-OHM-1-Ib-5-PF-Hg	9/2	Petri	P						X	Boiler #1, West Inlet	X	✓									
PG&E-BP-OHM-1-Ib-5-PR-Hg		250ml	G			X				Run 5	X	✓									51458
PG&E-BP-OHM-1-Ib-5-KCl-Hg		1L				X					X	✓									
PG&E-BP-OHM-1-Ib-5-HNO3/H2O2-Hg		250ml				X					X	✓									
PG&E-BP-OHM-1-Ib-5-KMnO4-Hg		1L				X					X	✓									
PG&E-BP-OHM-1-Ib-5-A-Hg	↓	125ml	↓		X					↓	X	✓			ASH						-51472

Relinquished by: [signature]	Date/Time: 9/3/99 1124	Relinquished by:	Date/Time:
Received by: [signature] - PASL	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02433

TRC

00-76

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): 8/31/99
Laboratory: Phil.P
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

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-1-0-2-PF-Hg	8/31	Petri							X	Boiler #1, outlet Run 2	X	✓									51460
PG&E-BP-OHm-1-0-2-PR-Hg	↓	250ml	G				X			↓	X	✓									
PG&E-BP-OHm-1-0-2-KCl-Hg		1L	↓				X				X	✓									
PG&E-BP-OHm-1-0-2-HNO_3/H_2O_2-Hg		250ml					X				X	✓									
PG&E-BP-OHm-1-0-2-$KMnO_4$-Hg	↓	1L	↓				X				X	✓									
PG&E-BP-OHm-1-0-3-PF-Hg	9/1	Petri							X	Boiler #1, Outlet Run 3	X	✓									51461
PG&E-BP-OHm-1-0-3-PR-Hg	↓	250ml	G				X			↓	X	✓									
PG&E-BP-OHm-1-0-3-KCl-Hg		1L	↓				X				X	✓									
PG&E-BP-OHm-1-0-3-HNO_3/H_2O_2-Hg		250ml					X				X	✓									
PG&E-BP-OHm-1-0-3-$KMnO_4$-Hg	↓	1L	↓				X				X	✓									
PG&E-BP-OHm-1-0-4-PF-Hg	9/1	Petri							X	Boiler #1, Outlet Run 4	X	✓									51462
PG&E-BP-OHm-1-0-4-PR-Hg	↓	250ml	G				X			↓	X	✓									
PG&E-BP-OHm-1-0-4-KCl-Hg		1L	↓				X				X	✓									
PG&E-BP-OHm-1-0-4-HNO_3/H_2O_2-Hg		250ml					X				X	✓									
PG&E-BP-OHm-1-0-4-$KMnO_4$-Hg	↓	1L	↓				X				X	✓									

Relinquished by:	Date/Time: 9/3/99 1127	Relinquished by:	Date/Time:
Received by:	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

00-77

№ 2429

TRC

CHAIN OF CUSTODY RECORD

Project Name: Brayton - PG&E
Project No.: 26846
Sampling Date(s): 9/2/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

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-BP-OHM-1-0-5-PF-Hg	9/2	Petri							X	Boiler #1 Outlet	X	✓									51463.
PG&E-BP-OHM-1-0-5-HCl-Hg	↓	1L	G			X				Run 5	X	✓									
PG&E-BP-OHM-1-0-5-~~HNO3~~-Hg		250ml	↓			X				↓	X	✓									
PG&E-BP-OHM-1-0-5-$KMnO_4$-Hg		1L				X					X	✓									
PG&E-BP-OHM-1-0-5-PR-Hg	↓	250ml	↓			X				↓	X	✓									

Relinquished by:	Date/Time: 9/3/99 1125	Relinquished by:	Date/Time:
Received by: PASL	Date/Time: 9/09/14 12:30	Received by:	Date/Time:

REMARKS (*):

00178

№ 02432

TRC

Page ___ of ___

US SAMPLE LOG IN SHEET

TRC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Carcuro LOWELL

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.	810006439951	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	9 14 99	
Time Received	12:30p	

Temperature of Coolers

Cooler ID:	Temperature
1 crate	not taken

Relinquished By: _____ Logbook No: _____

9 14 99

** TX STATUS REPORT ** AS OF SEP 16 1999 12:23 PAGE.01

PHILIP ANALYTICAL

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	JOB#	STATUS
18	09/16	12:23	19784531995	EC--S	00'28"	002	198	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: Hg via 'OH' Method
were received in good condition unless
indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
051449	BP-OHM-1-RB	99/08/31	99/09/14
051450	BP-OHM-1-I-FB	99/08/30	99/09/14
051451	BP-OHM-1-Ia-2	99/08/31	99/09/14
051452	BP-OHM-1-Ib-2	99/08/31	99/09/14
051453	BP-OHM-1-Ia-3	99/09/01	99/09/14
051454	BP-OHM-1-Ib-3	99/09/01	99/09/14
051455	BP-OHM-1-Ia-4	99/09/01	99/09/14
051456	BP-OHM-1-Ib-4	99/09/01	99/09/14
051457	BP-OHM-1-Ia-5	99/09/02	99/09/14
051458	BP-OHM-1-Ib-5	99/09/02	99/09/14
051459	BP-OHM-1-O-FB	99/08/30	99/09/14
051460	BP-OHM-1-O-2	99/08/31	99/09/14
051461	BP-OHM-1-O-3	99/09/01	99/09/14
051462	BP-OHM-1-O-4	99/09/01	99/09/14
051463	BP-OHM-1-O-5	99/09/02	99/09/14

Comments:

Date 99/09/16

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 via 'OH' Method
were received in good condition unless
indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
051449	BP-OHM-1-RB	99/08/31	99/09/14
051450	BP-OHM-1-I-FB	99/08/30	99/09/14
051451	BP-OHM-1-Ia-2	99/08/31	99/09/14
051452	BP-OHM-1-Ib-2	99/08/31	99/09/14
051453	BP-OHM-1-Ia-3	99/09/01	99/09/14
051454	BP-OHM-1-Ib-3	99/09/01	99/09/14
051455	BP-OHM-1-Ia-4	99/09/01	99/09/14
051456	BP-OHM-1-Ib-4	99/09/01	99/09/14
051457	BP-OHM-1-Ia-5	99/09/02	99/09/14
051458	BP-OHM-1-Ib-5	99/09/02	99/09/14
051459	BP-OHM-1-O-FB	99/08/30	99/09/14
051460	BP-OHM-1-O-2	99/08/31	99/09/14
051461	BP-OHM-1-O-3	99/09/01	99/09/14
051462	BP-OHM-1-O-4	99/09/01	99/09/14
051463	BP-OHM-1-O-5	99/09/02	99/09/14

Comments: _____

Date 99/09/16

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 via 7471
were received in good condition unless
indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
051465	BP-OHM-1-Ia-2 Ash	99/08/31	99/09/14
051466	BP-OHM-1-Ib-2 Ash	99/08/31	99/09/14
051467	BP-OHM-1-Ia-3 Ash	99/09/01	99/09/14
051468	BP-OHM-1-Ib-3 Ash	99/09/01	99/09/14
051469	BP-OHM-1-Ia-4 Ash	99/09/01	99/09/14
051470	BP-OHM-1-Ib-4 Ash	99/09/01	99/09/14
051471	BP-OHM-1-Ia-5 Ash	99/09/02	99/09/14
051472	BP-OHM-1-Ib-5 Ash	99/09/02	99/09/14
051942	NIST 1633b Coal Ash	99/09/16	99/09/14

Comments:

Date 99/09/16

Appendix C.1.2

Process Streams

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. 1 Unit 1

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
8/31/99	1002	2	3 Cells	3 Samples / 3 Cells
	1005	3	3 Cells	3 Samples / 3 Cells
	1007	4	3 Cells	3 Samples / 3 Cells
	1030	2	3 Cells	3 Samples / 3 Cells
	1032	3	3 Cells	3 Samples / 3 Cells
	1034	4	3 Cells	3 Samples / 3 Cells
	1100	2	3 Cells	3 Samples / 3 Cells * Unit At Full Load
	1102	3	3 Cells	3 Samples / 3 Cells
	1104	4	3 Cells	3 Samples / 3 Cells
	1130	2	3 Cells	3 Samples / 3 Cells
	1132	3	3 Cells	3 Samples / 3 Cells
	1134	4	3 Cells	3 Samples / 3 Cells

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. 2 Unit 1

DATE	TIME	SILO #	APPROX VOLUME	COMMENT Mike O'Brien
8/31/99	1403	2	3 Cells 3X	3 Samples / 3 Cells
	1405	3	3 Cells 3X	3 Samples / 3 Cells
	1407	4	3 Cells 3X	3 Samples / 3 Cells
	1430	2	3 Cells 3X	3 Samples / 3 Cells
	1432	3	3 Cells 3X	3 Samples / 3 Cells
	1434	4	3 Cells 3X	3 Samples / 3 Cells
	1500	2	3 Cells 3X	3 Samples / 3 Cells
	1502	3	3 Cells 3X	3 Samples / 3 Cells
	1504	4	3 Cells 3X	3 Samples / 3 Cells
	1530	2	3 Cells 3X	3 Samples / 3 Cells
	1532	3	3 Cells 3X	3 Samples / 3 Cells
	1534	4	3 Cells 3X	3 Samples / 3 Cells
	1600	2	3 Cells 3X	3 Samples / 3 Cells
	1602	3	3 Cells 3X	3 Samples / 3 Cells
	1604	4	3 Cells 3X	3 Samples / 3 Cells
	1630	2	3 Cells 3X	3 Samples / 3 Cells
	1632	3	3 Cells 3X	3 Samples / 3 Cells
	1634	4	3 Cells 3X	3 Samples / 3 Cells
	1700	2	3 Cells 3X	3 Samples / 3 Cells
	1702	3	3 Cells 3X	3 Samples / 3 Cells
	1704	4	3 Cells 3X	3 Samples / 3 Cells
	1730	2	3 Cells 3X	3 Samples / 3 Cells
	1732	3	3 Cells 3X	3 Samples / 3 Cells
	1734	4	3 Cells 3X	3 Samples / 3 Cells

TRC

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. 3 Unit 1

M O'Brien

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
9/1/99	0834	1	3 Cells 3X	3 Grab Samples
	0836	2	3 Cells 3X	3 Grab Samples
	0837	3	3 Cells 3X	3 Grab Samples
	0839	4	3 Cells 3X	3 Grab Samples
	0900	1	3 Cells 3X	3 Grab Samples
	0902	2	3 Cells 3X	3 Grab Samples
	0904	3	3 Cells 3X	3 Grab Samples
	0907	4	3 Cells 3X	3 Grab Samples
	0930	1	3 Cells 3X	3 Grab Samples
	0932	2	3 Cells 3X	3 Grab Samples
	0934	3	3 Cells 3X	3 Grab Samples
	0936	4	3 Cells 3X	3 Grab Samples
	1009	1	3 Cells 3X	3 Grab Samples
	1011	2	3 Cells 3X	3 Grab Samples
	1012	3	3 Cells 3X	3 Grab Samples
	1013	4	3 Cells 3X	3 Grab Samples
	1039	1	3 Cells 3X	3 Grab Samples
	1040	2	3 Cells 3X	3 Grab Samples
	1042	3	3 Cells 3X	3 Grab Samples
	1043	4	3 Cells 3X	3 Grab Samples
	1109	1	3 Cells 3X	3 Grab Samples
	1110	2	3 Cells 3X	3 Grab Samples
	1112	3	3 Cells 3X	3 Grab Samples
	1113	4	3 Cells 3X	3 Grab Samples
	1139	1	3 Cells 3X	3 Grab Samples
	1141	2	3 Cells 3X	3 Grab Samples
	1142	3	3 Cells 3X	3 Grab Samples
	1144	4	3 Cells 3X	3 Grab Samples

TRC

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. 3 Unit 1

M O'Brien

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
9/1/99	1209	1	3 Cells 3X	3 Grab Samples
	1210	2		3 Grab Samples
	1212	3		3 Grab Samples
	1213	4		3 Grab Samples

TRC

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. 4 Unit 1

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
9/1/94	1420	1	3 Cells 3X	3 Grab Samples
	1421	2	3 Cells 3X	3 Grab Samples
	1423	3	3 Cells 3X	3 Grab Samples
	1425	4	3 Cells 3X	3 Grab Samples
	1445	1	3 Cells 3X	3 Grab Samples
	1447	2	3 Cells 3X	3 Grab Samples
	1449	3	3 Cells 3X	3 Grab Samples
	1450	4	3 Cells 3X	3 Grab Samples Unit down / Silo 4 Down
	1515	1	3 Cells 3X	3 Grab Samples
	1517	2	3 Cells 3X	3 Grab Samples
	1518	3	3 Cells 3X	3 Grab Samples
	1545	1	3 Cells 3X	3 Grab Samples
	1547	2	3 Cells 3X	3 Grab Samples
	1548	3	3 Cells 3X	3 Grab Samples
	1615	1	3 Cells 3X	3 Grab Samples
	1616	2	3 Cells 3X	3 Grab Samples
	1618	3	3 Cells 3X	3 Grab Samples
	1645	1	3 Cells 3X	3 Grab Samples
	1646	2	3 Cells 3X	3 Grab Samples
	1648	3	3 Cells 3X	3 Grab Samples
	1715	1	3 Cells 3X	3 Grab Samples
	1717	2	3 Cells 3X	3 Grab Samples
	1719	3	3 Cells 3X	3 Grab Samples

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. 5 Unit 1

M. O'Brien

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
9/2/99	0805	1	3 Cells 3X	3 Grab Samples
	0807	2	3 Cells 3X	3 Grab Samples
	0809	3	3 Cells 3X	3 Grab Samples
	0830	1	3 Cells 3X	3 Grab Samples
	0831	2	3 Cells 3X	3 Grab Samples
	0833	3	3 Cells 3X	3 Grab Samples
	0900	1	3 Cells 3X	3 Grab Samples
	0901	2	3 Cells 3X	3 Grab Samples
	0902	3	3 Cells 3X	3 Grab Samples
	0930	1	3 Cells 3X	3 Grab Samples
	0931	2	3 Cells 3X	3 Grab Samples
	0933	3	3 Cells 3X	3 Grab Samples
	MOB ~~0900~~ 1000	1	3 Cells 3X	3 Grab Samples
	MOB ~~0901~~ 1001	2	3 Cells 3X	3 Grab Samples
	MOB ~~0903~~ 1003	3	3 Cells 3X	3 Grab Samples
	1030	1	3 Cells 3X	3 Grab Samples
	1031	2	3 Cells 3X	3 Grab Samples
	1033	3	3 Cells 3X	3 Grab Samples
	1100	1	3 Cells 3X	3 Grab Samples
	1101	2	3 Cells 3X	3 Grab Samples
	1103	3	3 Cells 3X	3 Grab Samples

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton Point unit 1
Project No.: 26046-0030-00003
Sampling Date(s): 8/31 - 9/2/99
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 COAL, Raw	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters* Cl, S, Ash, moisture, Btu, GHV				Comments
PG&E-BP-OAM-1-2-C	8/31/99	5GAL	P						✓	raw coal feeders composite	✓			X						✓				Run 2
PG&E-BP-OAM-1-3-C	9/1/99	5GAL	P						✓	Raw coal feeders composite	✓			X						✓				Run 3
PG&E-BP-OAM-1-4-C	9/1/99	5GAL	P						✓	raw coal feeders composite	✓			X						✓				Run 4
PG&E-BP-OAM-1-5-C	9/2/99	5GAL	P						✓	Raw coal feeders composite	✓			X										Run 5

Relinquished by: [signature]	Date/Time: 9/3/99 1200	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 9/3/99 1400	Received by:	Date/Time:

REMARKS (*): PROXIMATE (MOISTURE, ASH, SULFUR, VOLATILE, BTU/lb)

№ 02434

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

TRC
TRC Environmental Corporation

Worldwide Olympic Partner

36 USC 380

CUSTOMER COUNTER SHIPPING RECORD

Questions?
www.ups.com
or
1-800-PICK-UPS

RECEIVED FROM (PLEASE PRINT)

NAME: David Gill (TRC)	DATE: 9/3/99
STREET: Boott Mills South, Foot of John St	
CITY: Lowell	STATE: MA ZIP CODE: 01851
TELEPHONE (H): ( )	TELEPHONE (W): (978) 970-5600

SHIPPER COMPLETE ALL INFORMATION SHOWN BELOW / A DUPLICATE ADDRESS LABEL SHOULD BE ENCLOSED IN EACH PACKAGE — **FOR UPS USE ONLY**

PACKAGE	SEND TO ADDRESS / LIST EACH PACKAGE SEPARATELY	C.O.D. AMOUNT	DECLARED VALUE*	UPS	TYPE	R NO. - PACKAGE ID # - CHARGES
1	NAME: Commercial Testing & Eng. STREET: Rt 2 Box 162A 1.5 mi. N of Middle CITY: Middlesboro STATE: NY ZIP: 14965 PACKAGE CONTENTS: Sample	$	$		EXCESS VALUATION PACKAGE	Ground Tracking Number 1Z 010 X87 03 1179 404 4
2	NAME: STREET: SAME CITY: STATE: ZIP: PACKAGE CONTENTS:	$	$		C.O.D. EXCESS VALUATION PACKAGE	Ground Tracking Number 1Z 010 X87 03 1179 403 5
3	NAME: STREET: SAME CITY: STATE: ZIP: PACKAGE CONTENTS:	$			VALUATION PACKAGE	Ground Tracking Number 1Z 010 X87 03 1179 402 6
4	NAME: STREET: SAME CITY: STATE: ZIP: PACKAGE CONTENTS:	$			C.O.D. EXCESS VALUATION PACKAGE	Ground Tracking Number 1Z 010 X87 03 1179 401 7

* Unless a greater value is declared in writing on this receipt, the shipper hereby declares and agrees that the released value of each package covered by this receipt is $100, which is a reasonable value under the circumstances surrounding the transportation, *even in the event that the carrier repackages or assists the shipper in packaging a shipment.* In addition, the maximum value or declared value per package is $50,000 and the maximum liability per package is $50,000. Claims not made to the carrier within 9 months of the scheduled delivery date are waived. The carrier shall not be liable for any special, incidental, or consequential damages.

The entry of a C.O.D. amount is not a declaration of value. All checks tendered in payment of C.O.D.'s will be accepted by UPS at shipper's risk.

All shipments are subject to the terms and conditions contained in the UPS tariff which is maintained at local UPS offices or at www.ups.com.

Thank You For Using
United Parcel Service

01122702 REV 9/98 (6MM 9/98) W

SHIPPER RECEIPT - WHITE UPS COPY - CANARY

Appendix C.2

Unit 3

Appendix C.2.1

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-53128-

38

CHAIN OF CUSTODY 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:

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

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

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*	Ontario-Hydro	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, PPa						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: 9/16/99	Relinquished by:	Date/Time:
Received by: [signature] - PASC	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

No. 02565

TAC

00186

Mv-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-Ila-1-PF-Hg	9/16/99	Petri							x	Inlet 1 Run 1A	x										53131
PG&E-SG-OHM-Ila-1-PR-Hg		500ml	G			x					x				1LCG×2, 500CG, 250CG×2						
PG&E-SG-OHM-Ila-1-KCl-Hg		1L				x					x						PPD.				
PG&E-SG-OHM-Ila-1-HNO3/H2O2-Hg		250ml				x					x										
PG&E-SG-OHM-Ila-1-KMnO4-Hg		1L				x					x										
PG&E-SG-OHM-Ila-1-A-Hg		125ml			x						x				250CG×2		53153.				2bottles composite before Analysis
PG&E-SG-OHM-IIb-1-PF-Hg	9/16/99	Petri							x	Inlet 1 Run 1B	x				ppd, 500CG, 250CG						53134
PG&E-SG-OHM-IIb-1-PR-Hg		500ml	G			x					x						1LCG×2				2 bottles composite
PG&E-SG-OHM-IIb-1-KCl-Hg		1L				x					x										
PG&E-SG-OHM-IIb-1-HNO3/H2O2-Hg		250ml				x					x										
PG&E-SG-OHM-IIb-1-KMnO4-Hg		1L				x					x										
PG&E-SG-OHM-IIb-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 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		500G, 250G, 1LG×2							53135
PG&E-SG-OHM-Ib-2-PR-Hg	↓	500ml	G				X			↓	✓	X						ppd.			
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		250G×2, 1LG×2, ppd.							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		250G×2, 1LG×2, ppd.							
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									

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Received by: [signature]	Date/Time: 990918 12:30	Received by:	Date/Time:

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

Ontario-Hydro

CC-88

№ 2568

TLC

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

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-IIa-3-PF-Hg	9/17/99	Petri							X	Inlet Run 3A	✓	X		PPD, 250CG×3, 1LCG×2							53132
PG&E-SG-OHM-IIa-3-PR-Hg	↓	2×250ml	G			X				↓	✓	X									Composite prior to Analysis
PG&E-SG-OHM-IIa-3-KCl-Hg	↓	1L	↓			X				↓	✓	X									
PG&E-SG-OHM-IIa-3-~~HNO3/H2O2~~-Hg	↓	250ml	↓			X				↓	✓	X									
PG&E-SG-OHM-IIa-3-KMnO4-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	↓	2×250ml	G			X				↓	✓	X		PPD, 250CG×3, 1LCG×2							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									53151

Relinquished by: [signature]	Date/Time: 9/17/99	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02570

TRC

00-89

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-4-PF-Hg	9/17	Petri							X	Inlet Run 4A	✓	X				250(G+3, 1L(G+2					53133
PG&E-SG-OHM-Ila-4-PR-Hg		2x250ml	G			X					✓	X				ppd.					Composite before Analysis
PG&E-SG-OHM-Ila-4-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ila-4-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-Ila-4-KMnO4/H2SO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ila-4-A-Hg	✓	2x250ml	✓		X					✓	✓	X						53156			Composite before Analysis
PG&E-SG-OHM-Ilb-4-PF-Hg	9/17	Petri							X	Inlet Run 4B	✓	X		250(G+3, 1L(G+2							53137
PG&E-SG-OHM-Ilb-4-PR-Hg		2x250ml	G			X					✓	X				ppd.					Composite before Analysis
PG&E-SG-OHM-Ilb-4-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ilb-4-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-Ilb-4-KMnO4/H2SO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ilb-4-A-Hg	✓	2x250ml	✓		X						✓	X						53159			Composite before Analysis

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 (*):

№ 2576

TAC

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-Oa-1-PF-Hg	9/16/99	Petri						X		Outlet Run 1A	✓	X		250G×2, 14G×2, ppd							53139.
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/H2O-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		250G×2, 14G×2, ppd							53141
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/H2O-Hg	↓	250ml	↓			X				↓	✓	X									
PG&E-SG-OHM-Ob-1-KMnO4-Hg	↓	1L	↓			X				↓	✓	X									

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

REMARKS (*):

№ 02567

TRC

00-91

CHAIN OF CUSTODY RECORD

Project Name: PG&E
Project No.: 260246
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	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 Run3A	✓	X			250G+2			1LG+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 Run3B	✓	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			100G+2,			500G+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: 9/19 0908 12:30	Received by:	Date/Time:

REMARKS (*):

00192

№ 2571

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 Run 2	✓	X			250G*2, 1LG*2, ppd						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: 9/10/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 9/10/99 12:30	Received by:	Date/Time:

REMARKS (*):

Ontario-Hydro

00-93

№ 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 Ontario-Hydro	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-3-IE-3-PF-Hg	9/9/99	Petri							X	Boiler #3-Run 3	X		Ppd,	3BOG-2,	NLOG-2						53146.
PG&E-BP-OHM-3-IE-3-KCl-Hg		1L	G			X				East Inlet	X										
PG&E-BP-OHM-3-IE-3-HNO3/H2O2-Hg		250ml				X					X										
PG&E-BP-OHM-3-IE-3-KMnO4-Hg		1L				X					X										
PG&E-BP-OHM-3-IE-3-PR-Hg		250ml				X					X										
PG&E-BP-OHM-3-IE-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-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: 9/18/99	Relinquished by:	Date/Time:
Received by:	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

00194

№ 2563

TLC

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 (Cotacio-Hydro)	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, 100CG×5								53143.
PG&E-BP-OHM-3-RB-HNO3-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-KMnO4-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	100CG×2, 500CG×2							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-KMnO4-Hg	↓	500ml	↓				X			↓	✓	X									
PG&E-BP-OHM-3-I-FB-PF-Hg	9/7/99	Petri							X	Inlet Field Blank		X	ppd,	100CG×2, 500CG×2							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-KMnO4-Hg	↓	500ml	↓				X			↓		X									

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

REMARKS (*):

00195

№ 02435

TRC

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:

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												
~~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									53152
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: [signature]	Date/Time: 9/18/99	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 990918 12:30	Received by:	Date/Time:

REMARKS (*):

96-90

№ 2436

TLC

CHAIN OF CUSTODY 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: [signature]	Date/Time: 9/18/99 0900	Relinquished by: J. Jones	Date/Time: 09-18-99 9:00
Received by: [signature]	Date/Time: 990918 17:30	Received by:	Date/Time:

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

№ 02577

TRC

00-97

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.	flu from site	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	9 18 99	
Time Received	12:30 p	

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 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: Hg 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

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- 60115

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	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-BP-OHM-3-RB-PF-Hg	10/6/99	Petri							x	Reagent Blank	✓	x									60116
PG&E-BP-OHM-3-RB-HNO3-Hg		250ml	CG			x					✓	x									
PG&E-BP-OHM-3-RB-HNO3/H2O2-Hg		250ml				x					✓	x									
PG&E-BP-OHM-3-RB-KMnO4-Hg		250ml				x					✓	x									
PG&E-BP-OHM-3-RB-KCl-Hg		250ml		x							✓	x									
PG&E-BP-OHM-3-0-4-PF-Hg	10/6/99	Petri							x	Boiler #3 Run 4	✓	x									60117
PG&E-BP-OHM-3-0-4-PR-Hg		250ml	CG			x				Outlet	✓	x									
PG&E-BP-OHM-3-0-4-KCl-Hg		950ml	AG			x					✓	x									
PG&E-BP-OHM-3-0-4-HNO3/H2O2-Hg		250ml	CG			x					✓	x									
PG&E-BP-OHM-3-0-4-KMnO4-Hg		950ml	AG			x					✓	x									

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 (*):

00106

№ 02569

TRC

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	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-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: [signature]	Date/Time: 10/12/99 1700	Relinquished by:	Date/Time:
Received by: [signature] - PASL	Date/Time: 99/10/13 12:45	Received by:	Date/Time:

REMARKS (*):

00107

№ 2562

THC

Page ___ of ___

US SAMPLE LOG IN SHEET

TRC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Gavin

Received By (Signature):

Client Project ID:

REMARKS:

Condition of Samples/Sample Shipment: Samples recieved.

Custody Seal(s)	Present ___ Absent ✓	
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 for Hg.
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 Hg
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: 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

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 C.2.2

Process Streams

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. Unit 3 Run 2

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
9/9/99	1142	4	1/4 Gal.	Grab Sample
	1143	5	1/4 Gal.	Grab Sample
	1210	1	1/4 Gal.	Grab Sample
	1210	2	1/4 Gal.	Grab Sample
	1211	3	1/4 Gal.	Grab Sample
	1212	4	1/4 Gal.	Grab Sample
	1213	5	1/4 Gal.	Grab Sample
	1240	1	1/4 Gal	Grab Sample
	1241	2	1/4 Gal	Grab Sample
	1242	3	1/4 Gal	Grab Sample
	1243	4	1/4 Gal	Grab Sample
	1244	5	1/4 Gal	Grab Sample

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

1 of 2

PULVERIZED COAL SAMPLE LOG

RUN No. Unit 3, Run 2

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
9/9/99	0910	1	1/4 Gal	Grab Sample
	0911	2	1/4 Gal	Grab Sample
	0912	3	1/4 Gal	Grab Sample
	0913	4	1/4 Gal	Grab Sample
	0914 ~~0940~~	5	1/4 Gal.	Grab Sample
	0940	1	1/4 Gal.	Grab Sample
	0940	2	1/4 Gal.	Grab Sample
	0941	3	1/4 Gal.	Grab Sample
	0942	4	1/4 Gal.	Grab Sample
	0943	5	1/4 Gal.	Grab Sample
	1010	1	1/4 Gal.	Grab Sample
	1011	2	1/4 Gal.	Grab Sample
	1012	3	1/4 Gal	Grab Sample
	1013	4	1/4 Gal.	Grab Sample
	1014	5	1/4 Gal.	Grab Sample
	1040	1	1/4 Gal.	Grab Sample
	1041	2	1/4 Gal.	Grab Sample
	1042	3	1/4 Gal	Grab Sample
	1042	4	1/4 Gal	Grab Sample
	1043	5	1/4 Gal	Grab Sample
	1110	1	1/4 Gal	Grab Sample
	1111	2	1/4 Gal.	Grab Sample
	1112	3	1/4 Gal.	Grab Sample
	1113	4	1/4 Gal.	Grab Sample
	1114	5	1/4 Gal.	Grab Sample
	1140	1	1/4 Gal.	Grab Sample
	1140	2	1/4 Gal	Grab Sample
	1141	3	1/4 Gal.	Grab Sample

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. Unit 3, Run 3 1/2

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
9/9/99	1602	1	1/4 Gal.	Grab Sample
	1603	2	1/4 Gal.	Grab Sample
	1604	3	1/4 Gal.	Grab Sample
	1605	4	1/4 Gal.	Grab Sample
	1606	5	1/4 Gal.	Grab Sample
	1630	1	1/4 Gal.	Grab Sample
	1630	2	1/4 Gal.	Grab Sample
	1631	3	1/4 Gal.	Grab Sample
	1632	4	1/4 Gal.	Grab Sample
	1633	5	1/4 Gal.	Grab Sample
	1700	1	1/4 Gal.	Grab Sample
	1700	2	1/4 Gal.	Grab Sample
	1701	3	1/4 Gal.	Grab Sample
	1702	4	1/4 Gal.	Grab Sample
	1703	5	1/4 Gal.	Grab Sample
	1730	1	1/4 Gal.	Grab Sample
	1730	2	1/4 Gal.	Grab Sample
	1731	3	1/4 Gal.	Grab Sample
	1732	4	1/4 Gal.	Grab Sample
	1733	5	1/4 Gal.	Grab Sample
	1800	1	1/4 Gal.	Grab Sample
	1800	2	1/4 Gal.	Grab Sample
	1801	3	1/4 Gal.	Grab Sample
	1802	4	1/4 Gal.	Grab Sample
	1803	5	1/4 Gal.	Grab Sample
	1830	1	1/4 Gal.	Grab Sample
	1831	2	1/4 Gal.	Grab Sample
	1832	3	1/4 Gal.	Grab Sample

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. Unit 3 Run 3 2 of 2

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
9/9/99	1833	4	1/4 Gal.	Grab Sample
	1834	5	1/4 Gal.	Grab Sample
	1900	1	1/4 Gal	Grab Sample
	1901	2	1/4 Gal	Grab Sample
	1902	3	1/4 Gal	Grab Sample
	1903	4	1/4 Gal	Grab Sample
	1904	5	1/4 Gal	Grab Sample

1 of 2

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

SAMPLER - MIKE ~~APOLO~~ ARAUJO PG&E ~~USGEN~~ BPS RUN No. 24 Hischoff TRC

	DATE	TIME	SILO #	APPROX VOLUME	COMMENT
	10/6/99	1105	3-1	1/2 C	SAMPLE obtained from side sample above feeder
		1106	3-2	1/2 C	1/2 CAN C (1 gal) per subsample, Restart 1105
1		1107.30	3-4	1/2 C	R3-3 out of service
		1109	3-5	1/2 C	
	10/6/99	~~1135~~ 1140	3-1	1/2 C	1119 hold for broken vacuum toilet, RESTART - 11
		11 42	3-2	1/2 C	
2		11 43	3-4	1/2 C	
		11 45	3-5	1/2 C	
	10/6/99	1200	3-1	1/2 C	
		12 11 30	3-2	1/2 C	
3		12 12.30	3-4	1/2 C	
		12 13.30	3-5	1/2 C	
	10/6/99	1230	3-1	1/2 C	
4		1241	3-2	1/2 C	
		1242	3-4	1/2 C	
		1243	3-5	1/2 C	
	10/6/99	1300	3-1	1/2 C	
5		1311	3-2	1/2 C	
		1312	3-4	1/2 C	
		1313	3-5	1/2 C	
	10/6/99	1340	3-1	1/2 C	
6		1341	3-2	1/2 C	
		1342	3-4	1/2 C	
		1343.30	3-5	1/2 C	
	10/6/99	1400	3-1	1/2 C	
7		1411	3-2	1/2 C	
		1412	3-4	1/2 C	
		1413	3-5	1/2 C	

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00003

PULVERIZED COAL SAMPLE LOG

RUN No. ~~3-3~~ 4 Unit 3

Sampler: Mike PG&E BPS Dischuff TRC.

DATE	TIME	SILO #	APPROX VOLUME	COMMENT
10/6/99	143540	3-1	1/2 c	
	1441	3-2	1/2 c	
	1442	3-4	1/2 c	
	1443	3-5	1/2 c	Run end 1456
	150210	3-1		
		3-2		
		3-4		
		3-5		

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton Point Station unit 3
Project No.: 26046-8030-00003
Sampling Date(s): 10/6/99
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 COAL	Source Description	ANALYSIS: Trace Metals*	Mercury	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters* (Ash, MOISTURE, SHV)	Comments
PG&E BP-04M-3-4-C	10/6/99	5 gal	P						X	Unit 3 Pan 4 Composite	X									X	Perform 1,2,4 & 5

Relinquished by: [signature] Date/Time: 10/12/99 1600
Received by: Date/Time:
Relinquished by: Date/Time:
Received by: Date/Time:
REMARKS (*):

№ 02578

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

TRC
TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: PG&E Scrubber RAS / Brayton Point
Project No.: 26016-0030-00009
Sampling Date(s): 9/16-17 1999
Laboratory: Commercial Testing
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s): 9/20/99
Shipper's Name:

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

ANALYSIS: Trace Metals*, Mercury, Hexavalent Chromium, HCl, Cl2, Particulate Matter, PCDD/PCDF, Semi-Volatile Organics, Volatile Organics, Physical Parameters*, Cl/HF/SO4/NH3/Flux

Sample Code	Sampled Date	Container Size	Container G/P	Other	Source Description	Trace Metals*	Mercury	Physical Parameters*	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
Received by: [signature] Date/Time: 9-22-99 15:30
Relinquished by: Date/Time:
Received by: Date/Time:
REMARKS (#):

№ 02564

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

TRC
TRC Environmental Corporation

APPENDIX D

ANALYTICAL DATA SHEETS

Appendix D.1

Unit 1

Appendix D.1.1

Exhaust Gas Streams

PSC
PHILIP SERVICES

INORGANIC DATA PACKAGE
FOR
TRC ENVIRONMENTAL CORPORATION
Project # 26046

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

Submission #: 9I0478

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

1. CASE NARRATIVE

PROJECT NARRATIVE

PHILIP Analytical Services (Burlington ON)
Philip Project: AN990787
Philip Submission #:9I0478

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					
051464 99	Method Blank	99/08/31	99/09/14	99/09/21	99/09/21
051465 99	BP-OHM-1-Ia-2 Ash	99/08/31	99/09/14	99/09/21	99/09/21
051466 99	BP-OHM-1-Ib-2 Ash	99/08/31	99/09/14	99/09/21	99/09/21
051467 99	BP-OHM-1-Ia-3 Ash	99/09/01	99/09/14	99/09/21	99/09/21
051468 99	BP-OHM-1-Ib-3 Ash	99/09/01	99/09/14	99/09/21	99/09/21
051469 99	BP-OHM-1-Ia-4 Ash	99/09/01	99/09/14	99/09/21	99/09/21
051470 99	BP-OHM-1-Ib-4 Ash	99/09/01	99/09/14	99/09/21	99/09/21
051471 99	BP-OHM-1-Ia-5 Ash	99/09/02	99/09/14	99/09/21	99/09/21
051472 99	BP-OHM-1-Ib-5 Ash	99/09/02	99/09/14	99/09/21	99/09/21
051942 99	NIST 1633b Coal Ash	99/09/16	99/09/14	99/09/21	99/09/21
Draft ASTM Mercury Speciation Method (September1, 1999 Revision)- Front Half					
051448 99	Method Blank	99/08/31	99/09/14	99/10/09	99/10/09
051449 99	BP-OHM-1-RB	99/08/31	99/09/14	99/10/09	99/10/09
051450 99	BP-OHM-1-I-FB	99/08/30	99/09/14	99/10/09	99/10/09
051459 99	BP-OHM-1-O-FB	99/08/30	99/09/14	99/10/09	99/10/09
051460 99	BP-OHM-1-O-2	99/08/31	99/09/14	99/10/11	99/10/11
051461 99	BP-OHM-1-O-3	99/09/01	99/09/14	99/10/09	99/10/09
051462 99	BP-OHM-1-O-4	99/09/01	99/09/14	99/10/11	99/10/11
051463 99	BP-OHM-1-O-5	99/09/02	99/09/14	99/10/11	99/10/11
051451 99	BP-OHM-1-Ia-2	99/08/31	99/09/14	99/10/10	99/10/10
051452 99	BP-OHM-1-Ib-2	99/08/31	99/09/14	99/10/10	99/10/10
051453 99	BP-OHM-1-Ia-3	99/09/01	99/09/14	99/10/10	99/10/10
051454 99	BP-OHM-1-Ib-3	99/09/01	99/09/14	99/10/10	99/10/10
051455 99	BP-OHM-1-Ia-4	99/09/01	99/09/14	99/10/10	99/10/10
051456 99	BP-OHM-1-Ib-4	99/09/01	99/09/14	99/10/10	99/10/10
051457 99	BP-OHM-1-Ia-5	99/09/02	99/09/14	99/10/10	99/10/10
051458 99	BP-OHM-1-Ib-5	99/09/02	99/09/14	99/10/10	99/10/10

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

051448 99	Method Blank	99/08/31	99/09/14	99/10/04	99/10/04
051449 99	BP-OHM-1-RB	99/08/31	99/09/14	99/10/04	99/10/04
051450 99	BP-OHM-1-I-FB	99/08/30	99/09/14	99/10/04	99/10/04
051451 99	BP-OHM-1-Ia-2	99/08/31	99/09/14	99/10/04	99/10/04
051452 99	BP-OHM-1-Ib-2	99/08/31	99/09/14	99/10/04	99/10/04
051453 99	BP-OHM-1-Ia-3	99/09/01	99/09/14	99/10/04	99/10/04
051454 99	BP-OHM-1-Ib-3	99/09/01	99/09/14	99/10/04	99/10/04
051455 99	BP-OHM-1-Ia-4	99/09/01	99/09/14	99/10/04	99/10/04
051456 99	BP-OHM-1-Ib-4	99/09/01	99/09/14	99/10/04	99/10/04
051457 99	BP-OHM-1-Ia-5	99/09/02	99/09/14	99/10/04	99/10/04
051458 99	BP-OHM-1-Ib-5	99/09/02	99/09/14	99/10/04	99/10/04
051459 99	BP-OHM-1-O-FB	99/08/30	99/09/14	99/10/04	99/10/04
051460 99	BP-OHM-1-O-2	99/08/31	99/09/14	99/10/04	99/10/04
051461 99	BP-OHM-1-O-3	99/09/01	99/09/14	99/10/04	99/10/04
051462 99	BP-OHM-1-O-4	99/09/01	99/09/14	99/10/04	99/10/04
051463 99	BP-OHM-1-O-5	99/09/02	99/09/14	99/10/04	99/10/04

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

051448 99	Method Blank	99/08/31	99/09/14	99/10/04	99/10/04
051449 99	BP-OHM-1-RB	99/08/31	99/09/14	99/10/04	99/10/04
051450 99	BP-OHM-1-I-FB	99/08/30	99/09/14	99/10/04	99/10/04
051451 99	BP-OHM-1-Ia-2	99/08/31	99/09/14	99/10/04	99/10/04
051452 99	BP-OHM-1-Ib-2	99/08/31	99/09/14	99/10/04	99/10/04
051453 99	BP-OHM-1-Ia-3	99/09/01	99/09/14	99/10/04	99/10/04
051454 99	BP-OHM-1-Ib-3	99/09/01	99/09/14	99/10/04	99/10/04
051455 99	BP-OHM-1-Ia-4	99/09/01	99/09/14	99/10/04	99/10/04
051456 99	BP-OHM-1-Ib-4	99/09/01	99/09/14	99/10/04	99/10/04
051457 99	BP-OHM-1-Ia-5	99/09/02	99/09/14	99/10/04	99/10/04
051458 99	BP-OHM-1-Ib-5	99/09/02	99/09/14	99/10/04	99/10/04
051459 99	BP-OHM-1-O-FB	99/08/30	99/09/14	99/10/04	99/10/04
051460 99	BP-OHM-1-O-2	99/08/31	99/09/14	99/10/04	99/10/04
051461 99	BP-OHM-1-O-3	99/09/01	99/09/14	99/10/04	99/10/04
051462 99	BP-OHM-1-O-4	99/09/01	99/09/14	99/10/04	99/10/04
051463 99	BP-OHM-1-O-5	99/09/02	99/09/14	99/10/04	99/10/04

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

051448 99	Method Blank	99/08/31	99/09/14	99/10/01	99/10/01
051449 99	BP-OHM-1-RB	99/08/31	99/09/14	99/10/01	99/10/01
051450 99	BP-OHM-1-I-FB	99/08/30	99/09/14	99/10/01	99/10/01
051451 99	BP-OHM-1-Ia-2	99/08/31	99/09/14	99/10/01	99/10/01
051452 99	BP-OHM-1-Ib-2	99/08/31	99/09/14	99/10/01	99/10/01
051453 99	BP-OHM-1-Ia-3	99/09/01	99/09/14	99/10/01	99/10/01
051454 99	BP-OHM-1-Ib-3	99/09/01	99/09/14	99/10/01	99/10/01
051455 99	BP-OHM-1-Ia-4	99/09/01	99/09/14	99/10/01	99/10/01
051456 99	BP-OHM-1-Ib-4	99/09/01	99/09/14	99/10/01	99/10/01
051457 99	BP-OHM-1-Ia-5	99/09/02	99/09/14	99/10/01	99/10/01
051458 99	BP-OHM-1-Ib-5	99/09/02	99/09/14	99/10/01	99/10/01
051459 99	BP-OHM-1-O-FB	99/08/30	99/09/14	99/10/01	99/10/01
051460 99	BP-OHM-1-O-2	99/08/31	99/09/14	99/10/01	99/10/01

051461 99	BP-OHM-1-O-3	99/09/01	99/09/14	99/10/01	99/10/01
051462 99	BP-OHM-1-O-4	99/09/01	99/09/14	99/10/01	99/10/01
051463 99	BP-OHM-1-O-5	99/09/02	99/09/14	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.

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

99 11 09
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:**	99/09/14
Project Desc:	PG&E	**Date Reported:**	99/10/12
Address:	Boott Mills South, Foot of John Street Lowell, MA MA 01852	**Submission No.:**	9I0478
		Sample No.:	051448-051463
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 99/12/06**

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

	Client ID:		Method Blank	Blank Spike#1	Blank Spike#1	Blank Spike#2	Blank Spike#2	BP OHM-1-RB	BP OHM-1-I-FB	BP OHM-1-Ia-2	BP OHM-1-Ia-2
	Lab No.:		051448 99	051448 99	051448 99	051448 99	051448 99	051449 99	051450 99	051451 99	051451 99
	Date Sampled:		-	-	-	-	-	99/08/31	99/08/30	99/08/31	99/08/31
Component	**MDL**	**Units**			% Recoveries		% Recoveries				Duplicate
Mercury - FH (Outlet)	0.010	ug	<	0.095	95	0.094	94	<	<	-	-
Mercury -FH (Inlet)	0.010	"	-	-	-	-	-	-	-	2.2	-
Mercury - KCl	0.030	"	<	0.32	106	0.29	97	<	<	6.3	-
Mercury - KMnO4	0.030	"	<	0.30	101	0.31	101	<	<	0.81	-
Mercury - H202	0.010	"	<	0.050	100	0.046	92	<0.25	<0.25	<0.25	<0.25

PASC - Certificate of Analysis

			BP	BP	BP	BP	BP	BP	BP	BP	BP
	Client ID:		OHM-1-Ia-2	OHM-1-Ia-2	OHM-1-Ia-2	OHM-1-Ia-2	OHM-1-Ib-2	OHM-1-Ib-2	OHM-1-Ib-2	OHM-1-Ib-2	OHM-1-Ib-2
	Lab No.:		051451 99	051451 99	051451 99	051451 99	051452 99	051452 99	051452 99	051452 99	051452 99
	Date Sampled:		99/08/31	99/08/31	99/08/31	99/08/31	99/08/31	99/08/31	99/08/31	99/08/31	99/08/31
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.		Duplicate	M. Spike	MS % Rec.	MS Dup
Mercury - FH (Outlet)	0.010	ug	-	-	-	-	-	-	-	-	-
Mercury -FH (Inlet)	0.010	"	-	-	-	-	1.2	-	-	-	-
Mercury - KCl	0.030	"	-	-	-	-	10.0	-	-	-	-
Mercury - KMnO4	0.030	"	-	-	-	-	0.30	0.33	0.86	91.00	0.93
Mercury - H202	0.010	"	2.5	100	2.6	100	<0.25	-	-	-	-

PASC - Certificate of Analysis

			BP	BP	BP	BP	BP	BP	BP	BP	BP
	Client ID:		OHM-1-Ib-2	OHM-1-Ia-3	OHM-1-Ib-3	OHM-1-Ib-3	OHM-1-Ib-3	OHM-1-Ib-3	OHM-1-Ib-3	OHM-1-Ib-3	OHM-1-Ia-4
	Lab No.:		051452 99	051453 99	051454 99	051454 99	051454 99	051454 99	051454 99	051454 99	051455 99
	Date Sampled:		99/08/31	99/09/01	99/09/01	99/09/01	99/09/01	99/09/01	99/09/01	99/09/01	99/09/01
Component	**MDL**	**Units**	MSD % Rec.			Duplicate	M. Spike	MS % Rec.	MS Dup	MSD % Rec.	
Mercury - FH (Outlet)	0.010	ug	-	-	-	-	-	-	-	-	-
Mercury -FH (Inlet)	0.010	"	-	1.2	1.2	1.2	2.2	97	2.2	97	1.1
Mercury - KCl	0.030	"	-	5.6	6.2	-	-	-	-	-	6.1
Mercury - KMnO4	0.030	"	91.00	1.3	0.50	-	-	-	-	-	1.15
Mercury - H202	0.010	"	-	<0.25	<0.25	-	-	-	-	-	<0.25

PASC - Certificate of Analysis

			BP	BP	BP	BP	BP	BP	BP	BP	BP
	Client ID:		OHM-1-Ia-4	OHM-1-Ia-4	OHM-1-Ia-4	OHM-1-Ia-4	OHM-1-Ia-4	OHM-1-Ib-4	OHM-1-Ia-5	OHM-1-Ib-5	OHM-1-Ib-5
	Lab No.:		051455 99	051455 99	051455 99	051455 99	051455 99	051456 99	051457 99	051458 99	051458 99
	Date Sampled:		99/09/01	99/09/01	99/09/01	99/09/01	99/09/01	99/09/01	99/09/02	99/09/02	99/09/02
Component	**MDL**	**Units**	Duplicate	M. Spike	MS % Rec.	MS Dup	MSD % Rec.				Duplicate
Mercury - FH (Outlet)	0.010	ug	-	-	-	-	-	-	-	-	-
Mercury -FH (Inlet)	0.010	"	-	-	-	-	-	1.5	0.67	<0.10	-
Mercury - KCl	0.030	"	6.1	12.5	95	12.4	95	7.0	5.9	6.3	-
Mercury - KMnO4	0.030	"	-	-	-	-	-	0.17	0.98	0.39	0.37
Mercury - H202	0.010	"	-	-	-	-	-	<0.25	<0.25	<0.25	-

PASC - Certificate of Analysis

			BP	BP	BP	BP	BP	BP	BP
	Client ID:		OHM-1-Ib-5	OHM-1-Ib-5	OHM-1-Ib-5	OHM-1-Ib-5	OHM-1-O-FB	OHM-1-O-2	OHM-1-O-2
	Lab No.:		051458 99	051458 99	051458 99	051458 99	051459 99	051460 99	051460 99
	Date Sampled:		99/09/02	99/09/02	99/09/02	99/09/02	99/08/30	99/08/31	99/08/31
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.			Duplicate
Mercury - FH (Outlet)	0.010	ug	-	-	-	-	<	0.013	-
Mercury -FH (Inlet)	0.010	"	-	-	-	-	-	-	-
Mercury - KCl	0.030	"	-	-	-	-	<	10.2	-
Mercury - KMnO4	0.030	"	1.00	93	1.00	93	<	0.82	-
Mercury - H202	0.010	"	-	-	-	-	<0.25	<0.25	<0.25

PASC - Certificate of Analysis

			BP	BP	BP	BP	BP	BP	BP
	Client ID:		OHM-1-O-2	OHM-1-O-2	OHM-1-O-2	OHM-1-O-2	OHM-1-O-3	OHM-1-O-4	OHM-1-O-5
	Lab No.:		051460 99	051460 99	051460 99	051460 99	051461 99	051462 99	051463 99
	Date Sampled:		99/08/31	99/08/31	99/08/31	99/08/31	99/09/01	99/09/01	99/09/02
Component	**MDL**	**Units**	M. Spike	MS % Rec.	MS Dup	MSD % Rec.			
Mercury - FH (Outlet)	0.010	ug	-	-	-	-	1.4	1.4	1.4
Mercury -FH (Inlet)	0.010	"	-	-	-	-	-	-	-
Mercury - KCl	0.030	"	-	-	-	-	7.0	5.9	5.5
Mercury - KMnO4	0.030	"	-	-	-	-	0.60	0.67	0.63
Mercury - H202	0.010	"	2.7	100	2.7	110	<0.25	<0.25	<0.25

PASC - Summary of Analysis Pre. Dates

Batch Code:	**10093GFL**	**10112GFB**	**10093GFL**
Mercury - FH (Outlet)	051448 99	051460 99	051461 99
	051449 99	051462 99	
	051450 99	051463 99	
	051459 99		
Run Date:	99/10/09	99/10/11	99/10/08
Date of Sample Prep:	99/10/09	99/10/11	99/10/09

Batch Code:	**10102GFT**	**10103GFT**
Mercury -FH (Inlet)	051451 99	051454 99
	051452 99	051455 99
	051453 99	051456 99
		051457 99
		051458 99
Run Date:	99/10/10	99/10/10
Date of Sample Prep:	99/10/10	99/10/10

Batch Code:	**10045GKC**	**10046GKC**
Mercury - KCl	051448 99	051455 99
	051449 99	051456 99
	051450 99	051457 99
	051451 99	051458 99
	051452 99	051459 99
	051453 99	051460 99
	051454 99	051461 99
		051462 99
		051463 99
Run Date:	99/10/04	99/10/04
Date of Sample Prep:	99/10/04	99/10/04

Batch Code:	**10042BMN**	**10043BMN**	**10044BMN**
Mercury - KMnO4	051448 99	051450 99	051458 99
	051449 99	051451 99	051460 99
		051452 99	051461 99
		051453 99	051462 99
		051454 99	051463 99
		051455 99	
		051456 99	
		051457 99	
		051459 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:	**10011B2B**	**10012B2B**
Mercury - H202	051448 99	051459 99
	051449 99	051460 99
	051450 99	051461 99
	051451 99	051462 99
	051452 99	051463 99

PASC - Summary of Analysis Pre. Dates

	051453 99	
	051454 99	
	051455 99	
	051456 99	
	051457 99	
	051458 99	
Run Date:	99/10/01	99/10/01
Date of Sample Prep:	99/10/01	99/10/01

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:**	99/09/14
Project Desc:	PG&E	**Date Reported:**	99/10/08
Address:	Boott Mills South, Foot of John Street Lowell, MA MA 01852	**Submission No.:**	9I0478
		Sample No.:	051464-051942
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: R.A. McLeod

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	BP-OHM-1-Ia-2	BP-OHM-1-Ia-2	BP-OHM-1-Ia-2	BP-OHM-1-Ia-2	BP-OHM-1-Ib-2
	Client ID:		Blank	Spike	Spike	Ash	Ash	Ash	Ash	Ash
	Lab No.:		051464 99	051464 99	051464 99	051465 99	051465 99	051465 99	051465 99	051466 99
	Date Sampled:		-	-	-	99/08/31	99/08/31	99/08/31	99/08/31	99/08/31
Component	**MDL**	**Units**			% Recoveries		Duplicate	M. Spike	MS % Rec.	
Weight of sample	0.0001	g	-	-	-	13.3	-	-	-	9.8
Mercury	0.04	mg/kg	<	0.99	99	0.39	0.41	1.5	110	0.18

00017

PASC - Certificate of Analysis

	Client ID:		BP-OHM-1-Ia-3 Ash	BP-OHM-1-Ib-3 Ash	BP-OHM-1-Ia-4 Ash	BP-OHM-1-Ib-4 Ash	BP-OHM-1-Ia-5 Ash	BP-OHM-1-Ib-5 Ash	NIST 1633b Coal Ash
	Lab No.:		051467 99	051468 99	051469 99	051470 99	051471 99	051472 99	051942 99
	Date Sampled:		99/09/01	99/09/01	99/09/01	99/09/01	99/09/02	99/09/02	99/09/16
Component	**MDL**	**Units**							
Weight of sample	0.0001	g	11.2	11.6	15.9	14.7	11.4	22.4	-
Mercury	0.04	mg/kg	0.26	0.16	0.25	0.19	0.20	0.20	0.14

CCC18

Batch Code:	**1007LTA1**
Weight of sample	051465 99
	051466 99
	051467 99
	051468 99
	051469 99
	051470 99
	051471 99
	051472 99
Run Date:	99/10/07
Date of Sample Prep:	99/10/07

Batch Code:	**0921IIA2**
Mercury	051464 99
	051465 99
	051466 99
	051467 99
	051468 99
	051469 99
	051470 99
	051471 99
	051472 99
	051942 99
Run Date:	99/09/21
Date of Sample Prep:	99/09/21

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
051464	TRC-LO	MB R456	Mercury	PV	-0.04	-99999.0	0.99	99.			99/09/21	IIA2	99/09/21	MG01	21.	7.	
051465	TRC-LO	BP-OHM-1-Ia-2 Ash	Mercury	PV	0.39	0.41	1.47	107.			99/09/21	IIA2	99/09/21	MG01	21.	7.	
051466	TRC-LO	BP-OHM-1-Ib-2 Ash	Mercury	PV	0.18						99/09/21	IIA2	99/09/21	MG01	21.	7.	
051467	TRC-LO	BP-OHM-1-Ia-3 Ash	Mercury	PV	0.26						99/09/21	IIA2	99/09/21	MG01	20.	7.	
051468	TRC-LO	BP-OHM-1-Ib-3 Ash	Mercury	PV	0.16						99/09/21	IIA2	99/09/21	MG01	20.	7.	
051469	TRC-LO	BP-OHM-1-Ia-4 Ash	Mercury	PV	0.25						99/09/21	IIA2	99/09/21	MG01	20.	7.	
051470	TRC-LO	BP-OHM-1-Ib-4 Ash	Mercury	PV	0.19						99/09/21	IIA2	99/09/21	MG01	20.	7.	
051471	TRC-LO	BP-OHM-1-Ia-5 Ash	Mercury	PV	0.20						99/09/21	IIA2	99/09/21	MG01	19.	7.	
051472	TRC-LO	BP-OHM-1-Ib-5 Ash	Mercury	PV	0.20						99/09/21	IIA2	99/09/21	MG01	19.	7.	
051942	TRC-LO	NIST 1633b Coal Ash	Mercury	PV	0.14						99/09/21	IIA2	99/09/21	MG01	5.	7.	
BL0921	INTERNAL		Mercury	PV	-0.04	-99999.0	0.99	99.			99/09/21	IIA2	99/09/21	MG01	$$$	$$$	

11 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

00021

RUN DATE: 09-21-1999 CHART DATE: 09-22-1999
CHART SPEED: 30
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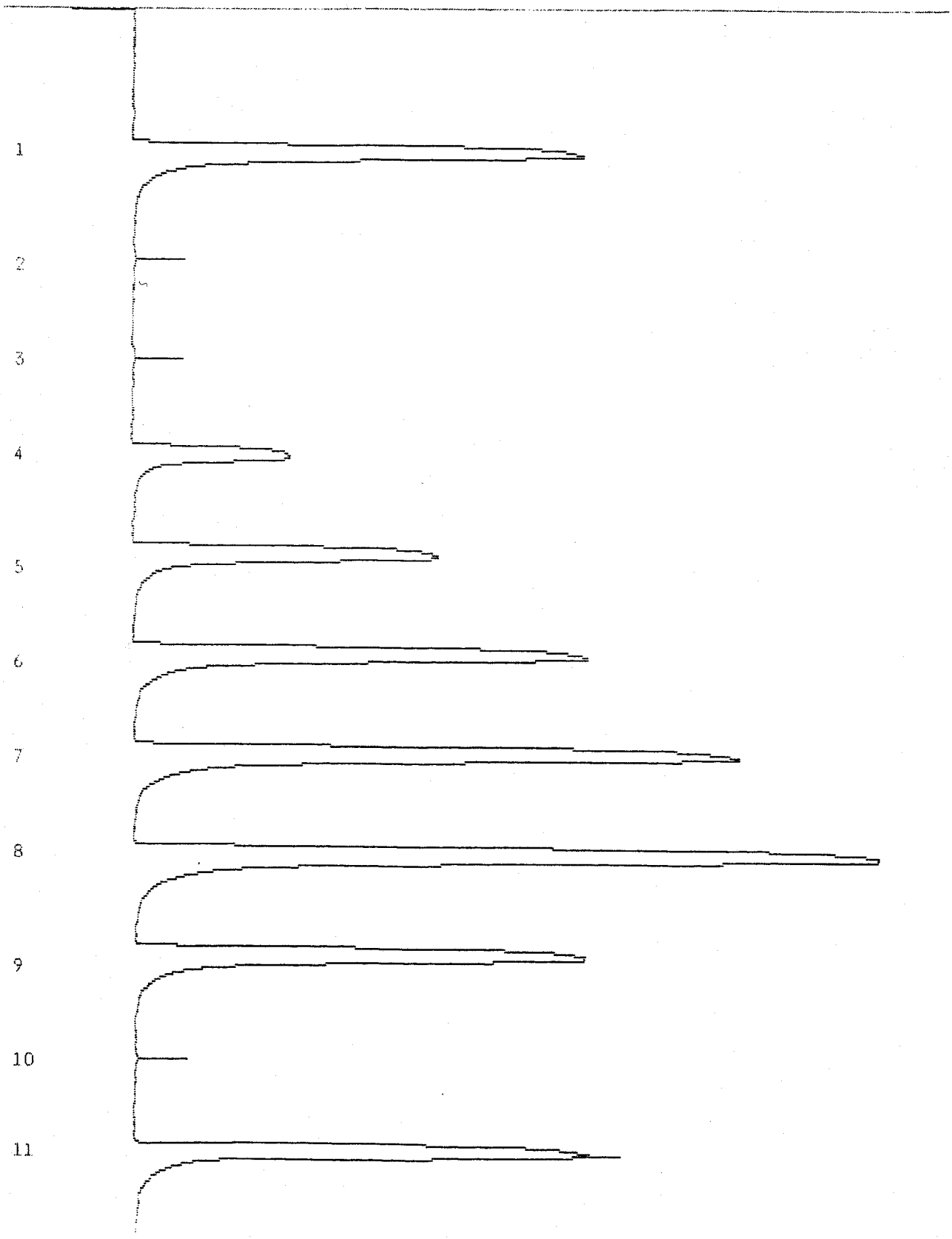

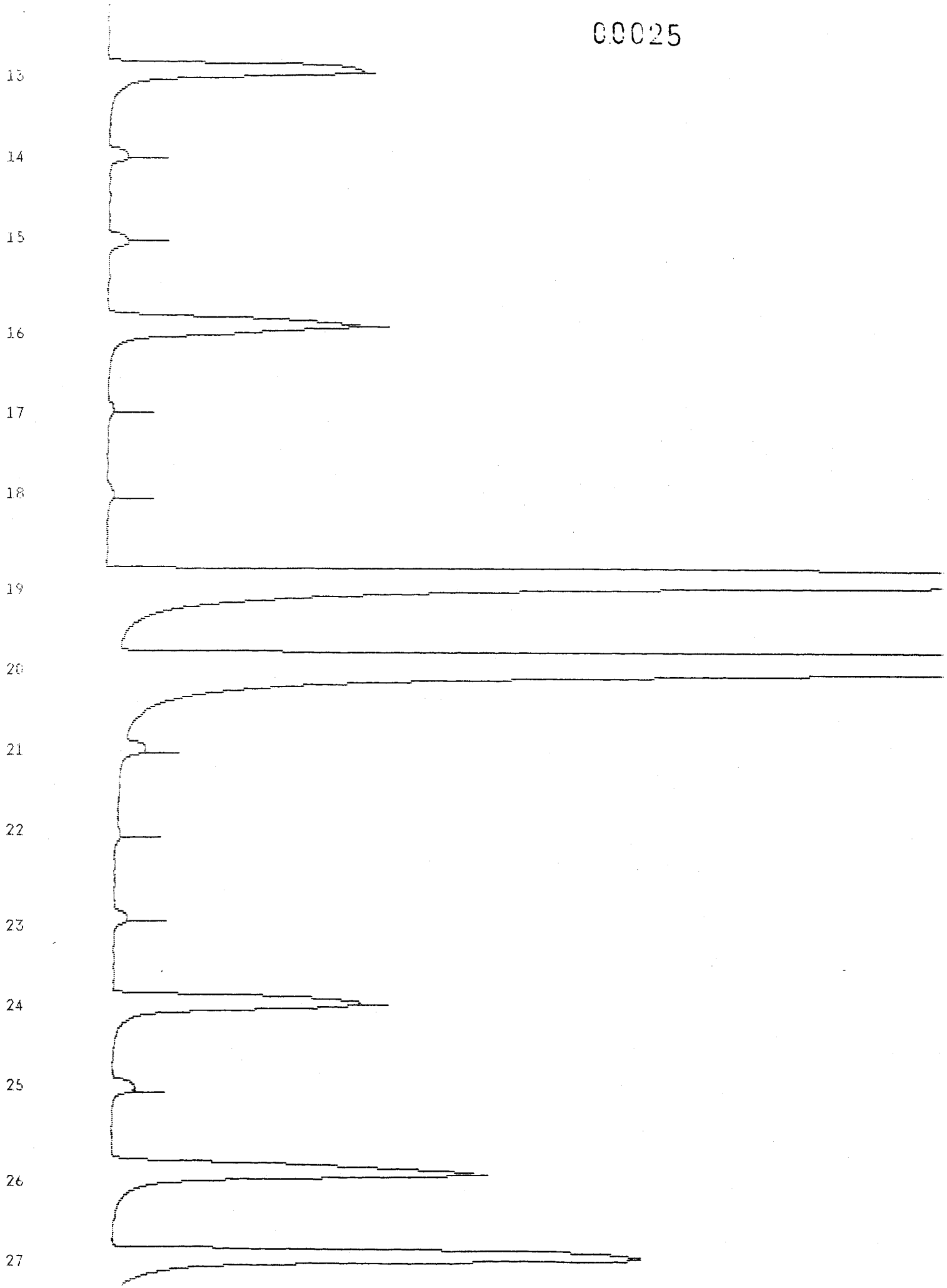
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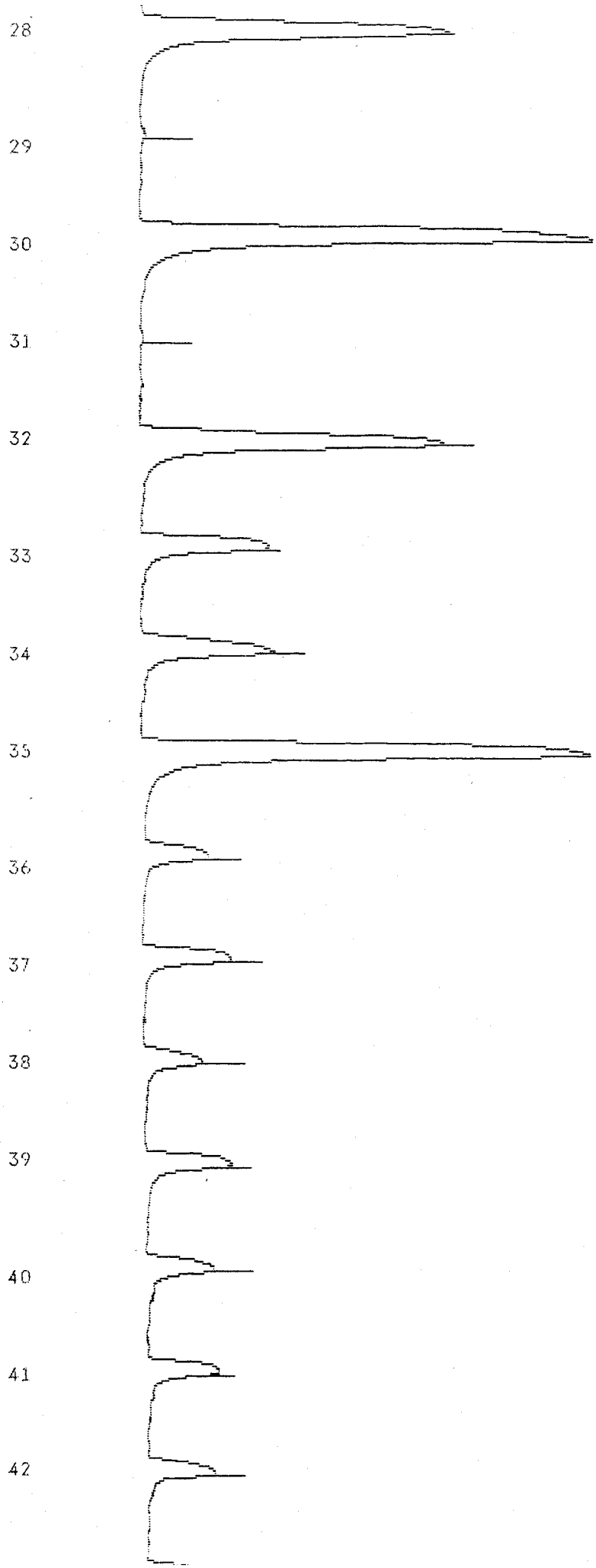
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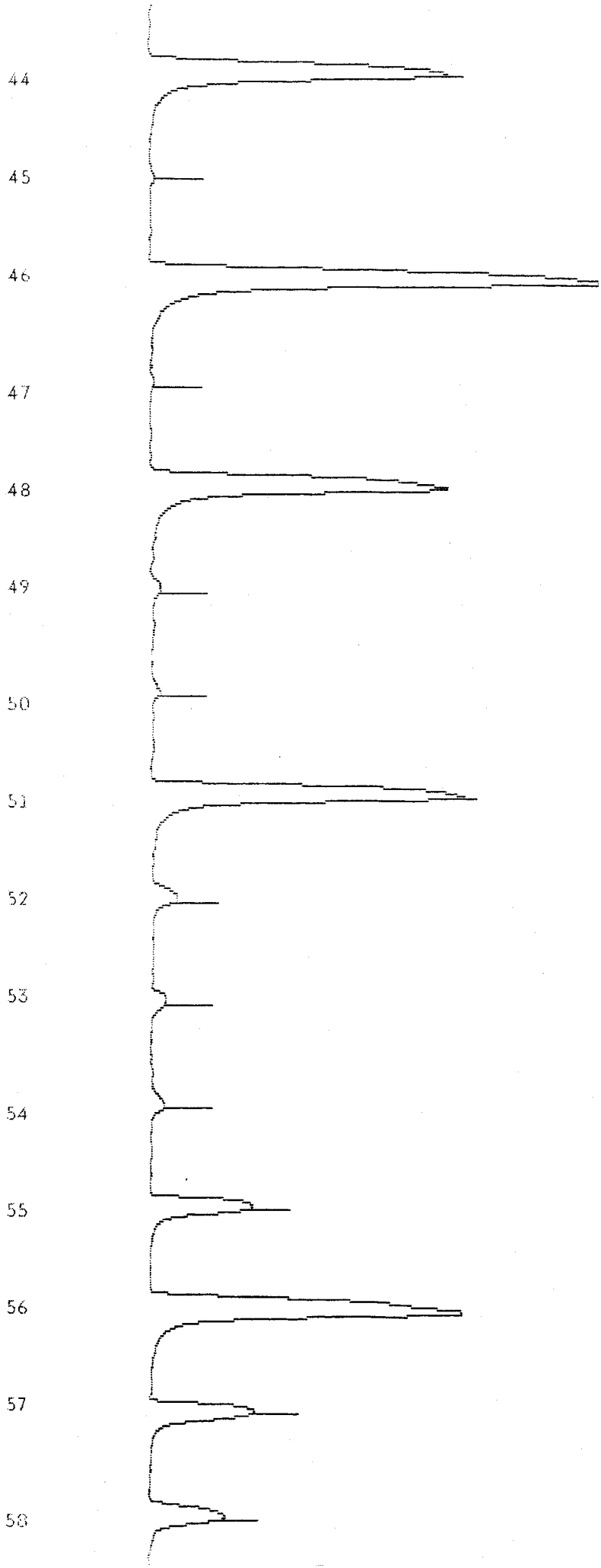
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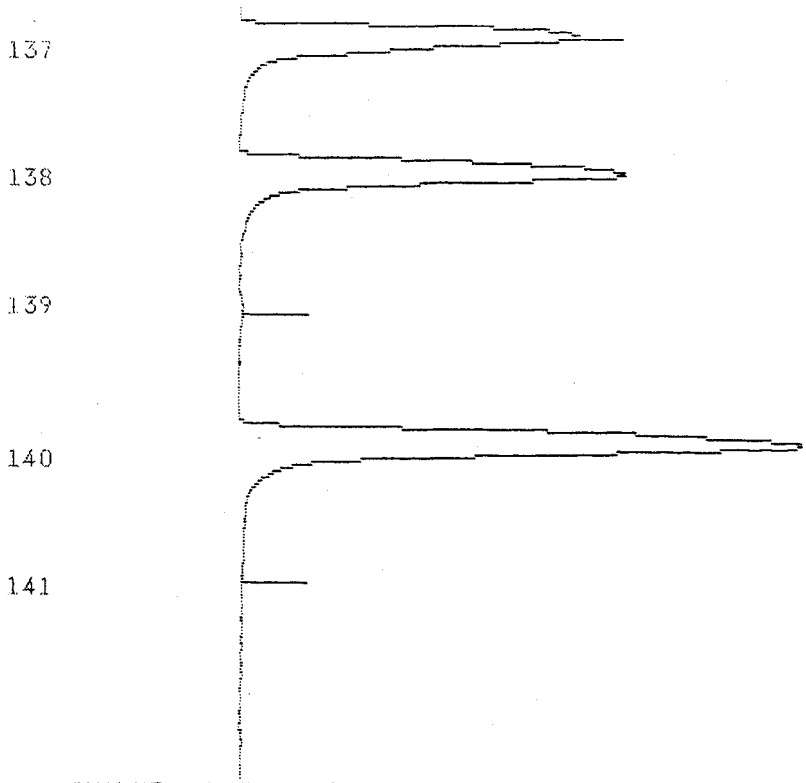
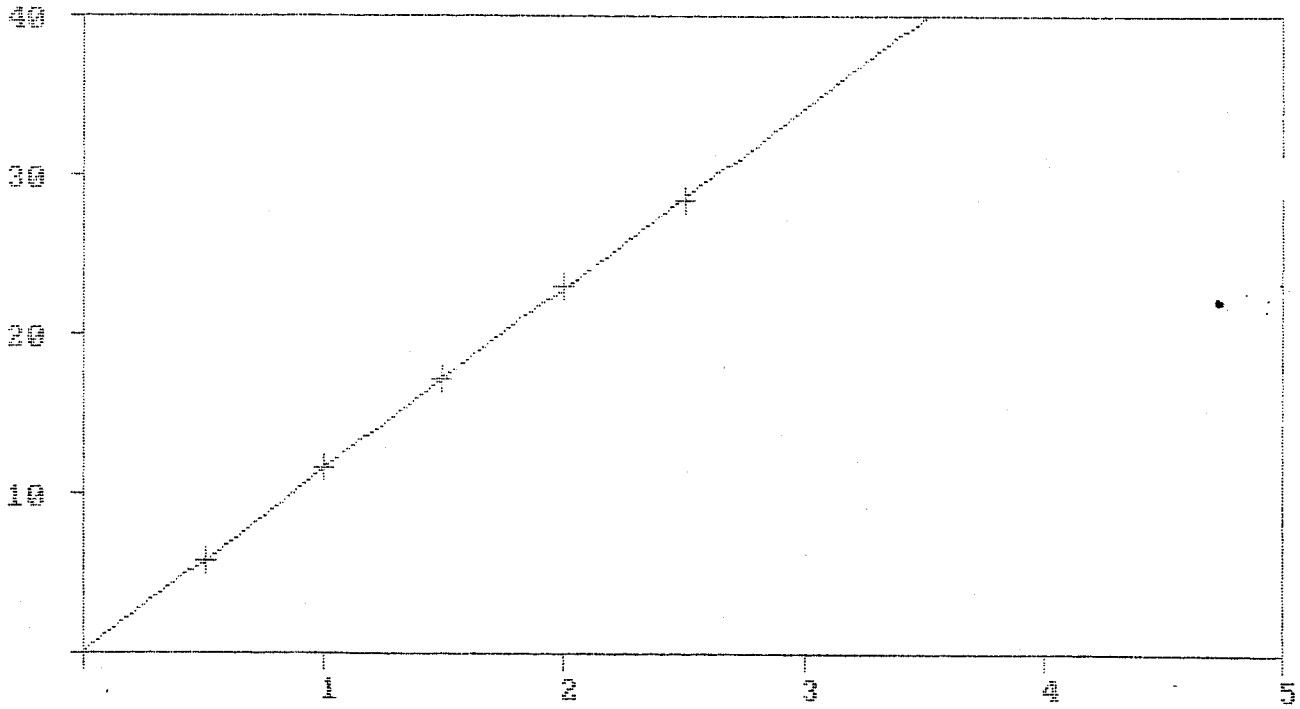


CHANNEL NAME: LDC
RUN NAME: 990921S



DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.15 SLOPE = 11.34485

CORRELATION: .9999616

CHANNEL NAME: LDC
RUN DATE: 09-21-1999
SAMPLE TABLE NAME: 990921S
METHOD NAME: HGSOIL

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION	EF
1	PRIMER	1	1	17.0	1.487	S

3	S1: 0	1	1	5.5		0.501	I
4	S2: .5	1	1	5.8		0.501	
5	S3: 1	1	1	11.6		1.009	
6	S4: 1.5	1	1	17.1		1.498	
7	S5: 2	1	1	23.0		2.010	
8	S6: 2.5	1	1	28.4		2.490	
9	ICV	1	1	17.0		1.482	99%
10	B	1	1	0.0		-0.014	b
11	D4	1	1	17.1		1.498	d
12	BL0921-IIA1 51232,51313	1	1	0.0		-0.014	I
13	BL0921S 51978	1	1	11.4		0.994	99%
14	51314	1	1	0.6		0.042	
15	51314D	1	1	0.6		0.040	
16	51314S	1	1	11.4		0.987	s95%
17	51315	1	1	0.1		-0.005	I
18	51316	1	1	0.1		-0.005	I
19	51233	1	1	98.6		8.676	R
20	48224	1	1	98.1	Dil: 2		O
21	51979	1	1	0.7		0.047	SUSPECTED CONT. RERUN 011 Sept 22
22	51980	1	1	0.0		-0.014	I
23	51981	1	1	0.4		0.019	I
24	51538	1	1	11.2		0.972	
25	51539	1	1	0.8		0.058	
26	51233	10	1	16.4		14.330	
27	48224	10	1	24.1		21.110	
28	CCV	1	1	11.5		1.000	100%
29	B	1	1	0.0		-0.014	b
30	D4	1	1	17.1		1.498	d
31	BL0921-IIA2 51464	1	1	0.0		-0.014	s
32	BL0921S	1	1	11.4		0.987	99%
33	51465	1	1	4.6		0.393	
34	51465D	1	1	4.8		0.411	
35	51465S	1	1	16.8		1.467	107%
36	51466	1	1	2.2		0.180	
37	51467	1	1	3.1		0.262	
38	51468	1	1	2.0		0.163	
39	51469	1	1	3.0		0.253	
40	51470	1	1	2.3		0.193	
41	51471	1	1	2.4		0.202	
42	51472	1	1	2.4		0.197	
43	51942	1	1	1.7		0.135	
44	CCV	1	1	11.3		0.979	98%
45	B	1	1	0.0		-0.014	b
46	D4	1	1	17.1		1.498	s
47	BL0921-IIA3 51581	1	1	0.0		-0.014	I
48	BL0921S	1	1	11.3		0.985	99%
49	51582	1	1	0.2		0.002	I
50	51582D	1	1	0.1		-0.005	I
51	51582S	1	1	11.9		1.039	103%
52	51583	1	1	0.7		0.051	I
53	51584	1	1	0.3		0.017	I
54	51585	1	1	0.4		0.019	I
55	51586	1	1	3.7		0.314	
56	51880	1	1	12.1		1.052	
57	51881	1	1	3.8		0.320	
58	51882	1	1	2.7		0.228	
59	51883	1	1	3.7		0.312	
60	CCV	1	1	11.1		0.968	97%
61	B	1	1	0.0		-0.014	b
62	D4	1	1	17.1		1.498	d
63	BL0921-IIA4	1	1	0.0		-0.014	I
64	BL0921S	1	1	11.8		1.024	102%
65	52027	1	1	0.2		0.006	I
66	52027D	1	1	0.2		0.002	I
67	52027S	1	1	12.0		1.046	104%

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	$$$	$$$	
047503	TRC-LO	PG&E-S-OHM-O-4	Mercury -	PV	0.128						99/10/09	3GFL	99/10/09	MG01	45.	43.	
051448	TRC-LO	MB R456	Mercury -	PV	-0.010	-99999.0	0.095	95.	0.094	94.	99/10/09	3GFL	99/10/09	MG01	39.	25.	
051449	TRC-LO	BP-OHM-1-RB	Mercury -	PV	-0.010						99/10/09	3GFL	99/10/09	MG01	39.	25.	
051450	TRC-LO	BP-OHM-1-I-FB	Mercury -	PV	-0.010						99/10/09	3GFL	99/10/09	MG01	40.	25.	
051459	TRC-LO	BP-OHM-1-O-FB	Mercury -	PV	-0.010						99/10/09	3GFL	99/10/09	MG01	40.	25.	
051461	TRC-LO	BP-OHM-1-O-3	Mercury -	PV	1.358						99/10/09	3GFL	99/10/09	MG01	38.	25.	
BL1009	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.095	95.	0.094	94.	99/10/09	3GFL	99/10/09	MG01	$$$	$$$	
047489	TRC-LO	PG&E-S-OHM-RB	Mercury -	PV	-0.010						99/10/09	4GFL	99/10/09	MG01	46.	43.	
BL1009	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.098	98.	0.097	97.	99/10/09	4GFL	99/10/09	MG01	$$$	$$$	

26 Tests for OHFLT with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00030

LDC AUTOSAMPLER RUN LOG (MERCURY)

(1)

Date: 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)	0.5		
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			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			"			
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.

(2)

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.09 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						
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			BL 1009 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.

(3)

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.09 Run Code: MG01 Matrix: MP

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						
13						
14						
15						
16						
17						
18						
19						
20						
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			
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						
71						
72						
73						
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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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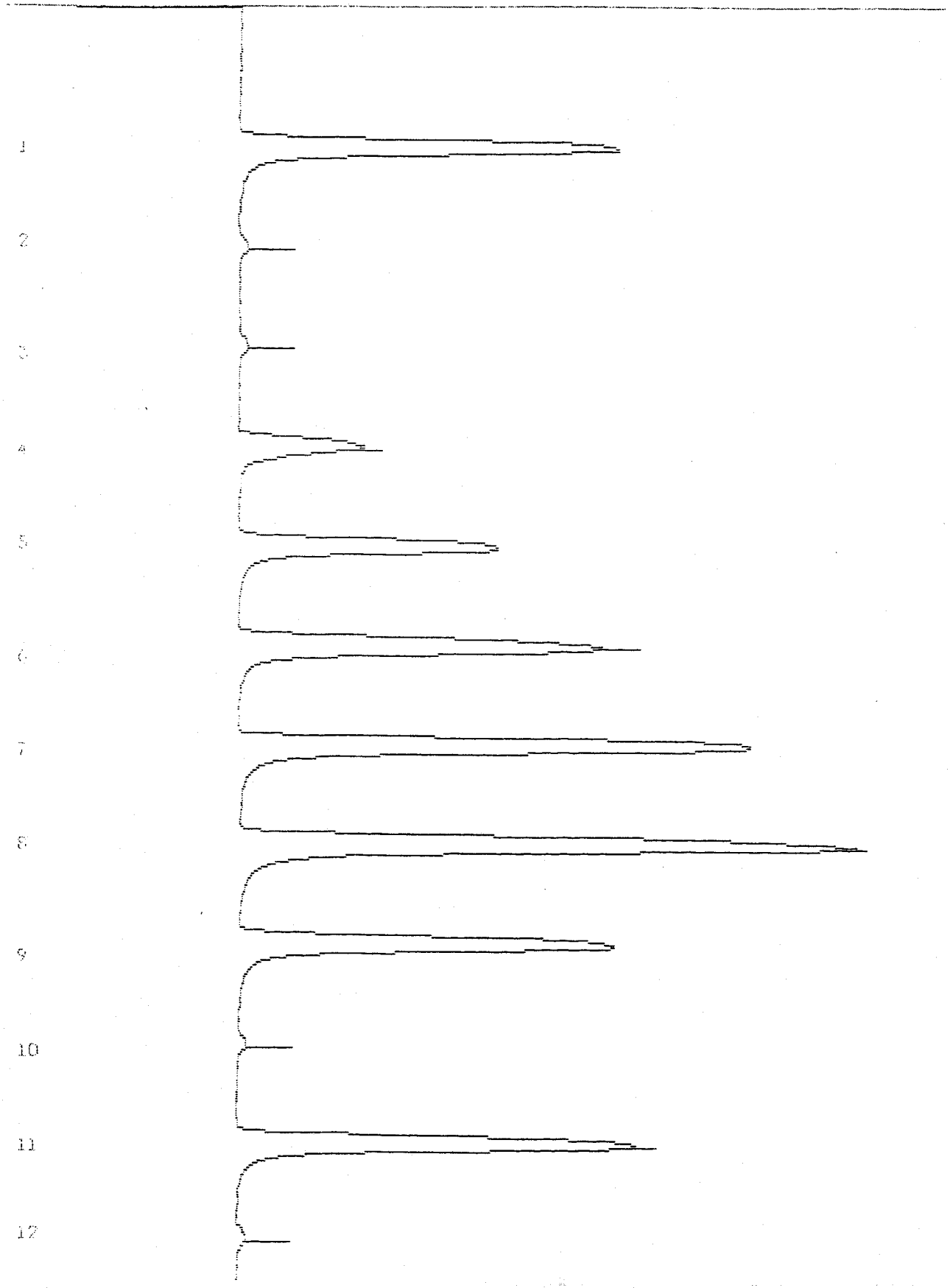

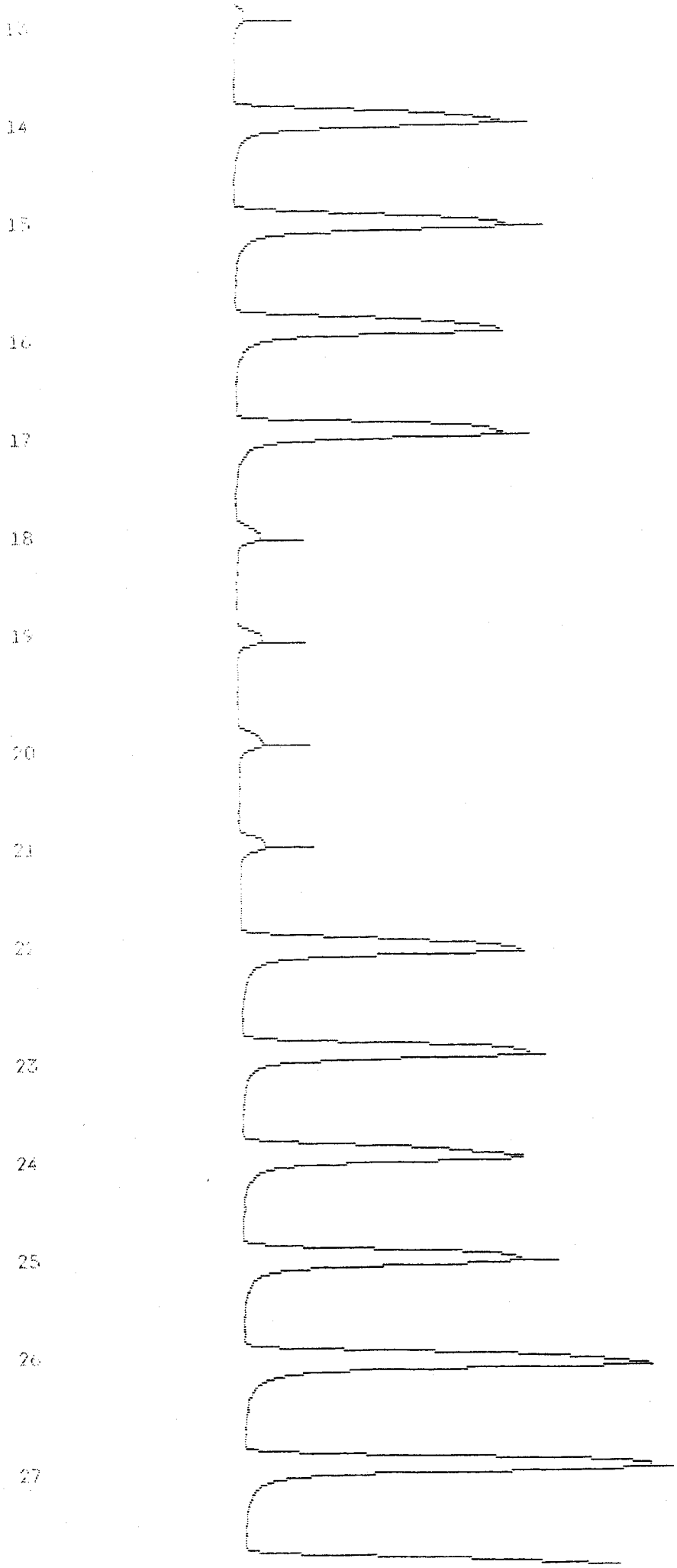
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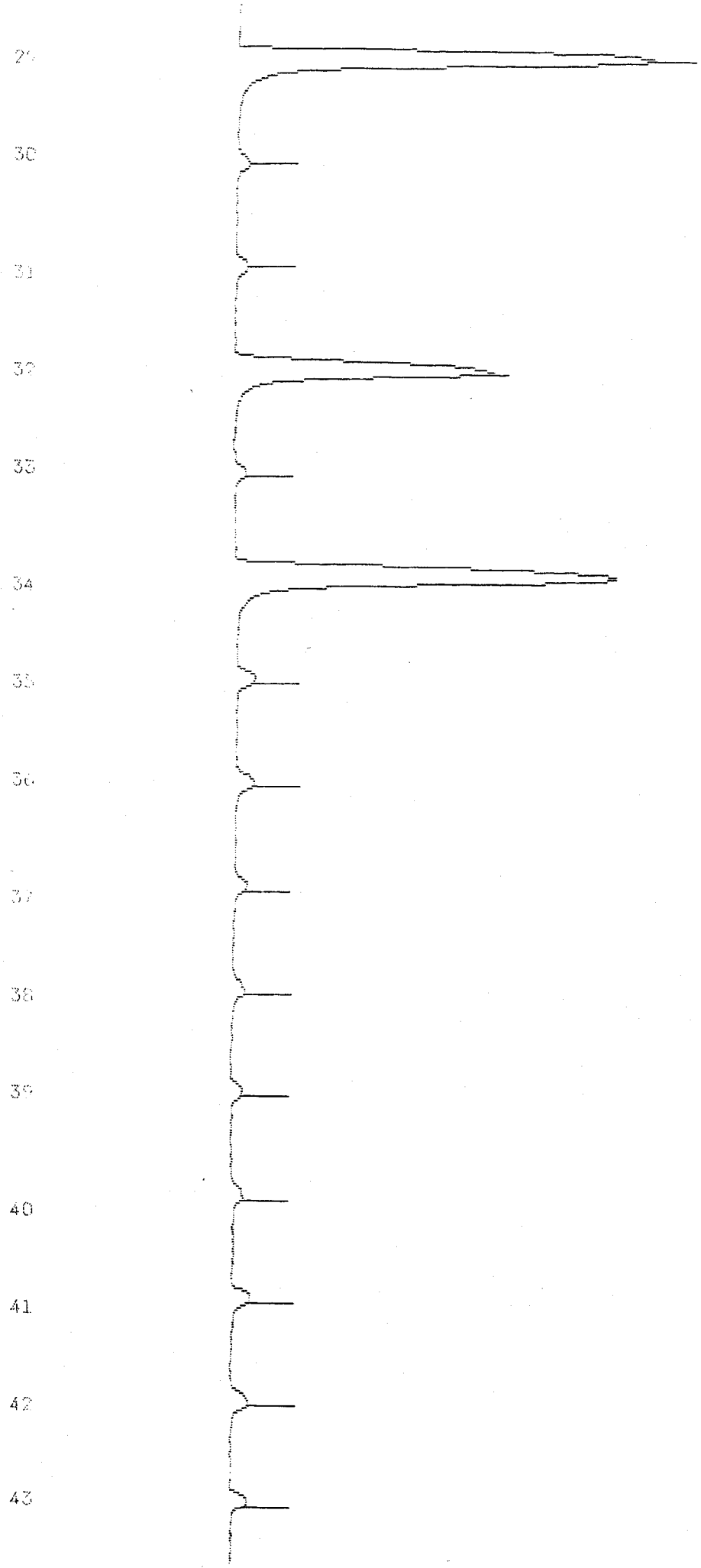
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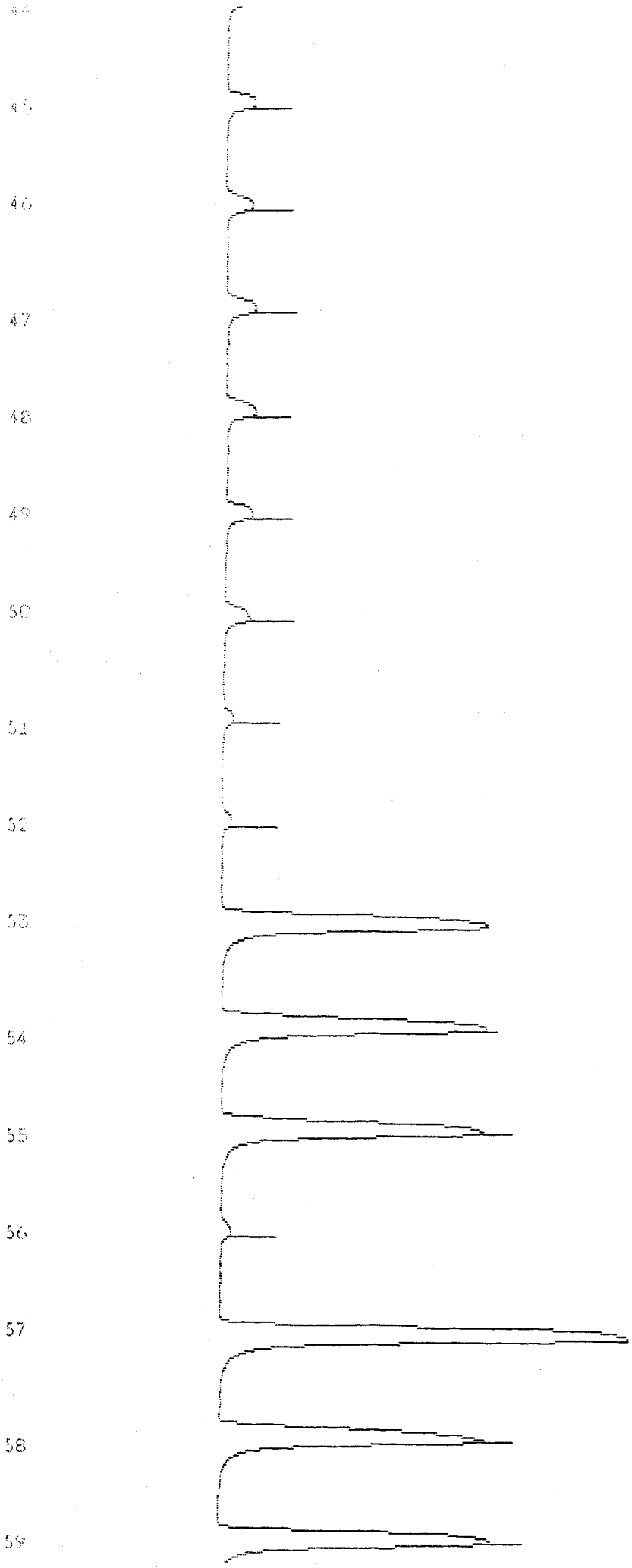
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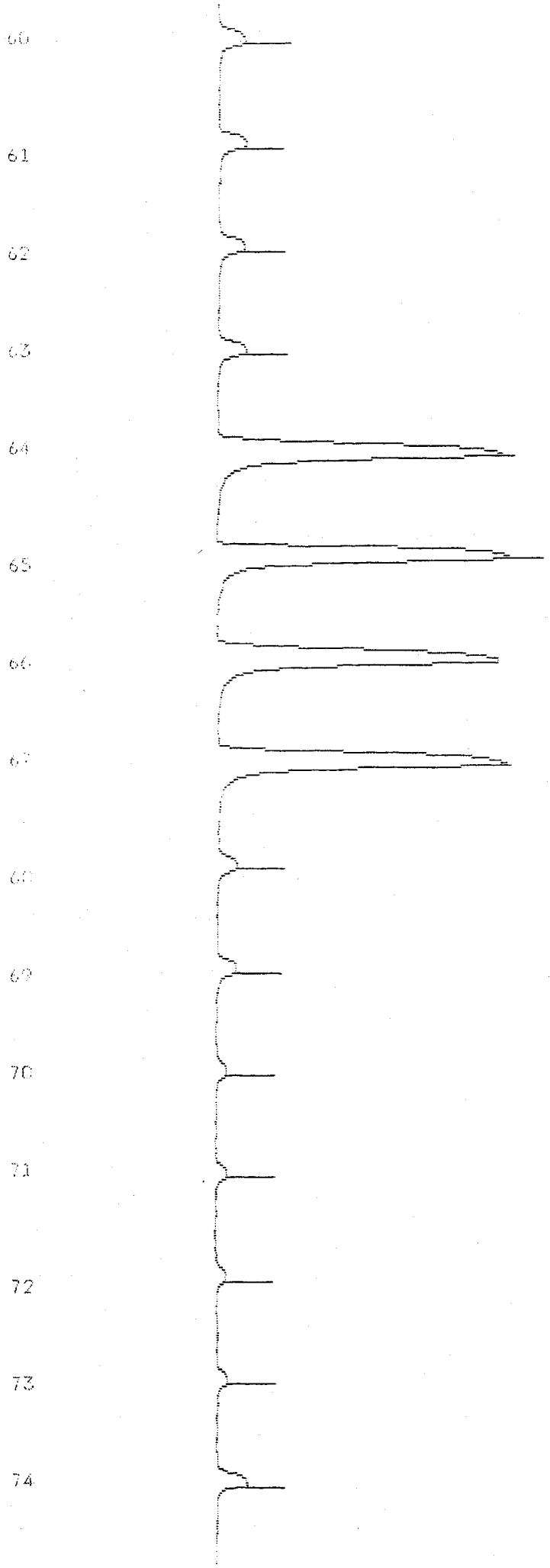
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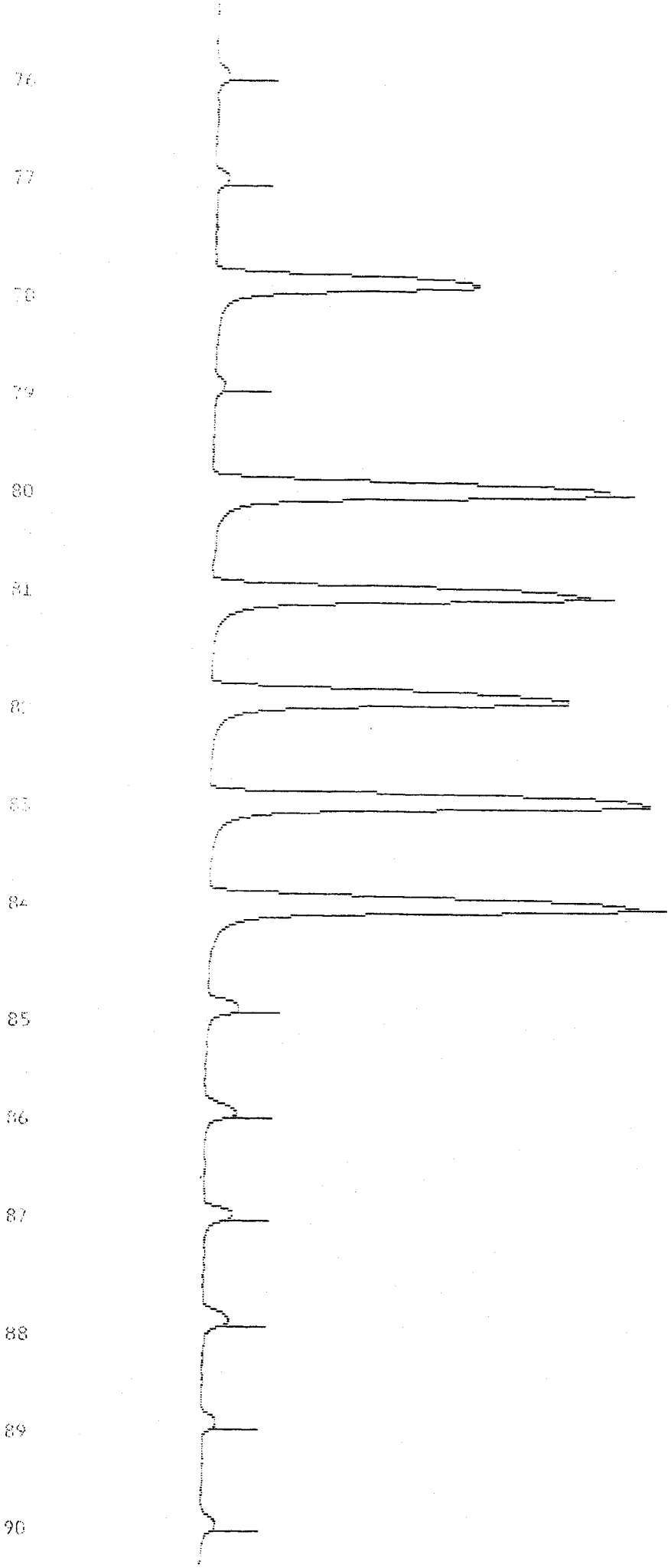
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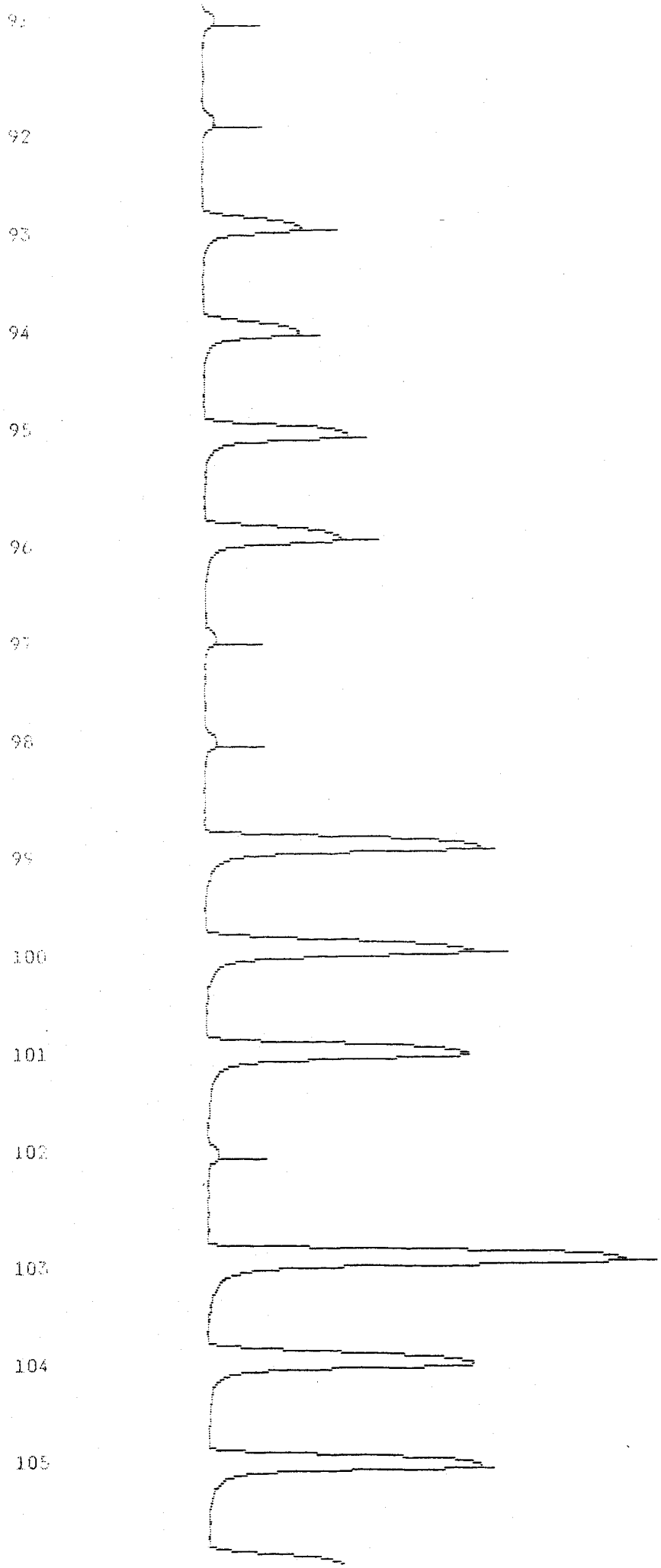
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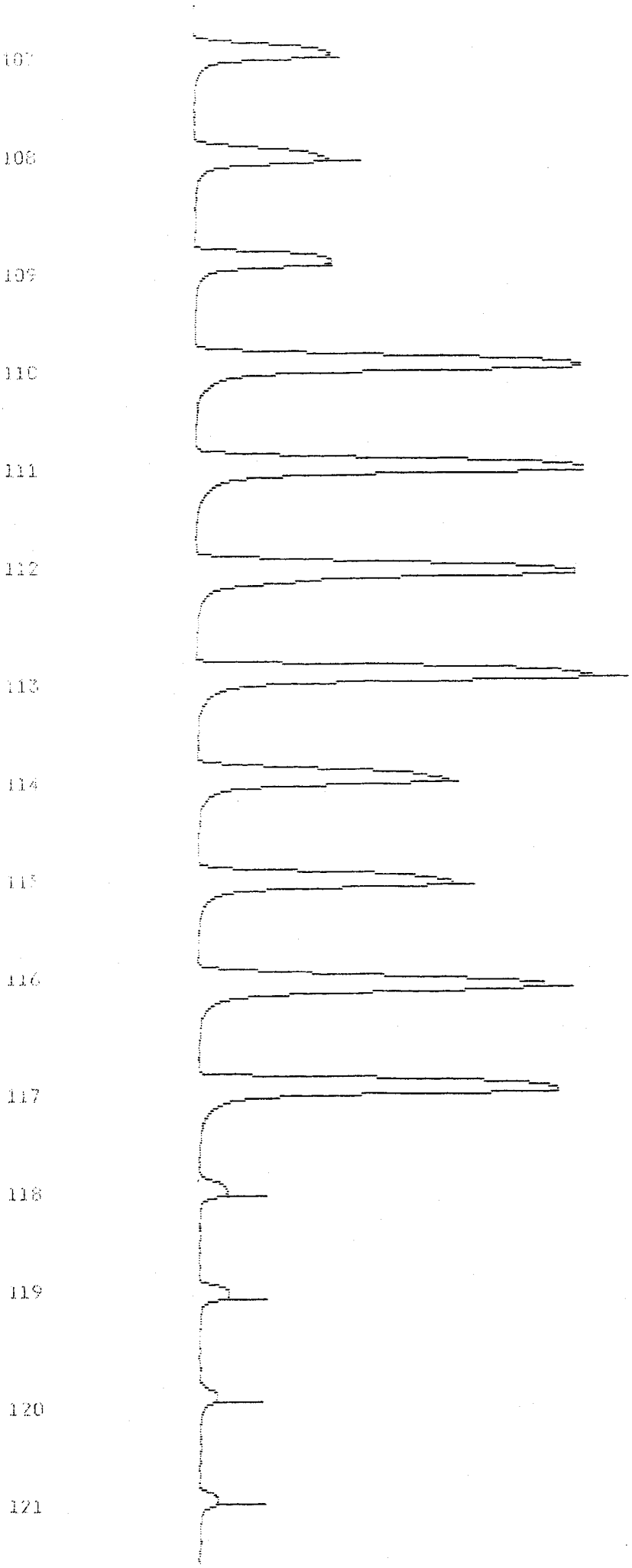
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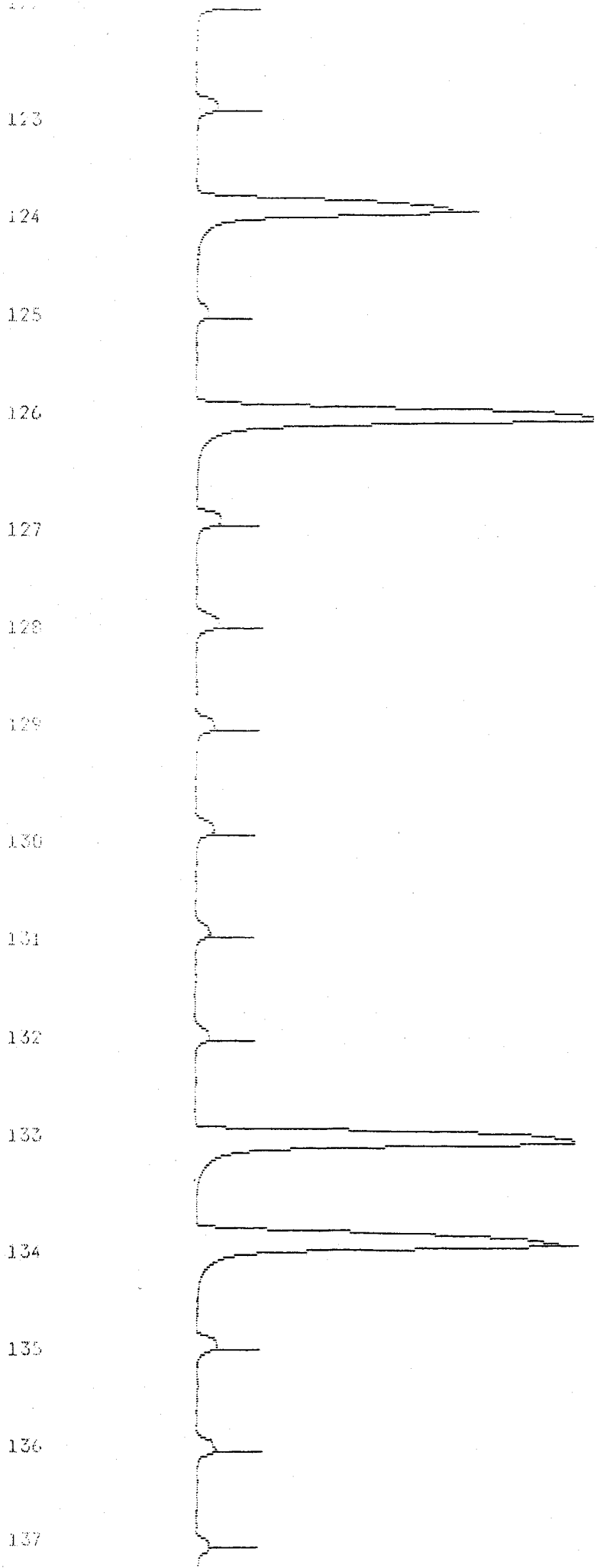
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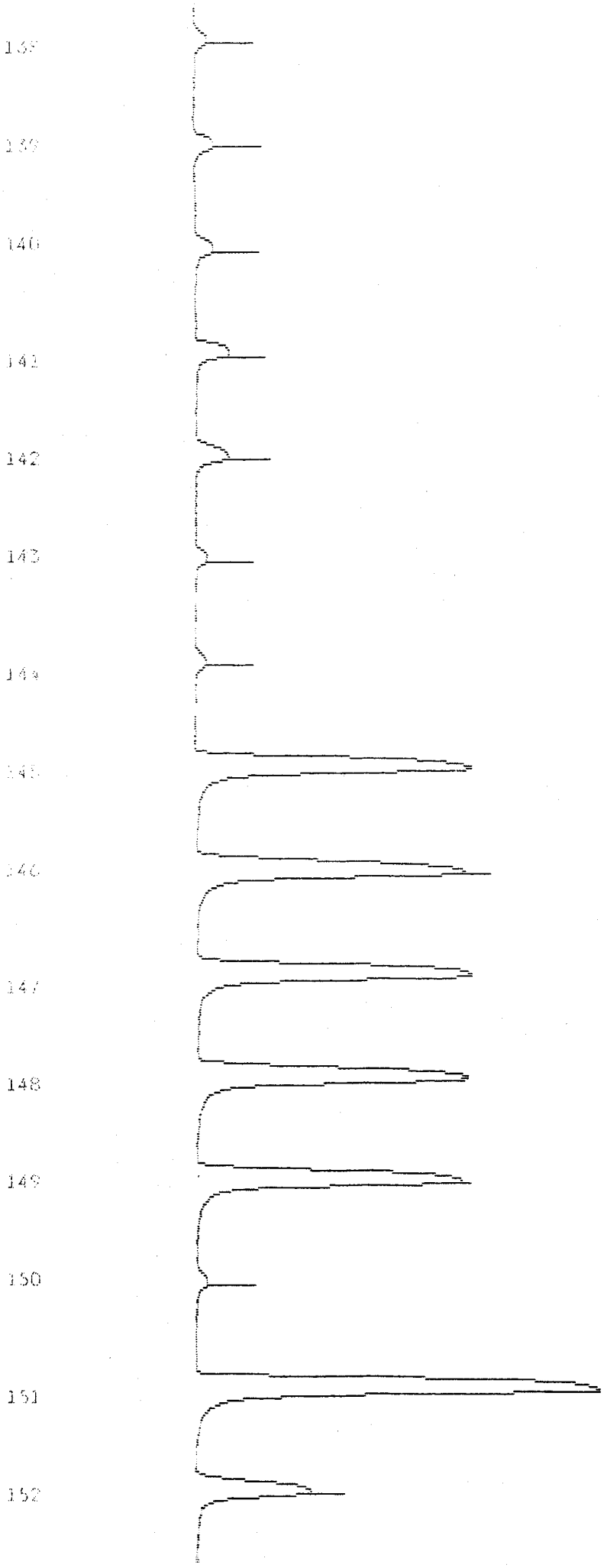
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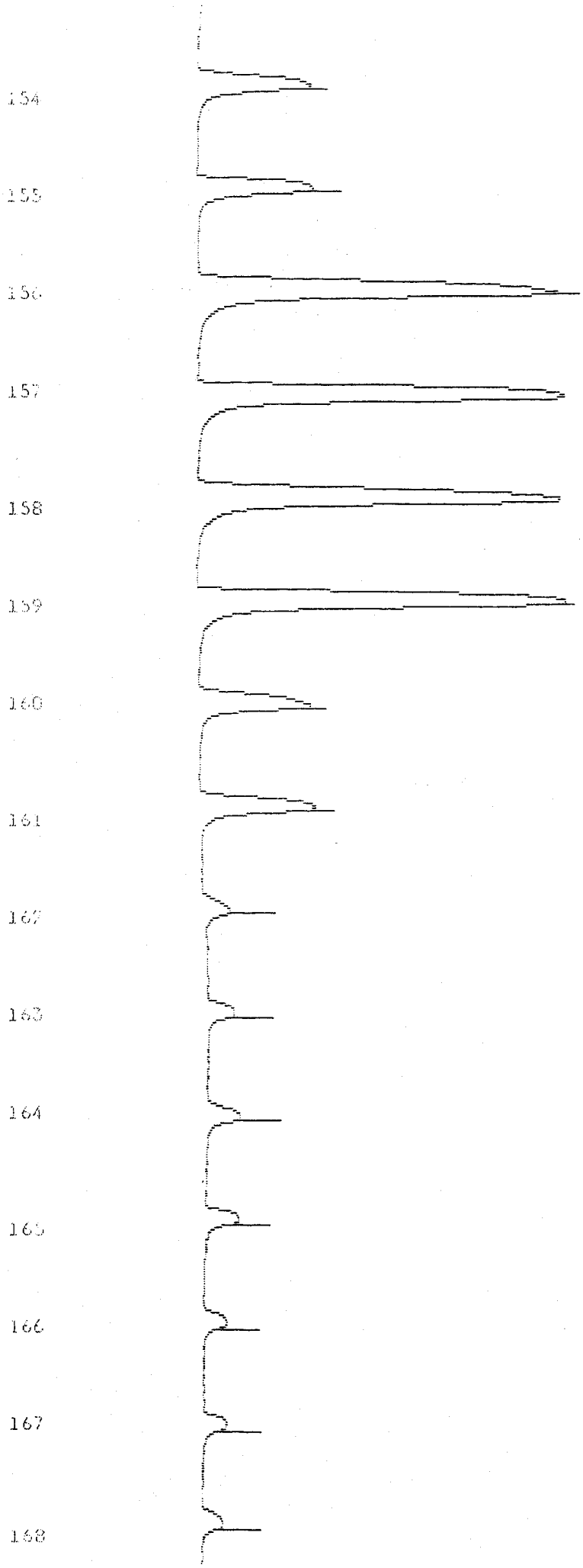
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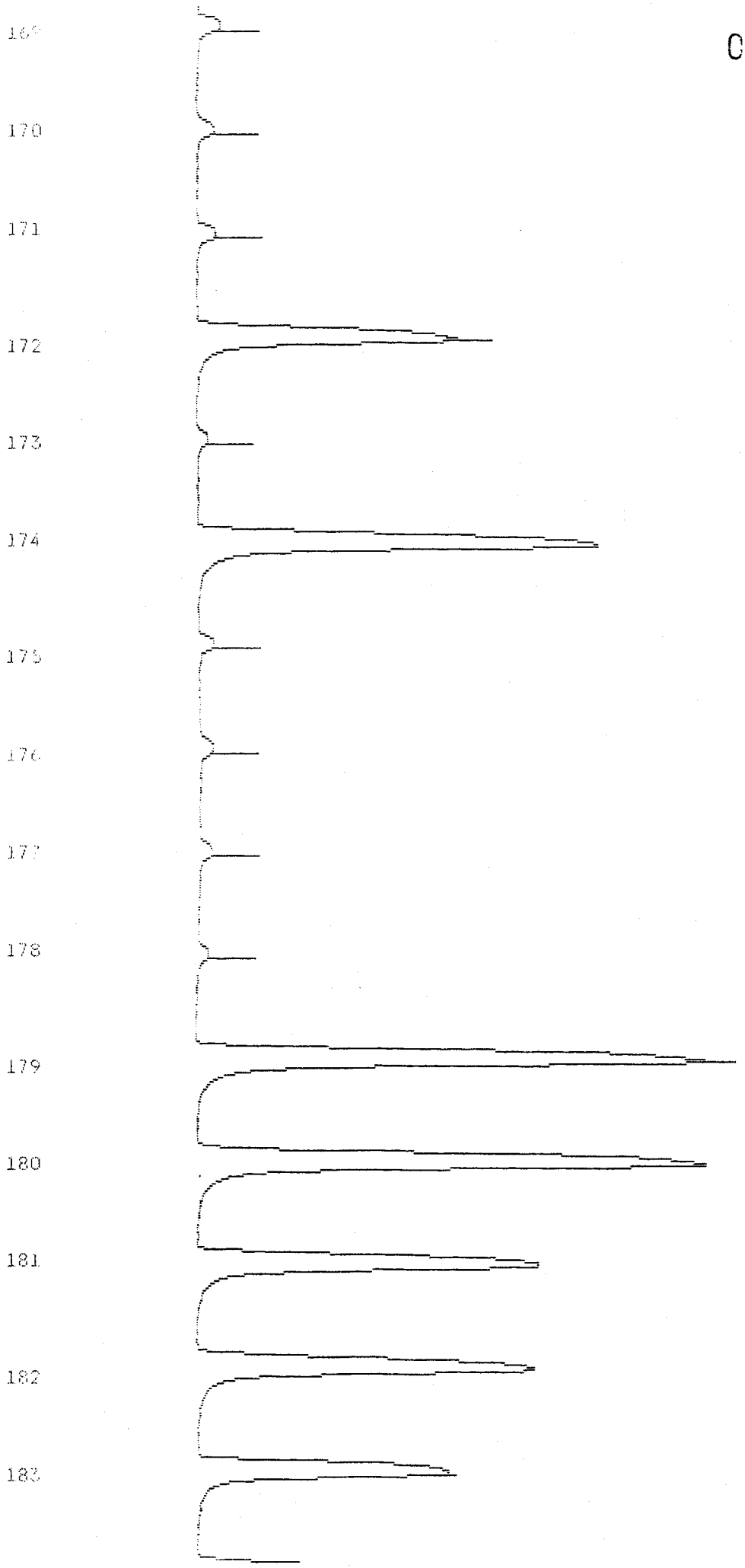
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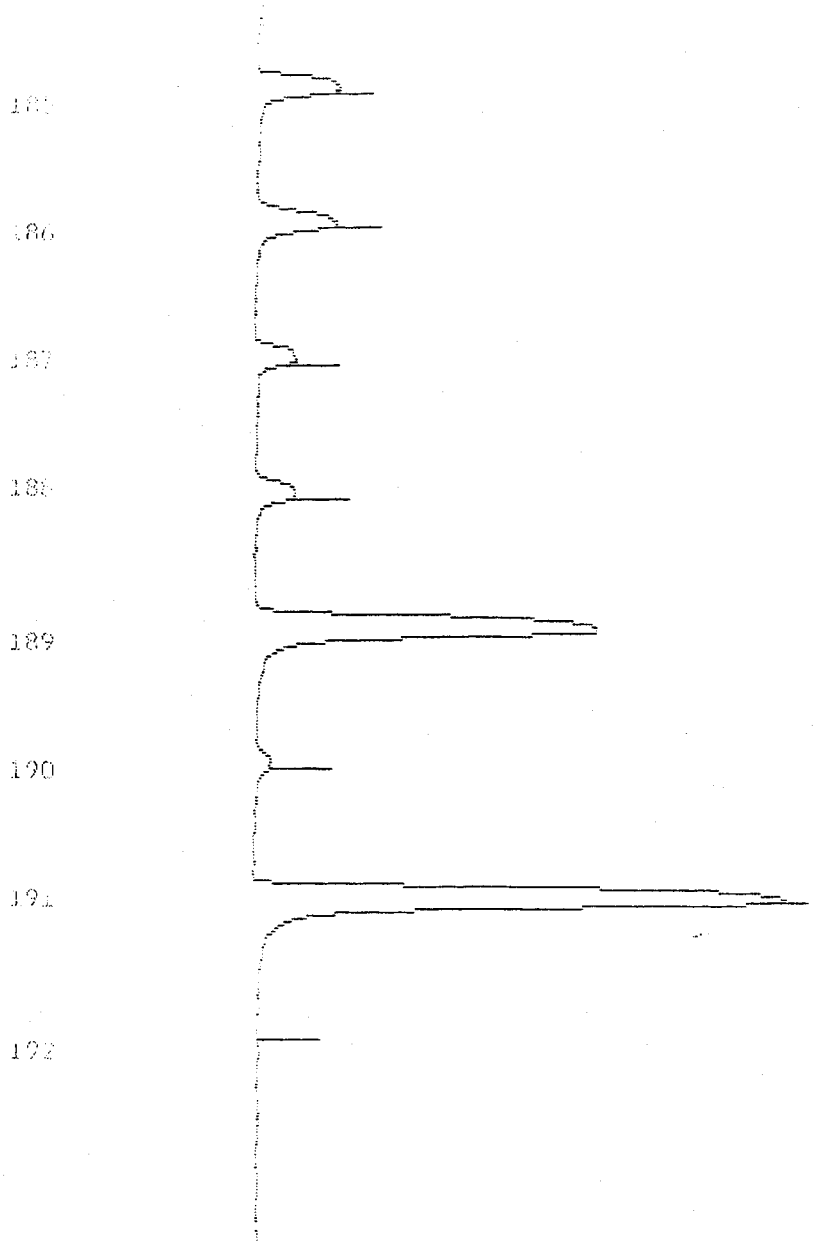
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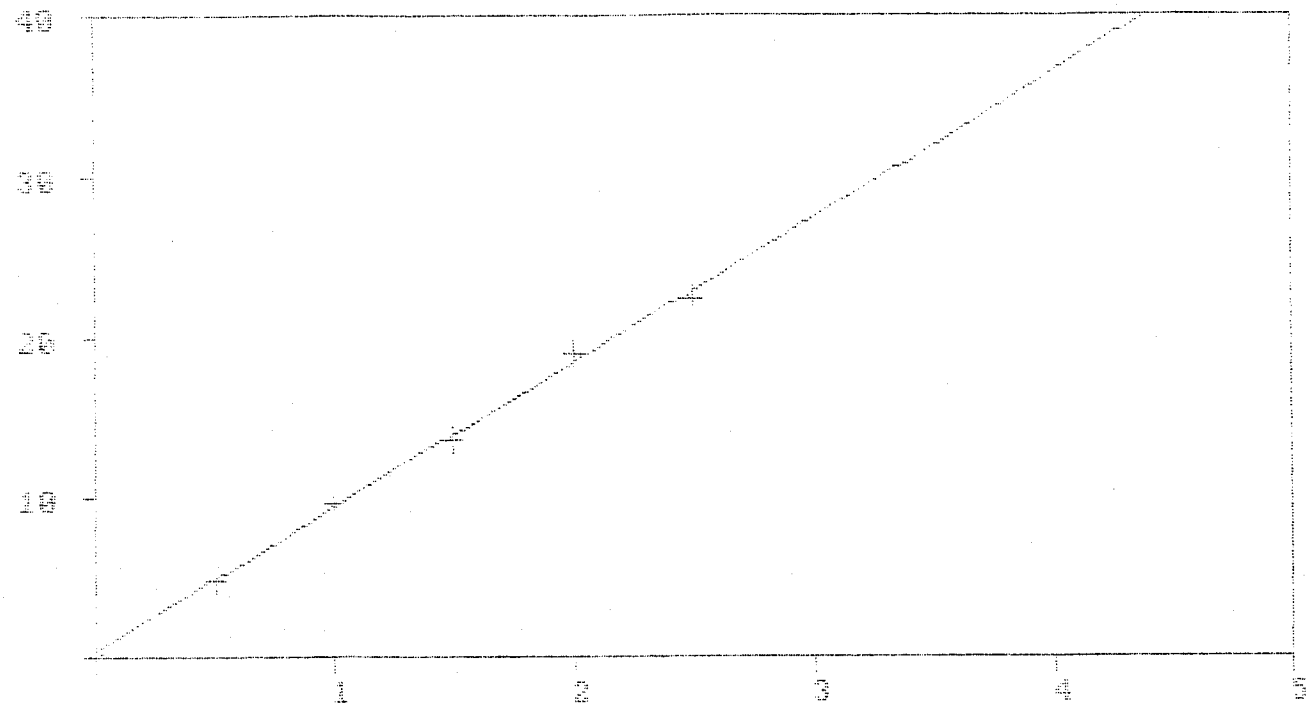
00047

CHANNEL NAME: LDC
RUN NAME: 991009WA



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CALIBRATION ORDER: 1
INTERCEPT = 0.33
SLOPE = 9.024245

CORRELATION= .9991140

CHANNEL NAME: LDC
RUN DATE: 10-09-1999
SAMPLE TABLE NAME: 991009WA
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION (ppb)	LF
1	PRIMER	1	1	14.5	1.571	s
2	DUMMY	1	1	0.2	-0.013	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 53128	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	95%
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	
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26	51662	10	1	14.2	1.545	14.389		
27	51662	10	1	14.3		14.417		
28	51663	10	1	15.4	1.532	14.989		
29	51663	10	1	14.9		16.140		
30	51664	1	1	0.0	<0.01	-0.034	I	
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	I	
36	53129 A	1	1	0.2		-0.010	I	
37	53129 B	1	1	0.0	<0.01	-0.034	I	
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	I	
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	I	
52	BL1009-2GFL	1	1	0.0		-0.037	I	
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	I	
72	53143 C	1	1	0.0	<0.01	-0.031	I	
73	53143 C	1	1	0.0		-0.031	I	
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	I	
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	I	
90	53685 B	1	1	0.2		-0.019	I	

0.00148

92	53685 C	1	1	0.9		-0.031	s	
93	53690	1	1	3.6	0.0290	0.499		
94	53690	1	1	2.9		0.488		
95	53691	1	1	4.6	0.0460	0.472		
96	53691	1	1	4.3		0.440		
97	BL1009-3GFL 42245,	1	1	0.0	<0.01	-0.031	I	
98	BL1009-3GFL 51448	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.	
132	51460	10	1	0.1		-0.232	ON 99/10/11.	
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,	1	1	0.0	<0.01	-0.031	I	
144	BL1009-4GFL 43188	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	422660	1	1	3.6	0.037	0.361		
155	422660	1	1	3.7		0.375		

158	42266B3	1	1	12.3	0.134	1.230	97%
159	42266B3	1	1	12.1		1.213	
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	1.5	0.016	0.161	
186	43225	1	1	1.7		0.153	
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

00050

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
051451	TRC-LO	BP-OHM-1-Ia-2	Mercury -	PV	2.239						99/10/10	2GFT	99/10/10	MG02	40.	26.	
051452	TRC-LO	BP-OHM-1-Ib-2	Mercury -	PV	1.205						99/10/10	2GFT	99/10/10	MG02	40.	26.	
051453	TRC-LO	BP-OHM-1-Ia-3	Mercury -	PV	1.151						99/10/10	2GFT	99/10/10	MG02	39.	26.	
BL1010	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.100	100.	0.099	99.	99/10/10	2GFT	99/10/10	MG02	$$$	$$$	
051454	TRC-LO	BP-OHM-1-Ib-3	Mercury -	PV	1.237	1.236	2.208	97.	2.209	97.	99/10/10	3GFT	99/10/10	MG02	39.	26.	*PDS*
051455	TRC-LO	BP-OHM-1-Ia-4	Mercury -	PV	1.059						99/10/10	3GFT	99/10/10	MG02	39.	26.	
051456	TRC-LO	BP-OHM-1-Ib-4	Mercury -	PV	1.450						99/10/10	3GFT	99/10/10	MG02	39.	26.	
051457	TRC-LO	BP-OHM-1-Ia-5	Mercury -	PV	0.665						99/10/10	3GFT	99/10/10	MG02	38.	26.	
051458	TRC-LO	BP-OHM-1-Ib-5	Mercury -	PV	-0.100						99/10/10	3GFT	99/10/10	MG02	38.	26.	

-J Tests for OHFLTB with an MDL of 0.010 ug Validated By CMH Control

C0051

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 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	1GF		
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						
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	2GF		
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: 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						
13						
14						
15						
16						
17						
18						
19						
20						
21		1/2	47498			
22		↓	"			
23			51451			
24		↓	"			
25			51452			
26			"			
27			51453			
28			"			
29			BL 1010	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.

(3)

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.10 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						
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						
54						
55						
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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.

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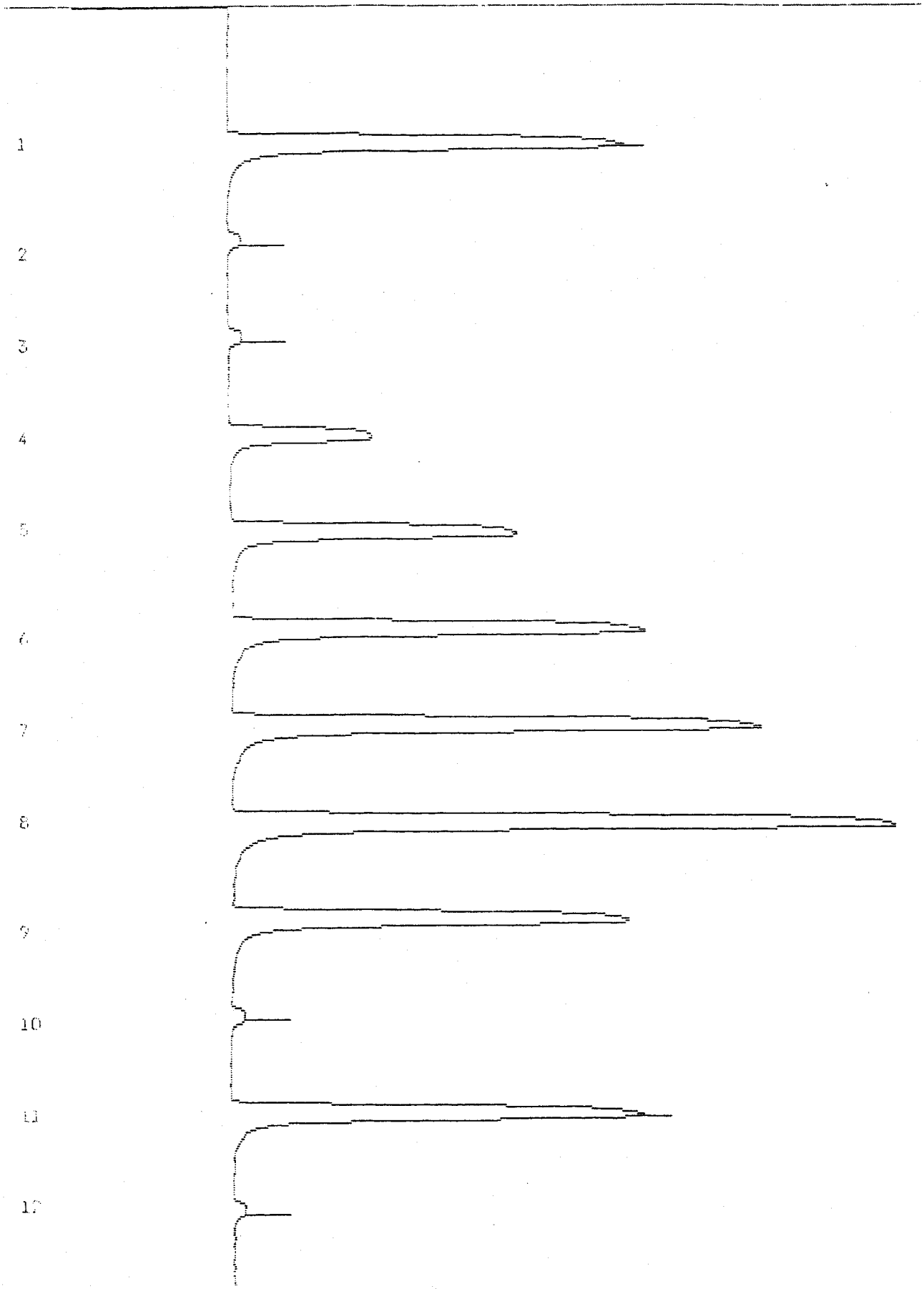

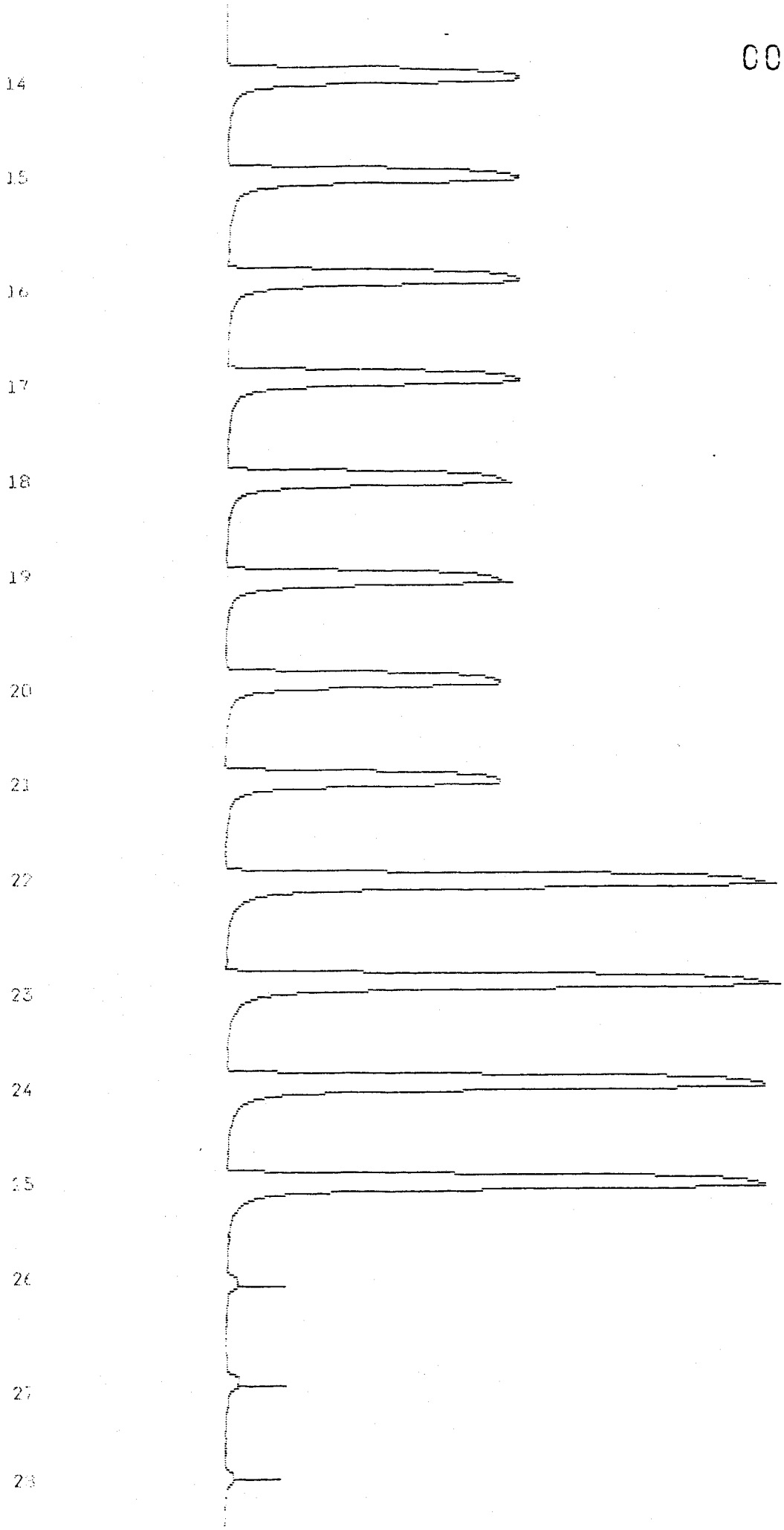
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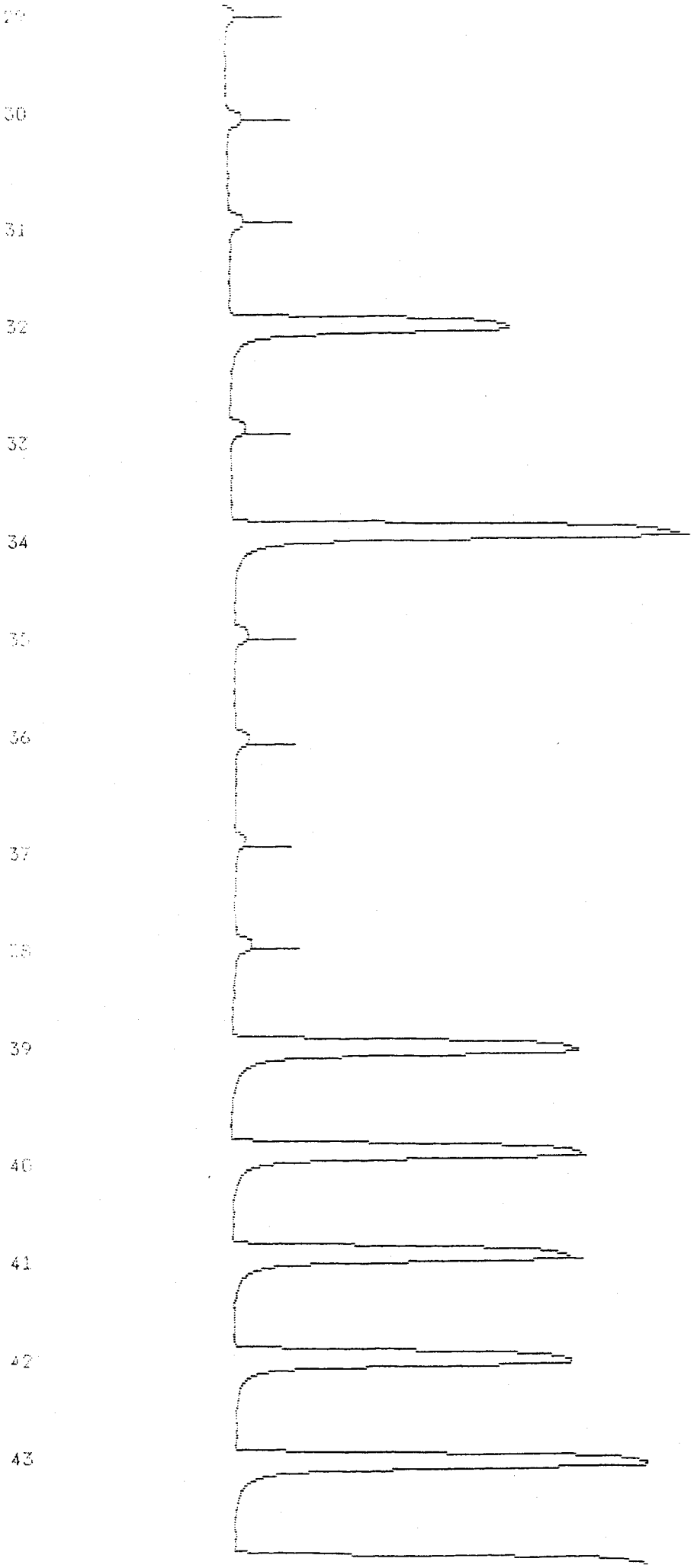
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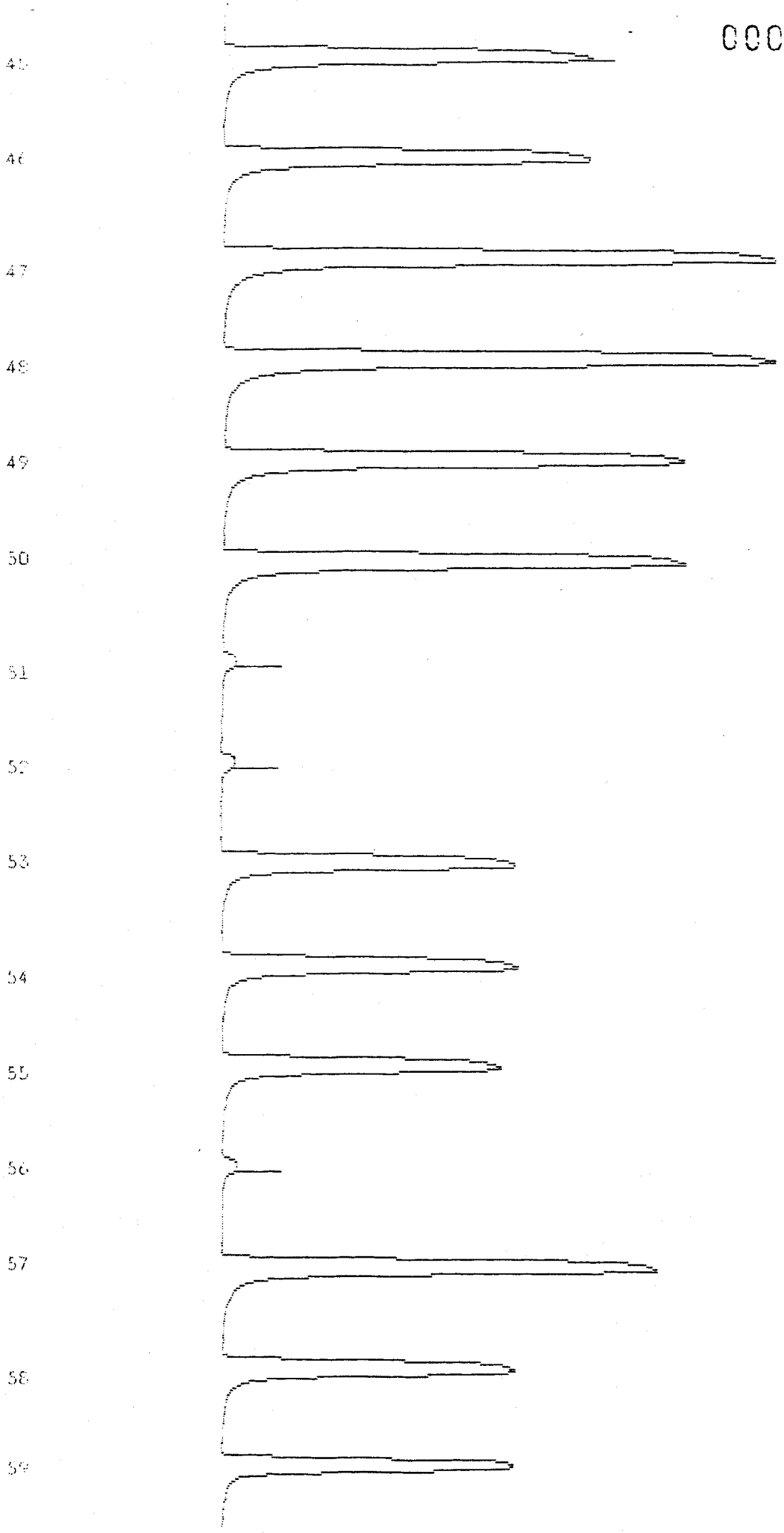
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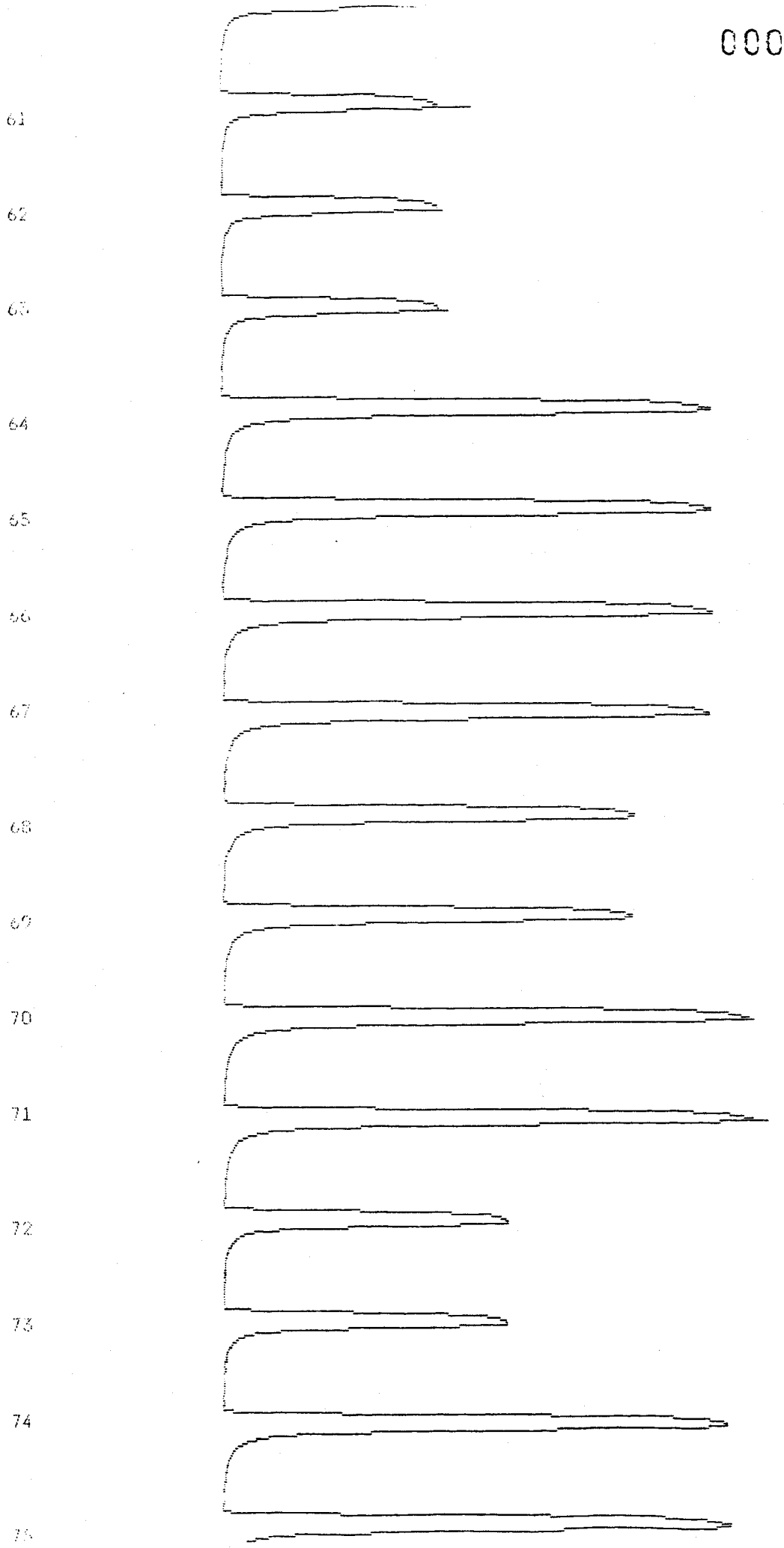
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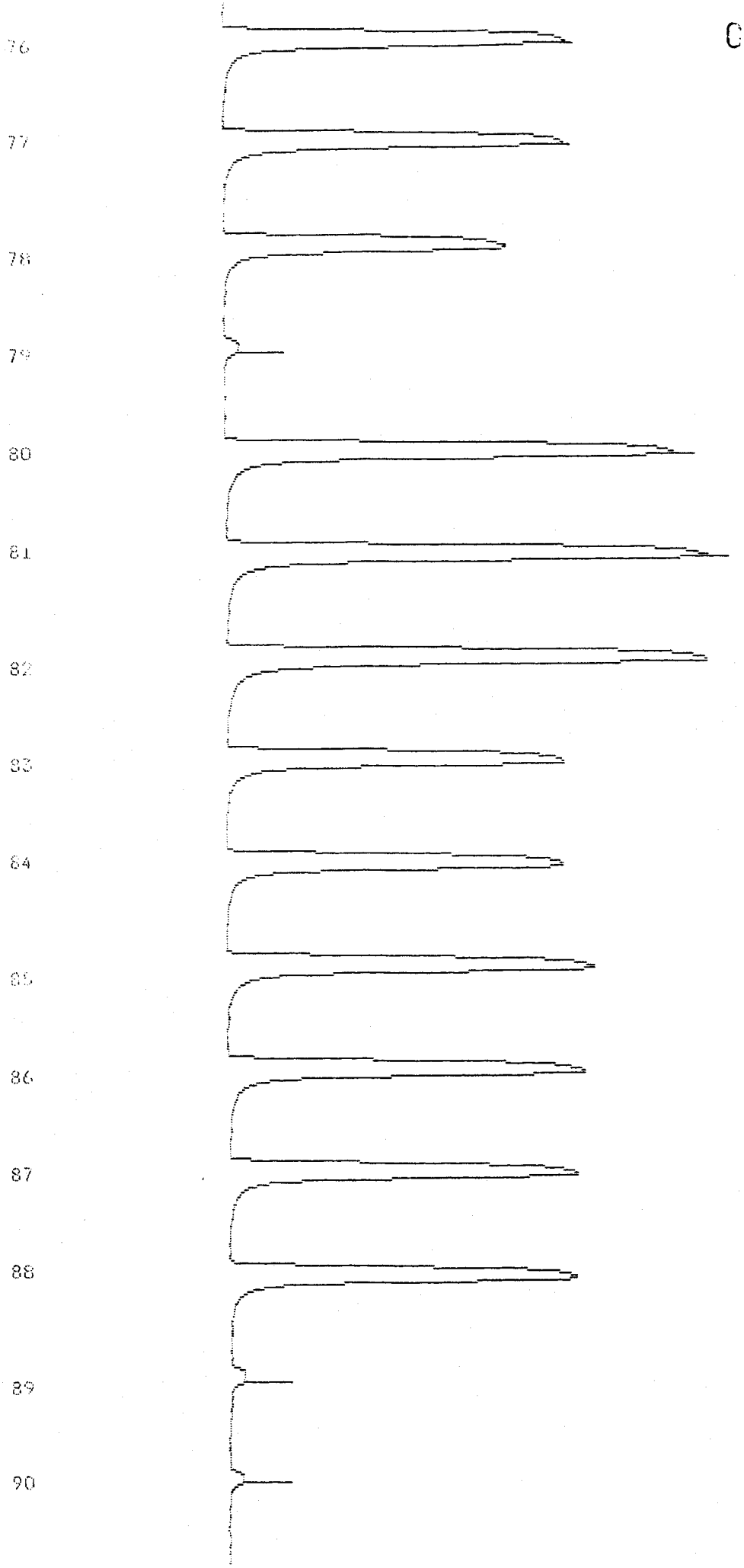
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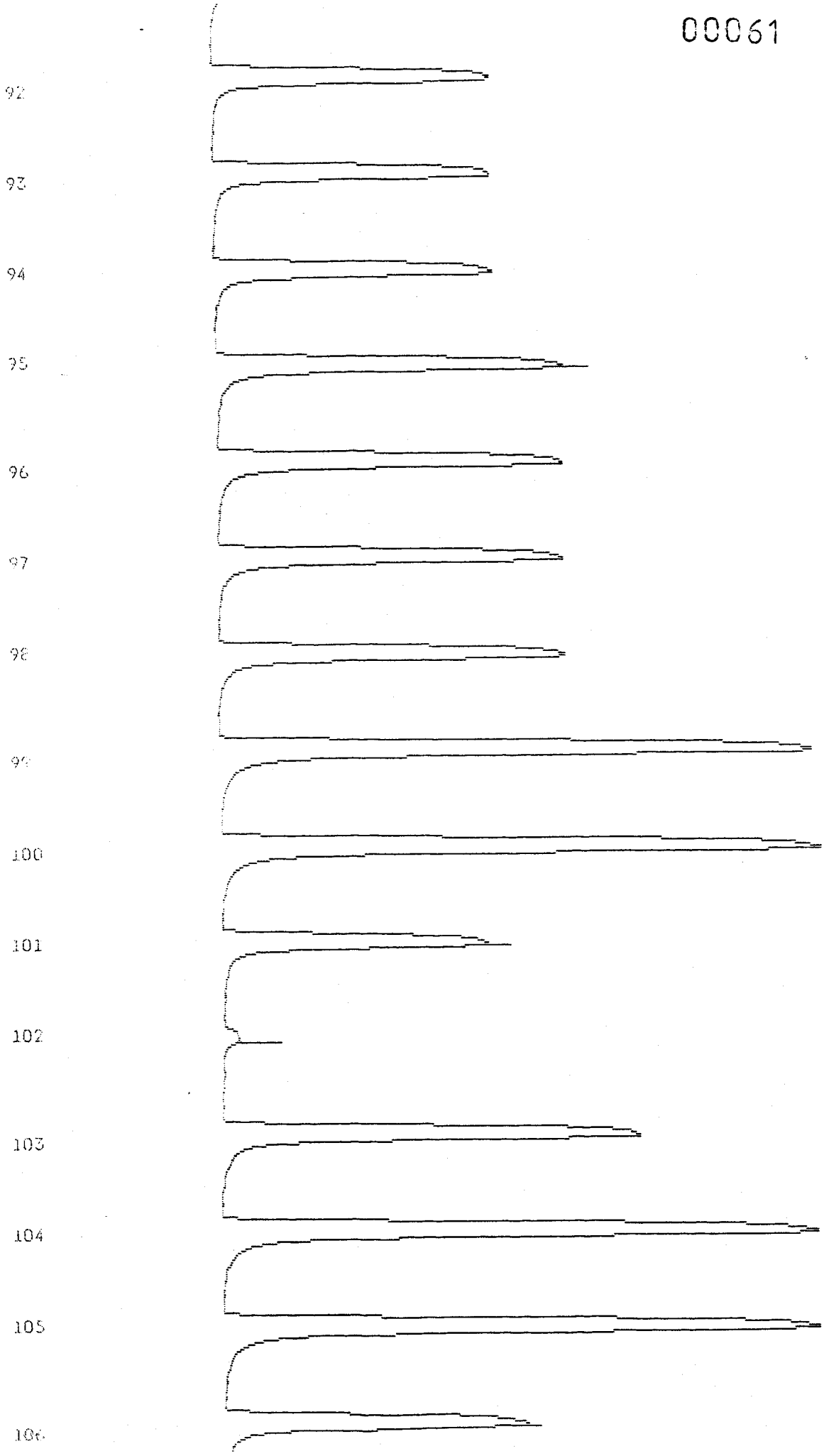
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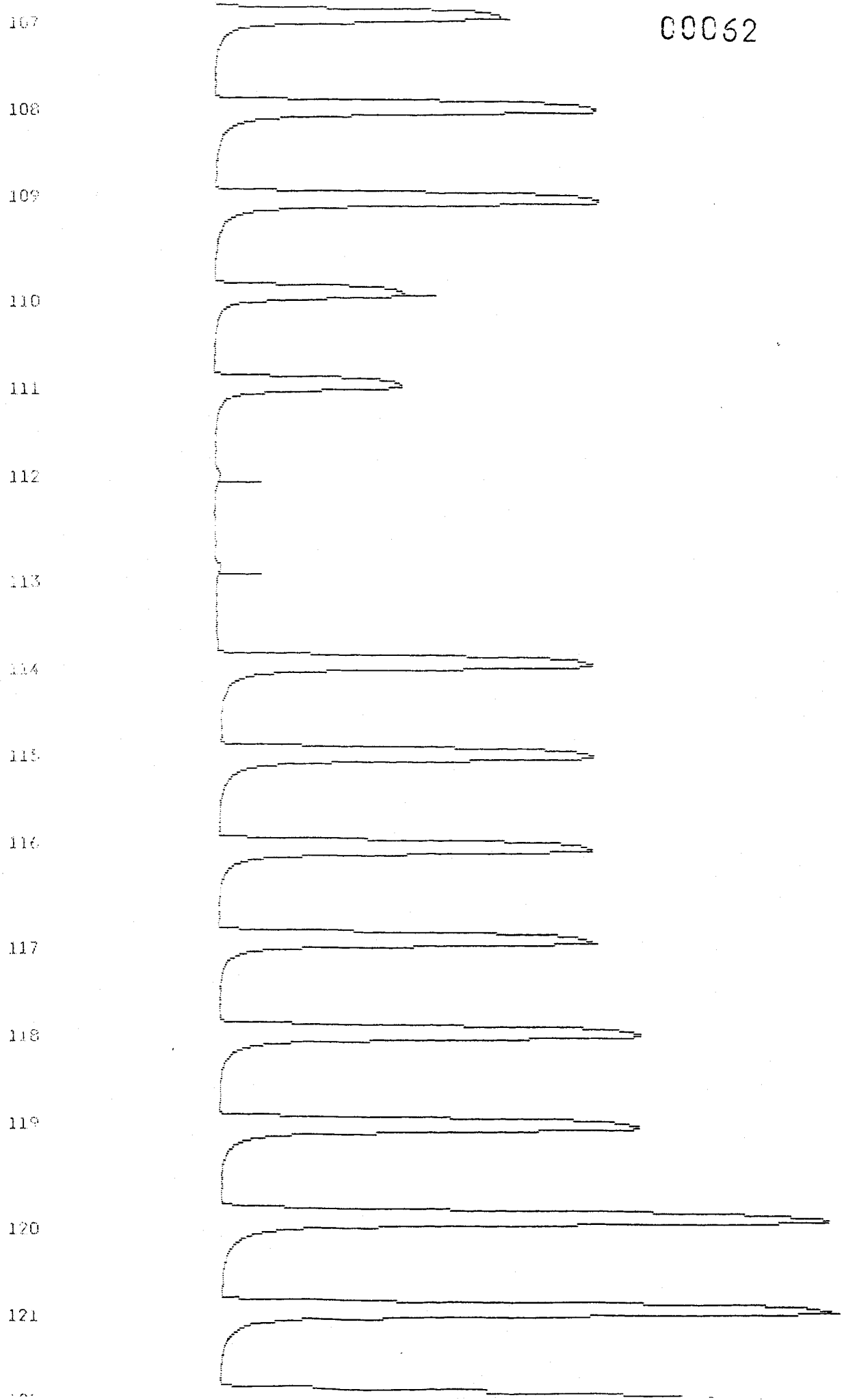
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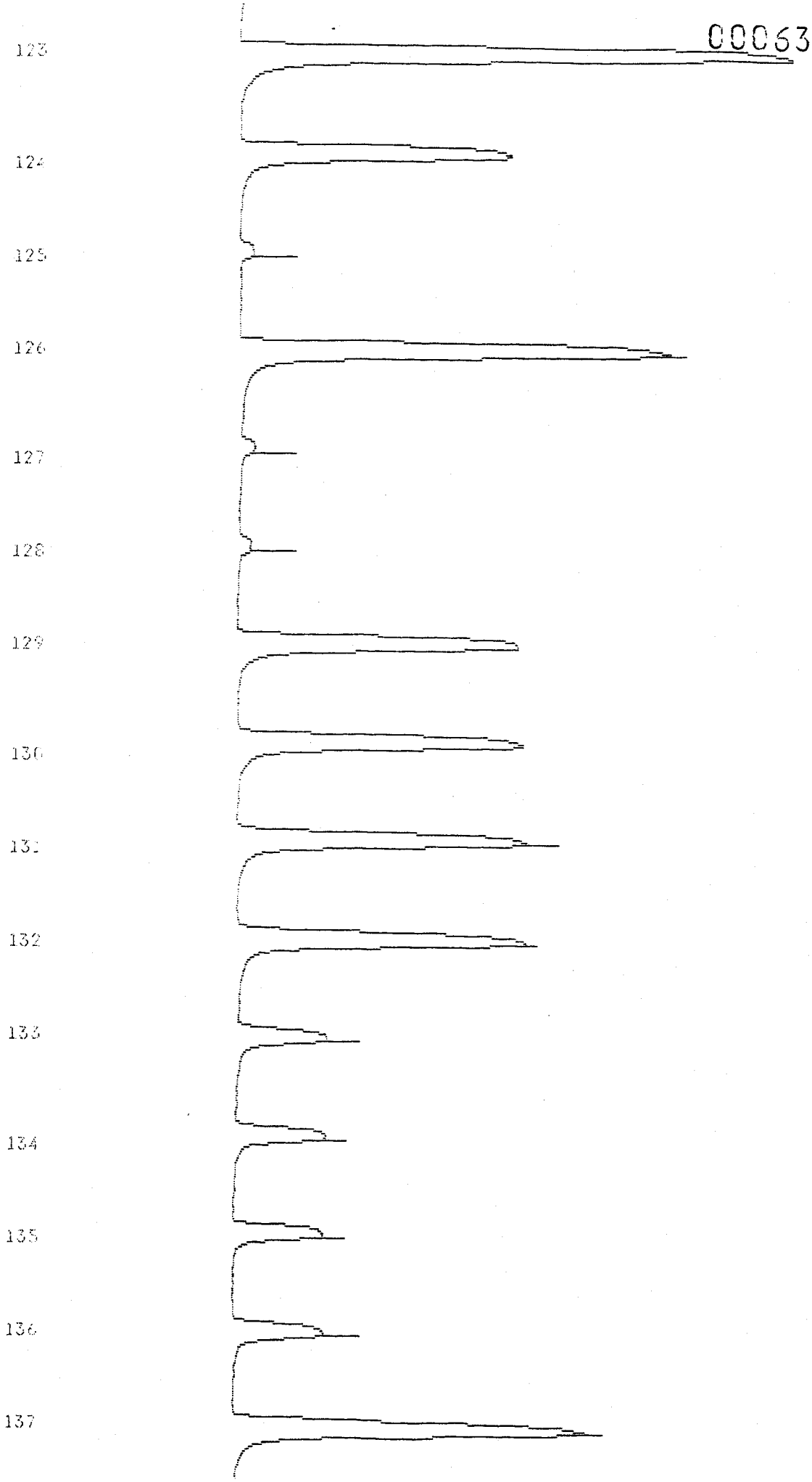
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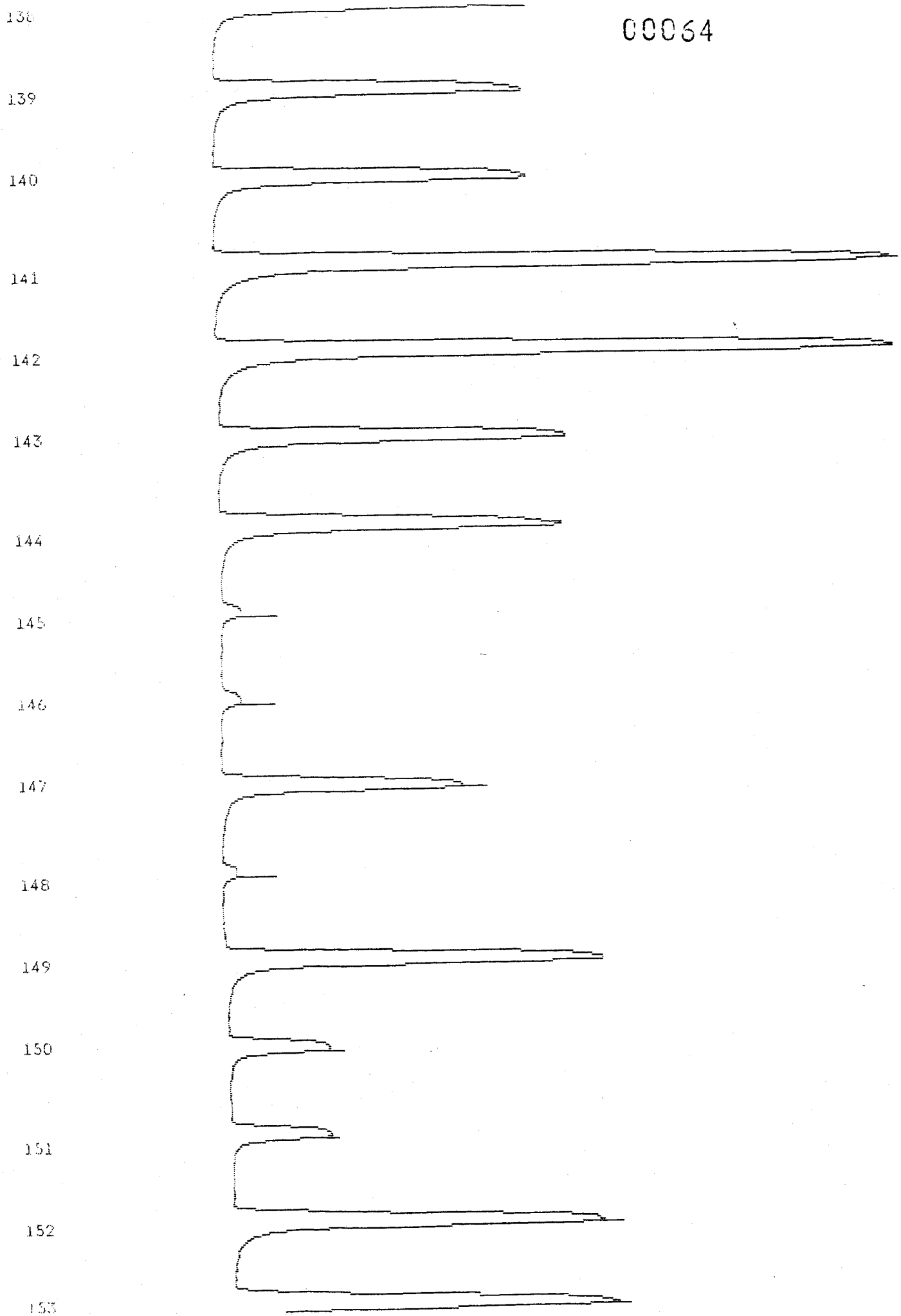
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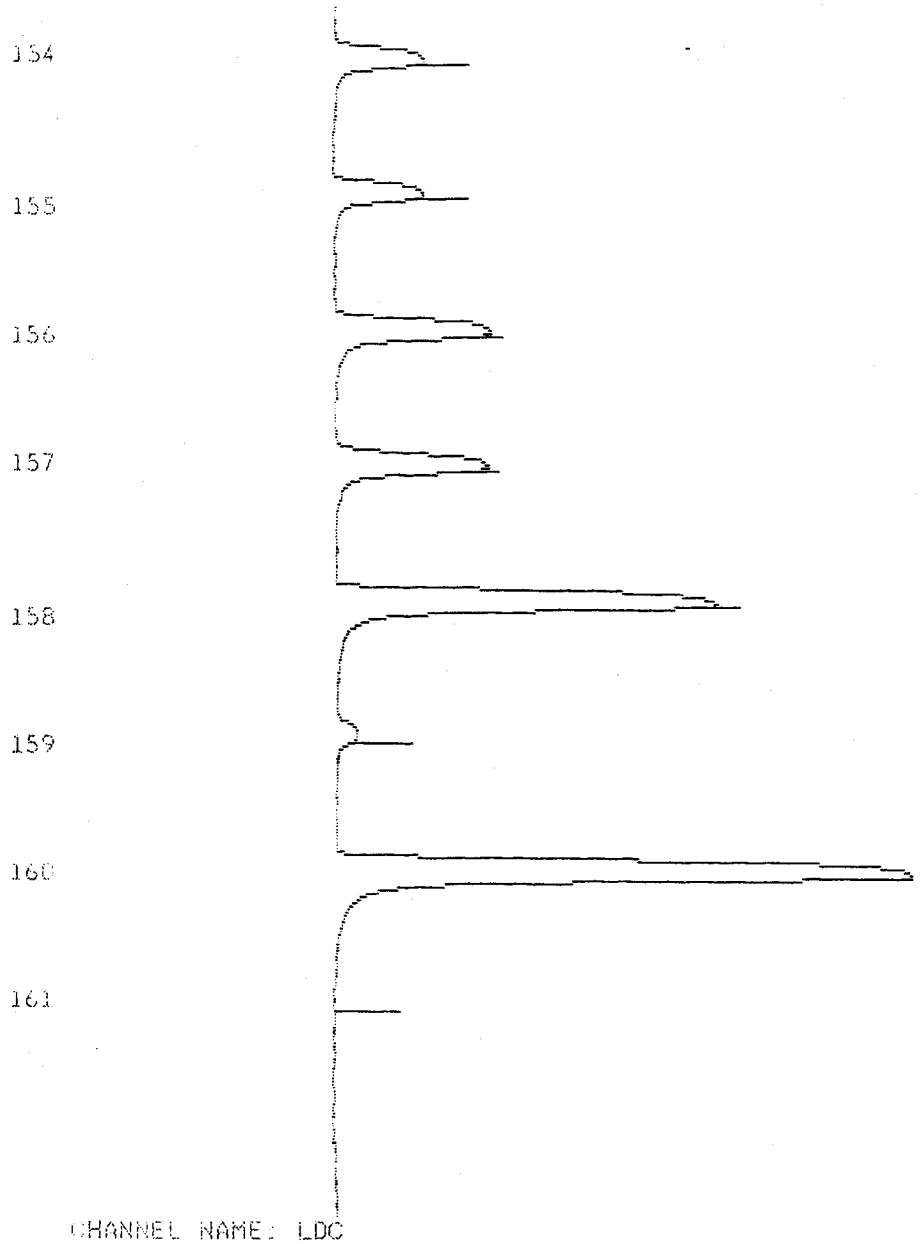
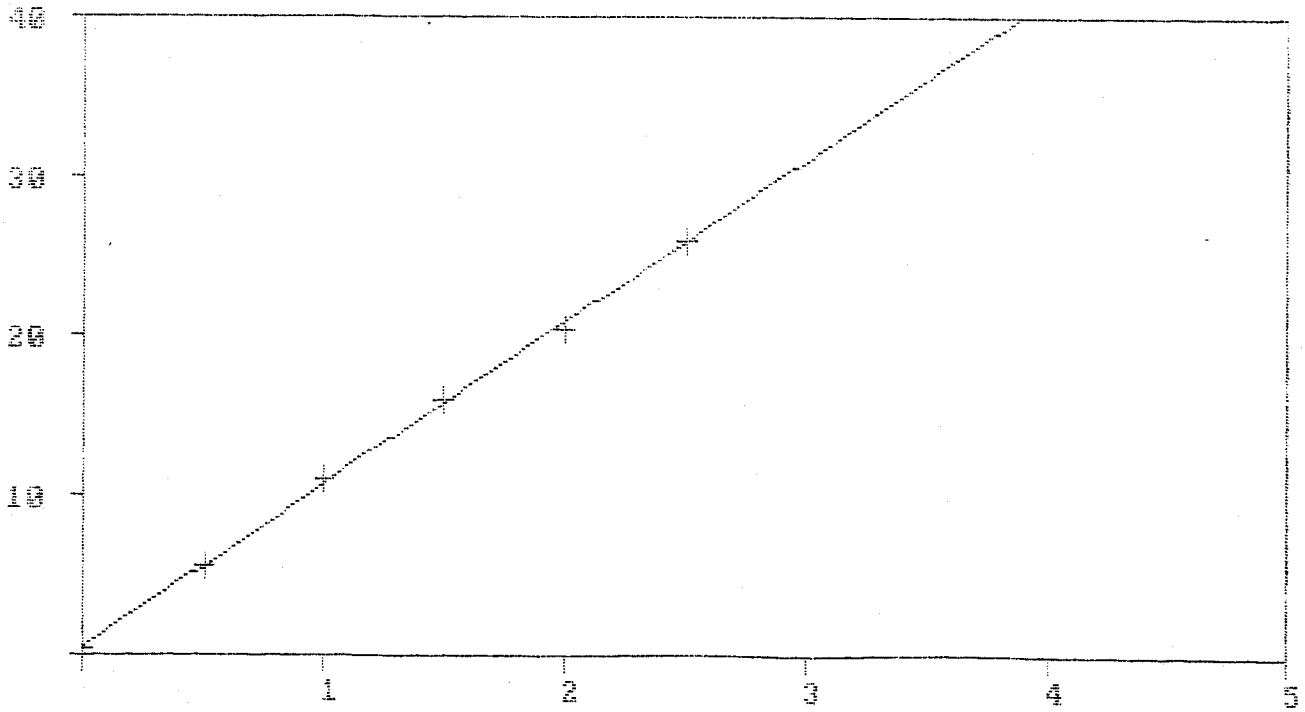


CHANNEL NAME: LDC
RUN NAME: 991010WA



CORRELATION: .9996244

00066

CHANNEL NAME: LDC
RUN DATE: 10-11-1999
SAMPLE TABLE NAME: 991010WA
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION (ppb)	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	NS @ 9.466	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	7.855	
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]		0.011	b	
57	D4	1	1	16.0	00067	[illegible]	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	BL1010-3GFT	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	14.9	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	53139	4	1	20.6	7.927	7.912		
123	53135	4	1	20.7		5.841		
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		0.982		
131	BL1010DS	1	1	10.6	0.099	0.993	99%	
132	BL1010DS	1	1	10.6		[illegible]		
133	53136	10	1	2.8		[illegible]		RERUN ON 5 x DIL ON 99/10/11. MB
134	53136	10	1	[illegible]		[illegible]		
135	53136D	10	1	[illegible]		[illegible]		
136	53136D	10	1	[illegible]		[illegible]		
137	53136S	10		[illegible]		[illegible]		
138	53136S	[illegible]				[illegible]		
139	53136DS	[illegible]				[illegible]		
140	53136DS	[illegible]		[illegible]		[illegible]		
141	[illegible]	[illegible]		[illegible]		[illegible]	R	RERUN ON 10 x DIL. 99/10/11 MB
142	[illegible]	[illegible]		[illegible]		11.246	R	
[illegible]	[illegible]	[illegible]		14.5	2.758	2.755		
[illegible]	[illegible]	[illegible]	1	14.6		2.760		
[illegible]	[illegible]	10	1	0.2		-0.272	R	RERUN ON 1 x DIL
[illegible]	[illegible]	10	1	0.2		-0.296	R	
[illegible]	[illegible]	1	1	10.0		0.933	93%	
[illegible]	[illegible]	1	1	0.0		-0.051	b	
[illegible]	D4	1	1	16.0		1.522	d	
[illegible]	[illegible]	2	1	4.1		0.695		RERUN ON 1 x DIL. MB
151	53147	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	

INTERCEPT: 0.52 LINEAR COEF: 10.1685

CORRELATION COEF: 9996244

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
051460	TRC-LO	BP-OHM-1-O-2	Mercury -	PV	0.013						99/10/11	2GFB	99/10/11	MG01	41.	27.	
051462	TRC-LO	BP-OHM-1-O-4	Mercury -	PV	1.442						99/10/11	2GFB	99/10/11	MG01	40.	27.	
051463	TRC-LO	BP-OHM-1-O-5	Mercury -	PV	1.443						99/10/11	2GFB	99/10/11	MG01	39.	27.	
BL1011	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.104	104.	0.103	103.	99/10/11	2GFB	99/10/11	MG01	$$$	$$$	

4 Tests for OHFLT with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00069

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			"			
41			42251			
42			"			
43			42725 a			
44			"			
45			42725 b			
46			"			
47			42725 c			
48			"			
49			42726			
50			"			
51			BL10 "	2GFB		
52			"			
53			BL10" S			
54			"			
55			CCV			
56			B			
57			D4			
58			BL10" 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.

00071

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.11 Run Code: MG01 Matrix: IMP.

nalyst: 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						
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21			43190			
22			"			
23			43191			
24			"			
25			43192			
26			"			
27			43193			
28			"			
29		1/5	53136 DS			
30		↓	"			
31			51460	DH FLT		
32			"	↓		
33		1/10	51462			
34		↓	"			
35			51462			
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						
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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: 10-11-1999 CHART DATE: 10-11-1999
CHART SPEED: 30
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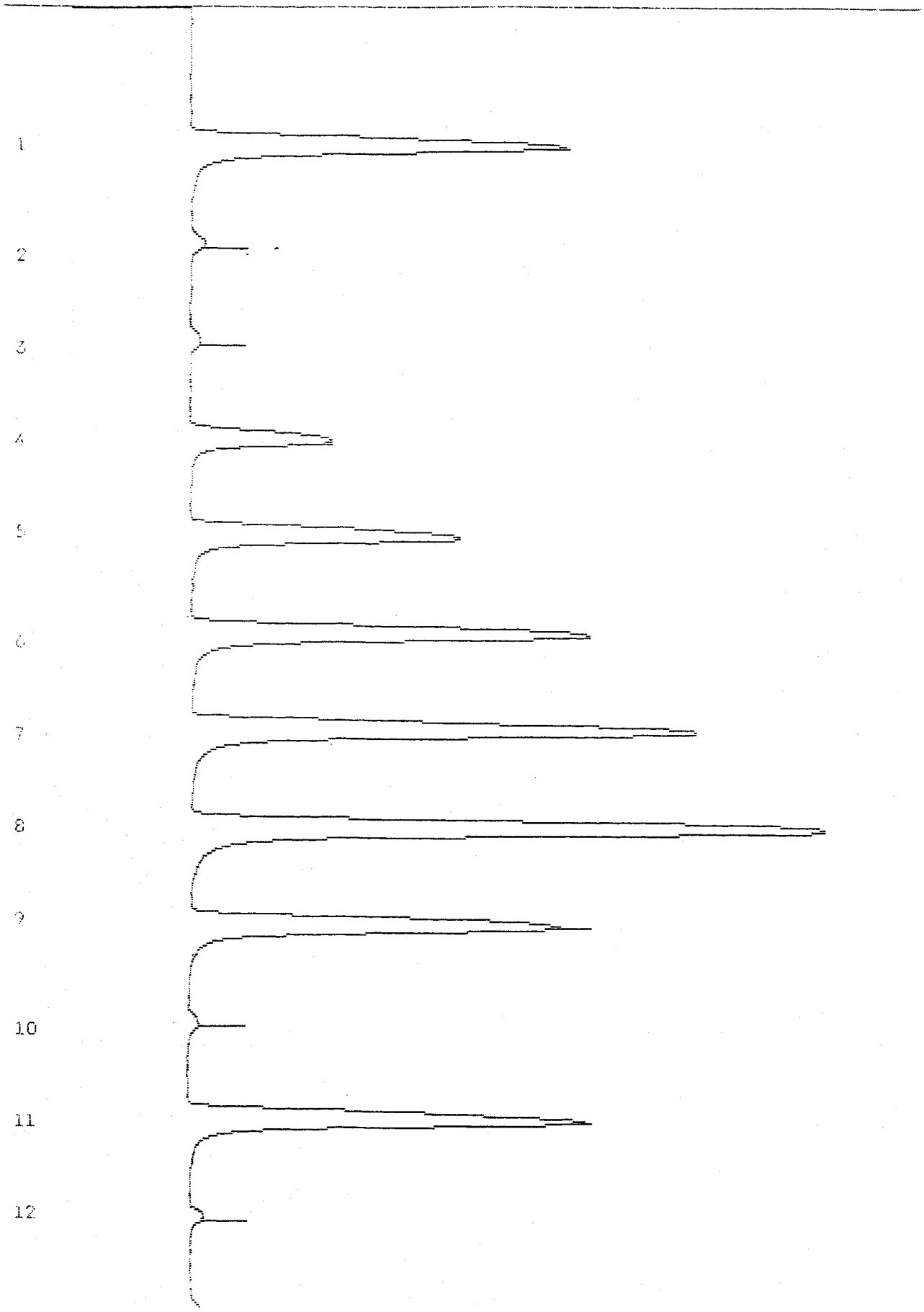

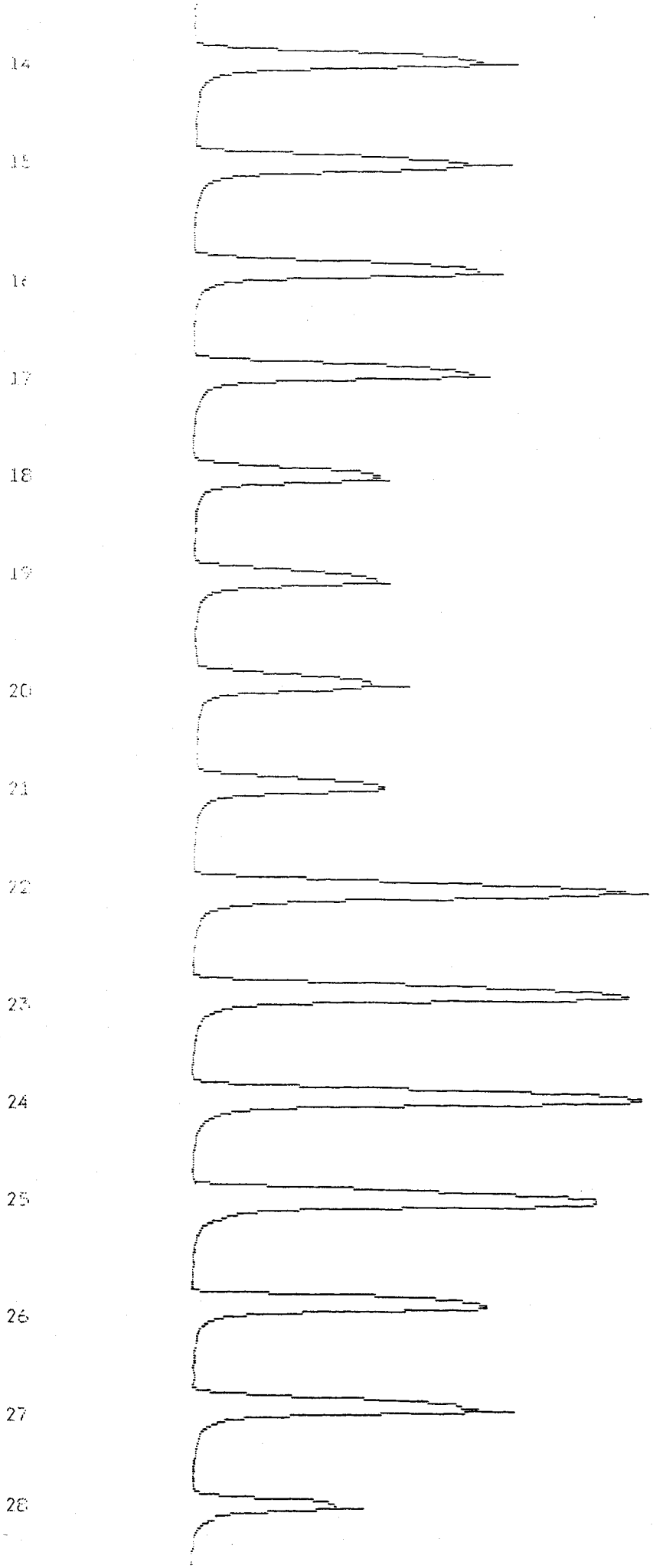
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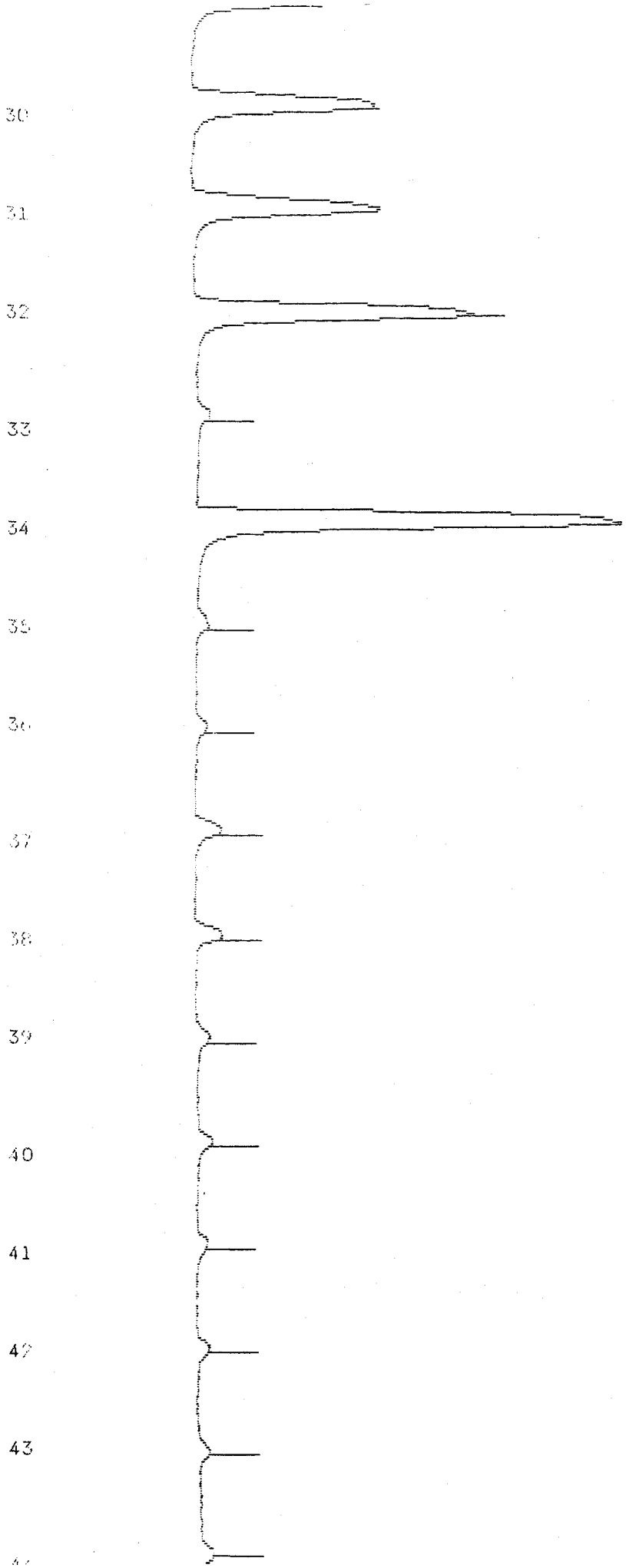
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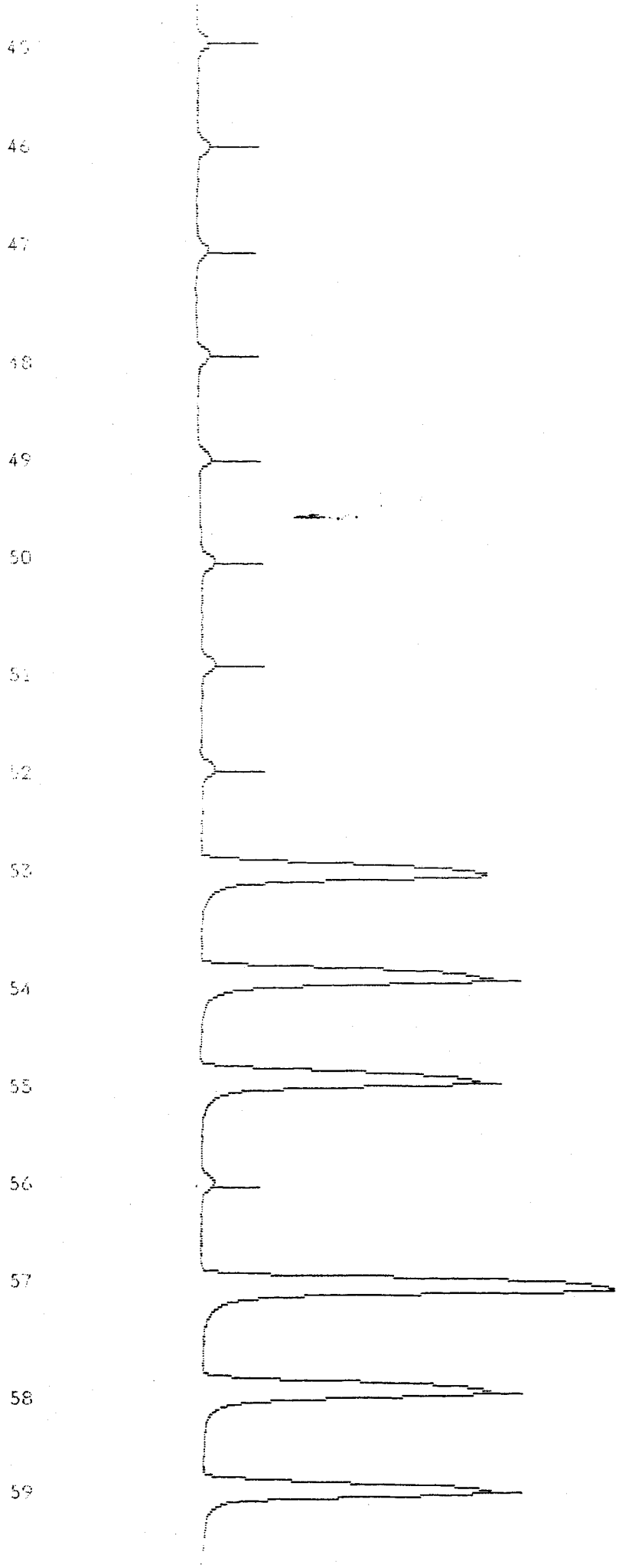
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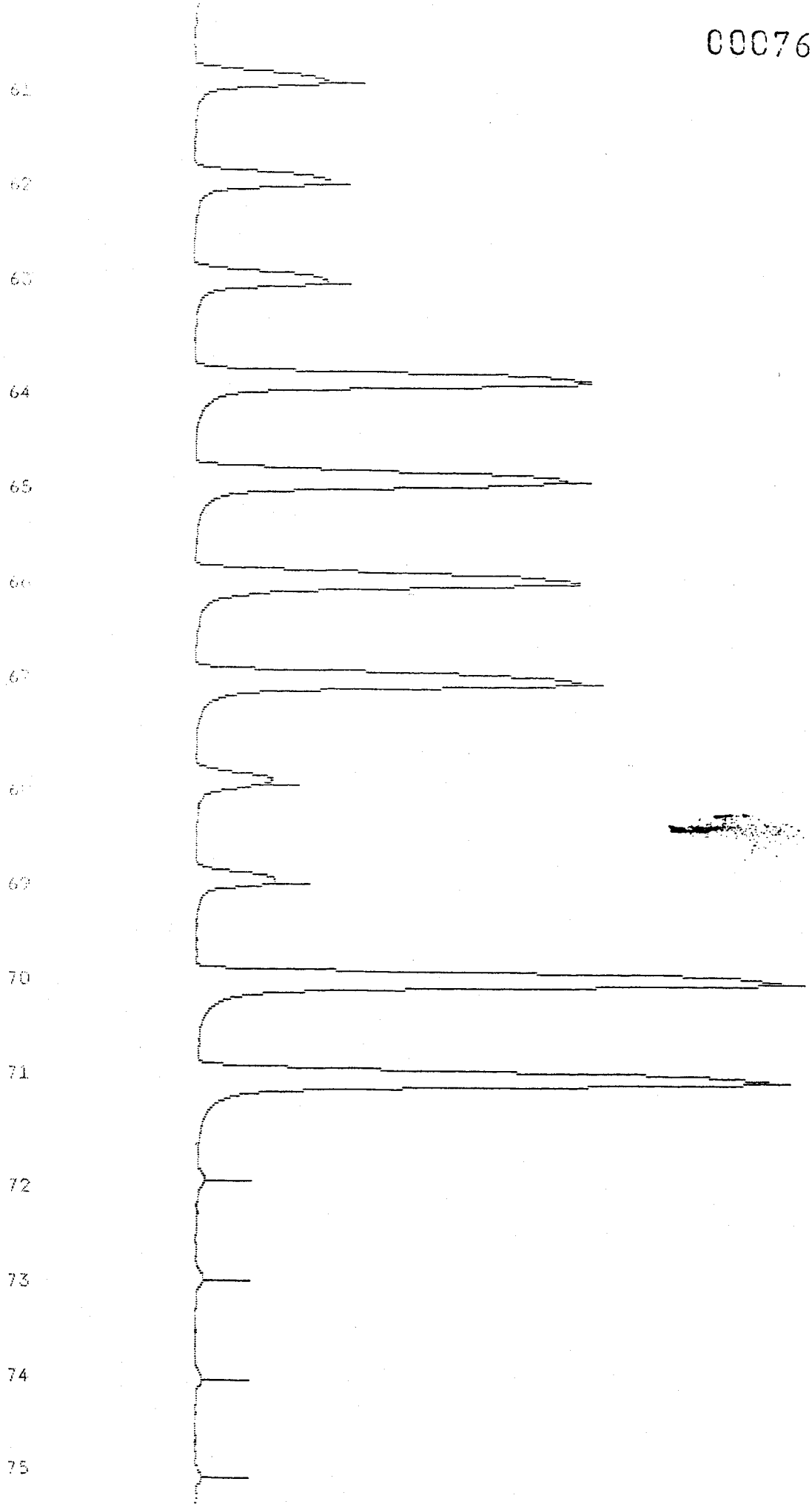
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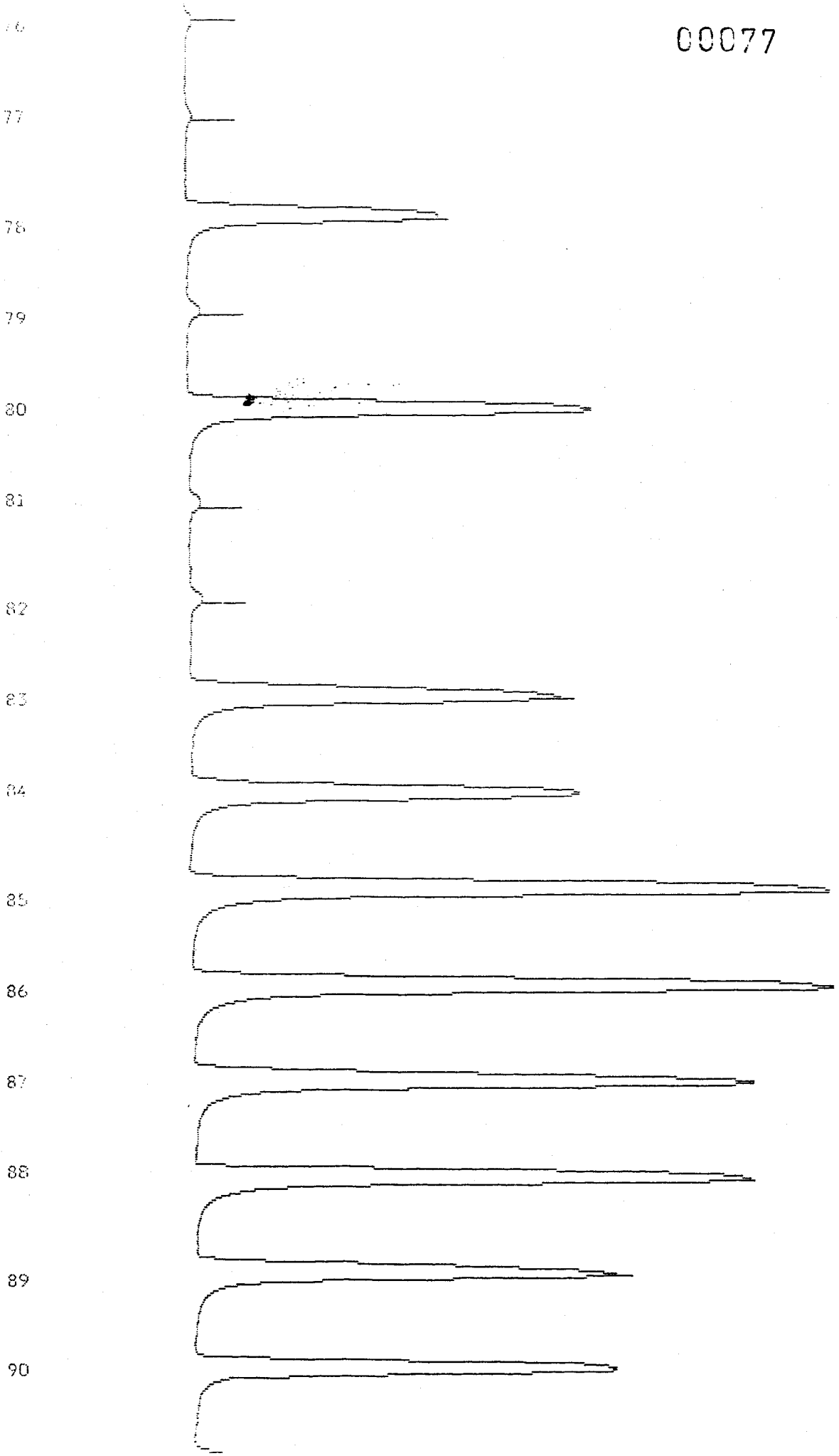
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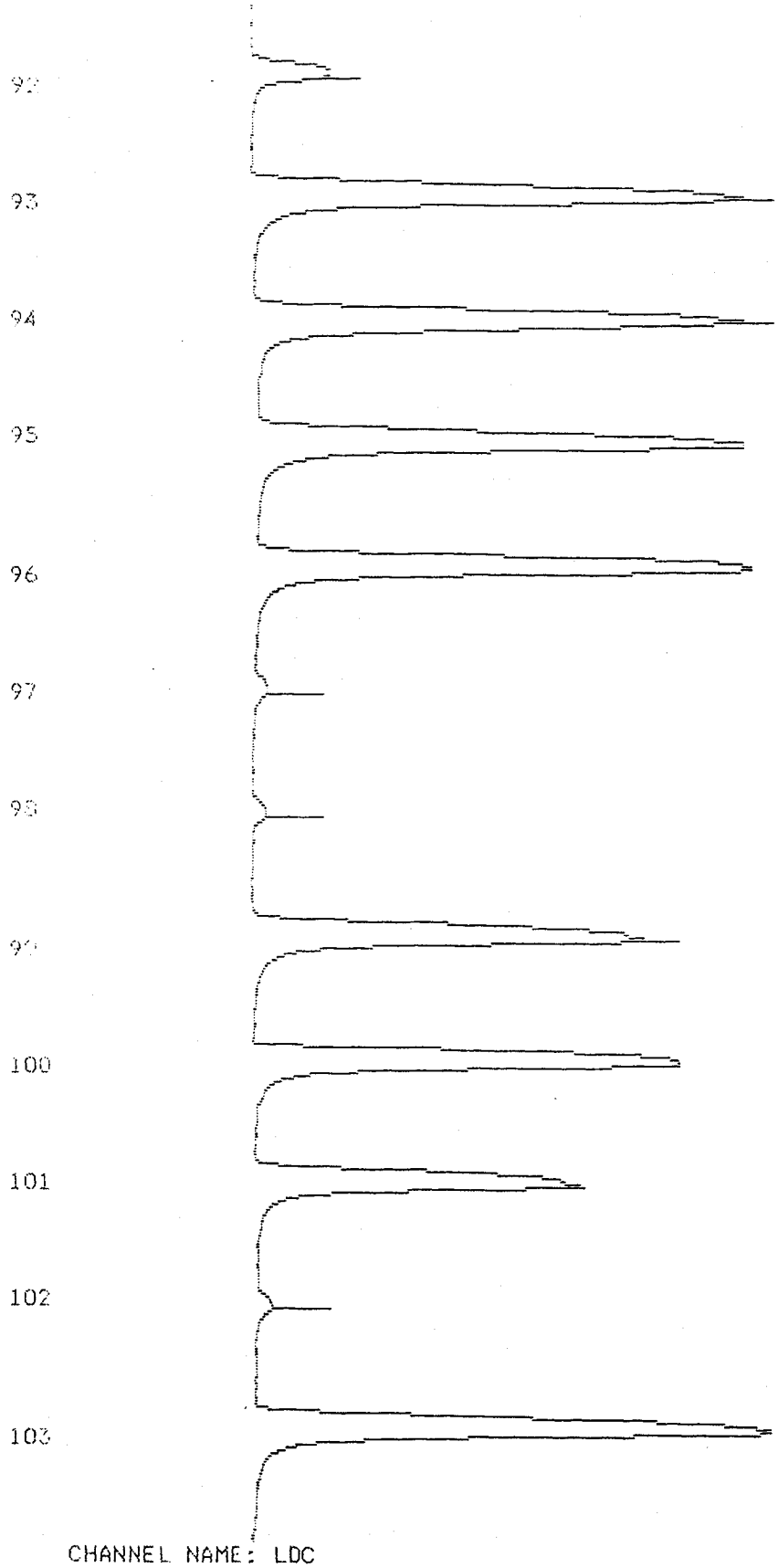
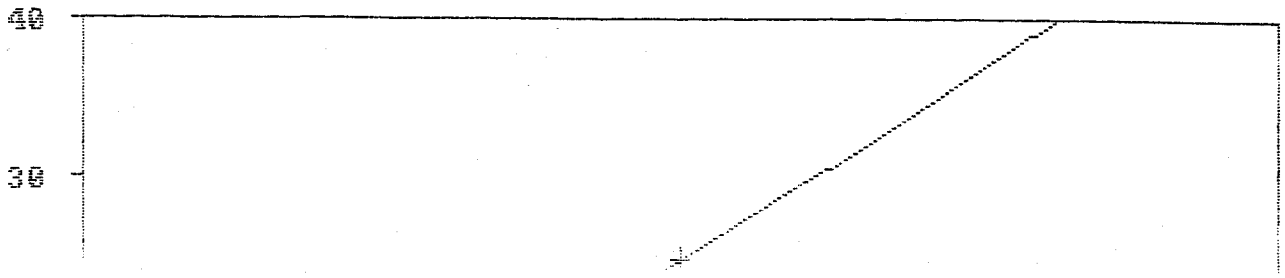
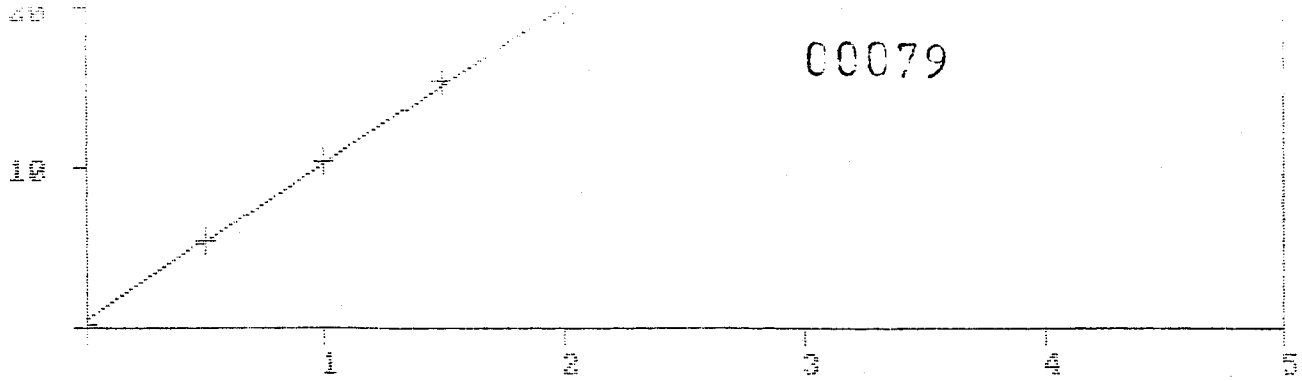


CHANNEL NAME: LDC
RUN NAME: 991011W





00079

DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.52 SLOPE = 9.684284

CORRELATION: .9995842

CHANNEL NAME: LDC
RUN DATE: 10-11-1999
SAMPLE TABLE NAME: 991011W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION (ppb)	EF
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	19.9		1.964	
8	S6: 2.5	1	1	24.7		2.498	
9	ICV	1	1	14.3	TUG	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	-0.041	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

41	42251	1	1	0.0			-0.054	I
42	42251	1	1	0.0	<0.000		-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

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
051448	TRC-LO	MB R456	Mercury -	PV	-0.030	-99999.0	0.320	106.	0.290	97.	99/10/04	5GKC	99/10/04	MG01	34.	20.	
051449	TRC-LO	BP-OHM-1-RB	Mercury -	PV	-0.030						99/10/04	5GKC	99/10/04	MG01	34.	20.	
051450	TRC-LO	BP-OHM-1-I-FB	Mercury -	PV	-0.030						99/10/04	5GKC	99/10/04	MG01	35.	20.	
051451	TRC-LO	BP-OHM-1-Ia-2	Mercury -	PV	14.104						99/10/04	5GKC	99/10/04	MG01	34.	20.	
051452	TRC-LO	BP-OHM-1-Ib-2	Mercury -	PV	22.479						99/10/04	5GKC	99/10/04	MG01	34.	20.	
051453	TRC-LO	BP-OHM-1-Ia-3	Mercury -	PV	12.522						99/10/04	5GKC	99/10/04	MG01	33.	20.	
051454	TRC-LO	BP-OHM-1-Ib-3	Mercury -	PV	13.968						99/10/04	5GKC	99/10/04	MG01	33.	20.	
BL1004	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.320	106.	0.290	97.	99/10/04	5GKC	99/10/04	MG01	$$$	$$$	

8 Tests for OHKCL with an MDL of 0.030 ug Validated By CMS Control Chart Updated N/A IO Requirements met N/A

00082

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
051455	TRC-LO	BP-OHM-1-Ia-4	Mercury -	PV	13.694	13.721	28.044	95.	27.962	95.	99/10/04	6GKC	99/10/04	MG01	33.	20.	*PDS*
051456	TRC-LO	BP-OHM-1-Ib-4	Mercury -	PV	15.673						99/10/04	6GKC	99/10/04	MG01	33.	20.	
051457	TRC-LO	BP-OHM-1-Ia-5	Mercury -	PV	13.381						99/10/04	6GKC	99/10/04	MG01	32.	20.	
051458	TRC-LO	BP-OHM-1-Ib-5	Mercury -	PV	14.199						99/10/04	6GKC	99/10/04	MG01	32.	20.	
051459	TRC-LO	BP-OHM-1-O-FB	Mercury -	PV	-0.030						99/10/04	6GKC	99/10/04	MG01	35.	20.	
051460	TRC-LO	BP-OHM-1-O-2	Mercury -	PV	23.051						99/10/04	6GKC	99/10/04	MG01	34.	20.	
051461	TRC-LO	BP-OHM-1-O-3	Mercury -	PV	15.645						99/10/04	6GKC	99/10/04	MG01	33.	20.	
051462	TRC-LO	BP-OHM-1-O-4	Mercury -	PV	13.204						99/10/04	6GKC	99/10/04	MG01	33.	20.	
051463	TRC-LO	BP-OHM-1-O-5	Mercury -	PV	12.290						99/10/04	6GKC	99/10/04	MG01	32.	20.	
053129	TRC-LO	SG-OHM-RB	Mercury -	PV	-0.030						99/10/04	6GKC	99/10/04	MG01	20.	16.	
BL1004	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.273	91.	0.275	91.	99/10/04	6GKC	99/10/04	MG01	$$$	$$$	

11 Tests for OHKCL with an MDL of 0.030 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00083

00084

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LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 991004 Run Code: KB01/MG01 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		½	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			~~WS378BL1003~~	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		⅕	53145			
75		↓	"			
76		⅕	53146			
77		↓	"			
78		⅕	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				

00090

(2)

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 991004 Run Code: MG01 Matrix: ~~unp~~ (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)	0.5		
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	1.5	1/5	53148			
24	↓	↓	"			
25			53149			
26			"			
27			BL10034	3GKC		
28			"			
29			BL10034S			
30			"			
31			BL10034ds			
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		MB ~~1/5~~	53690			
61	↓	↓	"			
62			WS378			
63			ORG REF			
64			CCV			
65			B			
66		MB	~~D4~~ D4			
67		MB	~~B~~ BL100~~34~~	4GKC		
68			D4 "			
69			BL0034 S			
70			"			
71			BL100~~34~~ DS			
72			"			
73	1/5	1/25	53745			
74	↓	↓	"			
75			53745 D			
76			"			
77			53745 S			
78			"			
79			53745 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: 99.10.04 Run Code: MG01 Matrix: IMP (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			BL10034	5GKC		
24			"			
25			BL10034 S			
26			"			
27			CCV			
28			B			
29			D4			
30			BL10034D			
31			"			
32	1.5		43202			
33			"			
34			43202 D			
35			"			
36			43202 S			
37			"			
38			43202 DS			
39			"			
40	↓	1/5	43203			
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			BL10034	6GKC		
62			"			
63			BL10034 S			
64			"			
65			BL10034 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.

00092 (4)

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.04 Run Code: MG Matrix: IMP (KCl)

Analyst: MG Units: ug/L (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						
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			"			
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	HYX		
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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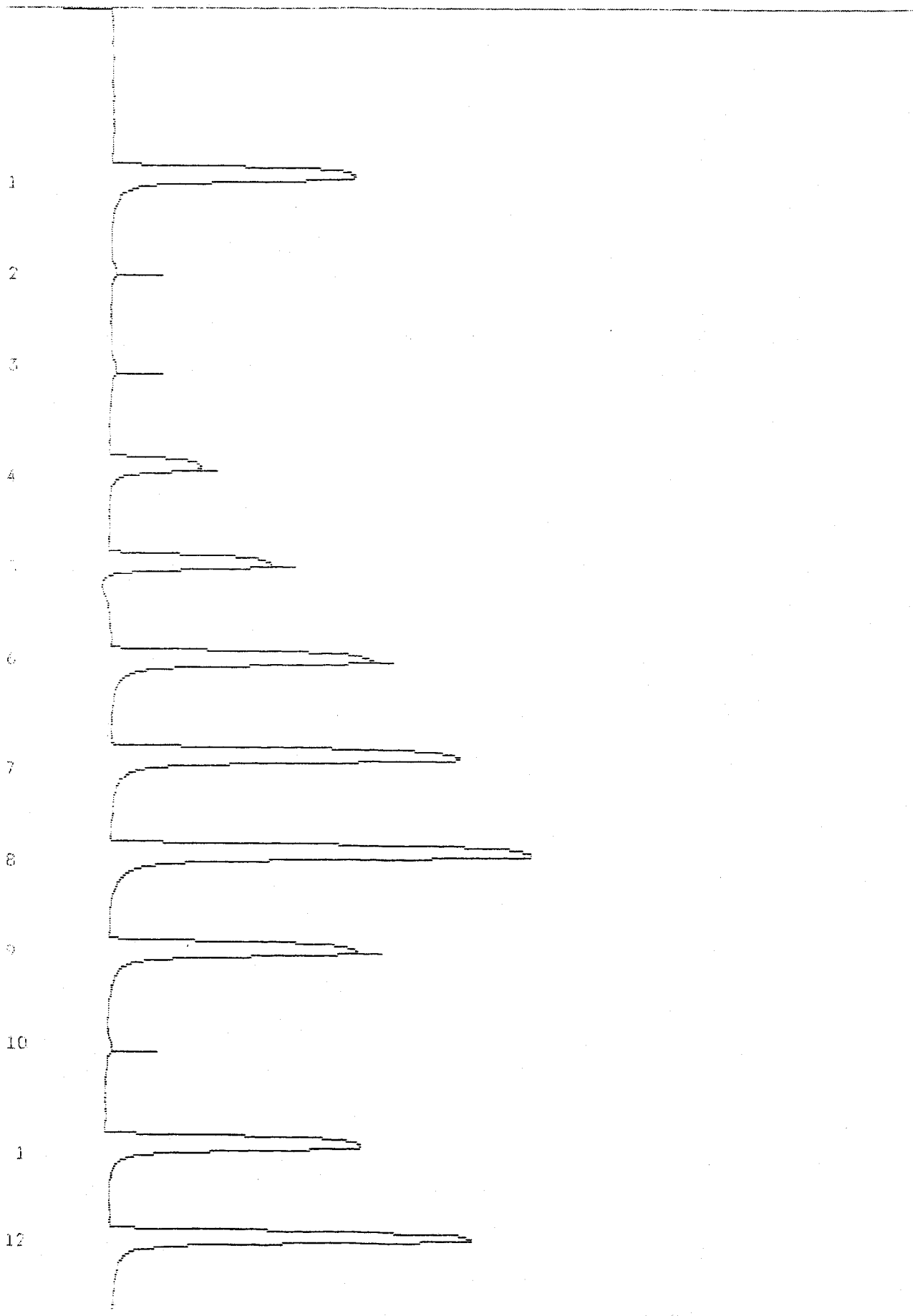

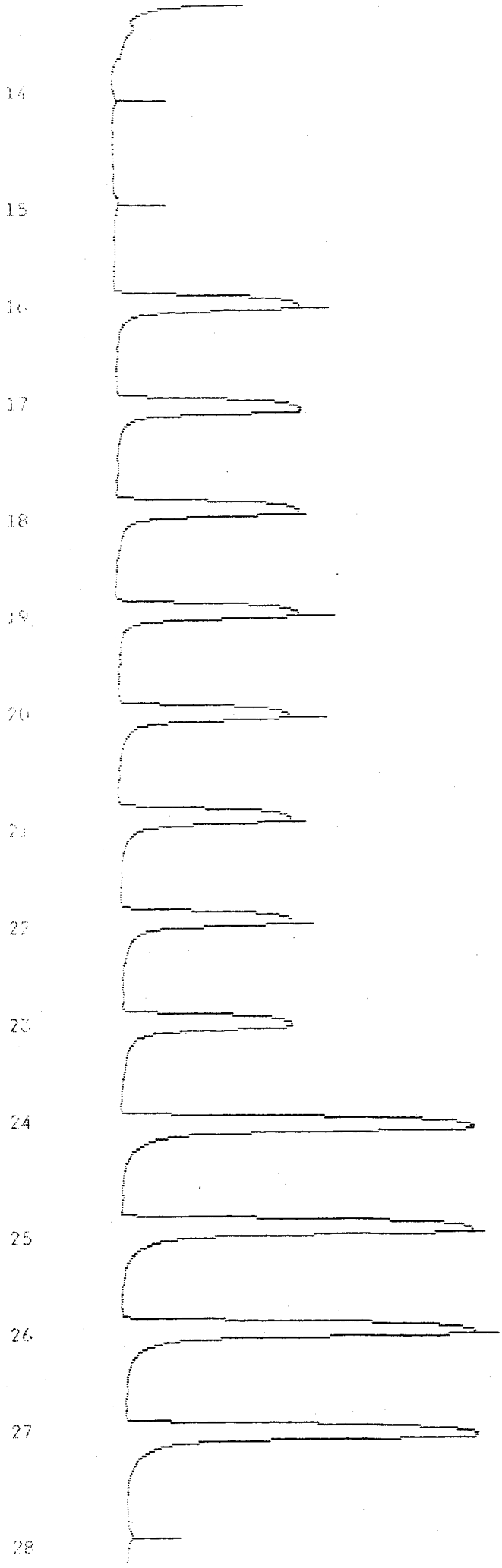
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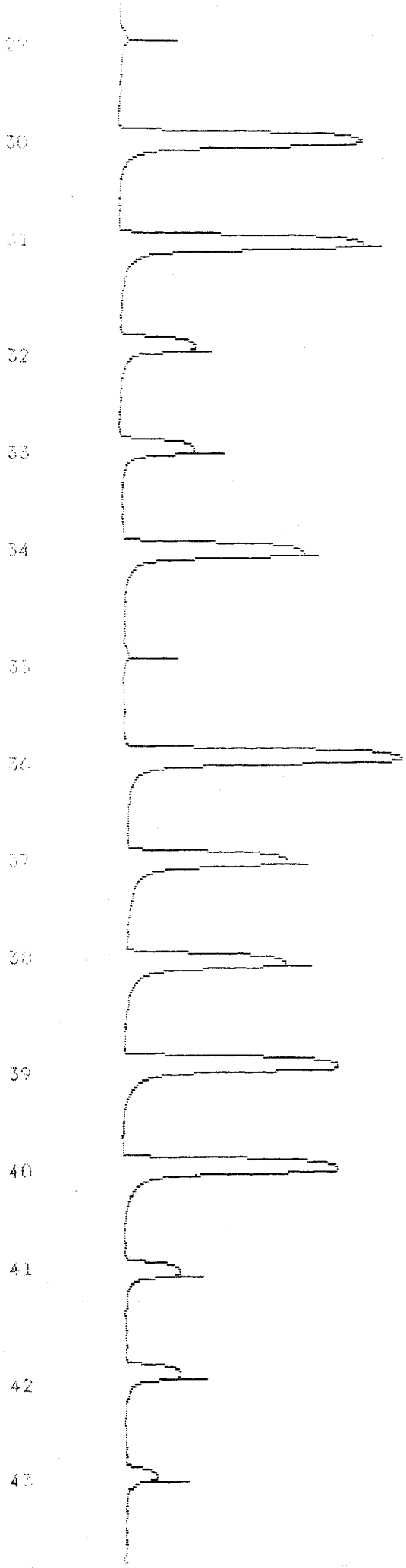
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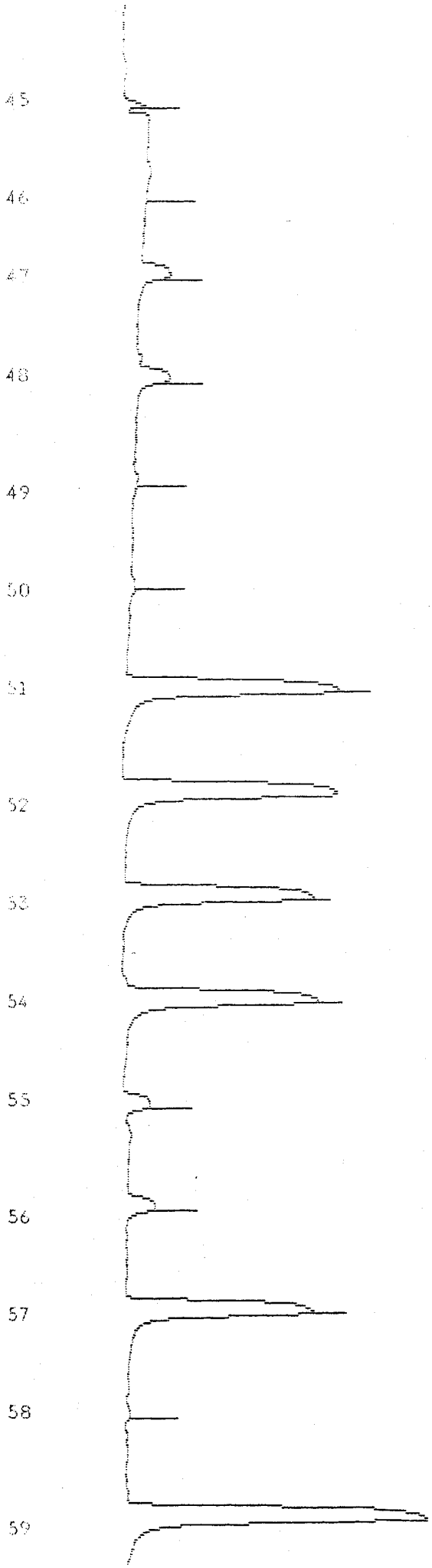
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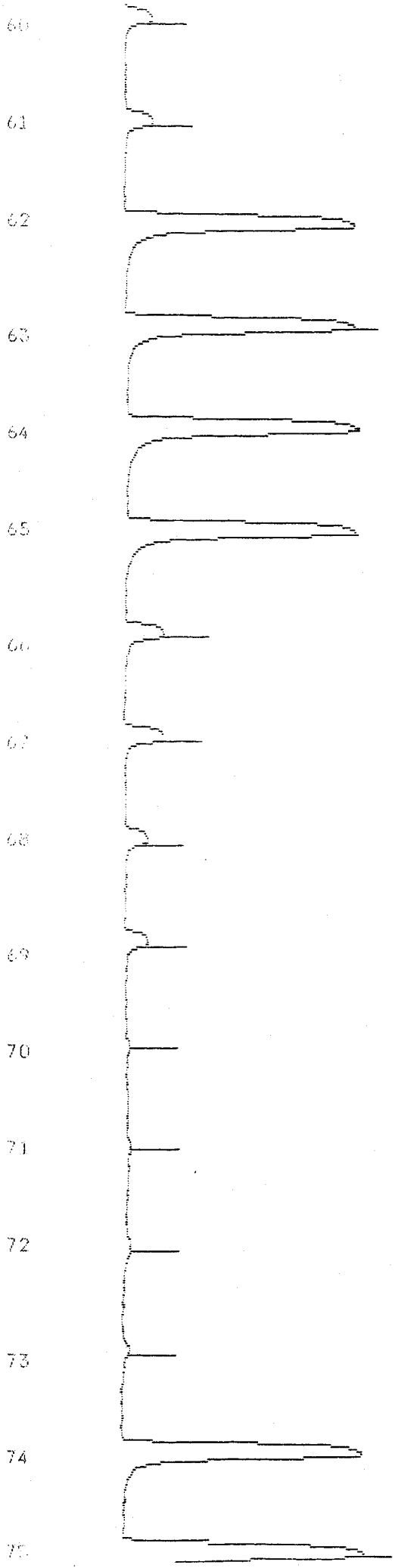
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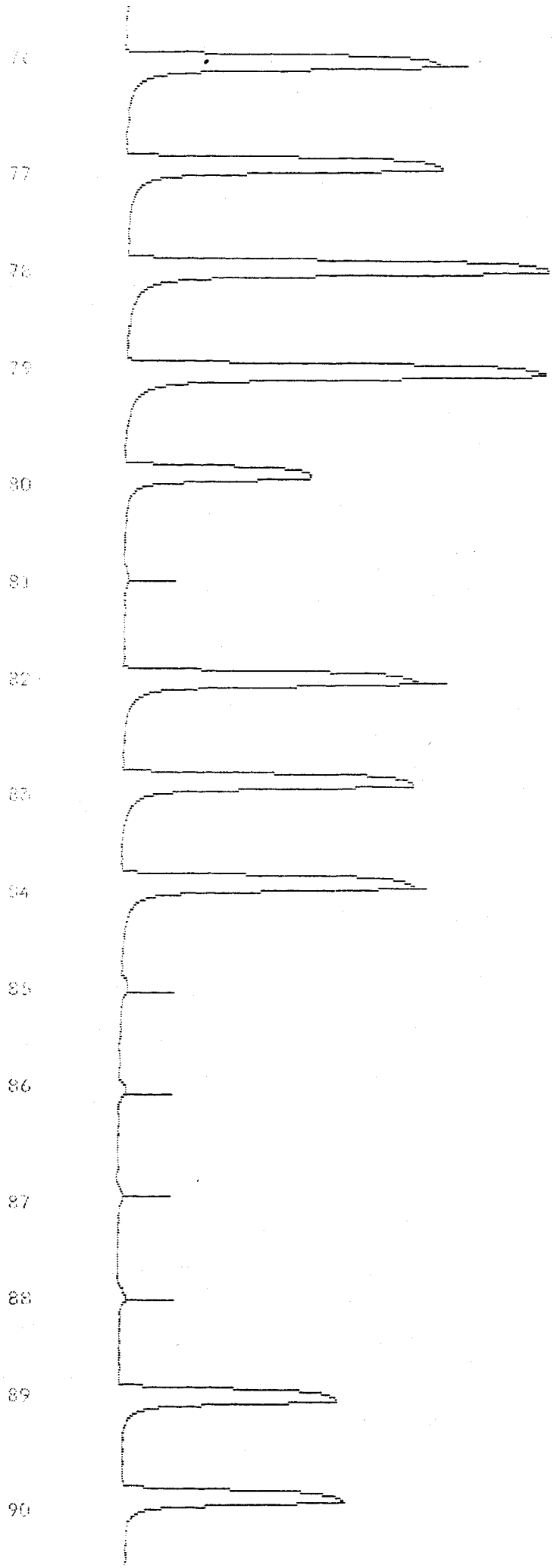
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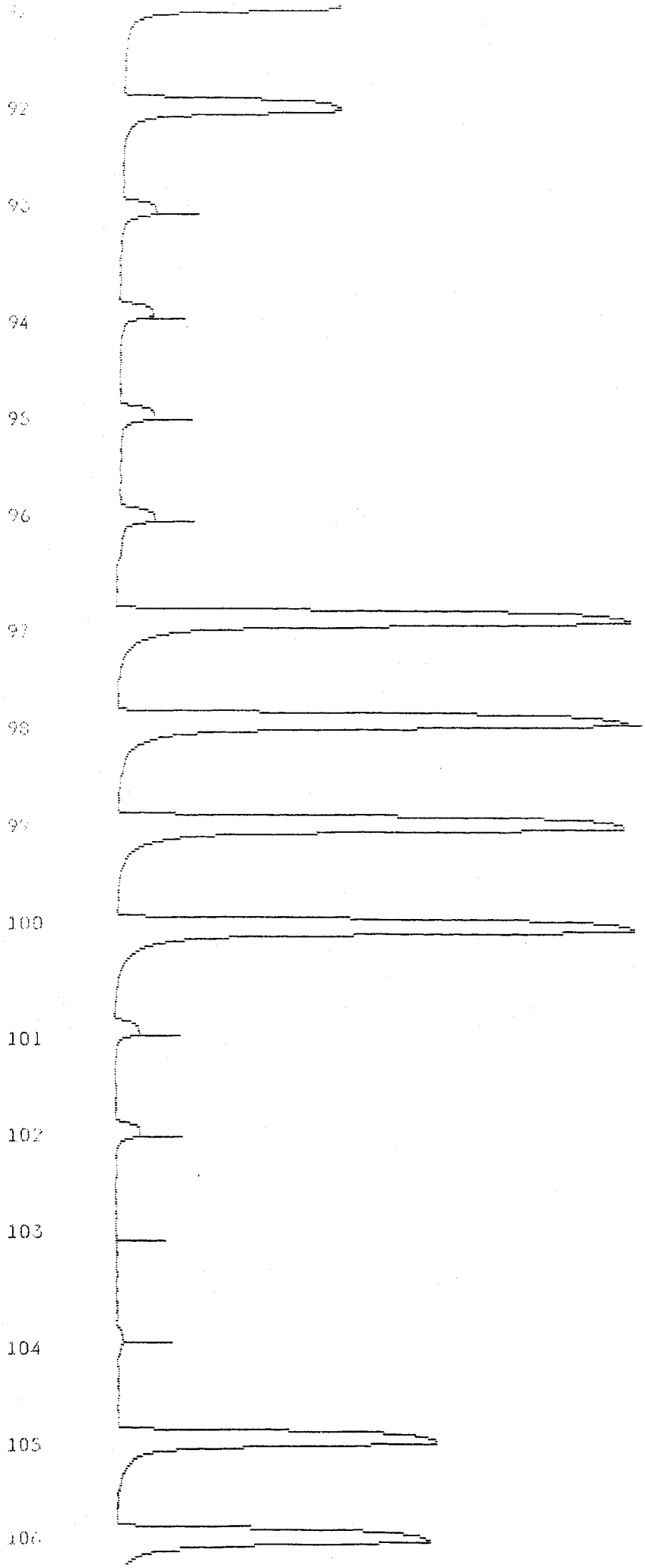
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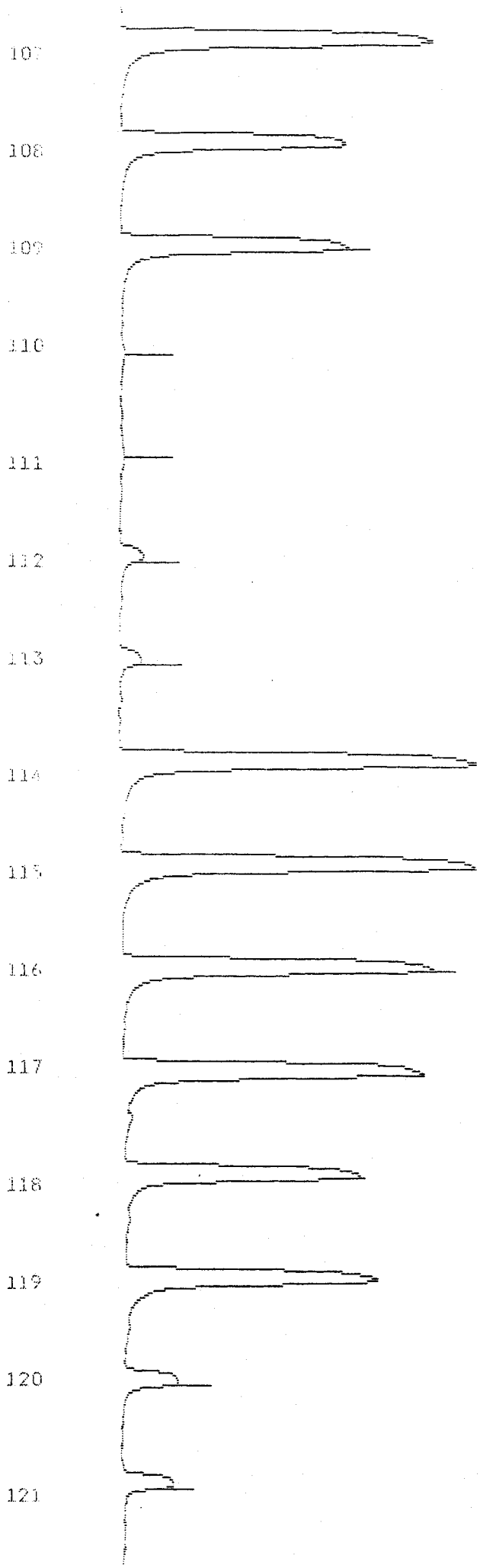
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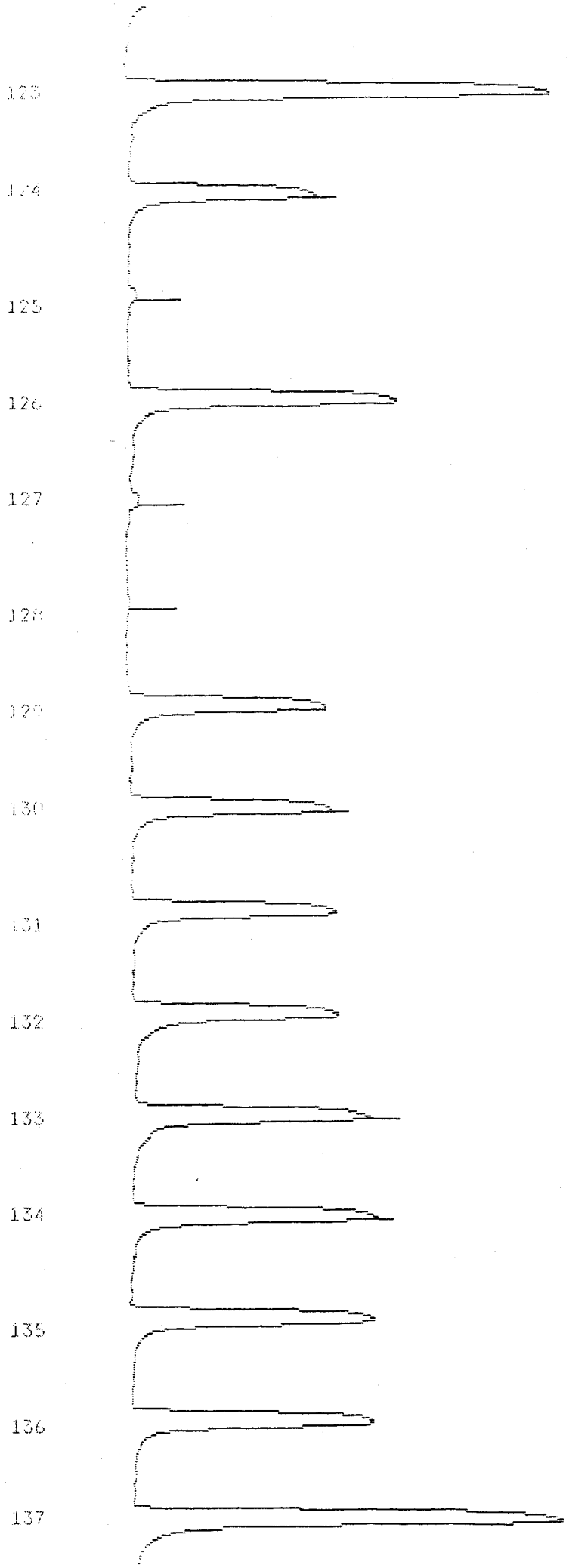
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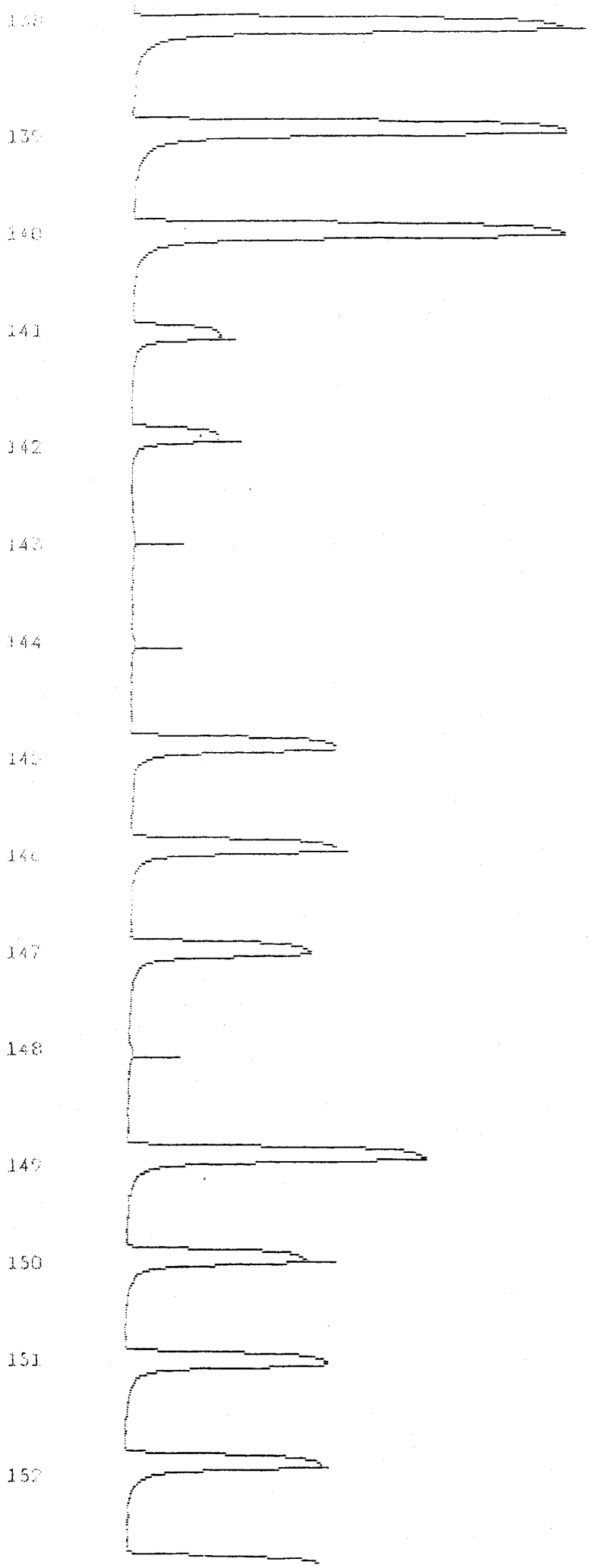
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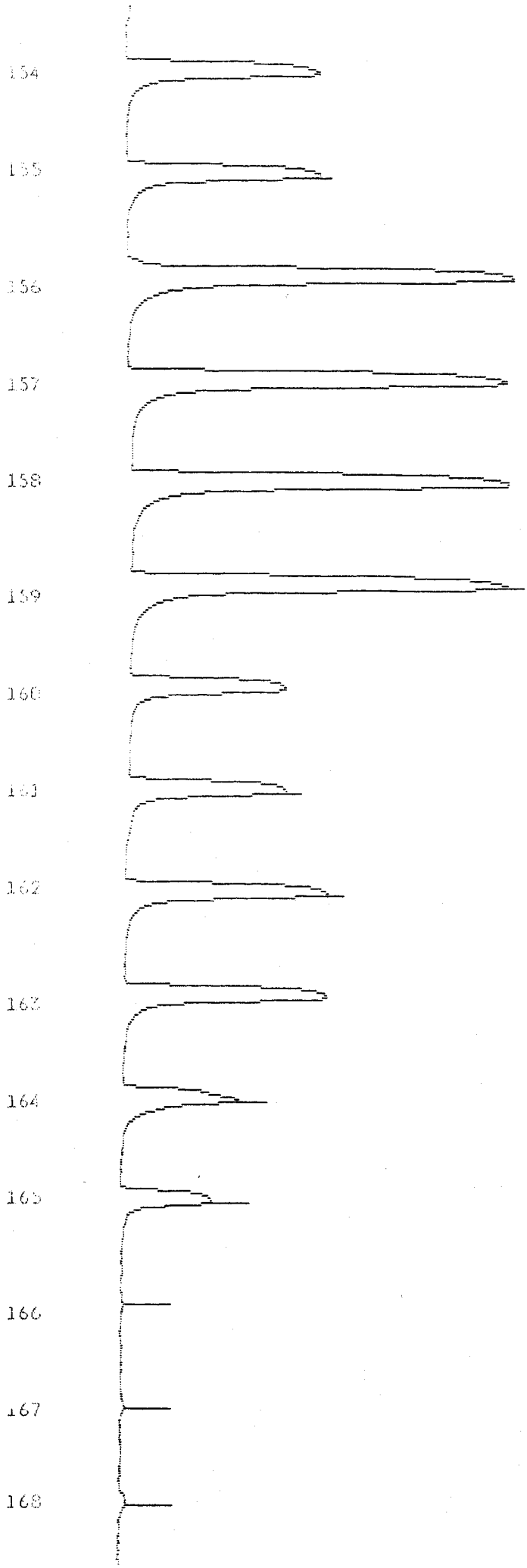
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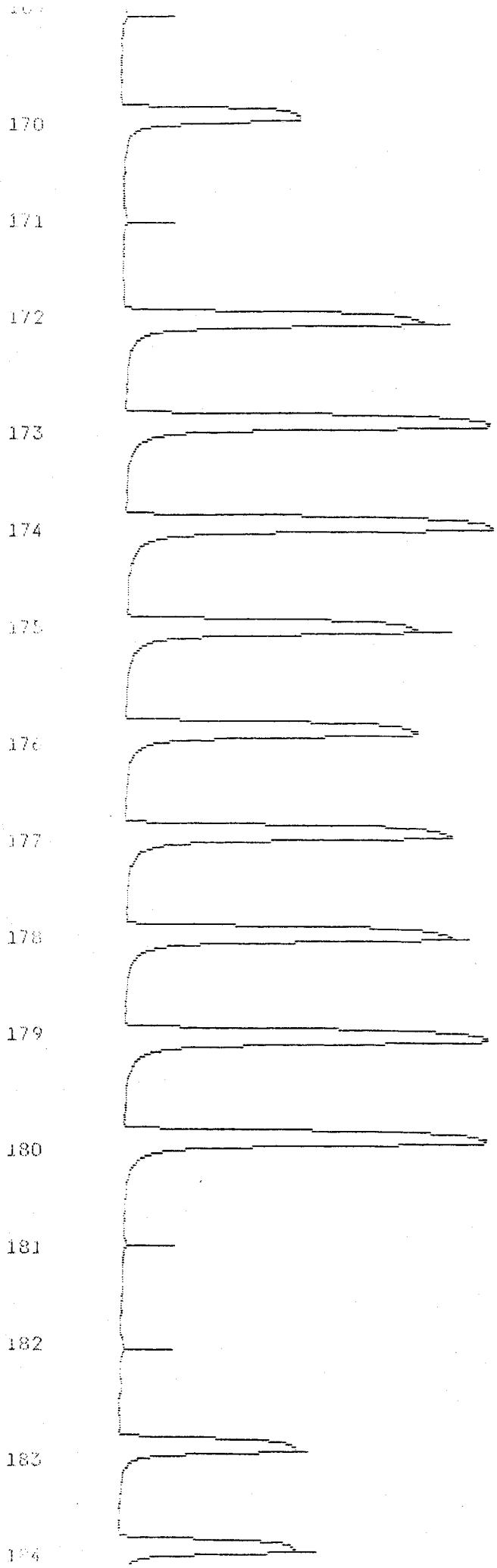
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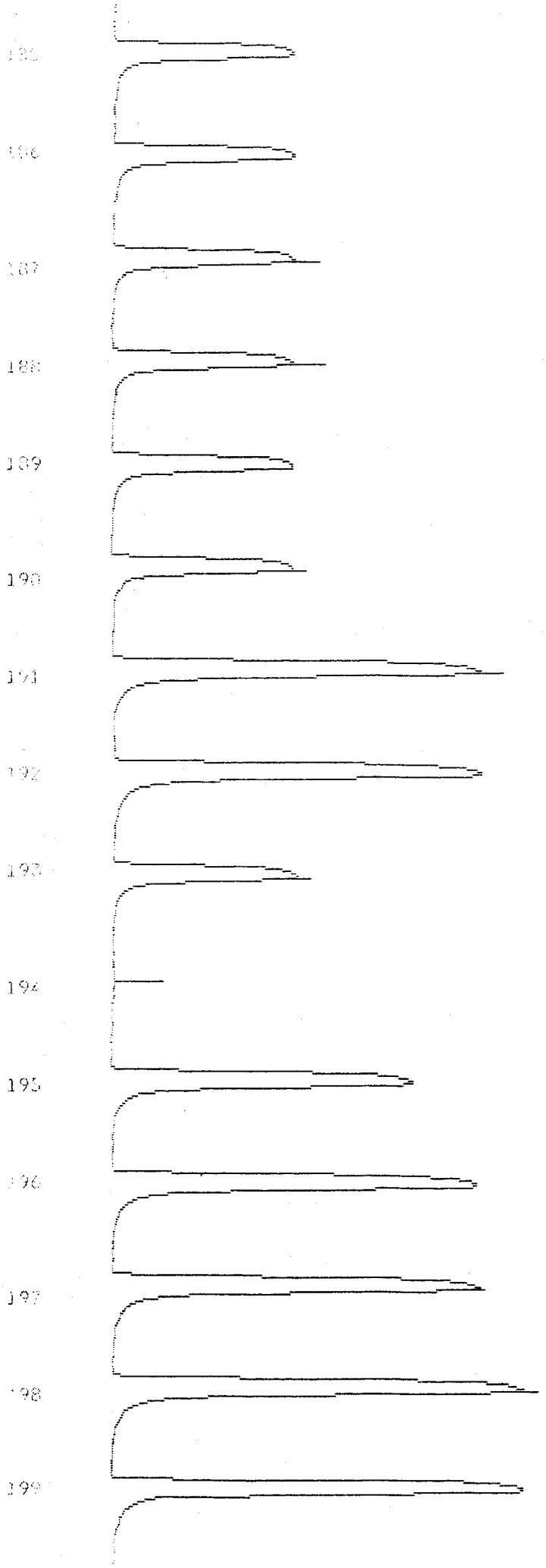
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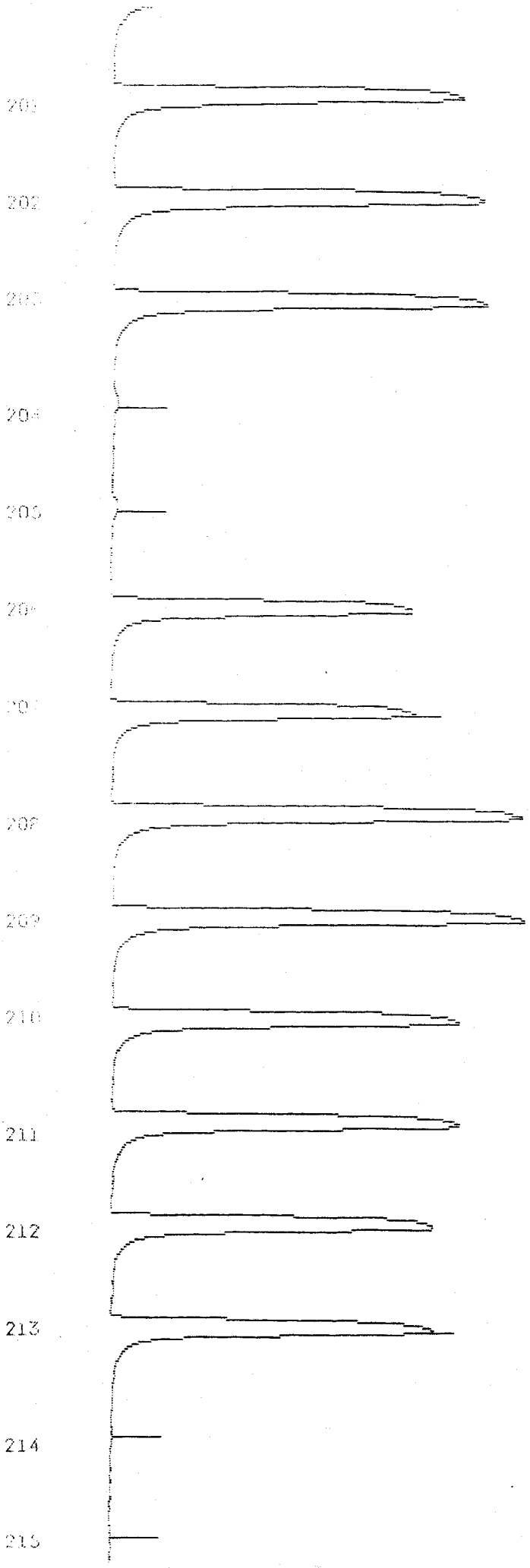
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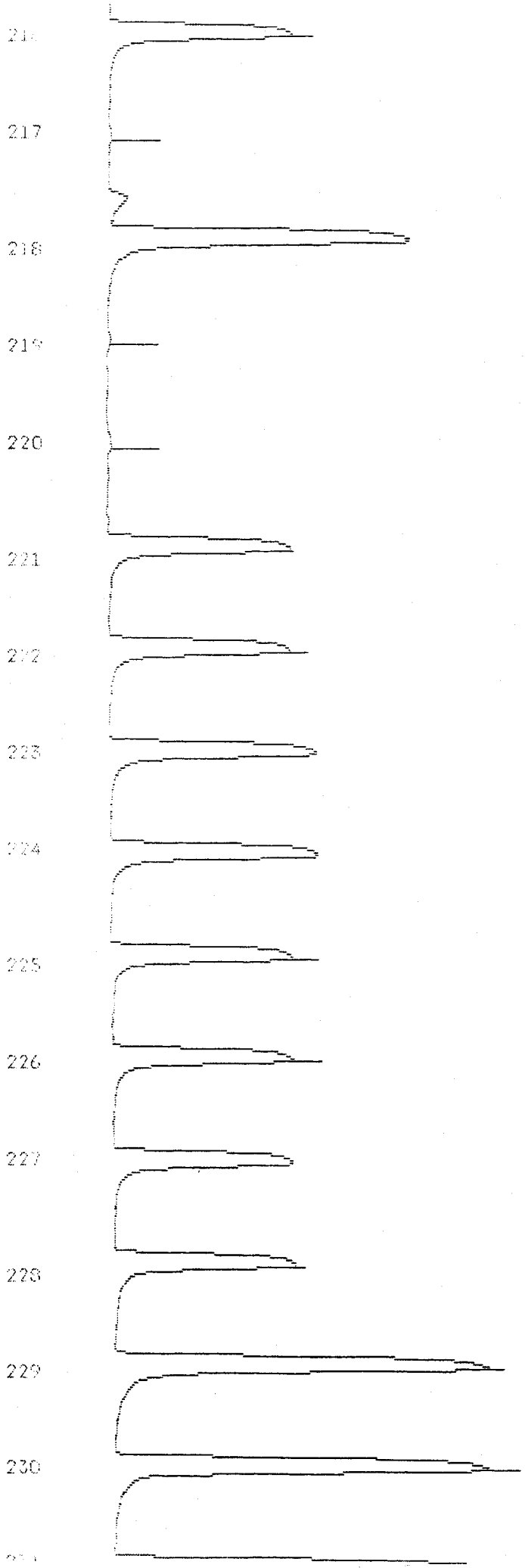
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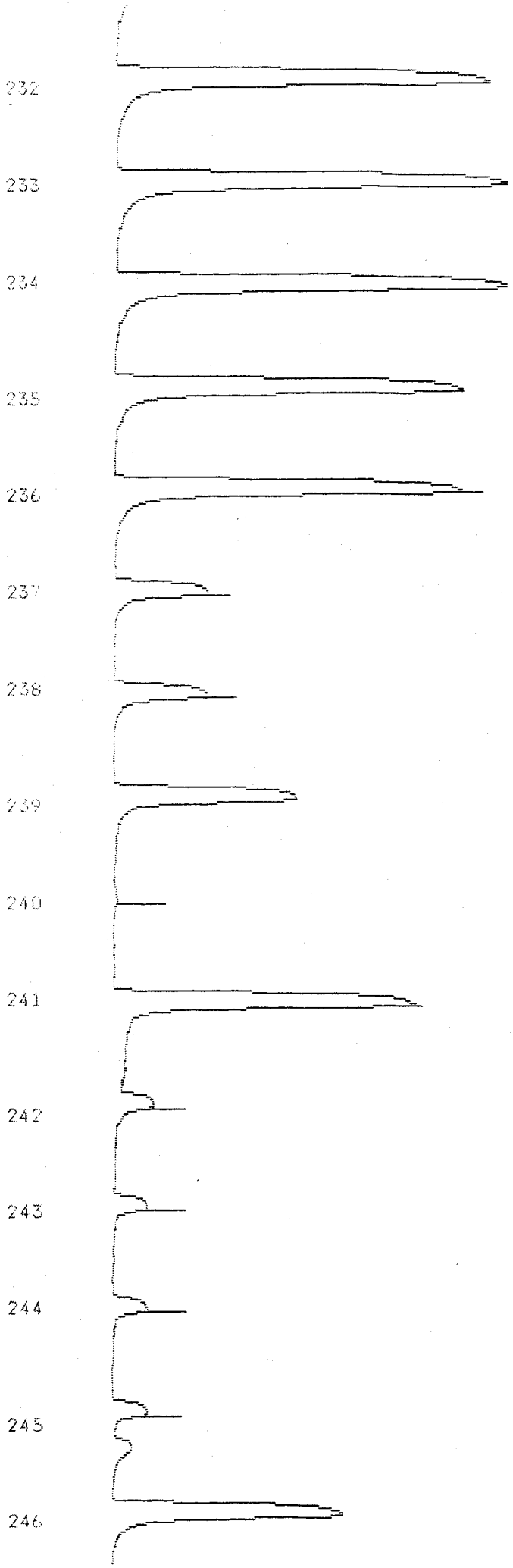
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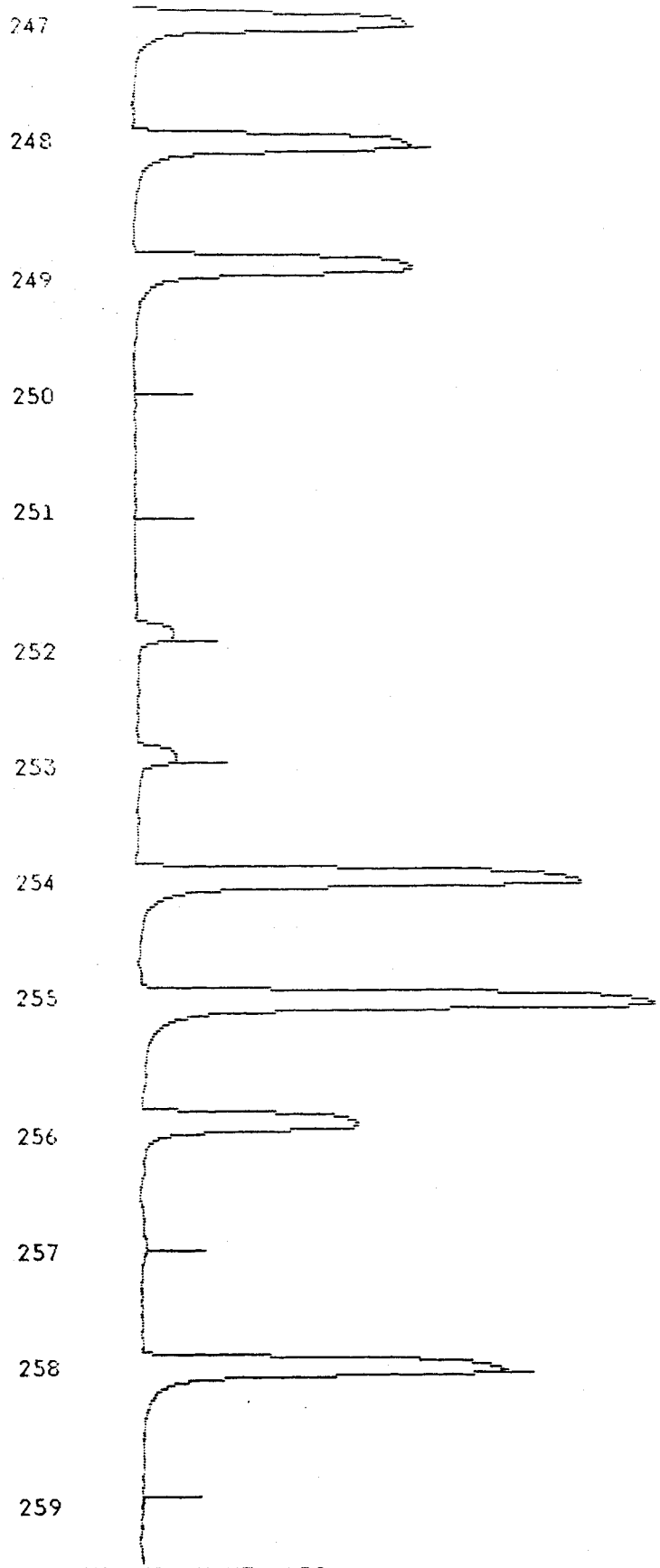
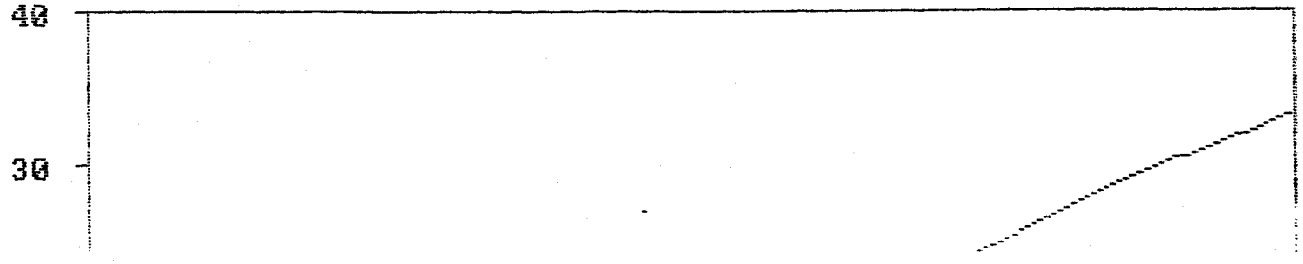
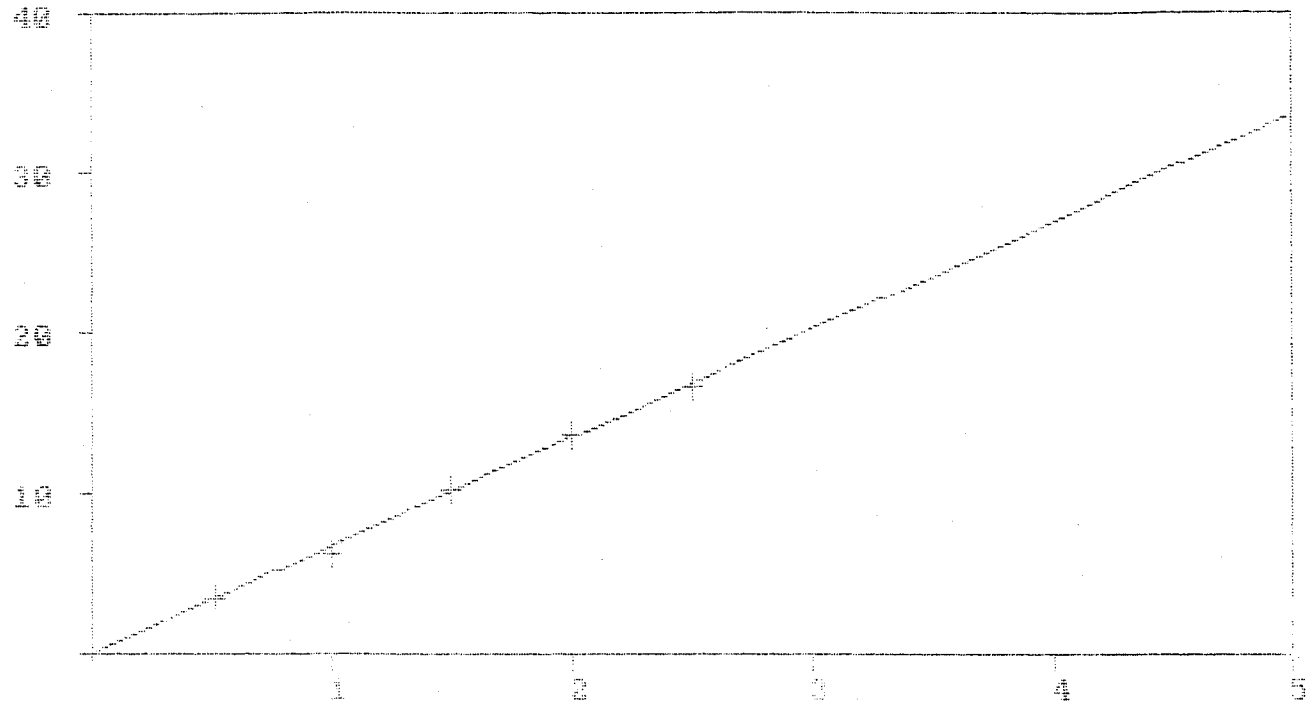


CHANNEL NAME: LDC
RUN NAME: 991004W



CHANNEL NAME: LOC
RUN NAME: 991004W



DATA TYPE: FIT CALIBRATION ORDER: 1
INTERCEPT = -1.16 SLOPE = 6.713413

CORRELATION: .9991756

CHANNEL NAME: LOC
RUN DATE: 10-04-1999
SAMPLE TABLE NAME: 991004W
METHOD NAME: HCWATER

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	
22	53132	1.5	1	[illegible]	1.410	

00111

24	53132S	1.5	1	13.2	2.954	
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	0.381	
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	D4	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	BL1004-20KC	1	1	0.0	0.002	I
50	BL1004-20KC	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	0.996	
55	53140	1.5	1	0.7	0.166	
56	53140	1.5	1	0.8	0.188	
57	CCV	1	1	6.3	0.949	95%
58	B	1	1	0.0	0.002	b
59	D4	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	531400S	1.5	1	7.9	1.776	
63	531400S	1.5	1	7.8	1.743	
64	5314000S	1.5	1	7.9	1.765	
65	5314000S	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	D4	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	BL1004-30KC	1	1	0.1	0.013	I
88	[illegible]	1	1	[illegible]	[illegible]	I

00112

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!
98	53164S	1.5	1	18.5	4.128	R	REPEAT @ END MA
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		

00113

156	432025	1.5	1	13.2	2.960	
157	432025	1.5	1	13.0	2.900	
158	432025S	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 REPEAT @ END ~~#~~	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	13.771	
188	51455	15	1	6.1	13.867	
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	BL3004-7GKC	1	1	0.0	0.005	I
[illegible]	[illegible]	1	1	[illegible]	[illegible]	I

00114

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	53164D	1.5	1	1.1	0.237	
245	53164D	1.5	1	1.1	0.237	
246	53164S	1.5	1	7.8	1.749	
247	53164S	1.5	1	7.7	1.732	
248	53164DS	1.5	1	7.9	1.765	
249	53164DS	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	1
252	53164D	1.5	1	1.0	0.215	
253	53164D	1.5	1	1.0	0.215	
254	WS 3/8	1	1	12.5	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

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enon umber	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
51458	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*
51460	TRC-LO	BP-OHM-1-O-2	Mercury -	P	1.838						99/10/04	4BMN	99/10/04	MG03	34.	20.	
51461	TRC-LO	BP-OHM-1-O-3	Mercury -	P	1.356						99/10/04	4BMN	99/10/04	MG03	33.	20.	
51462	TRC-LO	BP-OHM-1-O-4	Mercury -	P	1.512						99/10/04	4BMN	99/10/04	MG03	33.	20.	
51463	TRC-LO	BP-OHM-1-O-5	Mercury -	P	1.410						99/10/04	4BMN	99/10/04	MG03	32.	20.	

Tests for OHMN4 with an MDL of 0.030 ug Validated By [signature] Control Chart Updated N/A IO Requirements met N/A

00.15

enon umber	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
51448	TRC-LO	M	Mercury -	P	-0.030	-99999.0	0.304	101.	0.305	101.	99/10/04	2BMN	99/10/04	MG03	34.	20.	
51449	TRC-LO	BP-OHM-1-RB	Mercury -	P	-0.030						99/10/04	2BMN	99/10/04	MG03	34.	20.	
L1004	INTERNAL		Mercury -	P	-0.030	-99999.0	0.304	101.	0.305	101.	99/10/04	2BMN	99/10/04	MG03	$$$	$$$	

3 Tests for OHMN4 with an MDL of 0.030 ug Validated By [signature] Control Chart Updated N/A IO Requirements met N/A

00116

emon umber	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
51450	TRC-LO	BP-OHM-1-I-FB	Mercury -	P	-0.030						99/10/04	3BMN	99/10/04	MG03	35.	20.	
51451	TRC-LO	BP-OHM-1-Ia-2	Mercury -	P	1.814						99/10/04	3BMN	99/10/04	MG03	34.	20.	
51452	TRC-LO	BP-OHM-1-Ib-2	Mercury -	P	0.671	0.743	1.927	91.	2.085	91.	99/10/04	3BMN	99/10/04	MG03	34.	20.	*PDS*
51453	TRC-LO	BP-OHM-1-Ia-3	Mercury -	P	2.958						99/10/04	3BMN	99/10/04	MG03	33.	20.	
51454	TRC-LO	BP-OHM-1-Ib-3	Mercury -	P	1.129						99/10/04	3BMN	99/10/04	MG03	33.	20.	
51455	TRC-LO	BP-OHM-1-Ia-4	Mercury -	P	2.577						99/10/04	3BMN	99/10/04	MG03	33.	20.	
51456	TRC-LO	BP-OHM-1-Ib-4	Mercury -	P	0.382						99/10/04	3BMN	99/10/04	MG03	33.	20.	
51457	TRC-LO	BP-OHM-1-Ia-5	Mercury -	P	2.194						99/10/04	3BMN	99/10/04	MG03	32.	20.	
51459	TRC-LO	BP-OHM-1-O-FB	Mercury -	P	-0.030						99/10/04	3BMN	99/10/04	MG03	35.	20.	
L1004	INTERNAL		Mercury -	P	-0.030	-99999.0	0.308	103.	0.304	101.	99/10/04	3BMN	99/10/04	MG03	$$$	$$$	

10 Tests for OHMN4 with an MDL of 0.030 ug Validated By [signature] Control Chart Updated N/A IO Requirements met N/A

00117

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)

te: 99.10.04 WI Run Code: MG03 Matrix: IMP (KMNO4)

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			BL1004	1BMN		
15			"			
16			BL1004 S			
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		53750 S			
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			BL1004 S			
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)

Date: 99.10.04 WI Run Code: MG03 Matrix: IMP (MnO_4)

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						
13						
14						
15						
16						
17						
18						
19						
20						
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			"			
41			BL1004	3B MN		
42			"			
43			CCV			
44			B			
45			D4			
46			BL1004 S			
47			"			
48			BL1004 DS			
49			"			
50	1.5		51452			
51			"			
52			51452 D			
53			"			
54			51452 S			
55			"			
56			51452 DS			
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)

Date: 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)	0.5		
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						
141 ~~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.5	2.0		
53			CCV			
54			B			
55			D4			
56			BL1004	SBMN		
57			"			
58			BL1004 S			
59			"			
60			BL004 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)

Date: 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	GBMN		
32			"			
33			BL1004 S			
34			"			
35			BL1004 DS			
36			"			
37	1.5		53145			
38			"			
39			CCV			
40			B			
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			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: 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						
61 21			135 S			
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						
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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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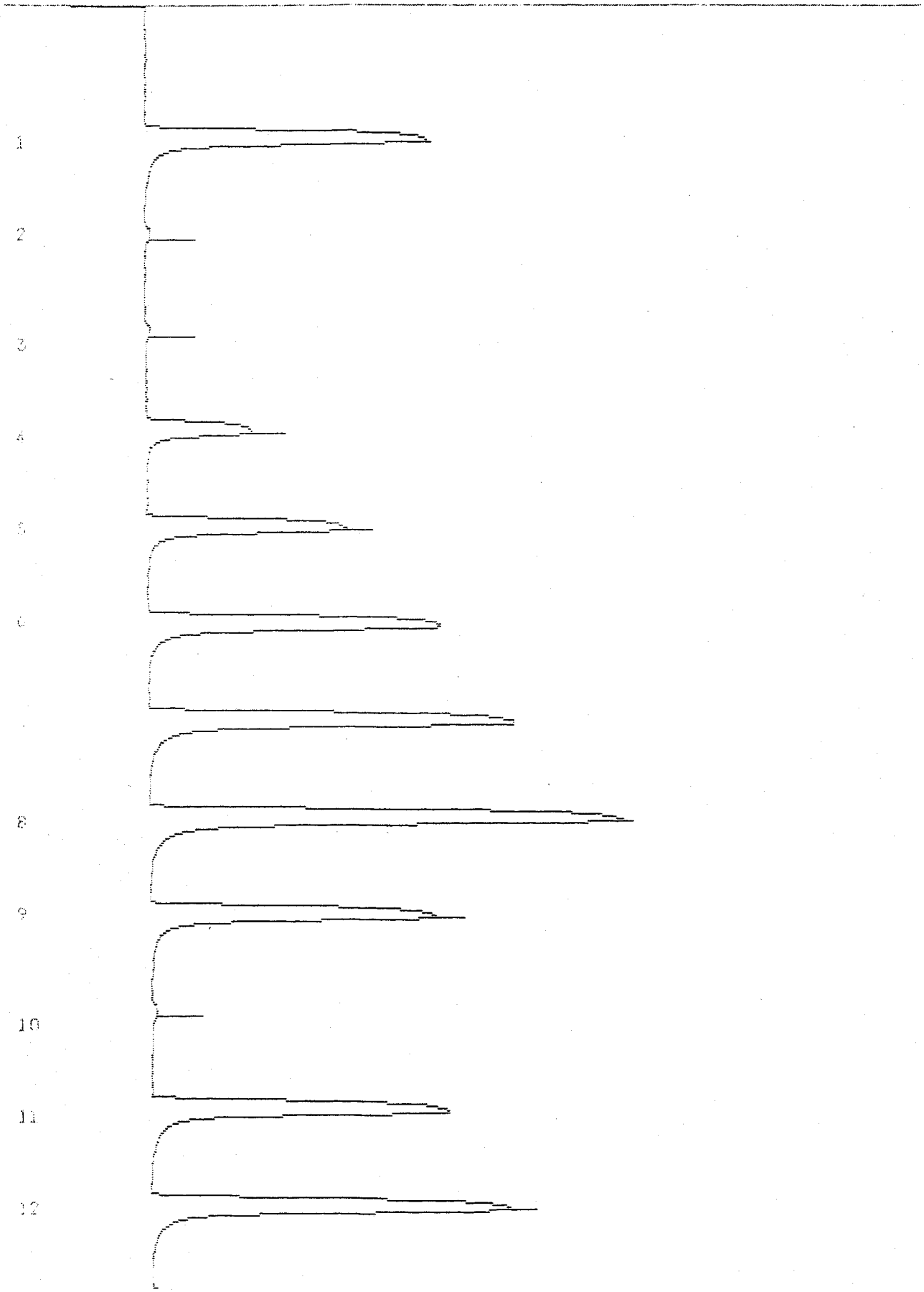

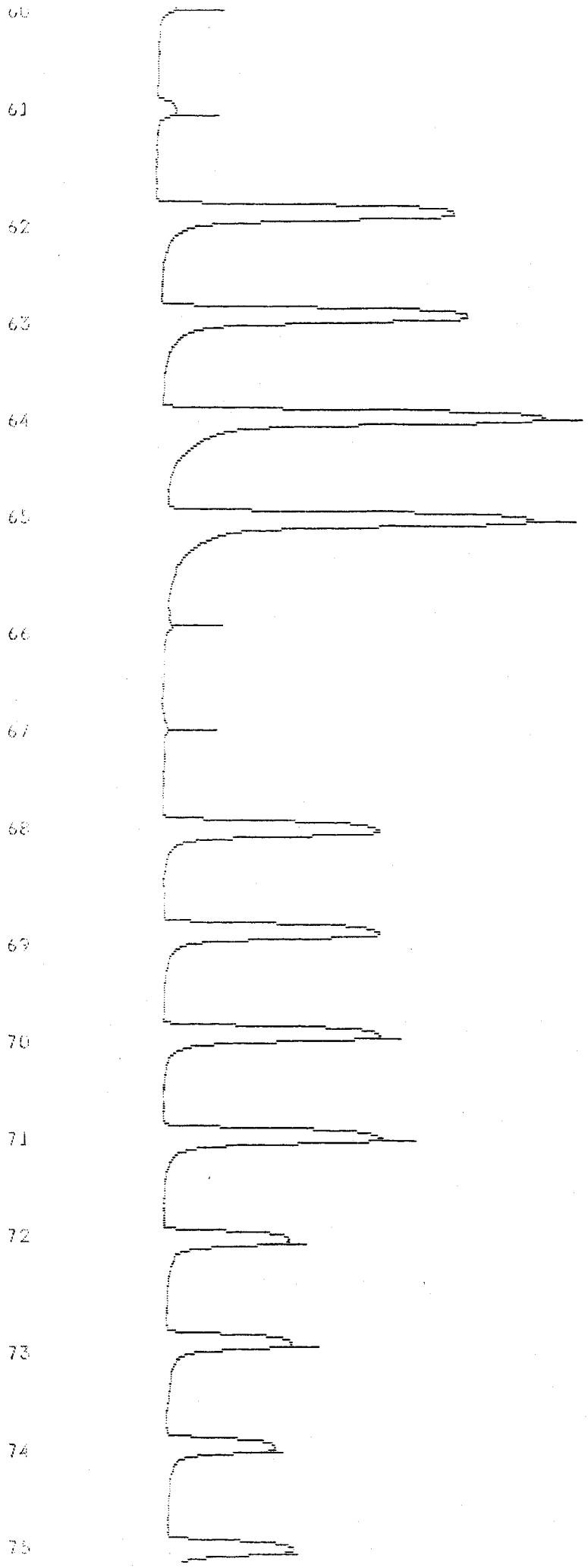
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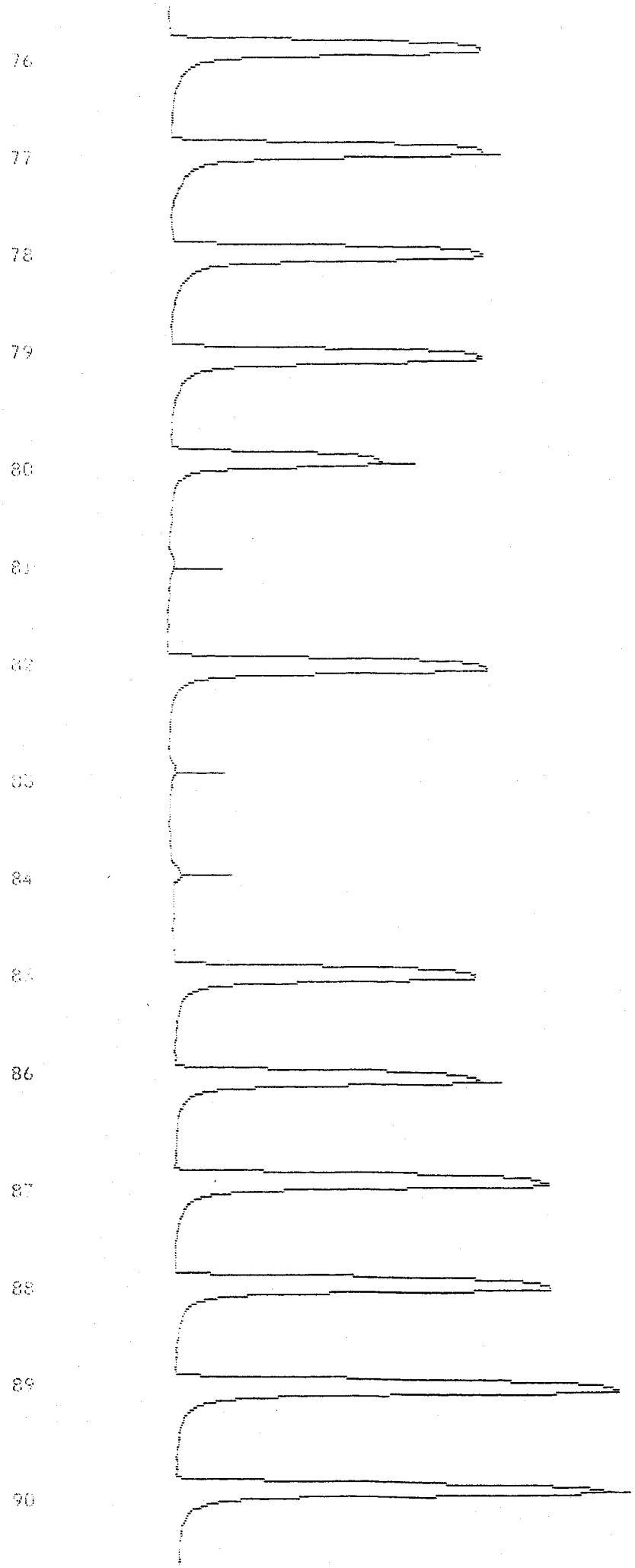
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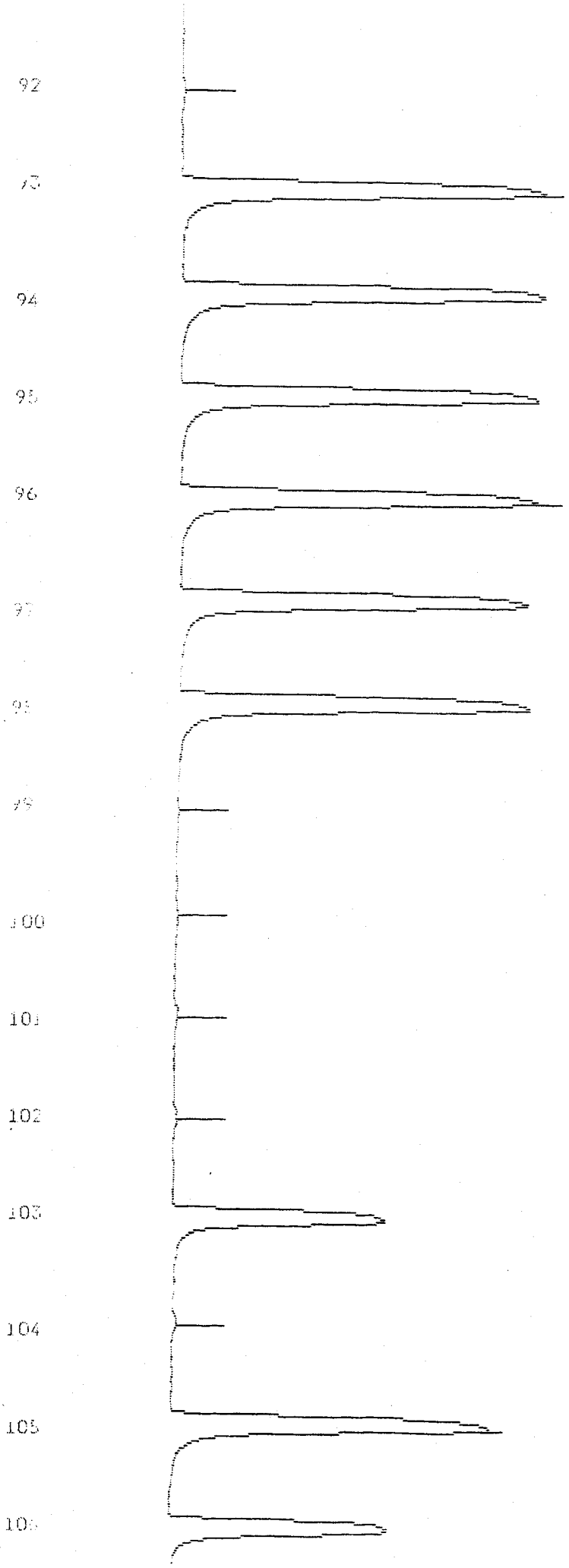
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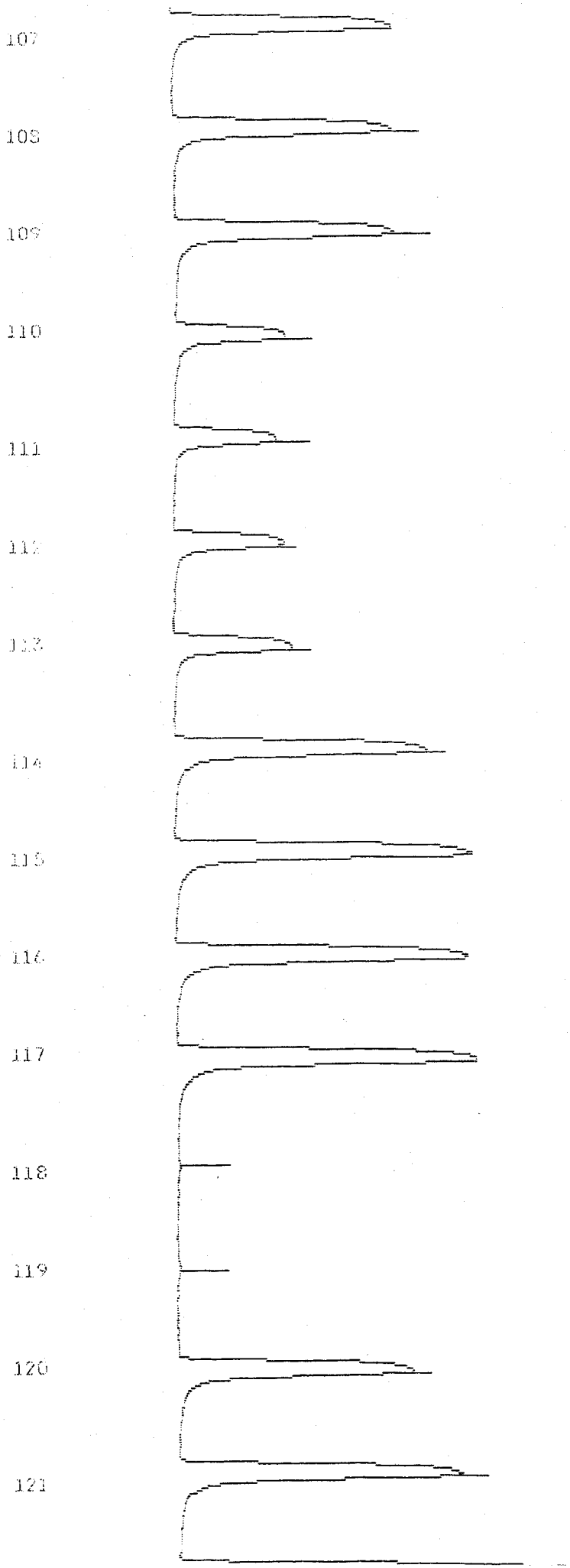
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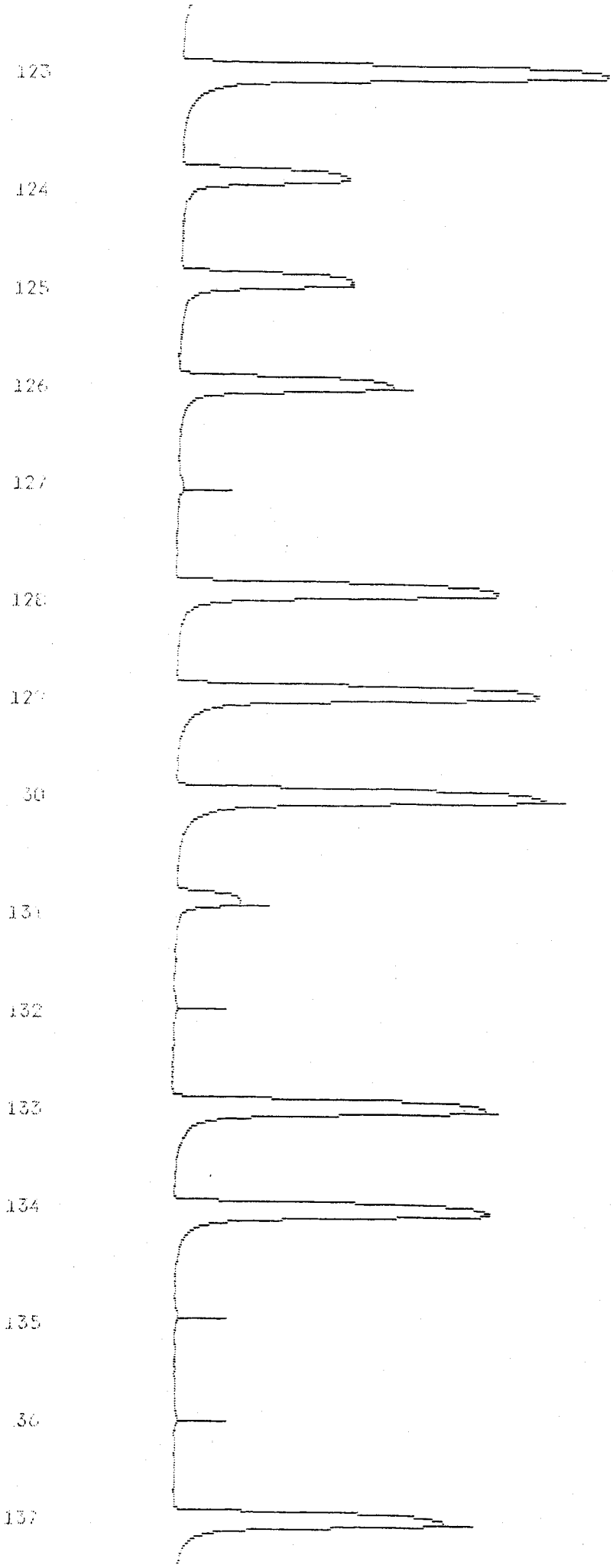
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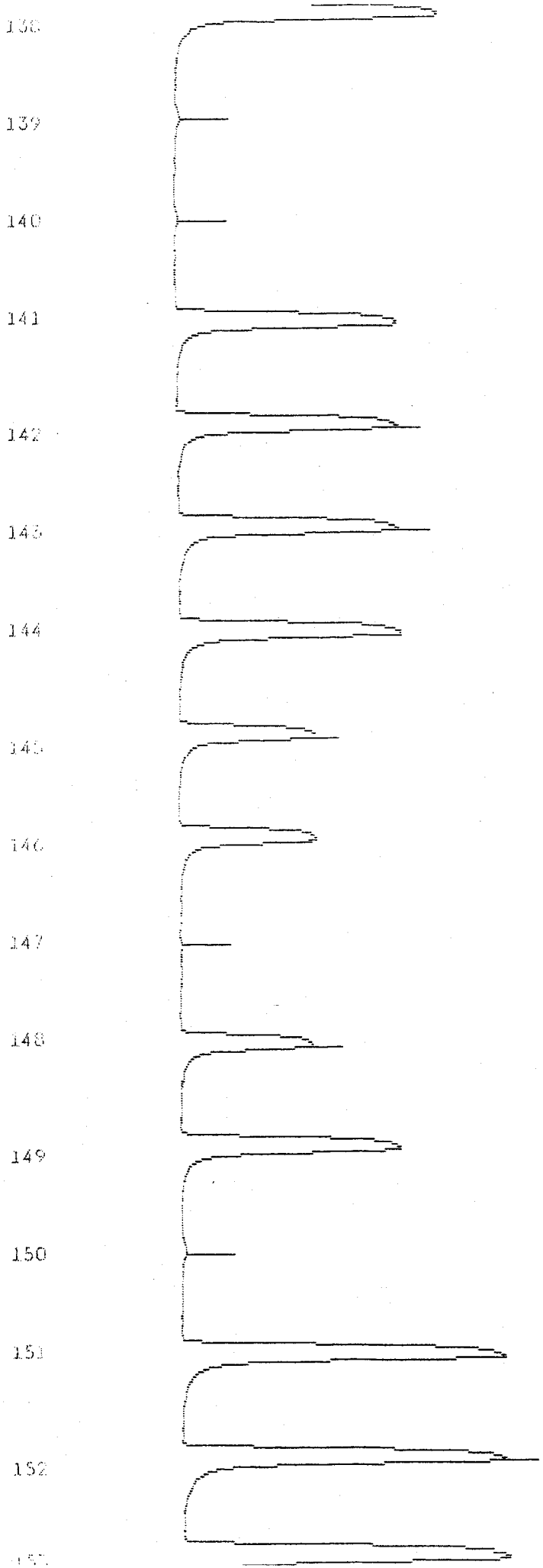
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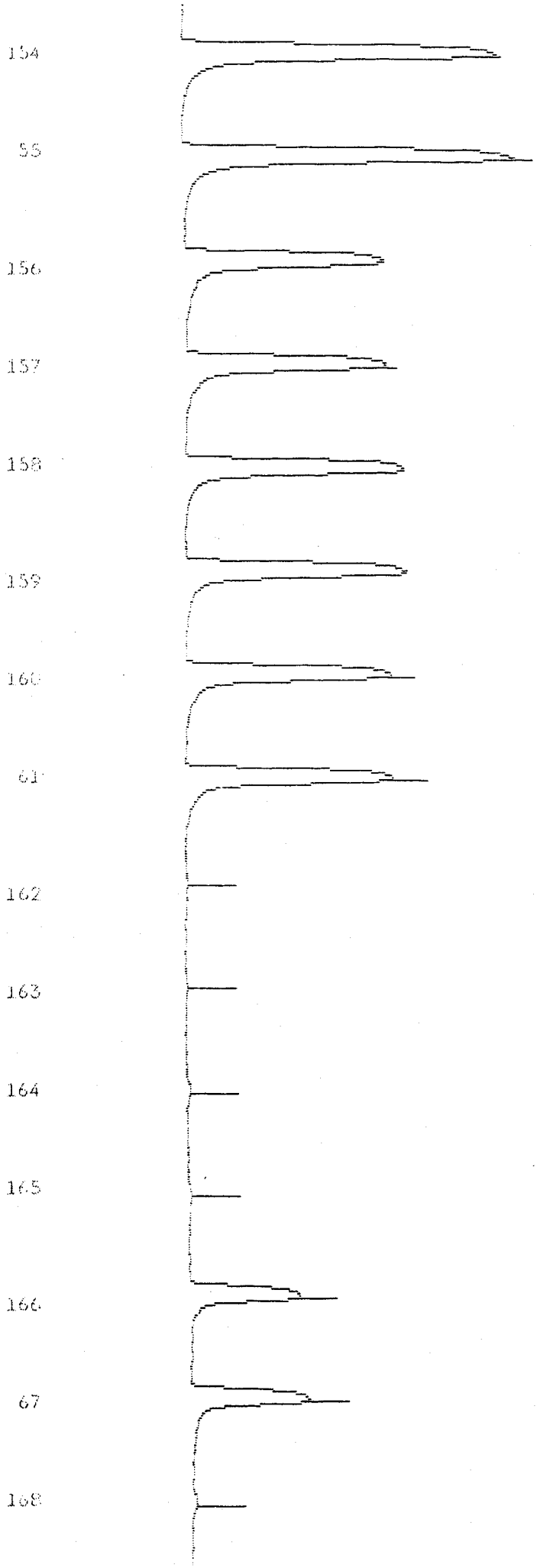
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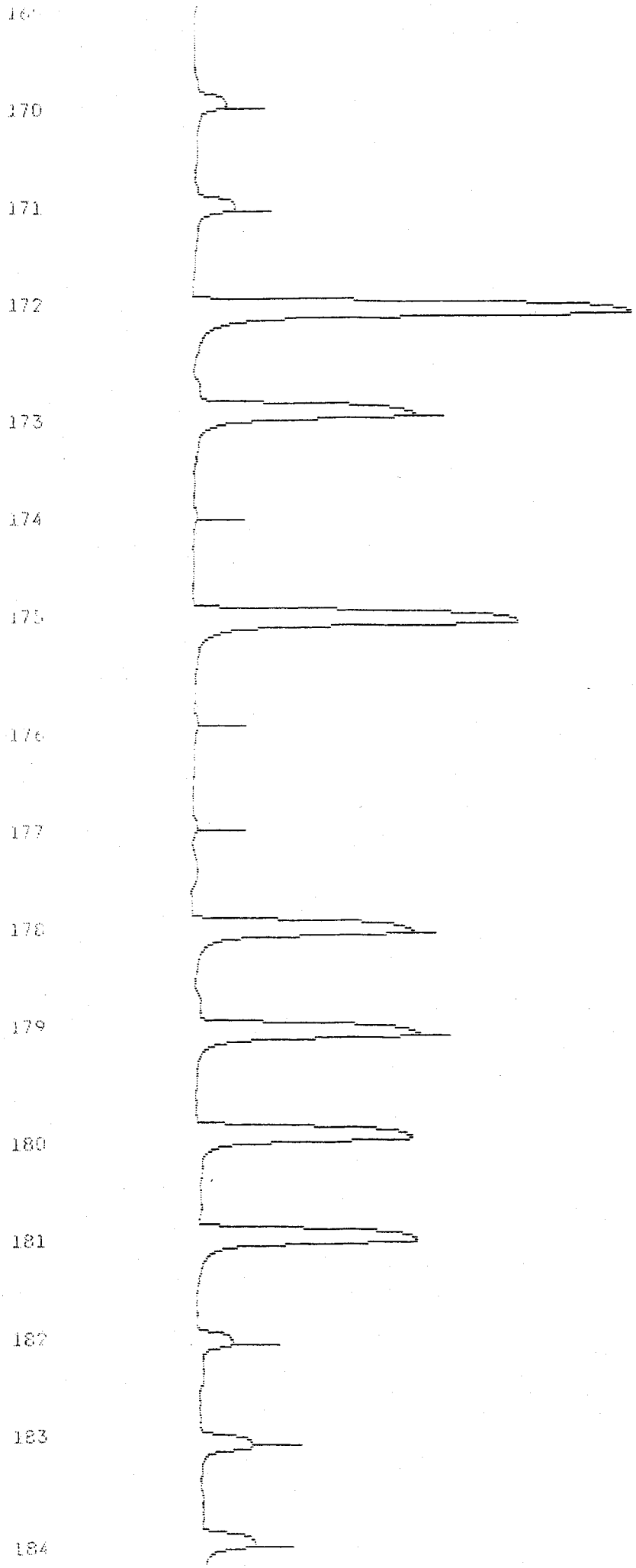
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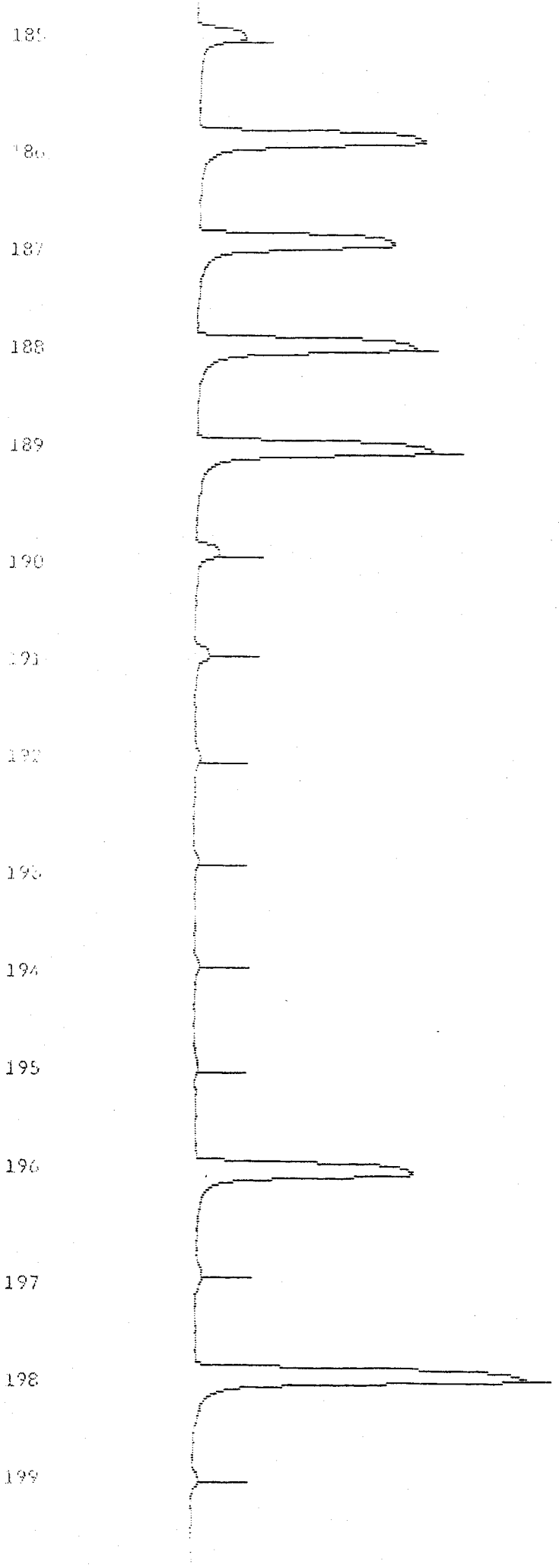
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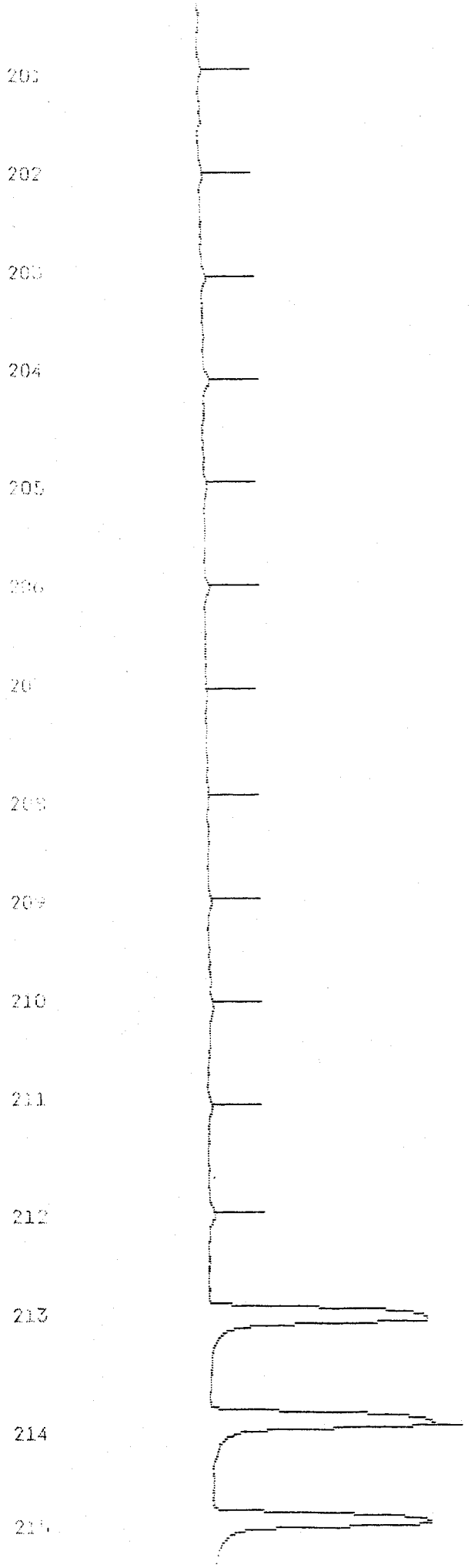
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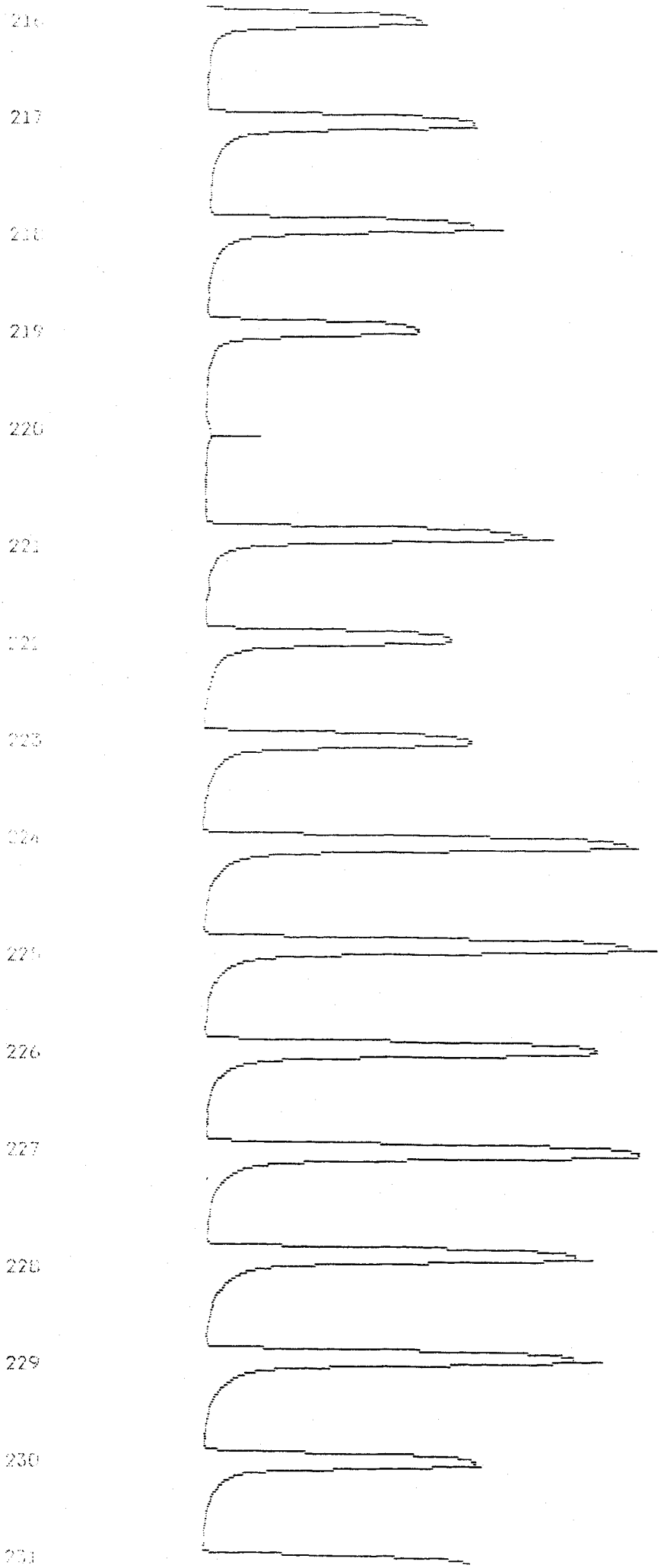
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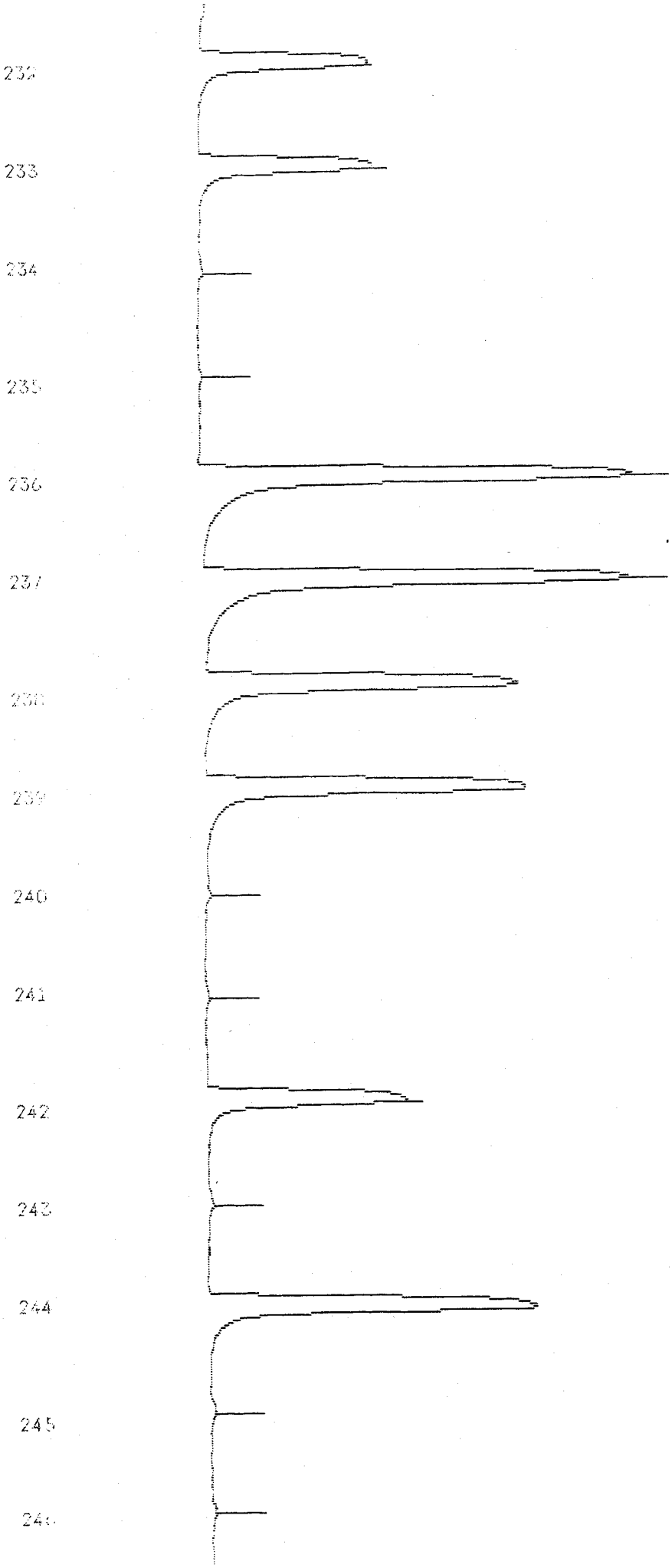
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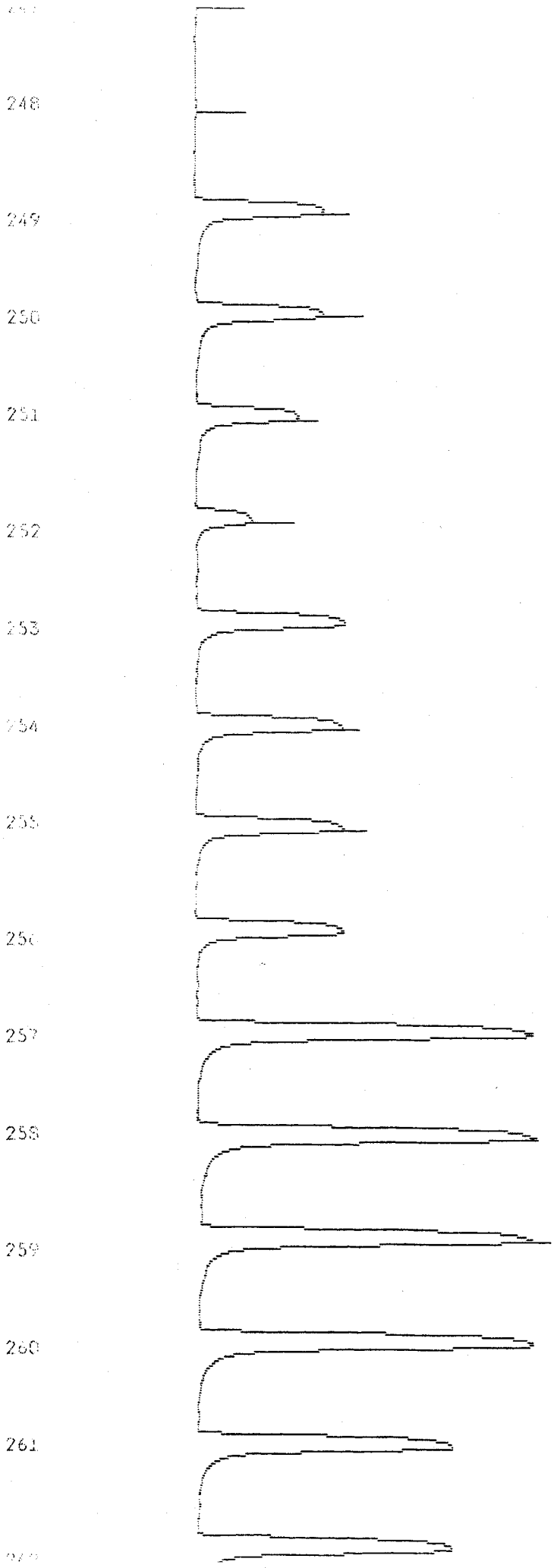
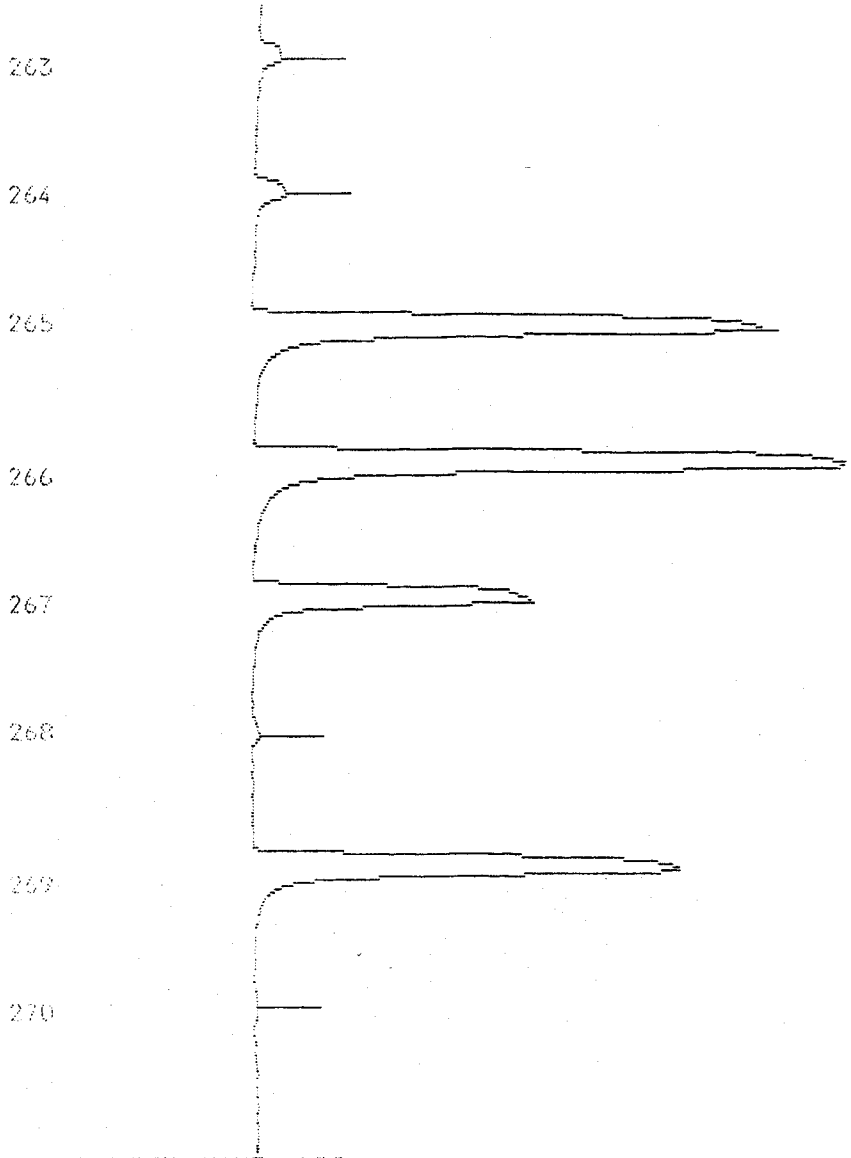
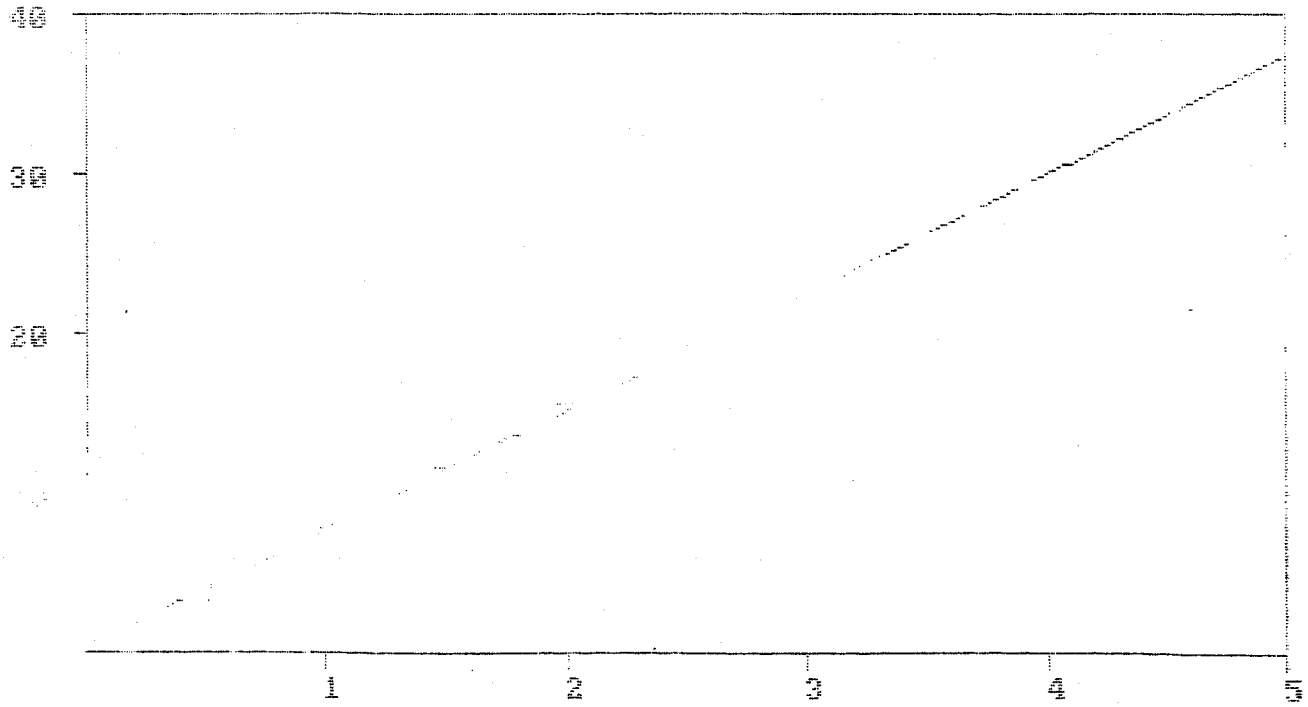




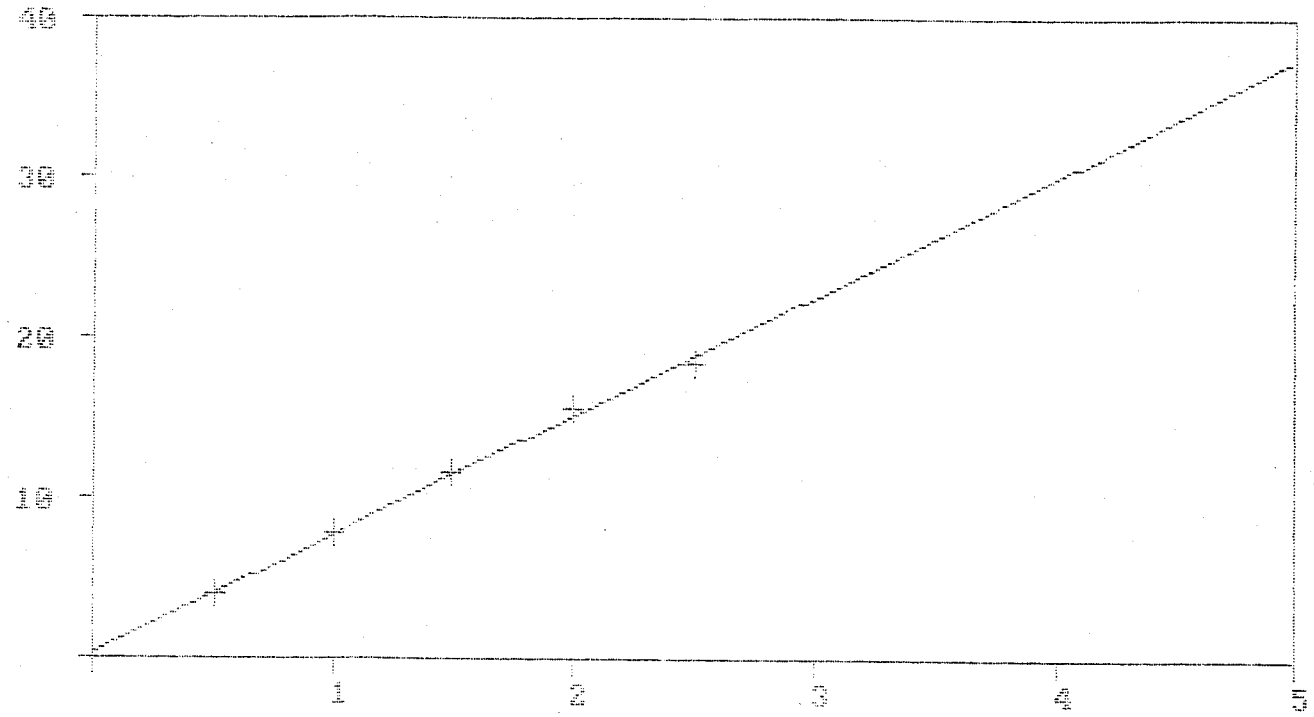
CHANNEL NAME: LDC
RUN NAME: 991004W1



DATA TYPE: FIA
INTERCEPT = 0.26

CALIBRATION ORDER: 1
SLOPE = 7.409733

CHANNEL NAME: LDC
RUN NAME: 991004WI



DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.20
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	50	1	8.7	54.336	
[illegible]	[illegible]	50	[illegible]	[illegible]	[illegible]	

00144

24	537463	30	1	15.7	[illegible]	
25	537463	30	1	15.6	[illegible]	
26	537463S	30	1	15.6	52.218	
27	537463S	30	1	15.7	52.316	
28	537463S	150	1	3.2	50.463	
29	537463S	150	1	3.2	50.969	
30	53750	1.5	1	[illegible]	[illegible]	
31	53750	1.5	1	4.7	0.70[illegible]	s
32	537500	1.5	1	4.5	[illegible]	
33	537500	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	13.4	2.251	
38	537503	1.5	1	13.4	2.261	
39	537503S	1.5	1	11.5	2.230	
40	537503S	1.5	1	10.7	2.117	
41	42494	7	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	13.7[illegible]	
46	424948	7.5	1	13.9	13.849	s
47	424948S	7.5	1	14.0	13.898	
48	424948S	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	42495	1.5	1	0.7	0.081	
52	42495	1.5	1	0.6	0.071	
53	4249[illegible]	7.5	1	9.[illegible]	9.301	
54	4249[illegible]	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	42512D	1.5	1	3.7	0.694	
75	42512D	1.5	1	4.3	0.812	
76	42512S	1.5	1	11.2	2.206	s
77	42512S	1.5	1	11.2	2.211	
78	42512DS	1.5	1	11.2	2.211	
79	42512DS	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	[illegible]	30	1	13.5	53.715	

90	42530	30	1	15.6	52.020	
91	42543	1.5	1	0.0	-0.053	
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	
96	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	14.5	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	2.291	
153	51458S	1.5	1	11.5	[illegible]	

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
156	51461	1.5	1	6.9	1.331	
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	0.218	
185	53135D	1.5	1	1.5	0.254	
186	53135S	1.5	1	[illegible].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	0.023	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	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.990	99%

00146

222	53145D	1.5	1	8.8	1.732	
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	53136DS	1.5	1	3.5	0.649	
252	53136DS	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	133S	1.5	1	8.9	1.756	
262	133S	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

00147

INTERCEPT: 0.26

CORRELATION COEF: .9989929

LINEAR COEF: 7.409733

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
051448	TRC-LO	MB R456	Mercury -	PV	-0.0050	-99999.0	0.0500	101.	0.0460	92.	99/10/01	1B2B	99/10/01	MG03	31.	17.	*BLKIMP*
051449	TRC-LO	BP-OHM-1-RB	Mercury -	PV	-0.2500						99/10/01	1B2B	99/10/01	MG03	31.	17.	*DDL*
051450	TRC-LO	BP-OHM-1-I-FB	Mercury -	PV	-0.2500						99/10/01	1B2B	99/10/01	MG03	32.	17.	*DDL*
051451	TRC-LO	BP-OHM-1-Ia-2	Mercury -	PV	-0.2500	-0.2500	2.5130	101.	2.5510	102.	99/10/01	1B2B	99/10/01	MG03	31.	17.	*PDS*
051452	TRC-LO	BP-OHM-1-Ib-2	Mercury -	PV	-0.2500						99/10/01	1B2B	99/10/01	MG03	31.	17.	*DDL*
051453	TRC-LO	BP-OHM-1-Ia-3	Mercury -	PV	-0.2500						99/10/01	1B2B	99/10/01	MG03	30.	17.	*DDL*
051454	TRC-LO	BP-OHM-1-Ib-3	Mercury -	PV	-0.2500						99/10/01	1B2B	99/10/01	MG03	30.	17.	*DDL*
051455	TRC-LO	BP-OHM-1-Ia-4	Mercury -	PV	-0.2500						99/10/01	1B2B	99/10/01	MG03	30.	17.	*DDL*
051456	TRC-LO	BP-OHM-1-Ib-4	Mercury -	PV	-0.2500						99/10/01	1B2B	99/10/01	MG03	30.	17.	*DDL*
051457	TRC-LO	BP-OHM-1-Ia-5	Mercury -	PV	-0.2500						99/10/01	1B2B	99/10/01	MG03	29.	17.	*DDL*
051458	TRC-LO	BP-OHM-1-Ib-5	Mercury -	PV	-0.2500						99/10/01	1B2B	99/10/01	MG03	29.	17.	*DDL*
BL1001	INTERNAL		Mercury -	PV	-0.0050	-99999.0	0.0500	101.	0.0460	92.	99/10/01	1B2B	99/10/01	MG03	$$$	$$$	*BLKIMP*
051459	TRC-LO	BP-OHM-1-O-FB	Mercury -	PV	-0.2500						99/10/01	2B2B	99/10/01	MG03	32.	17.	*DDL*
051460	TRC-LO	BP-OHM-1-O-2	Mercury -	PV	-0.2500	-0.2500	2.6610	104.	2.6900	105.	99/10/01	2B2B	99/10/01	MG03	31.	17.	*PDS*
051461	TRC-LO	BP-OHM-1-O-3	Mercury -	PV	-0.2500						99/10/01	2B2B	99/10/01	MG03	30.	17.	*DDL*
051462	TRC-LO	BP-OHM-1-O-4	Mercury -	PV	-0.2500						99/10/01	2B2B	99/10/01	MG03	30.	17.	*DDL*
051463	TRC-LO	BP-OHM-1-O-5	Mercury -	PV	-0.2500						99/10/01	2B2B	99/10/01	MG03	29.	17.	*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

00148

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.01 (WA) 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			WS 378			
13			ORG. REF.			
14			BL1001	1B2B		
15			"			
16			BL1001 S			
17			"			
18			BL1001 DS			
19			"			
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		HS	~~BLANK~~ CCV			
44			B			
45		HS	~~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						
141 ~~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						
50						
51						
52						
53						
54						
55						
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58						
59						
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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.

00152

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.)	1628	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1001	"	[illegible]	[illegible]	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	OS	"	↓	↓	↓	(Duplicate Spiked sample)
2	16	51449	"	↓	↓	↓	
3	17	50	"	↓	↓	↓	
4	18	52	"	↓	↓	↓	
5	19	53	"	↓	↓	↓	
6	20	54	"	↓	↓	↓	
7	21	55	"	↓	↓	↓	
8	22	56	"	↓	↓	↓	
9	23	57	"	↓	↓	↓	
10	24	58	"	↓	↓	↓	
	25	CCV (Cont. Calib. Verif.)	2821	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	"	↓	↓	↓	
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 Temp.: 1[illegible] °C

Prepared By: RB | Date: 99.10.01 | Checked by: [illegible]

	#	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	53184	"	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	50135	"				
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

* c[illegible]centration based on 30 ml final volume, ** concentration based on 20 ml final volume

* [illegible] 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

00154

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.)	HB249	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	53145	"	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	53144	"	"	"	"	
3	17	46	"	"	"	"	
4	18	47	"	"	"	"	
5	19	48	"	"	"	"	
6	20	49	"	"	"	"	
7	21	50	"	"	"	"	
8	22	61	"	"	"	"	
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. 1 95 °C

Prepared By: [illegible] Date: 99.10.01 Checked by: [illegible]

RUN DATE: 10-02-1999 CHART DATE: 10-02-1999
CHART SPEED: 30
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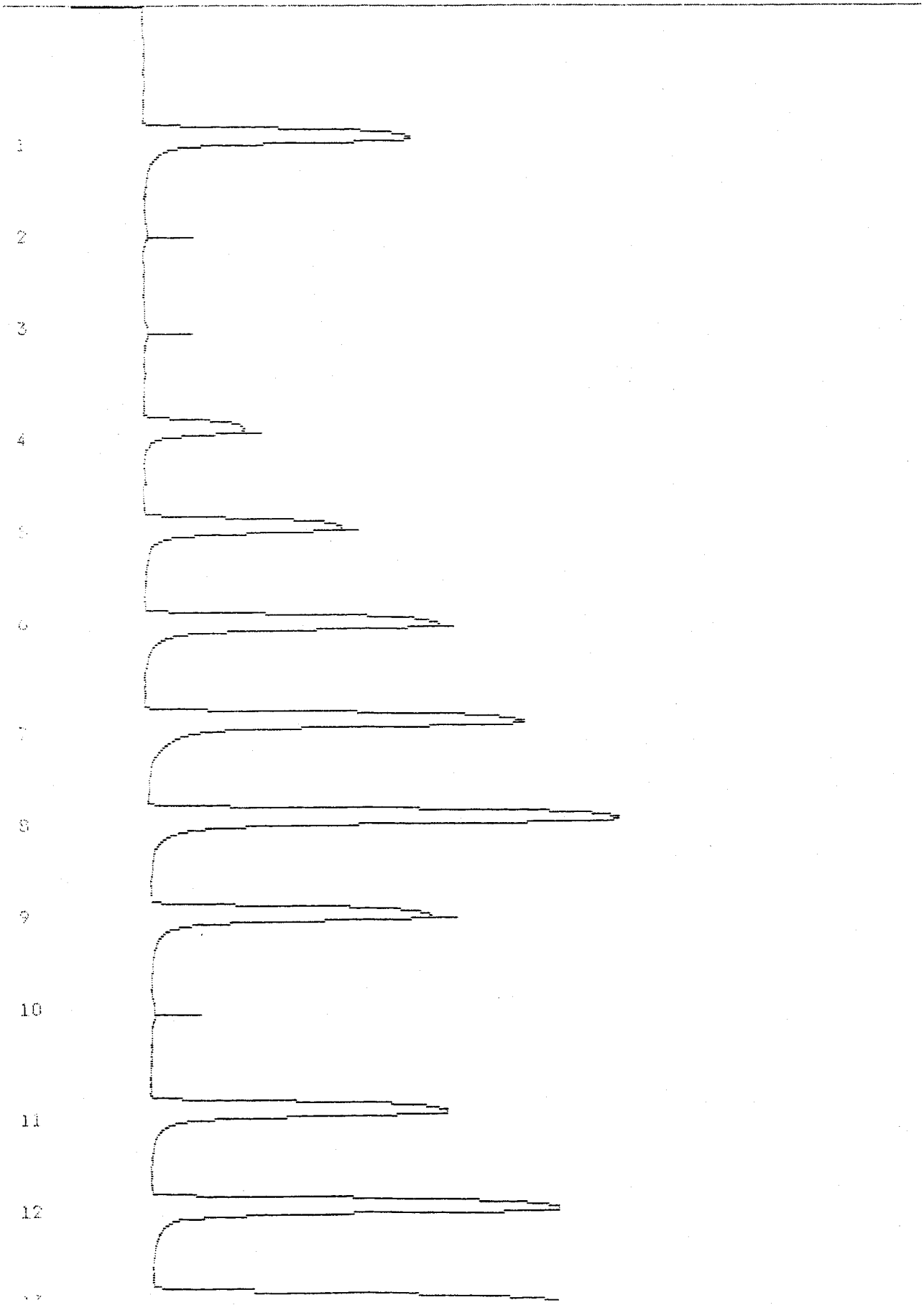

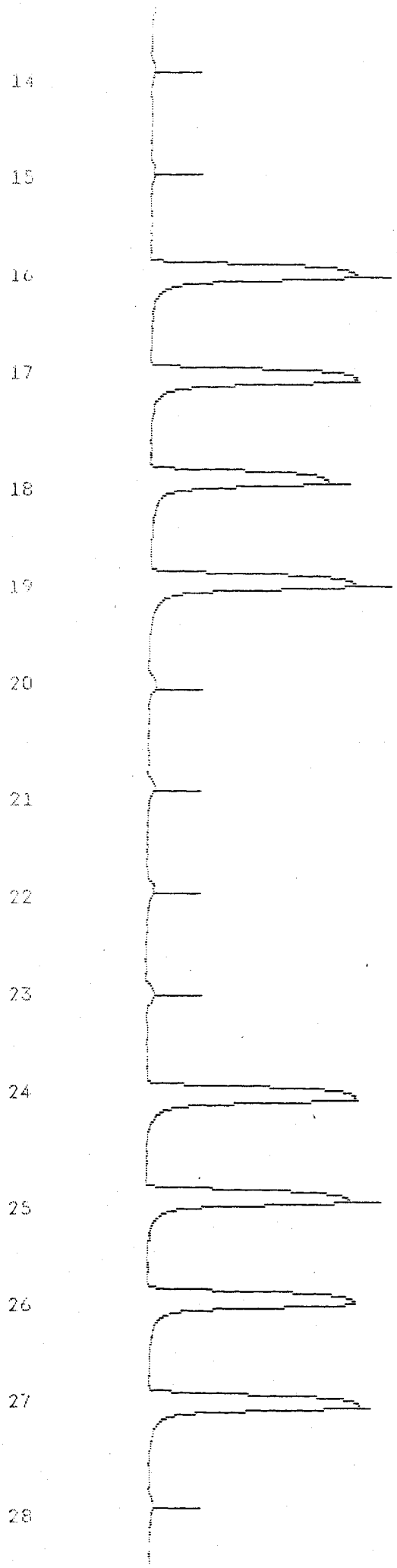
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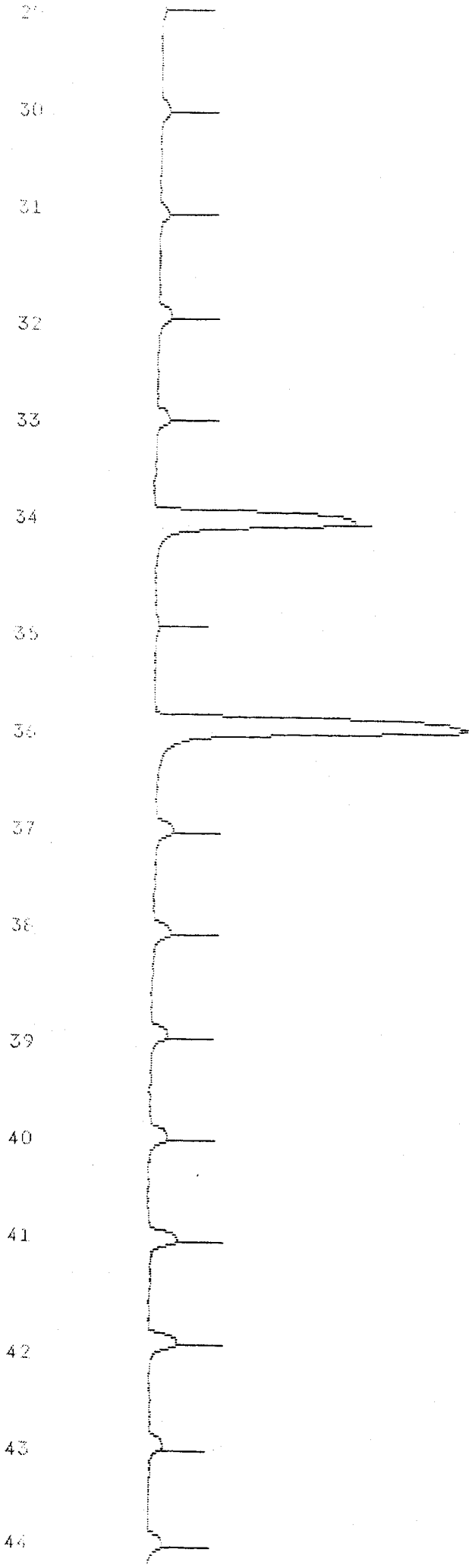
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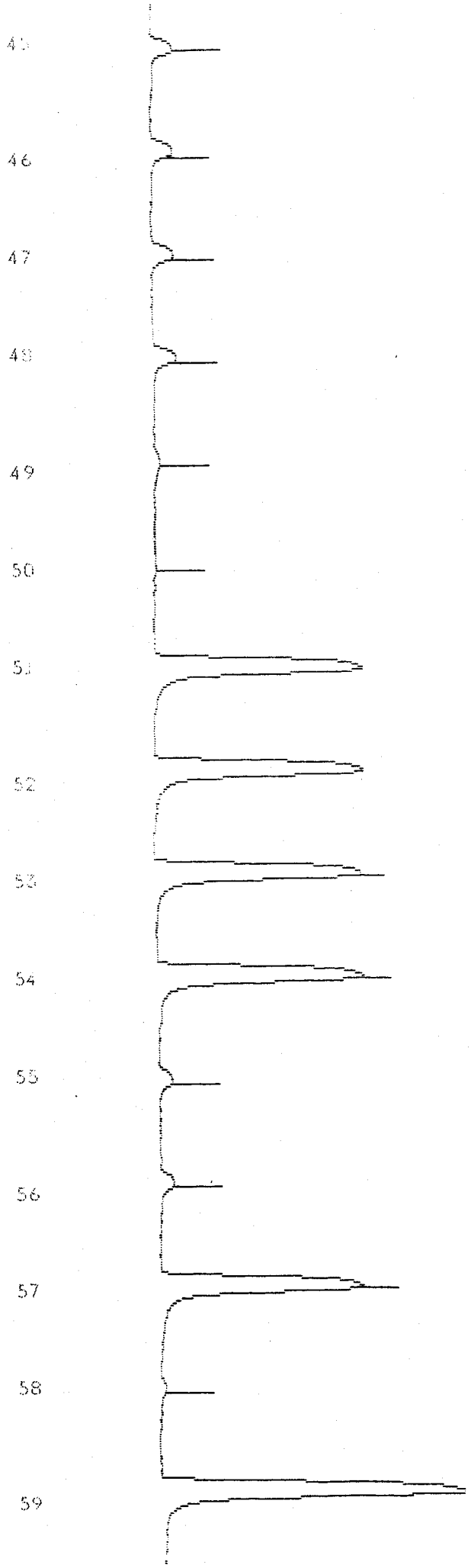
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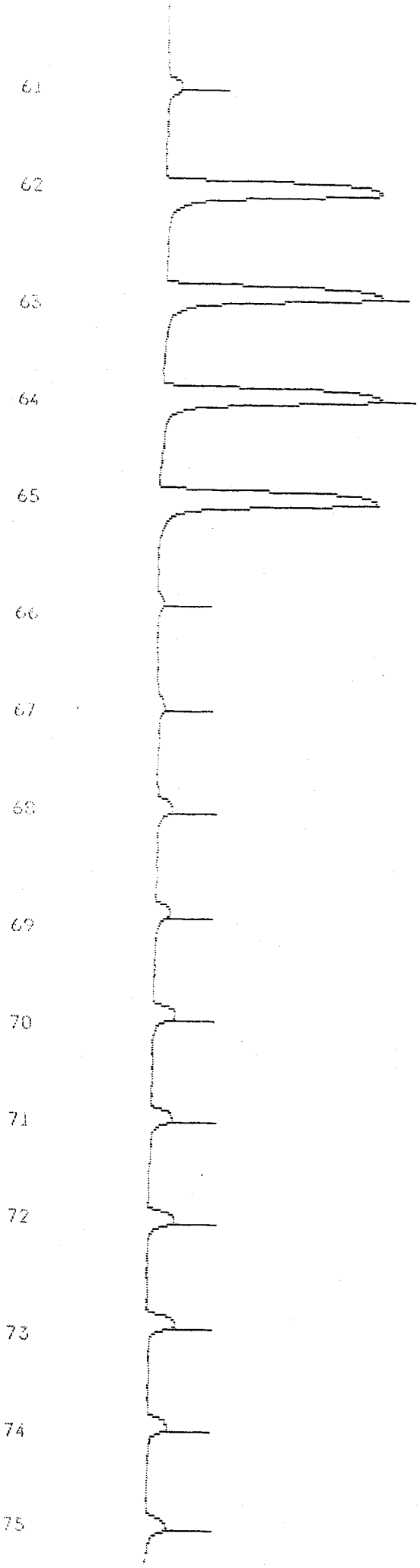
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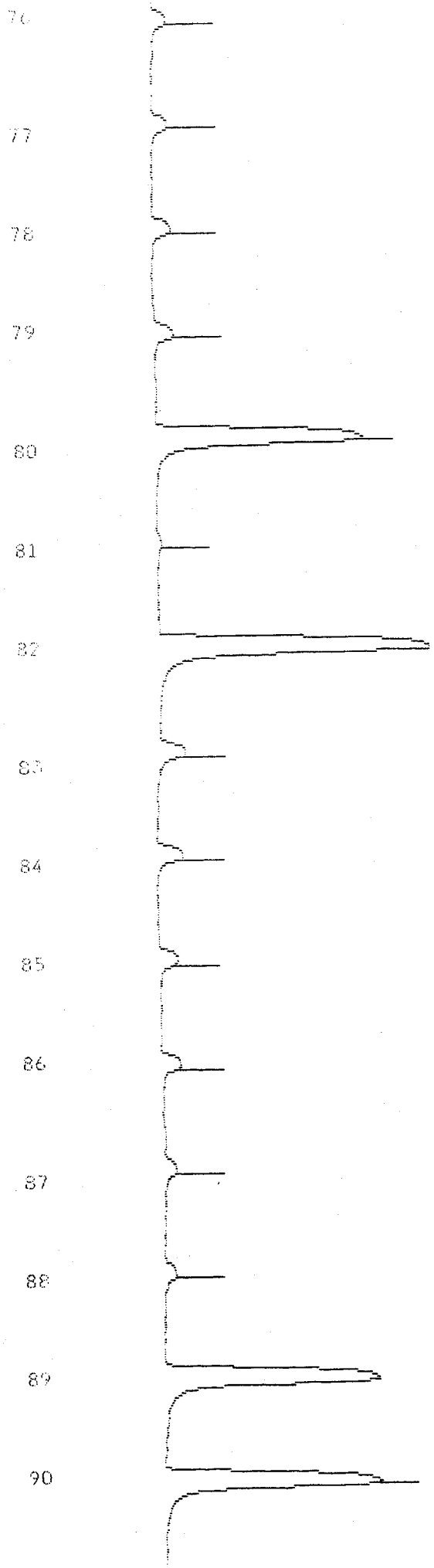
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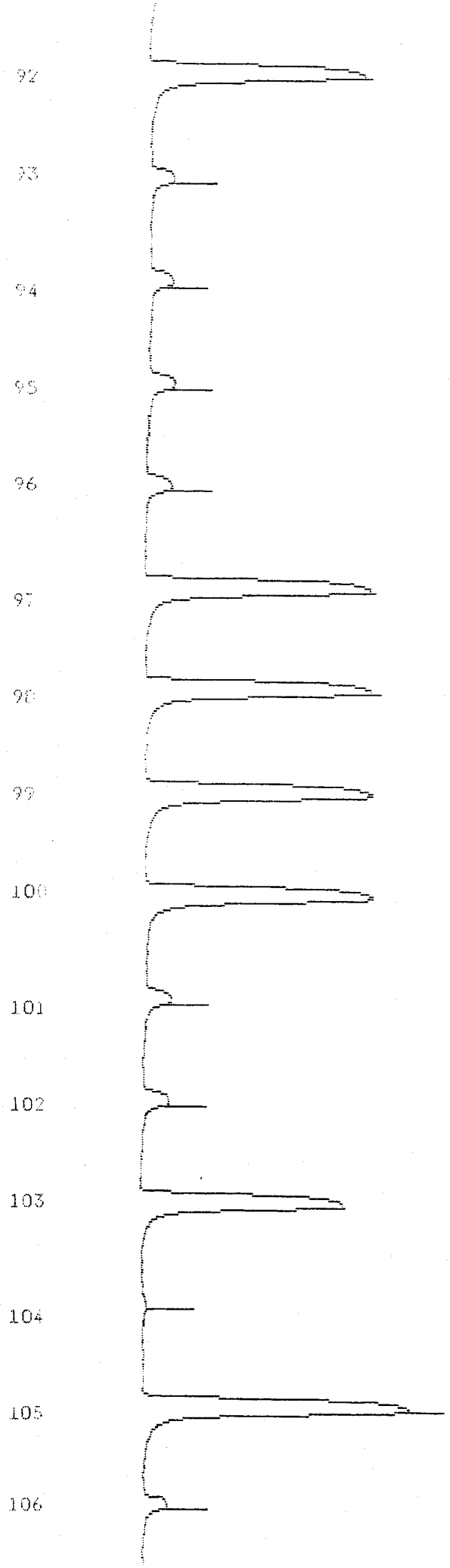
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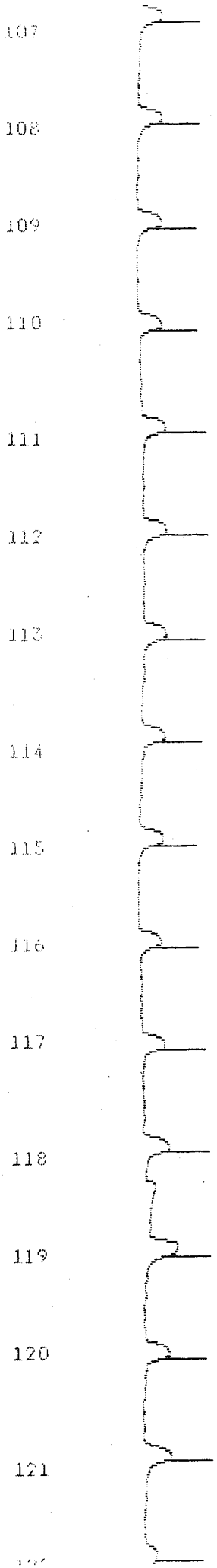
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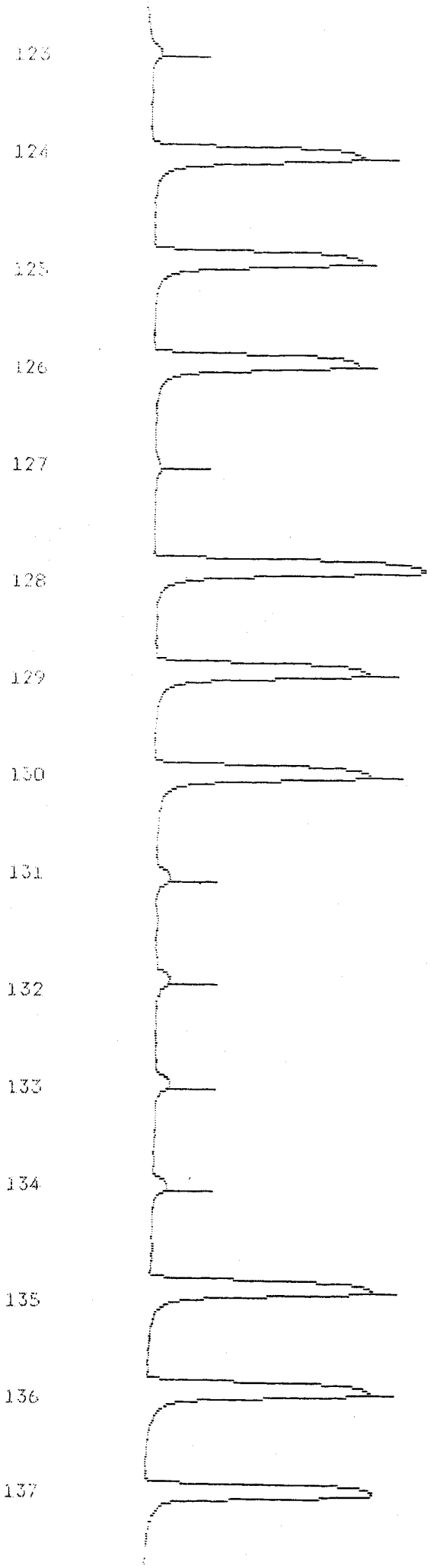
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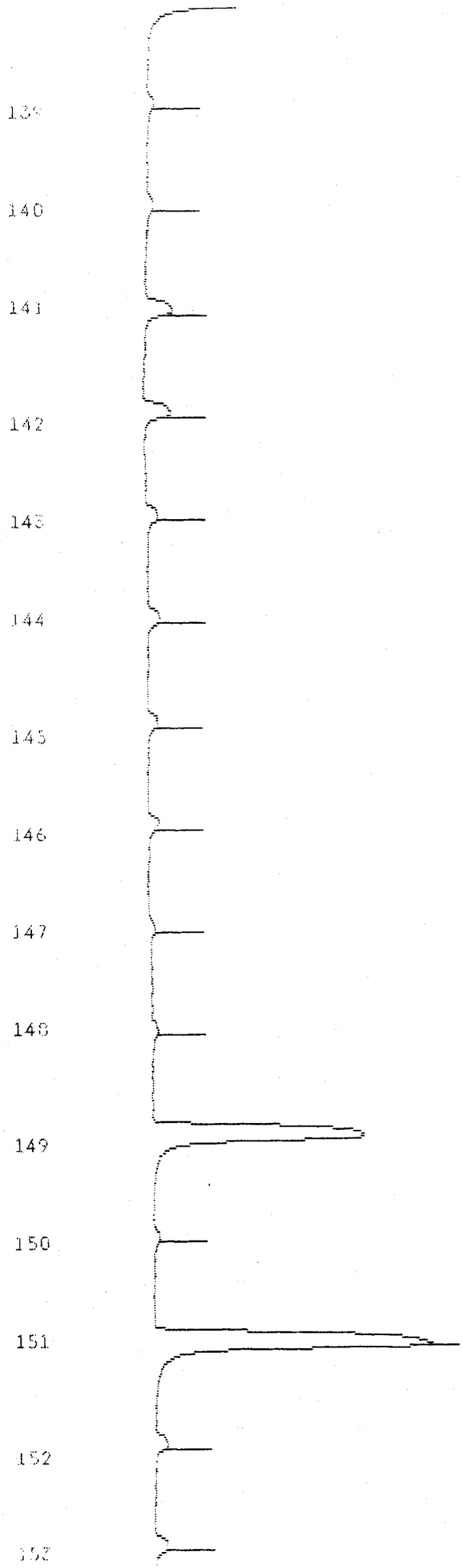
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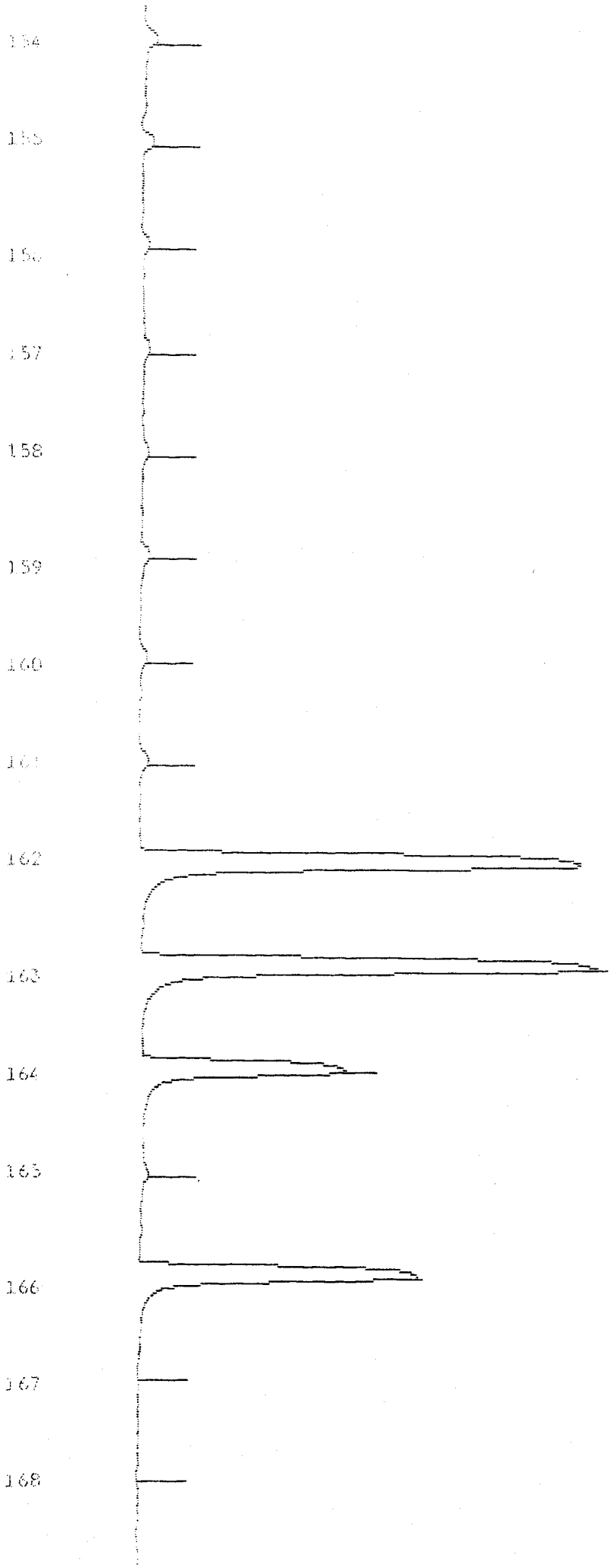
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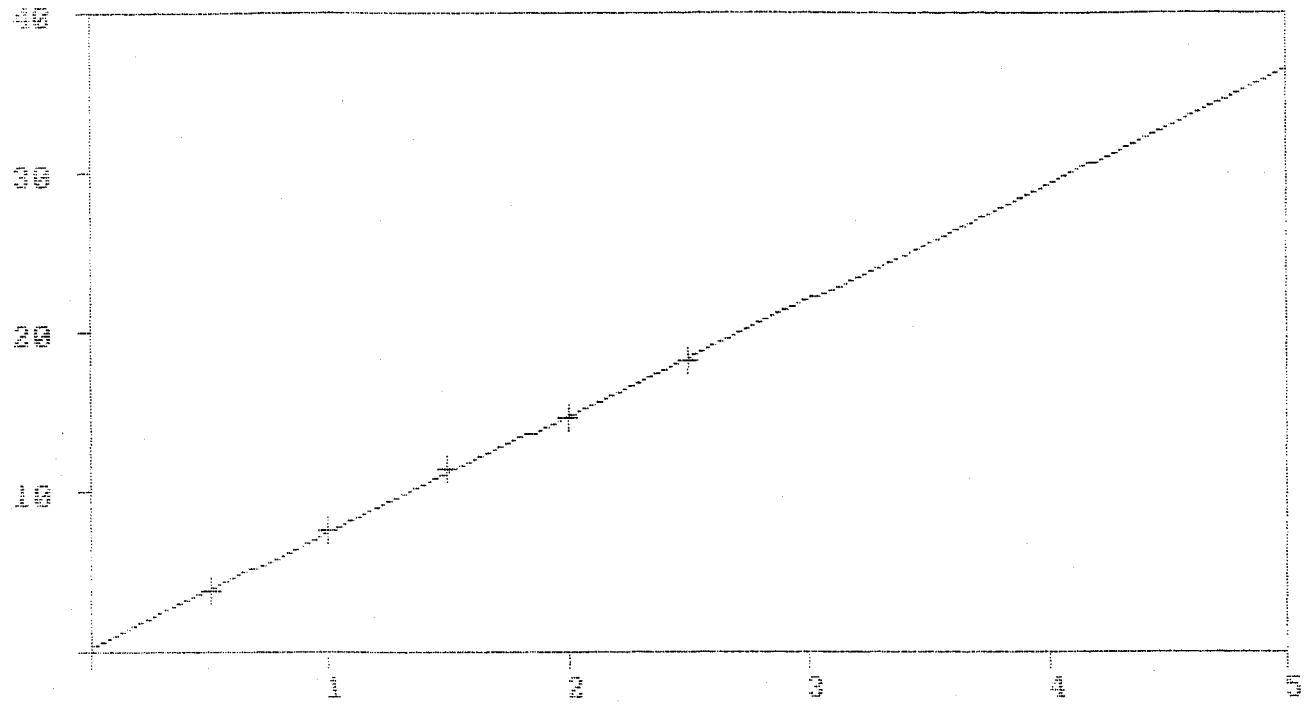
CHANNEL NAME: LDC
RUN NAME: 991001WA



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 51448	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		1.005	s
17	BL1001S	1	1	7.5	0.050	1.005	101%
18	BL10010S	1	1	6.3		0.850	
19	BL1001DS	1	1	7.4	0.046	0.992	92%
20	51451	10	1	0.[illegible]	[illegible]	0.140	I

22	51450	10	1	0.1	<0.250	-0.174	I	
23	51450	10	1	0.1		-0.174	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	[illegible]	
37	51453	10	1	0.5	<0.250	0.468	[illegible]	
38	51453	10	1	0.5		[illegible]		
39	51454	10	1	0.5	<0.250	[illegible]	[illegible]	
40	51454	10	1	0.6		[illegible]	[illegible]	
41	51455	10	1	[illegible]	<0.250	[illegible]		
42	51455	10	1	[illegible]		[illegible]		
43	51456	10		[illegible]	<0.250	[illegible]	[illegible]	
44	51456	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
45	51457	[illegible]	[illegible]	[illegible]	<0.250	[illegible]		
46	51457	[illegible]	[illegible]	[illegible]		0.569	s	
47	[illegible]	[illegible]		[illegible]	<0.250	0.603		
48	[illegible]	[illegible]		[illegible]		0.636		
[illegible]	[illegible] 53128		[illegible]	0.0	<0.005	-0.021	I	
[illegible]	[illegible]	[illegible]	[illegible]	0.0		-0.027	I	
[illegible]	[illegible]	[illegible]	[illegible]	7.5	0.050	1.005	101%	
[illegible]	[illegible]		1	7.5		1.009		
[illegible]	[illegible]	[illegible]	1	7.4	0.050	1.002	100%	
[illegible]	[illegible]	1	1	7.4		0.999		
[illegible]	[illegible]	10	1	0.3	<0.250	0.198	I	
[illegible]	[illegible]	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	0.263	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	0.4		[illegible]	[illegible]	

88	BL1001-4828	1	1	8.3		0.310	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	BL1001-4828	1	1	0.2	<0.005	0.003	I	
123	BL1001-4828	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	

154	53151	10	1	0.2	<0.250 0.029	I
155	53151	10	1	0.2	00.59 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	1

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

Fed Dangerous Goods Airbill

Recipient's Copy

00171

81000643995 1

Questions? Call 1•800•Go•FedEx® (800)463-3339

1 From

Date

Sender's FedEx Account Number [redacted]

Sender's Name Jean R Jones Phone (978) 970-5500

Company INC ENVIRONMENTAL CLEAN

Address 100 FOOT OF JOHN ST

Dept./Floor/Suite/Room

City LOWELL State MA ZIP 01852

2 Your Internal Billing Reference Information 2500-0030-00003

3 To

Recipient's Name Mr Ron Melson Phone (716) 772-7501

Company Pr [illegible] Services

Address 200 [illegible] Rd

Dept./Floor/Suite/Room

Check here if residence (Extra charge applies for FedEx Express Saver)

City [illegible] State NY ZIP 14225

For HOLD at FedEx Location check here

☐ Hold Weekday ☐ Hold Saturday (Not available at all locations) (Available for FedEx Priority Overnight and FedEx 2Day only)

For WEEKEND Delivery check here (Extra Charge. Not available at all locations)

☐ Saturday Delivery (Available for FedEx Priority Overnight and FedEx 2Day only) ☐ NEW Sunday Delivery (Available for FedEx Priority Overnight only)

4a Express Package Service *Packages under 150 lbs.*

Delivery commitment may be later in some areas.

☒ FedEx Priority Overnight (Next business morning) ☐ FedEx Standard Overnight (Next business afternoon)

☐ FedEx 2Day (Second business day) ☐ FedEx Express Saver (Third business day)

4b FedEx Freight Service *Packages over 150 lbs.*

Delivery commitment may be later in some areas.

☐ FedEx Overnight Freight (Next business day) ☐ FedEx 2Day Freight (Second business day) ☐ FedEx Express Saver Freight (Up to 3 business days)

(Call for delivery schedule. Some restrictions apply. See back for detailed descriptions of freight services.)

5 Packaging

☒ Other Packaging

Dangerous Goods cannot be shipped in FedEx packaging.

6 Special Handling

☒ Dangerous Goods as per attached Shipper's Declaration

☒ Cargo Aircraft Only

7 Payment

Bill to: ☒ Sender (Account No. in Section 1 will be billed) ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

(Enter FedEx Account No. or Credit Card No. below)

[redacted]

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	145	$ 20,000.00	$

* When declared value [illegible] you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE [illegible] OF LIABILITY section for further information.

Credit Card Auth.

Signature Release Unavailable

PART #154251 • Rev. Date 4/98 ©1994-98 FedEx • PRINTED IN U.S.A.

FedEx Tracking Number 81000643995 1

Form I.D. No. 0204

355 98 SRC

Page 1 of 1 Pages

Two completed and signed copies of this Declaration must be handed to the operator.

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.

TRANSPORT DETAILS

This shipment is within the limitations prescribed for: (delete non-applicable)

PASSENGER AND CARGO AIRCRAFT | CARGO AIRCRAFT ONLY

Airport of Departure: BOSR Boston

Airport of Destination BUF

Shipment type: (delete non-applicable)

NON-RADIOACTIVE | ~~RADIOACTIVE~~

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification

Proper Shipping Name	Class or Division	UN or I.D. No.	Packing Group	Subsidiary Risk	Quantity and Type of Packaging	Packing Inst.	Authorization
Corrosive Liquid, N.O.S. (Lime Rem/Sulfuric Acid)	8	UN 1760	II		1 Wooden Box x 6L	912	

Additional Handling Information Cargo Aircraft Only

Prepared for AIR TRANSPORT according to: (Customer MUST check one)

☐ 49 CFR ☒ ICAO / IATA

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked, and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Name/Title of Signatory Sales Jean Environmental Services

Place and Date Lowell MA 8/3

Signature (see warning above) Jean R

Emergency Telephone Number (Required for US Origin or Destination Shipments) Cell-phone (978) 474-7300

ACCEPTABLE FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS, OR TREATMENT.

Mb-51448

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): 8/30/99 - 8/31/99
Laboratory: Philip
Laboratory P.O. #:
Shipping Airbill No.:
Shipping Date(s):
Shipper's Name:

25

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 (Cr+6 - Hydra)	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-1-O-FB-PF-Hg	8/30	Petri							X	Boiler 1, Outlet FB	X	✓		ppm							
PG&E-BP-OHM-1-O-FB-PR-Hg		125ml	G			X					X	✓		100%							51459
PG&E-BP-OHM-1-O-FB-KCl-Hg		500ml				X					X	✓		100%							
PG&E-BP-OHM-1-O-FB-HNO3/H2O2-Hg		125ml				X					X	✓		500%							
PG&E-BP-OHM-1-O-FB-KMnO4-Hg		500ml				X					X	✓		500%							
PG&E-BP-OHM-1-I-FB-PF-Hg	8/30	Petri							X	Boiler #1, Inlet FB	X	✓		ppm							
PG&E-BP-OHM-1-I-FB-PR-Hg		125ml	G			X					X	✓		100%							51452
PG&E-BP-OHM-1-I-FB-KCl-Hg		500ml				X					X	✓		100%							
PG&E-BP-OHM-1-I-FB-HNO3/H2O2-Hg		125ml				X					X	✓		500%							
PG&E-BP-OHM-1-I-FB-KMnO4-Hg		500ml				X					X	✓		"							
PG&E-BP-OHM-1-RB-PF-Hg	8/31	Petri							X	Boiler #1, Reagent BK	X	✓		ppm							
PG&E-BP-OHM-1-RB-KCl-Hg		125ml	G			X					X	✓		100%							51449
PG&E-BP-OHM-1-RB-HNO3/H2O2-Hg		125ml				X					X	✓									
PG&E-BP-OHM-1-RB-HNO3-Hg		125ml				X					X	✓									
PG&E-BP-OHM-1-RB-KMnO4-Hg		125ml				X					X	✓									

Relinquished by:	Date/Time: 9/3/99 1126	Relinquished by:	Date/Time:
Received by: -PASI	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

00172

№ 2427

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TRC Environmental Corporation

MG - 64.

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): ~~9/1/99~~ 8/31/99
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 | 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	Hexavalent Chromium	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHm-1-Ia-2-PF-Hg	8/31	Petri							X	Boiler #1 East Inlet	X	✓		PPD							
PG&E-BP-OHm-1-Ia-2-PR-Hg		250ml	G			X				Run 2	X	✓		250ml							
PG&E-BP-OHm-1-Ia-2-KCl-Hg		1L				X					X	✓									51451
PG&E-BP-OHm-1-Ia-2-~~HNO3/H2O2-Hg~~		250ml				X					X	✓									
PG&E-BP-OHm-1-Ia-2-~~KMnO4-Hg~~		1L				X					X	✓									
PG&E-BP-OHm-1-Ia-2-A-Hg		125ml			X						X	✓		- Ash							51465
PG&E-BP-OHm-1-Ib-2-PF-Hg	8/31	Petri							X	Boiler #1 West Inlet	X	✓									51452
PG&E-BP-OHm-1-Ib-2-PR-Hg		250ml	G			X				Run 2	X	✓									
PG&E-BP-OHm-1-Ib-2-KCl-Hg		1L				X					X	✓									
PG&E-BP-OHm-1-Ib-2-~~HNO3/H2O2-Hg~~		250ml				X					X	✓									
PG&E-BP-OHm-1-Ib-2-~~KMnO4-Hg~~		1L				X					X	✓									
PG&E-BP-OHm-1-Ib-2-A-Hg		125ml			X						X	✓		- Ash.							51466

Relinquished by: [signature]	Date/Time: 9/3/99 1128	Relinquished by:	Date/Time:
Received by: [signature] - PASL	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02430

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TRC
TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): 9/1/99
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-1-Ia-3-PF-Hg	9/1	Petri							X	Boiler #1, East Inlet	X	✓									
PG&E-BP-OHM-1-Ia-3-PR-Hg	↓	250ml	G				X			Run 3	X	✓									
PG&E-BP-OHM-1-Ia-3-KCl-Hg		1L	↓				X			↓	X	✓				51453					
PG&E-BP-OHM-1-Ia-3-~~HNO3/H2O2~~-Hg		250ml					X				X	✓									
PG&E-BP-OHM-1-Ia-3-KMnO4-Hg		1L					X				X	✓									
PG&E-BP-OHM-1-Ia-3-A-Hg	↓	125ml	↓			X				Ash ↓	X	✓									51467
PG&E-BP-OHM-1-Ib-3-PF-Hg	9/1	Petri								Boiler #1, West Inlet	X										
PG&E-BP-OHM-1-Ib-3-PR-Hg	↓	250ml	G							Run 3	X										
PG&E-BP-OHM-1-Ib-3-KCl-Hg		1L	↓							↓	X					51454					
PG&E-BP-OHM-1-Ib-3-~~HNO3/H2O2~~-Hg		250ml									X										
PG&E-BP-OHM-1-Ib-3-KMnO4-Hg		1L									X										
PG&E-BP-OHM-1-Ib-3-A-Hg	↓	125ml	↓							Ash ↓	X										51468

Relinquished by:	Date/Time: 9/3/99 1126	Relinquished by:	Date/Time:
Received by: [signature] PASL	Date/Time: 9/10/99 12:30	Received by:	Date/Time:

REMARKS (*):

00174

№ 02431

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TRC Environmental Corporation

CHAIN OF C ODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): ~~7/31/99~~ 9/1/99
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-1-Ia-4-A-Hg	9/01	125ml	G			X				Boiler #1 East Inlet	X	✓				ASH					- 51469
PG&E-BP-OHM-1-Ia-4-PF-Hg		Petri							X	Run 4	X	✓									
PG&E-BP-OHM-1-Ia-4-PR-Hg		250ml	G				X				X	✓									
PG&E-BP-OHM-1-Ia-4-KCl-Hg		1L					X				X	✓								51455	
PG&E-BP-OHM-1-Ia-4-HNO3/H2O2-Hg		250ml					X				X	✓									
PG&E-BP-OHM-1-Ia-4-KMnO4-Hg		1L					X				X	✓									
PG&E-BP-OHM-1-Ib-4-A-Hg	9/1	125ml	G			X				Boiler #1 West Inlet	X	✓				ASH					- 51470
PG&E-BP-OHM-1-Ib-4-PF-Hg		Petri							X	Run 4	X	✓									
PG&E-BP-OHM-1-Ib-4-PR-Hg		250ml	G				X				X	✓									
PG&E-BP-OHM-1-Ib-4-KCl-Hg		1L					X				X	✓								51456	
PG&E-BP-OHM-1-Ib-4-HNO3/H2O2-Hg		250ml					X				X	✓									
PG&E-BP-OHM-1-Ib-4-KMnO4-Hg		1L					X				X	✓									

Relinquished by:	Date/Time: 9/3/99 1125	Relinquished by:	Date/Time:
Received by:	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02428

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TRC
TRC Environmental Corporation

00-175

CHAIN OF CUSTODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): 9/2/99
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 (Instant-Hydric)	HCl	Cl2	Particulate Matter	PCDD/PCDF	Semi-Volatile Organics	Volatile Organics	Physical Parameters*	Comments
PG&E-BP-OHM-1-Ia-5-PF-Hg	9/2	Petri							X	Boiler #1 East Inlet	X	✓									
PG&E-BP-OHM-1-Ia-5-PR-Hg		250ml	G			X				Run 5	X	✓									
PG&E-BP-OHM-1-Ia-5-KCl-Hg		1L				X					X	✓									51457
PG&E-BP-OHM-1-Ia-5-HNO3/H2O2-Hg		250ml				X					X	✓									
PG&E-BP-OHM-1-Ia-5-KMnO4-Hg		1L				X					X	✓									
PG&E-BP-OHM-1-Ia-5-A-Hg		125ml			X						X	✓		ASH							51471
PG&E-BP-OHM-1-Ib-5-PF-Hg	9/2	Petri	P						X	Boiler #1, West Inlet	X	✓									
PG&E-BP-OHM-1-Ib-5-PR-Hg		250ml	G			X				Run 5	X	✓									51459
PG&E-BP-OHM-1-Ib-5-KCl-Hg		1L				X					X	✓									
PG&E-BP-OHM-1-Ib-5-HNO3/H2O2-Hg		250ml				X					X	✓									
PG&E-BP-OHM-1-Ib-5-KMnO4-Hg		1L				X					X	✓									
PG&E-BP-OHM-1-Ib-5-A-Hg		125ml			X						X	✓		ASH							51472

Relinquished by: [signature]	Date/Time: 9/3/99 1124	Relinquished by:	Date/Time:
Received by: [signature] - PASL	Date/Time: 990914 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02433

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TRC Environmental Corporation

CHAIN OF C ODY RECORD

Project Name: PG&E Brayton
Project No.: 26046
Sampling Date(s): 8/31/99
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-1-0-2-PF-Hg	8/31	Petri							X	Boiler #1, outlet	X	✓									
PG&E-BP-OHM-1-0-2-PR-Hg	↓	250ml	G			X				Run 2	X	✓									
PG&E-BP-OHM-1-0-2-KCl-Hg	↓	1L	↓			X				↓	X	✓									51460
PG&E-BP-OHM-1-0-2-HNO3/H2O2-Hg	↓	250ml	↓			X				↓	X	✓									
PG&E-BP-OHM-1-0-2-KMnO4-Hg	↓	1L	↓			X				↓	X	✓									
PG&E-BP-OHM-1-0-3-PF-Hg	9/1	Petri							X	Boiler #1, Outlet	X	✓									
PG&E-BP-OHM-1-0-3-PR-Hg	↓	250ml	G			X				Run 3	X	✓									
PG&E-BP-OHM-1-0-3-KCl-Hg	↓	1L	↓			X				↓	X	✓									51461
PG&E-BP-OHM-1-0-3-HNO3/H2O2-Hg	↓	250ml	↓			X				↓	X	✓									
PG&E-BP-OHM-1-0-3-KMnO4-Hg	↓	1L	↓			X				↓	X	✓									
PG&E-BP-OHM-1-0-4-PF-Hg	9/1	Petri							X	Boiler #1, Outlet	X	✓									
PG&E-BP-OHM-1-0-4-PR-Hg	↓	250ml	G			X				Run 4	X	✓									
PG&E-BP-OHM-1-0-4-KCl-Hg	↓	1L	↓			X				↓	X	✓									51462
PG&E-BP-OHM-1-0-4-HNO3/H2O2-Hg	↓	250ml	↓			X				↓	X	✓									
PG&E-BP-OHM-1-0-4-KMnO4-Hg	↓	1L	↓			X				↓	X	✓									

Relinquished by: [signature]	Date/Time: 9/3/99 1127	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 990914 17:30	Received by:	Date/Time:

REMARKS (*): Ontario Hydro

№ 02429

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TRC
TRC Environmental Corporation

CHAIN OF CUSTODY RECORD

Project Name: Brayton - PG&E
Project No.: 26846
Sampling Date(s): 9/2/99
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-BP-OHM-1-0-5-PF-Hg	9/2	Petri							X	Boiler #1 Outlet	X	✓									51463
PG&E-BP-OHM-1-0-5-KCl-Hg	↓	1L	G			X				Run 5	X	✓									
PG&E-BP-OHM-1-0-5-~~HNO3~~-Hg		250ml	↓			X				↓	X	✓									
PG&E-BP-OHM-1-0-5-$KMnO_4$-Hg		1L				X					X	✓									
PG&E-BP-OHM-1-0-5-PR-Hg	↓	250ml	↓			X				↓	X	✓									

Relinquished by: [signature]	Date/Time: 9/3/99 1125	Relinquished by:	Date/Time:
Received by: [signature] - PPSL	Date/Time: 9/9/99 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02432

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

TRC Environmental Corporation

Page ___ of ___

US SAMPLE LOG IN SHEET

TRC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Green

Received By (Signature):

LOWELL

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.	810006439951	
Does Information on Custody Records and Samples Agree?	Yes ✓ No ___	
Date Received at Lab	9 14 99	
Time Received	12:30p	

Temperature of Coolers

Cooler ID:	Temperature
1 crate	not taken

Relinquished By: _____

9 14 99

Logbook No: _____

** TX STATUS REPORT ** AS OF SEP 16 1999 12:23 PAGE.01

PHILIP ANALYTICAL

	DATE	TIME	TO/FROM	MODE	MIN/SEC	PGS	JOB#	STATUS
18	09/16	12:23	19784531995	EC--S	00'28"	002	198	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: Hg via 'OH' Method
were received in good condition unless
indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
051449	BP-OHM-1-RB	99/08/31	99/09/14
051450	BP-OHM-1-I-FB	99/08/30	99/09/14
051451	BP-OHM-1-Ia-2	99/08/31	99/09/14
051452	BP-OHM-1-Ib-2	99/08/31	99/09/14
051453	BP-OHM-1-Ia-3	99/09/01	99/09/14
051454	BP-OHM-1-Ib-3	99/09/01	99/09/14
051455	BP-OHM-1-Ia-4	99/09/01	99/09/14
051456	BP-OHM-1-Ib-4	99/09/01	99/09/14
051457	BP-OHM-1-Ia-5	99/09/02	99/09/14
051458	BP-OHM-1-Ib-5	99/09/02	99/09/14
051459	BP-OHM-1-O-FB	99/08/30	99/09/14
051460	BP-OHM-1-O-2	99/08/31	99/09/14
051461	BP-OHM-1-O-3	99/09/01	99/09/14
051462	BP-OHM-1-O-4	99/09/01	99/09/14
051463	BP-OHM-1-O-5	99/09/02	99/09/14

Comments: _____

Date 99/09/16

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 via 'OH' method
were received in good condition unless
indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
051449	BP-OHM-1-RB	99/08/31	99/09/14
051450	BP-OHM-1-I-FB	99/08/30	99/09/14
051451	BP-OHM-1-Ia-2	99/08/31	99/09/14
051452	BP-OHM-1-Ib-2	99/08/31	99/09/14
051453	BP-OHM-1-Ia-3	99/09/01	99/09/14
051454	BP-OHM-1-Ib-3	99/09/01	99/09/14
051455	BP-OHM-1-Ia-4	99/09/01	99/09/14
051456	BP-OHM-1-Ib-4	99/09/01	99/09/14
051457	BP-OHM-1-Ia-5	99/09/02	99/09/14
051458	BP-OHM-1-Ib-5	99/09/02	99/09/14
051459	BP-OHM-1-O-FB	99/08/30	99/09/14
051460	BP-OHM-1-O-2	99/08/31	99/09/14
051461	BP-OHM-1-O-3	99/09/01	99/09/14
051462	BP-OHM-1-O-4	99/09/01	99/09/14
051463	BP-OHM-1-O-5	99/09/02	99/09/14

Comments: _____

Date 99/09/16

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 via 7471
were received in good condition unless indicated below.

SAMPLE LISTING

Philip ID #	Sample ID	Date Sampled	Date Received
051465	BP-OHM-1-Ia-2 Ash	99/08/31	99/09/14
051466	BP-OHM-1-Ib-2 Ash	99/08/31	99/09/14
051467	BP-OHM-1-Ia-3 Ash	99/09/01	99/09/14
051468	BP-OHM-1-Ib-3 Ash	99/09/01	99/09/14
051469	BP-OHM-1-Ia-4 Ash	99/09/01	99/09/14
051470	BP-OHM-1-Ib-4 Ash	99/09/01	99/09/14
051471	BP-OHM-1-Ia-5 Ash	99/09/02	99/09/14
051472	BP-OHM-1-Ib-5 Ash	99/09/02	99/09/14
051942	NIST 1633b Coal Ash	99/09/16	99/09/14

Comments: _____

Date 99/09/16

Appendix D.1.2

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 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

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - BRAYTON POINT GENERATING STATION
SAMPLING PROGRAM UNIT 1
COAL SAMPLE RUN 2
CODE: PG&E-BP-OHM-1-2-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 31, 1999

Date received September 9, 1999

Analysis Report No. 49-121878

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	6.56	xxxxx		
% Ash	7.10	7.60		
% Volatile	30.96	33.13		
% Fixed Carbon	55.38	59.27		
	100.00	100.00		
Btu/lb	12786	13684	MAF	14810
% Sulfur	0.78	0.83		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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TEL: (606) 248-4205
FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - BRAYTON POINT GENERATING STATION
SAMPLING PROGRAM UNIT 1
COAL SAMPLE RUN 2
CODE: PG&E-BP-OHM-1-2-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled August 31, 1999

Date received September 9, 1999

Analysis report no. 49-121878

PARAMETER	RESULTS
Mercury, Hg	0.08 ppm
Chlorine, Cl	0.03 %

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.

Jerry Wheeler

Middlesboro Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - BRAYTON POINT GENERATING SATION
SAMPLING PROGRAM UNIT 1
COAL SAMPLE RUN 3
CODE: PG&E-BP-OHM-1-3-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled September 1, 1999

Date received September 9, 1999

Analysis Report No. 49-121875

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	6.03	xxxxx		
% Ash	7.14	7.60		
% Volatile	33.09	35.21		
% Fixed Carbon	53.74	57.19		
	100.00	100.00		
Btu/lb	12927	13756	MAF	14887
% Sulfur	0.69	0.73		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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TEL: (606) 248-4205
FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - BRAYTON POINT GENERATING SATION
SAMPLING PROGRAM UNIT 1
COAL SAMPLE RUN 3
CODE: PG&E-BP-OHM-1-3-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled September 1, 1999

Date received September 9, 1999

Analysis report no. 49-121875

PARAMETER	RESULTS
Mercury, Hg	0.05 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,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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TEL: (606) 248-4205
FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - BRAYTON POINT GENERATING STATION
SAMPLING PROGRAM UNIT 1
COAL SAMPLE 4
CODE: PG&E-BP-OHM-1-4-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled September 1, 1999

Date received September 9, 1999

Analysis Report No. 49-121877

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	6.00	xxxxx		
% Ash	6.98	7.43		
% Volatile	33.33	35.46		
% Fixed Carbon	53.69	57.11		
	100.00	100.00		
Btu/lb	12929	13754	MAF	14858
% Sulfur	0.71	0.76		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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COMMERCIAL TESTING & ENGINEERING CO.

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ADDRESS ALL CORRESPONDENCE TO:
RT. 2, BOX 162A
MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - BRAYTON POINT GENERATING STATION
SAMPLING PROGRAM UNIT 1
COAL SAMPLE 4
CODE: PG&E-BP-OHM-1-4-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled September 1, 1999

Date received September 9, 1999

Analysis report no. 49-121877

PARAMETER	RESULTS
Mercury, Hg	0.06 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,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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TEL: (606) 248-4205
FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - BRAYTON POINT GENERATING STATION
SAMPLING PROGRAM UNIT 1
COAL SAMPLE RUN 5
CODE: PG&E-BP-OHM-1-5-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled September 2, 1999

Date received September 9, 1999

Analysis Report No. 49-121876

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	5.18	xxxxx		
% Ash	7.95	8.38		
% Volatile	32.70	34.49		
% Fixed Carbon	54.17	57.13		
	100.00	100.00		
Btu/lb	13012	13723	MAF	14978
% Sulfur	0.72	0.76		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

MEMBER ACIL

Original Watermarked For Your Protection

TERMS AND CONDITIONS ON REVERSE

COMMERCIAL TESTING & ENGINEERING CO.

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ADDRESS ALL CORRESPONDENCE TO:
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MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

September 22, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
P.O. NO. 033841
PG&E - BRAYTON POINT GENERATING STATION
SAMPLING PROGRAM UNIT 1
COAL SAMPLE RUN 5
CODE: PG&E-BP-OHM-1-5-C

Kind of sample reported to us COAL

Sample taken at

Sample taken by

Date sampled September 2, 1999

Date received September 9, 1999

Analysis report no. 49-121876

PARAMETER	RESULTS
Mercury, Hg	0.05 ppm
Chlorine, Cl	0.09 %

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.

Jerry Wheeler
Middlesboro Laboratory

MEMBER ACIL

Appendix D.2

Unit 3

Appendix D.2.1

Exhaust Gas Streams

PSC
QUALITY SERVICES

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.

99/12/9

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

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:	99/09/18
Date Reported:	99/10/12
Submission No.:	9I0694
Sample No.:	053128-053247

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

	Client ID:		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
	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

PASC - Certificate of Analysis

Component	MDL	Units	SG OHM-I1a-R3 053132 99 99/09/17 Duplicate	SG OHM-I1a-R3 053132 99 99/09/17 M. Spike	SG OHM-I1a-R3 053132 99 99/09/17 MS % Rec.	SG OHM-I1a-R3 053132 99 99/09/17 MS Dup	SG OHM-I1a-R3 053132 99 99/09/17 MSD % Rec.	SG OHM-I1a-R4 053133 99 99/09/17	SG OHM-I1b-R1 053134 99 99/09/16	SG OHM-I1b-R1 053134 99 99/09/16 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

	Client ID:		SG OHM-I1b-R2	SG OHM-I1b-R2	SG OHM-I1b-R2	SG OHM-I1b-R2	SG OHM-I1b-R3	SG 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	-

PASC - Certificate of Analysis

			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	-

PASC - Certificate of Analysis

			SG	SG	SG	SG	SG	SG	BP	BP
	Client ID:		OHM-Oa-R3	OHM-Oa-R3	OHM-Oa-R3	OHM-Oa-R3	OHM-Ob-R1	OHM-Ob-R3	OHM-3-RB	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

PASC - Certificate of Analysis

			BP	BP	BP	BP	BP	BP	BP
	Client ID:		OHM-3-IE-R2	OHM-3-IE-R2	OHM-3-IE-R2	OHM-3-IE-R2	OHM-3-IE-R2	OHM-3-IE-R2	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

PASC - Certificate of Analysis

			BP	BP	BP	BP	BP	SG	SG
	Client ID:		OHM-3-IW-R2	OHM-3-IW-R3	OHM-3-O-FB	OHM-3-O-R2	OHM-3-O-R3	OHM-Oa-R2	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

PASC - Certificate of Analysis

			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.
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

PASC - Certificate of Analysis

	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

PASC - Certificate of Analysis

	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

00023

PASC - Certificate of Analysis

	Client ID:		BP-OHM-3-IE-R3 Ash	BP-OHM-3-IW-R2 Ash	BP-OHM-3-IW-R3 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

PASC - Summary of Analysis Pre. Dates

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

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			874 D			
16			874 S			
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			159 D			
31			159 S			
32			160			
33			161			
34			162			
35			163			
36			53247			
37			ERA 240			
38			CCV			
39			B			
40			D4			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
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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

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.)	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 43~~	"	"	"	"	
	3 15	53709	"	0.202	"	"	
	4 16	~~52162 44~~	"	"	"	"	
108	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. / 195 °C

Notes:

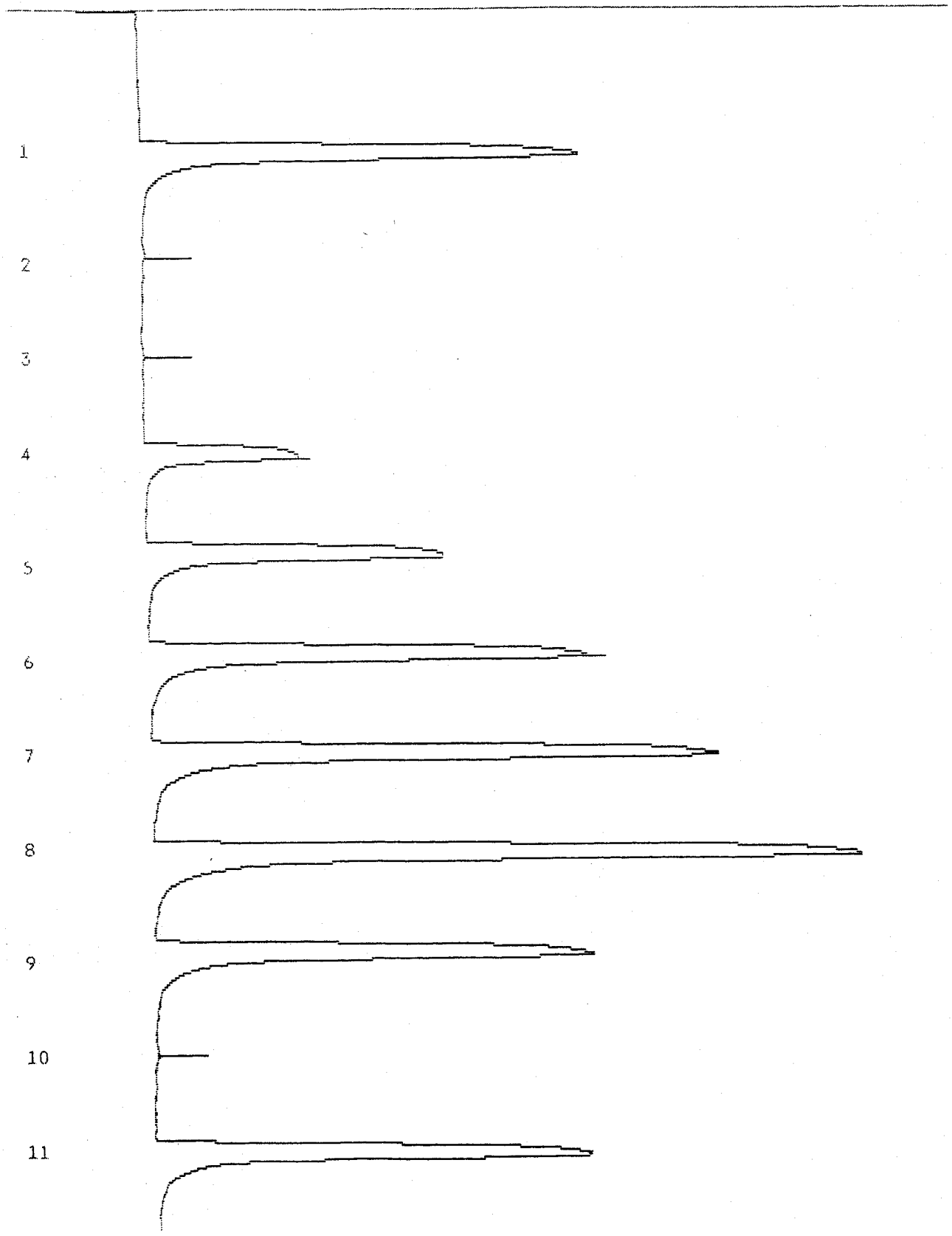
* concentration based on 40 ml final volume, ** concentration based on 1 gram of sample

Prepare 0.5 ppm standards daily

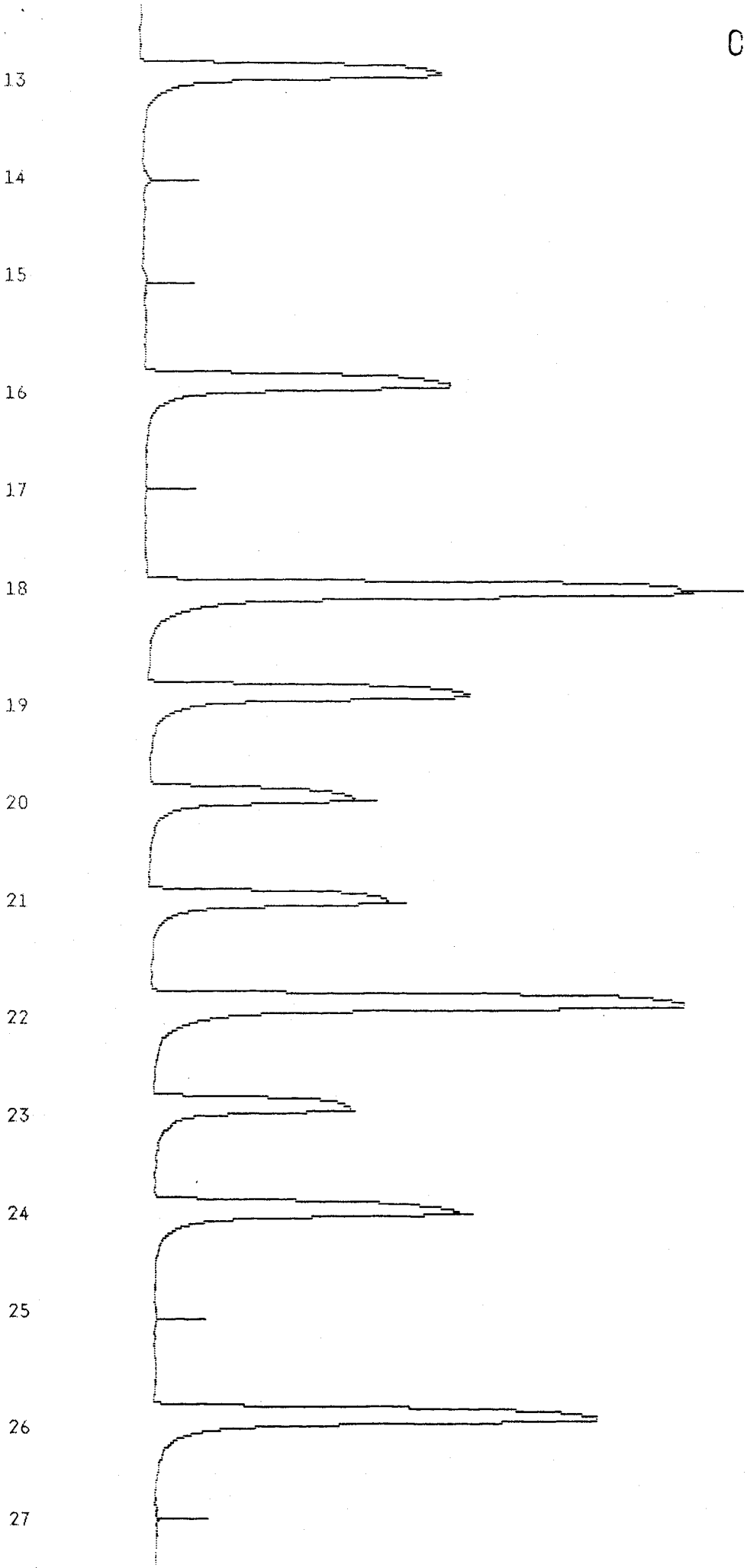
Include one External Reference Material (ERA 230 or NRC PACS-1) per run

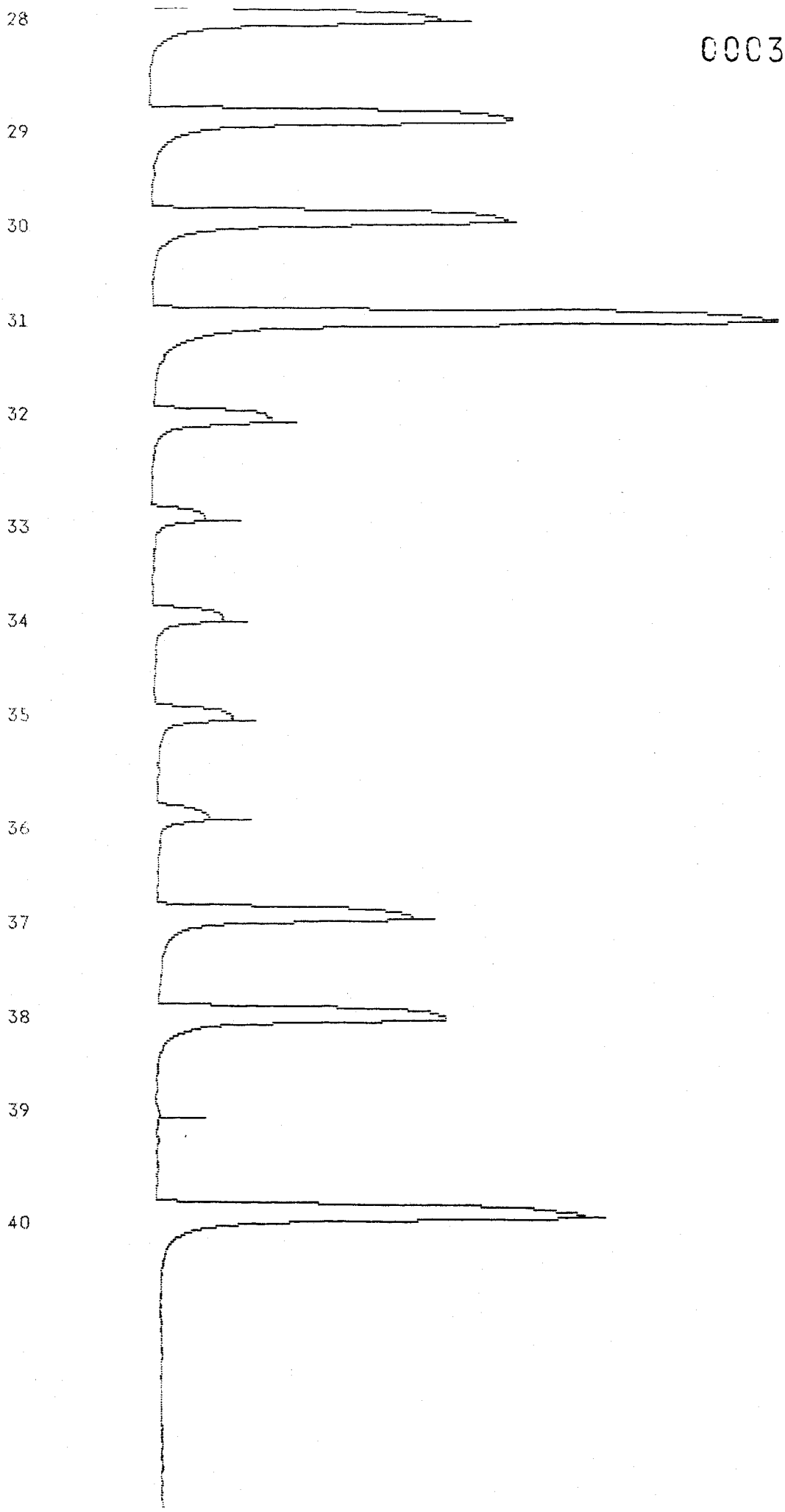
Prepared By: [illegible] Date: Sept 24/99 Checked by: [illegible]

RUN DATE: 09-24-1999 CHART DATE: 09-24-1999
CHART SPEED: 30
DATA FILE NAME: C:\DP4\DATA\990924S.DAT



00031

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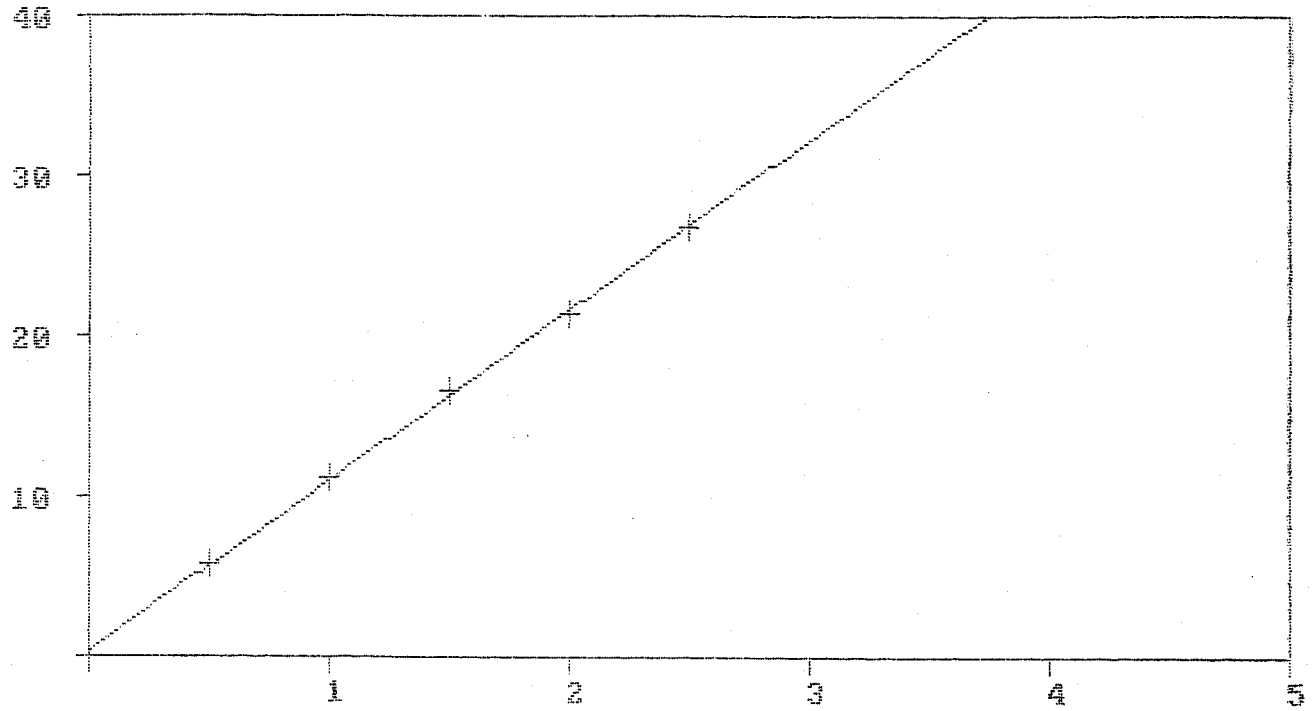
CHANNEL NAME: LDC
RUN NAME: 990924S



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-IIA153152	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%

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	531590	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

00034

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)

Date: 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)	0.5		
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			BL1009	16FL		
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			"			
41			53130			
42			"			
43			53138			
44			"			
45			53140			
46			"			
47			53141			
48			"			
49			53142			
50			"			
51			BL1009	2GFL		
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.

[illegible] Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.09 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						
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.

Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.09 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						
13						
14						
15						
16						
17						
18						
19						
20						
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						
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.

Blank Spike = 1.0 mg/kg for solid samples.

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CHART SPEED: 30
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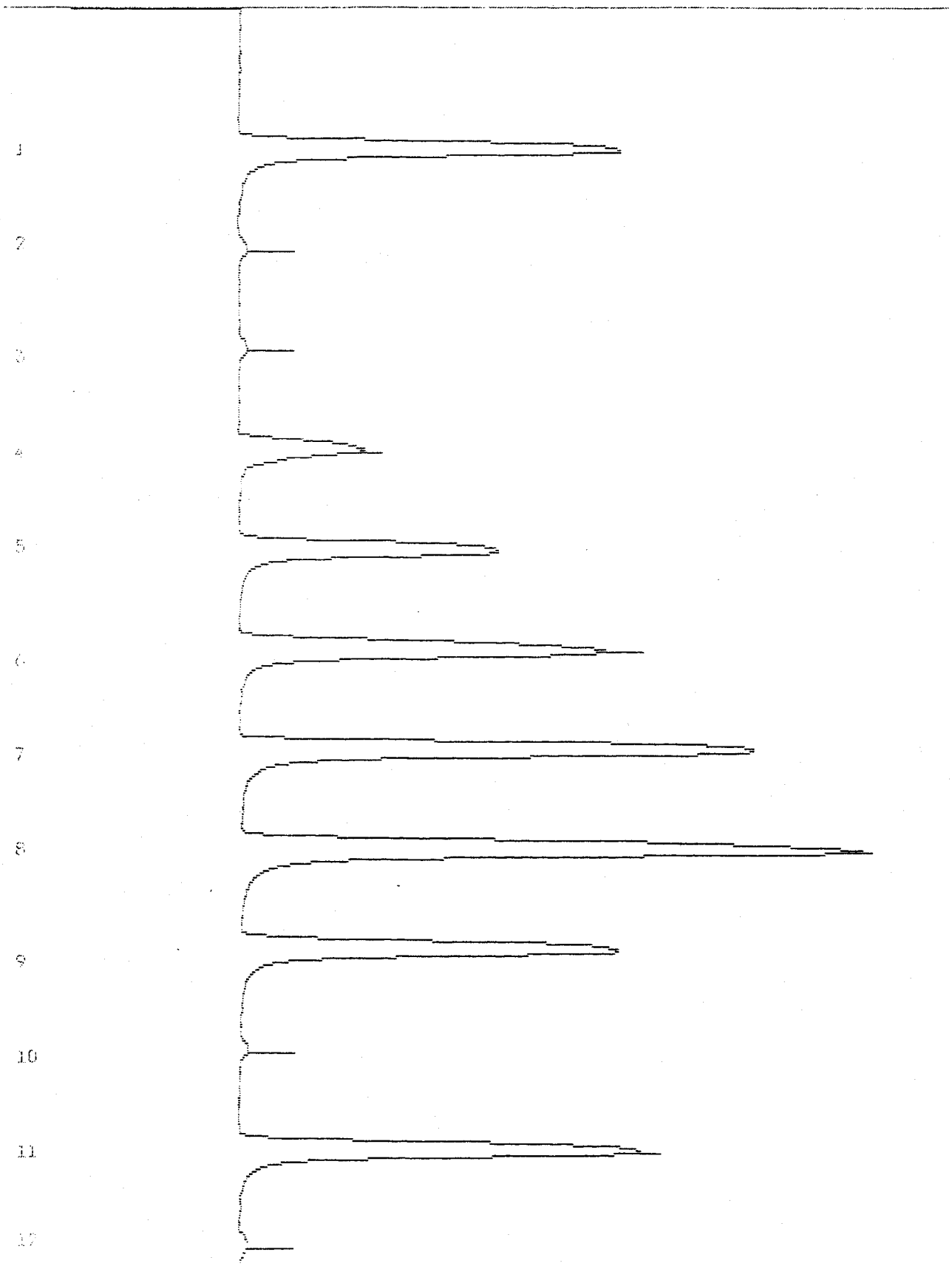

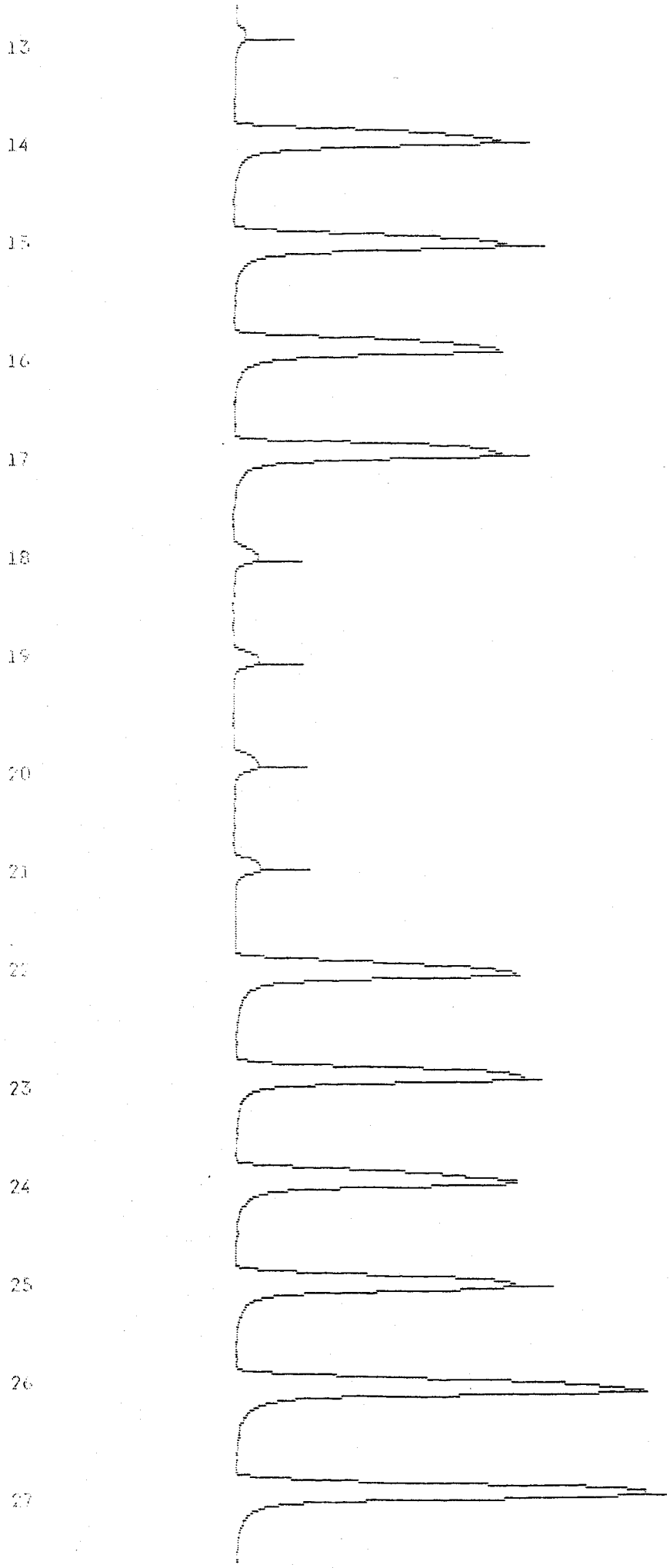
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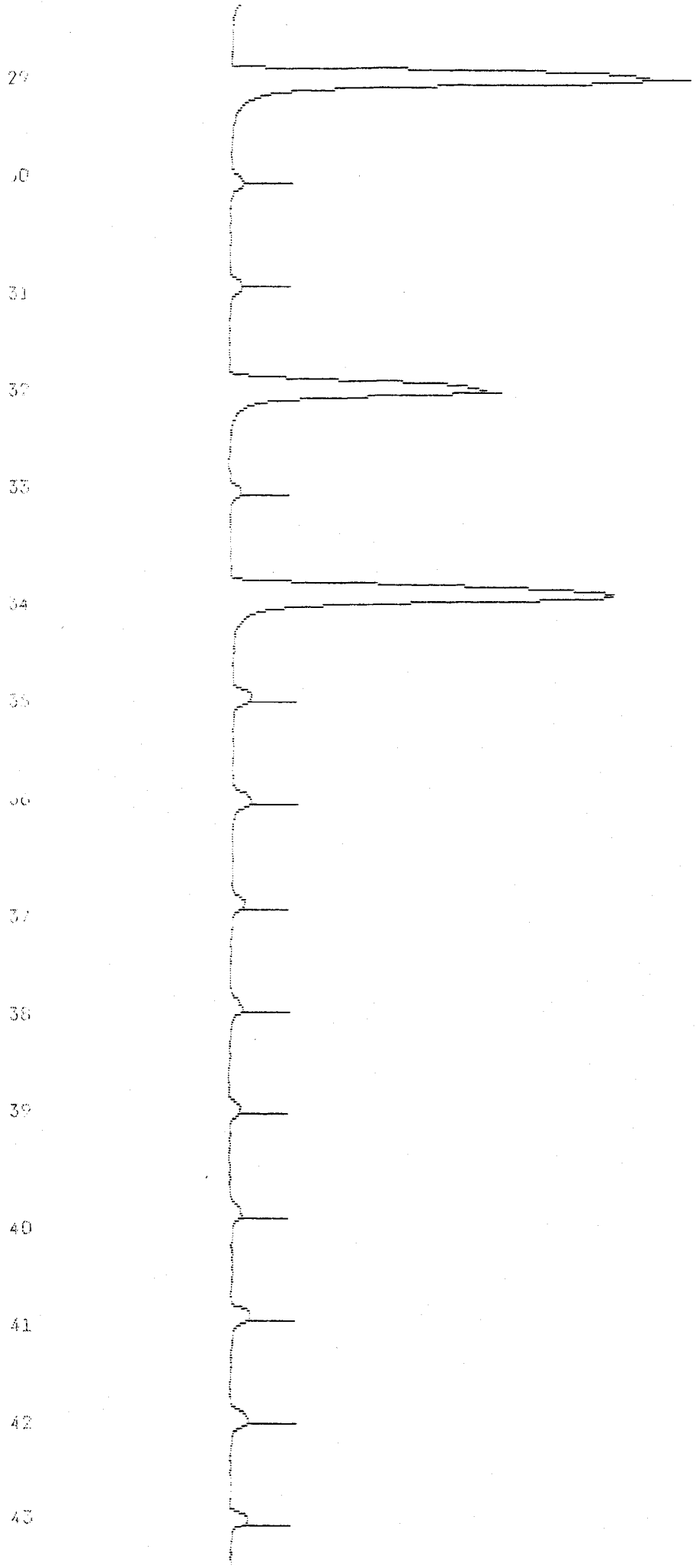
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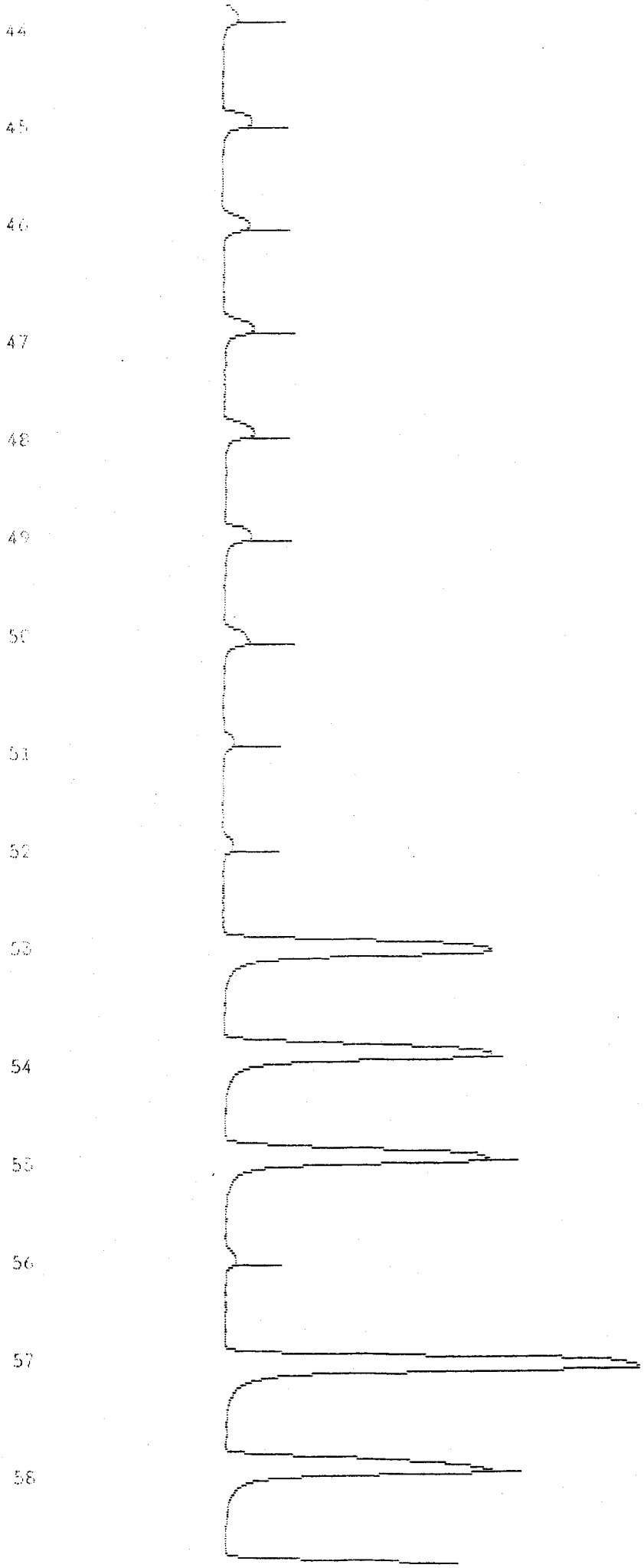
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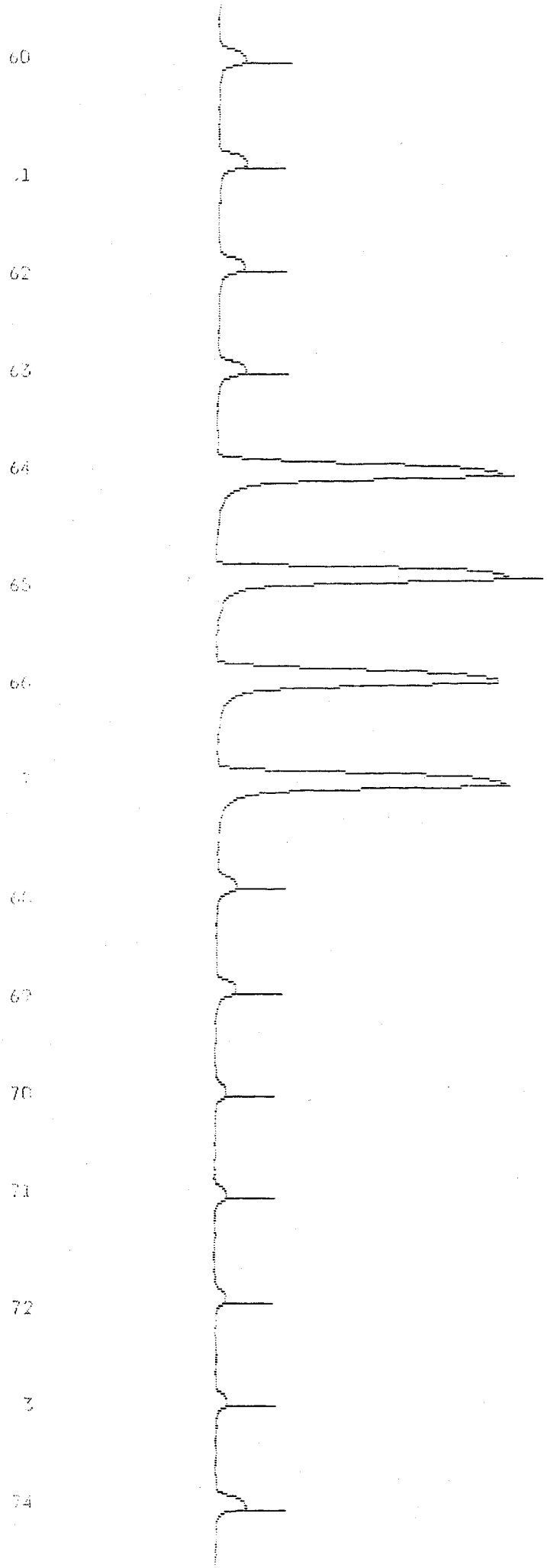
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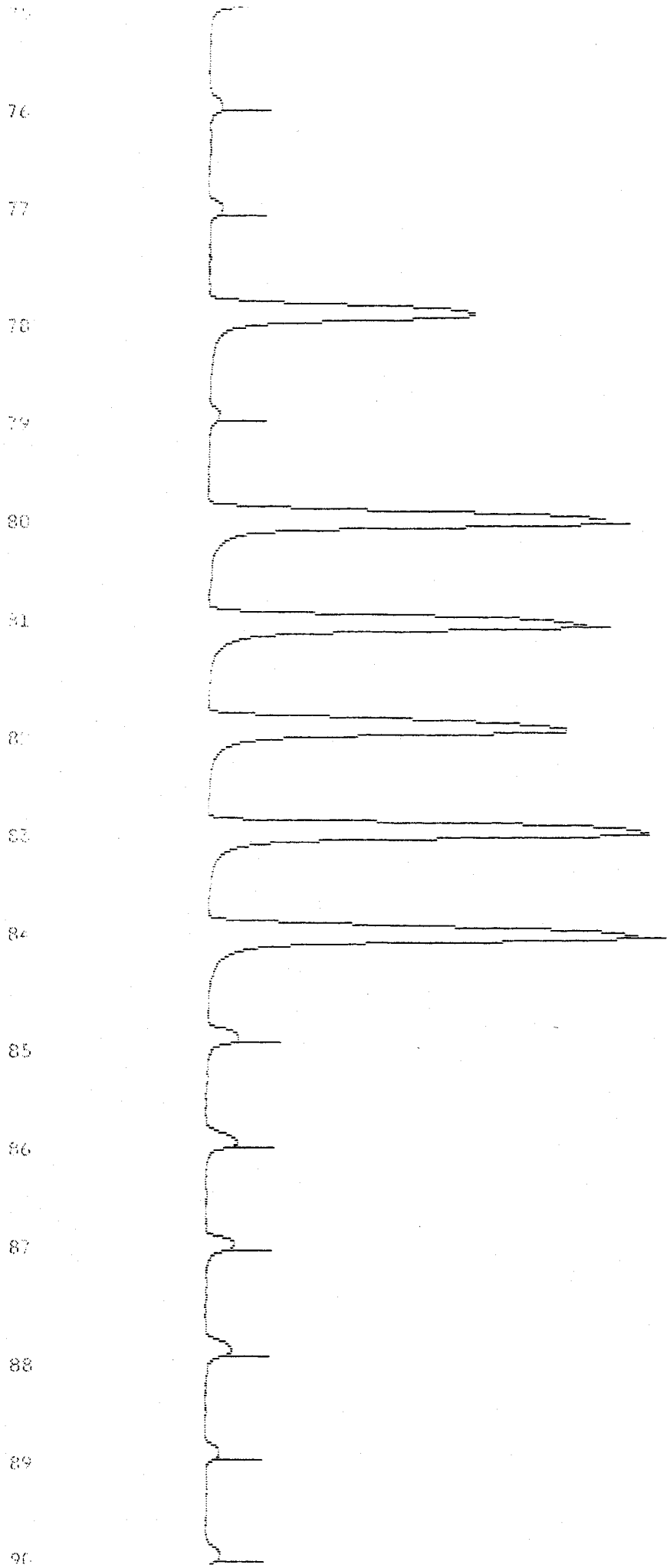
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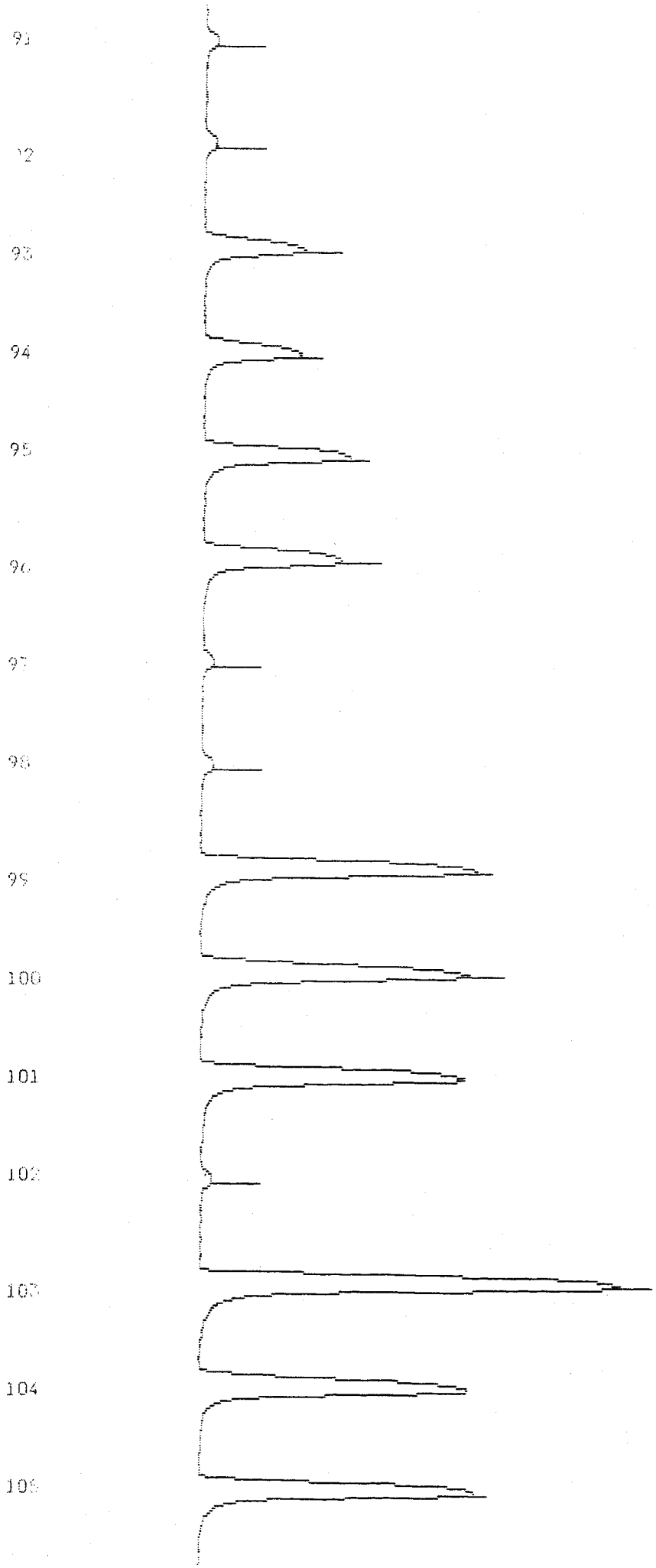
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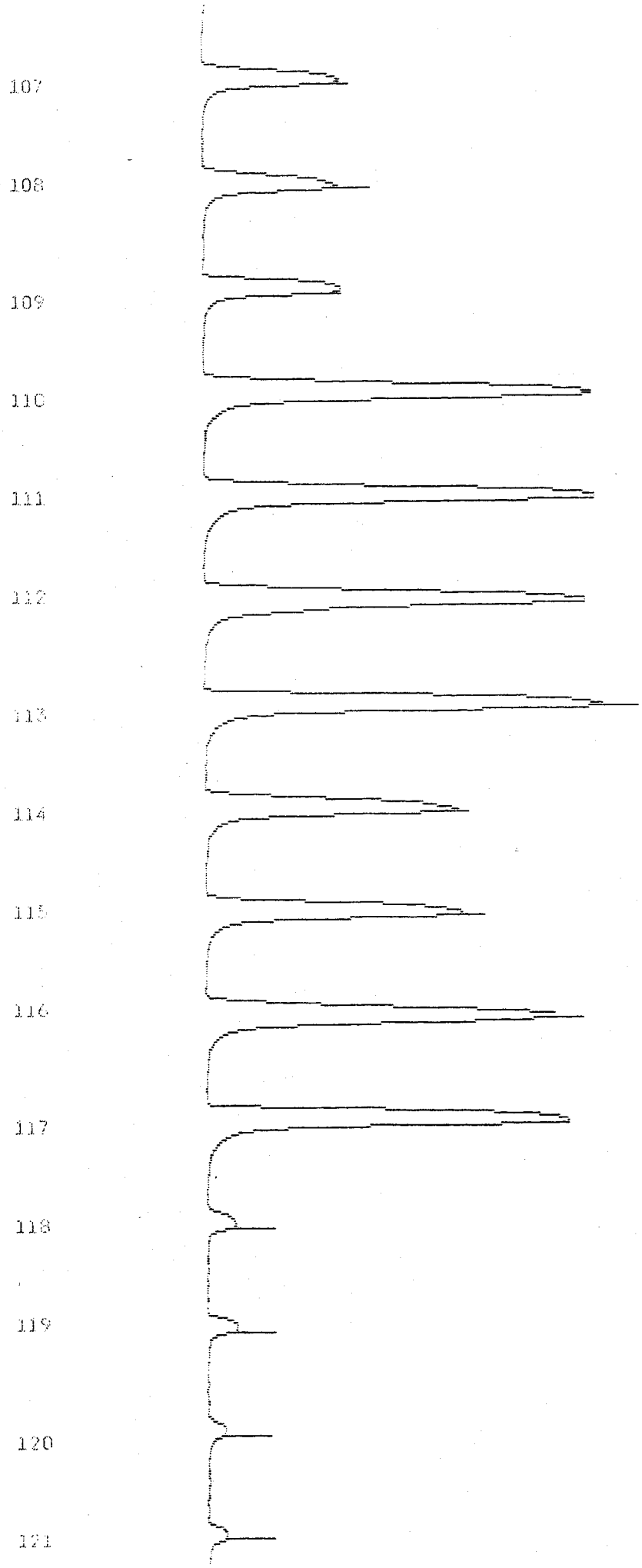
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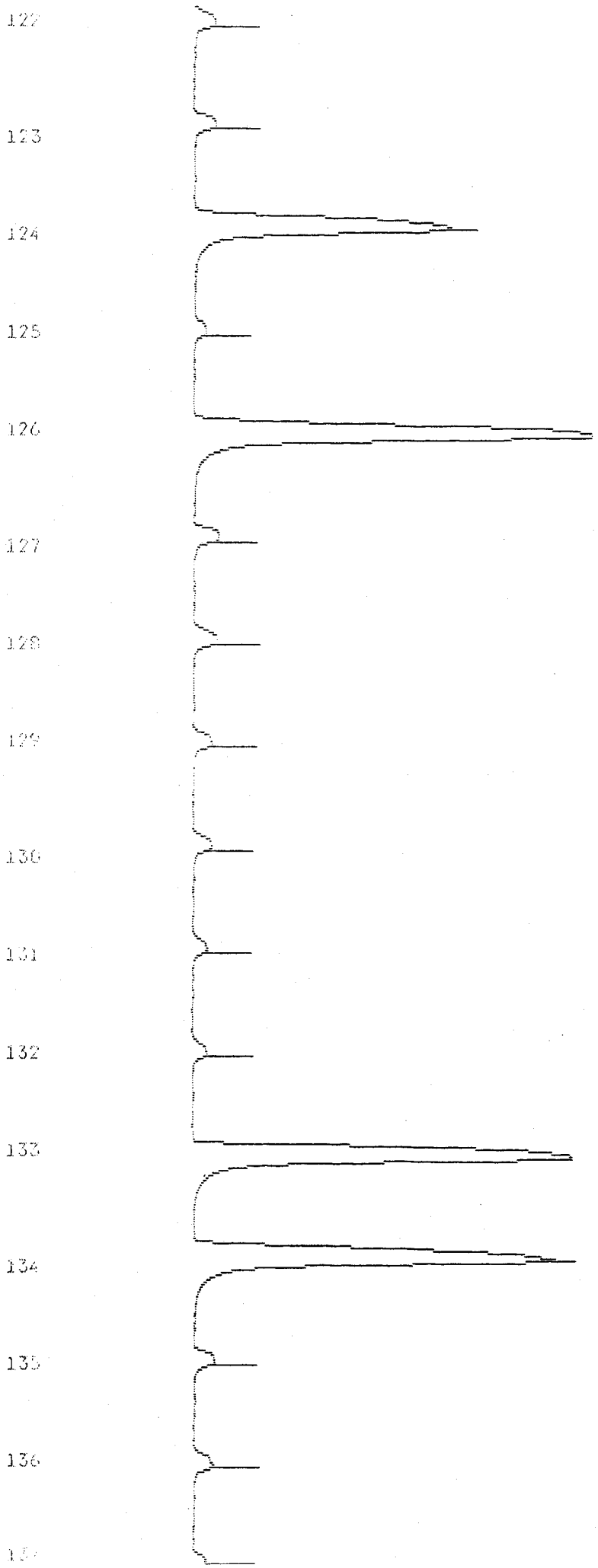
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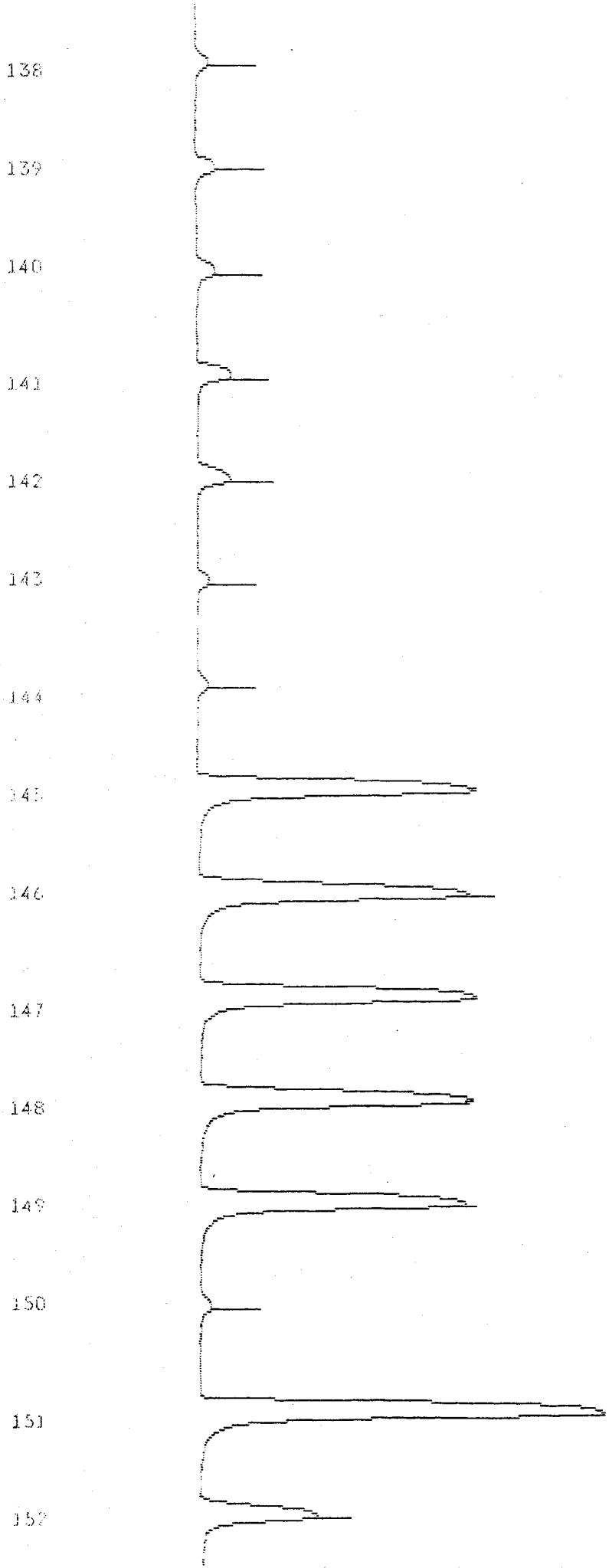
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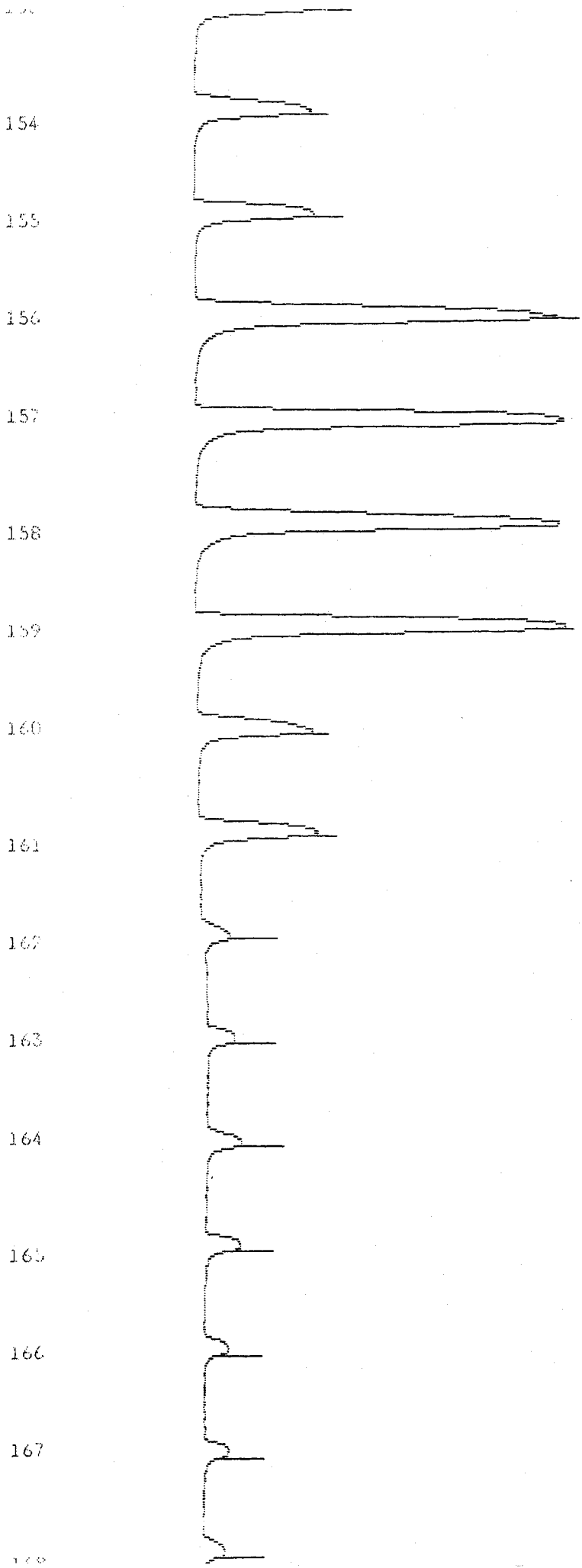
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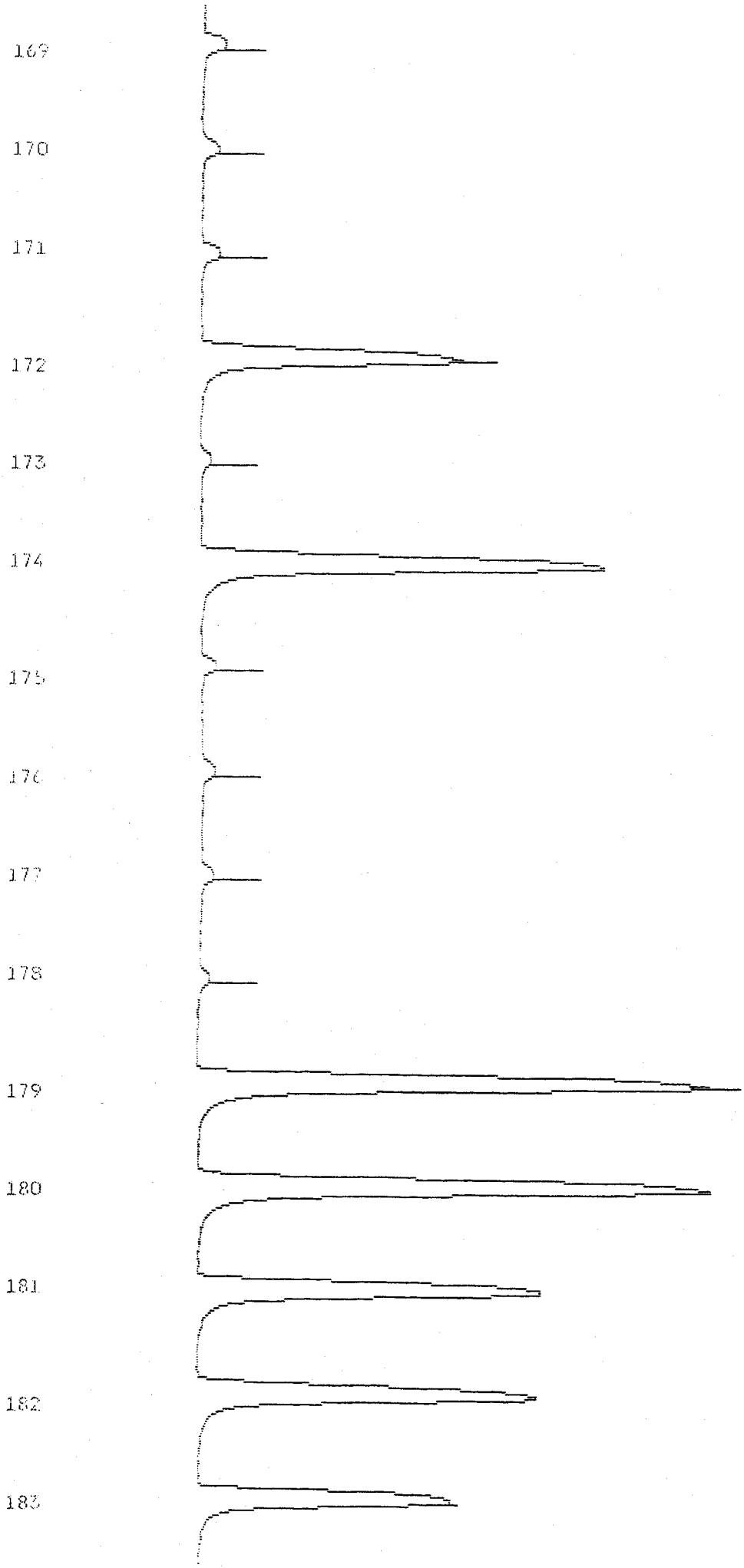
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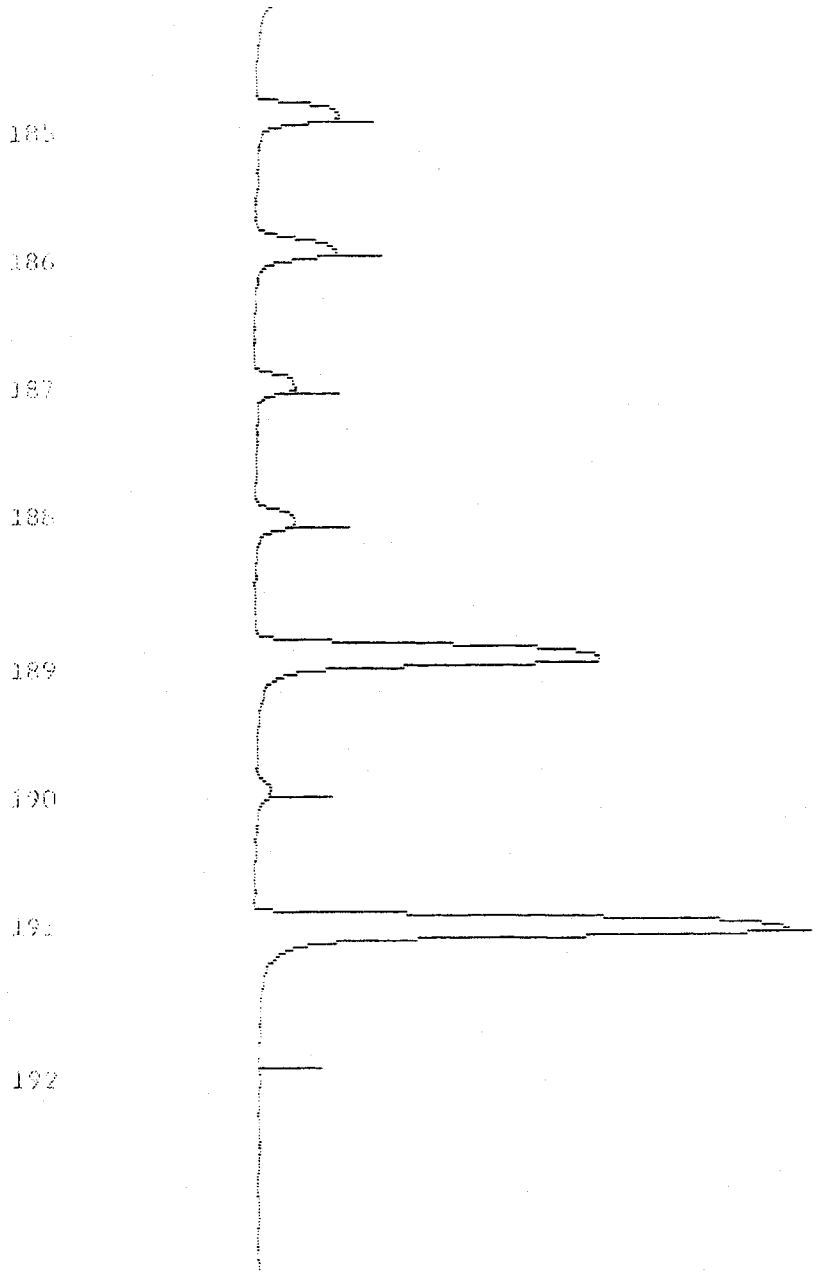
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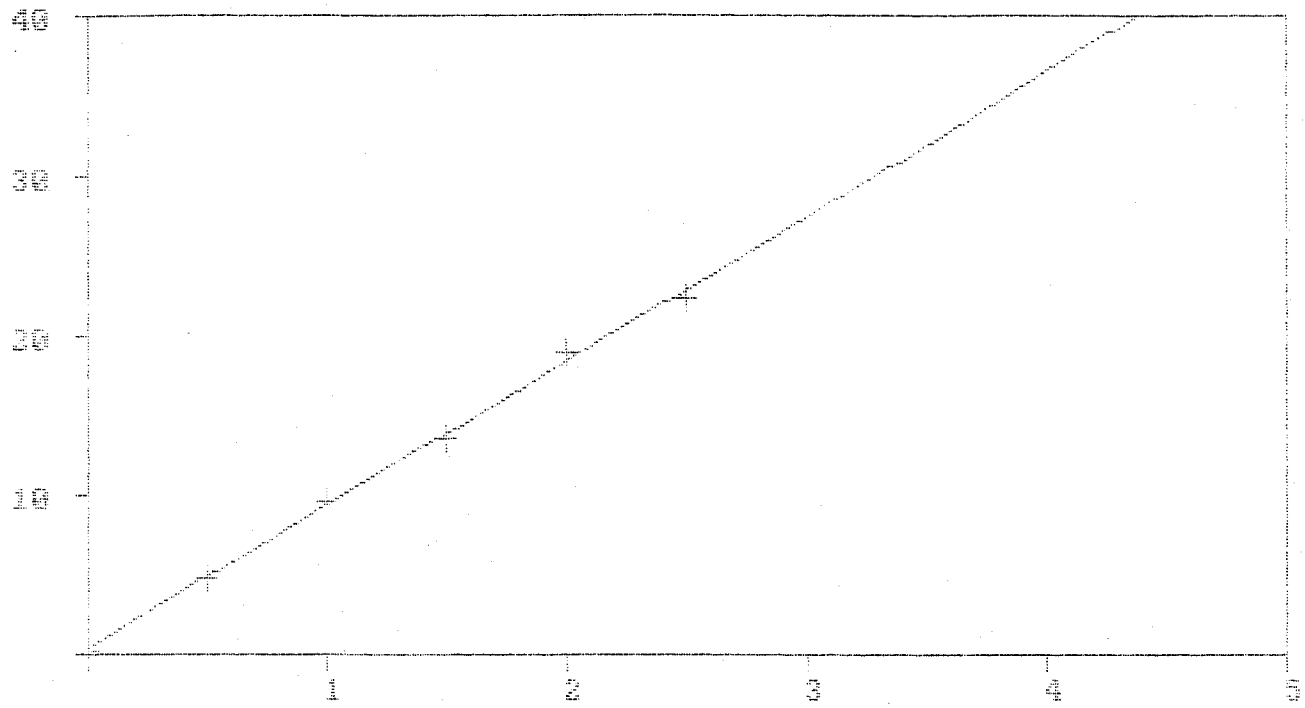
CHANNEL NAME: LDC
RUN NAME: 991009WA



DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.33 SLOPE = 9.024245

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	s
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 53128	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	95%
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%

25	53109DS	1	1	9.6		1.026	
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	I
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	I
36	53129 A	1	1	0.2		-0.010	I
37	53129 B	1	1	0.0	<0.01	-0.034	I
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	I
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	I
52	BL1009-2GFL	1	1	0.0		-0.037	I
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	I
72	53143 C	1	1	0.0	<0.01	-0.031	I
73	53143 C	1	1	0.0		-0.031	I
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	I
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	I

00053

[illegible]	[illegible]	1	1	0.1	<0.01	[illegible]	[illegible]	
92	53685 C	1	1	0.0		-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,	1	1	0.0	<0.01	-0.031	I	
98	BL1009-3GFL 51448	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.
132	51460	10	1	0.1		-0.232		ON 99/10/11.
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	f	
141	42265	1	1	0.8	<0.01	0.055		
142	42265	1	1	0.8		0.050		
143	BL1009-4GFL 42724,	1	1	0.0	<0.01	-0.031	I	
144	BL1009-4GFL 43188	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		

C0057

158	42266DS	1	1	12.3	0.134	1.230	97%
159	42266DS	1	1	12.5		1.243	
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	1.8	0.016	0.161	
186	43225	1	1	1.7		0.153	
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

enon umber	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 CMY Control Chart Updated N/A IO Requirements met N/A

00056

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 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						
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: 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						
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.

(3)

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.10 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						
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						
54						
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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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CHART SPEED: 30
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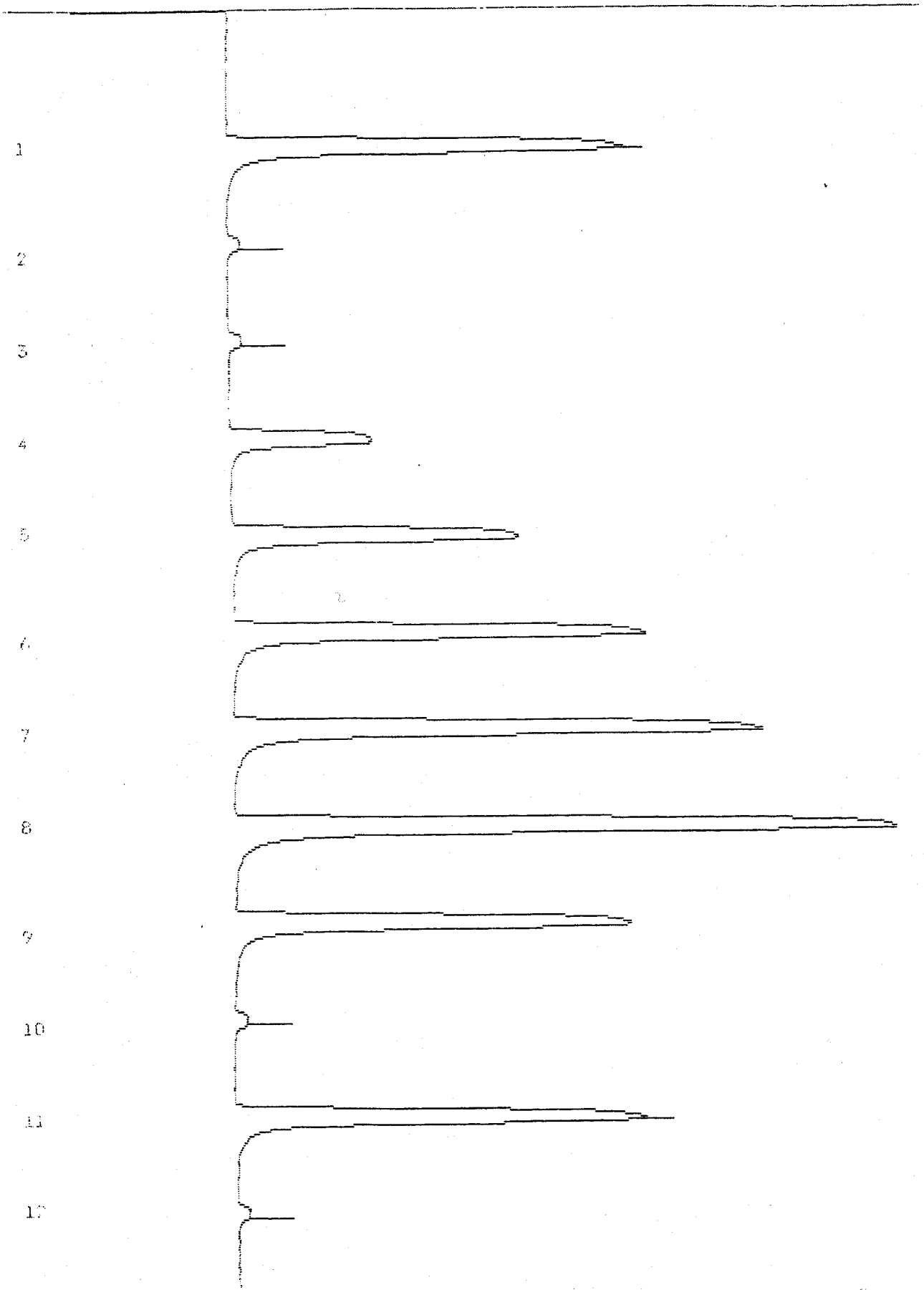

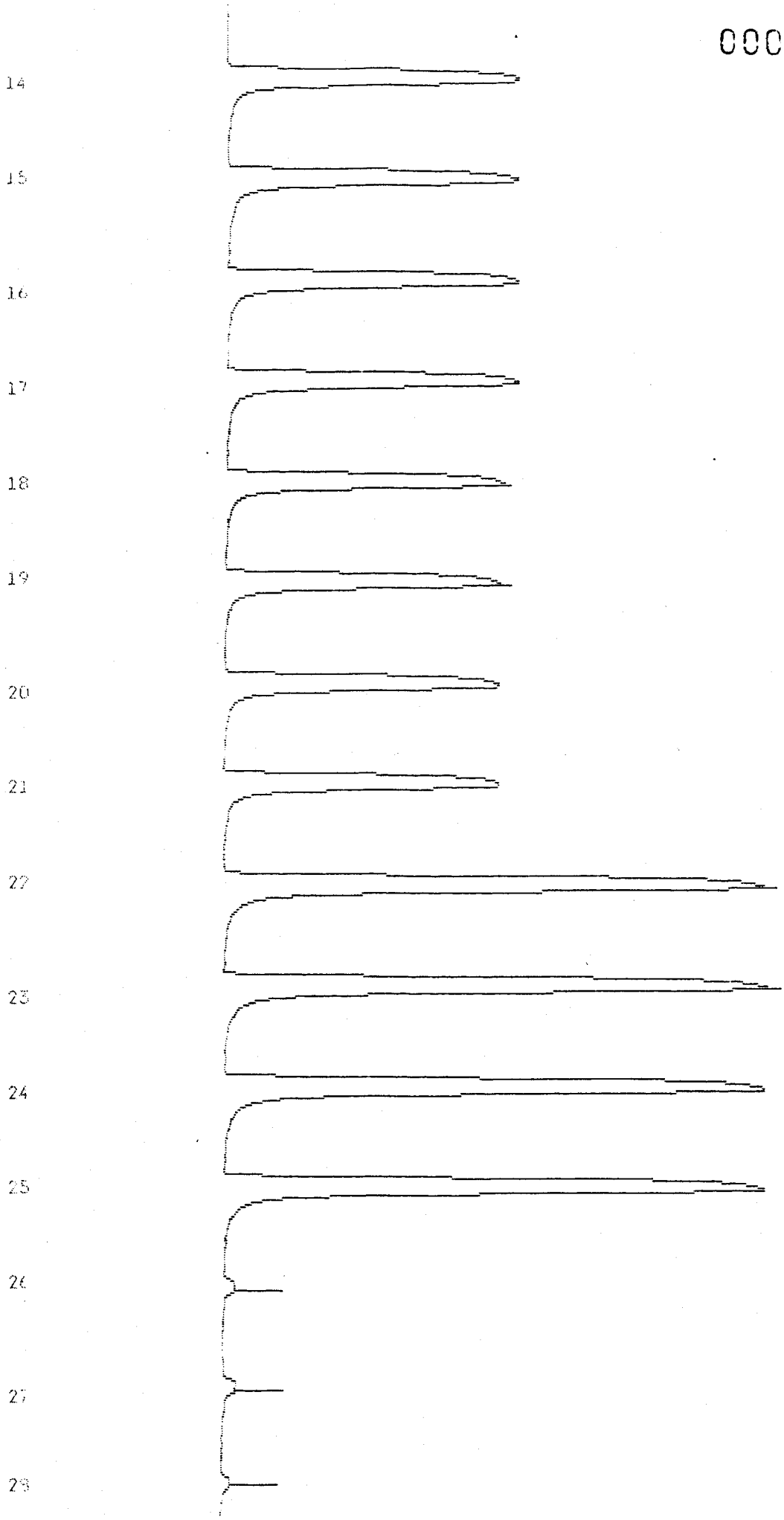
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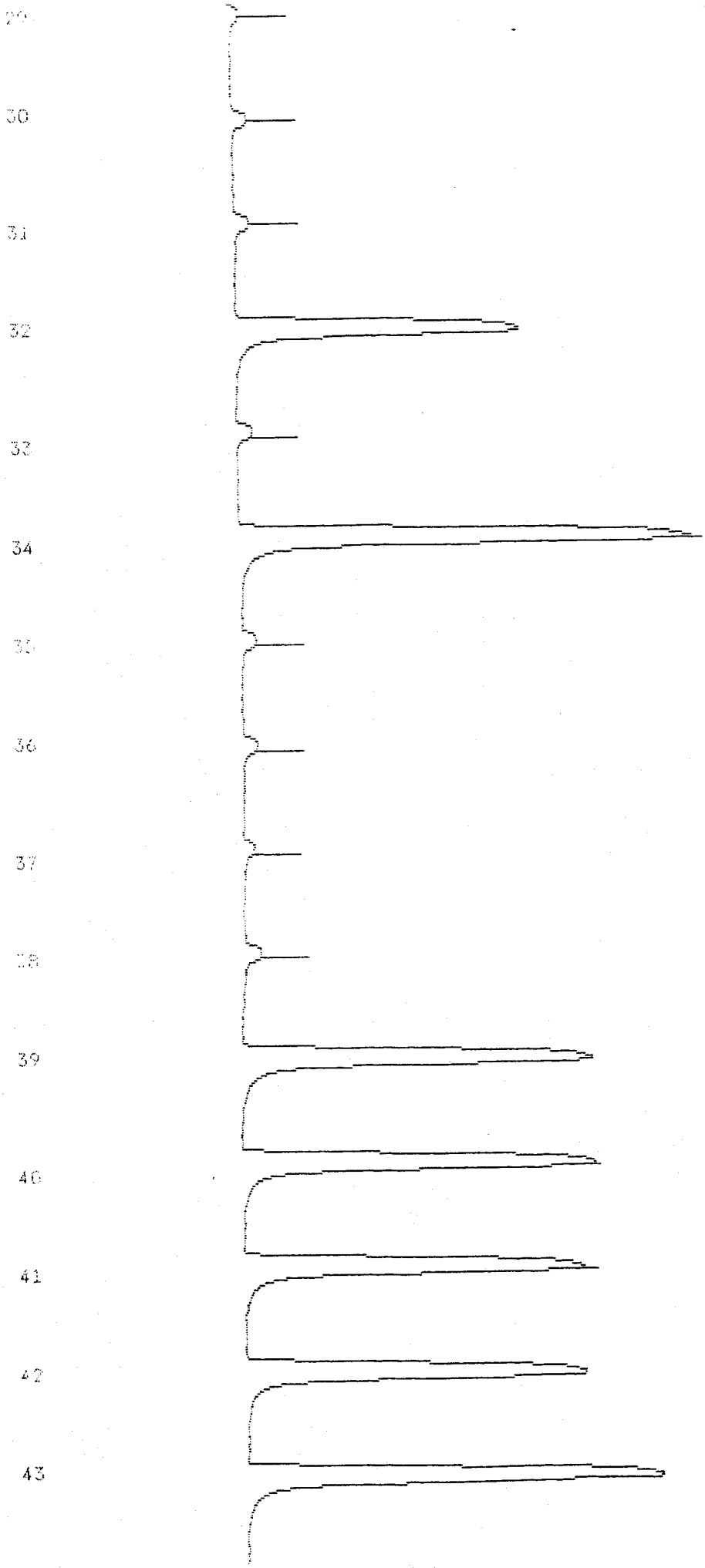
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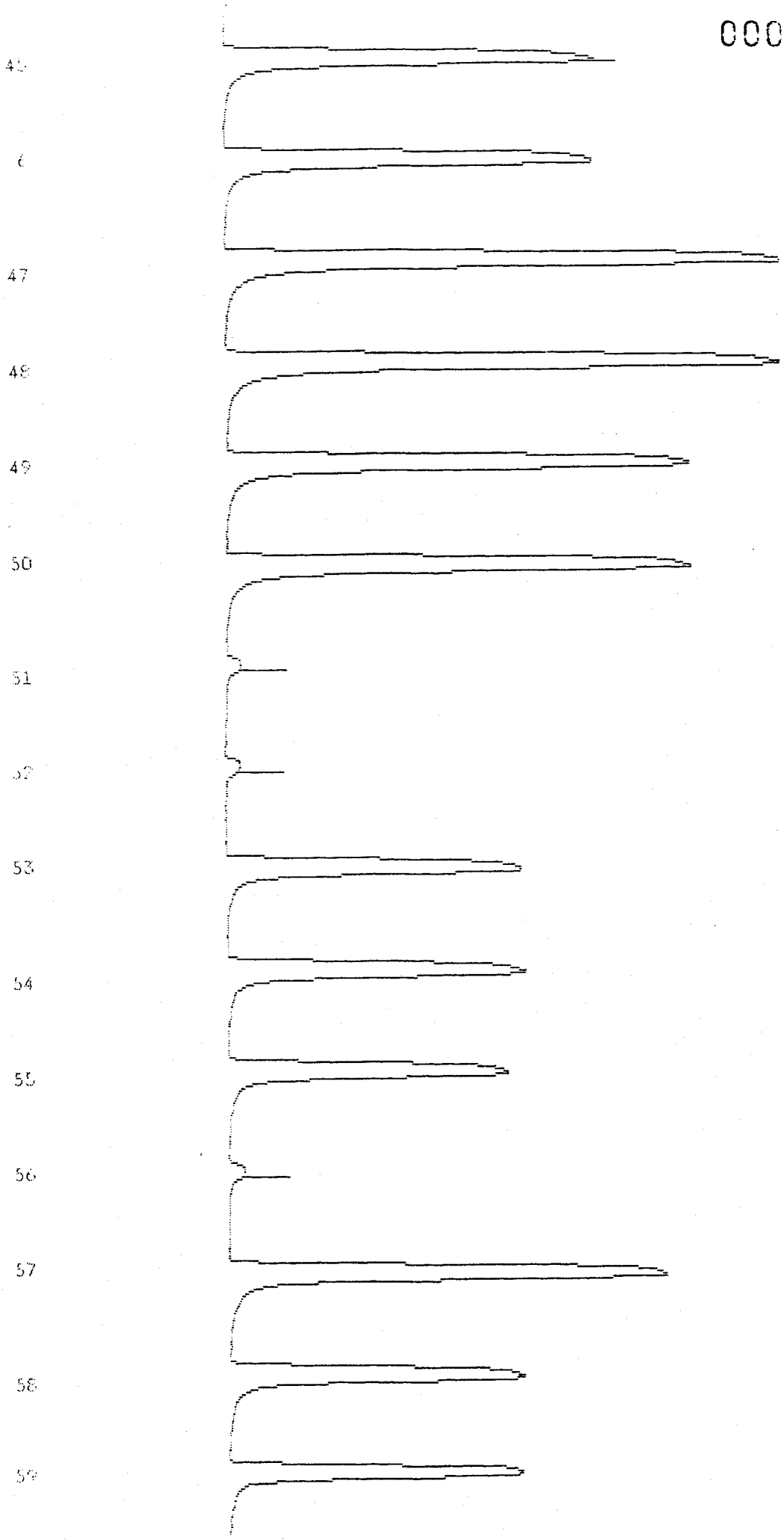
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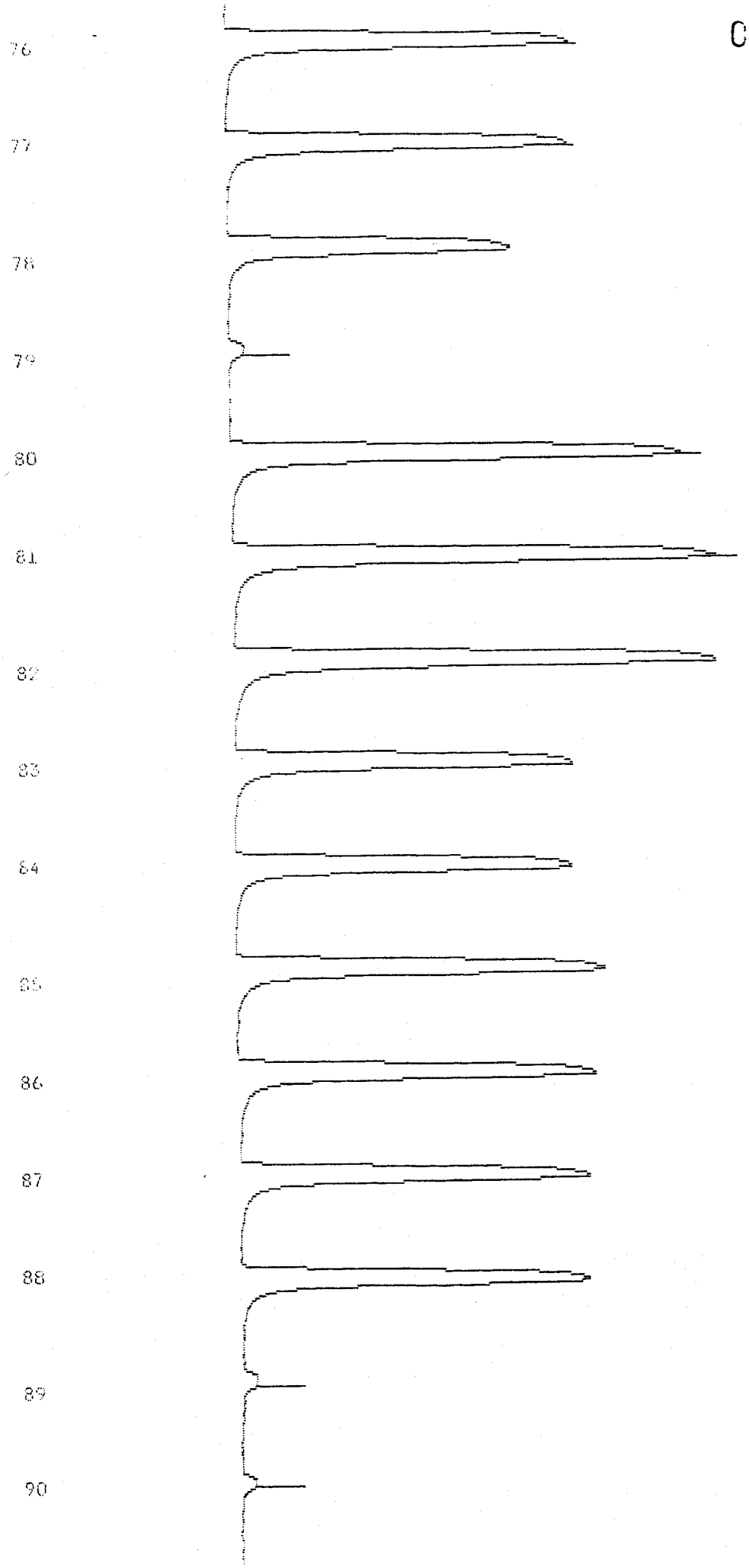
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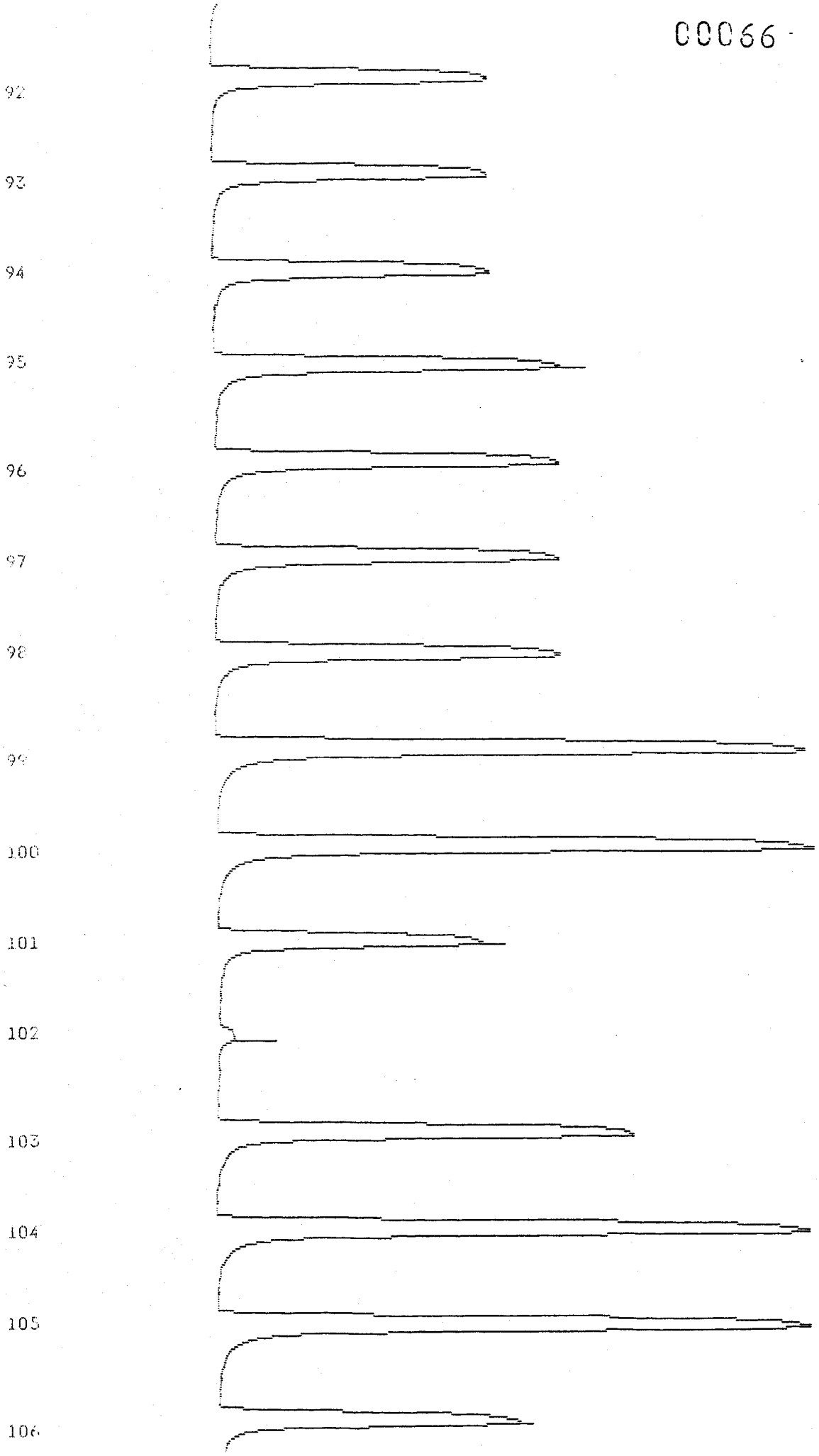
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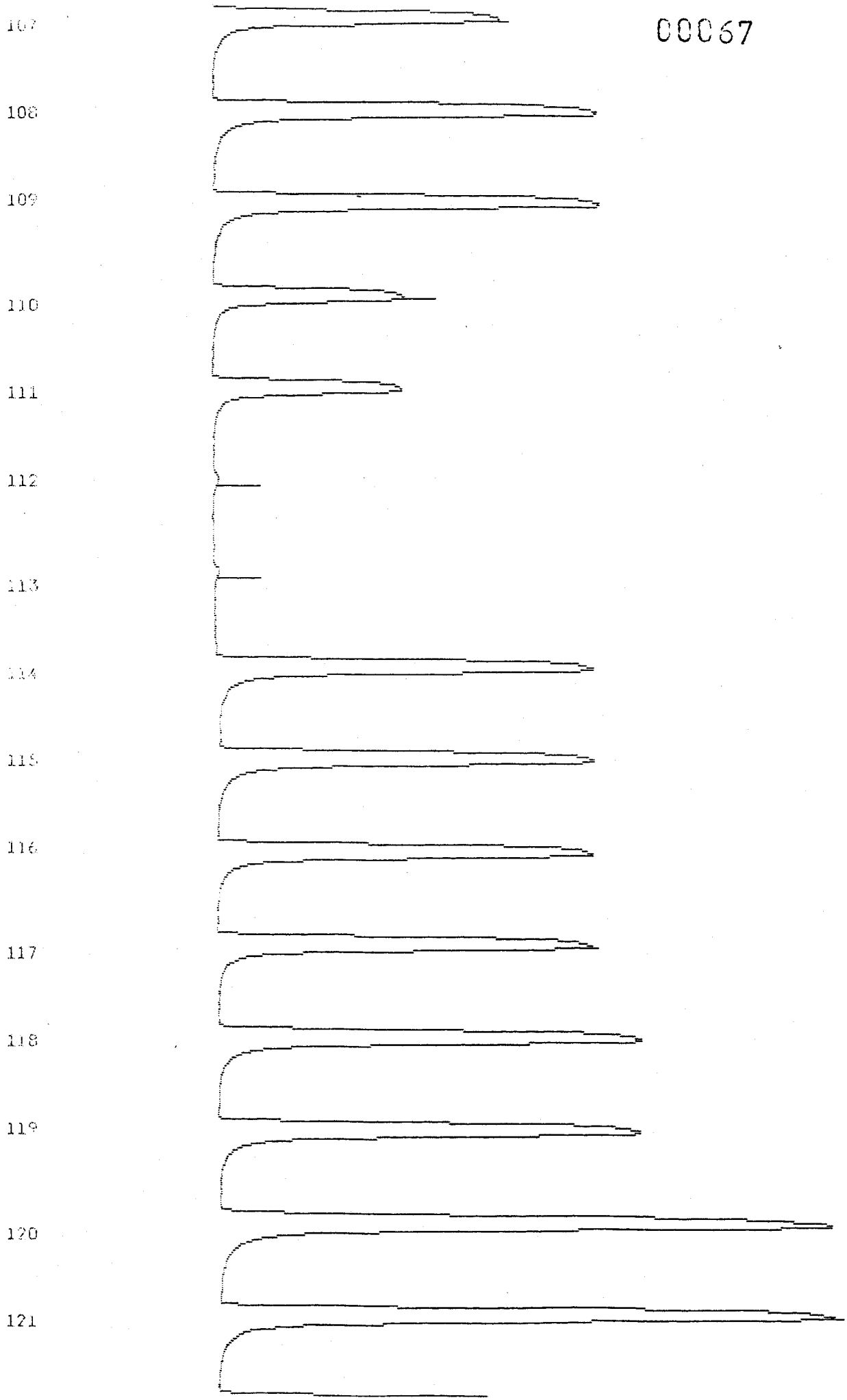
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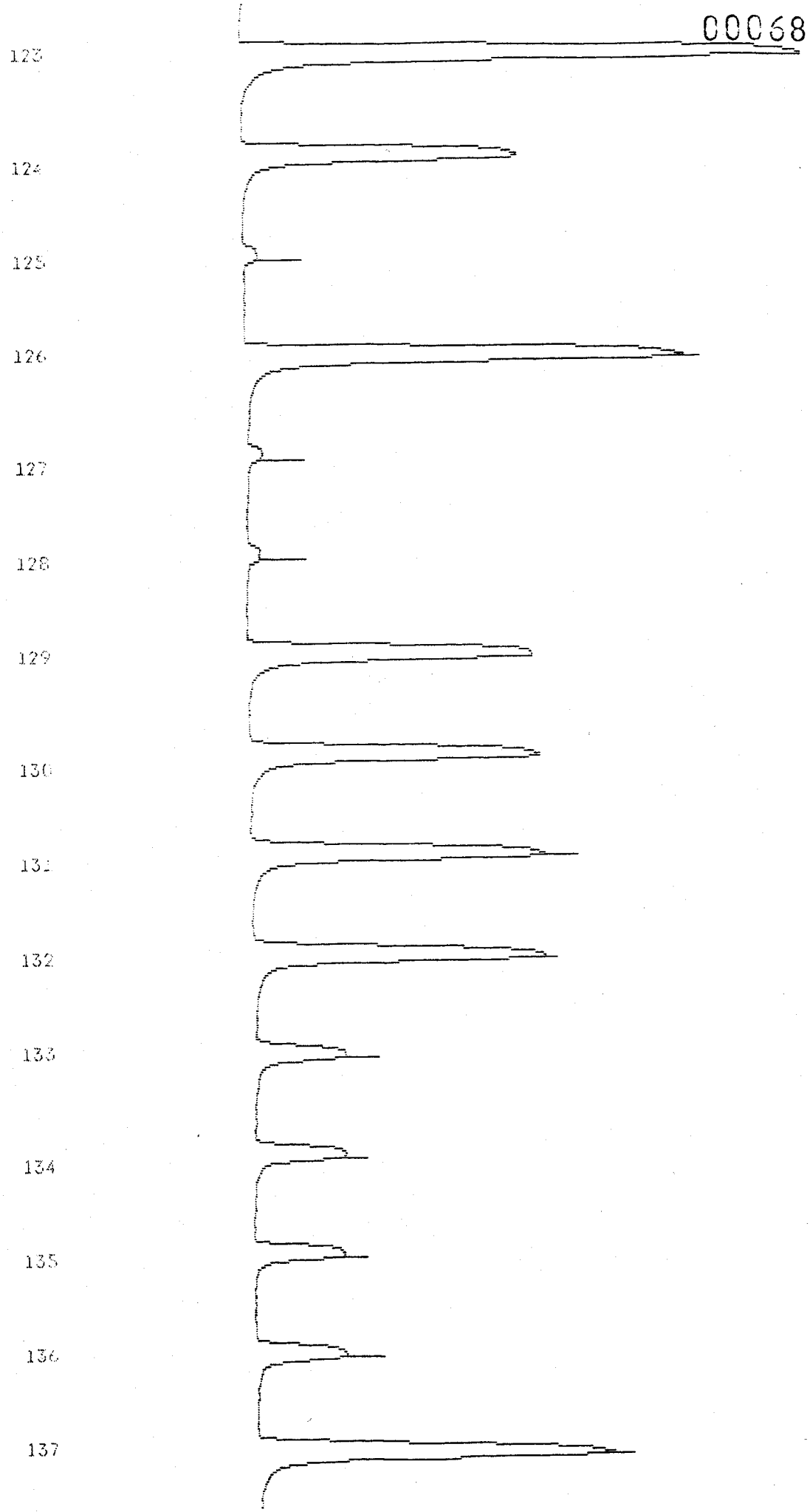
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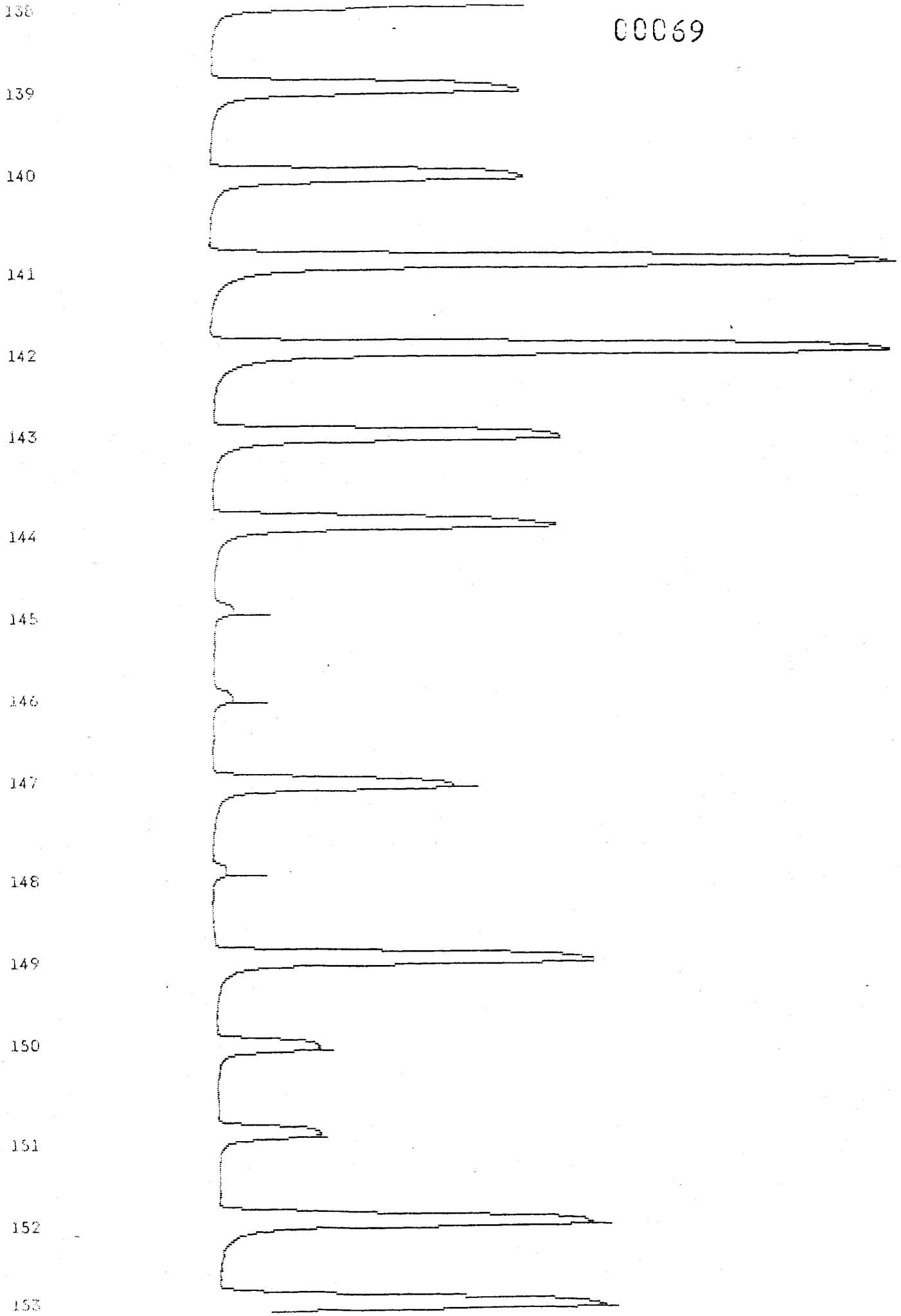
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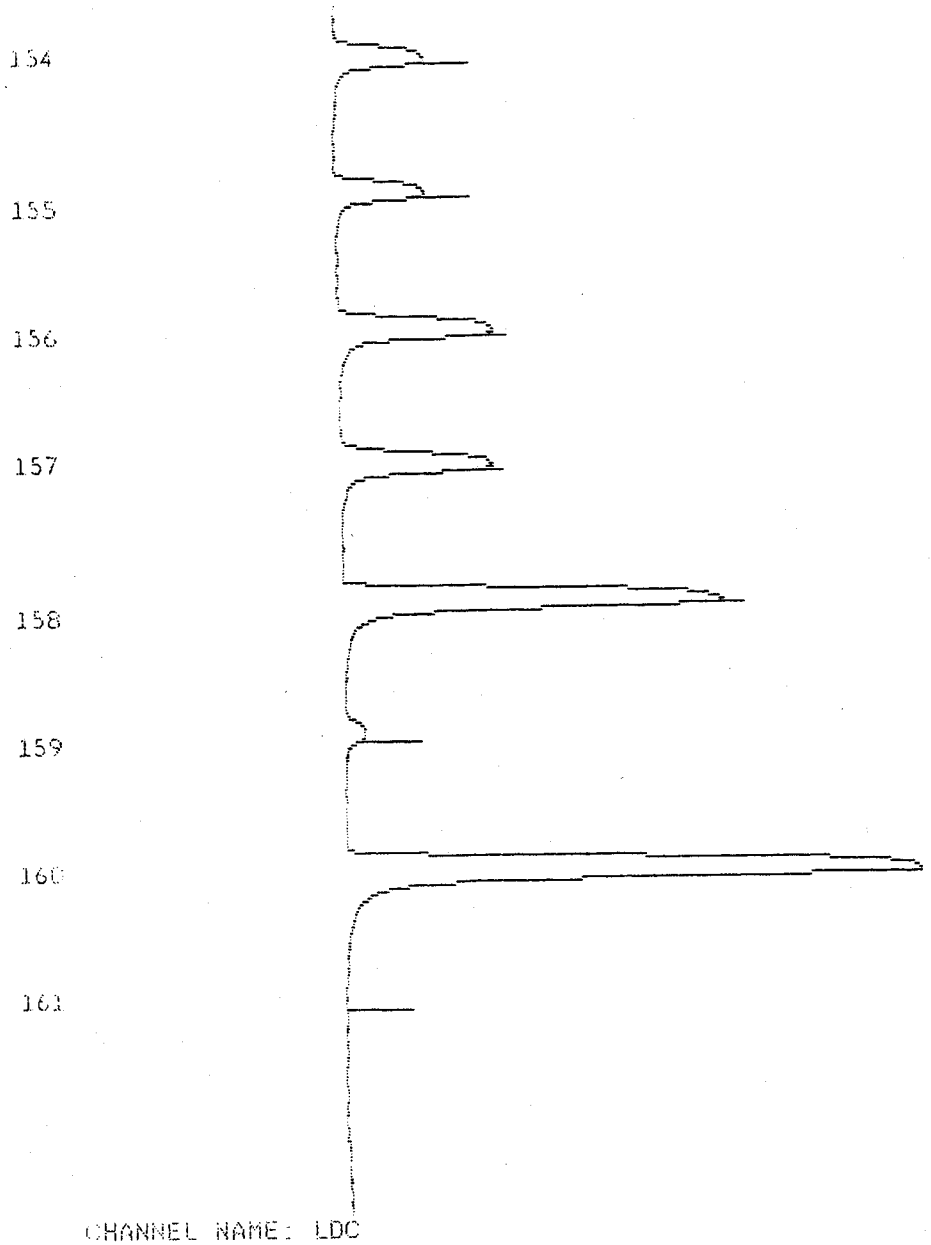
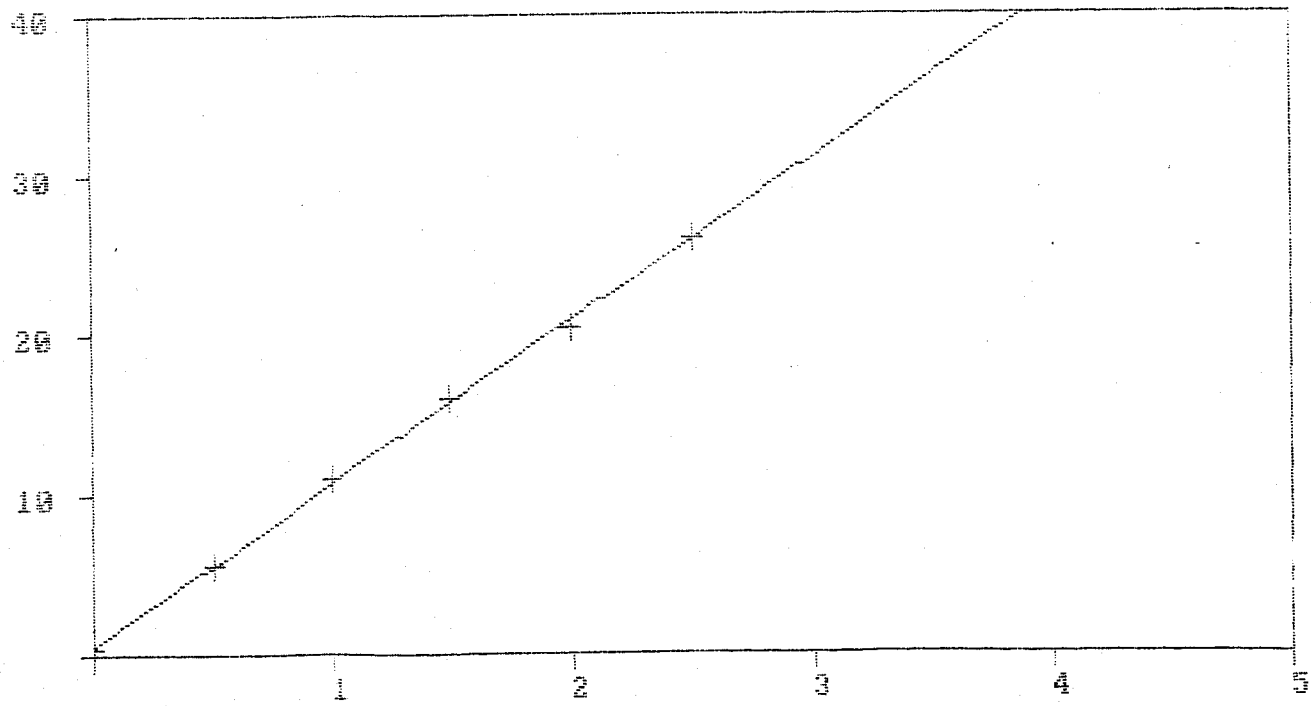


CHANNEL NAME: LDC
RUN NAME: 991010WA



CORRELATION: .9996244

00071

CHANNEL NAME: LDC
JN DATE: 10-11-1999
SAMPLE TABLE NAME: 991010WA
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	ppb	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	NS a. 9.466	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	7.855	
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	B	1	1	0.0		-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	BL1010-3GFT	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	53135	4	1	20.6	7.927	7.912		
123	53135	4	1	20.7		7.941		
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		0.966		
131	BL1010DS	1	1	10.6	0.099	0.993	99%	
132	BL1010DS	1	1	10.6		[illegible]		
133	53136	10	1	2.8		[illegible]		RERUN ON 5x DIL ON 99/10/11. MB
134	53136	10	1	[illegible]		[illegible]		
135	53136D	10	1	[illegible]		[illegible]		
136	53136D	10	1	[illegible]		[illegible]		
137	53136S	10		[illegible]		[illegible]		
138	53136S	[illegible]	[illegible]			[illegible]		
139	53136DS	[illegible]	[illegible]	[illegible]		[illegible]		
140	53136DS	[illegible]		[illegible]		[illegible]		
141	[illegible]	[illegible]		[illegible]		[illegible]	R	RERUN ON 10x DIL. 99/10/11 MB
142	[illegible]	[illegible]		[illegible]		11.246	R	
[illegible]	[illegible]	[illegible]		[illegible]	2.758	2.755		
[illegible]	[illegible]	[illegible]	1	14.6		2.760		
[illegible]	[illegible]	[illegible]	1	0.2		-0.272	R	RERUN ON 1x DIL.
[illegible]	[illegible]	[illegible]	1	0.2		-0.296	R	
[illegible]	[illegible]	1	1	10.0		0.933	93%	
[illegible]	[illegible]	1	1	0.0		-0.051	b	
[illegible]	D4	1	1	16.0		1.522	d	
[illegible]	[illegible]	2	1	4.1		0.695		RERUN ON 1x DIL. MB
151	53148	2	1	4.1		0.695	s	
152	53148	1	1	15.9	1.535	1.513		
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	

CC073

INTERCEPT: 0.52 LINEAR COEF: 10.1685

CORRELATION COEF: 9996244

00074

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 "	2GFB		
52			"			
53			BL10 " S			
54			"			
55			CCV			
56			B			
57			D4			
58			BL10 " 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: 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						
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						
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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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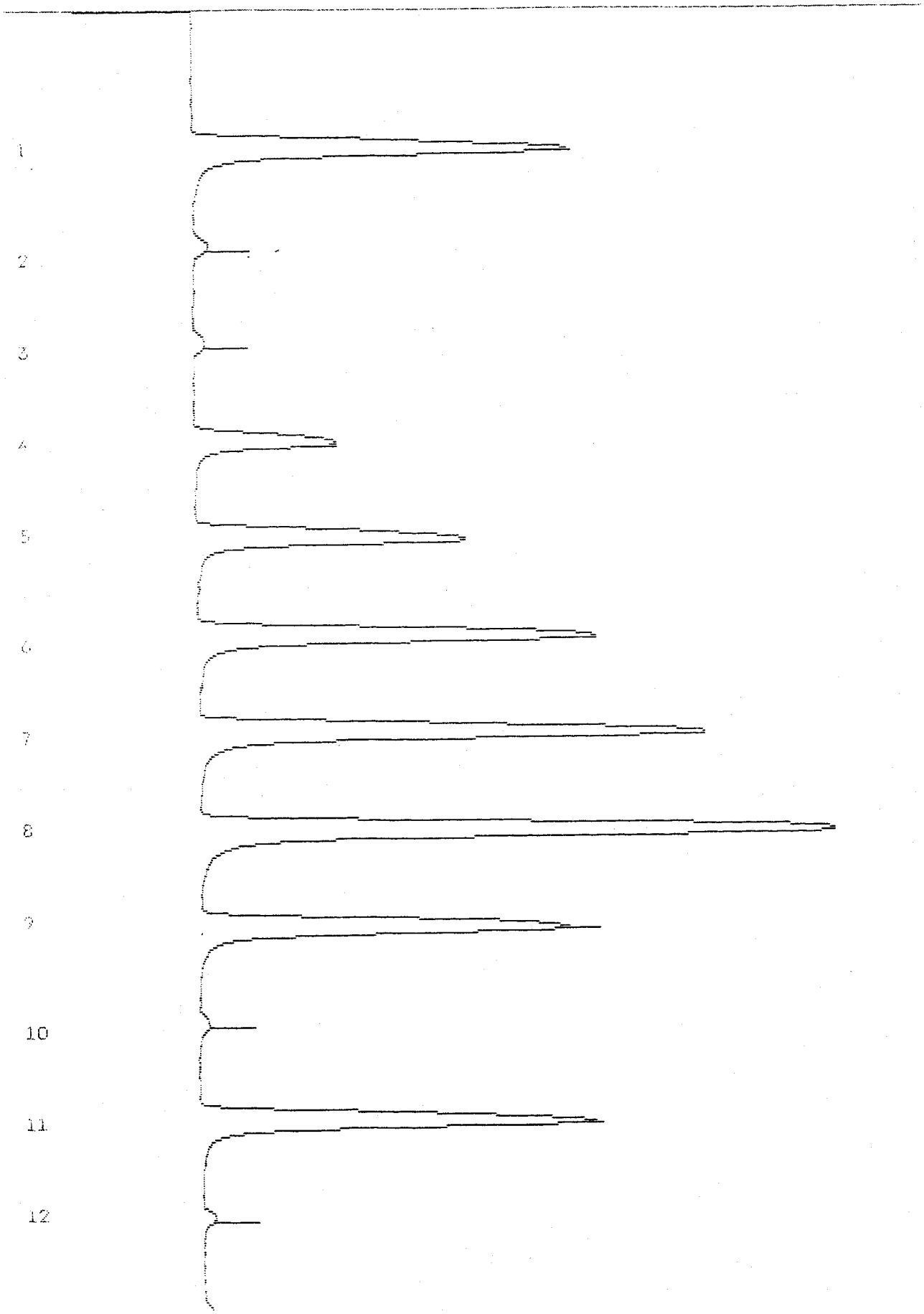

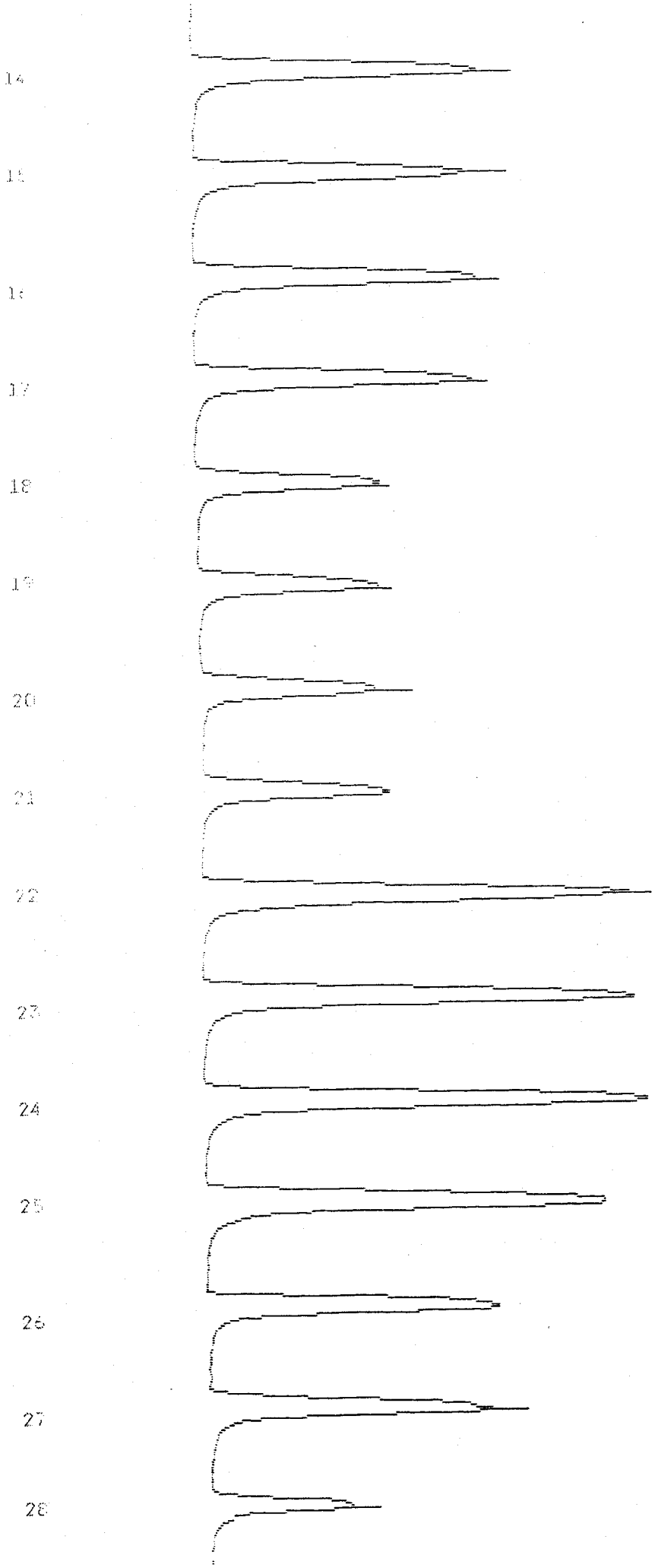
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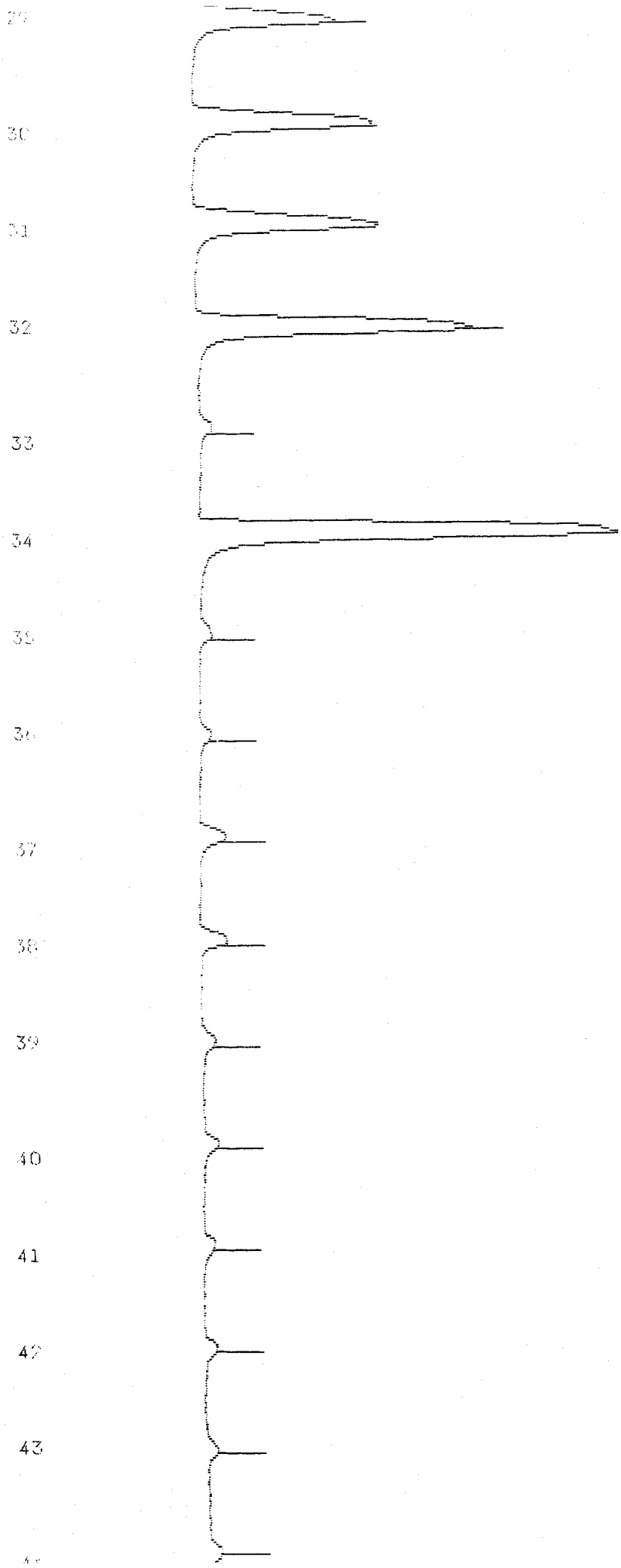
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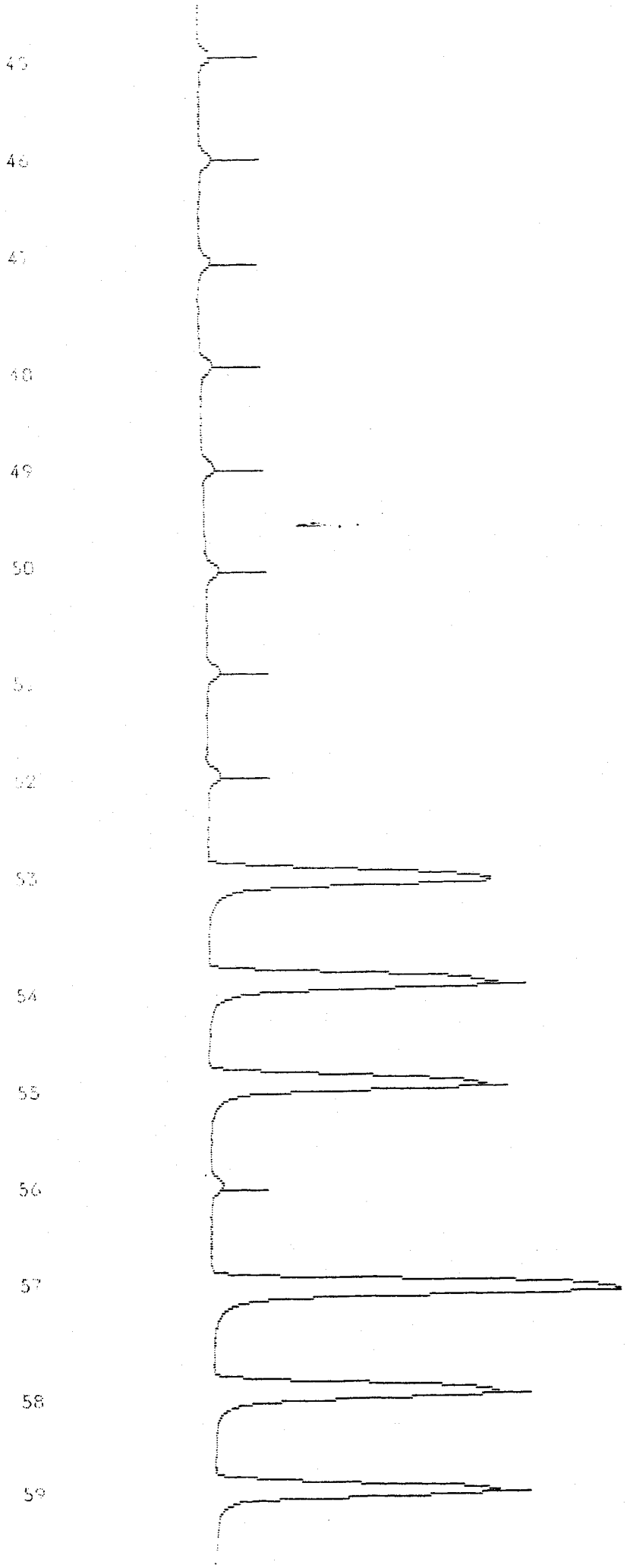
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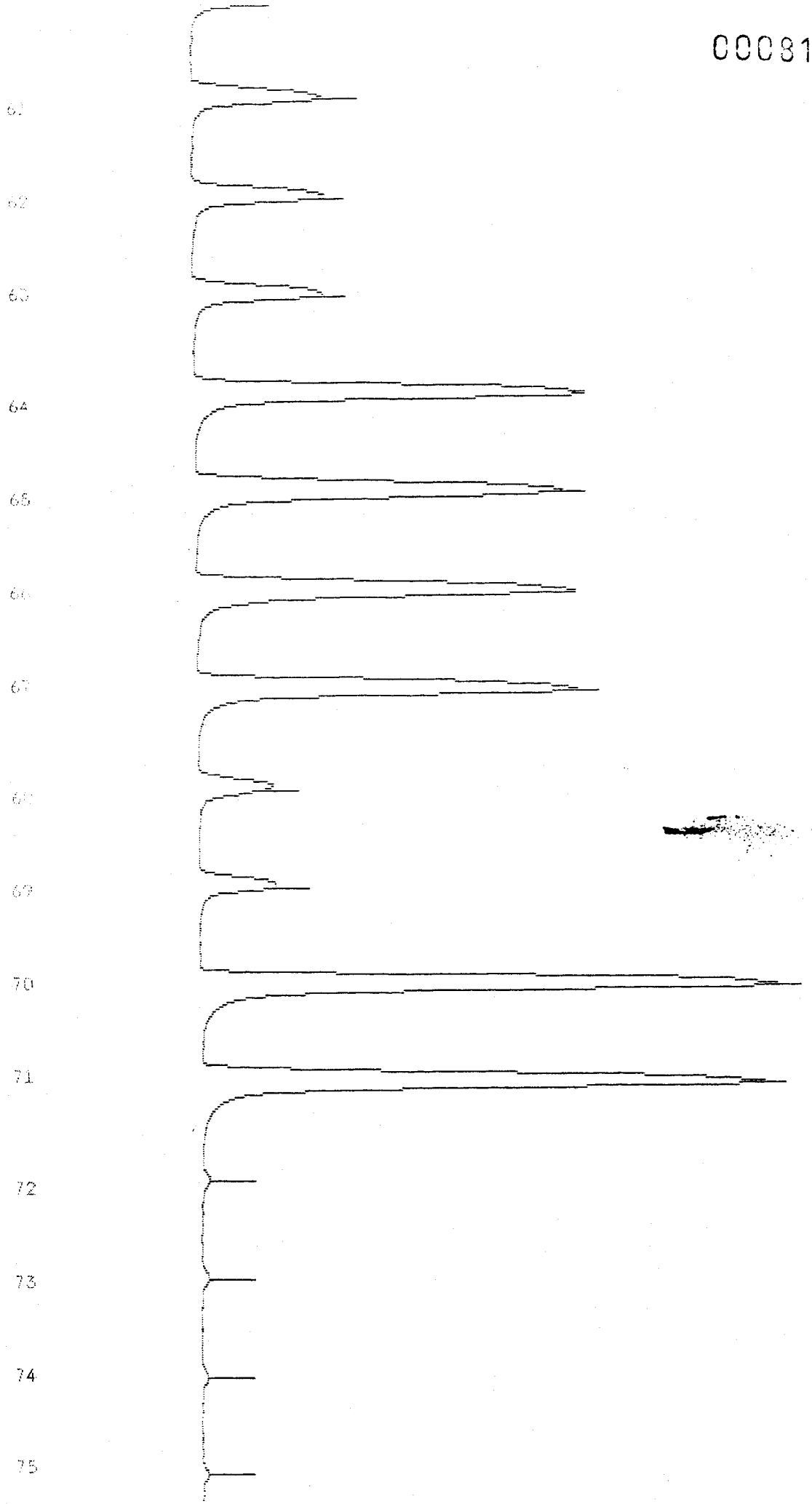
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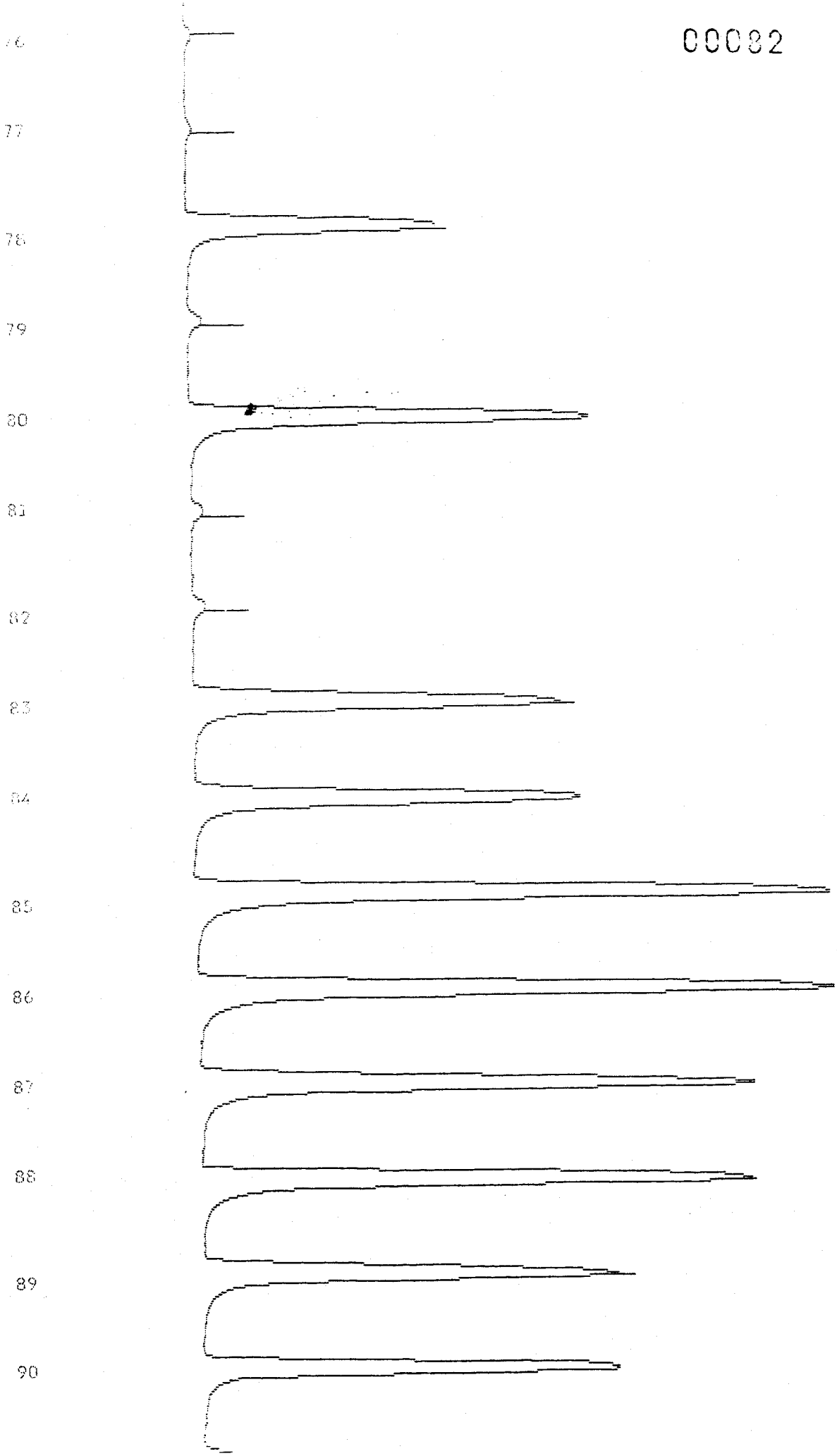
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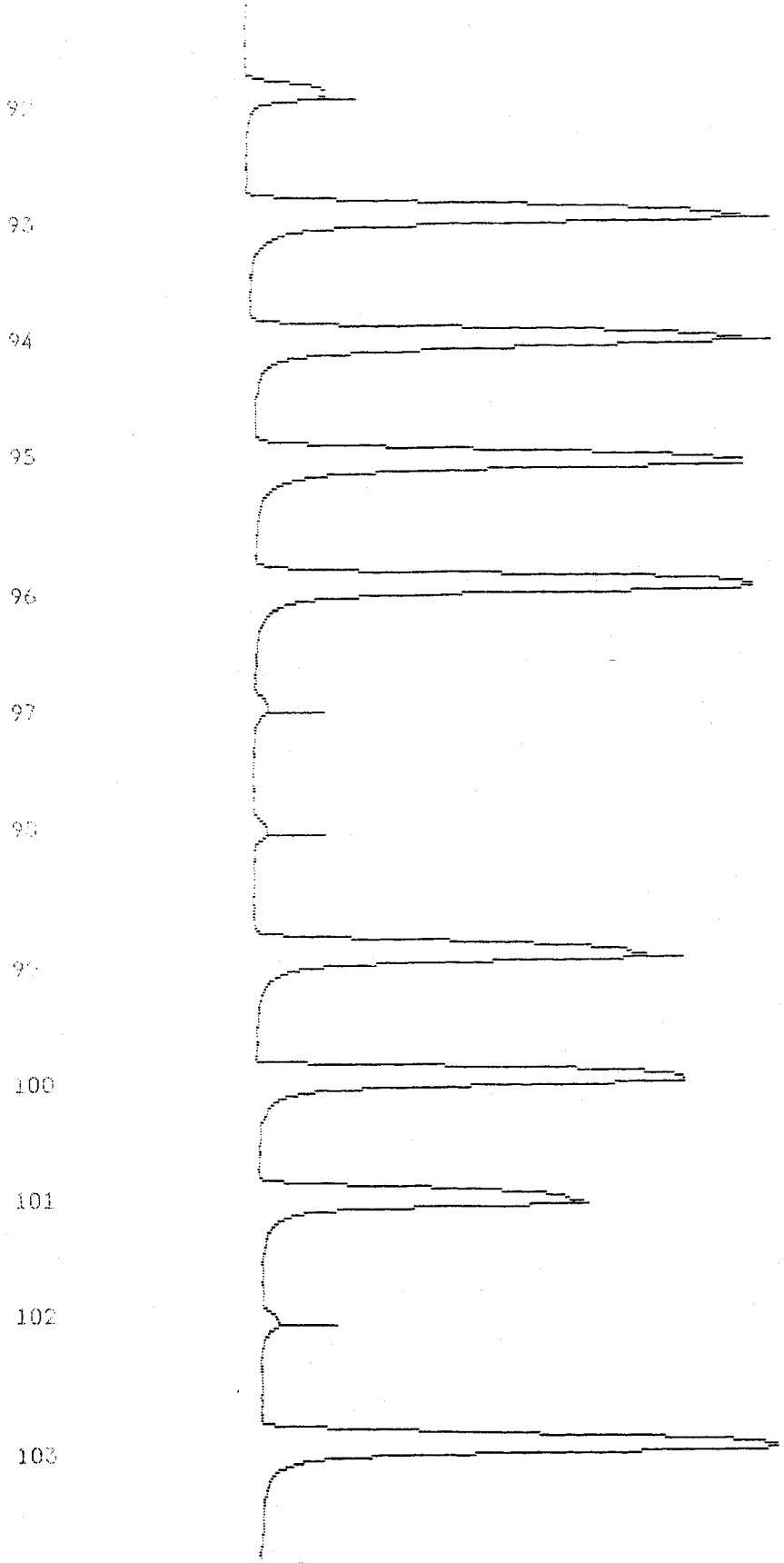
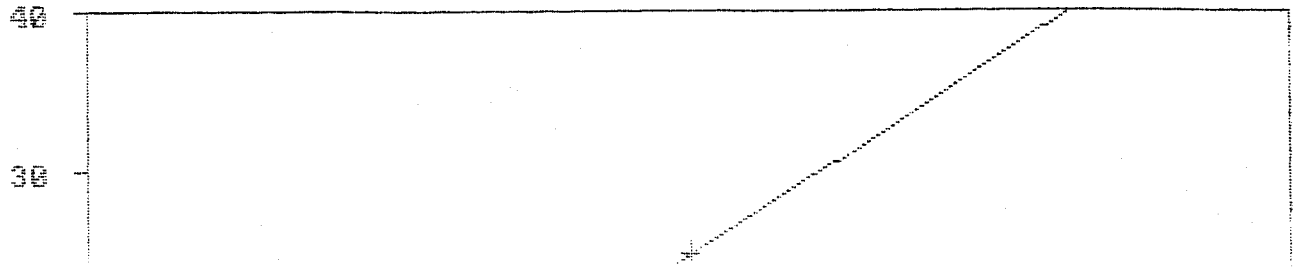
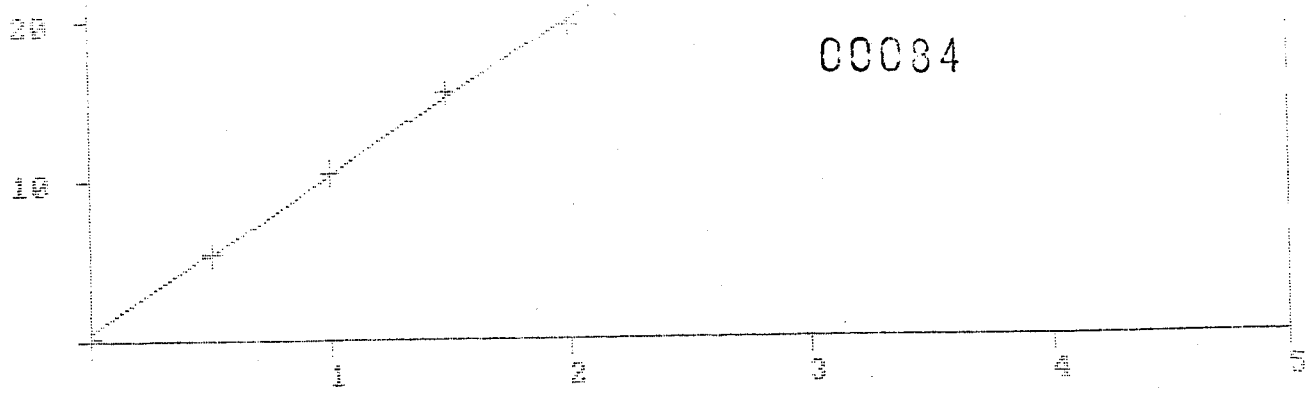


CHANNEL NAME: LDC
RUN NAME: 991011W





00034

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	TuG	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	-0.041	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	<0.0300	-0.054	I	
42	42251	1	1	0.0		-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	

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

00037

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			BL001	1BIB		
15			~~xxxxxx~~	NO CUP		
16			BL1001 S			
17			"			
18			BL1001 DS			
19			"			
20	102		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			BL001	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			42256			
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			BL001	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: 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						
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			~~44~~ "			
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	53685	"	"	"	"	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		"	"	"	"	

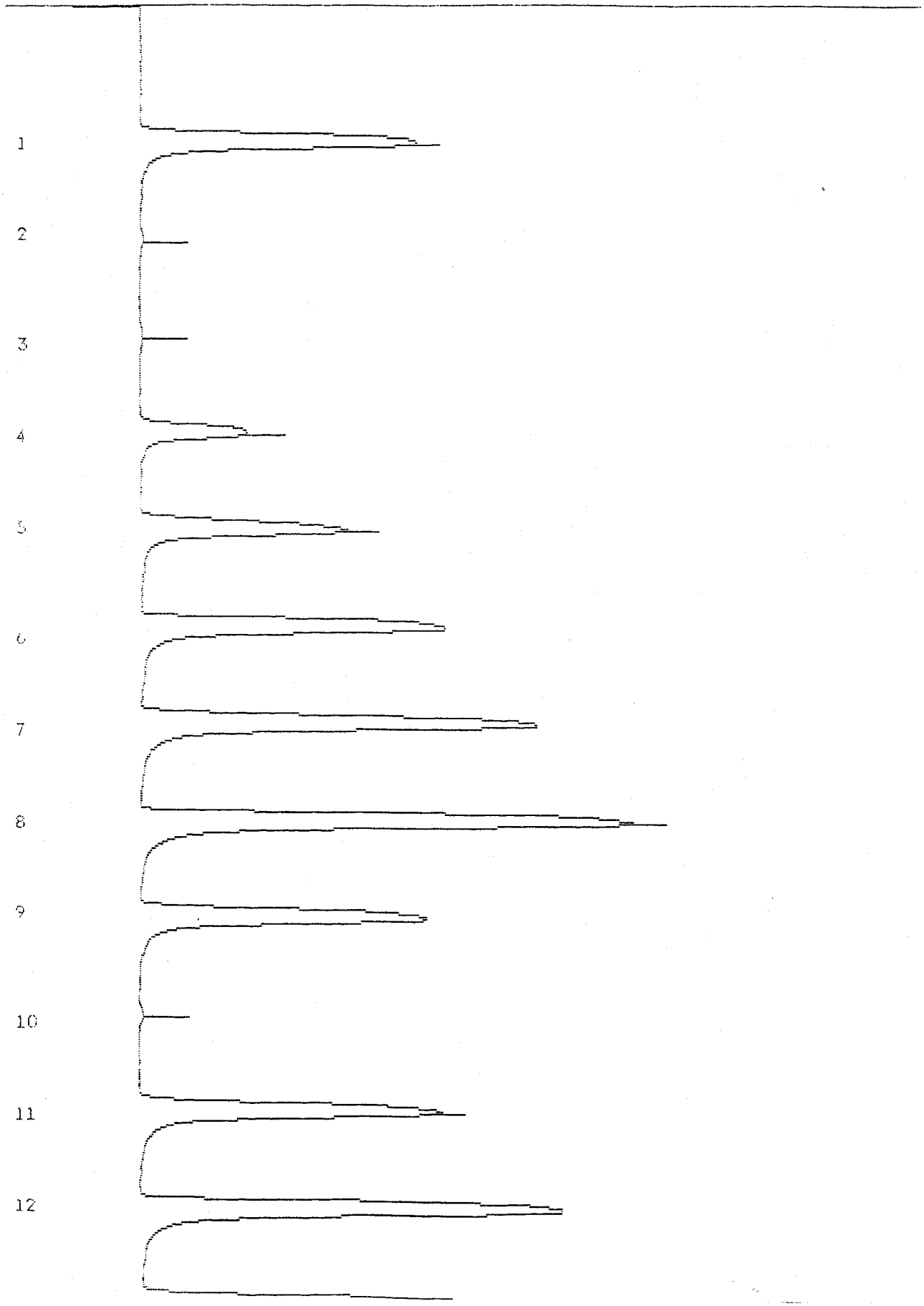
Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

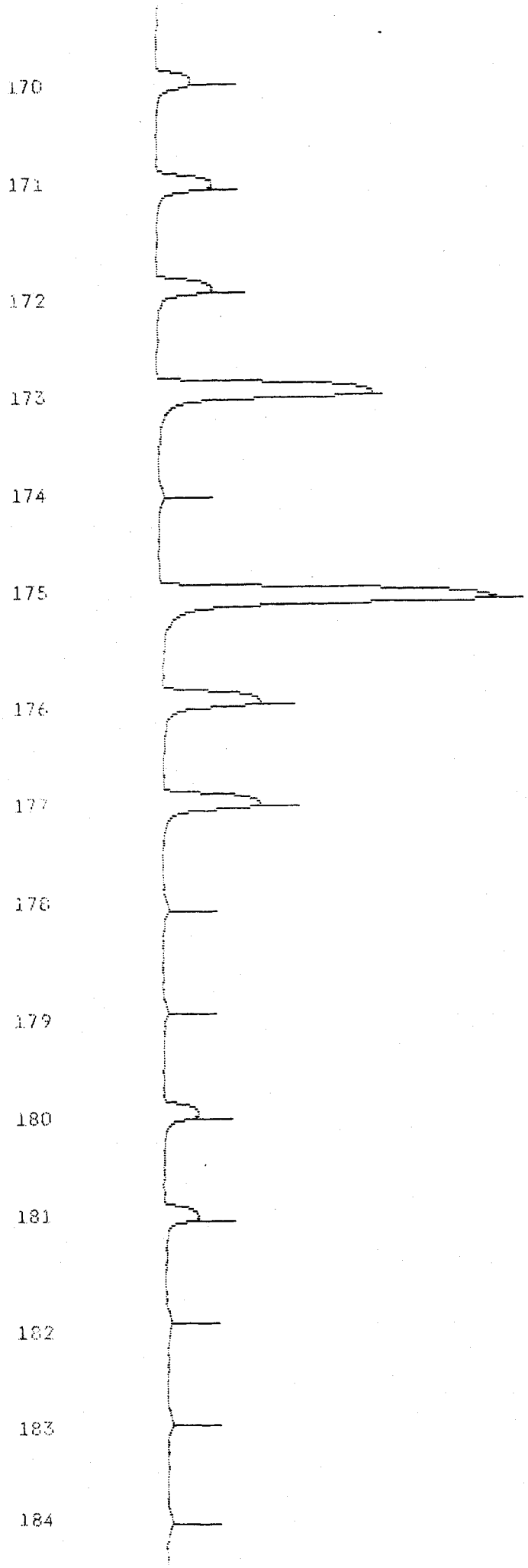
Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run — Prepare 0.05 ppm standards daily

HNO3 Lot. No.	H2SO4 Lot. No.	Bath Temps: / / °C

Prepared By: [illegible] Date: 99/10/01 Checked by: [illegible]

RUN DATE: 10-01-1999 CHART DATE: 10-02-1999
CHART SPEED: 30
DATA FILE NAME: C:\DP4\DATA\991001W.DAT

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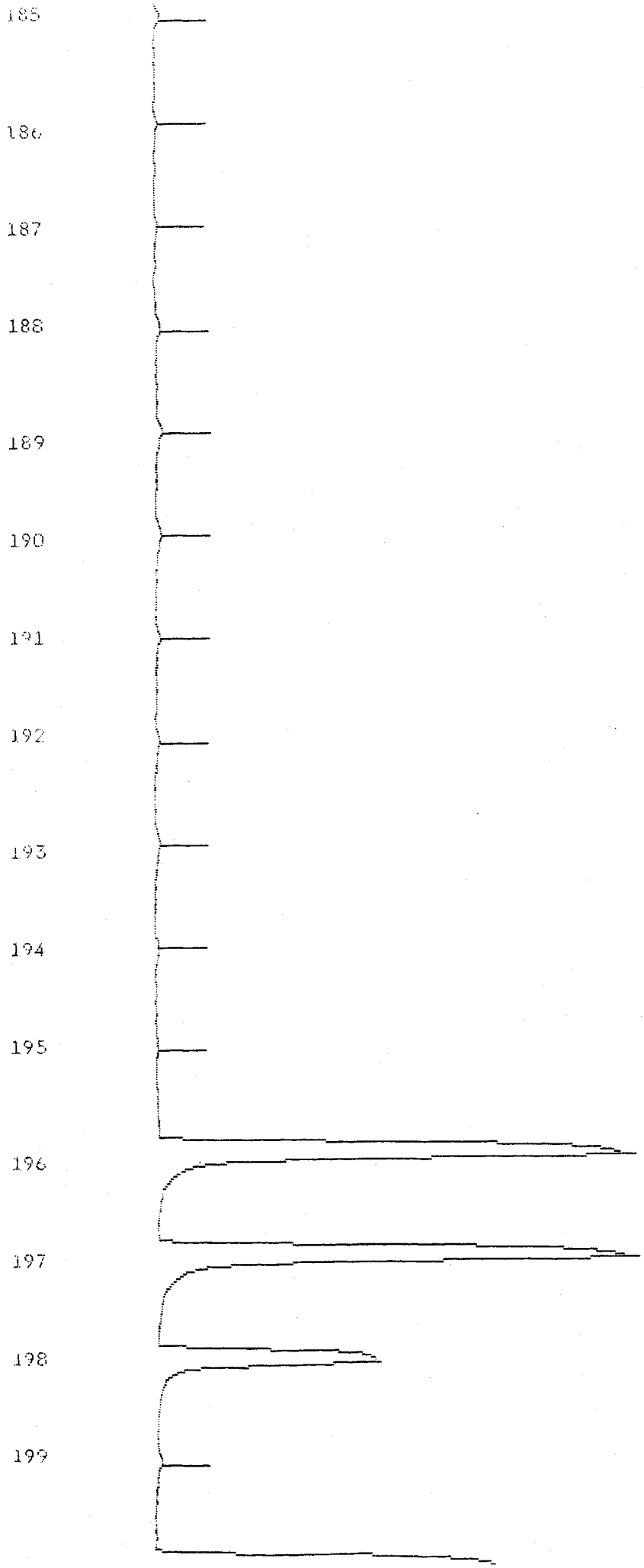
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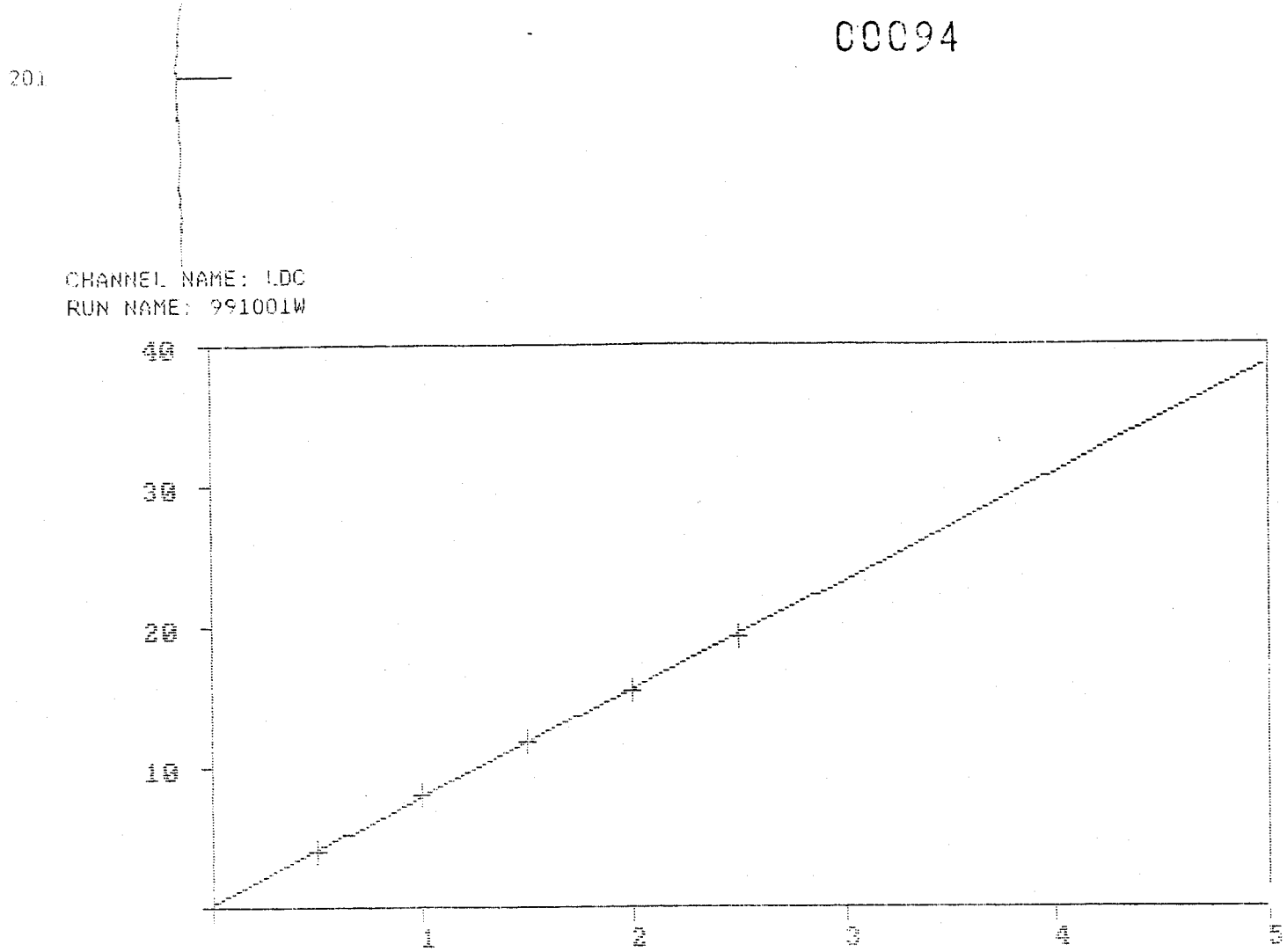

DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.20
SLOPE = 7.65819

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	8	1	1	0.0	-0.027	b
11	D4	1	1	11.9	1.523	d
12	WS 378	1	1	16.6	Tug 2.139 107%	
13	ORG REF	1	1	16.5	2.132 107%	
14	BL1001-1818 50089	1	1	0.0	<0.03 -0.027	I
15	BL1001-1818	1	1	0.0	-0.027	I
16	BL10013	1	1	7.8	m. 201 0.987	99%

150	[illegible]	1	1	7.9		[illegible]	96%
151	B	1	1	0.0		-0.027	b
152	D4	1	1	11.9		1.523	d
153	42745D	10	1	0.5	<0.250	0.372	I
154	42745D	10	1	0.5		0.436	I
155	42545S	10	1	8.4	2.676	10.640	101%
156	42545S	10	1	8.4		10.767	
157	42545DS	10	1	7.9	2.568	10.098	97%
158	42545DS	10	1	8.2		10.449	
159	42743	10	1	0.5	<0.250	0.404	I
160	42743	10	1	0.3		0.085	I
161	42744	10	1	0.2	<0.250	-0.043	I
162	42744	10	1	0.0		-0.266	I
163	42746	10	1	3.5	1.090	4.294	
164	42746	10	1	3.6		4.422	
165	42747	10	1	0.4	<0.250	0.276	I
166	42747	10	1	0.4		0.276	s
167	42748	10	1	0.1	<0.250	-0.170	I
168	42748	10	1	0.1		-0.138	I
169	42749	10	1	1.1	0.264	1.105	
170	42749	10	1	1.0		1.010	
171	42750	10	1	1.8	0.520	2.094	
172	42750	10	1	1.8		2.062	
173	CCV	1	1	7.5		0.956	95%
174	B	1	1	0.0		-0.027	b
175	D4	1	1	11.9		1.523	d
176	42751	10	1	3.3	1.018	4.071	
177	42751	10	1	3.3		4.071	
178	42282-HYX -MGHYX	1	1	0.0		-0.023	I
179	42282-HYX	1	1	0.0		-0.027	I
180	42497	1	1	1.1		0.111	
181	42497	1	1	1.1		0.114	s
182	43224	1	1	0.0		-0.027	I
183	43224	1	1	0.0		-0.027	I
184	42760	1	1	0.0		-0.020	I
185	42760	1	1	0.0		-0.020	I
186	44796	1	1	0.0		-0.027	I
187	44796	1	1	0.0		-0.027	I
188	47489	1	1	0.0		-0.027	I
189	47489	1	1	0.1		-0.017	I
190	53129	1	1	0.1		-0.017	I
191	53129	1	1	0.0		-0.027	I
192	53143	1	1	0.0		-0.027	I
193	53143	1	1	0.0		-0.027	I
194	53685	1	1	0.0		-0.027	I
195	53685	1	1	0.0		-0.027	I
196	WS 378	1	1	16.1		2.075	103%
197	ORG REF	1	1	16.2		2.084	104%
198	CCV	1	1	7.5		0.952	95%
199	B	1	1	0.0		-0.027	b
200	D4	1	1	11.9		1.523	d

C0095

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

00096

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

00097

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 CMB Control Chart Updated N/A IO Requirements met N/A

00098

①

LDC AUTOSAMPLER RUN LOG (MERCURY)

te: 991004 Run Code: KB01/MG01 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		½	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			WS53+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		⅕	53145			
75		↓	"			
76		⅕	53146			
77		↓	"			
78		⅕	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: ~~unp~~ (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)	0.5		
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	1.5	1/5	53148			
24	↓	↓	"			
25			53149			
26			"			
27			BL10034	3GKC		
28			"			
29			BL10034S			
30			"			
31			BL10034ds			
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		NA ~~1/5~~	53690			
61	↓	↓	"			
62			WS378			
63			ORG REF			
64			CCV			
65			B			
66		NA	~~D4~~ D4			
67		NA	~~B~~ BL10034	4GKC		
68			~~D4~~ "			
69			BL10034S			
70			"			
71			BL10034DS			
72			"			
73	1/5	1/25	53745			
74	↓	↓	"			
75			53745 D			
76			"			
77			53745 S			
78			"			
79			53745 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: 99.10.04 Run Code: MG01 Matrix: IMP (KCl)

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	1/10	53745 DS			
22	↓	↓	"			
23			BL1003	5GKC		
24			"			
25			BL1003 S			
26			"			
27			CCV			
28			B			
29			D4			
30			BL1003 D			
31			"			
32	1.5		43202			
33			"			
34			43202 D			
35			"			
36			43202 S			
37			"			
38			43202 DS			
39			"			
40	↓	1/5	43203			
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)	0.5		
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	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			"			
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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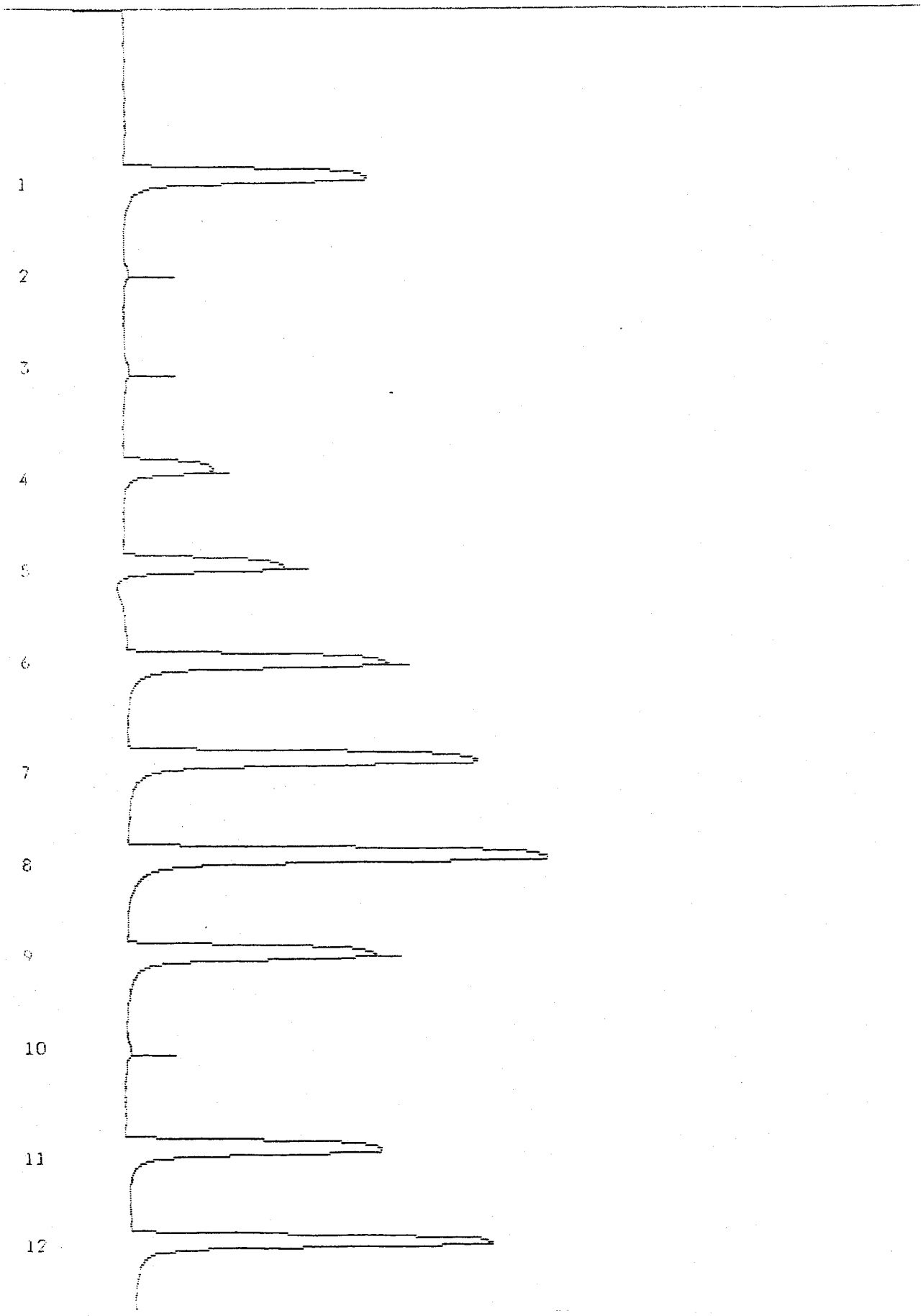

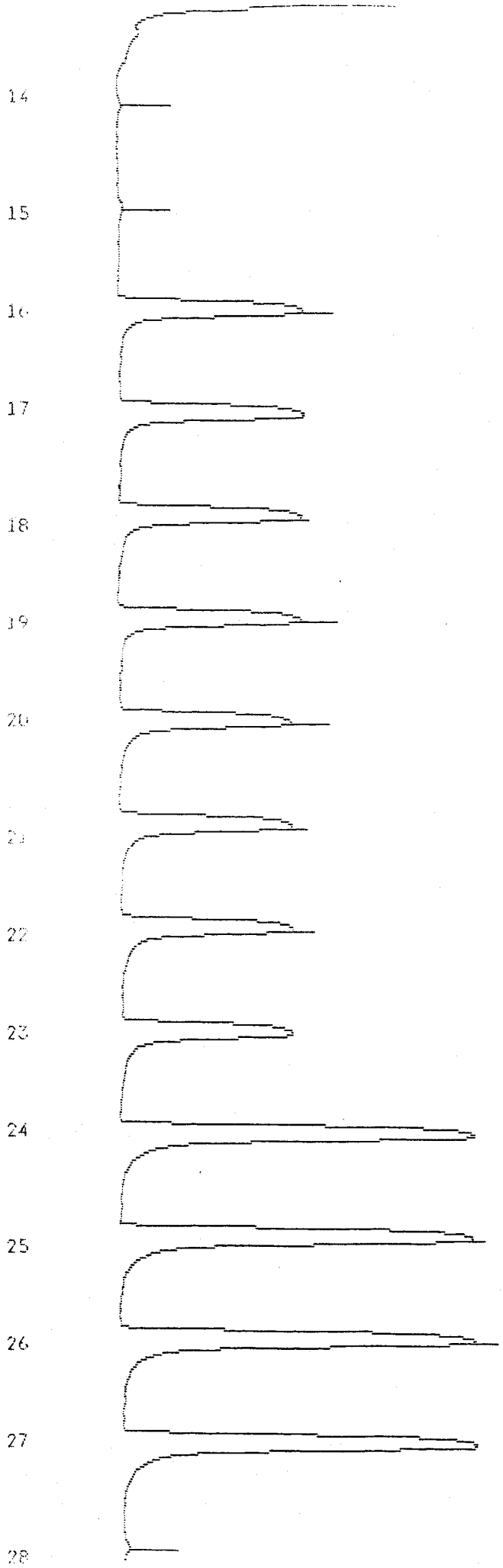
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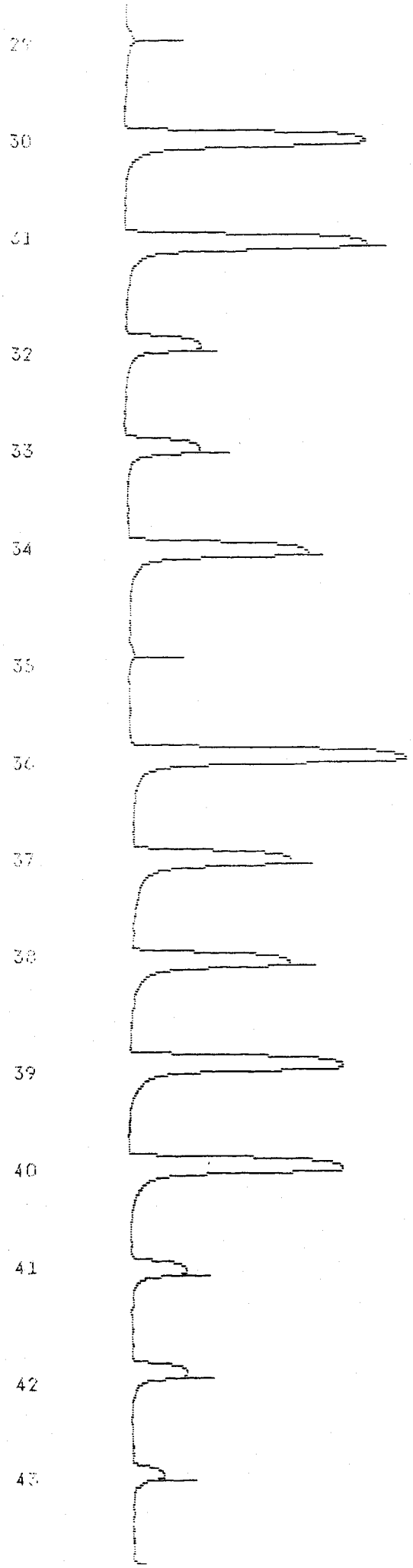
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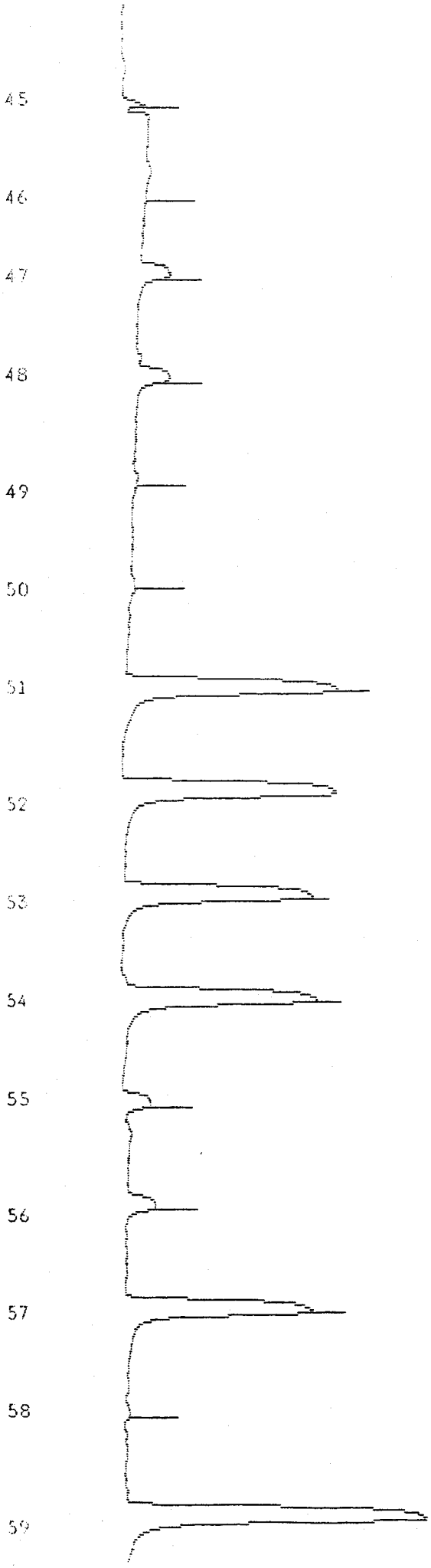
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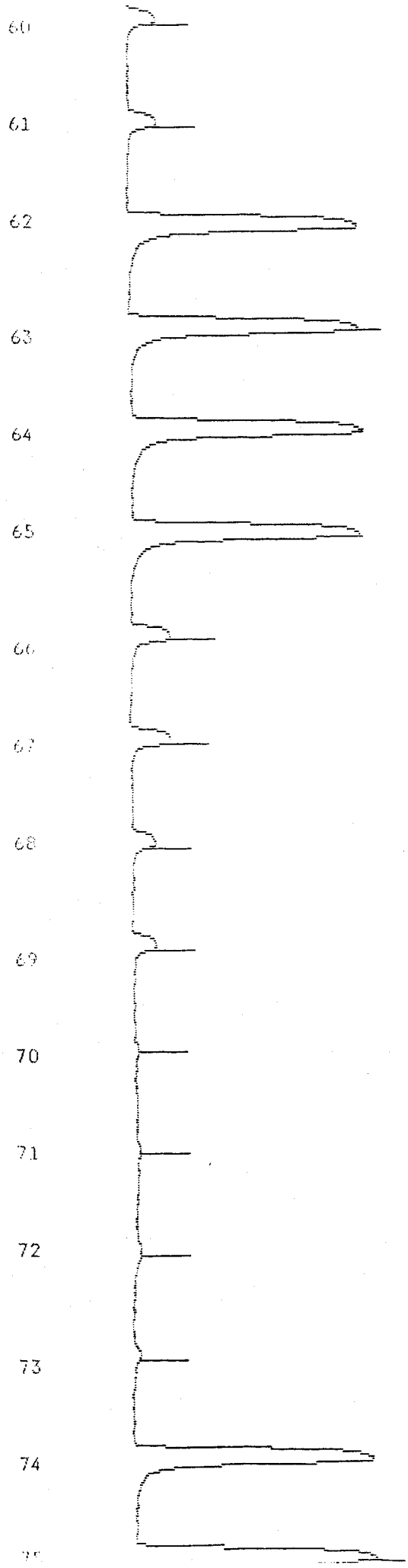
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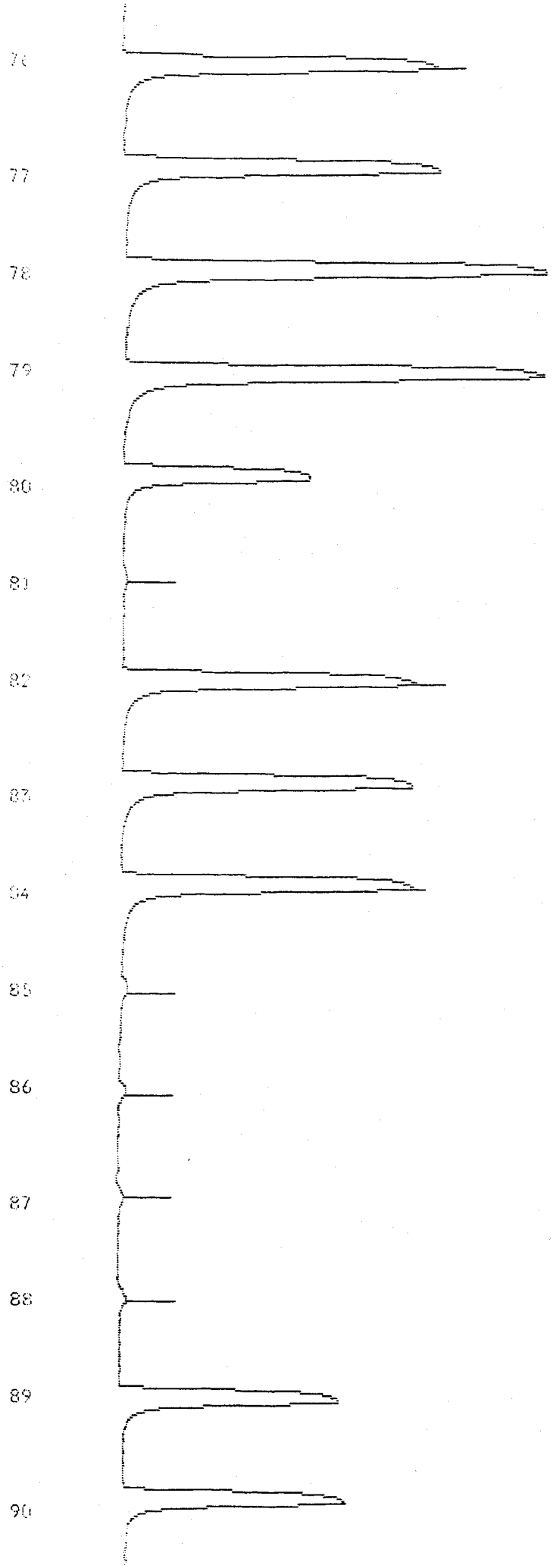
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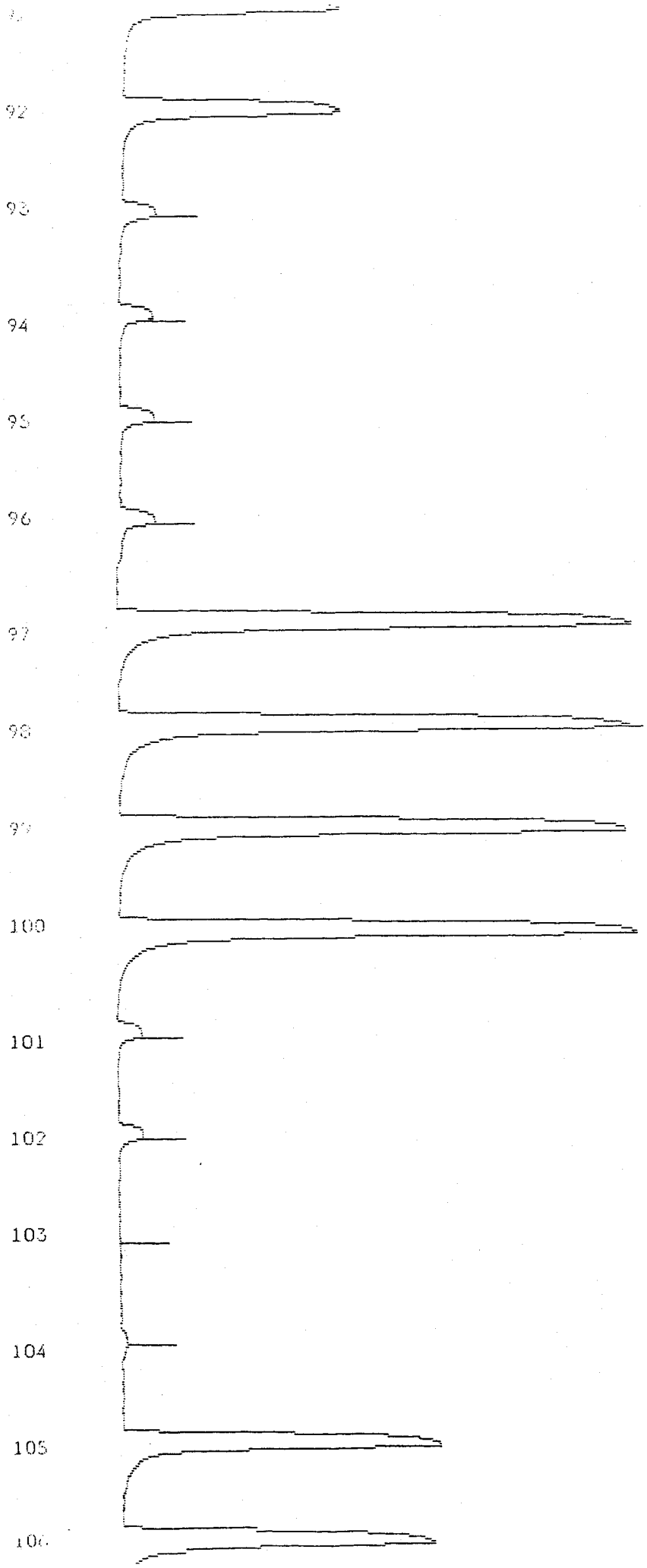
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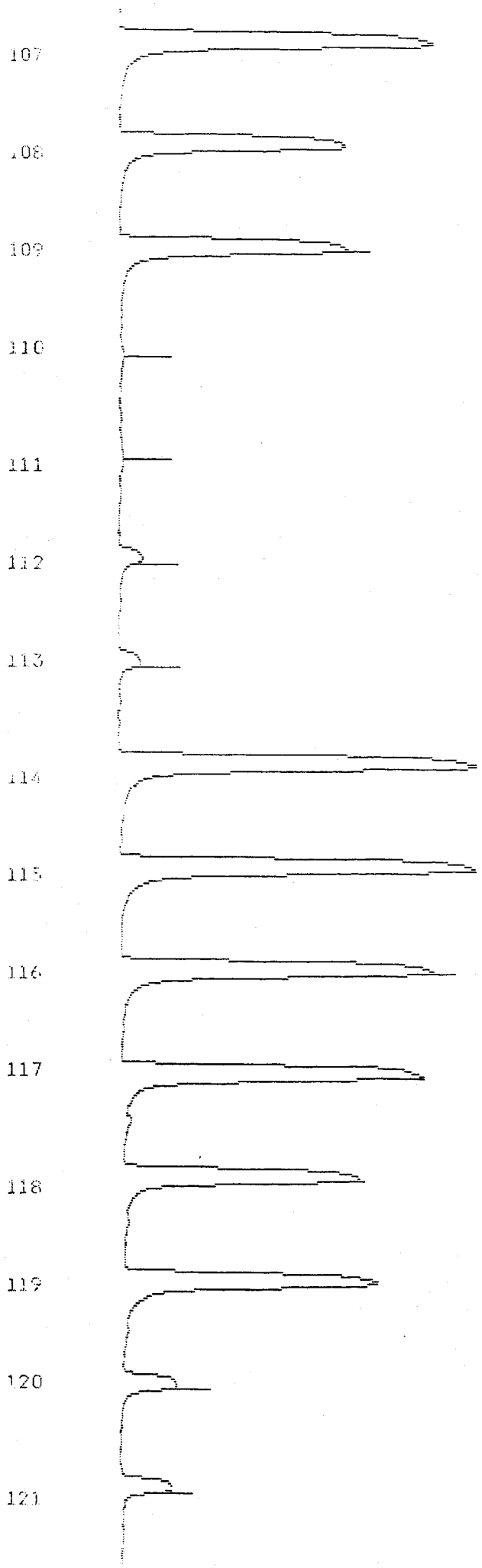
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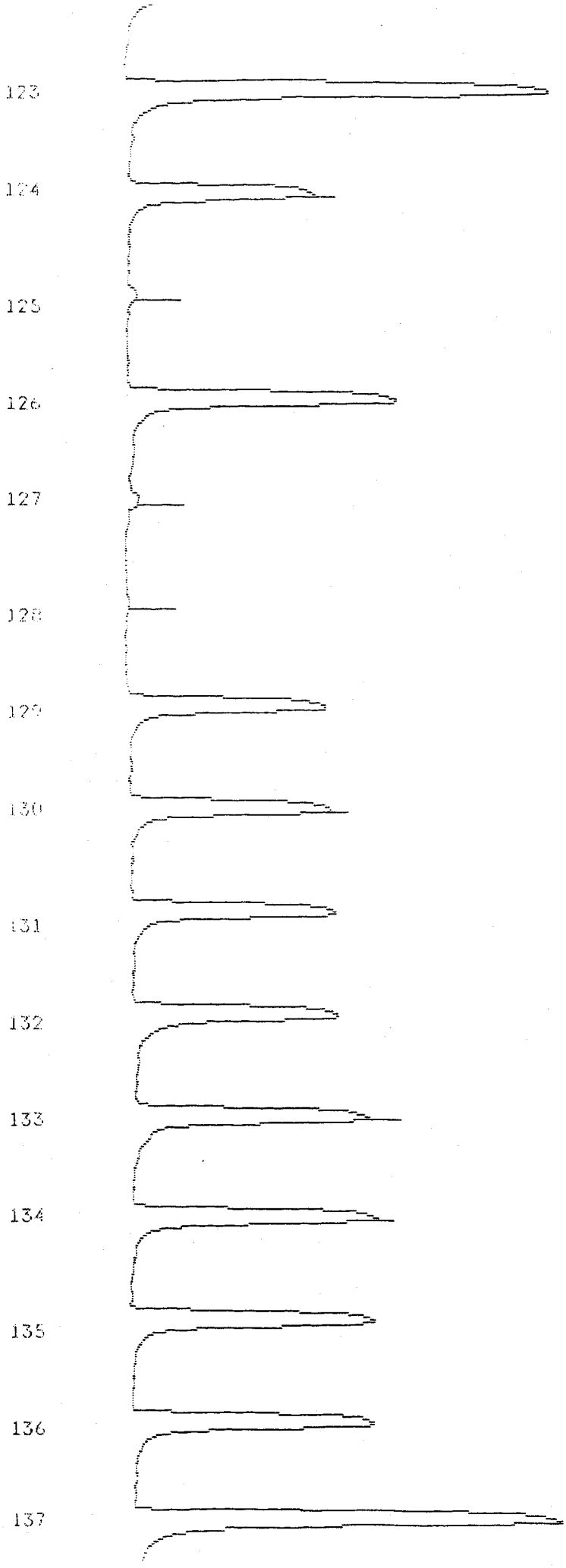
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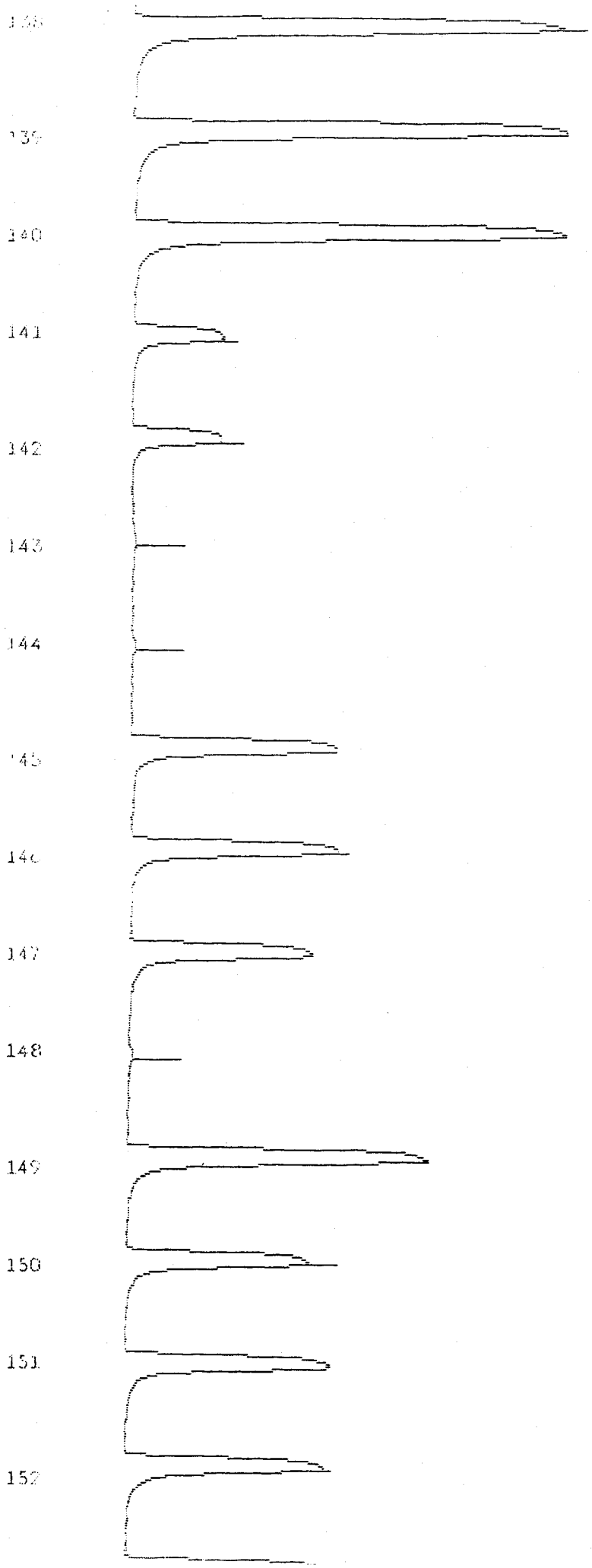
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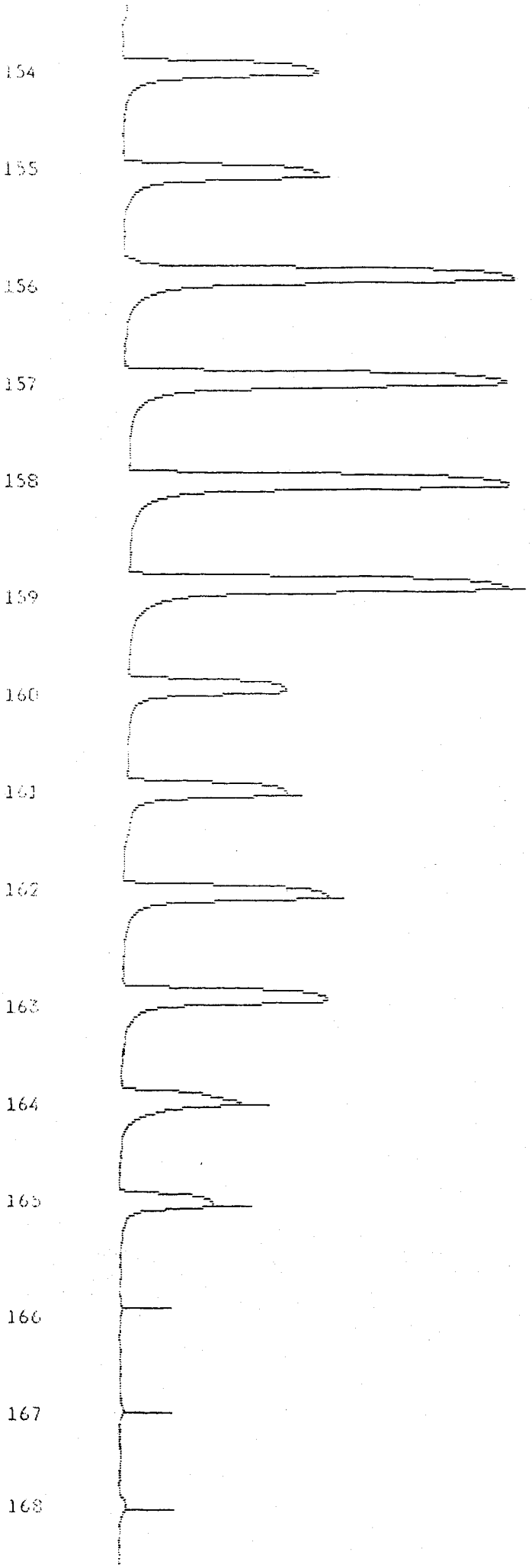
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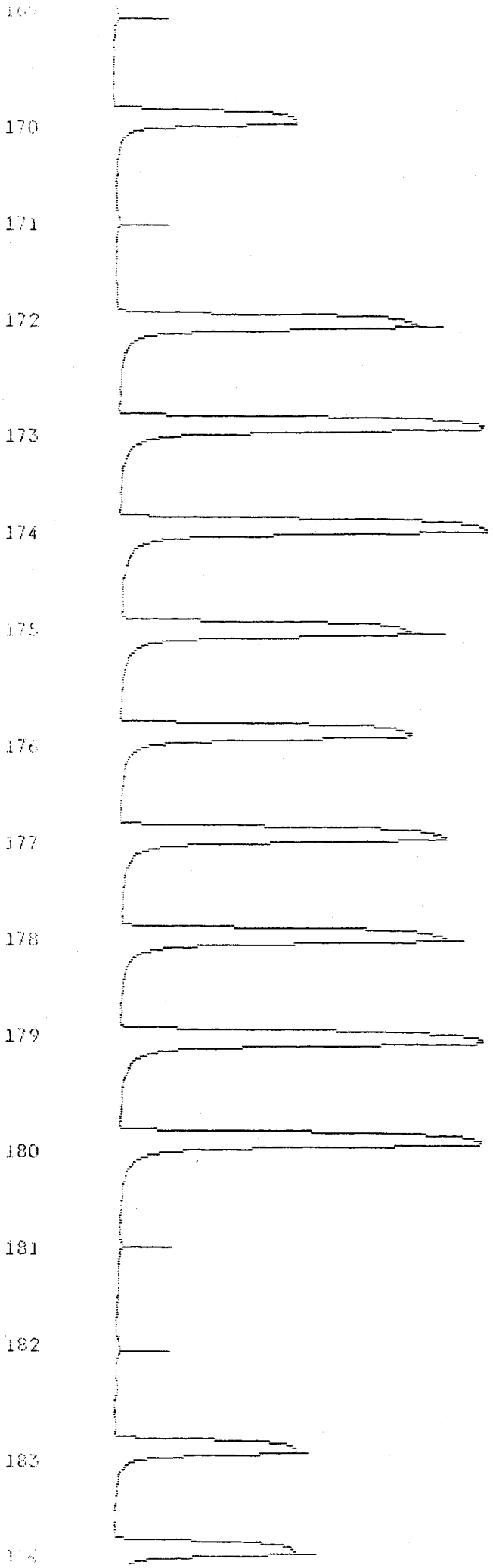
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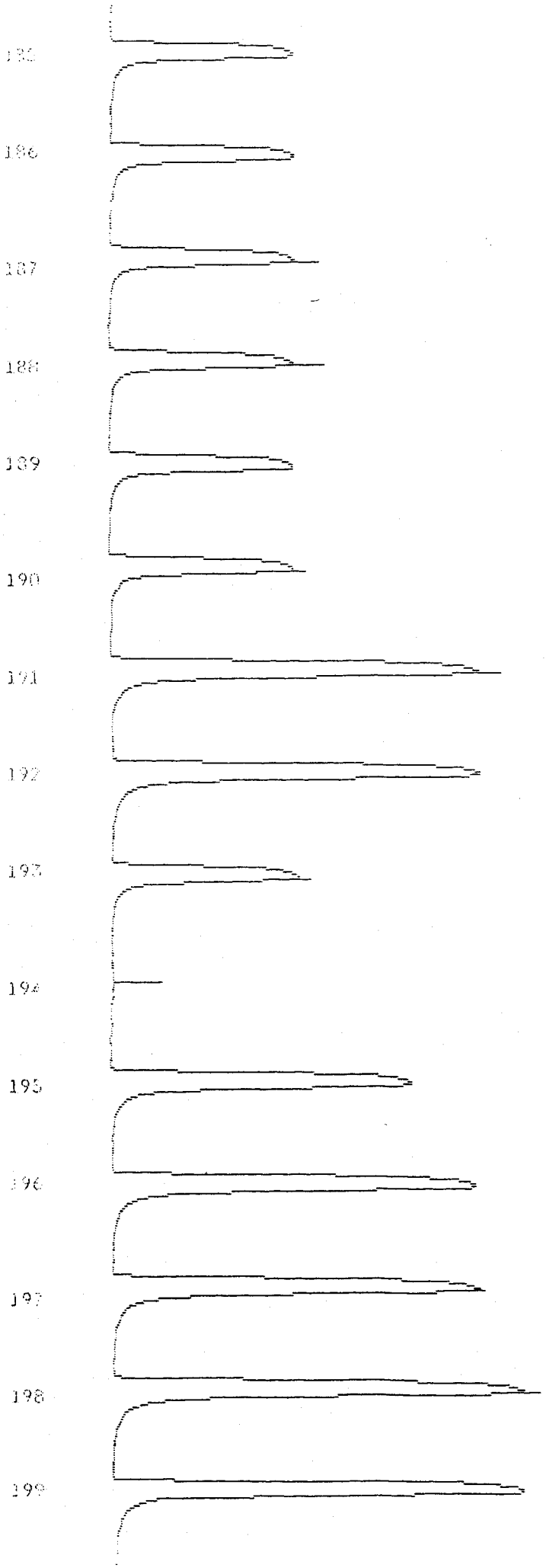
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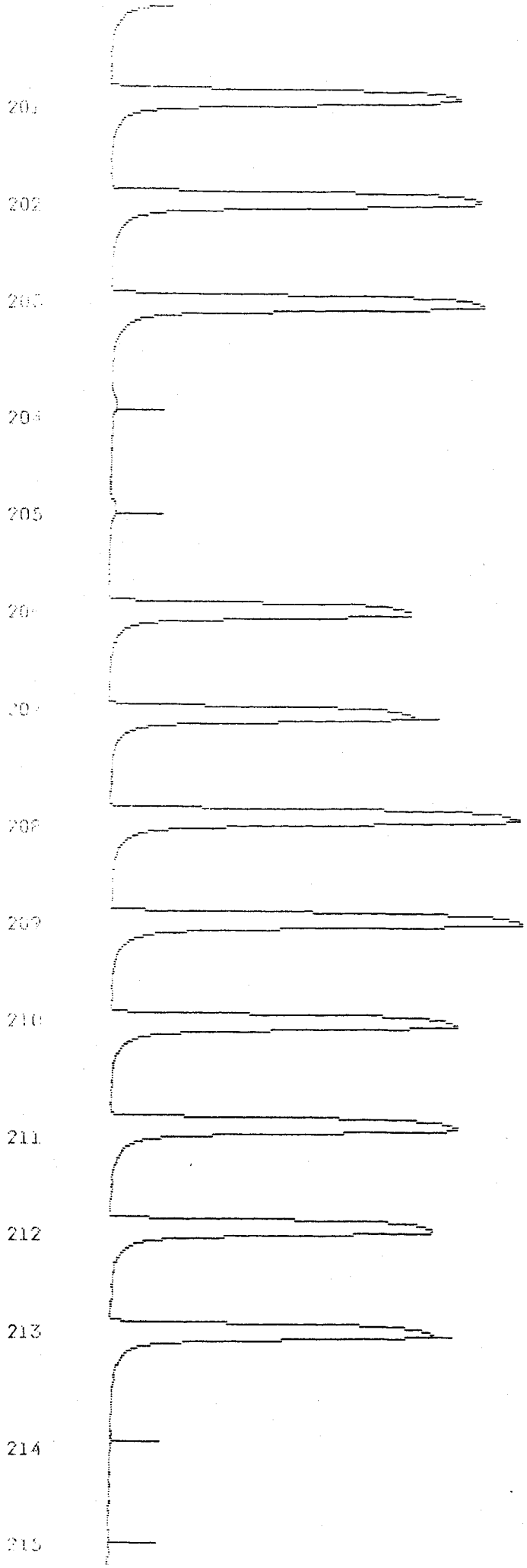
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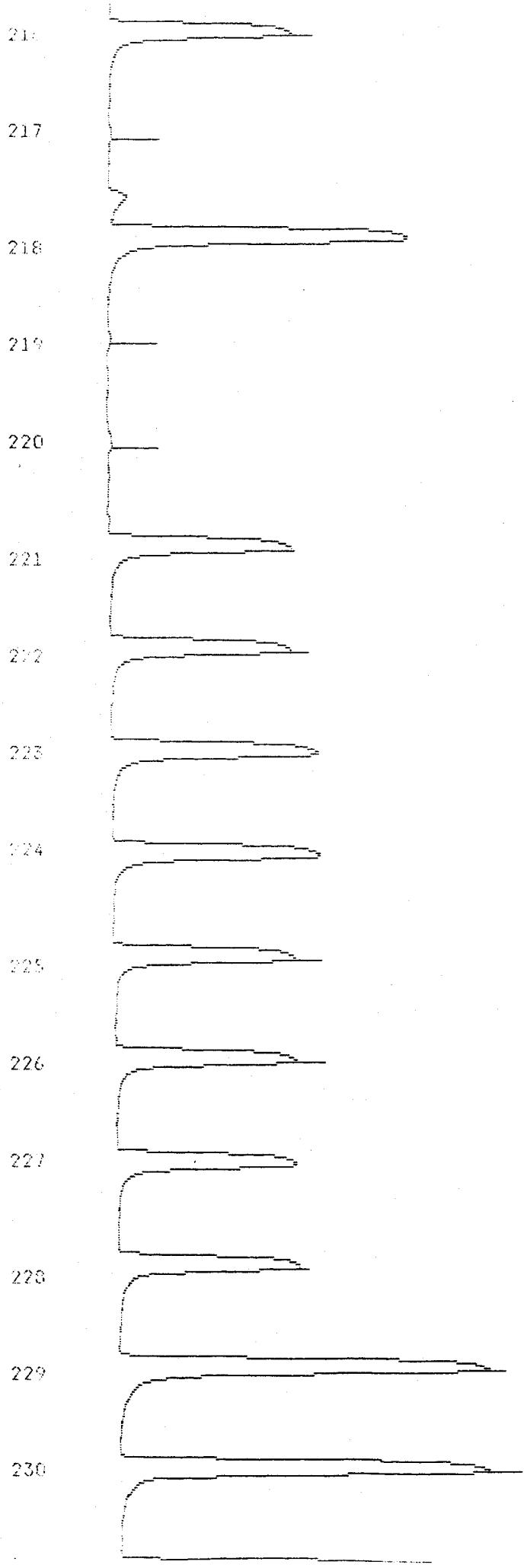
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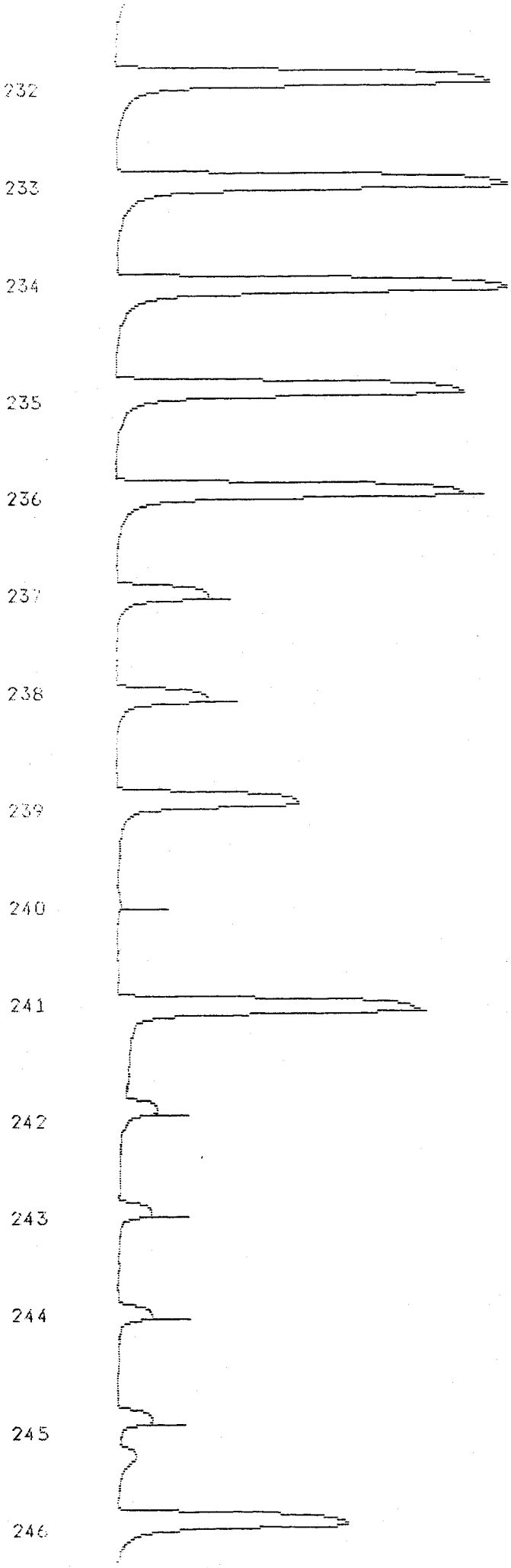
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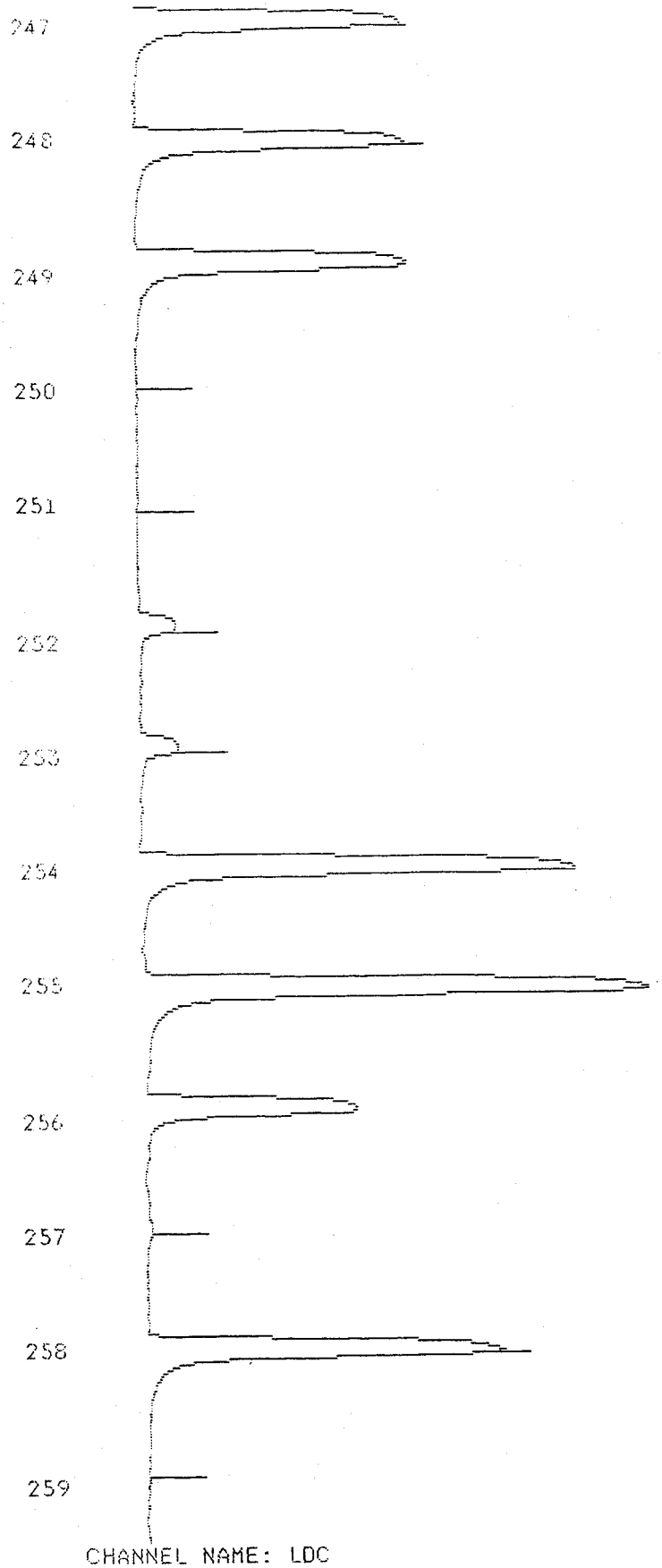

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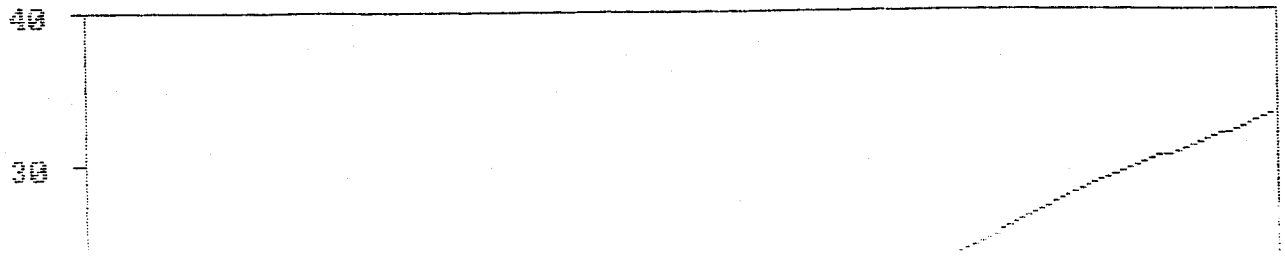
RUN NAME: 991004W



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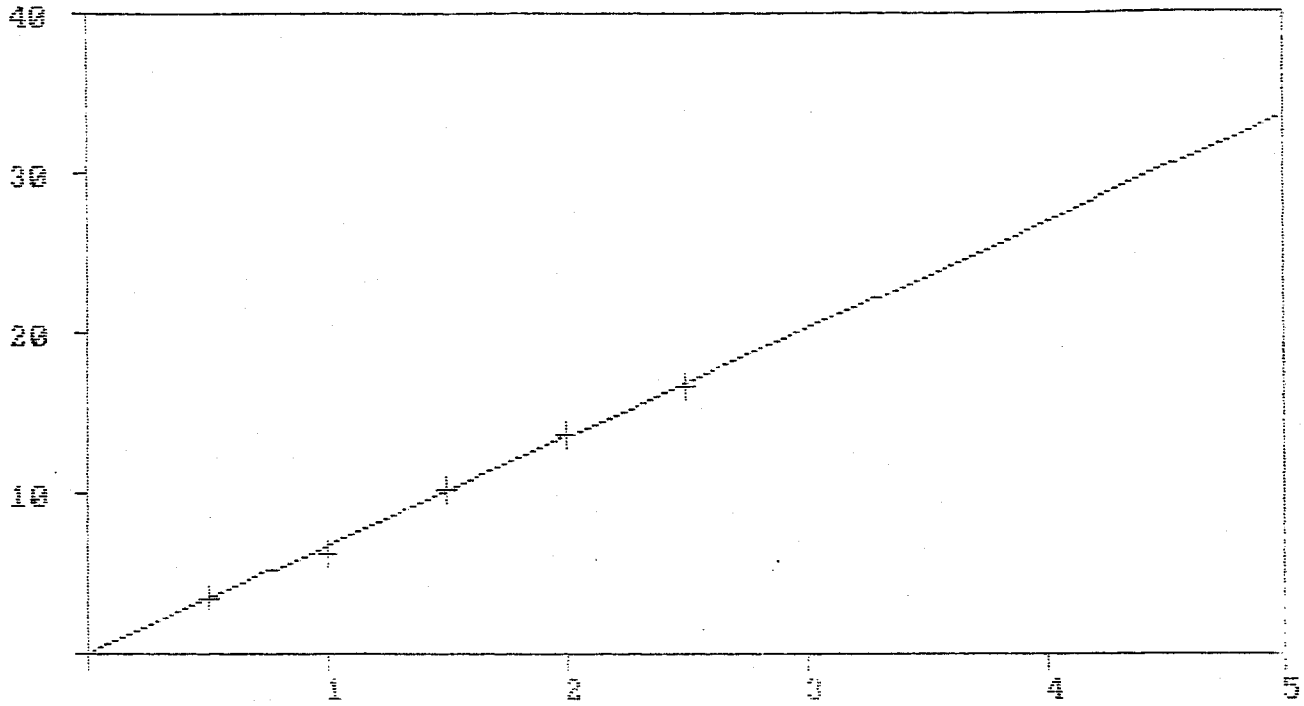
RUN NAME: 991004W



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	

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24	53132S	1.5	1	13.2	2.954	
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	53140DS	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

00127

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	0.243		
96	53164D	1.5	1	1.1	0.254		
97	53164S	1.5	1	18.6	4.149	R	VOID DOUBLE SPIKED.
98	53164S	1.5	1	18.5	4.128	R	REPEAT @ END MS
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	1.8	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		

00128

156	432025	1.5	1	13.2	2.960	
157	432023	1.5	1	13.0	2.900	
158	43202DS	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 REPEAT @ END #6	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

00129

222	BL1004C	1	1	6.1	0.907	
223	BL1004DS	1	1	7.0	1.046	
224	BL1004DS	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	53164D	1.5	1	1.1	0.237	
245	53164D	1.5	1	1.1	0.237	
246	53164S	1.5	1	7.8	1.749	
247	53164S	1.5	1	7.7	1.732	
248	53164DS	1.5	1	7.9	1.765	
249	53164DS	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	53164D	1.5	1	1.0	0.215	
253	53164D	1.5	1	1.0	0.215	
254	WS 378	1	1	12.5	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

99/10/08 7:36:56 Printed by MGAS LDCA DATA TO BE VALIDATED (METVAL') Analyzed by MGAS

ion nber	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

00130

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	17.	16.	
3139	TRC-LO	SG-OHM-Oa-R1	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	18.	16.	
3140	TRC-LO	SG-OHM-Oa-R3	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	17.	16.	
3141	TRC-LO	SG-OHM-Ob-R1	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	18.	16.	
3142	TRC-LO	SG-OHM-Ob-R3	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	17.	16.	
3143	TRC-LO	BP-OHM-3-RB	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	26.	16.	
3144	TRC-LO	BP-OHM-3-I-FB	Mercury -	P	-0.030						99/10/04	5BMN	99/10/04	MG03	27.	16.	
.1004	INTERNAL		Mercury -	P	-0.030	-99999.0	0.309	103.	0.300	100.	99/10/04	5BMN	99/10/04	MG03	$$$	$$$	

11 Tests for OHMN4 with an MDL of 0.030 ug Validated By Control Chart Updated N/A IO Requirements met N/A

C0131

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.	
3L1004	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 CMA Control Chart Updated N/A IO Requirements met N/A

00132

Run Date: 99/10/04
Run Code MG03

Matrix: IMP(KMnO4)

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)

Date: 99.10.04 WI Run Code: MG03 Matrix: IMP ($KMnO_4$)

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			BL1004	1BMN		
15			"			
16			BL1004 S			
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		53750 S			
38			"			
39			53750 DS			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
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			BL1004 S			
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.

[illegible] 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

I DC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.10.04WI Run Code: MG03 Matrix: IMP (MnO_4)

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)	0.6		
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			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	3BMN		
42			"			
43			CCV			
44			B			
45			D4			
46			BL1004 S			
47			"			
48			BL1004 DS			
49			"			
50	1.5		51452			
51			"			
52			51452 D			
53			"			
54			51452 S			
55			"			
56			51452 DS			
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.

[illegible] Blank Spike = 1.0 mg/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 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)	0.5		
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						
141 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.5	2.0		
53			CCV			
54			B			
55			D4			
56			BL1004	SBMN		
57			"			
58			BL1004 S			
59			"			
60			BL004 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 = CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

ICP AUTOSAMPLER RUN LOG (MERCURY)

Date: 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			
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			53135 DS			
72			"			
73		½	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)

Date: 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						
61 21			135 S			
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						
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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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CHART SPEED: 30
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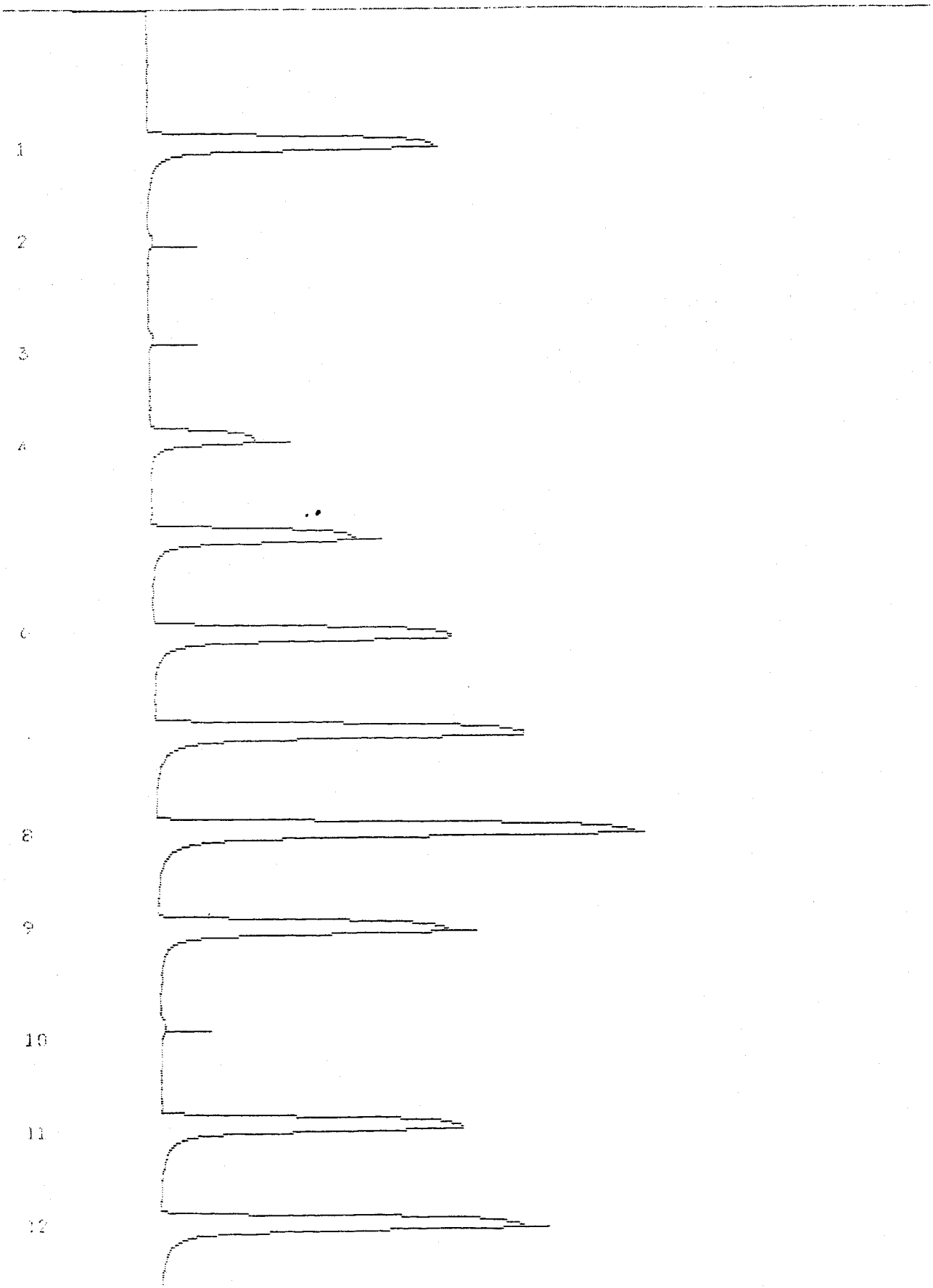

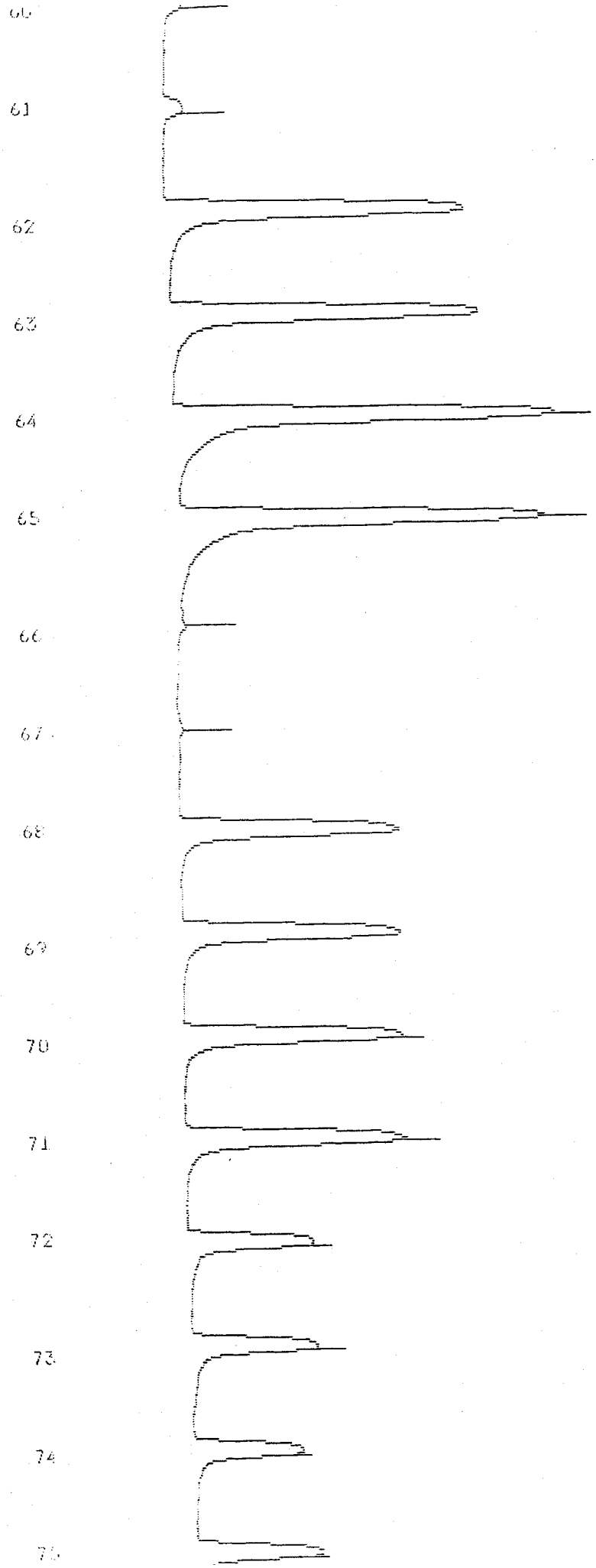
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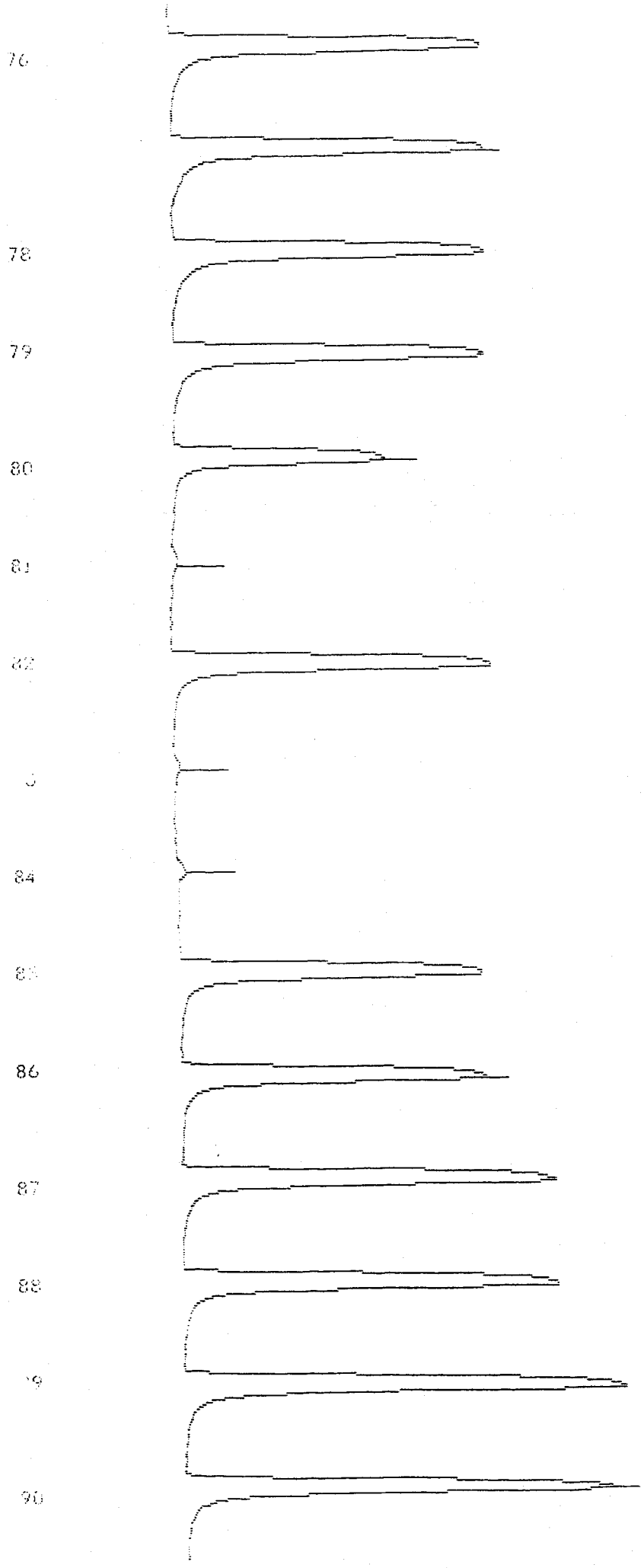
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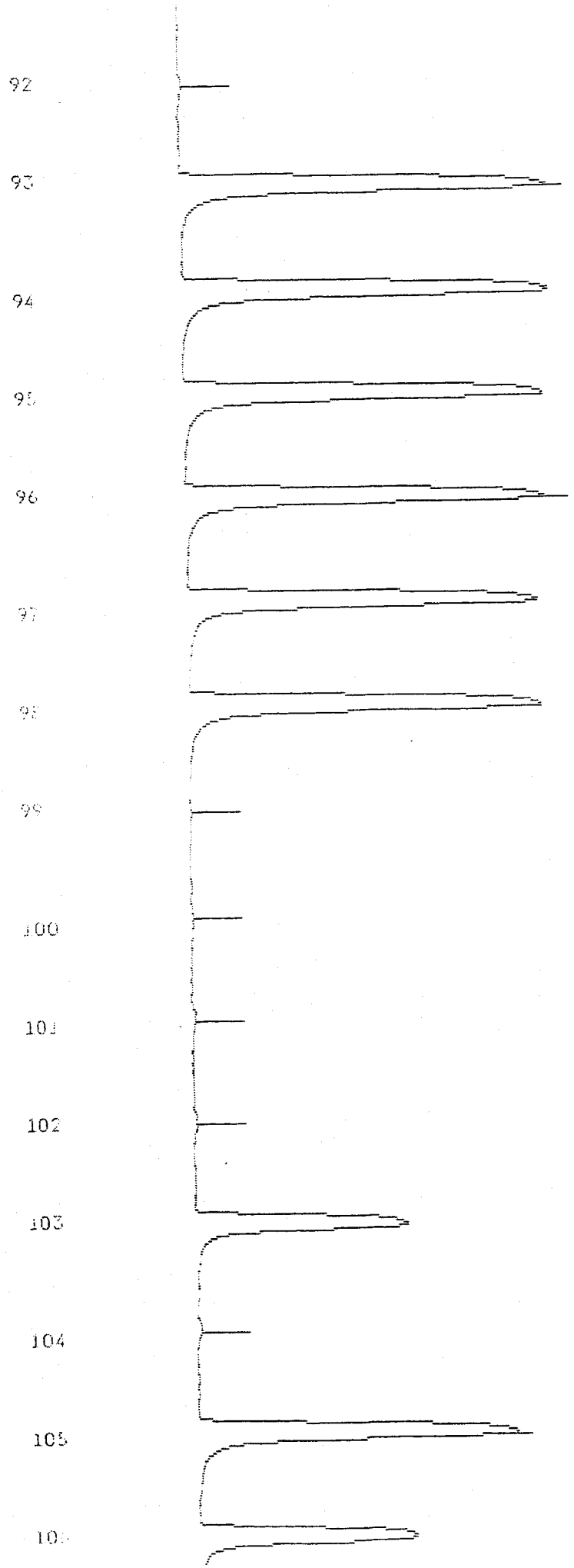
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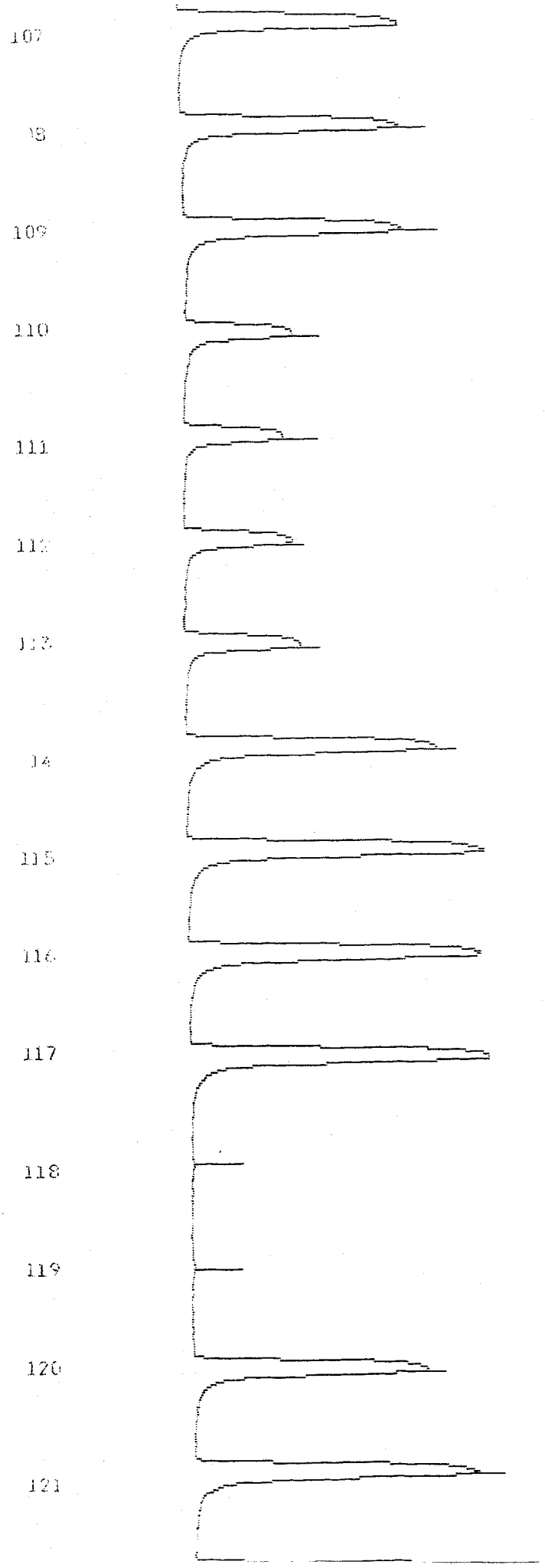
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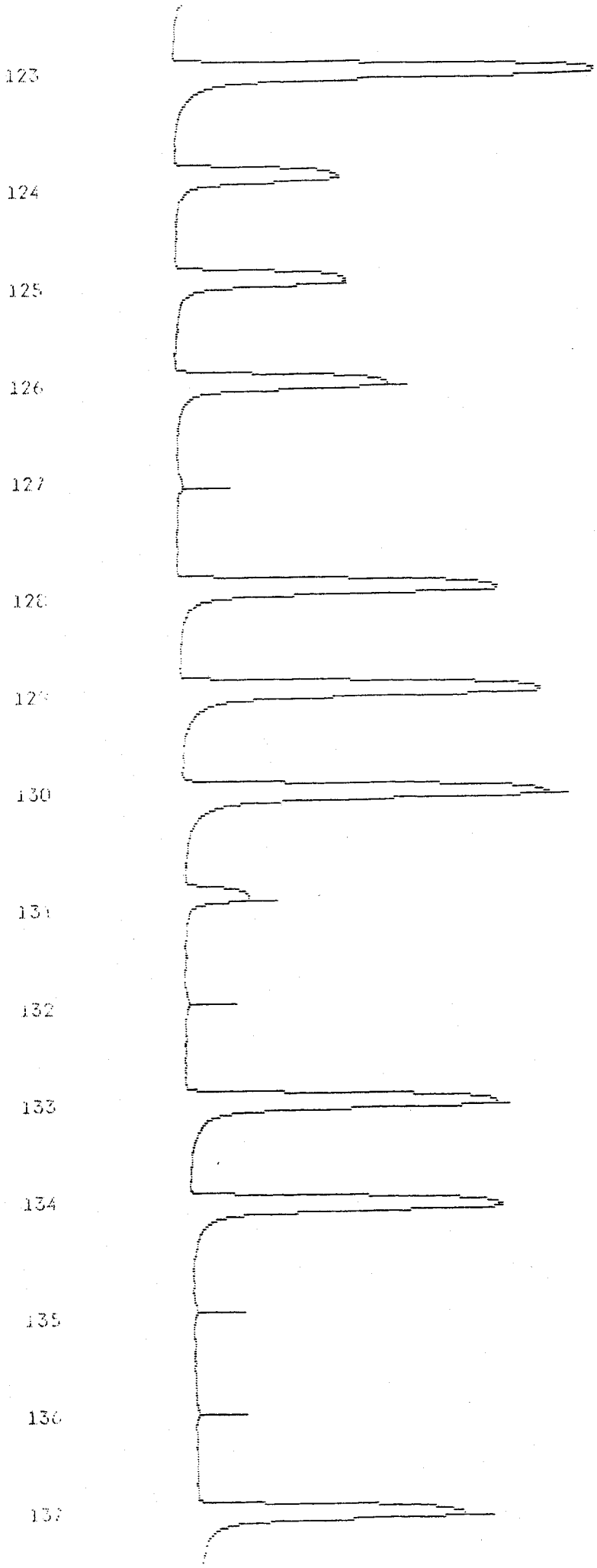
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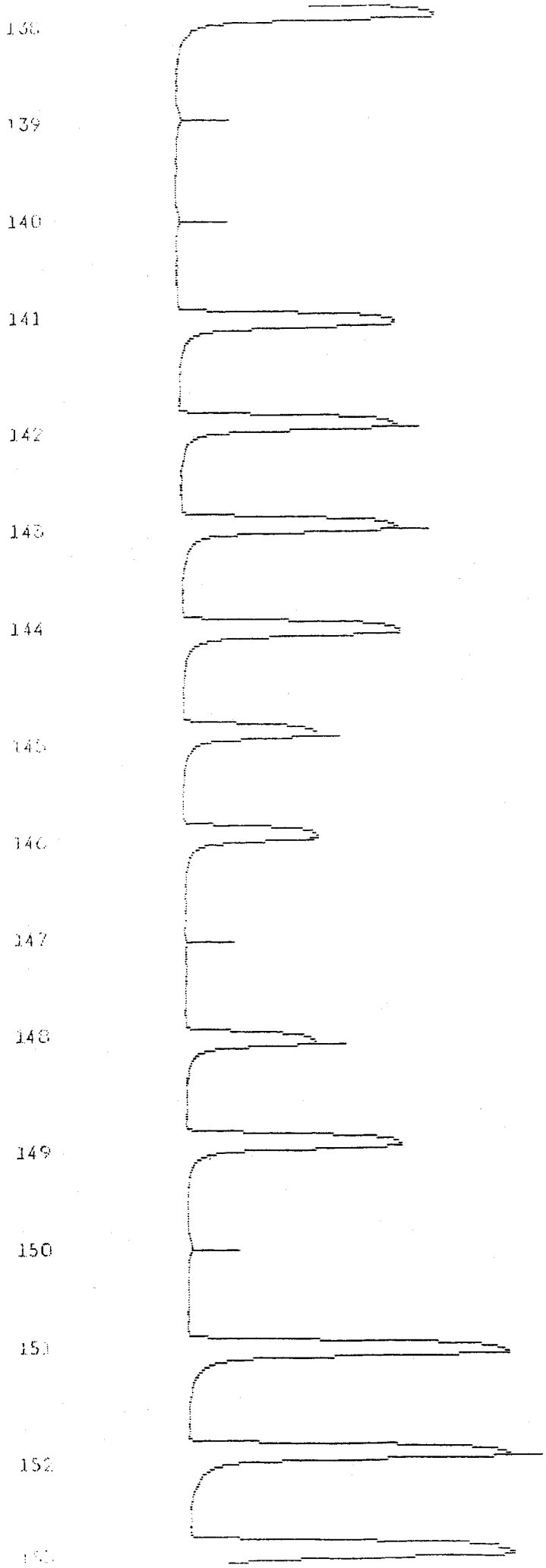
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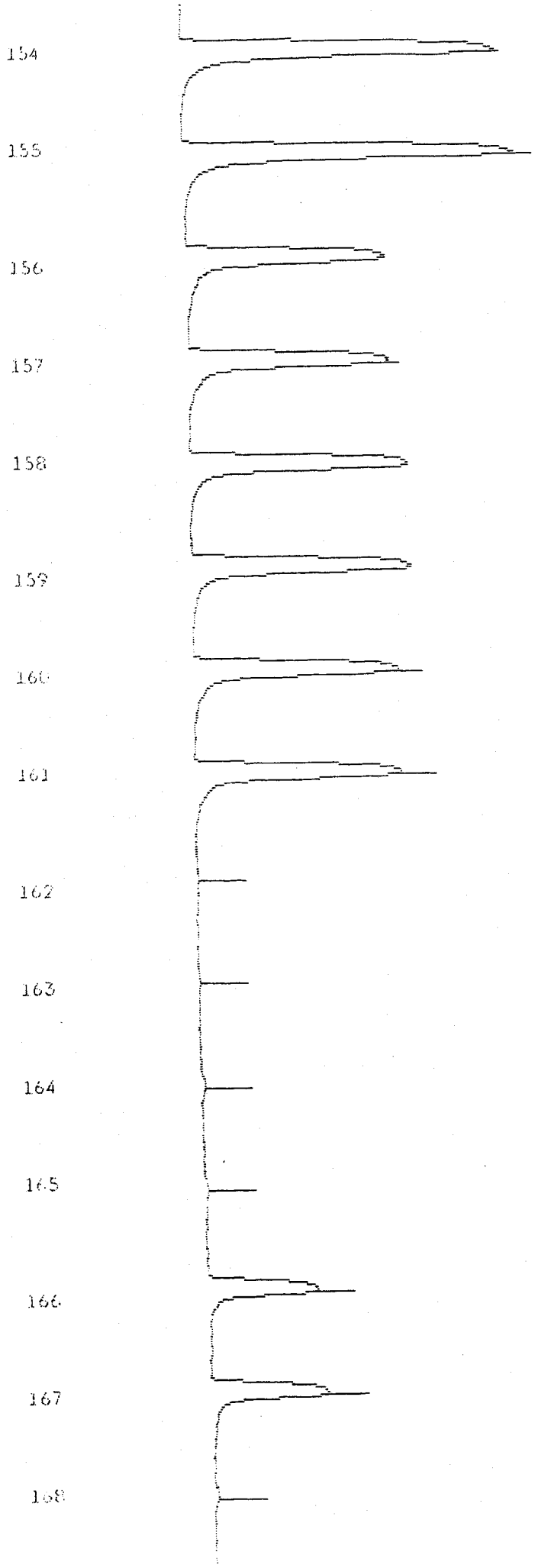
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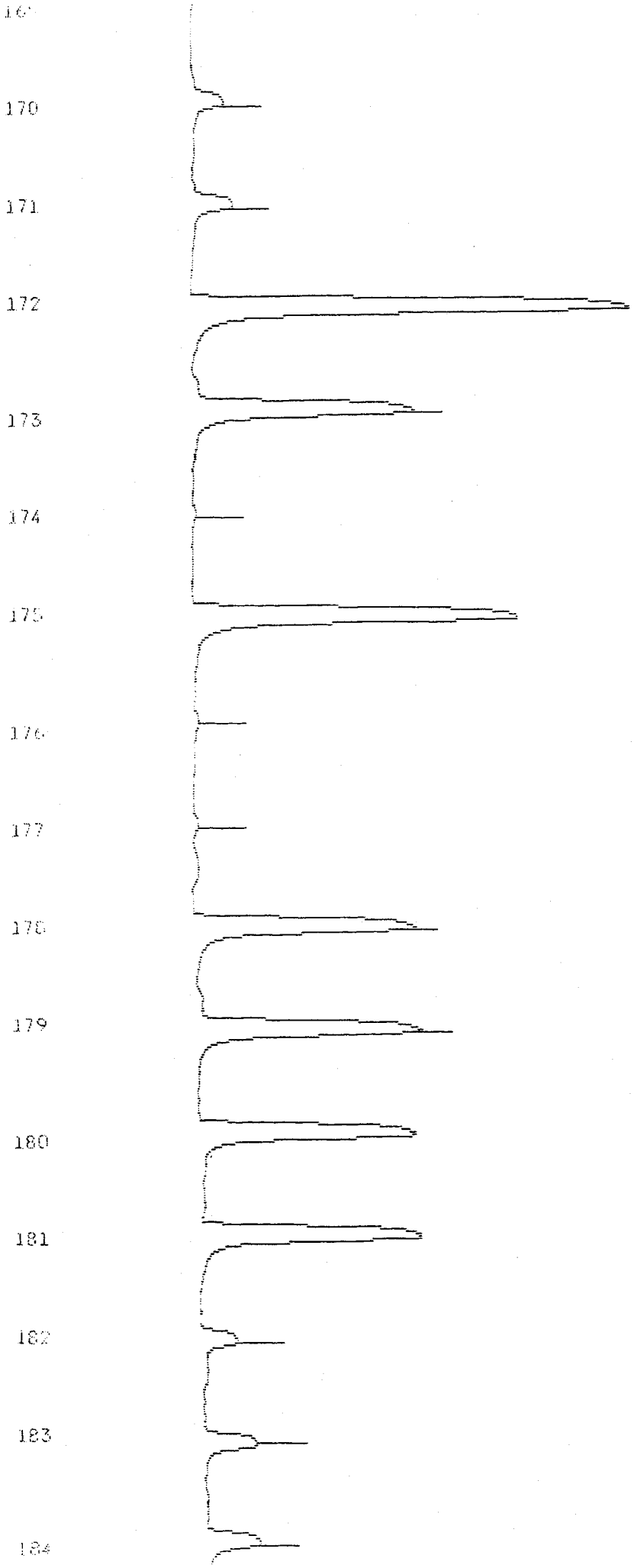
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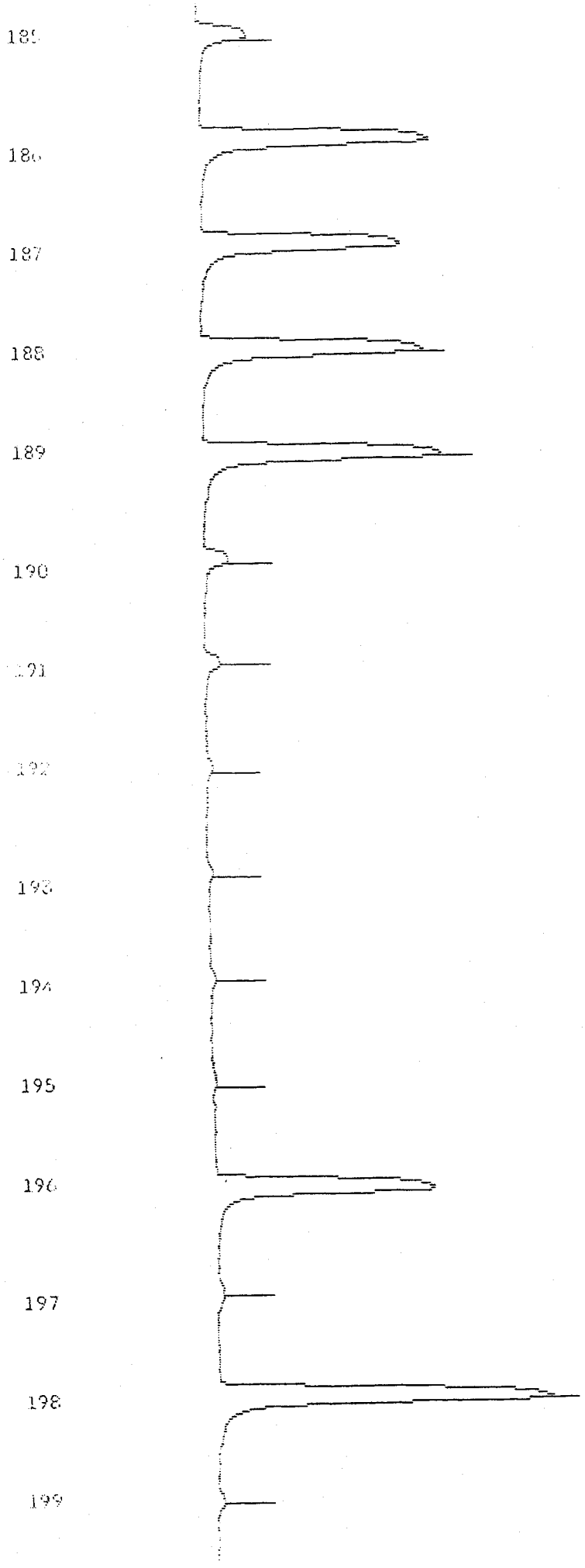
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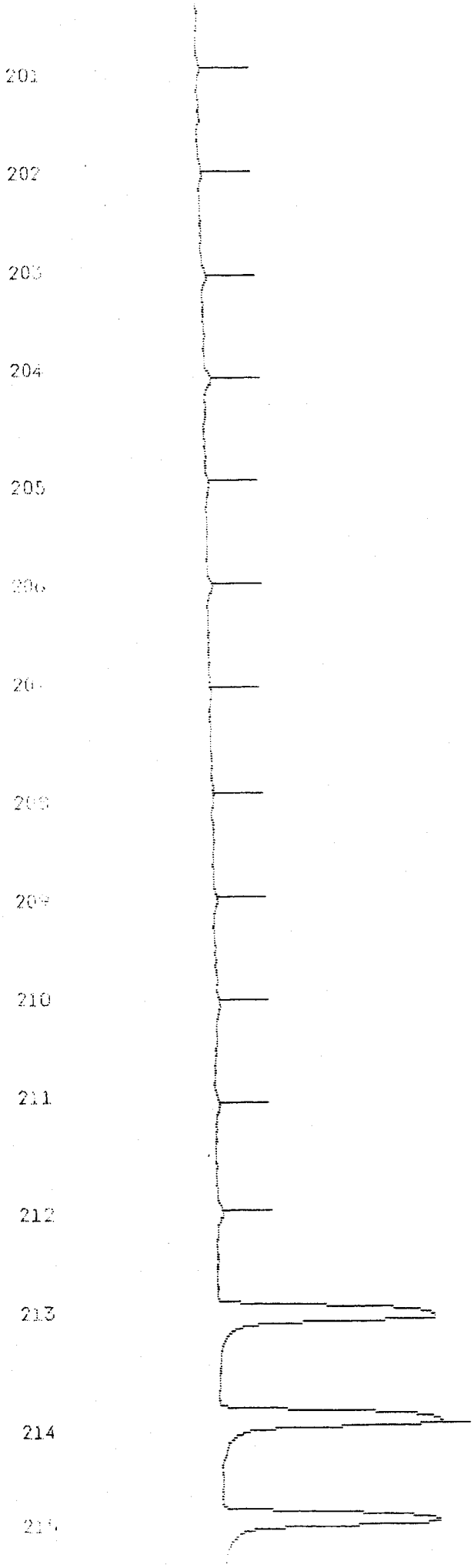
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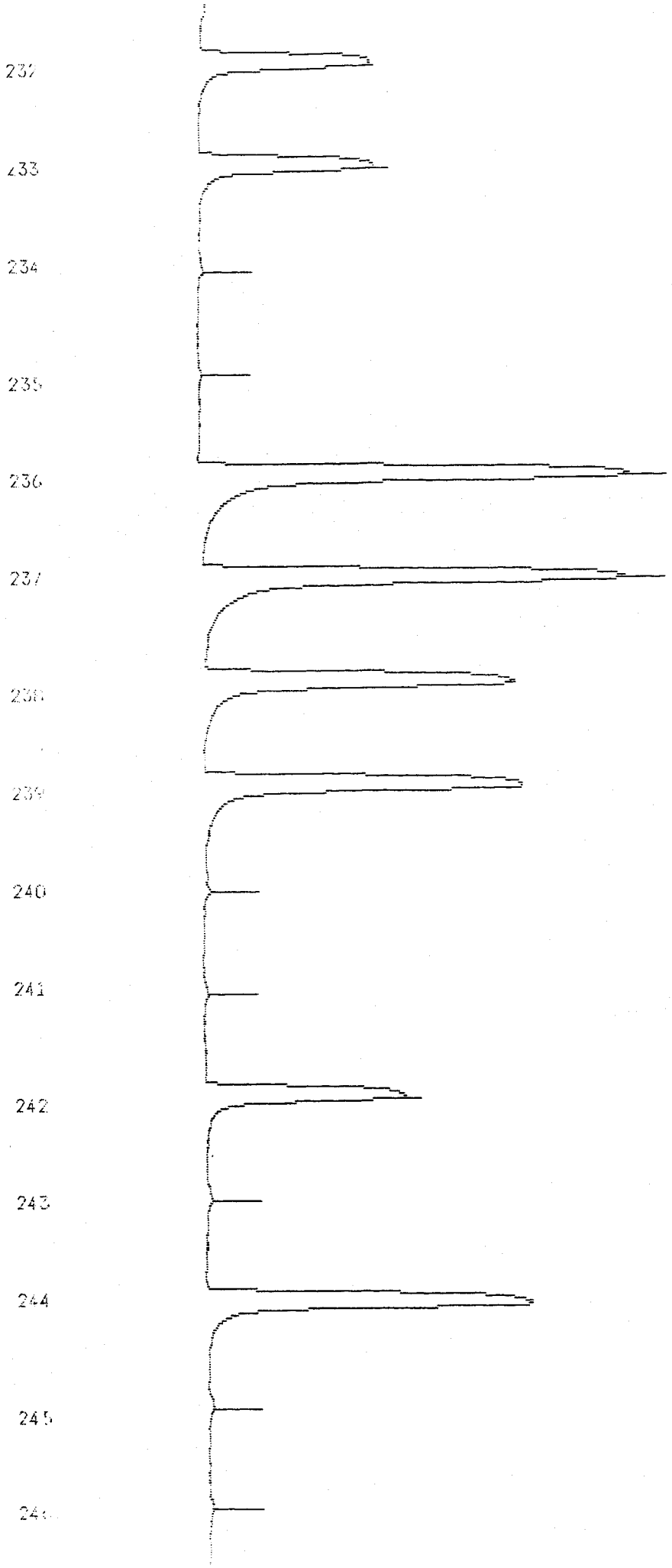
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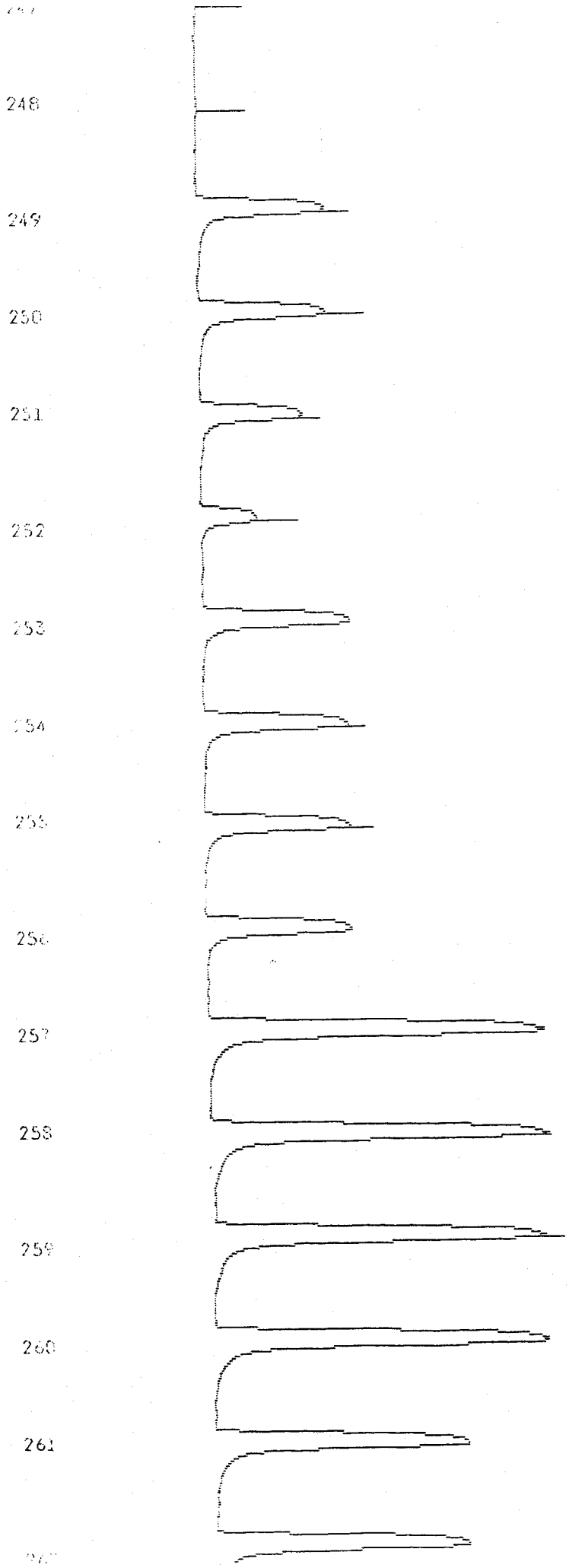
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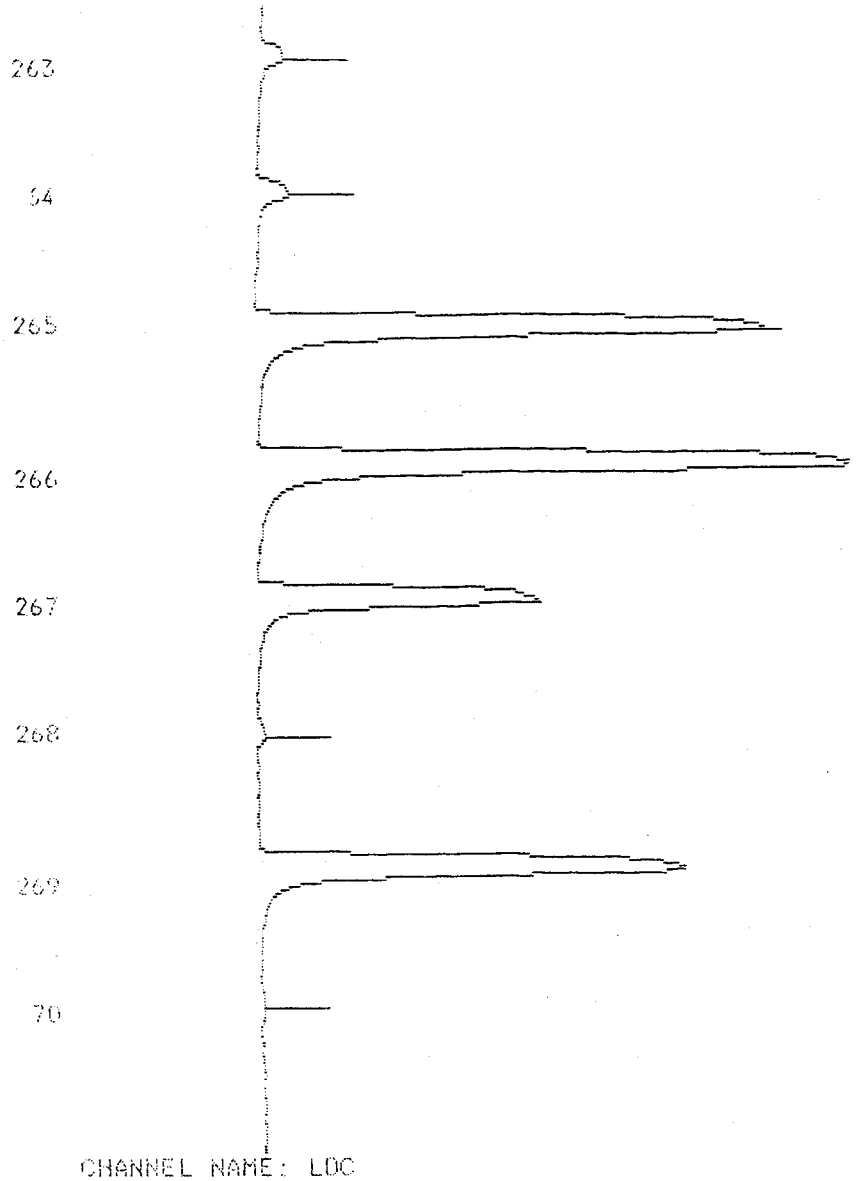
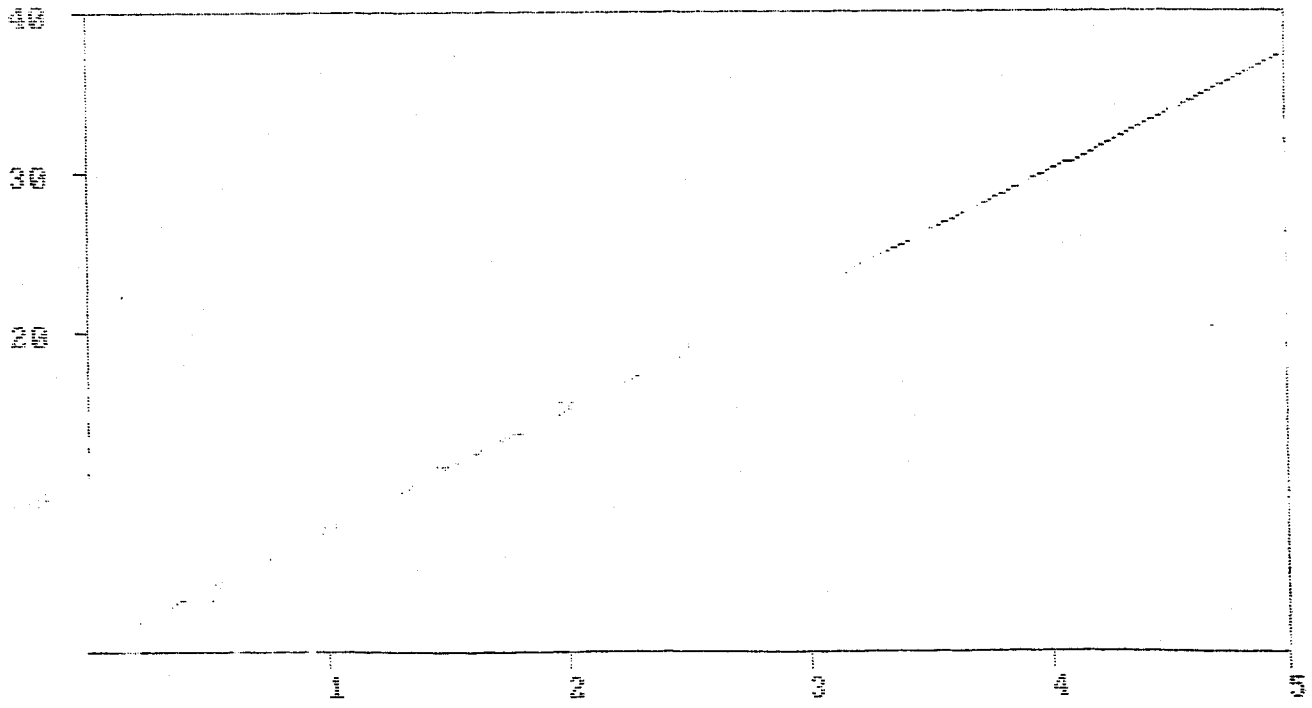


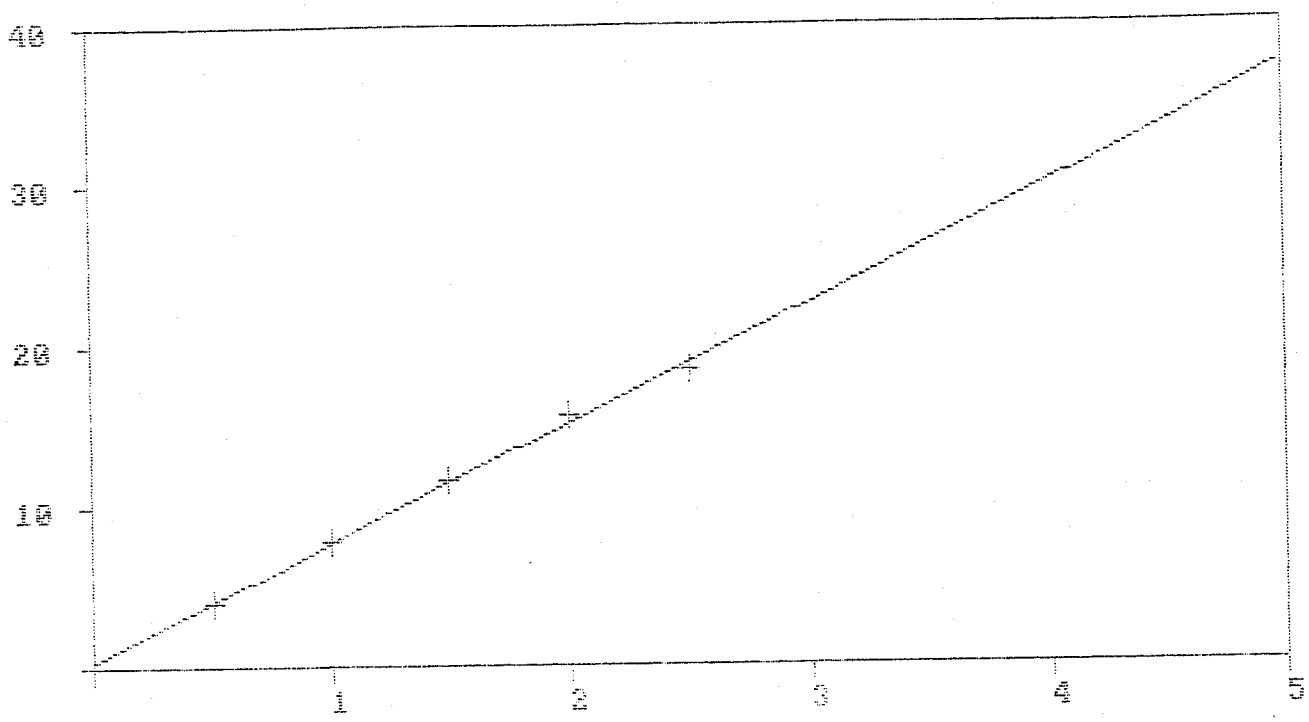
CHANNEL NAME: LDC
RUN NAME: 991004W1



DATA TYPE: FIA
INTERCEPT = 0.26

CALIBRATION ORDER: 1
SLOPE = 7.409735

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	8	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	8L1004-18MN	1	1	0.0	-0.035	I
15	8L1004-18MN	1	1	0.0	-0.035	I
16	8L1004S	1	1	7.6	0.986	s
17	8L1004S	1	1	7.5	0.983	
18	8L1004DS	1	1	7.5	0.983	
19	8L1004DS	1	1	7.6	0.993	
20	S17-6	50	1	8.7	24.336	
[illegible]	[illegible]	50	[illegible]	[illegible]	24.336	

00159

24	537463	30	1	15.7	61.921	
25	537463	30	1	15.6	61.921	
26	537463DS	30	1	15.6	62.218	
27	537463DS	30	1	15.7	62.316	
28	537463DS	150	1	3.2	59.463	
29	537463DS	150	1	3.2	59.969	
30	53790	1.5	1	[illegible]	0.881	
31	53790	1.5	1	4.7	0.901	s
32	537600	1.5	1	4.5	0.882	
33	537600	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	537503DS	1.5	1	11.3	2.230	
40	537503DS	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	42494D	7.5	1	6.7	6.508	
44	42494D	7.5	1	6.7	6.532	
45	42494S	7.5	1	13.9	13.776	
46	42494S	7.5	1	13.9	13.849	s
47	42494DS	7.5	1	14.1	13.898	
48	42494DS	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	42492	7.5	1	9.3	9.301	
54	42492	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	42512D	1.5	1	3.7	0.694	
75	42512D	1.5	1	4.3	0.812	
76	42512S	1.5	1	11.2	2.206	s
77	42512S	1.5	1	11.2	2.211	
78	42512DS	1.5	1	11.2	2.211	
79	42512DS	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	

00160

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	
96	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	BL1004-38MN	1	1	0.0	-0.035	I
102	BL1004-38MN	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	3.4	1.643	
121	51451	1.5	1	10.1	1.984	s
122	51453	1.5	1	14.5	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	BL1004-48MN	1	1	0.0	-0.035	I
140	BL1004-48MN	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	2.291	
153	51458S	1.5	1	11.5	2.266	

00163

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%

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221	D4		1	11.5	1.517	d
222	53145D	1.5	1	8.8	1.552	
223	53145D	1.5	1	9.5	1.675	
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	51458D	1.5	1	4.3	0.827	
250	51458D	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.	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	-0.0050	-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: 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			WS 378			
13			ORG. REF.			
14			BL1001	1B2B		
15			"			
16			BL1001 S			
17			"			
18			BL1001 DS			
19			"			
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)

te: 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		HS	~~BLW3B~~ CCV			
44			B			
45		HS	~~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						
141/~~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						
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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

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.)	1626	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 1001	"	[illegible]	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	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	51459	"	↓	↓	↓	
3	17	50	"	↓	↓	↓	
4	18	52	"	↓	↓	↓	
5	19	53	"	↓	↓	↓	
	20	54	"	↓	↓	↓	
	21	55	"	↓	↓	↓	
8	22	56	"	↓	↓	↓	
9	23	57	"	↓	↓	↓	
10	24	58	"	↓	↓	↓	
	25	CCV (Cont. Calib. Verif.)	2626	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 Temp. 195 / °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. Ver(.)	3828	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	53164	"	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

*** 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

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.)	HB28	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	53145	"	1 ml	15 ml	10 X	
1	13	O	"	"	"	"	(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	53144	"	"	"	"	
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		"	"	"	"	
	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. 518064 | Bath Temp. 171 °C

Prepared By: [illegible] Date: 99 10 01 Checked by: [illegible]

RUN DATE: 10-02-1999 CHART DATE: 10-02-1999
CHART SPEED: 30
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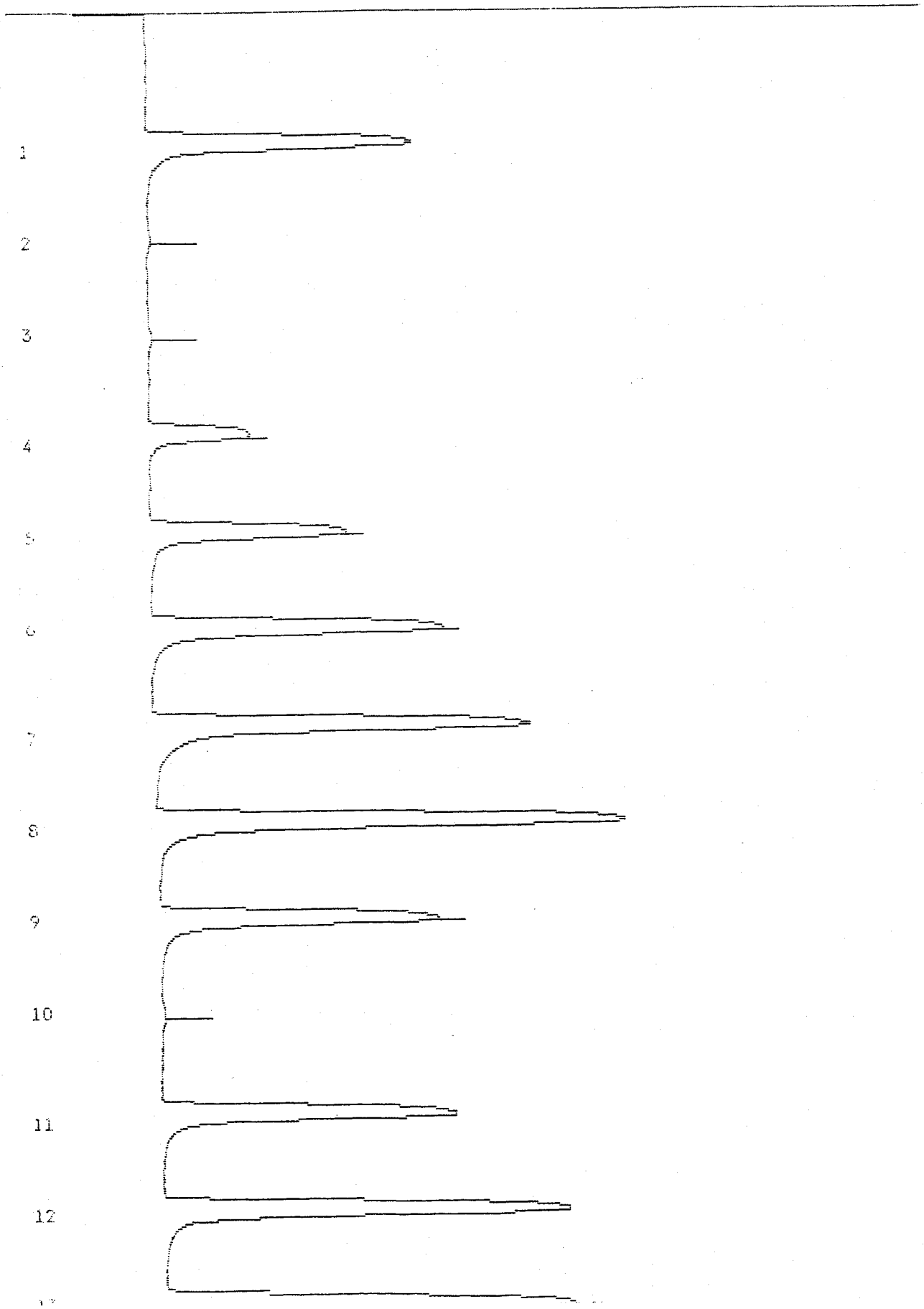

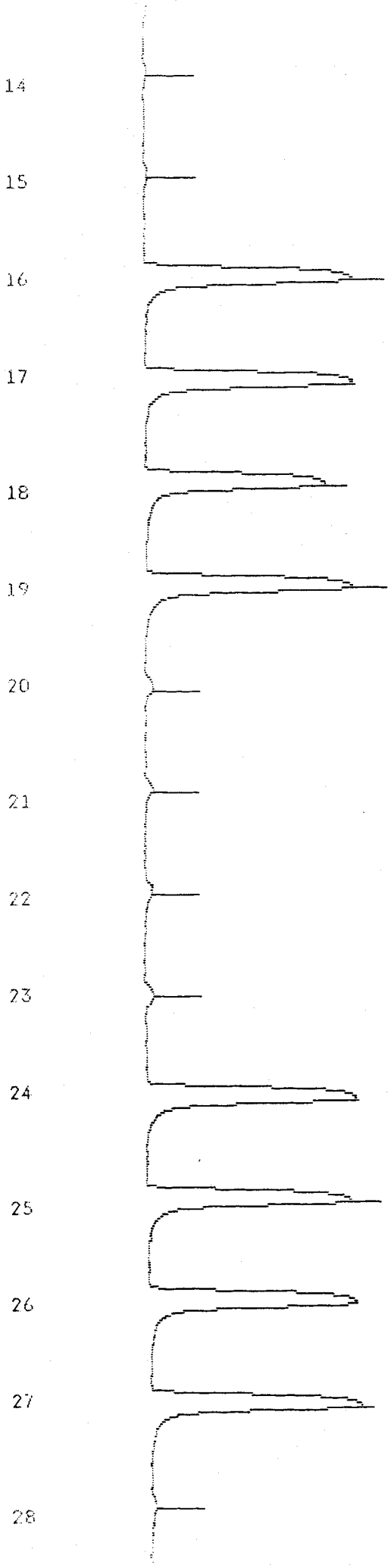
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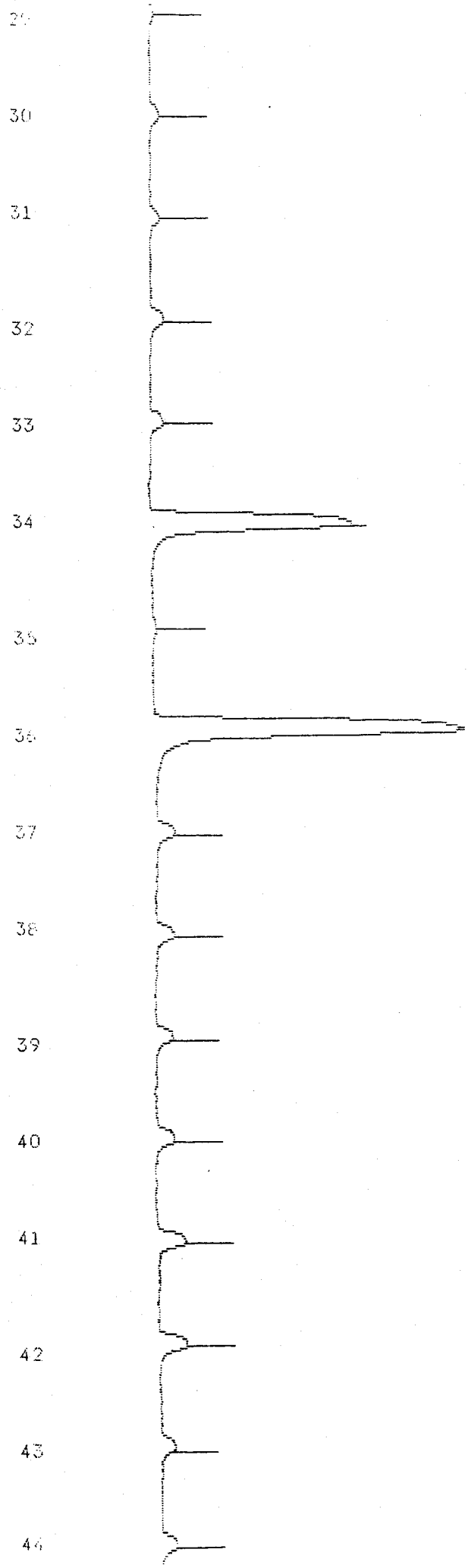
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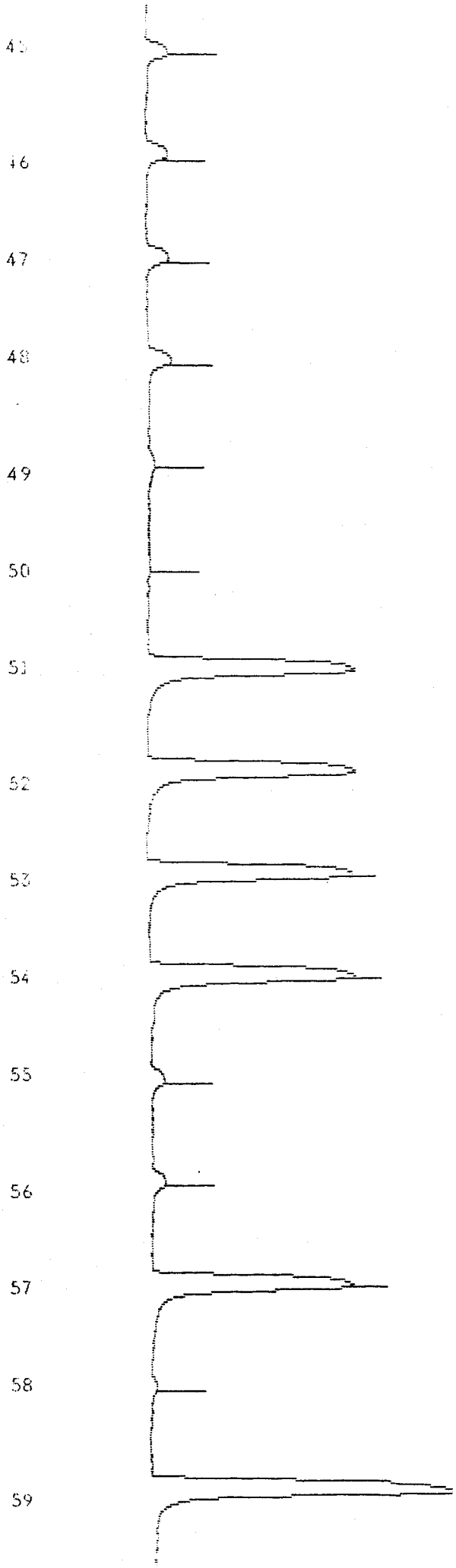
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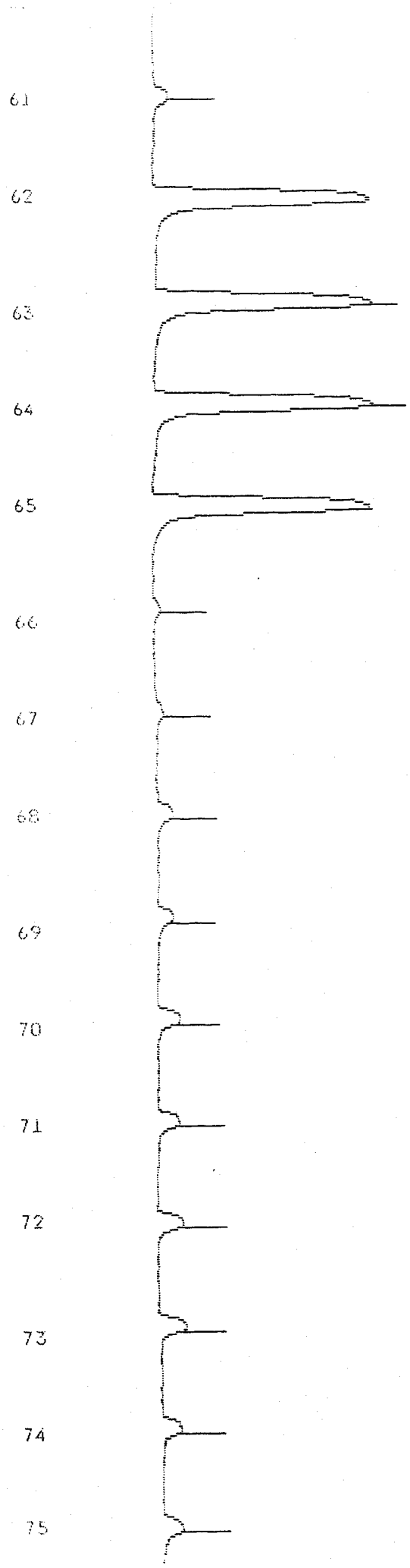
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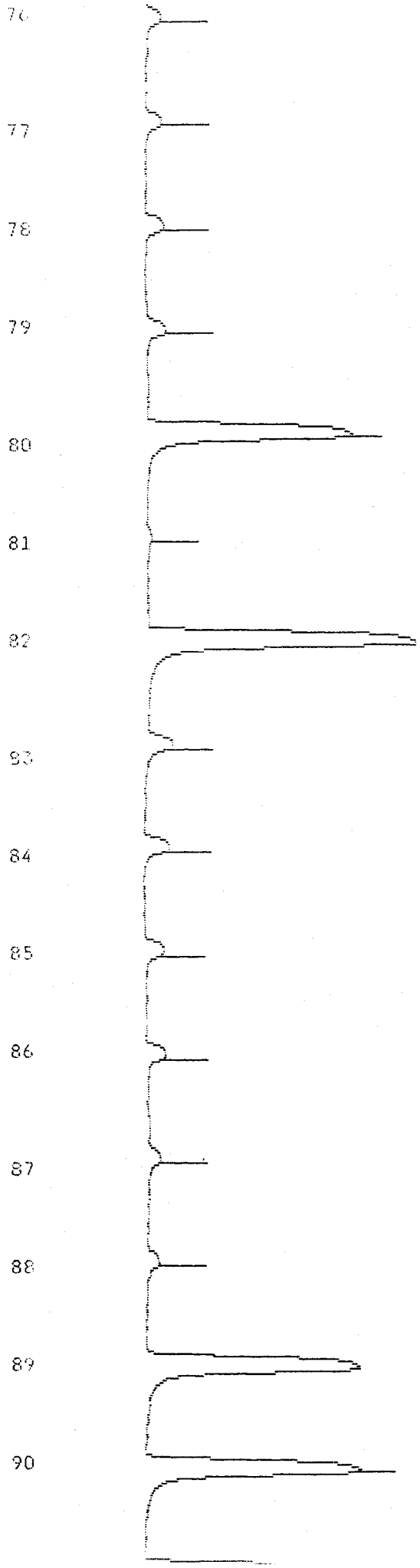
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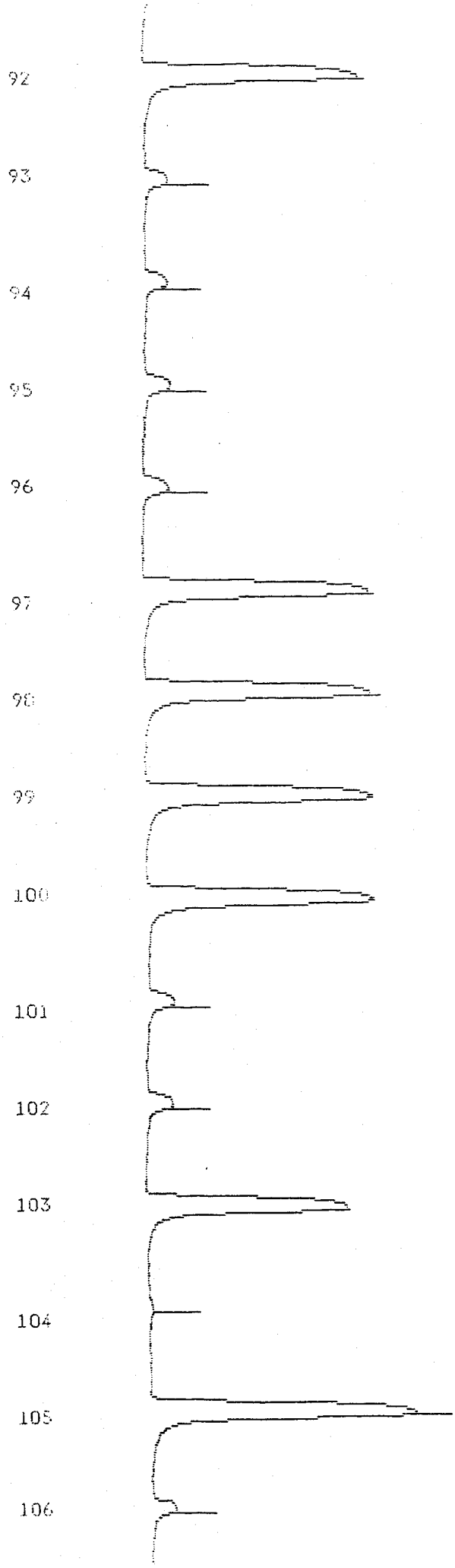
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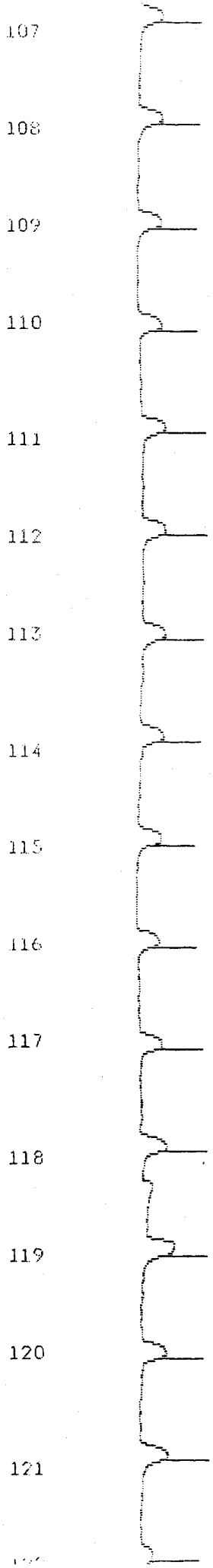
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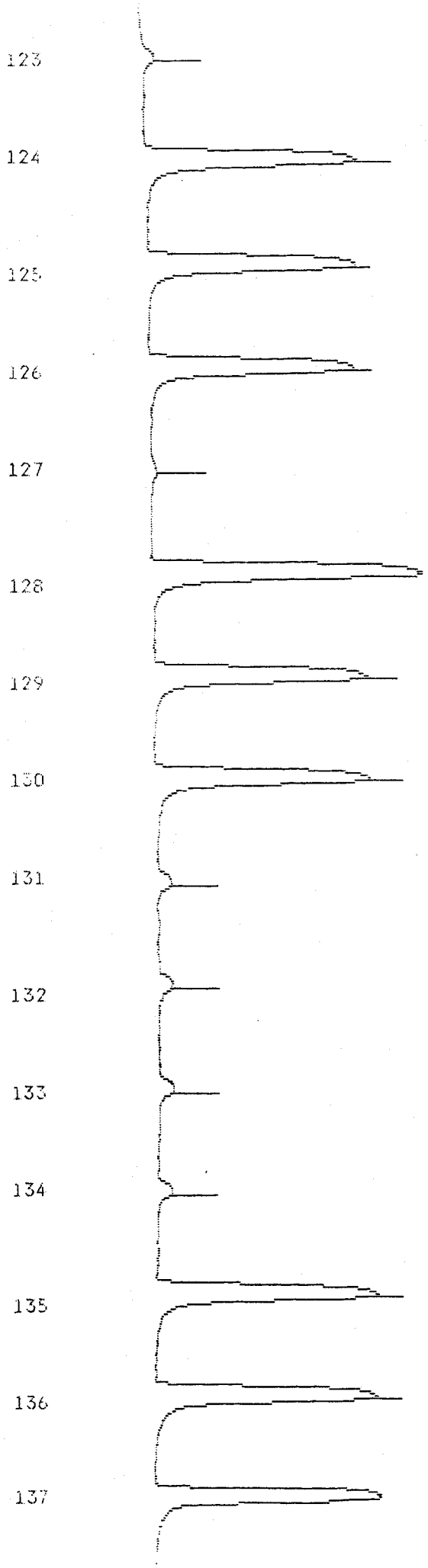
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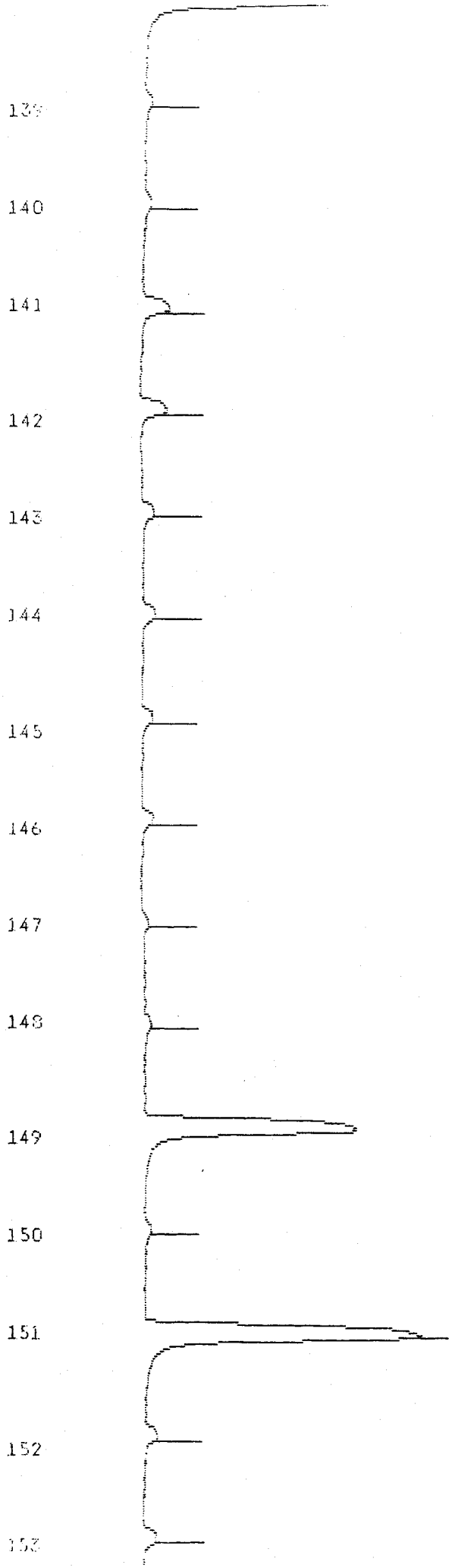
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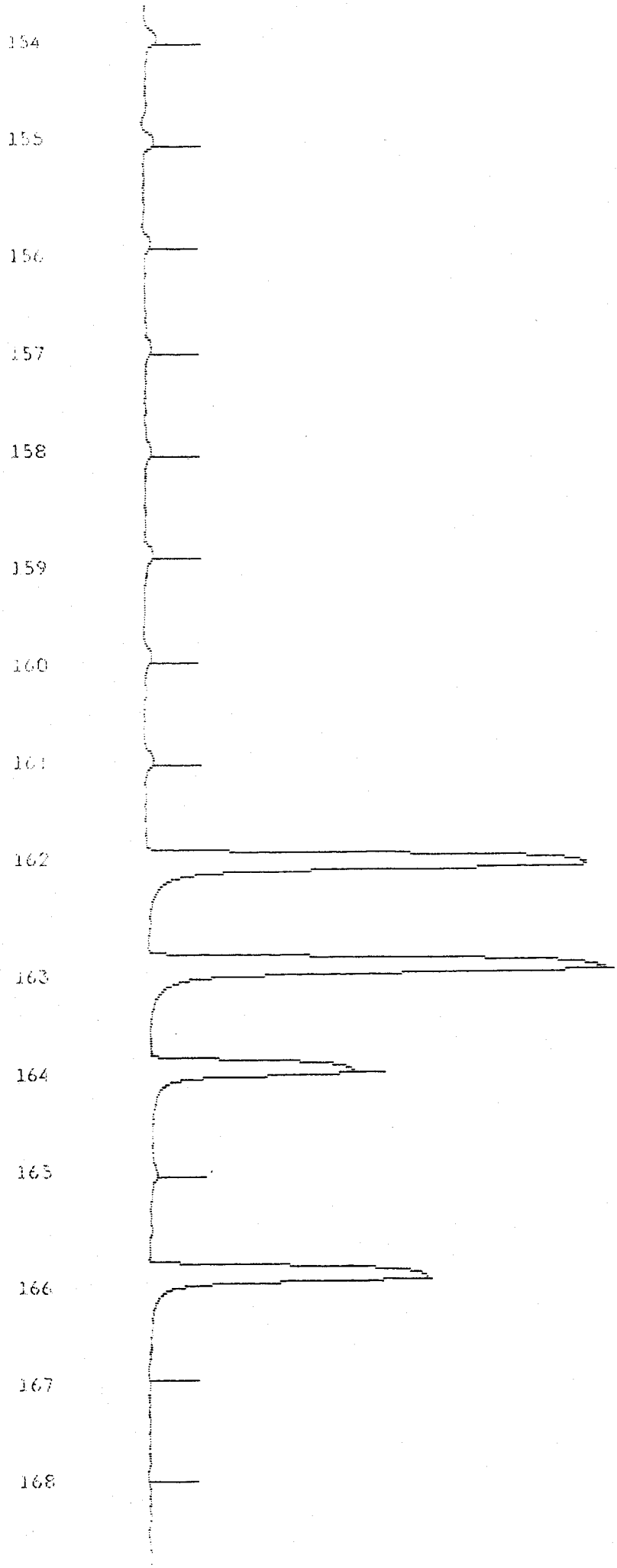
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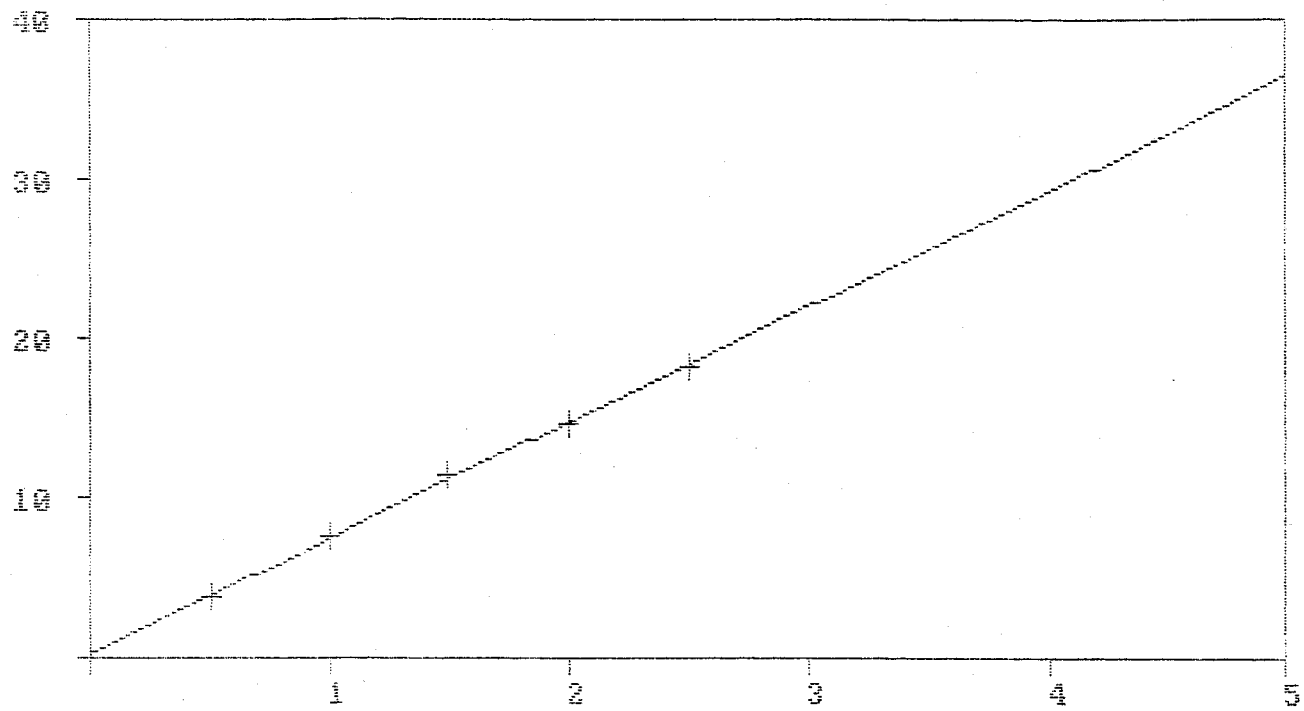
CHANNEL NAME: LDC
RUN NAME: 991001WA



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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 S1448	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		1.005	s
17	BL1001S	1	1	7.5	0.050	1.005	101%
18	BL10010S	1	1	6.3		0.850	
19	BL10010D	1	1	7.4	0.046	0.992	92%
20	[illegible]	10	1	0.[illegible]	<0.050	0.140	I

22	51451D	10	1	0.1	<0.250	-0.174	I	
23	51451D	10	1	0.1		-0.174	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]	I	
39	51454	10	1	0.5	<0.250	[illegible]	I	
40	51454	10	1	0.6		0.501	I	
41	51455	10	1	[illegible]	<0.250	0.771		
42	51455	10	1	[illegible]		[illegible]		
43	51456	10	1	[illegible]	<0.250	[illegible]	I	
44	51456	[illegible]	1	[illegible]		[illegible]	I	
45	51457	10	1	[illegible]	<0.250	0.503		
46	51457	[illegible]	1	[illegible]		0.569	s	
47	[illegible]	[illegible]	[illegible]	[illegible]	<0.250	0.603		
48	[illegible]	[illegible]	[illegible]	[illegible]		0.636		
[illegible]	[illegible] 53128		1	0.0	<0.005	-0.021	I	
[illegible]	[illegible]	[illegible]	[illegible]	0.0		-0.027	I	
[illegible]	[illegible]	1	1	7.5	0.050	1.005	101%	
[illegible]	[illegible]	[illegible]	1	7.5		1.009		
[illegible]	[illegible]DS	1	1	7.4	0.050	1.002	100%	
[illegible]	[illegible]DS	1	1	7.4		0.999		
[illegible]	[illegible]60	10	1	0.3	<0.250	0.198	I	
[illegible]	[illegible]60	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	

CC-82

88	BL1001-4B2B	1	1	0.3			0.010	I
89	BL1001S	1	1	7.7	0.052	0.83	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	CC.84	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	1

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

MB-53128

38

CHAIN OF CUSTODY 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:

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	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-HNO3-Hg	9/16/99					X				Hydrox	✓	X									

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

REMARKS (*):

00-36

№ 02565

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TRC Environmental Corporation

M 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-Ila-1-PF-Hg	9/16/99	Petri							X	Inlet 1 Run 1A ✓	X										53131
PG&E-SG-OHM-Ila-1-PR-Hg		500ml	G				X			✓	X			1LCG×2, 500CG, 250CG×2							
PG&E-SG-OHM-Ila-1-KCl-Hg		1L					X			✓	X							ppd.			
PG&E-SG-OHM-Ila-1-HNO3/H2O2-Hg		250ml					X			✓	X										
PG&E-SG-OHM-Ila-1-KMnO4-Hg		1L					X			✓	X										
PG&E-SG-OHM-Ila-1-A-Hg		125ml				X				✓	X				250CG×2			53153.			2 bottles composite before Analysis
PG&E-SG-OHM-IIb-1-PF-Hg	9/16/99	Petri							X	Inlet 1 Run 1B	X			ppd, 500CG, 250CG							53134
PG&E-SG-OHM-IIb-1-PR-Hg		500ml	G				X				X				1LCG×2						2 bottles composite
PG&E-SG-OHM-IIb-1-KCl-Hg		1L					X				X										
PG&E-SG-OHM-IIb-1-HNO3/H2O2-Hg		250ml					X				X										
PG&E-SG-OHM-IIb-1-KMnO4-Hg		1L					X				X										
PG&E-SG-OHM-IIb-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 (*):

№ 02566

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TRC
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			500G, 250G, 1LG×2						53135
PG&E-SG-OHM-Ib-2-PR-Hg	↓	500ml	G				X			↓	✓	X						ppd.			
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-$KMnO_4$-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			250G×2, 1LG×2, ppd.						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-$KMnO_4$-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			250G×2, 1LG×2, ppd.						
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-$KMnO_4$-Hg		1L					X					X									

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Received by: [signature]	Date/Time: 990918 12:30	Received by:	Date/Time:

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

№ 02568

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TRC Environmental Corporation

CHAIN OF C ODY 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-IIa-3-PF-Hg	9/17/99	Petri							X	Inlet Run 3A	✓	X	PPD, 250G+3, 1LG+2								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-HNO3/H2O2-Hg		250ml					X				✓	X									
PG&E-SG-OHM-IIa-3-KMnO4-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 250G+3, 1LG+2								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									53154

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REMARKS (*):

№ 02570

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TRC
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	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-Ila-4-PF-Hg	9/17	Petri							X	Inlet Run 4A	✓	X				250(G+3)		1L(G+2)			53133
PG&E-SG-OHM-Ila-4-PR-Hg		2x250ml	G			X					✓	X				ppd.					Composite before Analysis
PG&E-SG-OHM-Ila-4-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ila-4-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-Ila-4-KMnO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ila-4-A-Hg		2x250ml			X						✓	X						53356			Composite before Analysis
PG&E-SG-OHM-Ilb-4-PF-Hg	9/17	Petri							X	Inlet Run 4B	✓	X		250(G+3)				1L(G+2)			53137
PG&E-SG-OHM-Ilb-4-PR-Hg		2x250ml	G			X					✓	X				ppd.					Composite before Analysis
PG&E-SG-OHM-Ilb-4-KCl-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ilb-4-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-SG-OHM-Ilb-4-KMnO4-Hg		1L				X					✓	X									
PG&E-SG-OHM-Ilb-4-A-Hg		2x250ml			X						✓	X						53359			Composite before Analysis

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REMARKS (*):

№ 02576

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TRC Environmental Corporation

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	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-1-PF-Hg	9/16/99	Petri							X	Outlet Run 1A	✓	X	250(6+2), 14(6+2), ppd								53139
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/H2O~~-Hg	↓	250ml	↓			X				↓	✓	X									
PG&E-SG-OHM-Oa-1-$KMnO_4$-Hg	↓	1L	↓			X				↓	✓	X									
PG&E-SG-OHM-Ob-1-PF-Hg	9/16/99	Petri							X	Outlet Run 1B	✓	X	250(6+2), 14(6+2), ppd								53141
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/H2O~~-Hg	↓	250ml	↓			X				↓	✓	X									
PG&E-SG-OHM-Ob-1-$KMnO_4$-Hg	↓	1L	↓			X				↓	✓	X									

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REMARKS (*):

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№ 02567

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TRC
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	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-S6-OHM-0a-3-PF-Hg	9/17	Petri							X	Outlet Run 3A	✓	X			250G+2			1L G+2			53139
PG&E-S6-OHM-0a-3-PR-Hg		250ml	G			X					✓	X				ppd.					
PG&E-S6-OHM-0a-3-KCl-Hg		1L				X					✓	X									
PG&E-S6-OHM-0a-3-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-S6-OHM-0a-3-KMnO4-Hg		1L				X					✓	X									
PG&E-S6-OHM-0b-3-PF-Hg	9/17	Petri							X	Outlet Run 3B	✓	X									53142
PG&E-S6-OHM-0b-3-PR-Hg		250ml	G			X					✓	X									
PG&E-S6-OHM-0b-3-KCl-Hg		1L				X					✓	X									
PG&E-S6-OHM-0b-3-HNO3/H2O2-Hg		250ml				X					✓	X									
PG&E-S6-OHM-0b-3-KMnO4-Hg		1L				X					✓	X									
PG&E-S6-OHM-0-FB-PF-Hg	9/17	Petri							X	Outlet Field Blk	✓	X			100G+2,			500G+2			53138
PG&E-S6-OHM-0-FB-PR-Hg		125ml	G			X					✓	X						ppd.			
PG&E-S6-OHM-0-FB-KCl-Hg		500ml				X					✓	X									
PG&E-S6-OHM-0-FB-HNO3/H2O2-Hg		125ml				X					✓	X									
PG&E-S6-OHM-0-FB-KMnO4-Hg		500ml				X					✓	X									

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REMARKS (*):

№ 02571

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TRC Environmental Corporation

CHAIN OF C 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	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			250UG+2, 1-CG-+2, ppd						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: 9/09/18 12:30	Received by:	Date/Time:

REMARKS (*):

№ 02437

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TRC
TRC Environmental Corporation

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 Ontario-Hydro	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		PPA,	350GF2,	ILGF2						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										
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

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Received by: [signature]	Date/Time: 990918 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	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-BP-OHM-3-RB-PF-Hg	9/8/99	Petri	P						X	Reagent Blank	✓	X		ppd, 1000G×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-HNO_3/H_2O_2-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		1000G×2, 500G×2					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-HNO_3/H_2O_2-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		ppd		1000G×2, 500G×2					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-HNO_3/H_2O_2-Hg		125ml				X						X									
PG&E-BP-OHM-3-I-FB-$KMnO_4$-Hg		500ml				X						X									

Relinquished by: [signature]	Date/Time: 9/13/99	Relinquished by:	Date/Time:
Received by: [signature]	Date/Time: 9/09/18 12:30	Received by:	Date/Time:

REMARKS (*):

Nº 02435

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

TRC
TRC Environmental Corporation

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, 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: [signature]	Date/Time: 9/13/99	Relinquished by:	Date/Time:
Received by: [signature]	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: [signature]	Date/Time: 9/18/99 0900	Relinquished by: J. Jones	Date/Time: 09-18-99 9:00
Received by: [signature]	Date/Time: 990918 17:30	Received by:	Date/Time:

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

№ 02577

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

TRC
TRC Environmental Corporation

Page ___ of ___

US SAMPLE LOG IN SHEET

TRC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Graves

Received By (Signature): [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: [signature]

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 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: 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: Hg 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

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.

9/9/202
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

PASC - Certificate of Analysis

			Method	Blank	Blank	Blank	Blank	BP	BP	BP
	Client ID:		Blank	Spike#1	Spike#1	Spike#2	Spike#2	OHM-3-RB	OHM-3-O-4	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

PASC - Certificate of Analysis

			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

00007

PASC - Summary of Analysis Pre. Dates

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	

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:**	99/11/09
Address:	Boott Mills South, Foot of John Street Lowell, MA MA 01852	**Submission No.:**	9J0529
		Sample No.:	060263-060265
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

			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.:**	9J0529
		Sample No.:	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

	Client ID:		NIST 1633b Coal Ash	NIST 1633b 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: 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			BL1202	MSA1		
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			
41						
42						
43						
44						
45						
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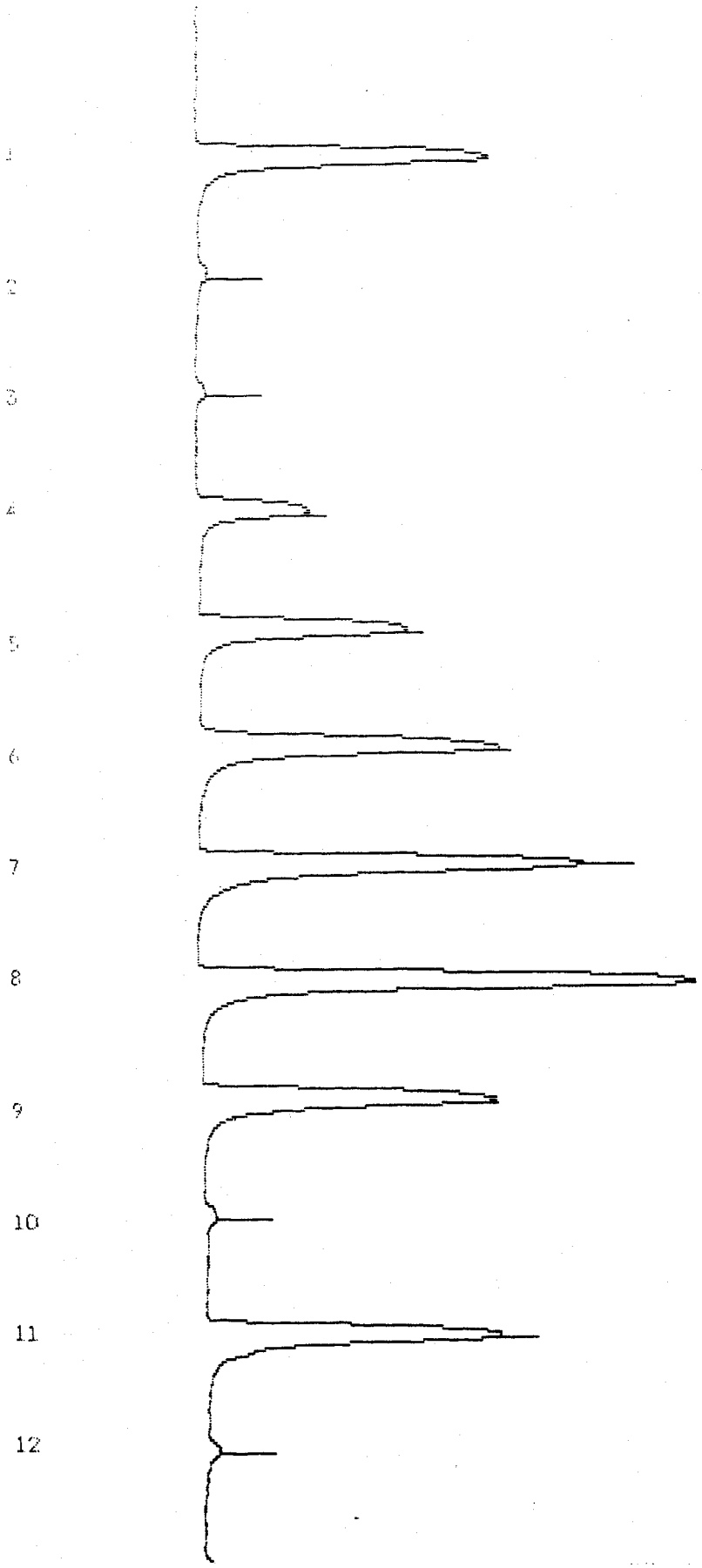
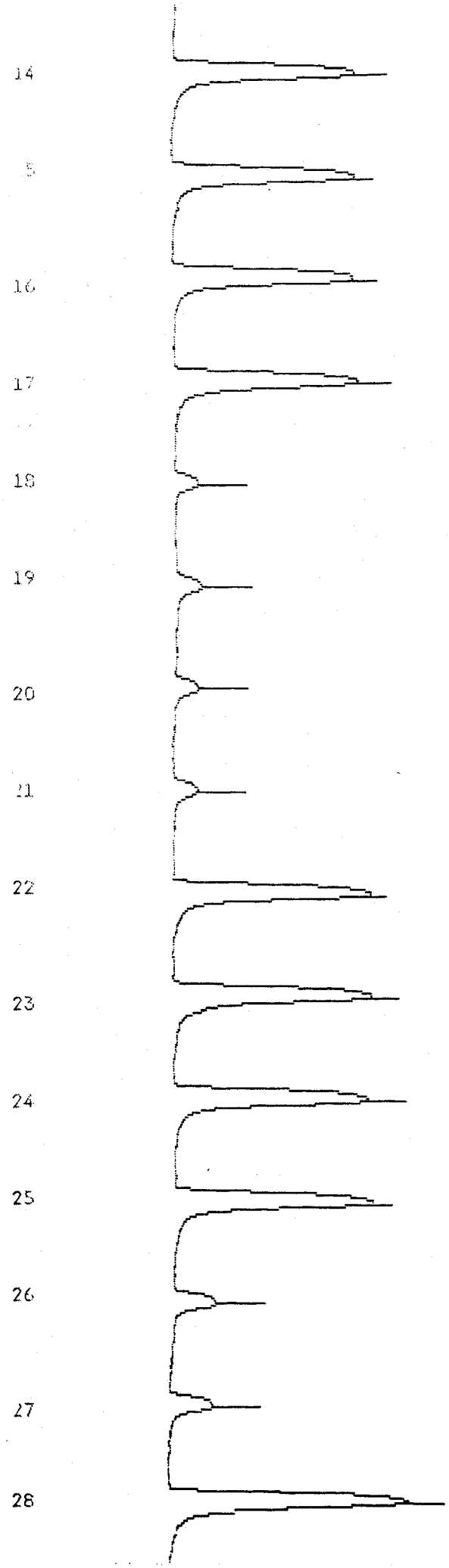
Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

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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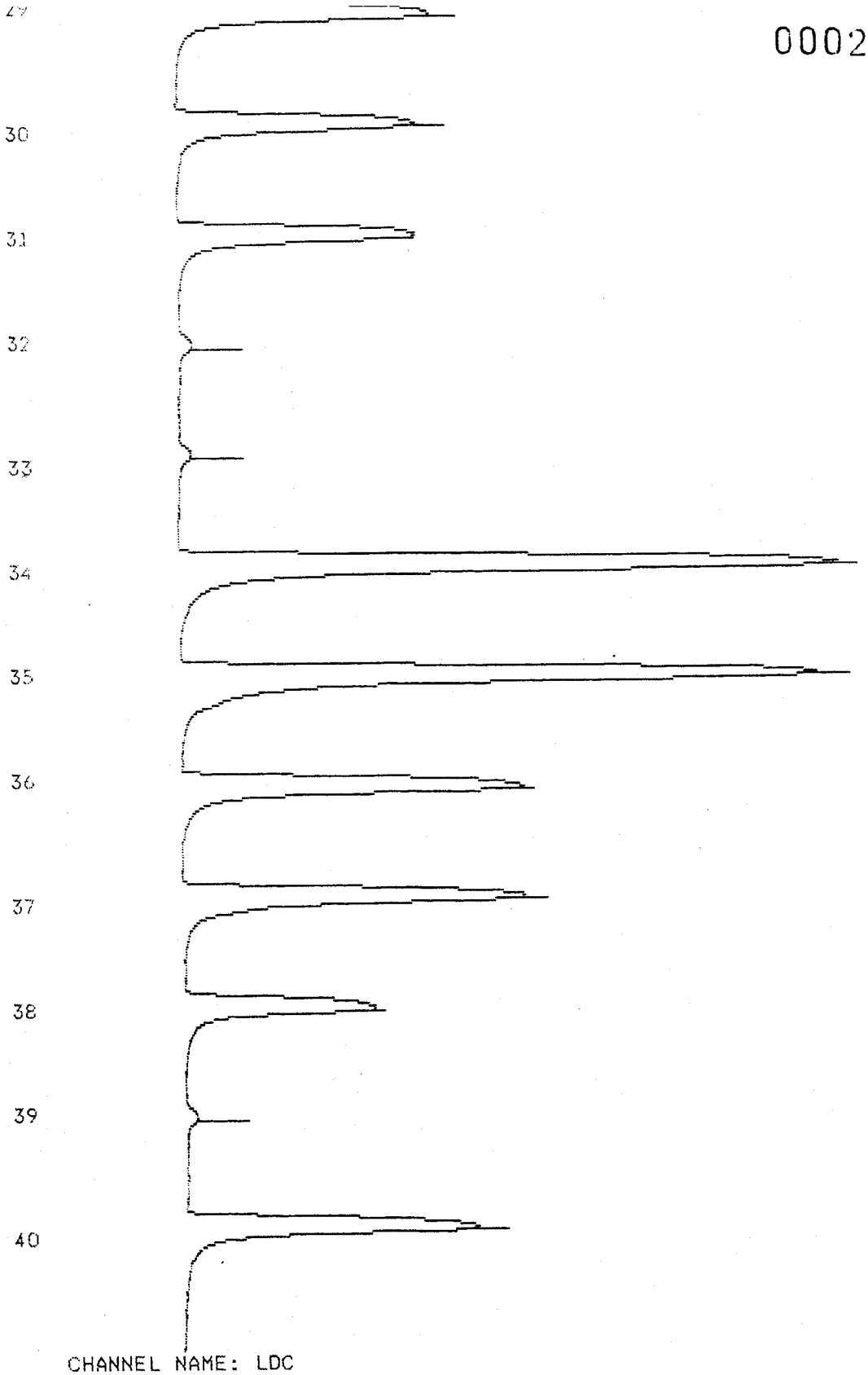
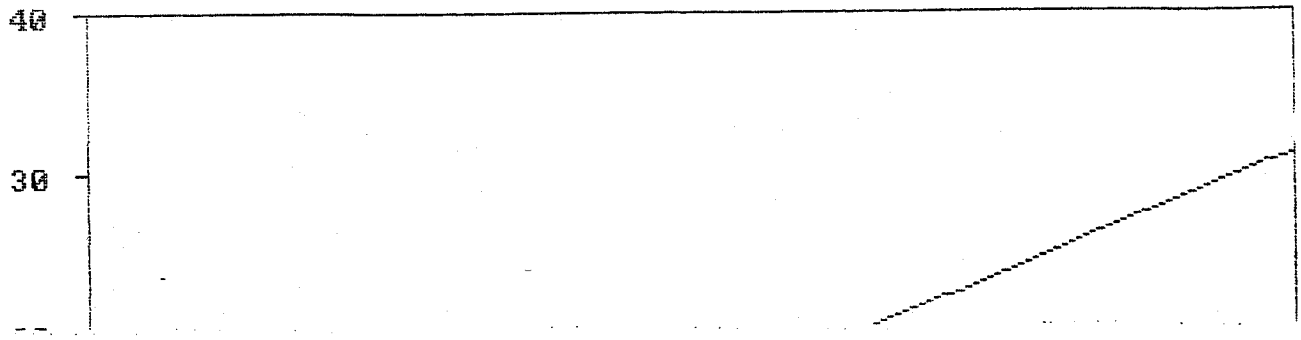
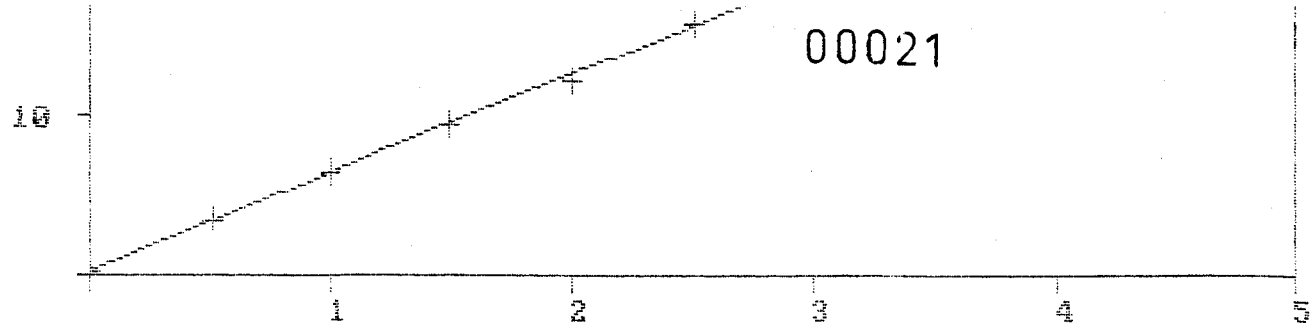


CHANNEL NAME: LDC
RUN NAME: 991202WA





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	TMG	CONCENTRATION µg/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		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

LINEAR COEF: 6.177568

CORRELATION COEF: .9994741

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

00023

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.11.01 Run Code: MGO 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) (S6)			
12			WS 378			
13			ORG. REF.			
14			BL1101	MNA!		
15			BL1101 S			
16			BL1101 DS			
17			59401			
18			01 D			
19			01 S			
20			01 DS			
21			59401	KMn24		
22			01 D			
23			01 S			
24			01 DS			
25			CCV			
26			B			
27			D4			
28			BL1101	INBN		
29			"			
30			BL1101 S			
31			"			
32			BL1101 DS			
33			"			
34			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			60668			
43			"			
44			60670			
45			"			
46			60671			
47			"			
48			CCV			
49			B			
50			D4			
51			BL1101	INKC		
52			"			
53			BL1101 S			
54			"			
55			BL1101 DS			
56			"			
57	2/3	1/10	60117			
58			"			
59			60117 D			
60			"			
61			60117 S			
62			"			
63			60117 DS			
64			"			
65			60116			
66			"			
67		1/4	60118			
68			"			
69			60119			
70			"			
71			CCV			
72			B			
73			D4			
74			BL1101	2NKC		
75			"			
76			BL1101 S			
77			"			
78			BL1101 DS			
79			"			
80	2/3	1/5	61634			

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: IMP/WATER

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~~	2/3	1/5	61634			
22	8/3		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			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	2/3		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			63245			

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

Analyst: 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)	0.5		
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						
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.)	A6A1	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.)	A6A2	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	63246	"	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. 190100 | H2SO4 Lot. No. 317120 | Bath Temps. 197 °C

Prepared By: AB Date: 99-11-01 Checked by: [illegible]

	#	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.)	AGAY	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.)	AGAS	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	65013	"	"	"	"	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	65040	"	"	"	"	

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. 317-120	Bath Temps. 197 °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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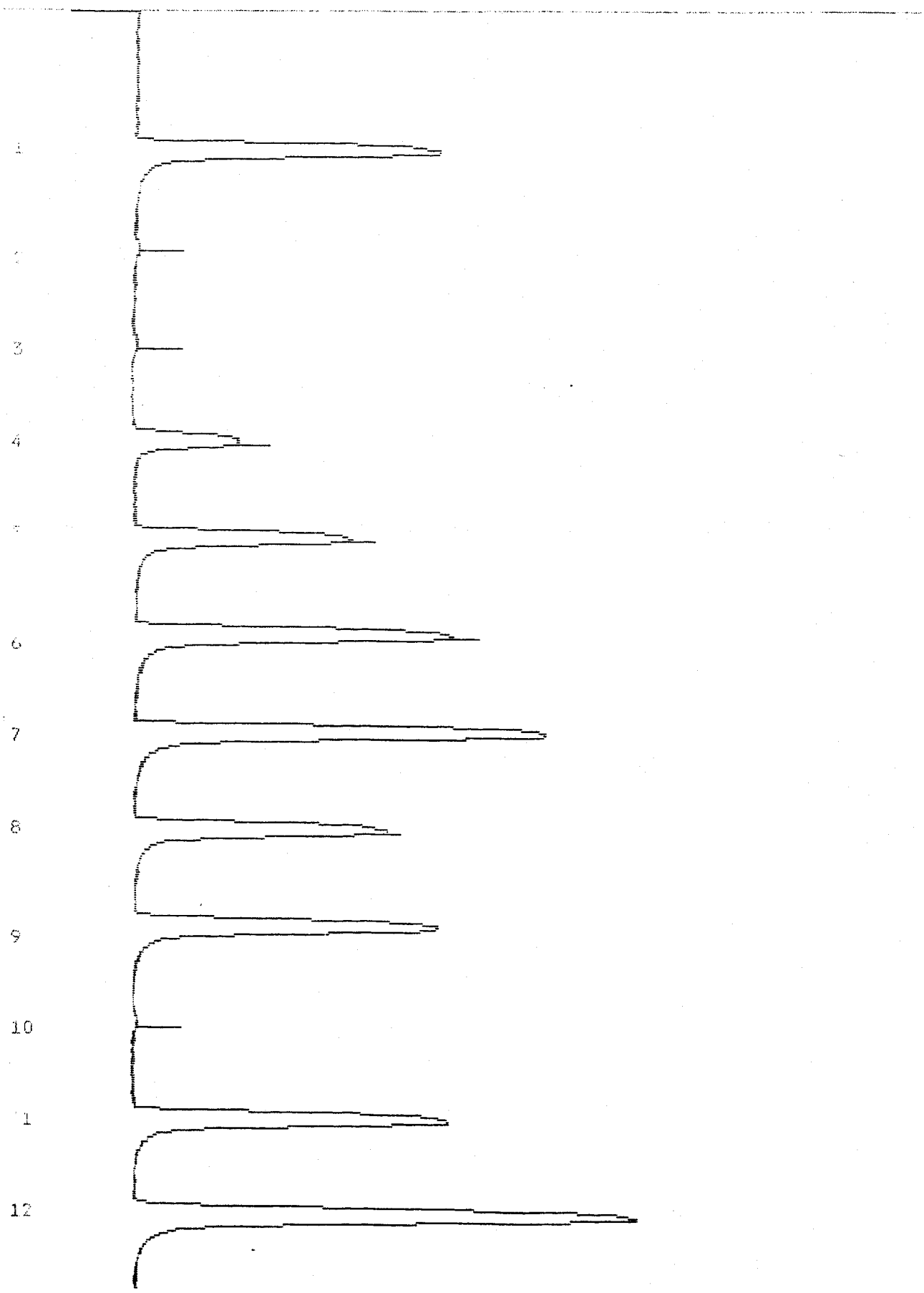

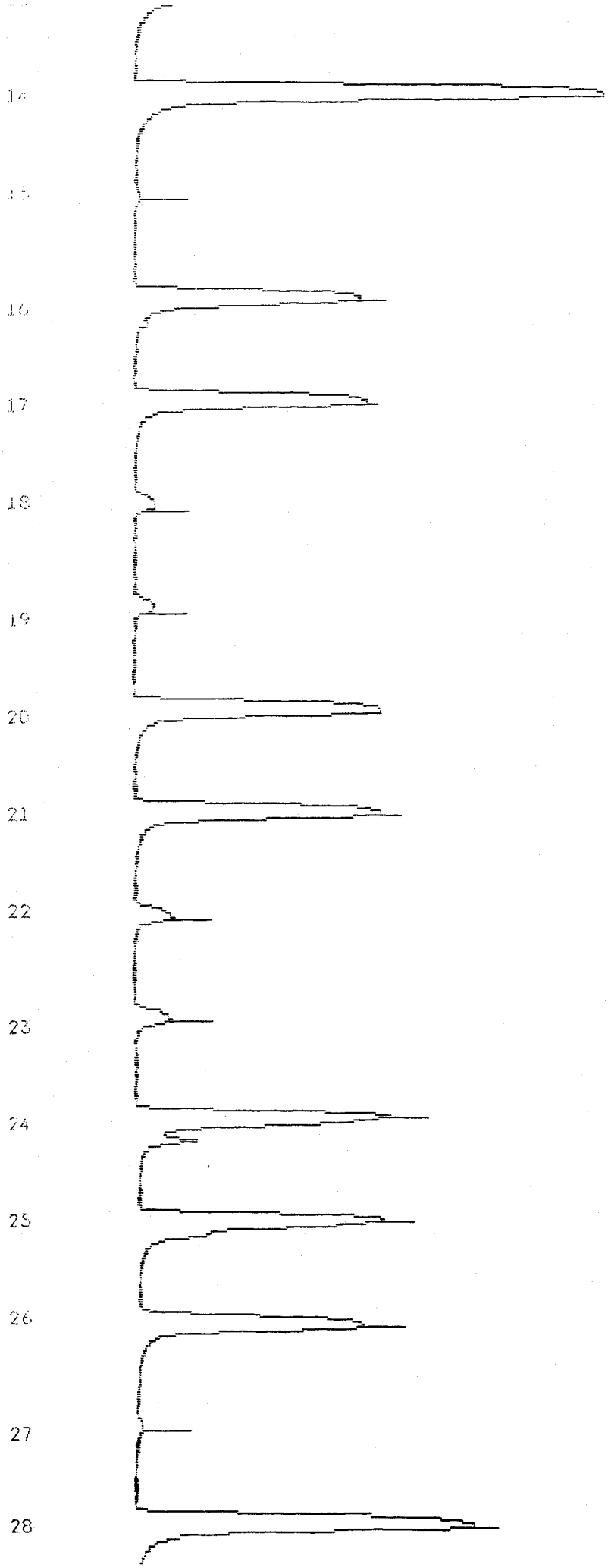
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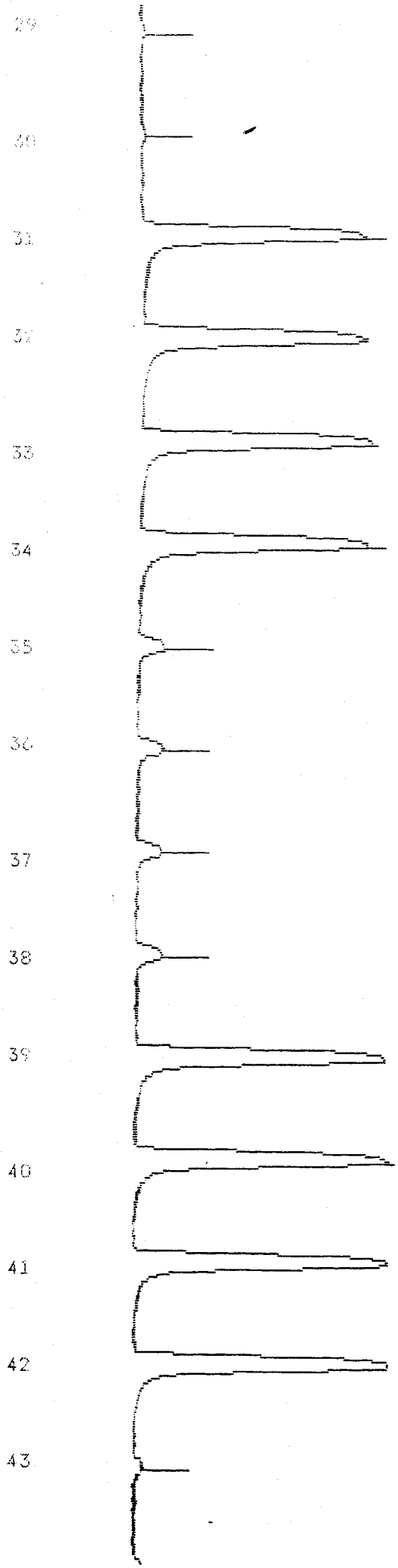
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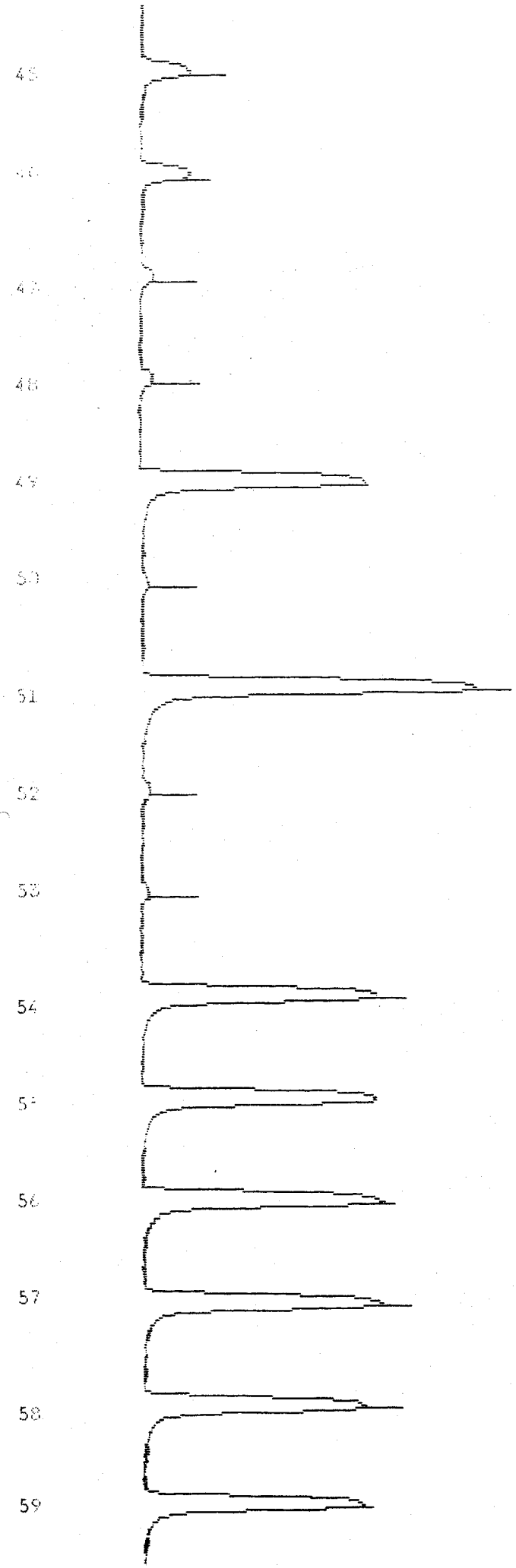
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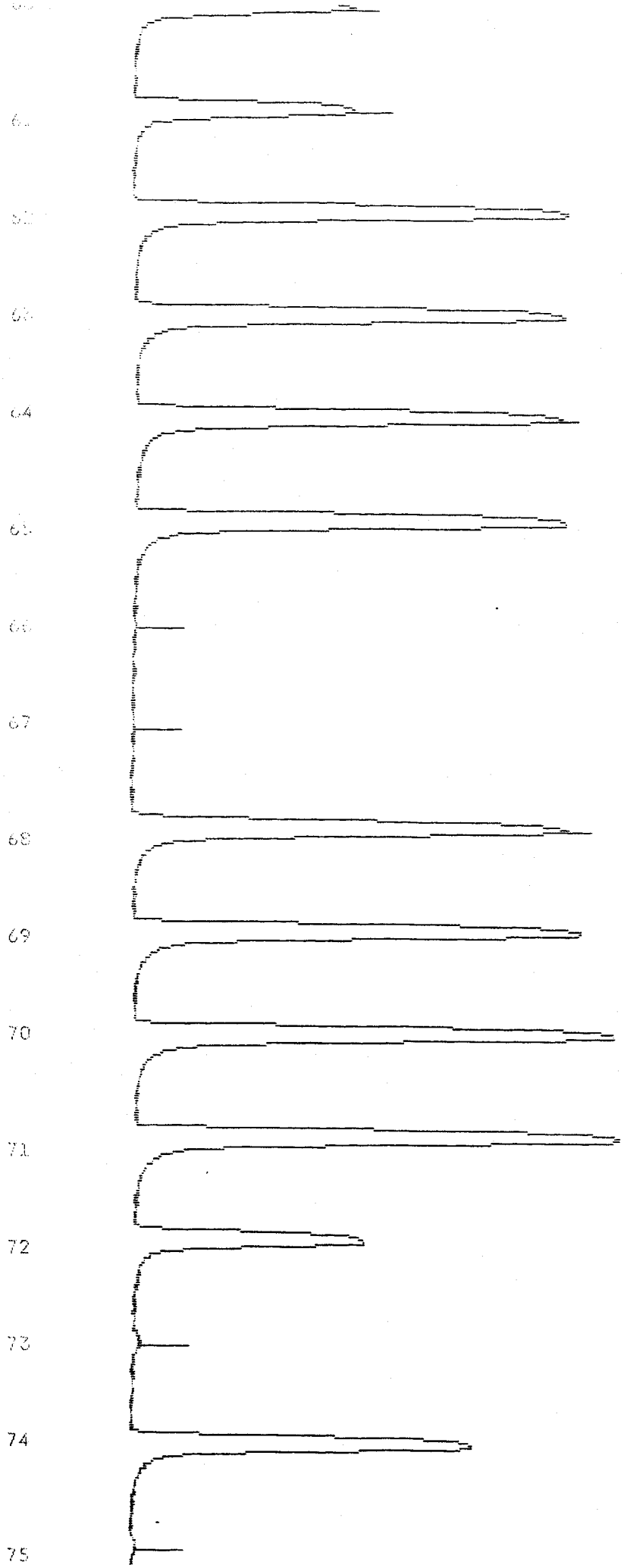
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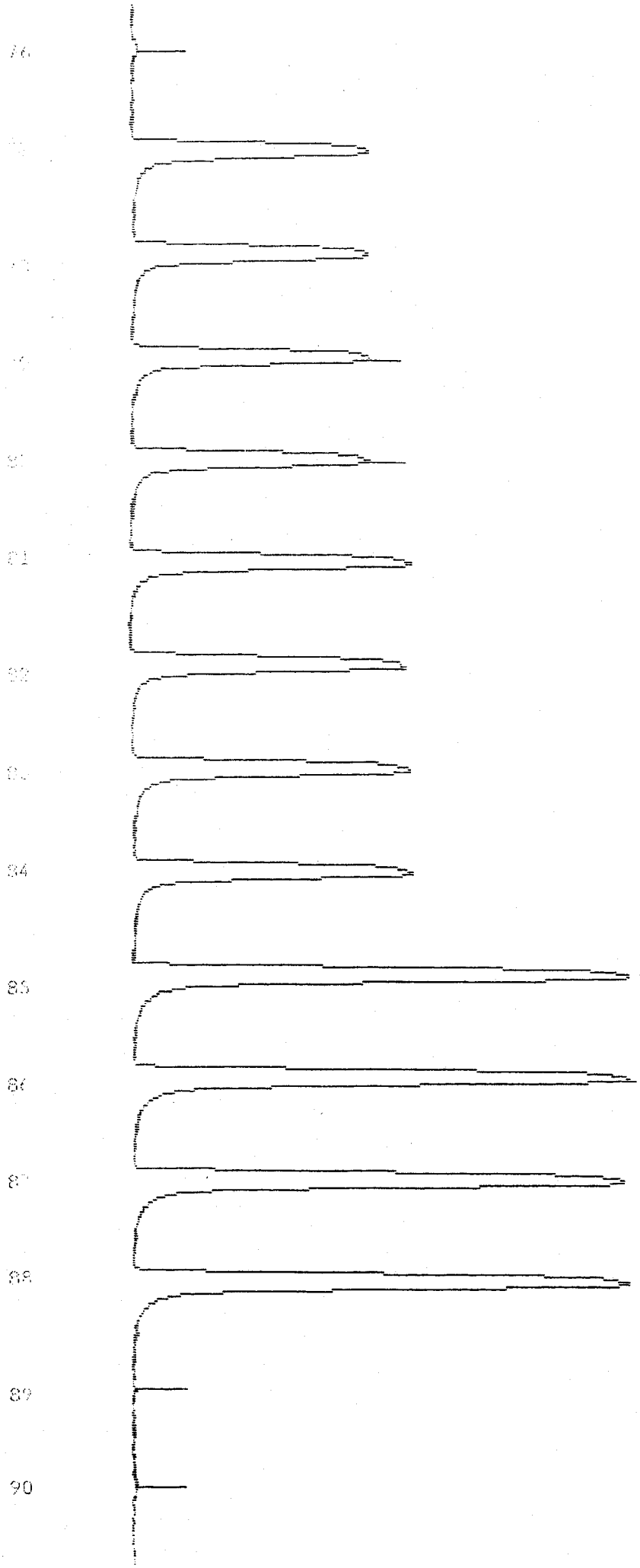
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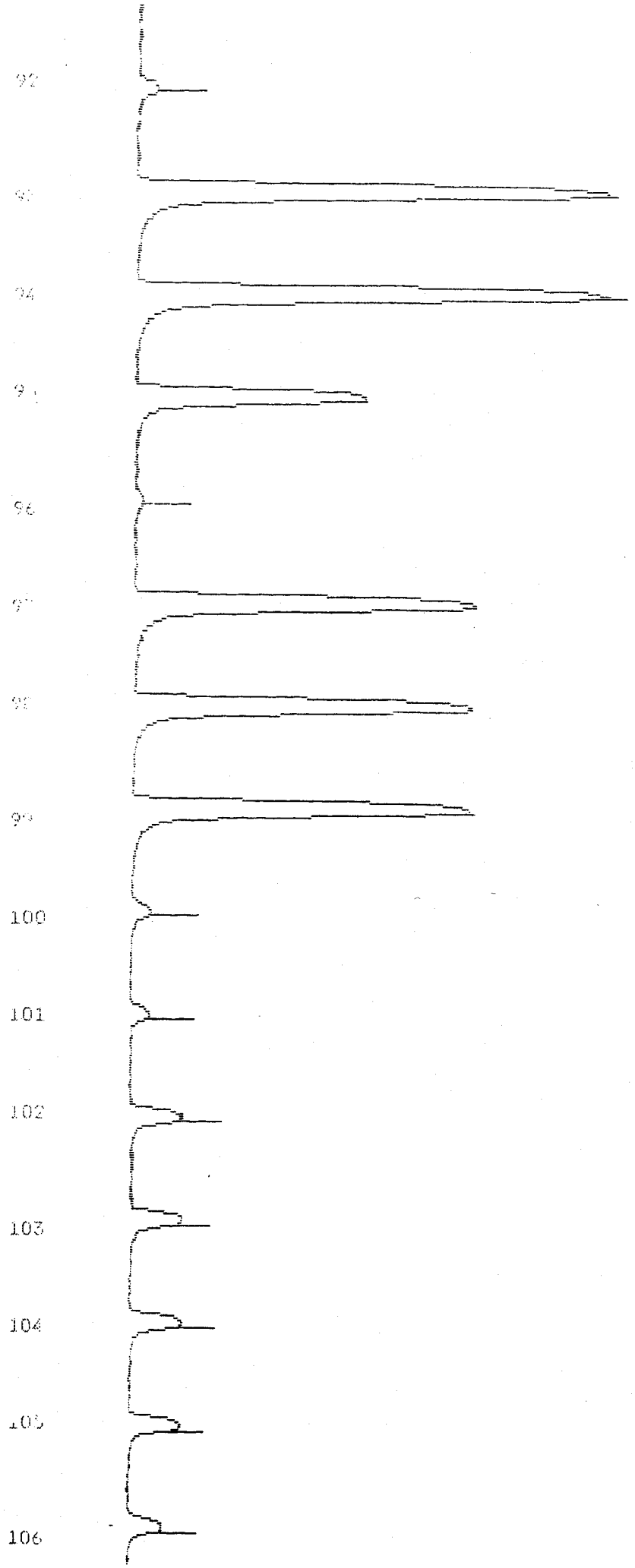
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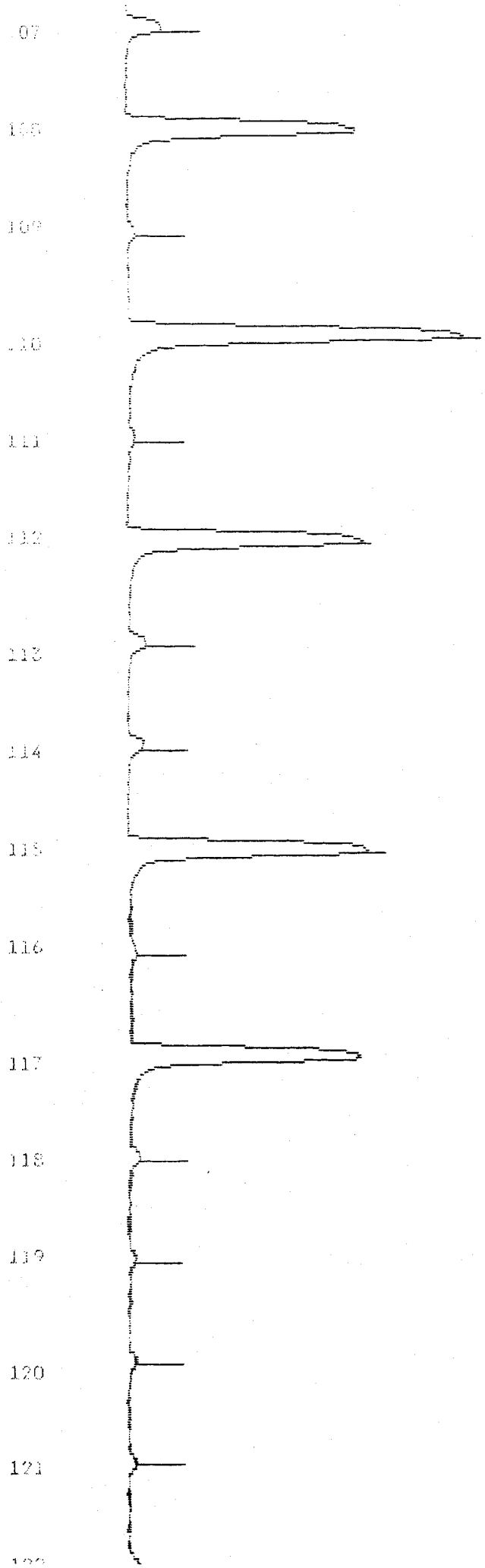
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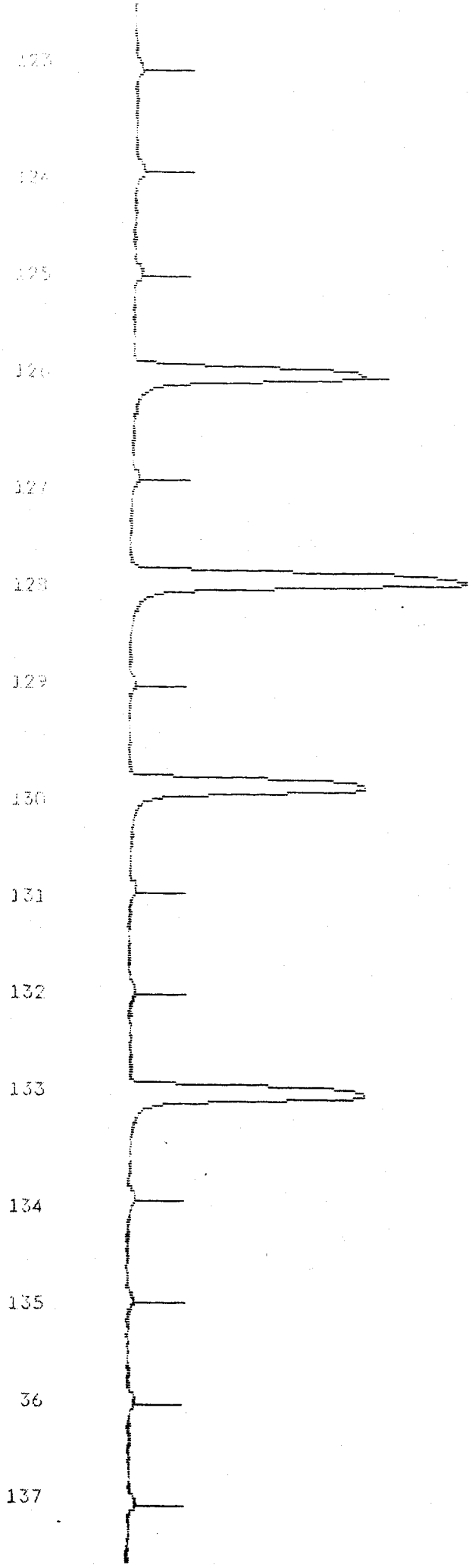
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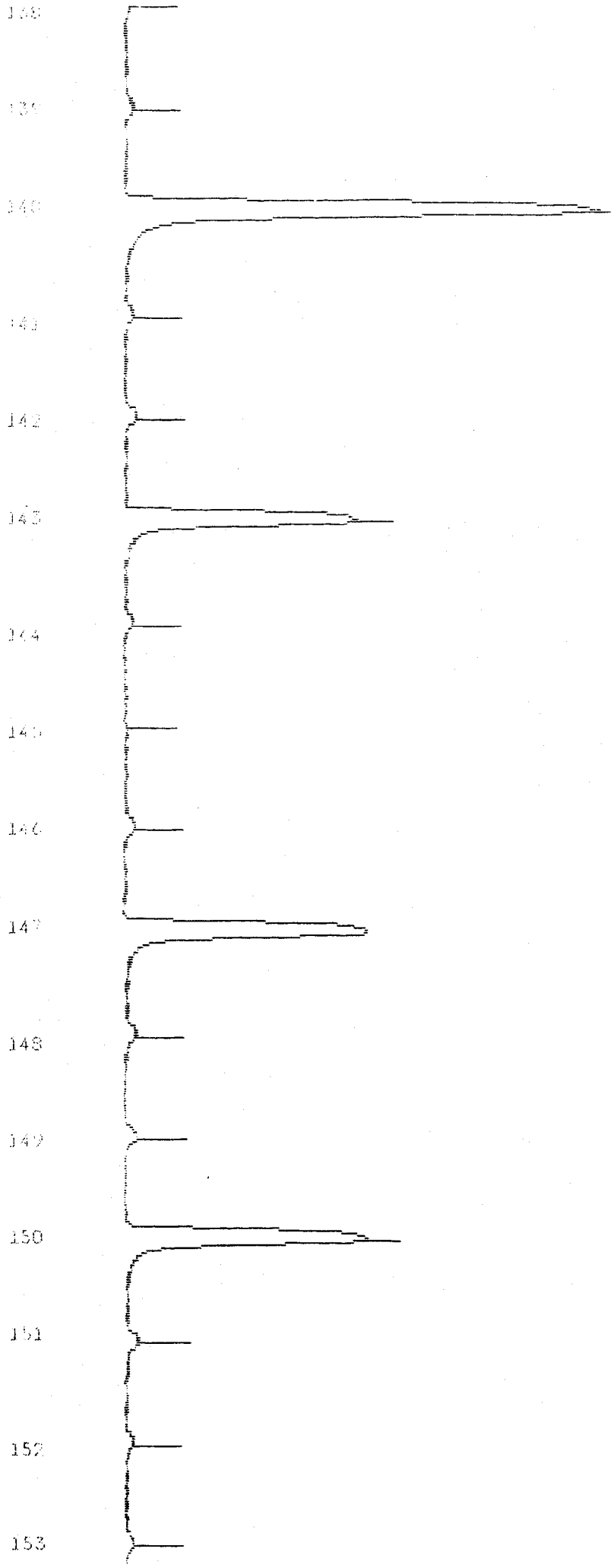
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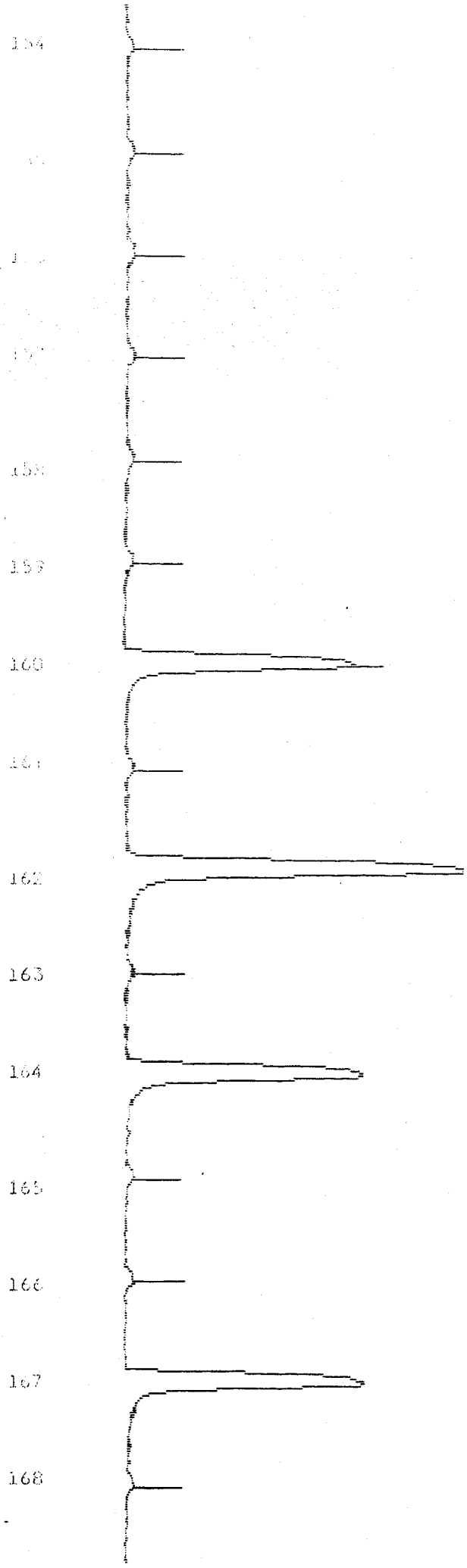
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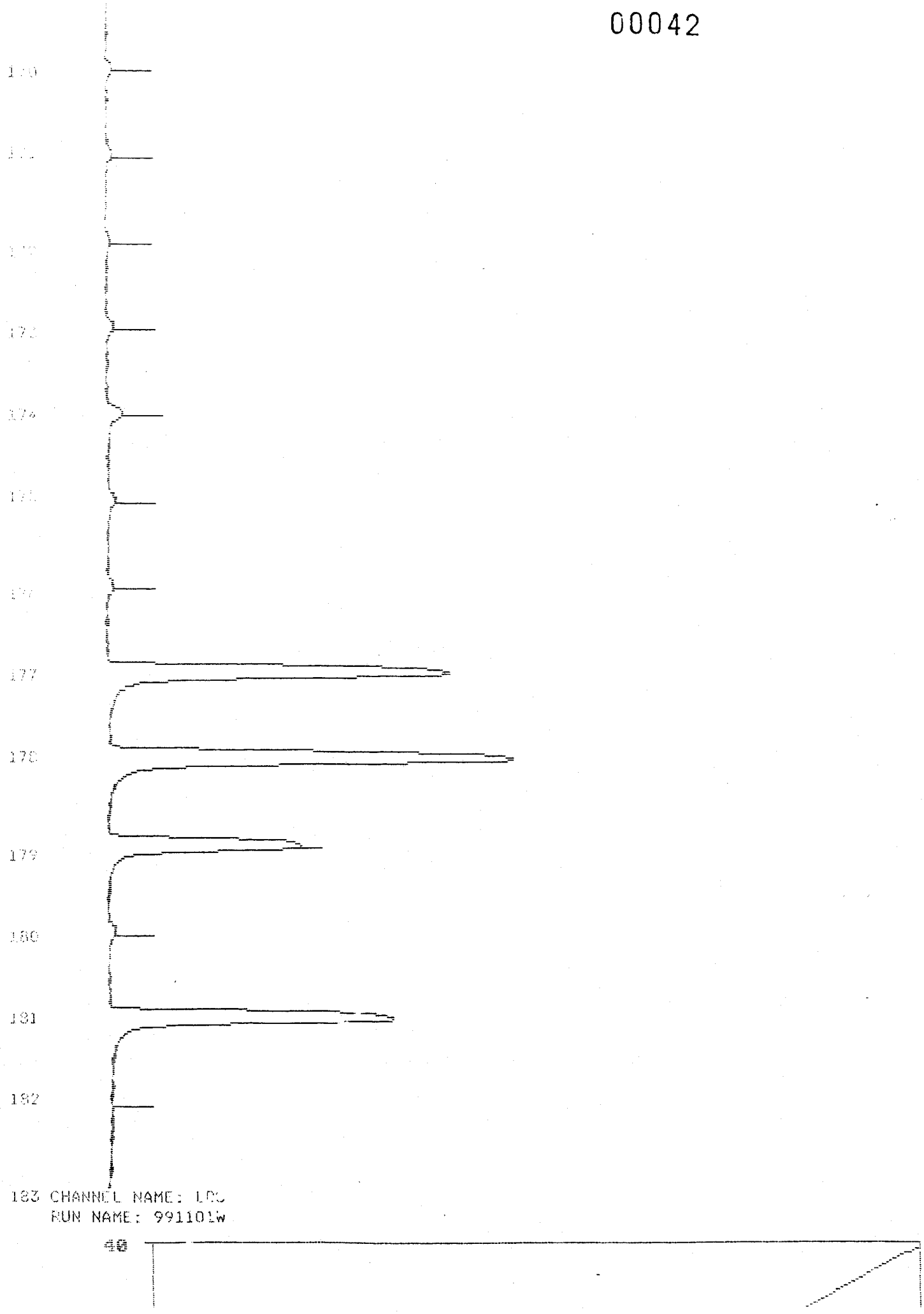
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183 CHANNEL NAME: LOC
RUN NAME: 991101W
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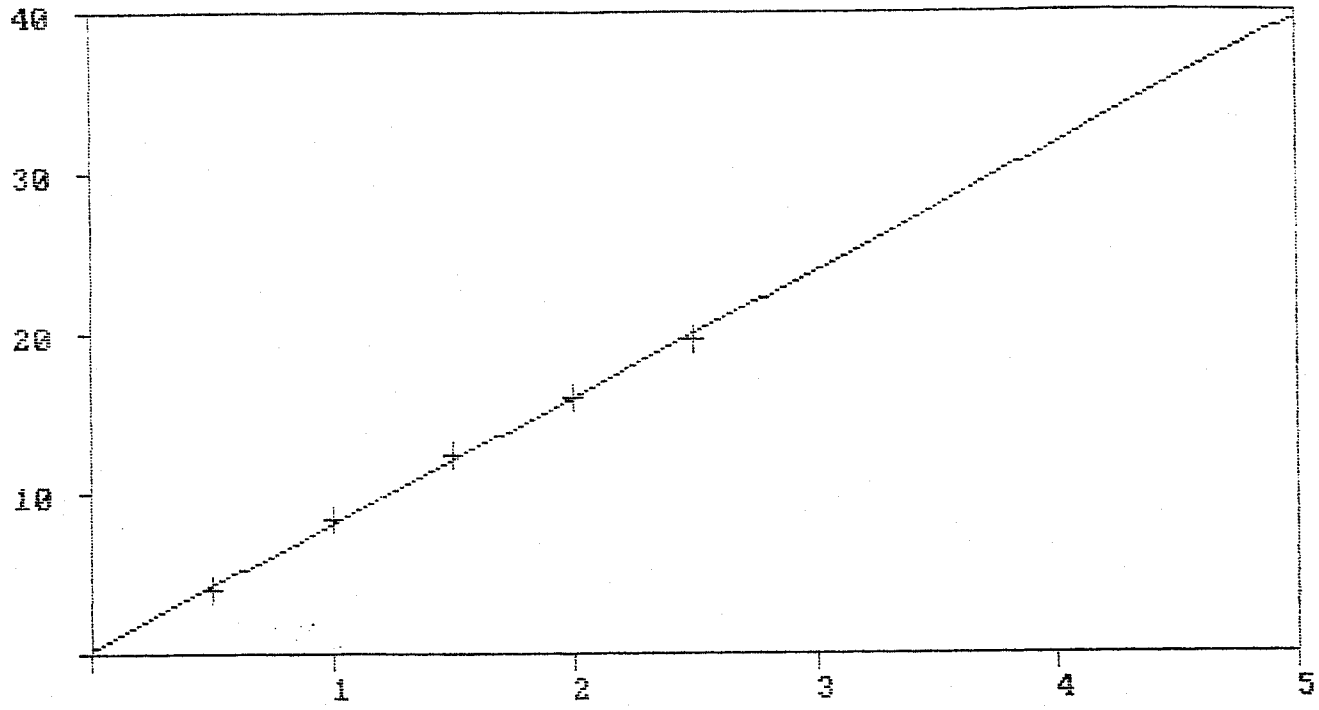
CHANNEL NAME: LDC
RUN NAME: 991101W



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INTERCEPT = 0.21
SLOPE = 7.874412

CORRELATION: .9994826

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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
16	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	

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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		1.155	
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	TMG	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	20.03	-0.008	I
53	BL1101-1NKC	1	1	0.1		-0.017	I
54	BL1101S	1	1	8.5	0.315	1.056	105 %
55	BL1101S	1	1	8.4		1.041	
56	BL1101DS	1	1	8.7	0.323	1.084	107 %
57	BL1101DS	1	1	8.6		1.072	
58	60117	6.666	1	8.0	6.586	6.586	
59	60117	6.666	1	8.0		6.586	
60	60117D	6.666	1	8.0	6.514	6.565	
61	60117D	6.666	1	7.8		6.462	s
62	60117S	6.666	1	15.8	13.130	13.222	99 %
63	60117S	6.666	1	15.6		13.035	
64	60117DS	6.666	1	15.6	13.088	13.035	98 %
65	60117DS	6.666	1	15.7		13.139	
66	60116	.6666	1	0.0	20.100	-0.017	I
67	60116	.6666	1	0.0		-0.017	I
68	60118	2.666	1	15.9	5.368	5.304	
69	60118	2.666	1	16.2		5.428	
70	60119	2.666	1	17.3	5.831	5.792	
71	60119	2.666	1	17.5		5.867	
72	CCV	1	1	8.3		1.025	103 %
73	B	1	1	0.0		-0.026	b
74	D4	1	1	12.3		1.540	d
75	BL1101-2NKC	1	1	0.0		-0.026	I
76	BL1101-2NKC	1	1	0.0		-0.026	s
77	BL1101S	1	1	8.4		1.047	
78	BL1101S	1	1	8.4		1.034	
79	BL1101DS	1	1	8.5		1.053	
80	BL1101DS	1	1	8.5		1.056	
81	61634	3.333	1	10.1		4.192	
82	61634	3.333	1	10.0		4.161	
83	61634D	3.333	1	9.9		4.120	
84	61634D	3.333	1	10.1		4.171	
85	61634S	3.333	1	18.0		7.531	
86	61634S	3.333	1	18.0		7.520	
87	61634DS	3.333	1	17.9		7.469	
88	61634DS	3.333	1	18.2		7.603	

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	0.117	
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

00046

156	63253	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
163	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	53257D	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	O	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 CMA Control Chart Updated N/A IO Requirements met N/A

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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 4)			
12			WS 37B			
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	1N1B		
29			"			
30			BL1102 S			
31			"			
32			BL1102 DS			
33			"			
34	NB		60669			
35			"			
36			60669 D			
37			"			
38			60669 S			
39			"			
40			60669 DS			
41			60669 DS			
42			60667			
43			"			
44			60668			
45			"			
46			60670			
47			"			
48		NB	~~60671~~ CCV			
49			B			
50			D4			
51			60671			
52			"			
53			BL1102	2N1B		
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			60850			
70			"			
71			CCV			
72			B			
73			D4			
74	NB	1/25	60860			
75			"			
76	NB	1/25	60861			
77			"			
78		1/2	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						
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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

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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.)	INIB	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.)	2NIB	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	"	"	"	"	300mL
3	33	60	"	"	"	"	6000 mL
4	34	61	"	"	"	"	6000 mL
5	35	62	"	"	"	"	300 mL
6	36	63	"	"	"	"	300 mL
7	37	64	"	"	"	"	300mL
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. 312120 | Bath Temps: / / 95°C

Prepared By: [illegible] Date: 99 11 02 Checked by: [illegible]

	#	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 OH MN_4 1000 mL
3	49	60117	"	"	"	"	
4	50	60117	"	"	"	"	
5	51	60117	"	"	"	"	
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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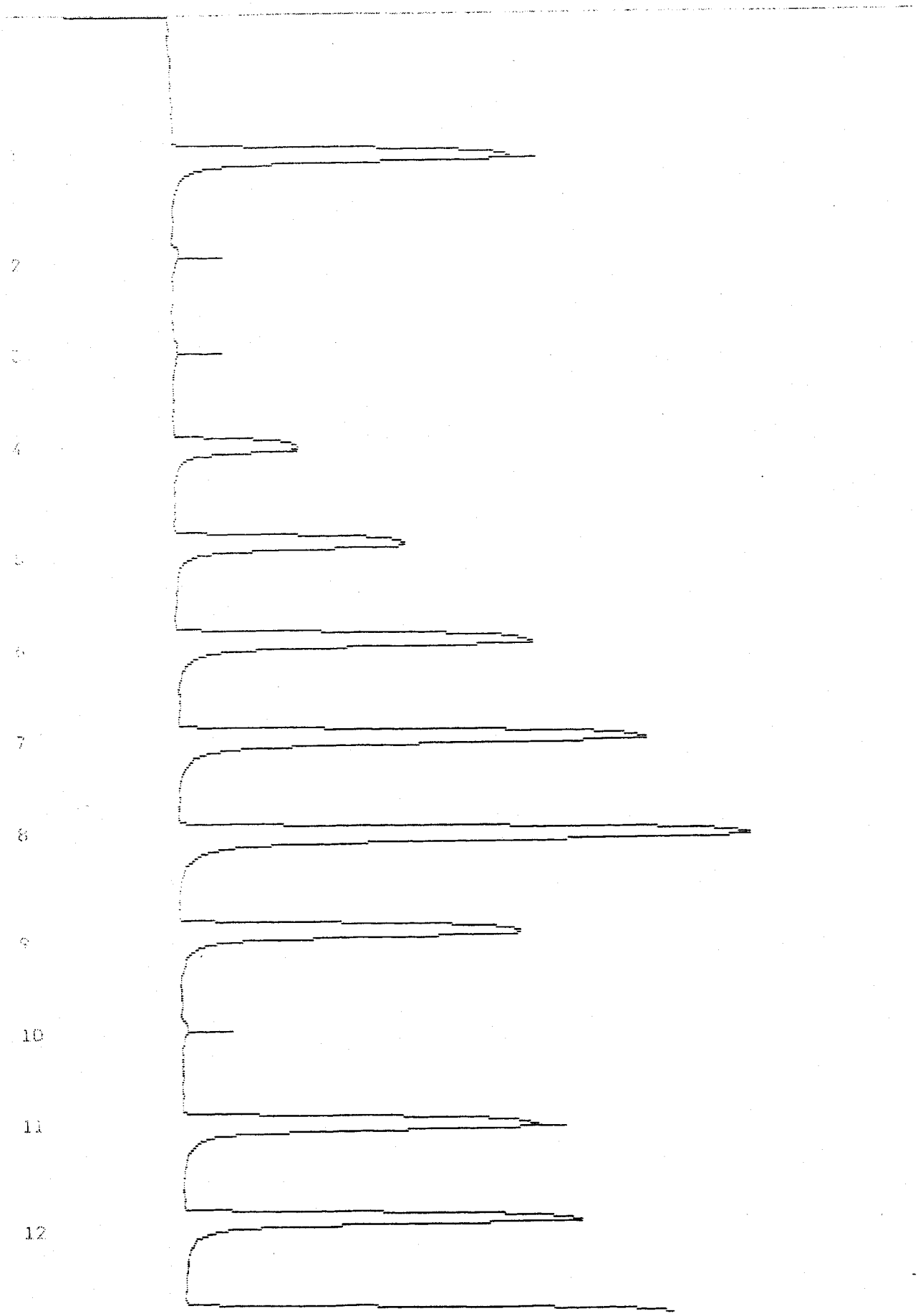

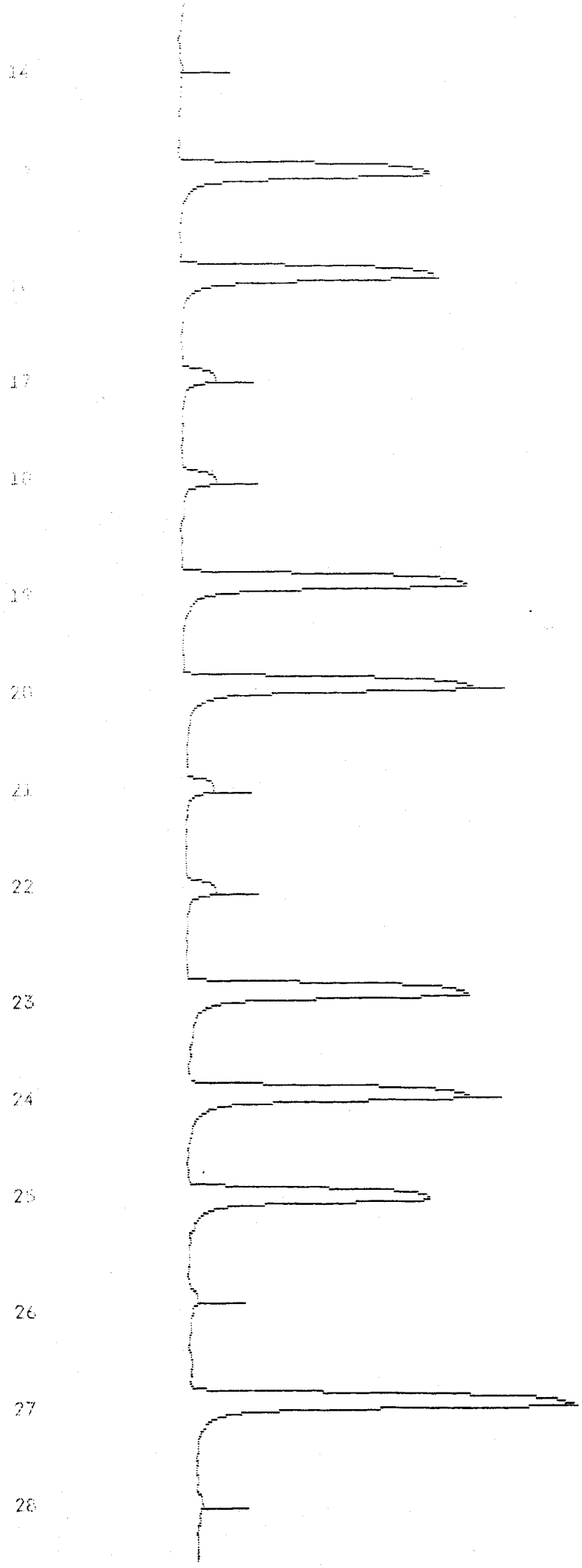
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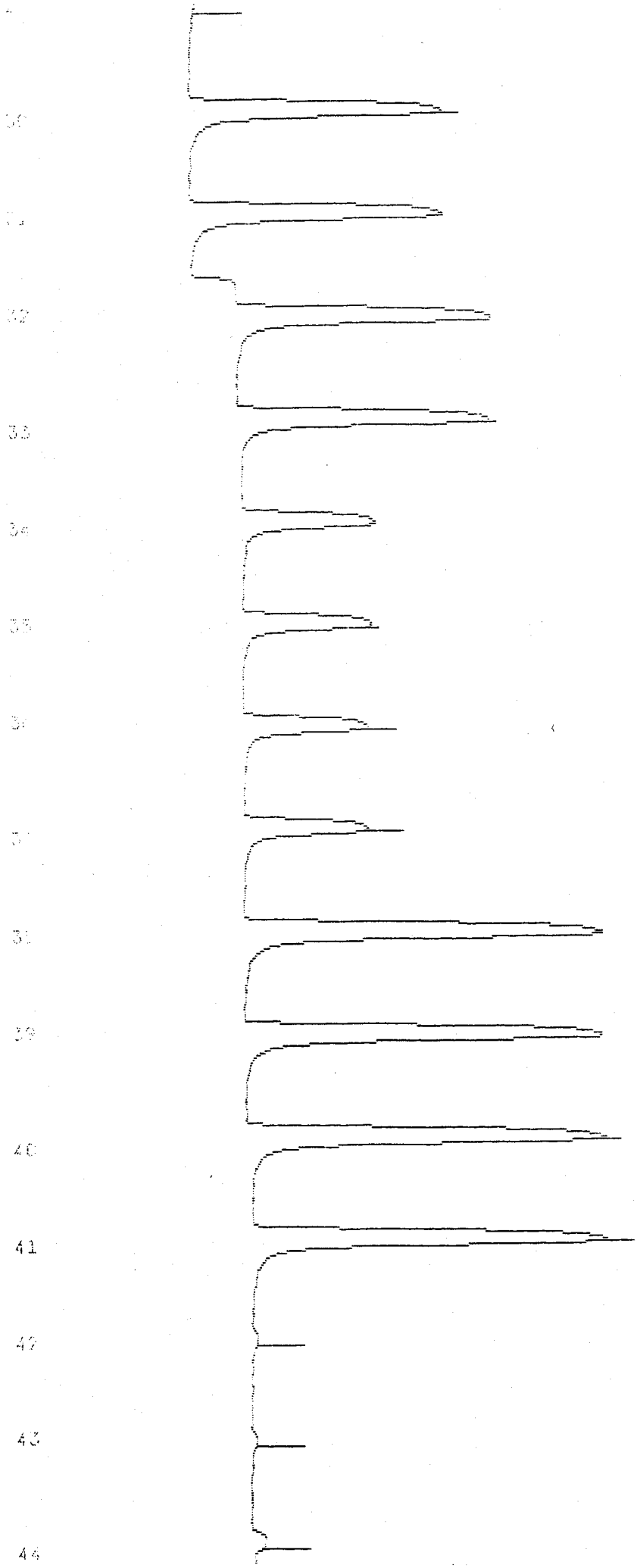
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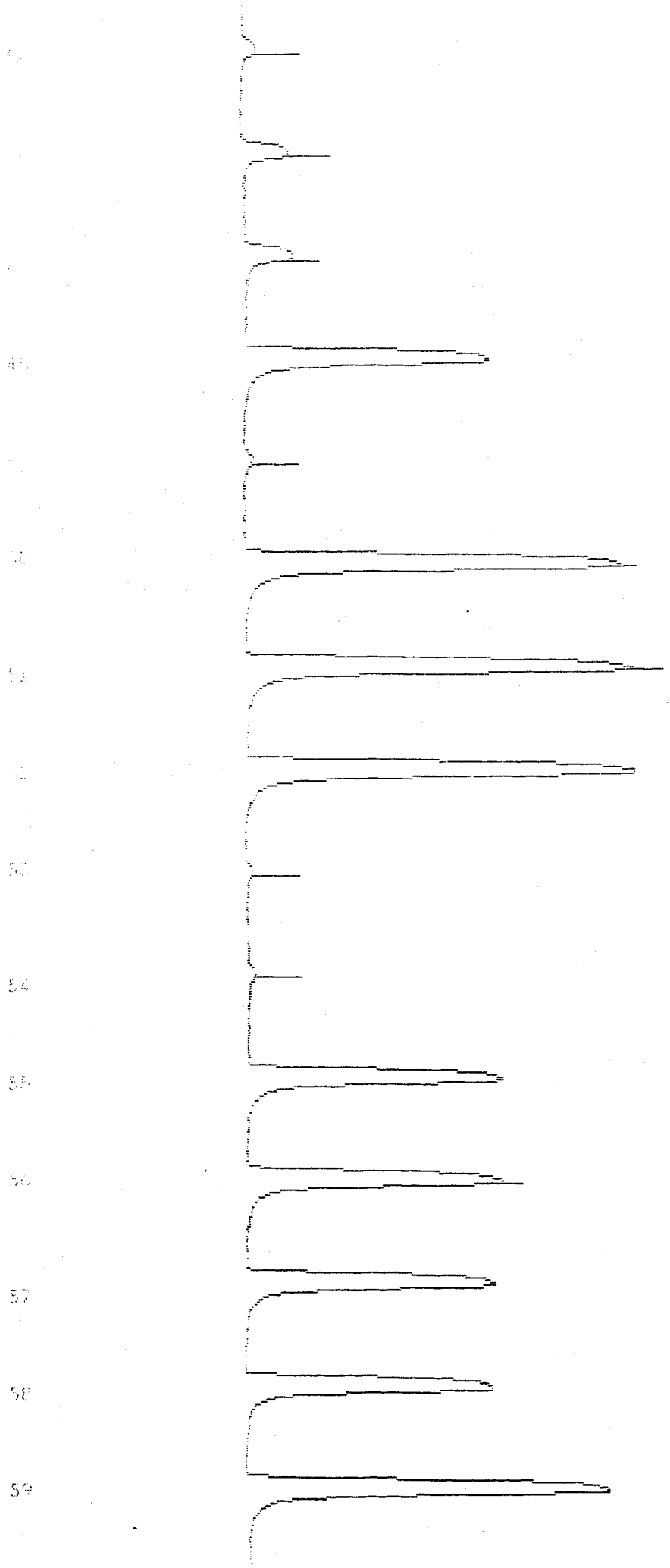
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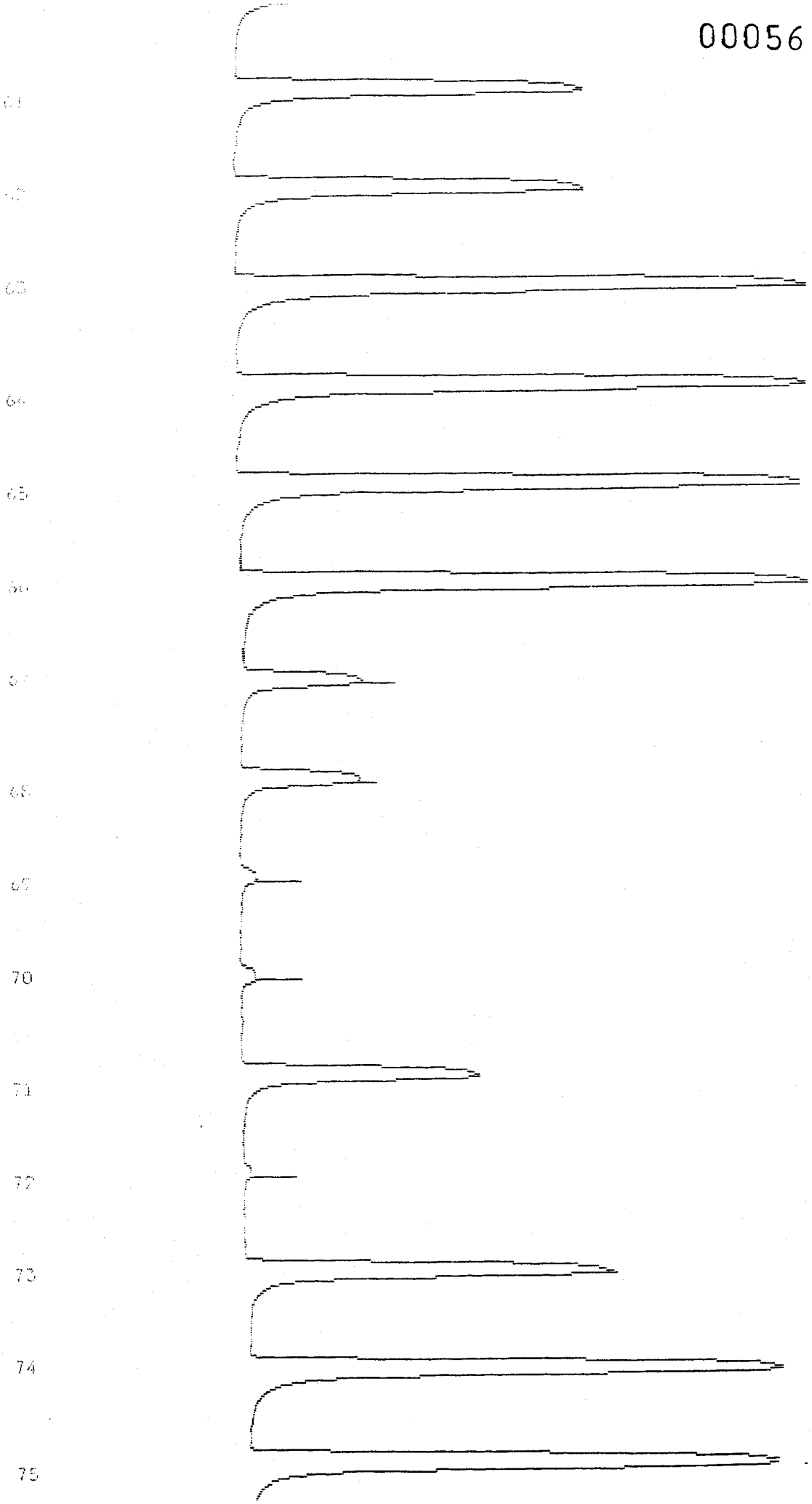
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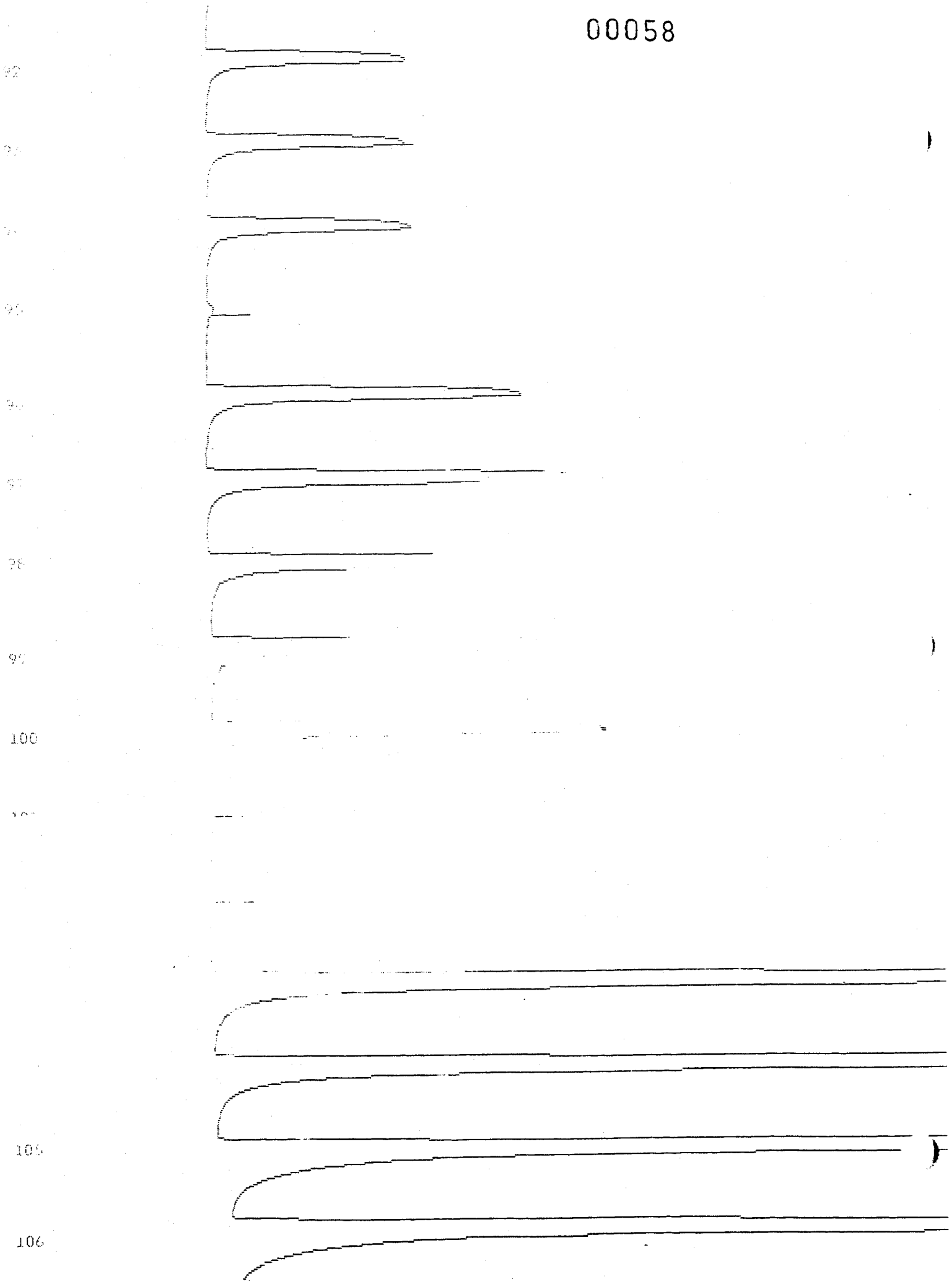

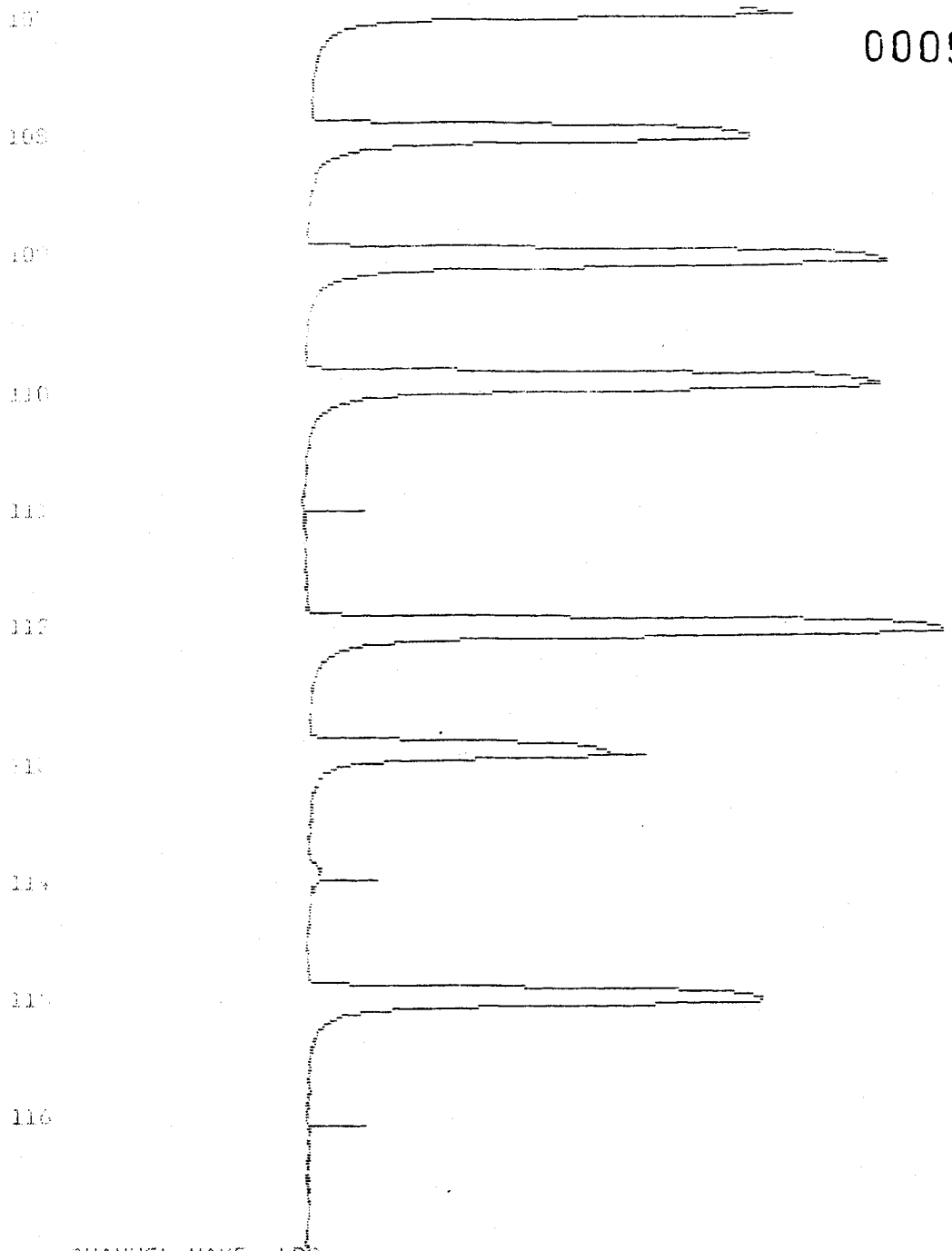

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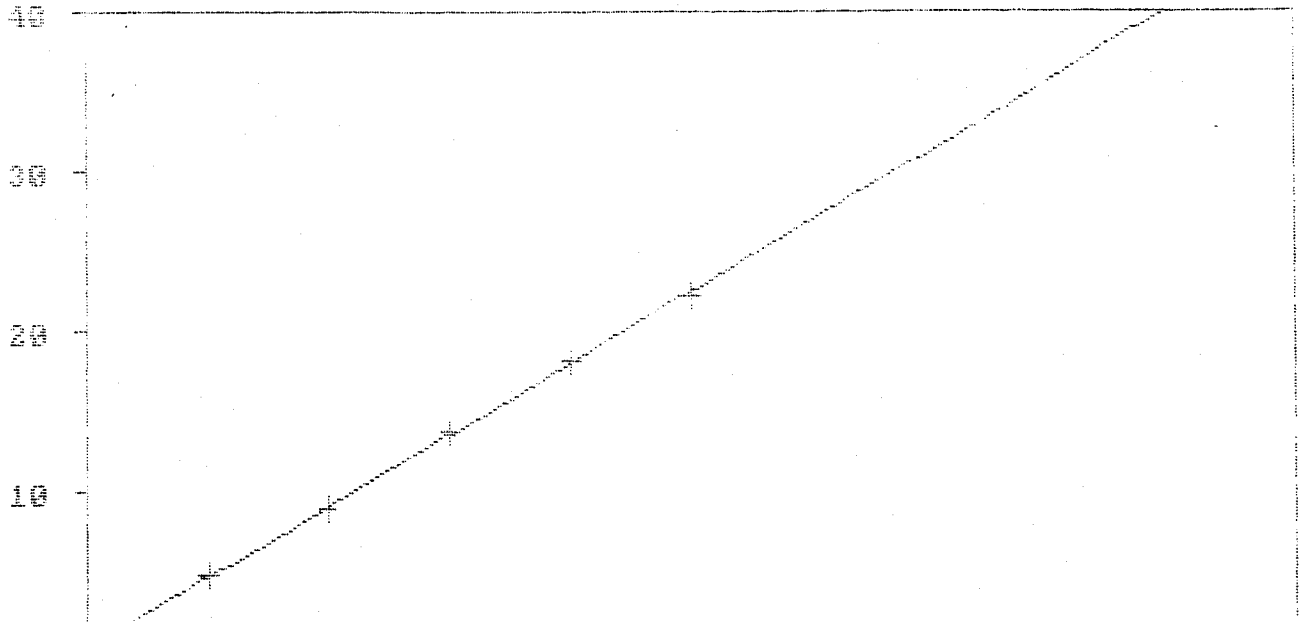
RUN NAME: 991102WA



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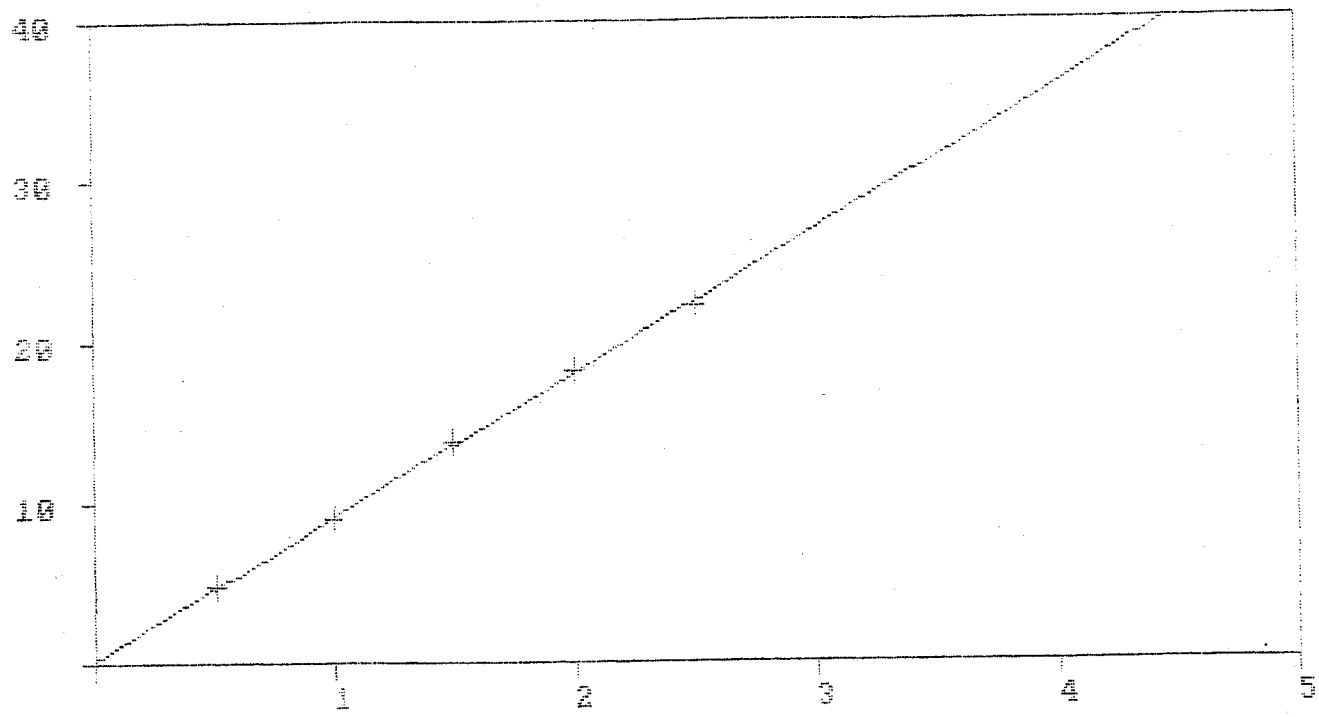

DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.19
SLOPE = 8.908424

CORRELATION: .9997317

CHANNEL NAME: LDC
RUN DATE: 11-02-1999
SAMPLE TABLE NAME: 991102WA
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION ug/L	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	

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25	CCV	1	1	8.8		0.949	
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		6.510	s
92	60117D	6.666	1	8.6	6 0293	6.210	
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	1
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 CMB 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)	0.6		
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			NS 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			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41	2/3		61638			
42			"			
43			61639			
44			"			
45		1/4	61640			
46			"			
47		1/4	60118			
48			"			
49			60119			
50			"			
51			CCV			
52			B			
53			D4			
54						
55						
56						
57						
58						
59						
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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.)	ZNM4	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 1000 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	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		"	"	"	"	

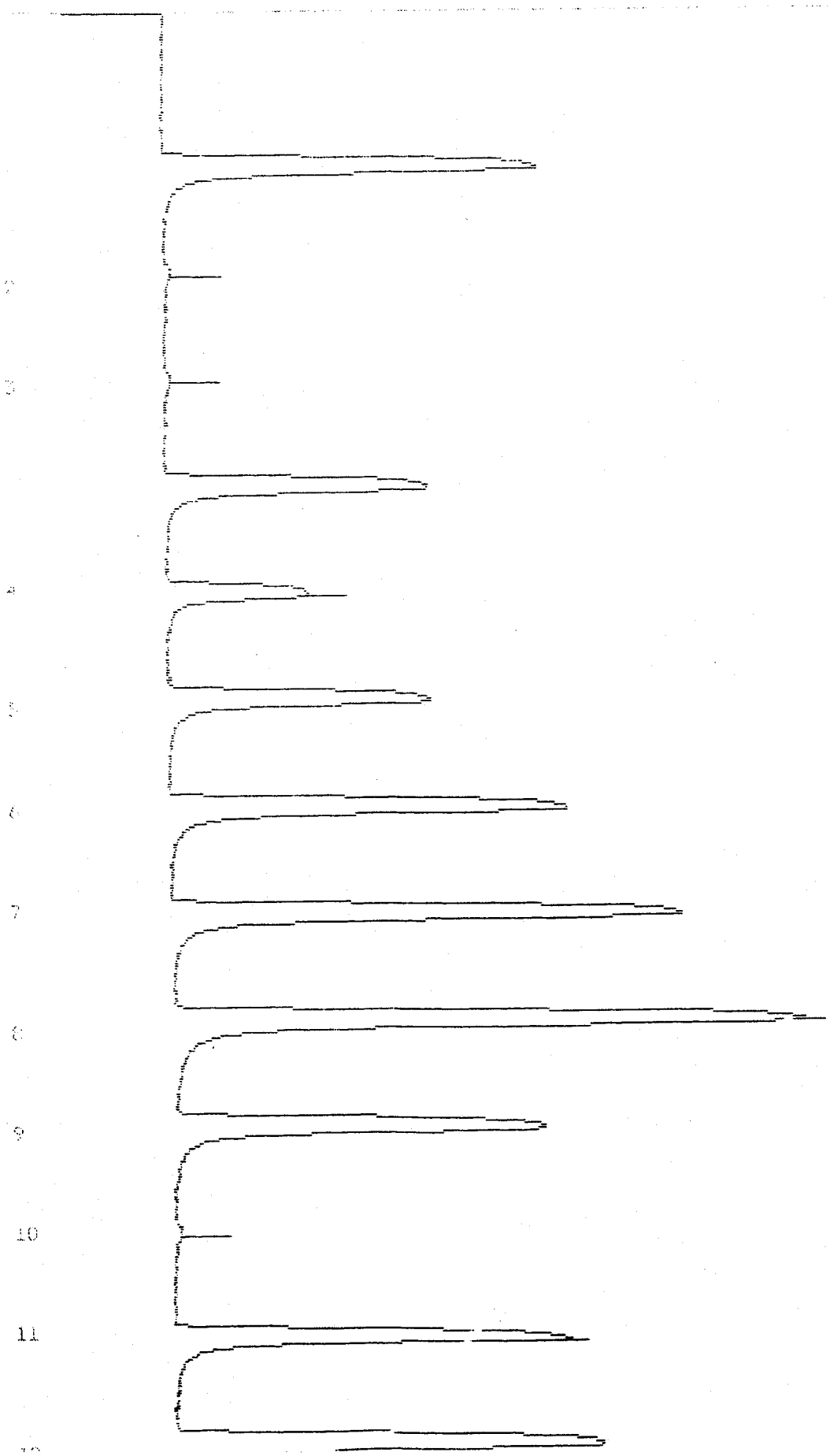
Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

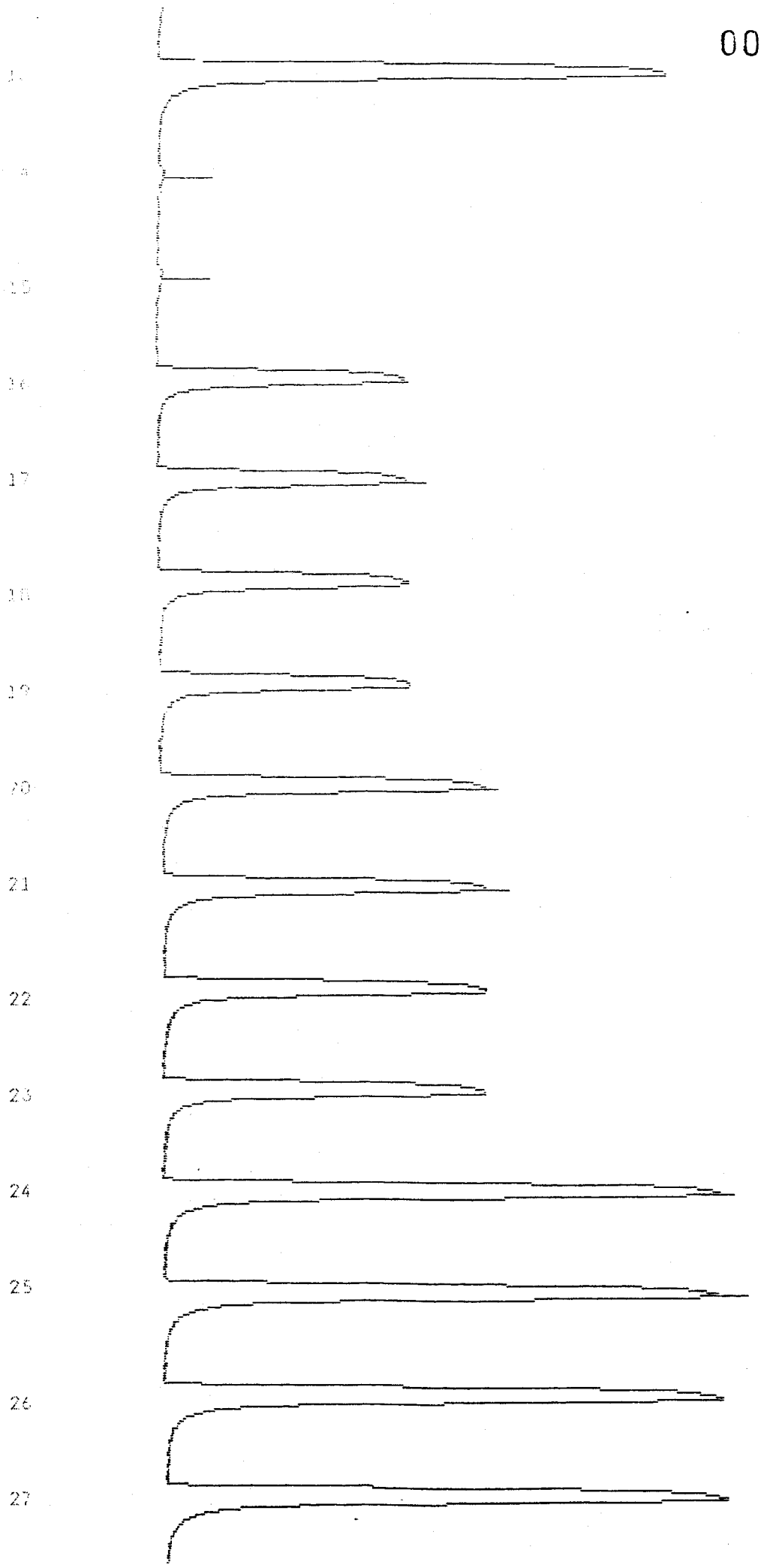
Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run — Prepare 0.05 ppm standards daily

HNO3 Lot. No. 119060 | H2SO4 Lot. No. 319060 | Bath Temps. / 195°C

Prepared By: M Alegria Date: 991103 Checked by: M Alegria

RUN DATE: 11-03-1999 CHART DATE: 11-03-1999
CHART SPEED: 30
DATA FILE NAME: C:\CPA\DATA\991103W.DAT

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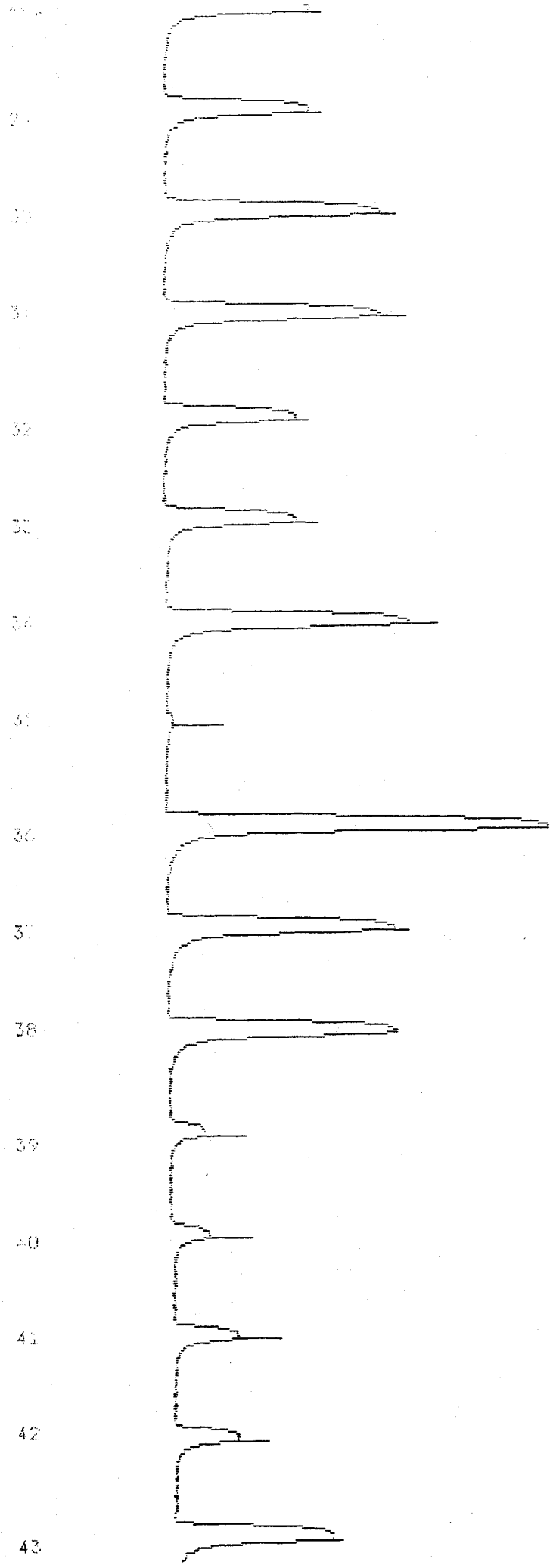
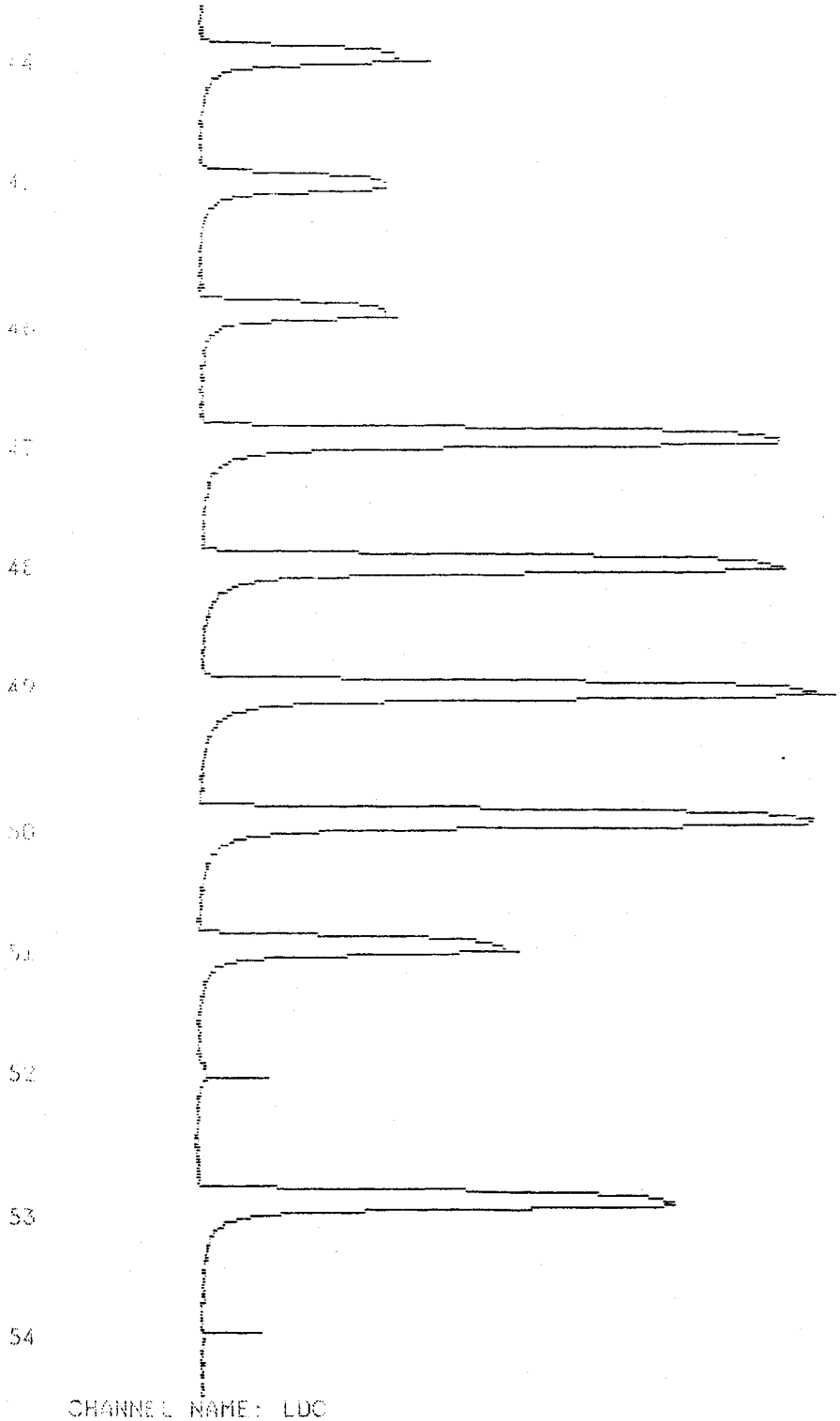
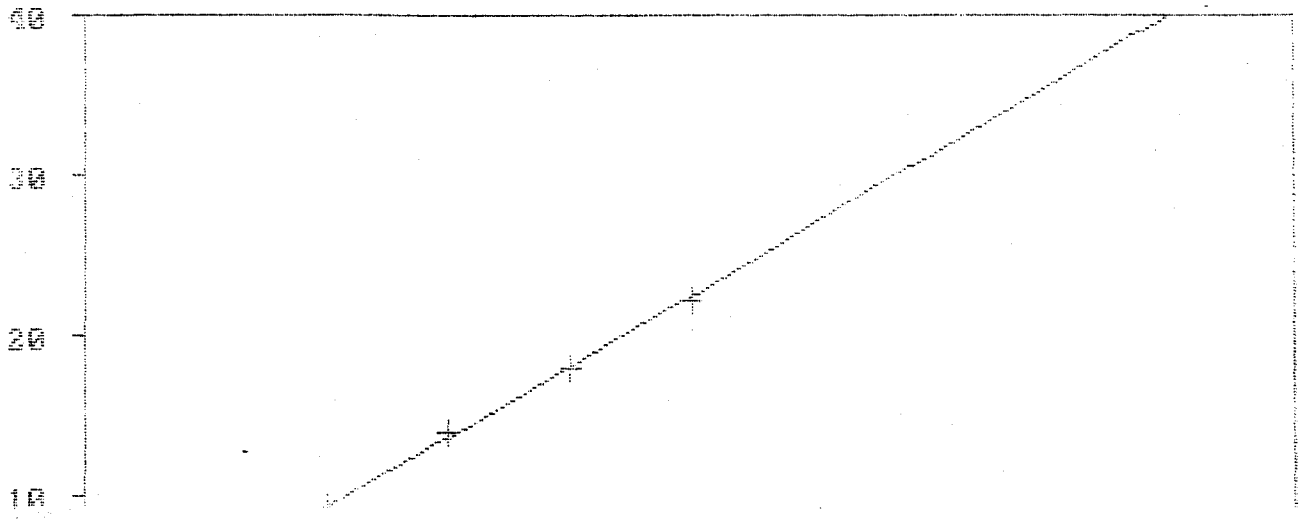
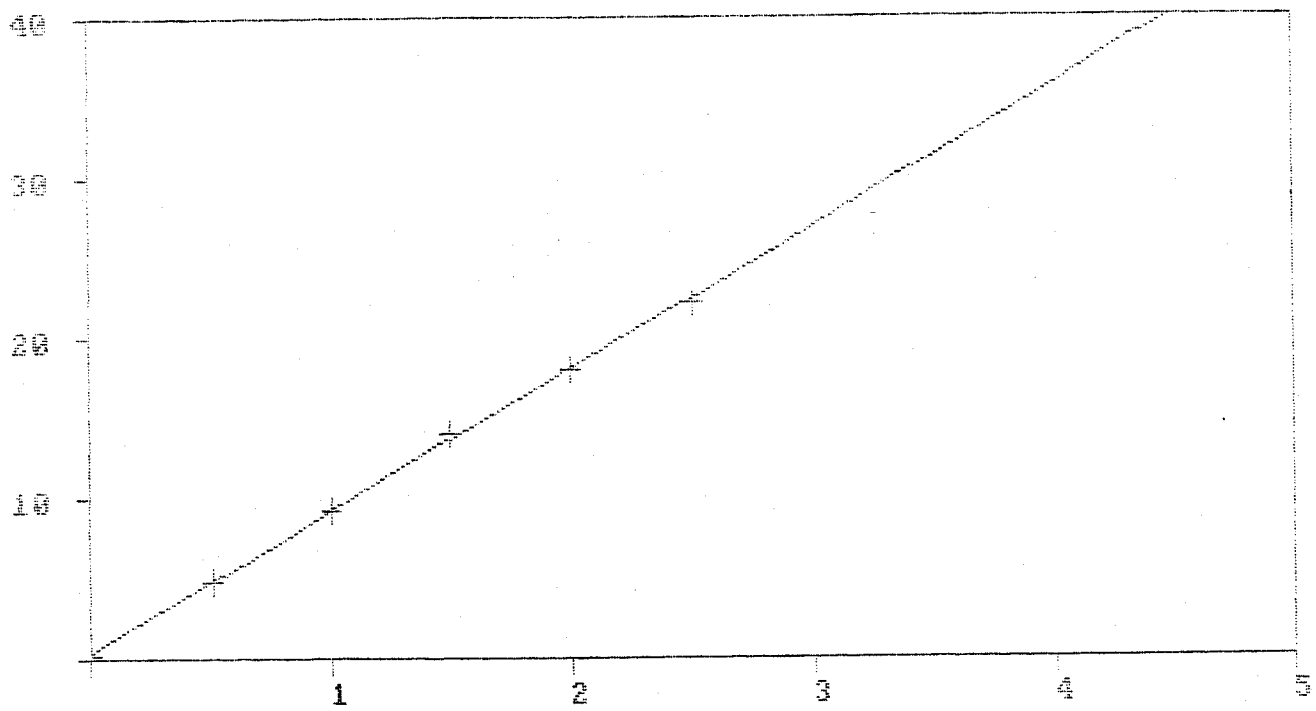




CHANNEL NAME: LDC
RUN NAME: 991103W



CHANNEL NAME: LDC
RUN NAME: 991103W



DATA TYPE: FIA
INTERCEPT = 0.34

CALIBRATION ORDER: 1
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 µg/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	TµG	-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	<0.03	-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	[illegible]

00071

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	96%
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	5.056	
48	60118	2.666	1	17.1		5.056	
49	60119	2.666	1	18.1	5.370	5.365	
50	60119	2.666	1	18.2		5.372	
51	CCV	1	1	9.0		0.974	97%
52	B	1	1	0.0		-0.039	b
53	D4	1	1	14.0		1.549	d

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)	0.5		
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			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			"			
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)

Date: 99.10.26 Run Code: MG02 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			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			"			
41	10		60116			
42			"			
43			CCV			
44			B			
45			D4			
46	10		60118			
47			"			
48			60119			
49			"			
50			BL1026	ABP2		
51			BL1026 B			
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: 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						
141 21	10		61640			
22	↓		"			
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						
48						
49						
50						
51						
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53						
54						
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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

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.)	ABP1	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.)	ABP2	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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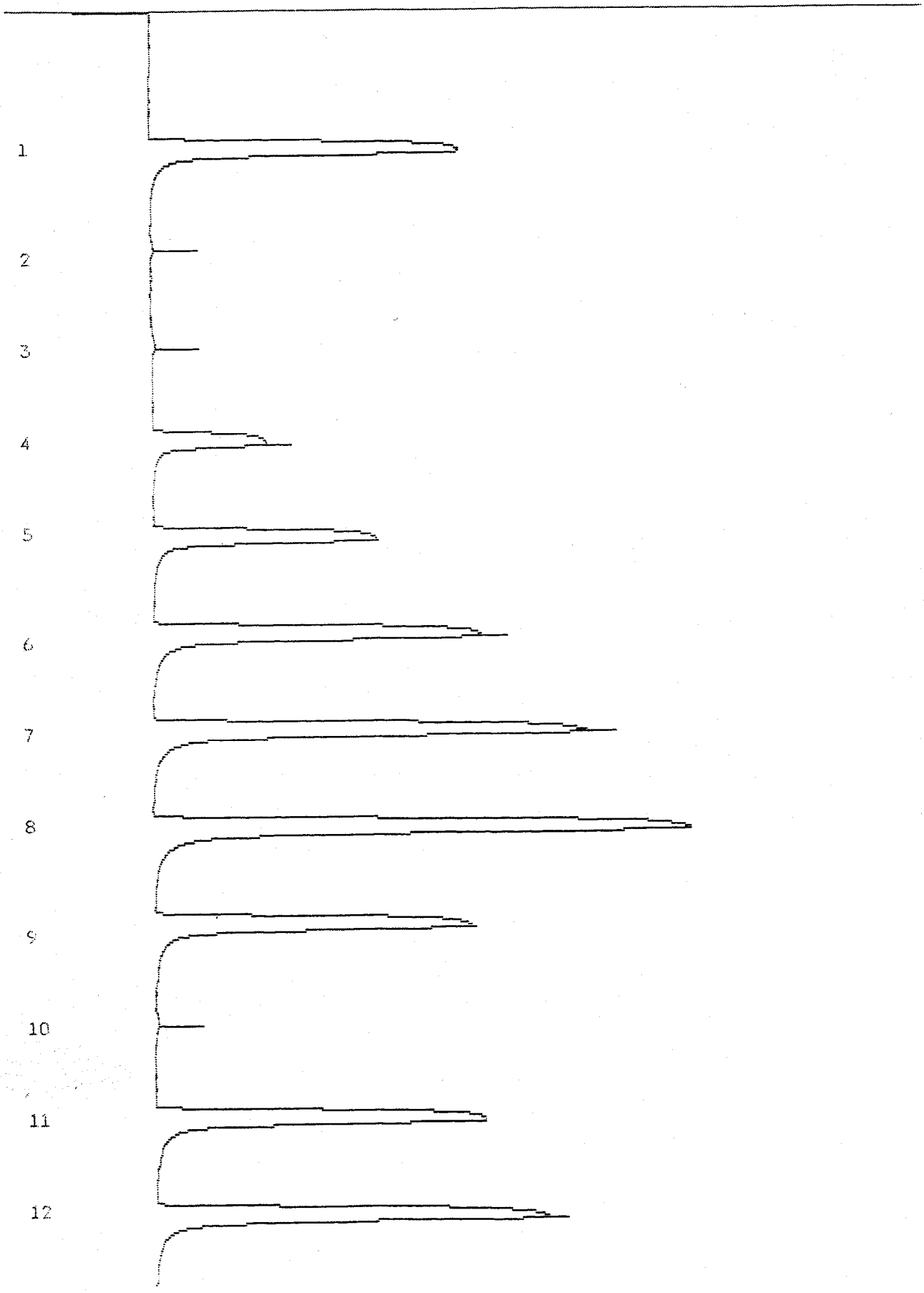

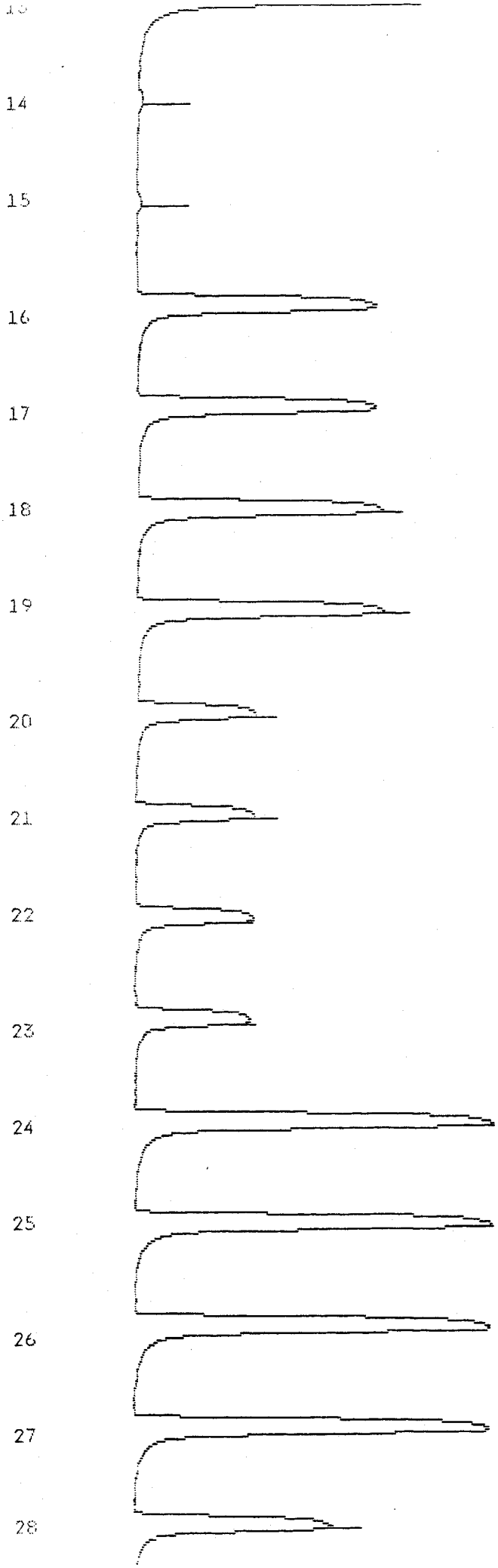
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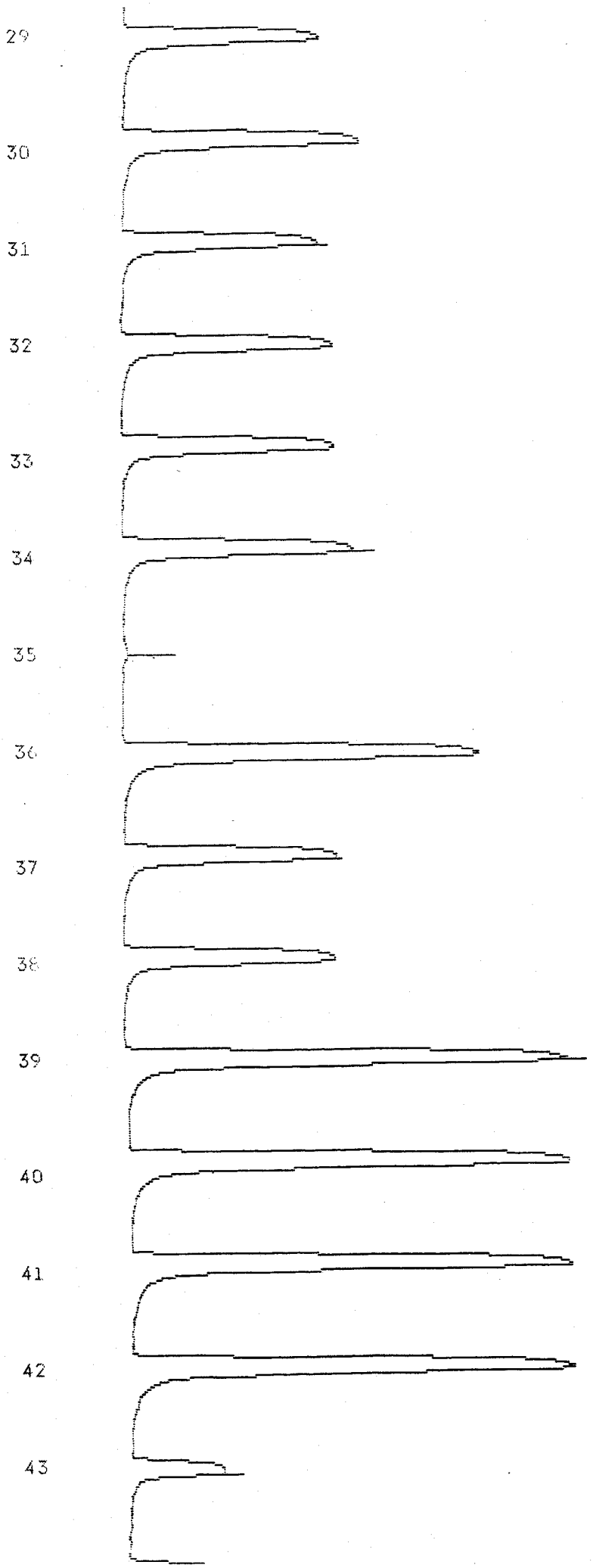
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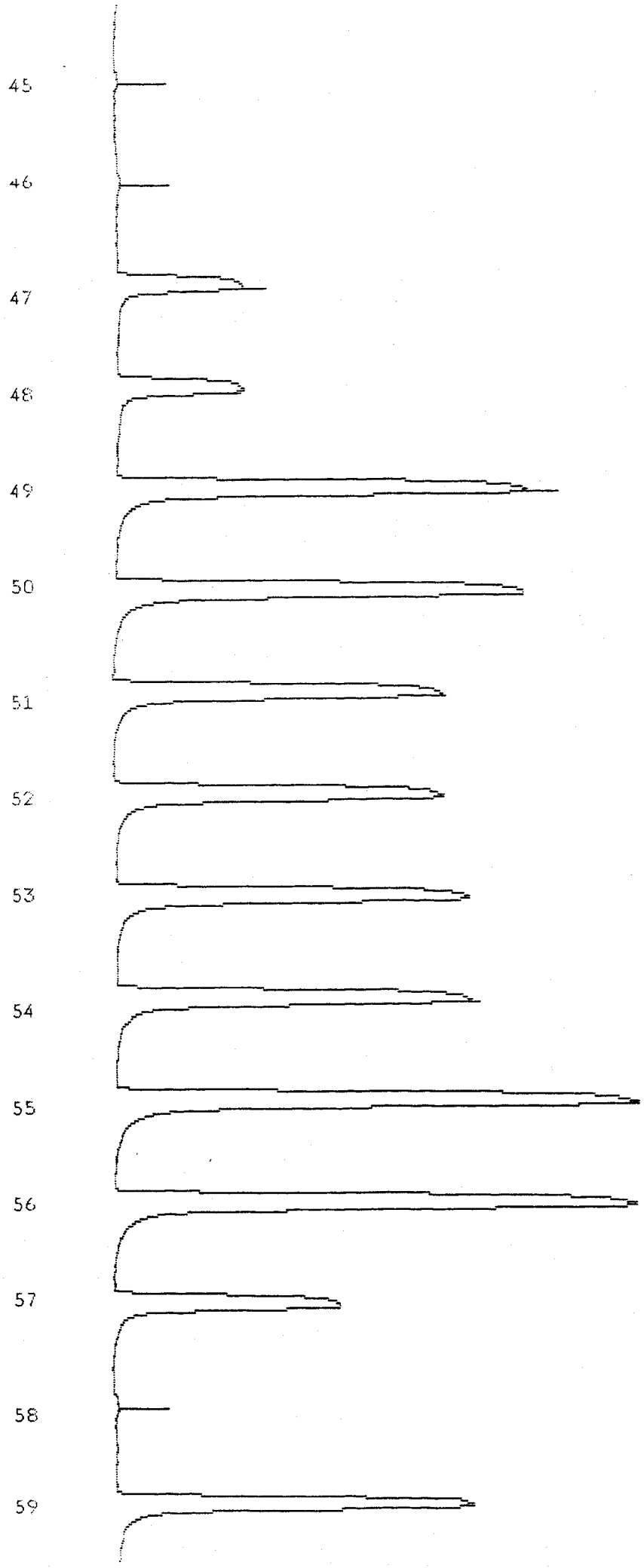
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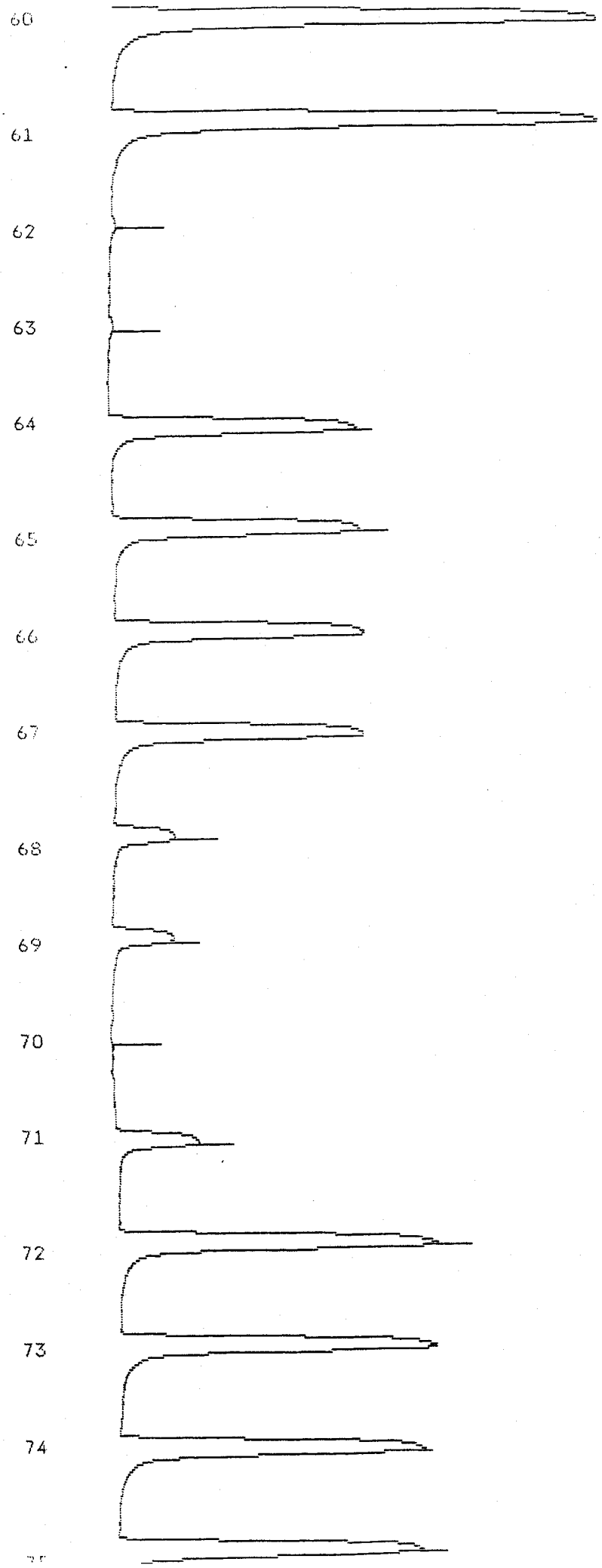
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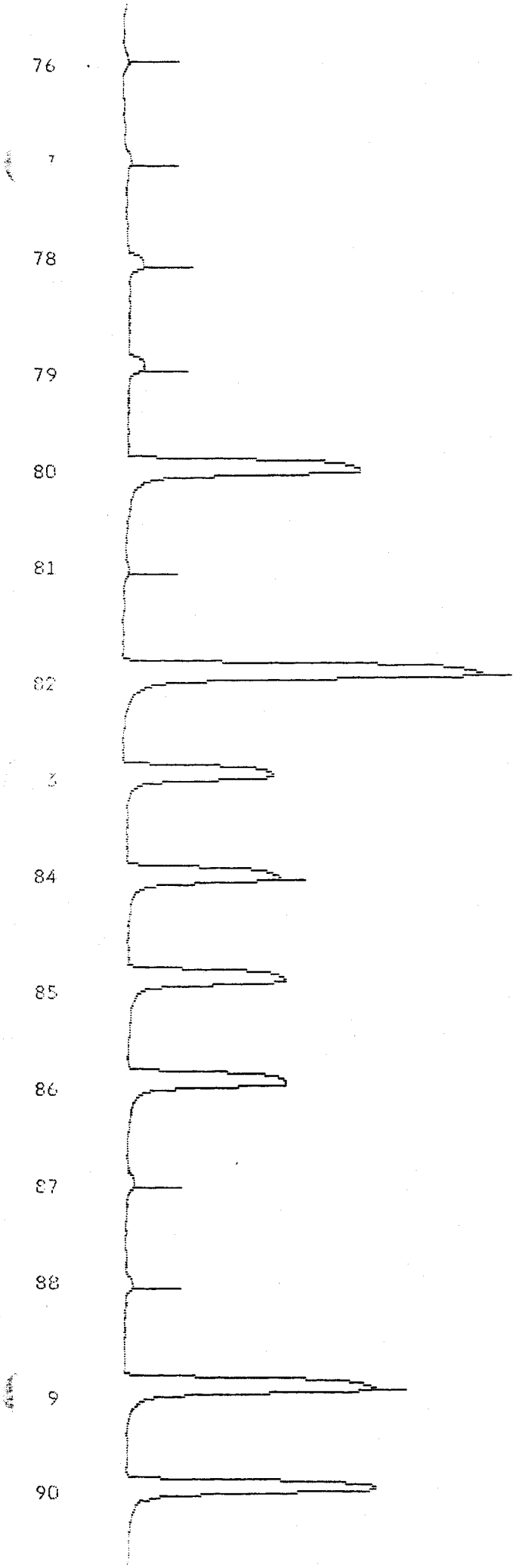
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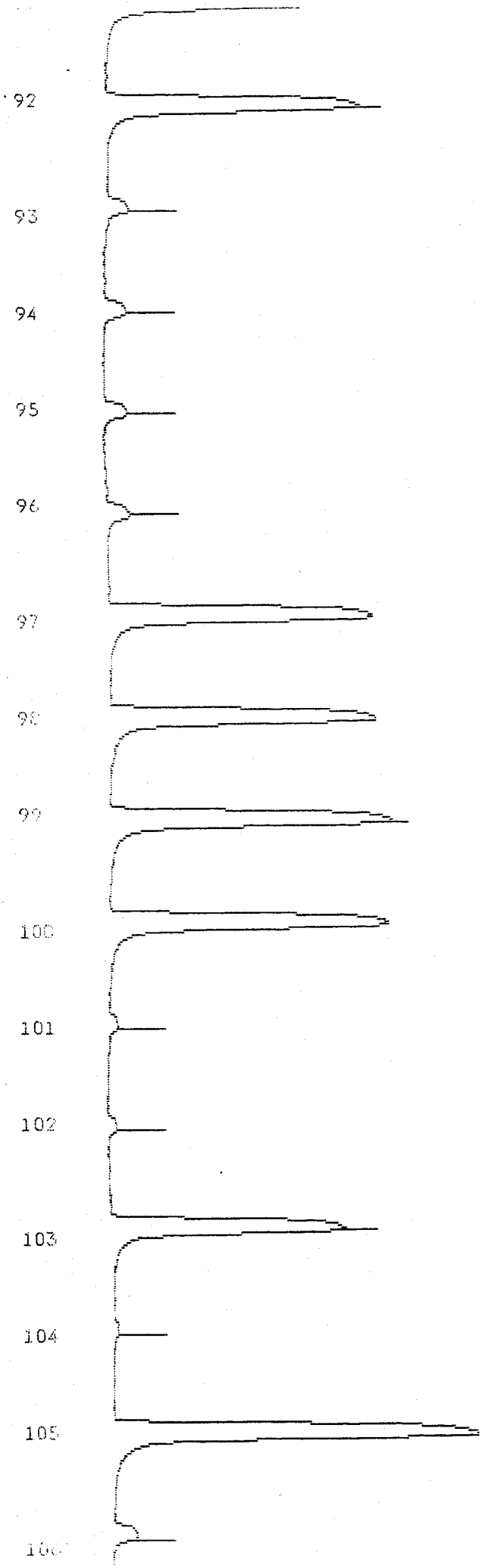
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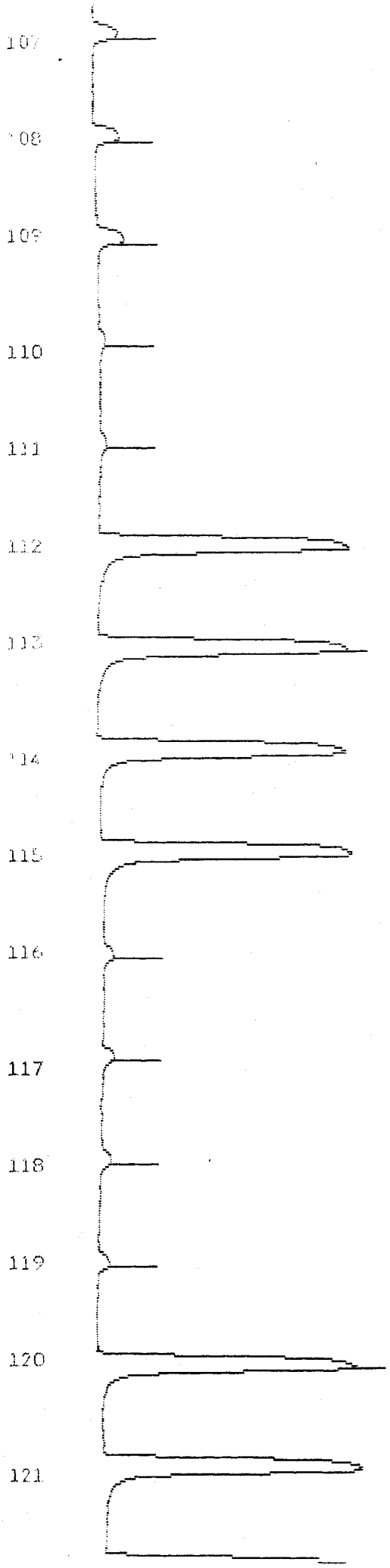
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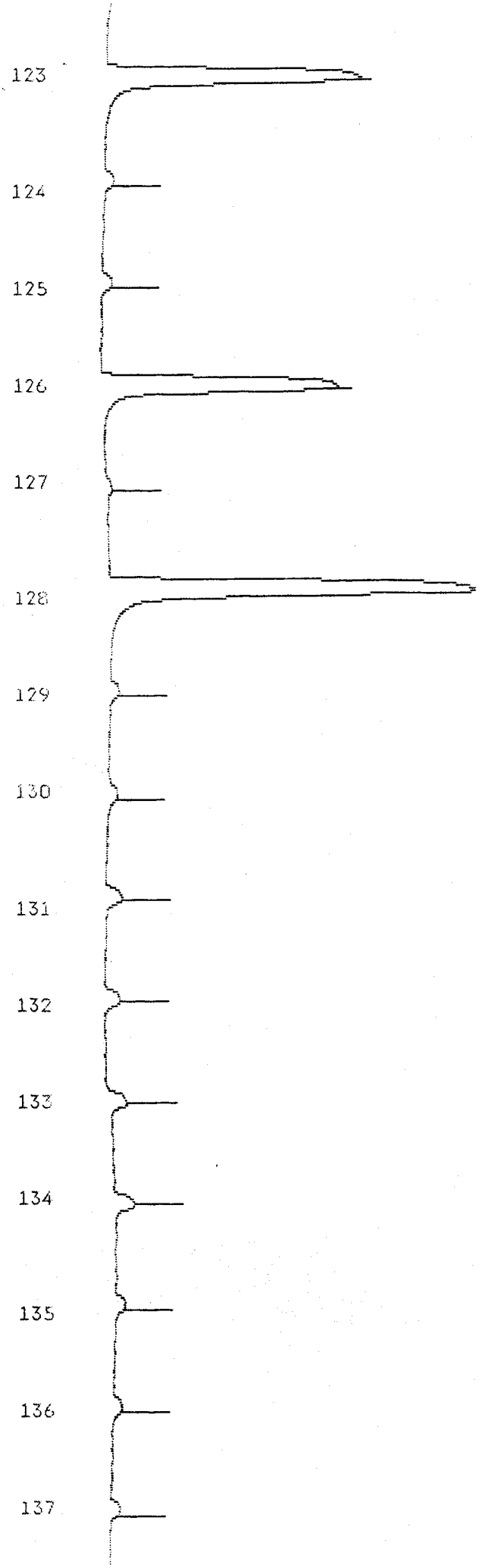
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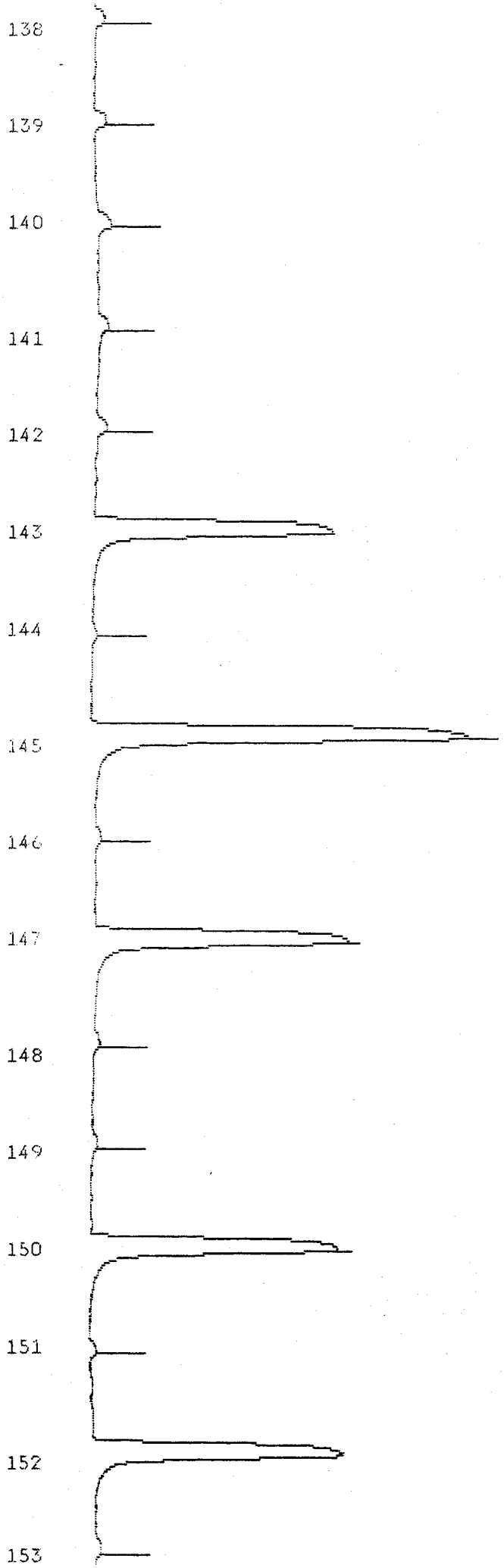
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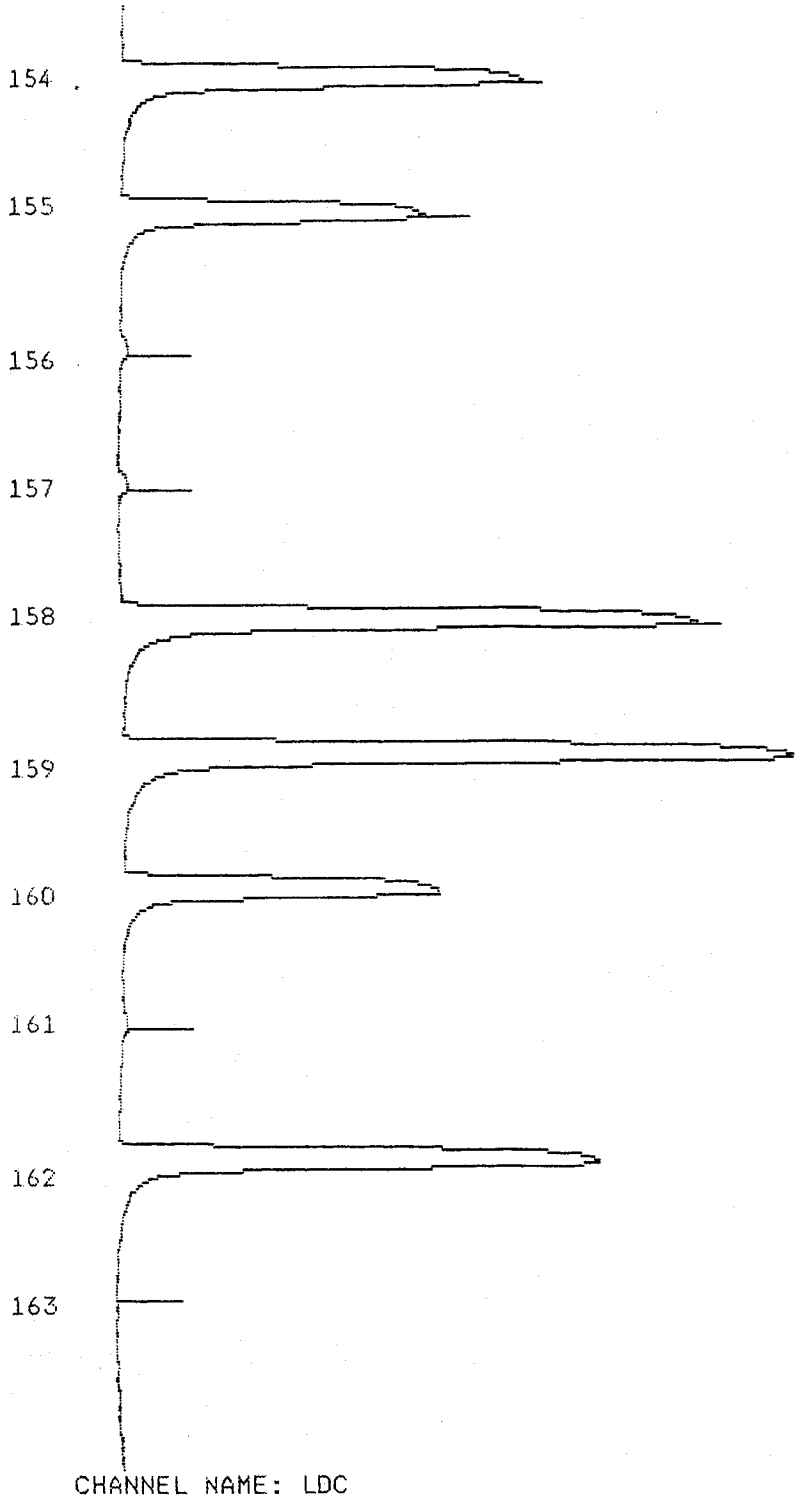

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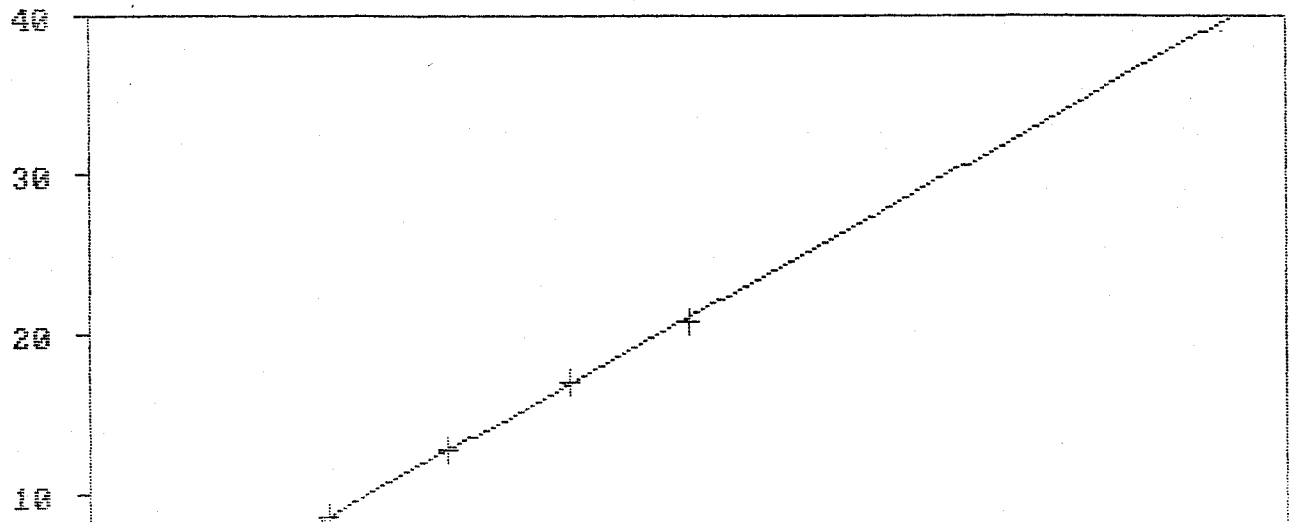
RUN NAME: 991026W



DATA TYPE: FIA
INTERCEPT = 0.25

CALIBRATION ORDER: 1
SLOPE = 8.30839

CORRELATION: .9998331

CHANNEL NAME: LDC
RUN DATE: 10-26-1999
SAMPLE TABLE NAME: 991026W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA		CONCENTRATION (PPb)	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		1.511	d
12	WS 378	1	1	15.0	TUG	1.781 89%	
3	ORG REF	1	1	17.5		2.081 104%	
4	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	1.014 109%	
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	
9	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	0.201	0.502		
49	59396	1	1	14.7	0.828	2.043		
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%
121	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	
45	D4	1	1	12.8		1.511	d	
146	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		0.999		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

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			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			

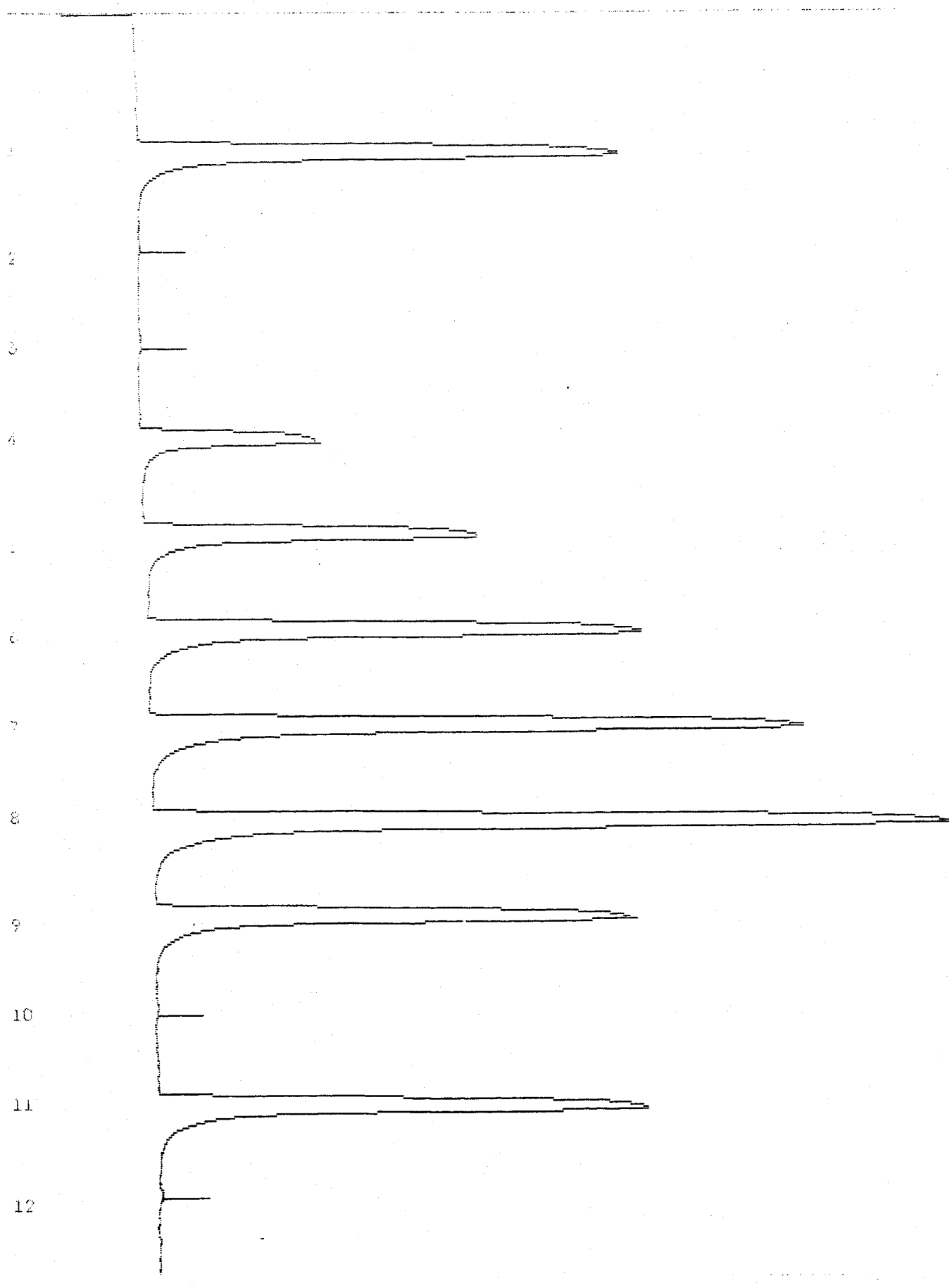
Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			60322			
42			CCV			
43			B			
44			D4			
45			BL1022	LTA3		
46			BL1022 S			
47			60323			
48			23 D			
49			23 S			
50			24			
51			25			
52			61832			
53			34			
54			35			
55			36			
56			CCV			
57			B			
58			D4			
59			BL1022	LTA4		
60			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						

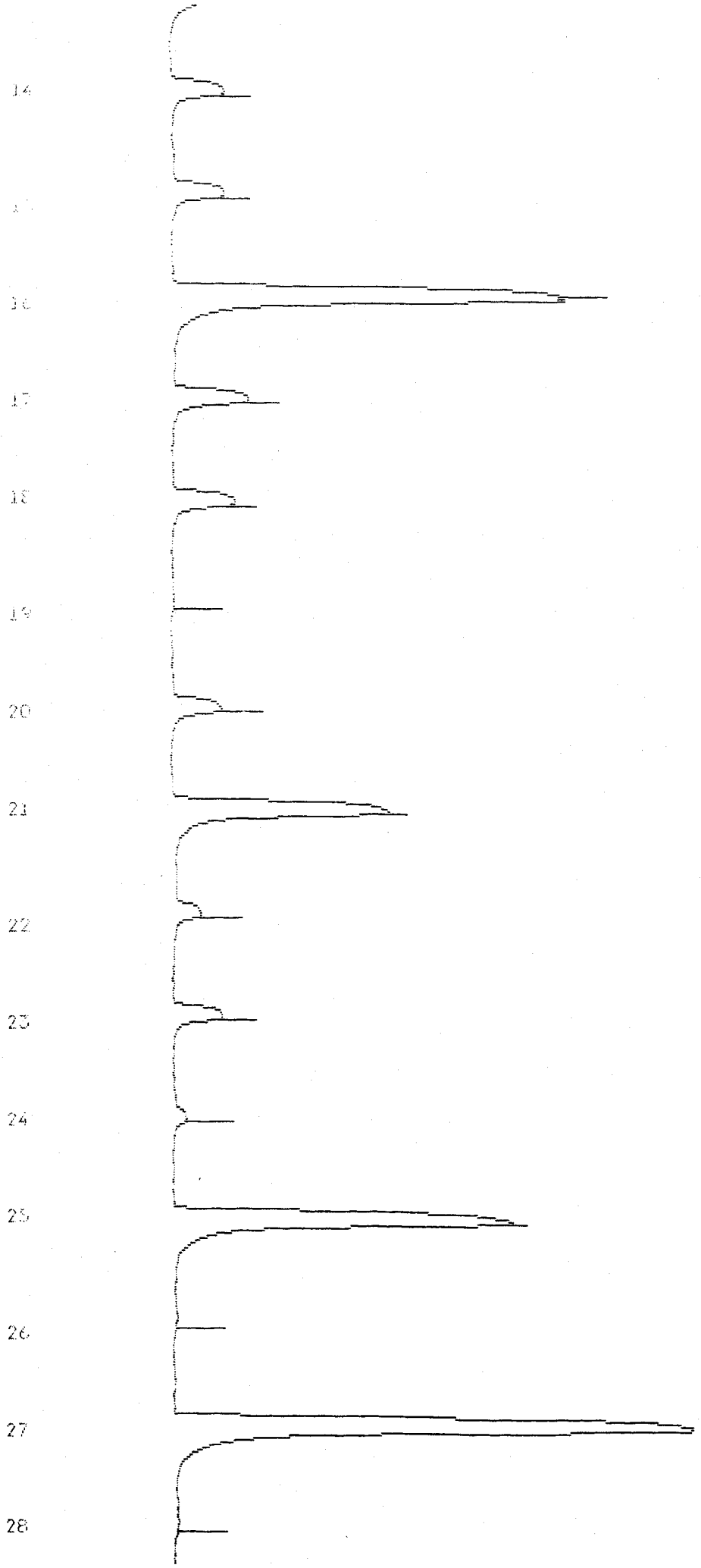
Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

RUN DATE: 10-22-1999 CHART DATE: 10-22-1999
CHART SPEED: 30
DATA FILE NAME: C:\DP8\DATA\99102?3.DAT

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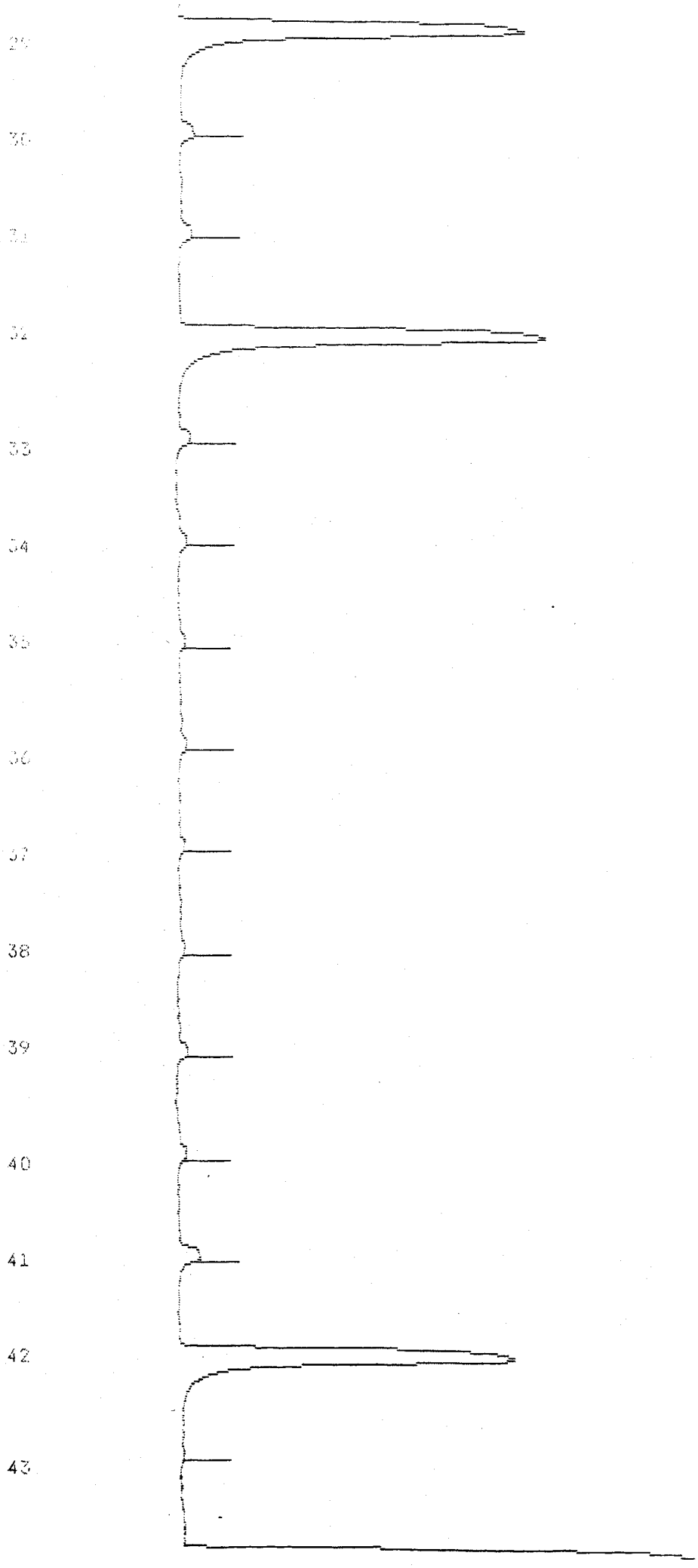
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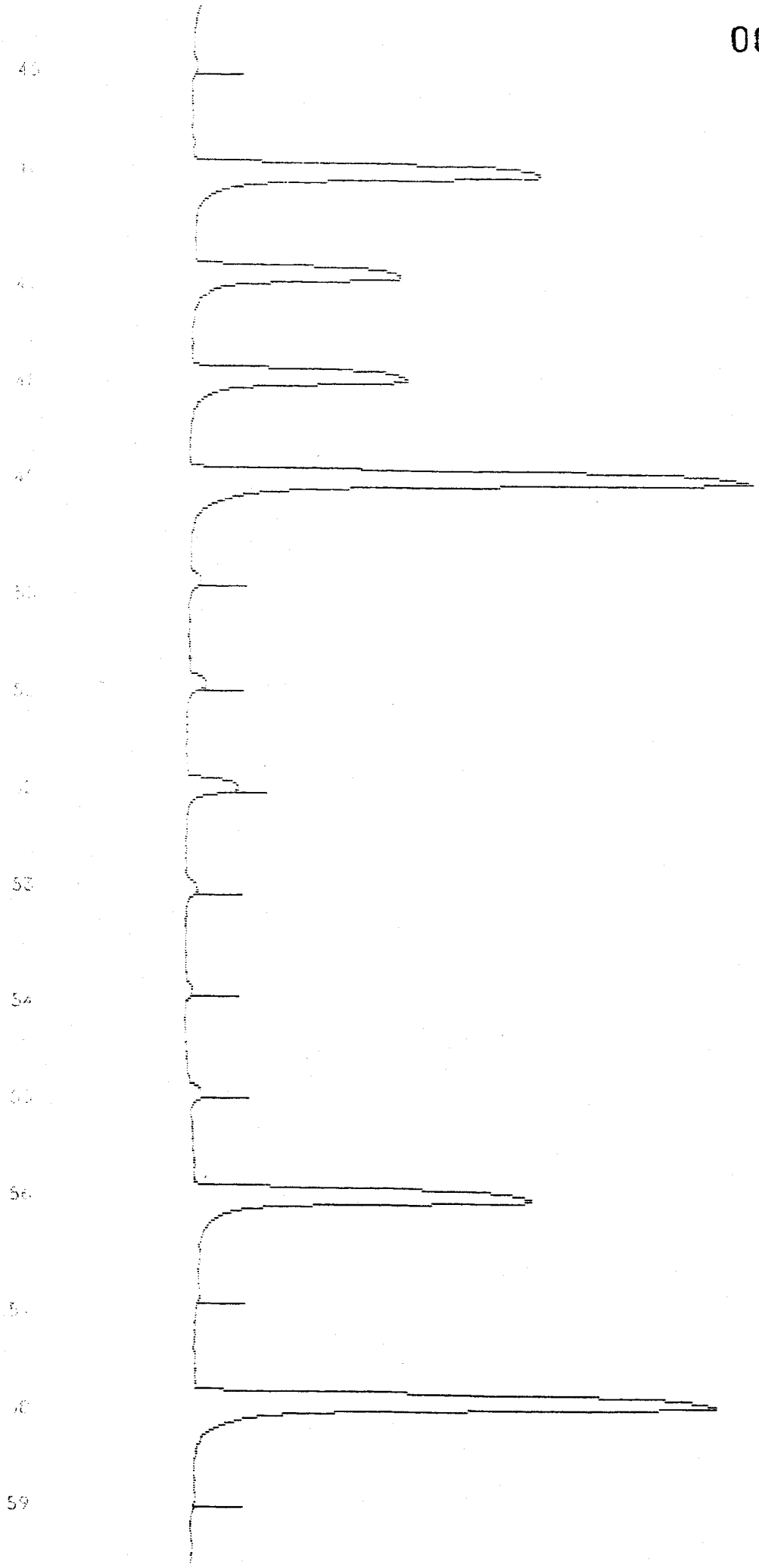
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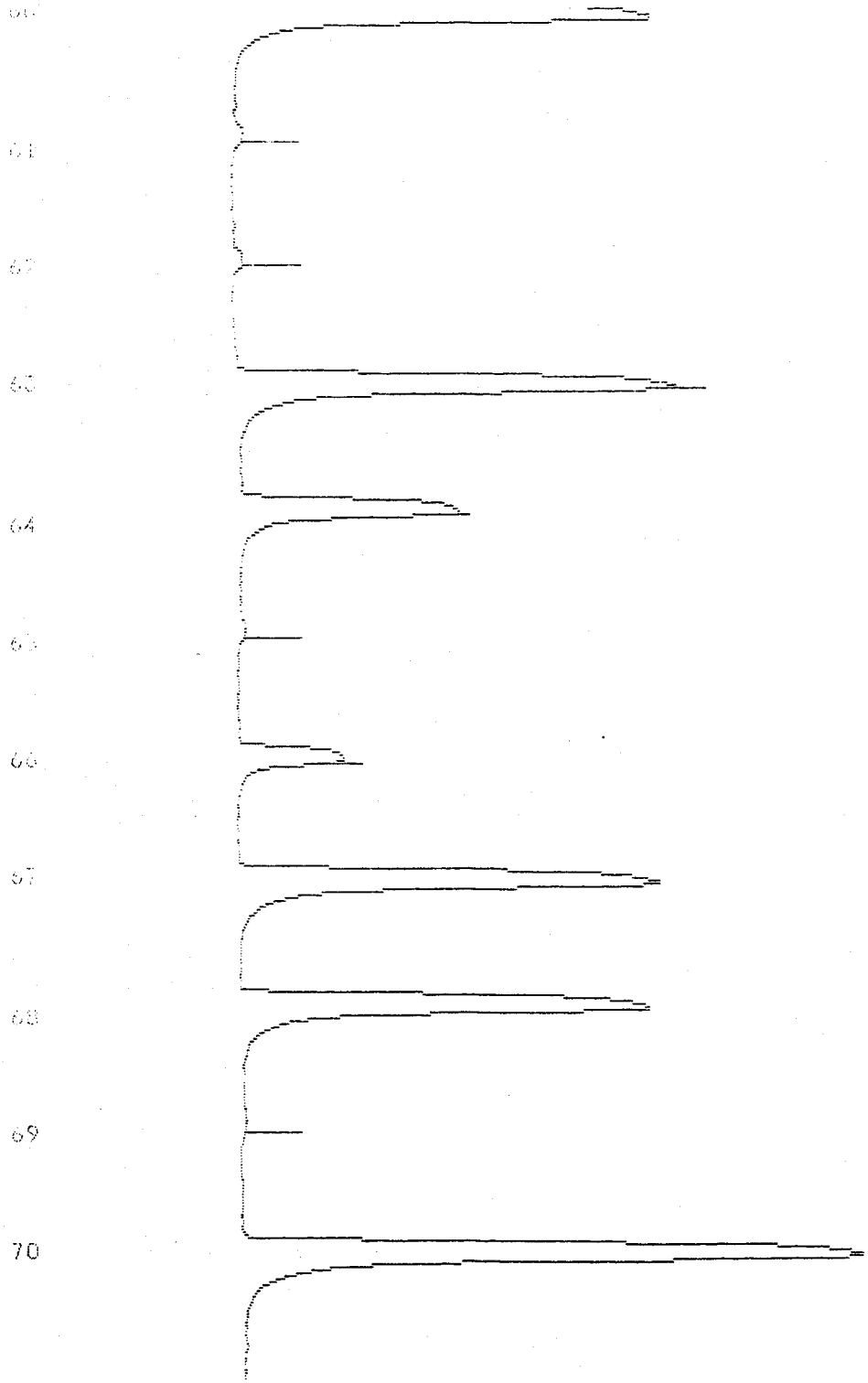
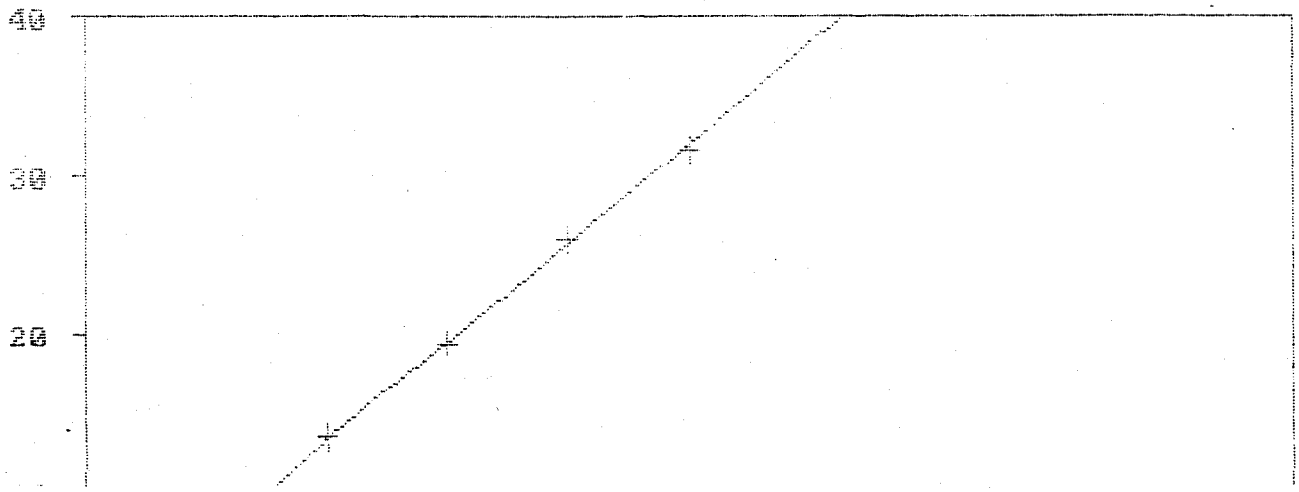
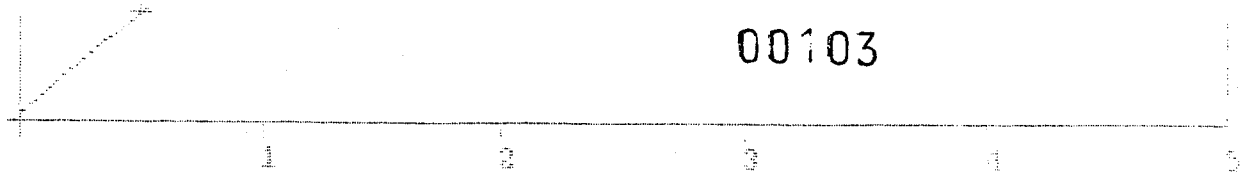


CHANNEL NAME: LDC
RUN NAME: 9910223





DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.27 SLOPE = 12.65[illegible]

CORRELATION: .9997256

CHANNEL NAME: LDC
RUN DATE: 10-22-1999
SAMPLE TABLE NAME: 9910223
METHOD NAME: HCSOIL

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION	Er
1	PRIMER	1	[illegible]	14.1	1.430	s
2	DUMMY	1	1	3.1	-0.023	I
3	S1: 0	1	1	0.0	-0.025	I
4	S2: .5	1	1	6.8	0.609	
5	S3: 1	1	1	13.9	1.017	
6	S4: 1.[illegible]	1	1	19.5	1.509	
7	S5: 2	1	1	25.9	2.020	
8	S6: 2.[illegible]	1	1	31.6	2.4[illegible]0	
9	[illegible]	1	1	18.9	1.4[illegible] 98%	
10		1	1	0.0	0.02[illegible]	b
11	[illegible]	1	1	19.5	1.5[illegible]	d
12	BL1022 LIA1 60263	1	1	0.0	-0.027	I
13	BL10223	1	1	13.[illegible]	1.011 101	
14	60279	1	1	1.3	0.1[illegible]	
15	60279D	1	1	1.3	0.112	
16	60279S	1	1	14.[illegible]	1.133 101%	
17	60264	1	1	2.6	0.17[illegible]	
18	60265	1	1	2.2	0.143	
19	60[illegible]32	1	1	0.0	0.02[illegible]	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	60[illegible]	1	1	1.7	0.102	
24	60312	1	1	0.3	-0.002	I
25	[illegible]	1	1	12.6	0.969 97%	
26	[illegible]	1	1	0.0	-0.029	b
27	D4	1	1	19.5	1.509	d
28	BL1022 LIA2	1	1	0.0	-0.027	I
29	BL10223	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	-0.00[illegible]	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
[illegible]	[illegible] 60321	1	1	0.0	-0.02[illegible]	I

00104

45	60323	1	1	7.8	0.585	
46	60323	1		8.1	0.610	
47	60323	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	60852		1	1.9	0.112	
54	60834	1	1	0.4	0.000	I
55	61835	1	1	0.1	-0.017	I
56	61836	1	1	0.3	-0.006	I
56	CCV		1	12.8	0.977	97%
57	B		1	0.0	0.025	L
58	B4	1	1	12.5	1.500	d
59	011022-1144 62367	1	1	0.0	-0.027	I
60	011022B	1	1	13.1	1.505	101%
61	52369	1	1	0.1	-0.014	S
62	623690	1	1	0.2	-0.014	I
63	623690	1	1	16.7	1.050	105%
64	62368	1	1	6.3	0.507	
65	62371	1	1	0.0	-0.025	I
66	62372	1	1	3.2	0.222	
67	CRA 240	1	1	13.2	1.013	
68	CCV	1	1	12.8	0.980	98%
69	B	1	1	0.0	-0.027	B
70	B4	1	1	12.5	1.509	d

INTERCEPT: 0.37 LINEAR COEF: 12.61515
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-60115

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	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-BP-OHM-3-RB-PF-Hg	10/6/99	Petri							X	Reagent Blank	✓	X									60116
PG&E-BP-OHM-3-RB-HNO_3-Hg	↓	250ml	CG				X			↓	✓	X									
PG&E-BP-OHM-3-RB-HNO_3/H_2O_2-Hg		250ml	↓				X				✓	X									
PG&E-BP-OHM-3-RB-$KMnO_4$-Hg		250ml					X				✓	X									
PG&E-BP-OHM-3-RB-KCl-Hg		250ml		X							✓	X									
PG&E-BP-OHM-3-0-4-PF-Hg	10/6/99	Petri							X	Boiler #3 Run 4	✓	X									60117
PG&E-BP-OHM-3-0-4-PR-Hg		250ml	CG				X			Outlet	✓	X									
PG&E-BP-OHM-3-0-4-KCl-Hg		950ml	AG				X				✓	X									
PG&E-BP-OHM-3-0-4-HNO_3/H_2O_2-Hg		250ml	CG				X				✓	X									
PG&E-BP-OHM-3-0-4-$KMnO_4$-Hg		950ml	AG				X				✓	X									

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 (*):

00106

№ 02569

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): 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	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-IE-4-PF-Hg	10/6	Petri							X	Boiler #3 Run 4	✓	X									60118
PG&E-BP-OHM-3-IE-4-PR-Hg	↓	250ml	CG				X			Inlet East	✓	X									
PG&E-BP-OHM-3-IE-4-KCl-Hg	↓	950ml	AG				X			↓	✓	X									
PG&E-BP-OHM-3-IE-4-HNO3/H2O2-Hg	↓	250ml	CG				X			↓	✓	X									
PG&E-BP-OHM-3-IE-4-KMnO4-Hg	↓	950ml	AG				X			↓	✓	X									
PG&E-BP-OHM-3-IE-4-A-Hg	↓	250ml	CG			X				↓	✓	X									60264
PG&E-BP-OHM-3-IW-4-PF-Hg	10/6	Petri							X	Boiler #3 Run 4	✓	X									60119
PG&E-BP-OHM-3-IW-4-PR-Hg	↓	250ml	CG				X			Inlet West	✓	X									
PG&E-BP-OHM-3-IW-4-KCl-Hg	↓	950ml	AG				X			↓	✓	X									
PG&E-BP-OHM-3-IW-4-HNO3/H2O2-Hg	↓	250ml	CG				X			↓	✓	X									
PG&E-BP-OHM-3-IW-4-KMnO4-Hg	↓	950ml	AG				X			↓	✓	X									
PG&E-BP-OHM-3-IW-4-A-Hg	↓	250ml	CG			X				↓	✓	X									60265

Relinquished by:	Date/Time: 10/12/99 1700	Relinquished by:	Date/Time:
Received by: PASL	Date/Time: 991013 12:45	Received by:	Date/Time:

REMARKS (*):

00107

№ 02562

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

TRC
TRC Environmental Corporation

Page ___ of ___

US SAMPLE LOG IN SHEET

TRC

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Garno

Received By (Signature):

Client Project ID:

REMARKS:		Condition of Samples/Sample Shipment:
Custody Seal(s)	Present ___ Absent ✓	Samples recieved.
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	
Airbill No.	4428 7897 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:

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 for Hg
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 Hg
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: 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

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.2.2

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 1906

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-BP-OHM-3-2-C

Kind of sample reported to us COAL

Sample taken at BRAYTON POINT GENERATING STA.

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis Report No. 49-122699

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	5.97	xxxxx		
% Ash	9.93	10.56		
% Volatile	32.52	34.58		
% Fixed Carbon	51.58	54.86		
	100.00	100.00		
Btu/lb	12714	13521	MAF	15117
% Sulfur	0.77	0.82		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

MEMBER ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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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-BP-OHM-3-2-C

Kind of sample reported to us COAL

Sample taken at BRAYTON POINT GENERATING STA.

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122699

PARAMETER	RESULTS
Mercury, Hg	0.10 ppm
Chlorine, Cl	0.09 %

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.

Jerry Wheeler

Middlesboro Laboratory

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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-BP-OHM-3-3-C

Kind of sample reported to us COAL

Sample taken at BRAYTON POINT GENERATING STA.

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis Report No. 49-122700

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	6.48	xxxxx		
% Ash	9.35	10.00		
% Volatile	31.22	33.38		
% Fixed Carbon	52.95	56.62		
	100.00	100.00		
Btu/lb	12703	13583	MAF	15092
% Sulfur	0.71	0.76		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

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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-BP-OHM-3-3-C

Kind of sample reported to us COAL

Sample taken at BRAYTON POINT GENERATING STA.

Sample taken by TRC ENVIRONMENTAL CORPORATION

Date sampled ------

Date received September 22, 1999

Analysis report no. 49-122700

PARAMETER	RESULTS
Mercury, Hg	0.07 ppm
Chlorine, Cl	0.11 %

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.

Jerry Wheeler

Middlesboro Laboratory

MEMBER ACIL

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ADDRESS ALL CORRESPONDENCE TO:
RT. 2, BOX 162A
MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

October 20, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E - BRAYTON POINT GENERATING STATION
SAMPLING PROGRAM UNIT 3
COAL SAMPLE RUN 4
PG&E-BP-OHM-3-4-C

Kind of sample reported to us COAL

Sample taken at PG&E

Sample taken by PG&E

Date sampled October 6, 1999

Date received October 15, 1999

Analysis Report No. 49-124435

SHORT PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	6.04	xxxxx		
% Ash	7.65	8.14		
Btu/lb	13037	13875	MAF	15105
% Sulfur	0.72	0.77		

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

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ADDRESS ALL CORRESPONDENCE
RT. 2, BOX 162A
MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

October 20, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E - BRAYTON POINT GENERATING STATION
SAMPLING PROGRAM UNIT 3
COAL SAMPLE RUN 4
PG&E-BP-OHM-3-4-C

Kind of sample reported to us COAL

Sample taken at PG&E

Sample taken by PG&E

Date sampled October 6, 1999

Date received October 15, 1999

Analysis report no. 49-124435

PARAMETER	RESULTS
Chlorine, Cl	0.09 %

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.

Results: Results are reported in parts per million (ppm).

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jerry Wheeler

Middlesboro Laboratory

MEMB
ACIL

COMMERCIAL TESTING & ENGINEERING CO.

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MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

October 20, 1999

TRC ENVIRONMENTAL CORPORATION
5 WATERSIDE CROSSING
WINDSOR, CT 06095
ACCOUNTS PAYABLE

Sample identification by
TRC ENVIRONMENTAL CORPORATION

SAMPLE BROUGHT IN
PG&E - BRAYTON POINT GENERATING STATION
SAMPLING PROGRAM UNIT 3
COAL SAMPLE RUN 4
PG&E-BP-OHM-3-4-C

Kind of sample reported to us COAL

Sample taken at PG&E

Sample taken by PG&E

Date sampled October 6, 1999

Date received October 15, 1999

Analysis report no. 49-124435

PARAMETER	RESULTS
Mercury, Hg	0.07 ppm

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.

Jerry Wheeler

Middlesboro Laboratory

MEMBER ACIL

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!

MESSAGE:

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306
SINCE 1906

PLEASE ADDRESS ALL CORRESPONDENCE TO:
RT. 2, BOX 162A, MIDDLESBORO, KY 40965
TEL: (606) 248-4205
FAX: (606) 248-0044

NIST Standard Results for Mercury
Nist 1630A (0.106) ± .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
9-28-99	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

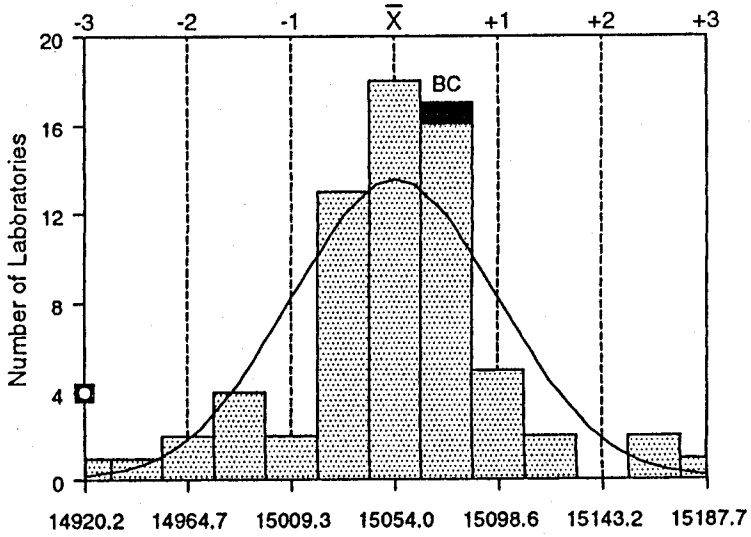
STATISTICS

Lab Value	
Mean	SD
15078	16.3

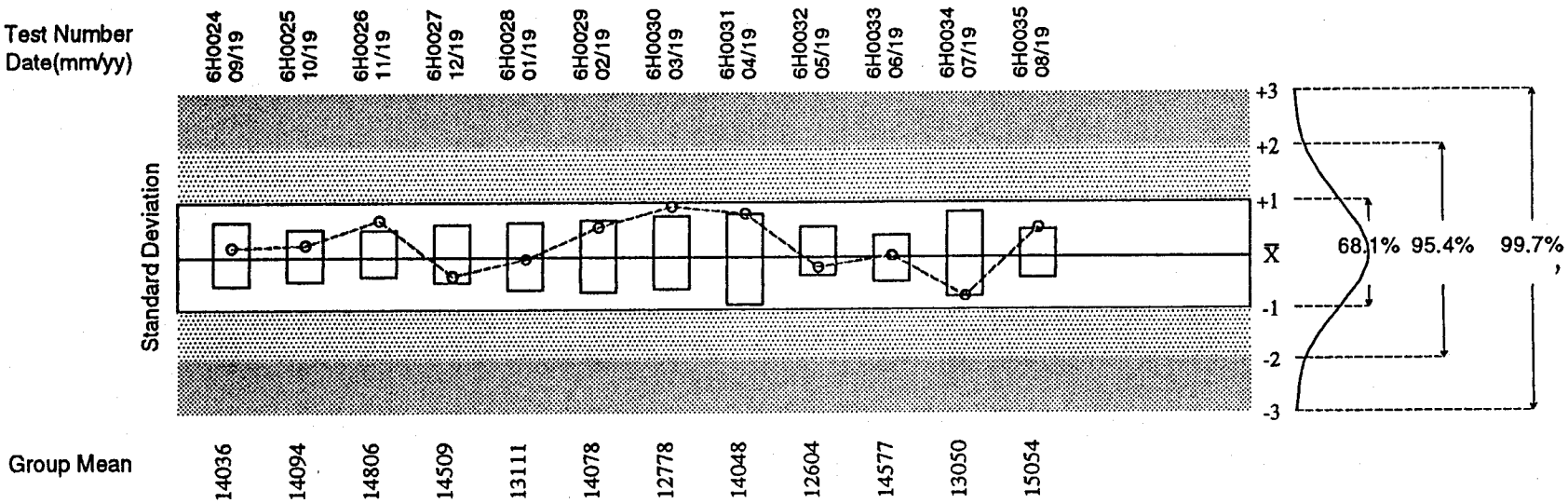
Group Value		
Mean	SD	n
15054	44.6	68

Accuracy	Precision Estimates: Laboratory	Precision Estimates: Ref. Standard	Precision Factors	Precision Factors: 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 Commerci- Testing & Engineering Co.

F-355

PARAMETER REPORT: Calorific Value, As Rec'd 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

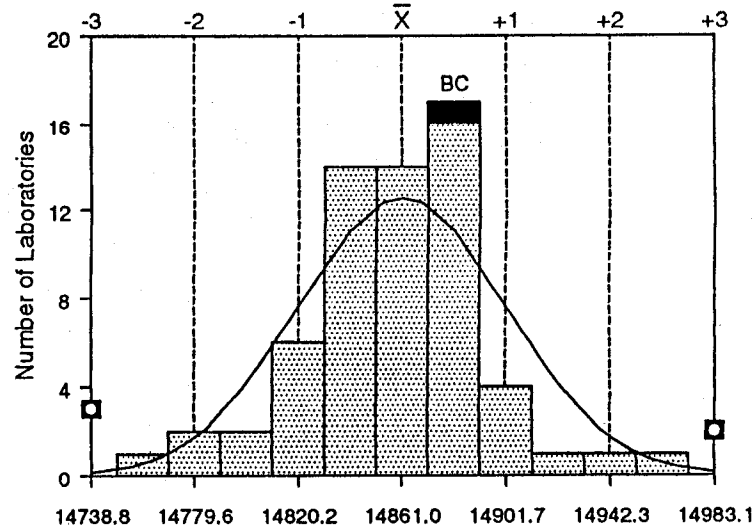
Lab Value	
Mean	SD
14888	21.9

Group Value		
Mean	SD	n
14861	40.7	64

Accuracy	Precision Estimates: Laboratory	Precision Estimates: 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



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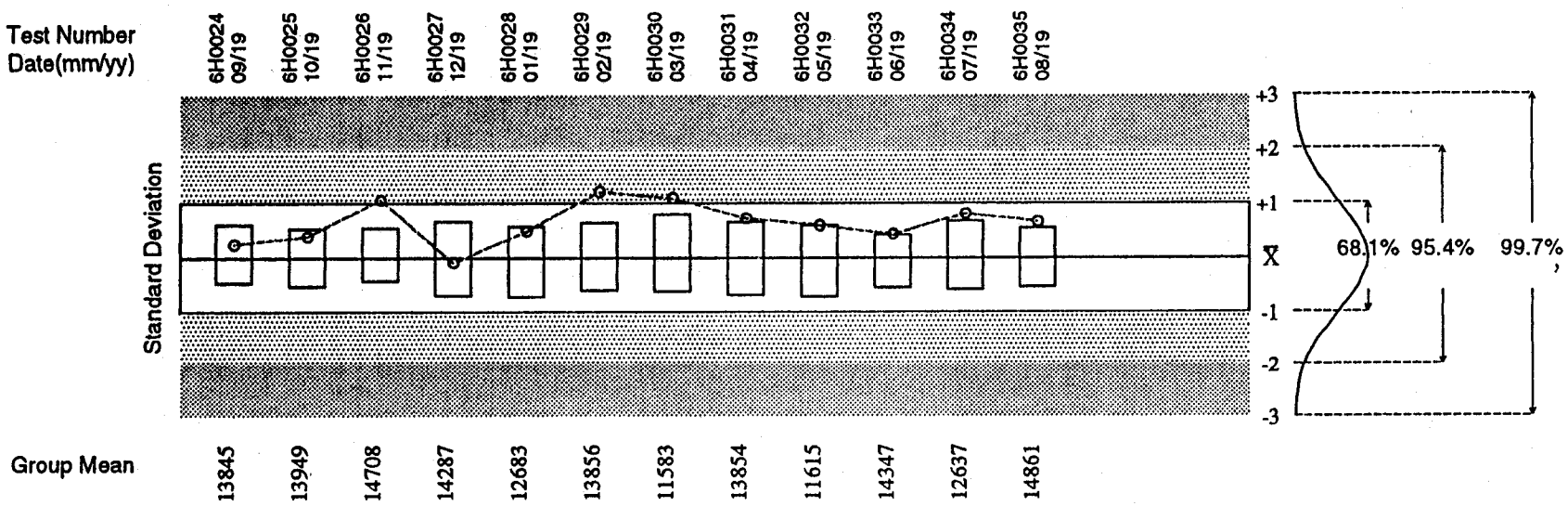

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F-355

PARAMETER REPORT: Sulfur % by wt

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

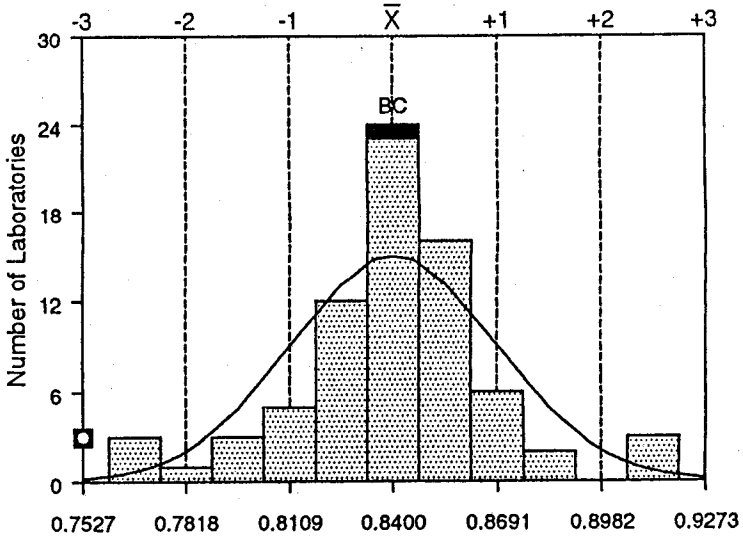
Lab Value	
Mean	SD
0.835	0.0071

Group Value		
Mean	SD	n
0.840	0.0291	74

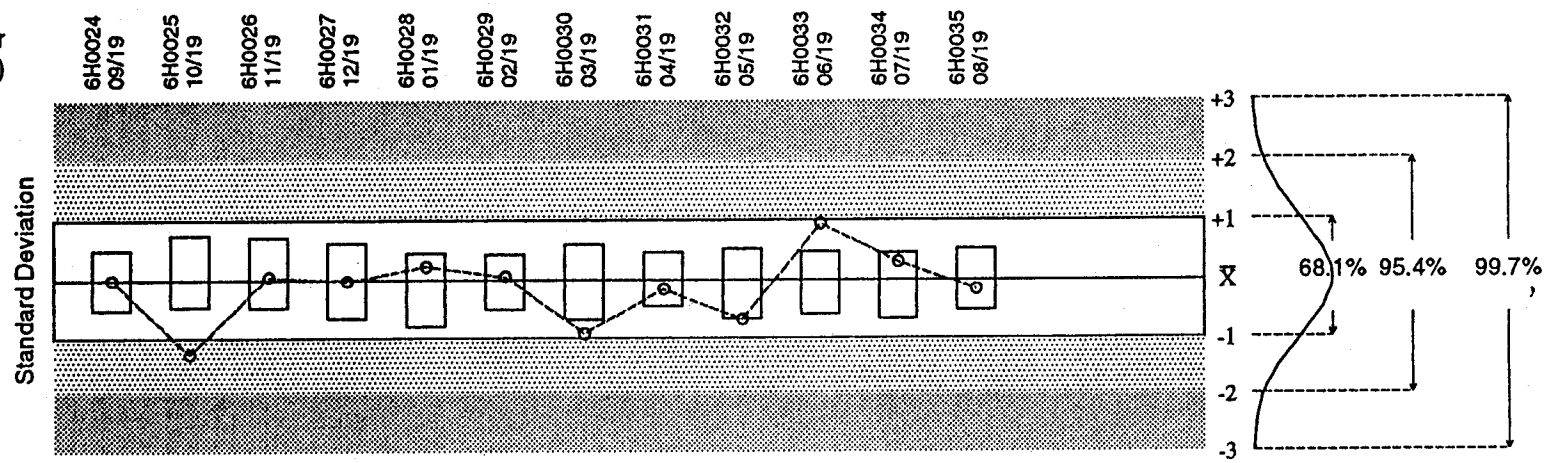
Accuracy	Laboratory	Ref. Standard
Mean Difference	-0.00500	within +/- 0.0582
Standard Score	-0.17	within +/- 2.0
Relative Difference(%)	-0.595	within +/- 6.9
Precision Ratio	0.759	< 2.8

Precision Factors	Group
Repeatability (r)	0.02616
Reproducibility (R)	0.08369
Confidence Interval	0.0135

FREQUENCY DISTRIBUTION



HISTORICAL PERFORMANCE



Laboratory Quality Services International
A Division of Commerci sting & Engineering Co.

F-355

PARAMETER REPORT: Ash % by wt

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

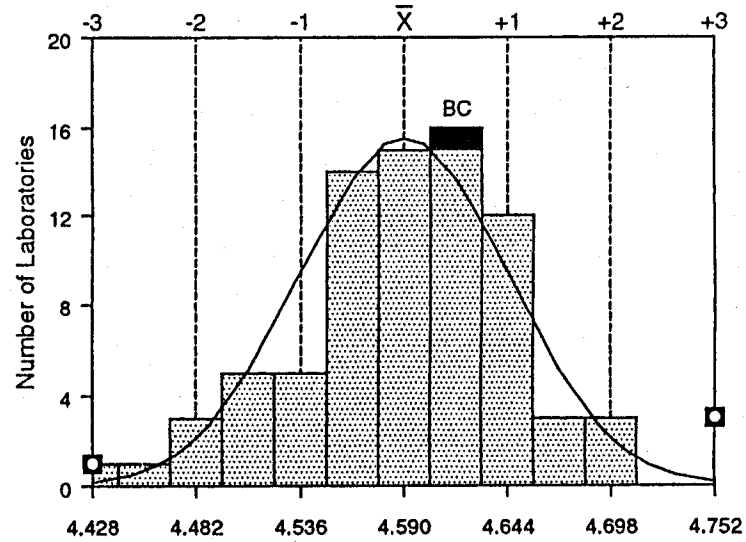
Lab Value	
Mean	SD
4.63	0.035

Group Value		
Mean	SD	n
4.59	0.054	77

Accuracy	Laboratory	Ref. Standard
Mean Difference	0.0400	within +/- 0.108
Standard Score	0.65	within +/- 2.0
Relative Difference(%)	0.871	within +/- 2.3
Precision Ratio	1.0	< 2.8

Precision Factors	Group
Repeatability (r)	0.08971
Reproducibility (R)	0.16359
Confidence Interval	0.0244

FREQUENCY DISTRIBUTION



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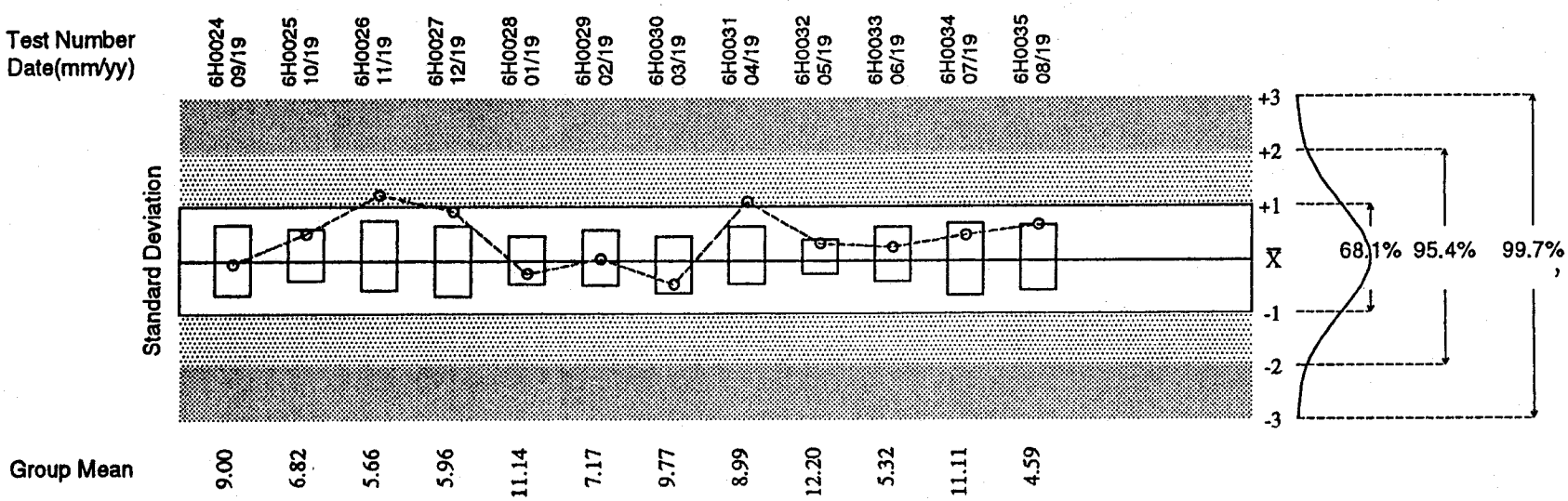

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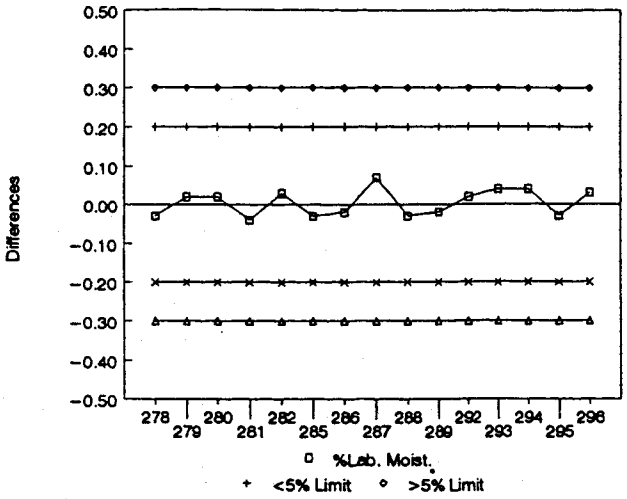
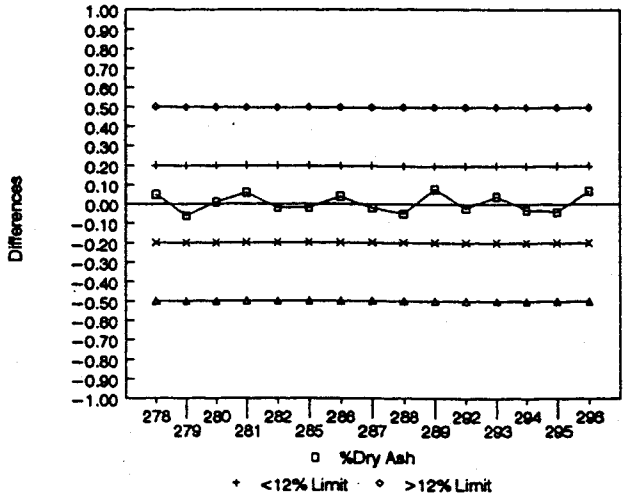
F-355

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

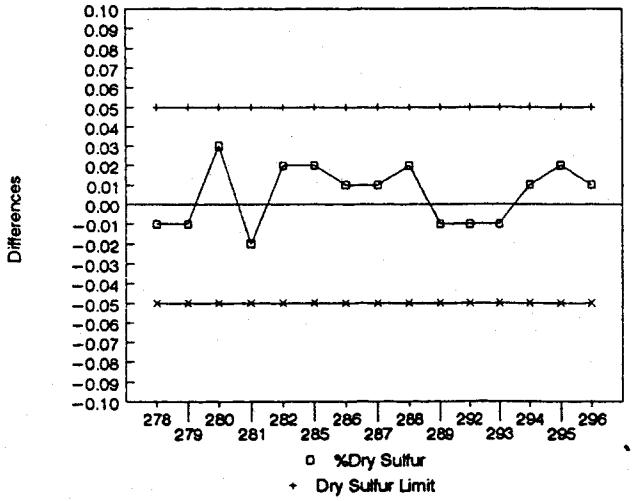
Daily 60 Mesh – %Lab. Moisture
Actual Difference



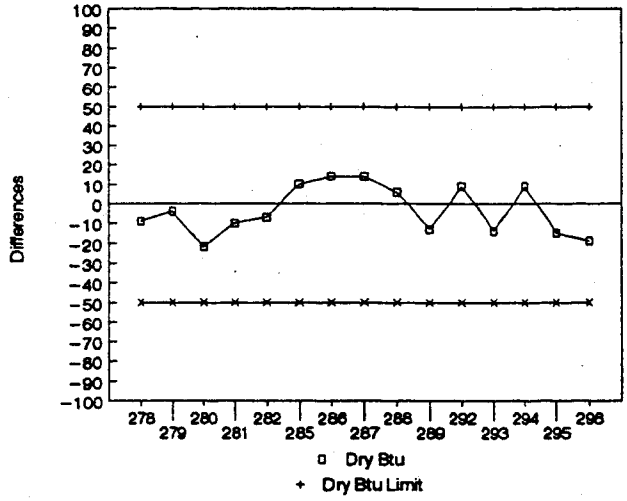
Daily 60 Mesh – %Dry Ash
Actual Difference



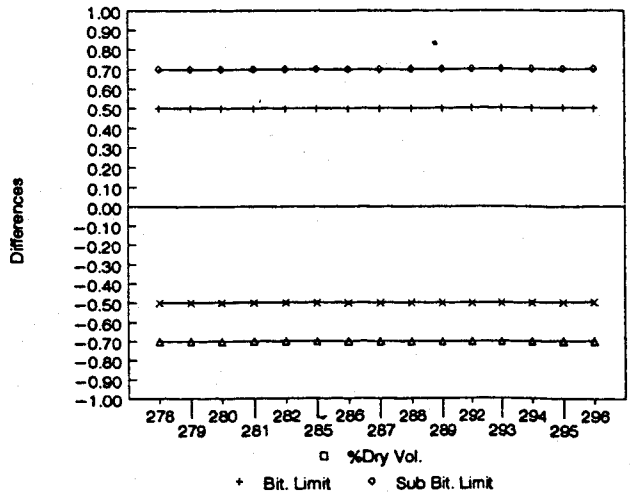
Daily 60 Mesh – %Dry Sulfur
Actual Difference



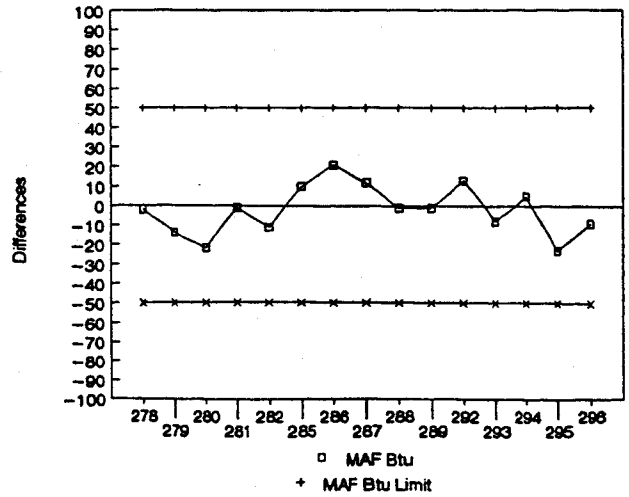
Daily 60 Mesh – Dry Btu/lb
Actual Difference



Daily 60 Mesh – %Dry Volatile
Actual Difference



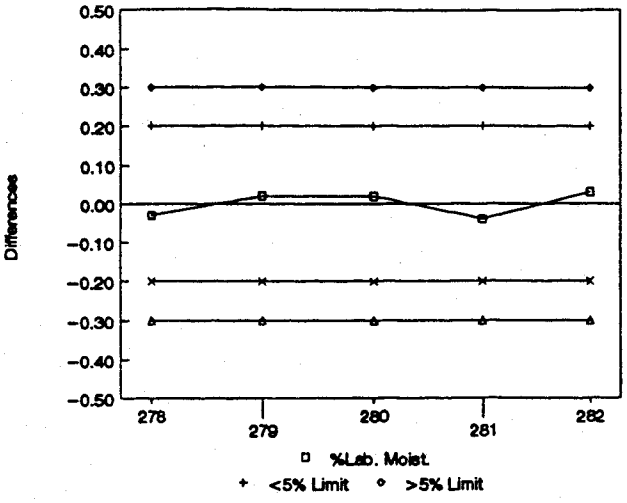
Daily 60 Mesh – MAF Btu/lb
Actual Difference



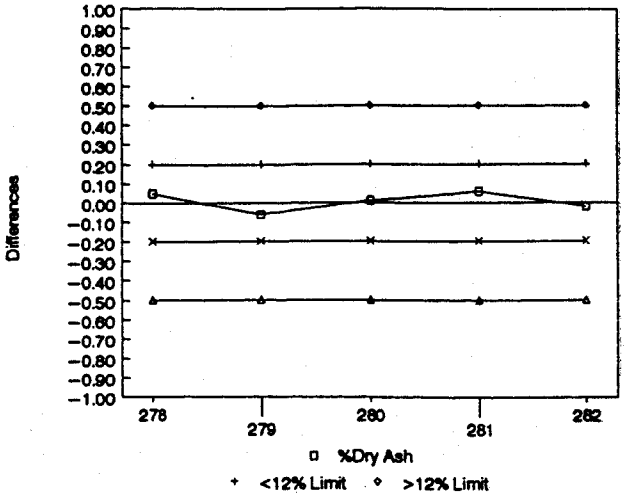
From: October 5, 1998 To: October 23, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

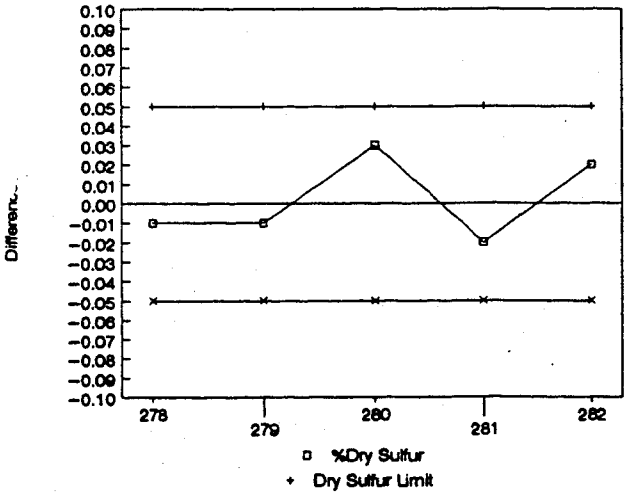
Daily 60 Mesh – %Lab. Moisture
Actual Difference



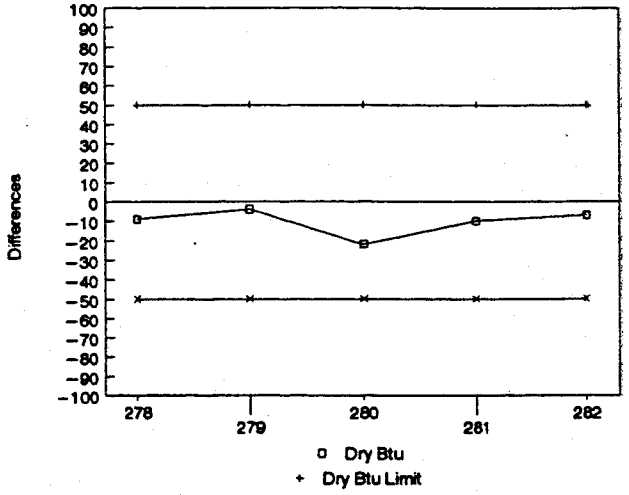
Daily 60 Mesh – %Dry Ash
Actual Difference



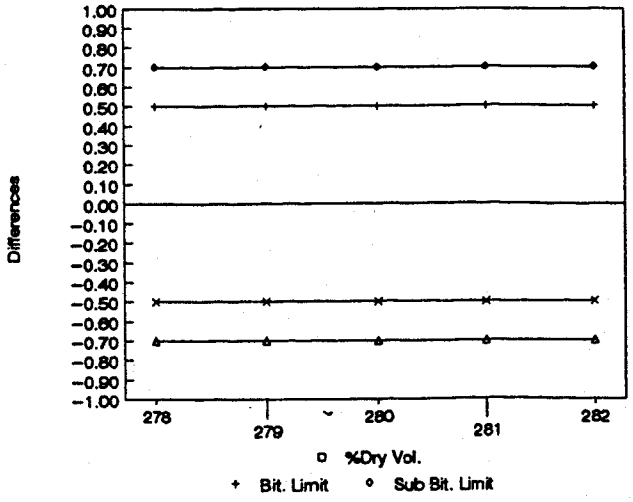
Daily 60 Mesh – %Dry Sulfur
Actual Difference



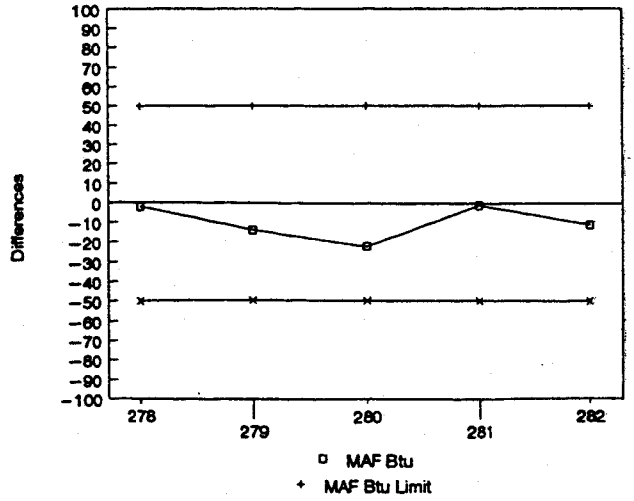
Daily 60 Mesh – Dry Btu/lb
Actual Difference



Daily 60 Mesh – %Dry Volatile
Actual Difference



Daily 60 Mesh – MAF Btu/lb
Actual Difference

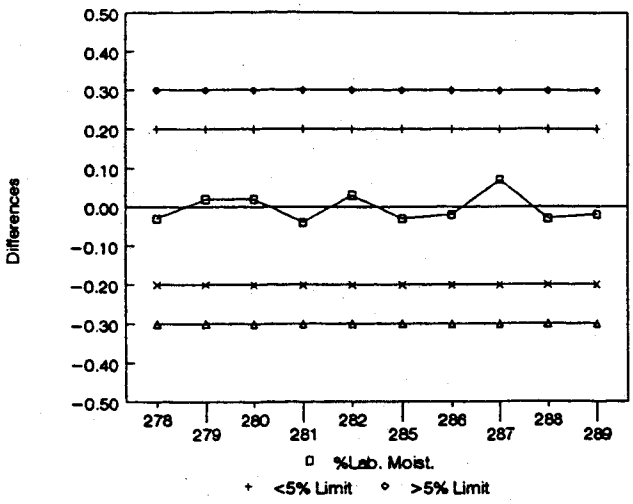


From: October 5, 1998 To: October 9, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

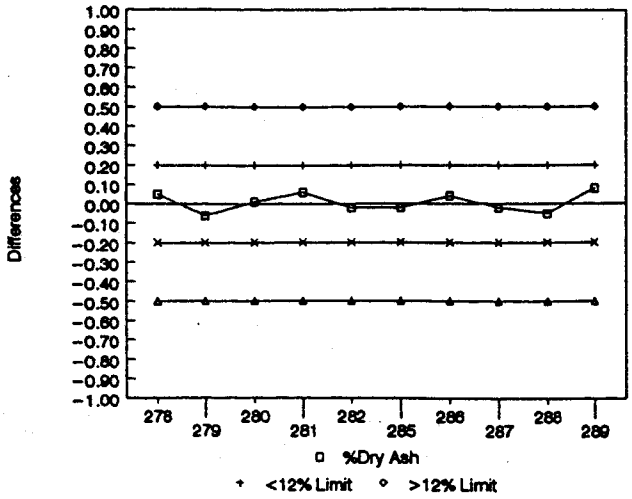
Daily 60 Mesh – %Lab. Moisture

Actual Difference



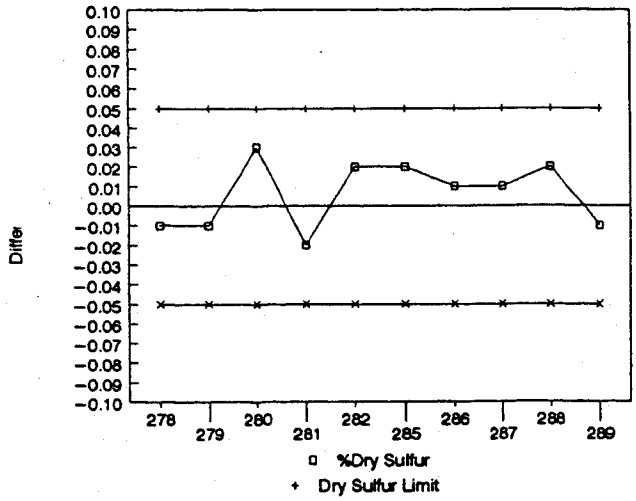
Daily 60 Mesh – %Dry Ash

Actual Difference



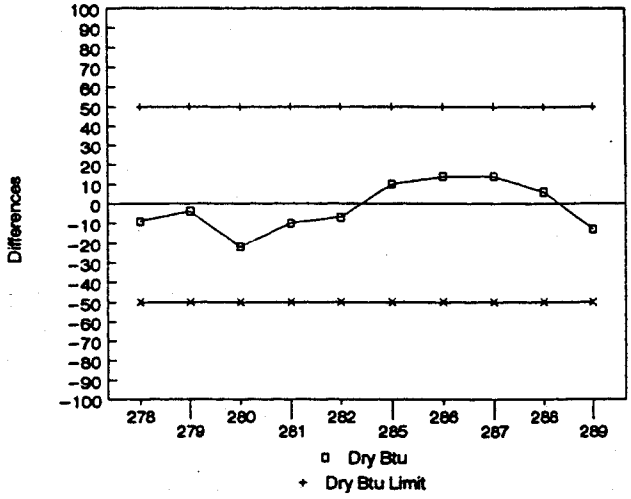
Daily 60 Mesh – %Dry Sulfur

Actual Difference



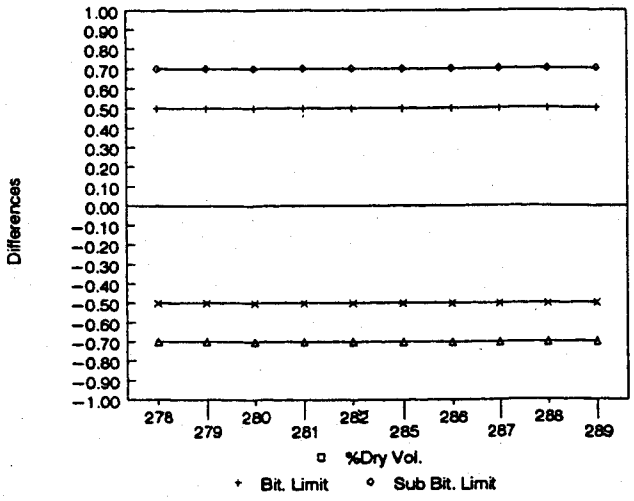
Daily 60 Mesh – Dry Btu/lb

Actual Difference



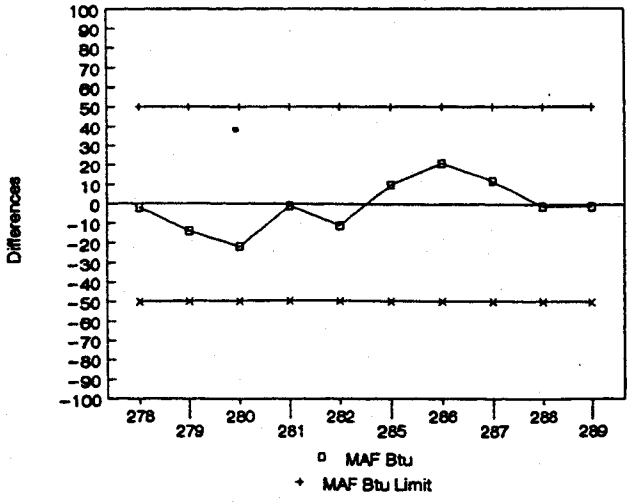
Daily 60 Mesh – %Dry Volatile

Actual Difference



Daily 60 Mesh – MAF Btu/lb

Actual Difference

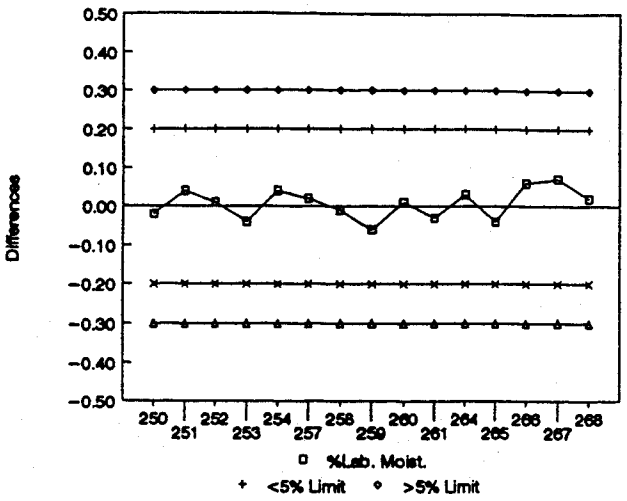


From: October 5, 1998 To: October 16, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

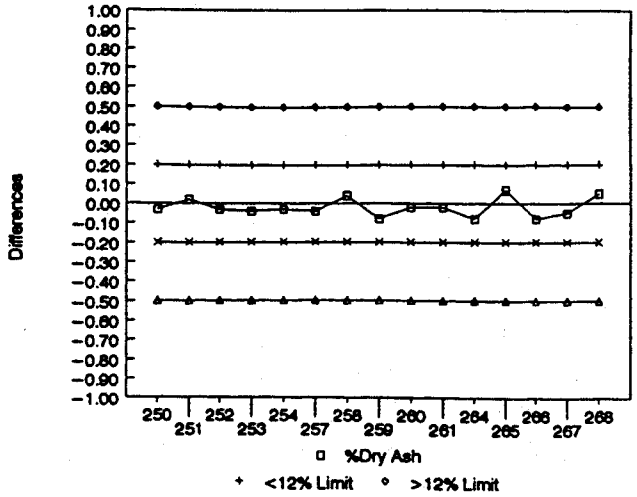
Daily 60 Mesh – %Lab. Moisture

Actual Difference



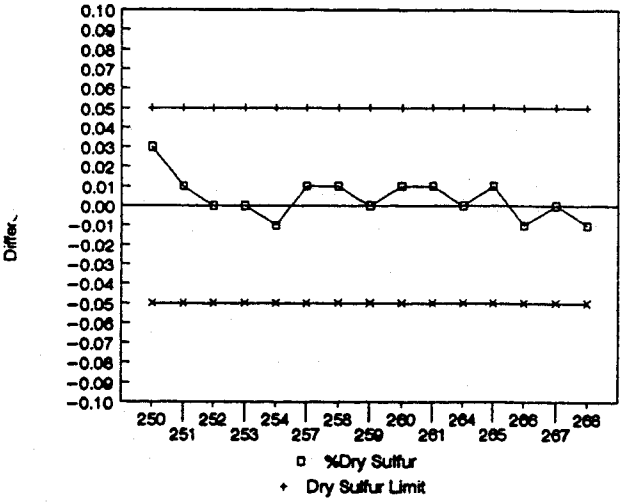
Daily 60 Mesh – %Dry Ash

Actual Difference



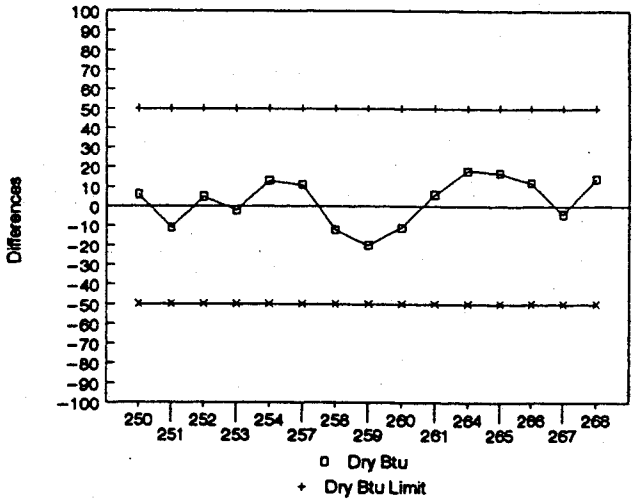
Daily 60 Mesh – %Dry Sulfur

Actual Difference



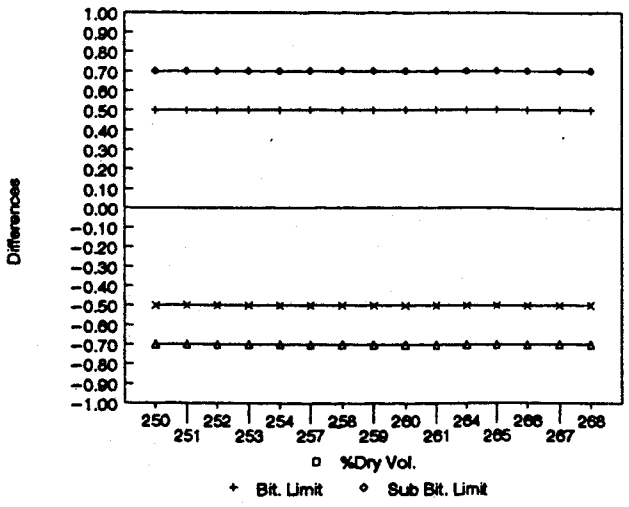
Daily 60 Mesh – Dry Btu/lb

Actual Difference



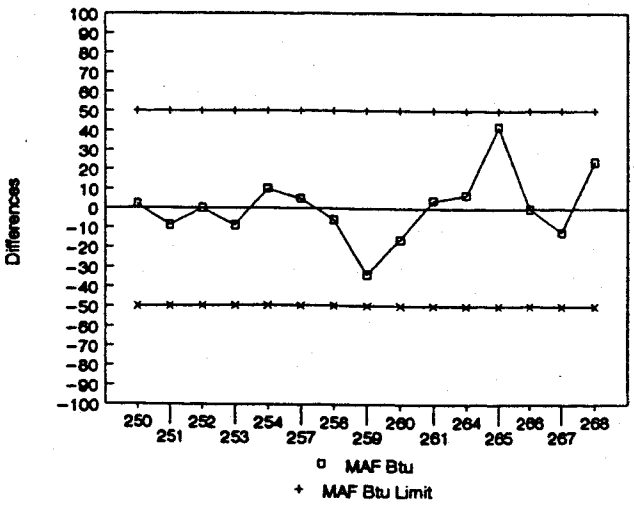
Daily 60 Mesh – %Dry Volatile

Actual Difference



Daily 60 Mesh – MAF Btu/lb

Actual Difference

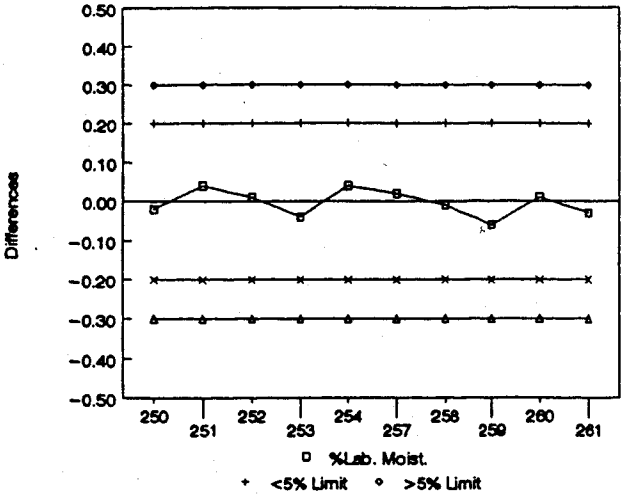


From: September 7, 1998 To: September 25, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

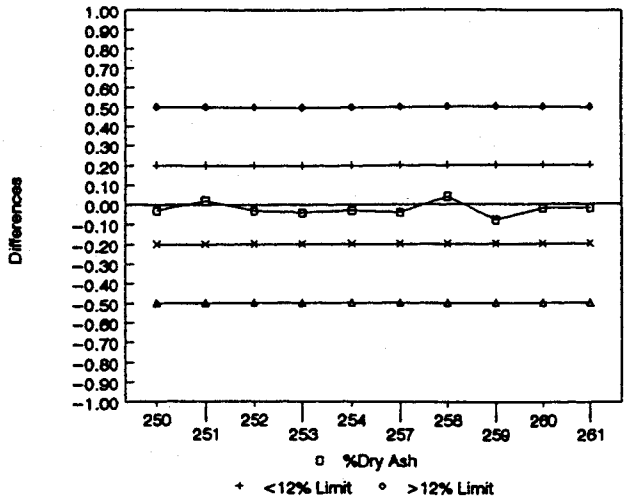
Daily 60 Mesh – %Lab. Moisture

Actual Difference



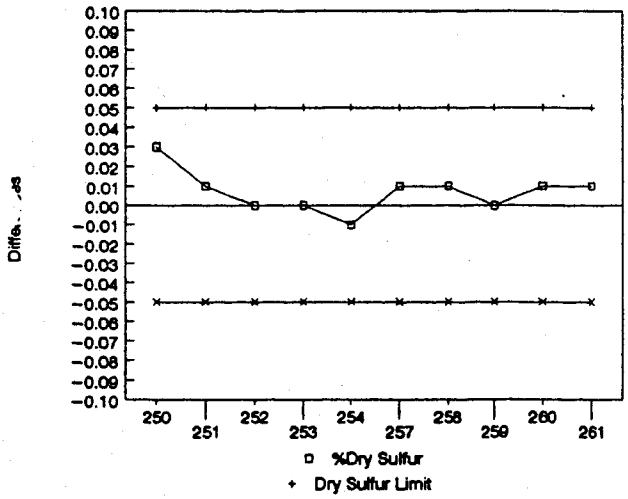
Daily 60 Mesh – %Dry Ash

Actual Difference



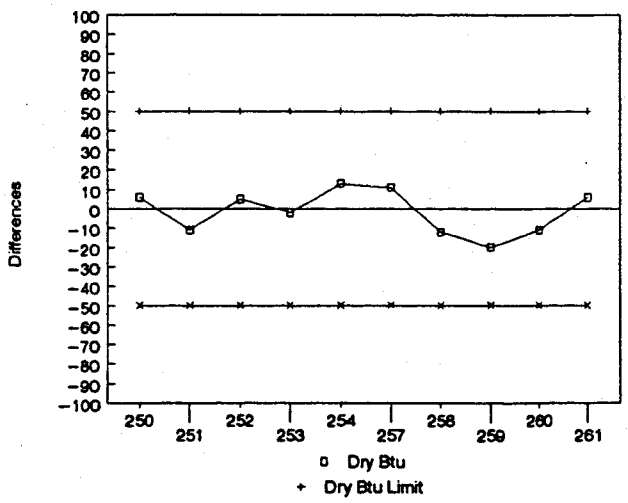
Daily 60 Mesh – %Dry Sulfur

Actual Difference



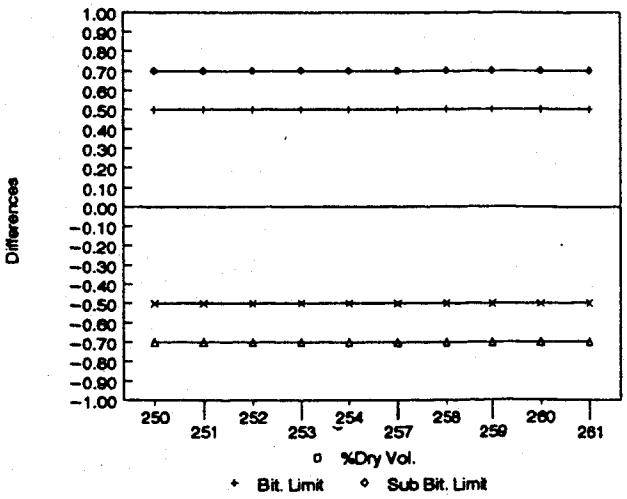
Daily 60 Mesh – Dry Btu/lb

Actual Difference



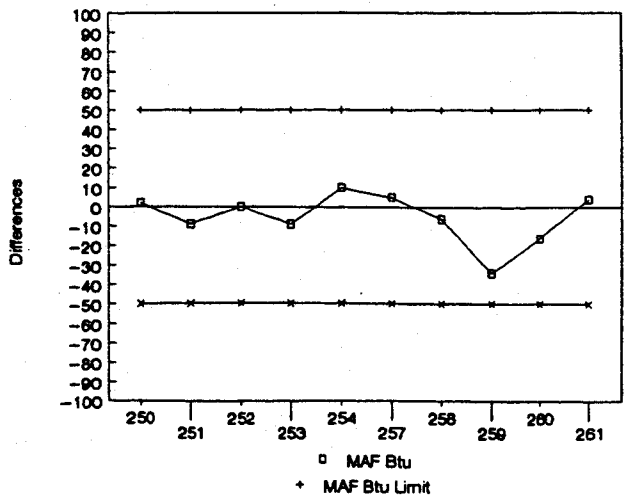
Daily 60 Mesh – %Dry Volatile

Actual Difference



Daily 60 Mesh – MAF Btu/lb

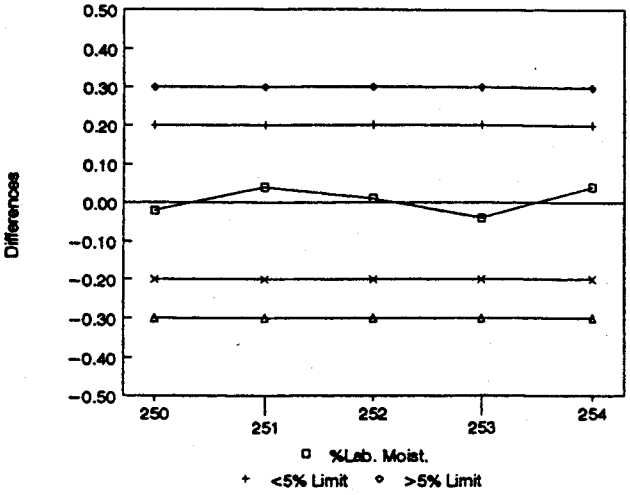
Actual Difference



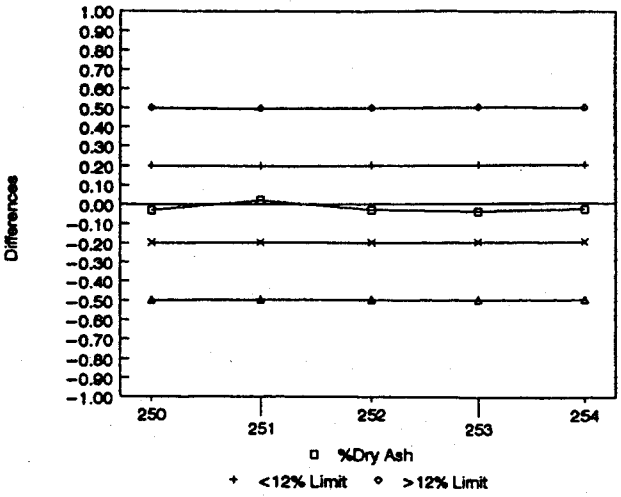
From: September 7, 1998 To: September 18, 1998

Daily 60 Mesh Replicate Analysis Differences
04900 – Middlesboro, KY

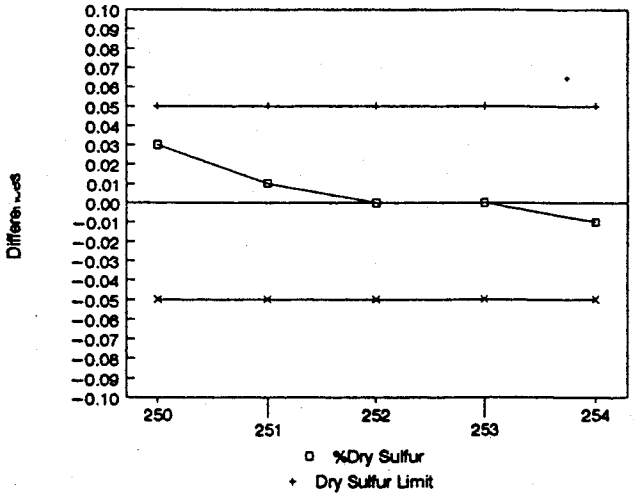
Daily 60 Mesh – %Lab. Moisture
Actual Difference



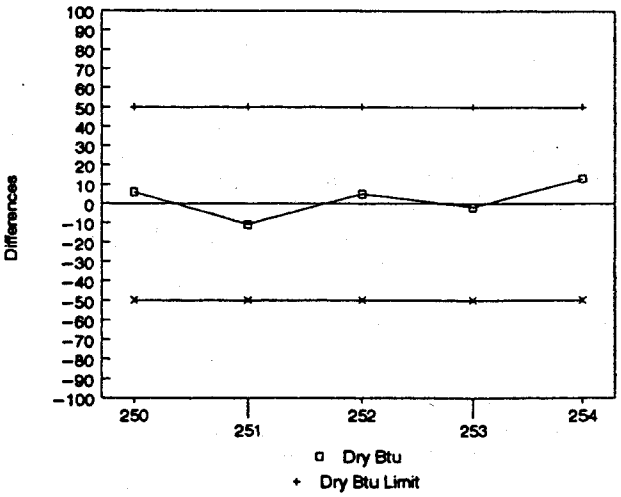
Daily 60 Mesh – %Dry Ash
Actual Difference



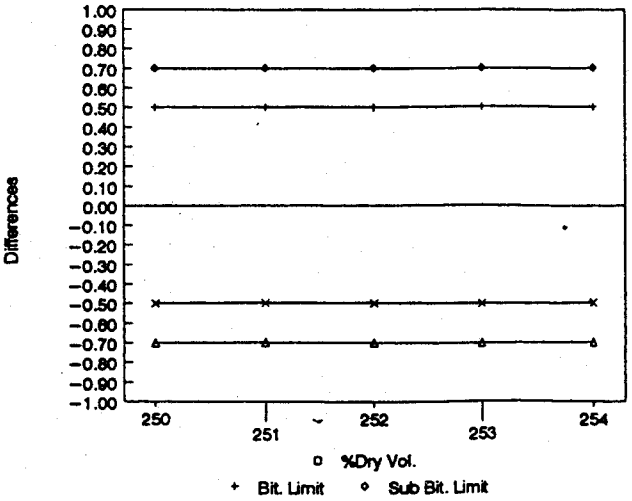
Daily 60 Mesh – %Dry Sulfur
Actual Difference



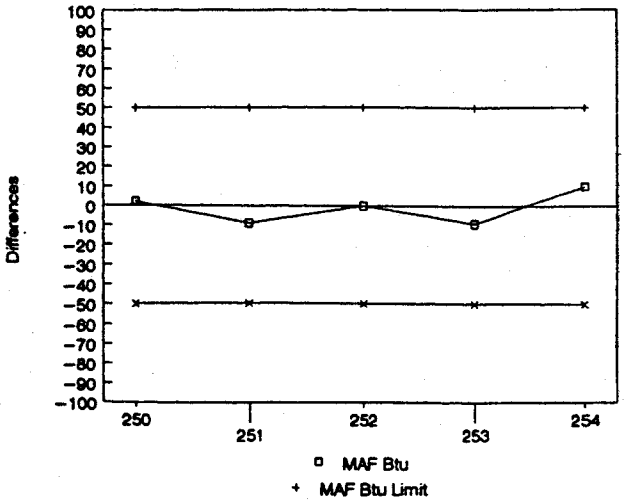
Daily 60 Mesh – Dry Btu/lb
Actual Difference



Daily 60 Mesh – %Dry Volatile
Actual Difference



Daily 60 Mesh – MAF Btu/lb
Actual Difference



From: September 7, 1998 To: September 11, 1998

APPENDIX F

LIST OF PARTICIPANTS

Appendix F.1

Unit 1

Runs 1, 2, and 3

Michael Martin - Field Team Coordinator
Edward MacKinnon - Sample Setup and Recovery
Scott Tibbetts - ESP Inlet Sampling
Kirk Laakso - ESP Exhaust Sampling
Scott James - ESP Exhaust Sampling
David Gill - ESP Inlet Sampling
Robert Nixon - ESP Inlet Sampling
Robert Rebello - ESP Inlet Sampling
Michael O'Brien - Process Sampling
Howard Schiff - Process Sampling/QA

Appendix F.2

Unit 3

Runs 1, 2, and 3

Michael Martin - Field Team Coordinator
Edward MacKinnon - Sample Setup and Recovery
Scott Tibbetts - ESP Inlet Sampling
Kirk Laakso - ESP Exhaust Sampling
Scott James - ESP Exhaust Sampling
David Gill - ESP Inlet Sampling
Robert Nixon - ESP Inlet Sampling
Robert Rebello - ESP Inlet Sampling
Michael O'Brien - Process Sampling
Howard Schiff - Process Sampling/QA

Run 4

Michael Martin - Field Team Coordinator
Edward MacKinnon - Sample Setup and Recovery
Ray Potter - ESP Inlet Sampling
Mark Winter - ESP Inlet Sampling
Mark Gollands - ESP Exhaust Sampling
Scott James - ESP Exhaust Sampling
Michael O'Brien - ESP Inlet Sampling
Robert Rebello - ESP Inlet Sampling
Howard Schiff - Process Sampling/QA

APPENDIX G

ADDITIONAL INFORMATION

Appendix G.1

Unit 1

				Unit 1 Test 2																
				8/31/99 14:00	8/31/99 14:15	8/31/99 14:30	8/31/99 14:45	8/31/99 15:00	8/31/99 15:15	8/31/99 15:30	8/31/99 15:45	8/31/99 16:00	8/31/99 16:15	8/31/99 16:30	8/31/99 16:45	8/31/99 17:00	8/31/99 17:15	8/31/99 17:30	8/31/99 17:45	
	11 FEEDER COAL FLOW	TONS/HR	1F113.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	12 FEEDER COAL FLOW	TONS/HR	1F124.PV	28.3	28.2	28.3	28.3	28.3	28.4	28.4	28.4	28.4	28.4	28.3	28.4	28.3	28.4	28.4		
	13 FEEDER COAL FLOW	TONS/HR	1F133.PV	32.2	32.2	32.2	32.2	32.2	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3		
	14 FEEDER COAL FLOW	TONS/HR	1F143.PV	30.0	30.0	29.9	29.8	30.0	30.2	30.2	30.1	30.2	30.1	30.1	29.9	30.1	30.1	30.0		
	UNIT 1 TOT COAL BURNED	TONS/HR	1F152.PV	90.7	90.7	90.4	90.8	91.0	91.1	90.9	91.1	90.8	91.1	91.0	91.3	91.1	91.1	91.1	90.9	
	UNIT 1 GROSS GENERATION	MW	1k211.pv	250.5	250.5	250.2	250.2	251.3	250.1	250.3	250.4	250.4	250.0	251.1	251.2	251.8	252.9	252.9		
	UNIT 1 TOTAL STEAM FLOW	KLBS/HR	1BM1P12.PV	1807.6	1805.8	1803.9	1802.0	1800.1	1798.2	1796.3	1794.4	1792.5	1792.4	1796.3	1800.3	1804.3	1808.3	1812.3		
	UN 1 MN STM @ SV AVERAGE	DEG F	1T202.PV	989.1	992.2	991.1	992.0	990.4	991.6	992.2	992.3	992.3	992.6	992.3	992.7	992.6	992.5	992.9		
	THROTTLE PRESS SELECT	PSIG	1BM1P06.PV	2476.6	2479.3	2480.1	2480.9	2481.7	2482.4	2483.2	2484.0	2484.8	2485.5	2486.3	2487.1	2487.9	2488.6	2488.4		
	BOILER 1 FEEDWATER FLOW	KLBS/HR	C1P411A.PV	1766.0	1763.6	1763.7	1768.7	1787.1	1780.4	1775.4	1773.3	1767.9	1757.5	1762.8	1763.1	1761.4	1774.5	1769.6		
	FURNACE 1 EAST DRAFT NR	"WC	C1P050A.PV	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3		
	FURNACE 1 WEST DRAFT NR	"WC	C1P050B.PV	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1		
	U1 WBox to Furn Diff Pres	PSID	1SA1P01.PV	5.2	5.2	5.2	5.3	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2		
	APH 11 GAS IN TEMP	DEG F	1T007.PV	635.7	635.4	635.1	634.9	634.9	635.2	635.4	635.7	635.9	636.1	636.4	636.6	636.8	637.1	637.3		
	APH 12 GAS IN TEMP	DEG F	1T008.PV	665.5	664.7	663.1	661.6	660.7	659.9	659.6	660.0	660.4	660.8	661.4	662.1	662.8	663.3	663.7		
	UNIT 1 APH 11 OUTLET TEMP	DEG F	C1T033A.PV	289.4	289.6	289.0	287.0	286.2	286.2	287.5	285.9	286.9	289.6	289.5	287.8	286.3	286.2	285.8		
	UNIT 1 APH 12 OUTLET TEMP	DEG F	C1T033B.PV	306.6	305.6	305.3	304.7	304.3	304.5	304.5	304.5	304.7	304.9	304.5	304.8	305.3	305.6	305.6		
	Boiler 1 East Fluegas O2	%	C1G007.PV	3.5	3.6	3.5	3.5	3.5	3.4	3.3	3.2	3.2	3.3	3.3	3.3	3.4	3.3	3.3		
	Boiler 1 West Fluegas O2	%	C1G005.PV	3.1	3.2	3.1	3.2	3.3	3.3	3.4	3.4	3.5	3.4	3.5	3.5	3.4	3.4	3.4		
	ID FAN 11 INLET TEMP	DEG F	1T013.PV	290.6	290.3	290.1	289.8	289.5	289.4	289.5	289.5	289.6	289.6	289.7	289.7	289.8	289.8	289.9		
	ID FAN 12 INLET TEMP	DEG F	1T014.PV	292.4	291.8	291.2	290.7	290.1	289.8	289.6	289.5	289.4	289.5	289.5	289.6	289.7	289.8	289.9		
	ID FAN 11 INLET PRESS	"WC	1P013.PV	-14.4	-14.6	-14.5	-14.5	-14.7	-14.6	-14.6	-14.6	-14.6	-14.5	-14.6	-14.6	-14.5	-14.6	-14.6		
	ID FAN 12 INLET PRESS	"WC	1P014.PV	-14.5	-14.7	-14.6	-14.6	-14.8	-14.8	-14.8	-14.8	-14.8	-14.8	-14.8	-14.8	-14.8	-14.7	-14.8		
	APH 11 GAS INLET PRESS	"WC	1P007.PV	-6.1	-6.3	-6.2	-6.2	-6.3	-6.3	-6.3	-6.3	-6.3	-6.2	-6.3	-6.3	-6.3	-6.2	-6.3		
	APH 12 GAS INLET PRESS	"WC	1P008.PV	-5.5	-5.6	-5.5	-5.5	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6	-5.6	-5.7	-5.6	-5.6	-5.6		
	APH 11 GAS OUTLET PRESS	"WC	1P009.PV	-10.2	-10.3	-10.2	-10.2	-10.3	-10.3	-10.3	-10.3	-10.3	-10.2	-10.3	-10.3	-10.3	-10.3	-10.3		
	APH 12 GAS OUTLET PRESS	"WC	1P010.PV	-10.4	-10.6	-10.5	-10.5	-10.6	-10.6	-10.6	-10.6	-10.6	-10.6	-10.6	-10.6	-10.6	-10.5	-10.6		
	CEM - Unit #1 CO	PPM	E1G123 .PV	19.5	16.2	16.7	14.3	16.4	16.0	20.9	14.3	15.0	15.2	15.6	15.1	15.7	21.1	19.5		
EPRICON	U1-East Epricon Inlet Temp	DEG F	C1T022.PV	868.2	868.5	868.7	868.9	869.2	870.0	870.6	870.7	871.0	871.3	872.1	873.3	873.4	873.6	874.8		
	U1-West Epricon Inlet Temp	DEG F	C1T027.PV	883.4	883.4	882.1	879.9	878.9	878.7	878.9	879.1	879.0	879.9	880.9	881.7	882.9	883.7	884.2		
	U1-East Epricon Outlt Temp	DEG F	C1T021.PV	860.5	860.1	859.6	859.2	859.0	859.3	859.7	860.0	860.4	860.7	861.1	861.4	861.8	862.1	862.4		
	U1-West Epricon Outlt Temp	DEG F	C1T026.PV	878.9	878.1	877.4	876.6	875.8	875.1	874.7	874.5	874.4	874.2	874.1	874.6	875.2	875.8	876.4		
	U1-East Epricon Gas Flow	KSCFM	C1F021.PV	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		
	U1-West Epricon Gas Flow	KSCFM	C1F026.PV	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		
ESP																				
Old Precip East	1 PREC TR-1A1A SEC AMPS	mA	P1OA01S.PV	196.7	189.5	204.7	150.5	189.8	184.9	155.2	215.3	200.4	194.0	156.8	159.9	152.0	167.3	151.2		
	1 PREC TR-1A1B SEC AMPS	mA	P1OA02S.PV	307.9	325.7	310.9	329.2	327.7	318.9	269.9	319.2	331.6	307.1	334.1	294.5	319.6	327.6	283.6		
	1 PREC TR-1A2A SEC AMPS	mA	P1OA03S.PV	321.1	280.0	303.5	219.0	248.8	216.7	271.9	249.4	215.4	240.2	223.6	212.0	207.8	199.8	221.0		
	1 PREC TR-1A2B SEC AMPS	mA	P1OA04S.PV	443.5	452.3	427.2	461.8	432.8	433.4	407.5	446.7	434.0	462.9	395.3	405.6	423.2	408.8	408.5		
	1 PREC TR-1A3A SEC AMPS	mA	P1OA05S.PV	340.1	431.3	436.4	370.1	296.1	402.1	304.0	350.8	304.5	327.8	334.9	269.1	305.0	351.9	318.7		
	1 PREC TR-1A3B SEC AMPS	mA	P1OA06S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1A1A SEC KV 1	KV	P1OV01S1.PV	57.4	56.3	55.7	54.1	54.7	53.5	35.3	57.4	56.6	55.3	53.2	56.3	54.9	55.6	55.7		
	1 PREC TR-1A1B SEC KV 1	KV	P1OV02S1.PV	57.8	58.6	55.9	58.0	58.5	58.1	21.0	45.2	or this point fo	59.0	56.0	57.5	56.6	57.0	57.3		
	1 PREC TR-1A2A SEC KV 1	KV	P1OV03S1.PV	25.8	24.9	25.8	24.5	24.7	23.7	25.7	24.5	23.7	24.0	23.6	23.3	24.1	24.4	23.8		
	1 PREC TR-1A2B SEC KV 1	KV	P1OV04S1.PV	24.9	25.0	24.4	24.9	24.5	24.8	25.2	24.7	24.4	24.6	24.1	23.9	24.2	24.4	24.5		
	1 PREC TR-1A3A SEC KV 1	KV	P1OV05S1.PV	23.4	23.1	23.9	23.2	22.6	23.5	22.9	23.4	22.6	22.9	22.0	21.3	22.2	23.2	22.0		
	1 PREC TR-1A3B SEC KV 1	KV	P1OV06S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1A1A PRI AMPS	AMPS	P1OA01P.PV	48.5	46.5	49.6	38.5	45.3	44.7	38.3	51.4	49.3	47.2	39.4	40.9	38.6	41.7	38.2		
	1 PREC TR-1A1B PRI AMP	AMPS	P1OA02P.PV	59.1	59.2	59.0	59.7	61.9	58.8	43.9	41.9	59.3	60.4	57.9	60.3	51.3	60.5	58.7		
	1 PREC TR-1A2A PRI AMPS	AMPS	P1OA03P.PV	47.8	44.1	45.9	46.9	48.0	38.4	31.3	50.9	47.6	45.9	42.9	43.0	45.9	45.1	39.1		
	1 PREC TR-1A2B PRI AMPS	AMPS	P1OA04P.PV	or this point fo	65.0	55.5	or this point fo	or this point fo	60.0	60.6	65.0	64.0	or this point fo	50.0	58.3	46.1	or this point fo	54.5		No good data
	1 PREC TR-1A3A PRI AMPS	AMPS	P1OA05P.PV	51.6	or this point fo	or this point fo	60.5	46.3	63.0	46.4	50.3	48.3	53.5	49.9	48.8	53.7	49.2	48.5		
	1 PREC TR-1A3B PRI AMPS	AMPS	P1OA06P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1A1A PRI VOLTS	VOLTS	P1OV01P .PV	208.2	203.0	199.4	187.9	205.4	197.1	149.2	214.8	208.6	201.7	190.4	193.1	187.5	197.6	192.5		
	1 PREC TR-1A1B PRI VOLTS	VOLTS	P1OV02p.PV	243.6	242.8	243.9	248.8	240.3	243.0	208.9	232.1	251.4	238.2	238.8	240.4	237.8	238.8	231.4		
	1 PREC TR-1A2A PRI VOLTS	VOLTS	P1OV03P.PV	291.1	273.9	295.3	265.1	269.4	258.5	276.4	270.6	259.1	262.2	248.7	244.9	259.6	258.4	245.8		
	1 PREC TR-1A2B PRI VOLTS	VOLTS	P1OV04P.PV	309.0	311.4	299.8	309.6	302.6	305.3	307.8	306.5	303.6	305.2	292.4	295.2	299.9	298.5	297.9		
	1 PREC TR-1A3A PRI VOLTS	VOLTS	P1OV05P.PV	302.4	302.0	311.0	297.1	286.4	300.3	285.9	303.8	288.0	291.9	277.2	265.8	281.8	299.0	276.9		
	1 PREC TR-1A3B PRI VOLTS	VOLTS	P1OV06P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Old Precip West	1 PREC TR-1B1A SEC AMPS	mA	P1OA07S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1B1B SEC AMPS	mA	P1OA08S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1B2A SEC AMPS	mA	P1OA09S.PV	82.9	83.8	80.4	86.4	64.2	83.6	88.6	92.2	87.8	80.8	90.4	83.4	88.3	87.3	84.6		
	1 PREC TR-1B2B SEC AMPS	mA	P1OA10S.PV	222.8	217.8	240.9	214.3	211.0	245.0	243.2	241.4	246.8	250.8	256.0	237.6	257.9	213.5	246.4		
	1 PREC TR-1B3A SEC AMPS	mA	P1OA11S.PV	165.3	159.5	179.2	161.2	140.5	165.9	175.0	171.8	164.4	128.8	184.0	185.2	187.8	197.8	179.8		
	1 PREC TR-1B3B SEC AMPS	mA	P1OA12S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1B1A SEC KV 1	KV	P1OV07S1.PV	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
	1 PREC TR-1B1B SEC KV 1	KV	P1OV08S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1B2A SEC KV 1	KV	P1OV09S1.PV	27.9	28.0	27.3	27.8	21.7	27.4	27.3	27.5	27.4	26.9	27.2	26.9	27.3	27.4	27.4		
	1 PREC TR-1B2B SEC KV 1	KV	P1OV10S1.PV	27.9	28.4	28.3	27.7	27.0	27.4	26.8	27.5	27.1	27.3	27.5	27.2	27.8	26.7	27.5		
	1 PREC TR-1B3A SEC KV 1	KV	P1OV11S1.PV	26.1	25.8	25.9	25.4	25.6	25.3	25.9	25.0	25.4	20.6	25.6	25.2	25.6	25.7	25.3		
	1 PREC TR-1B3B SEC KV 1	KV	P1OV12S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1B1A PRI AMPS	AMPS	P1OA07P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1B1B PRI AMPS	AMPS	P1OA08P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1B2A PRI AMPS	AMPS	P1OA09P.PV	22.5	22.9	22.3	23.5	18.5	23.4	24.2	24.4	24.4	23.1	24.7	23.6	24.0	23.5	23.3		
	1 PREC TR-1B2B PRI AMPS	AMPS	P1OA10P.PV	45.4	45.3	49.3	46.0	45.2	51.0	50.5	45.0	50.0	51.2	46.5	45.2	49.1	45.6	48.1		
	1 PREC TR-1B3A PRI AMPS	AMPS	P1OA11P.PV	35.4	34.0	37.4	36.0	30.8	39.3	37.0	35.7	35.6	27.9	39.3	39.4	38.6	40.4	37.9		
	1 PREC TR-1B3B PRI AMPS	AMPS	P1OA12P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1B1A PRI VOLTS	VOLTS	P1OV07P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

				Unit 1 Test 2																
				8/31/99 14:00	8/31/99 14:15	8/31/99 14:30	8/31/99 14:45	8/31/99 15:00	8/31/99 15:15	8/31/99 15:30	8/31/99 15:45	8/31/99 16:00	8/31/99 16:15	8/31/99 16:30	8/31/99 16:45	8/31/99 17:00	8/31/99 17:15	8/31/99 17:30	8/31/99 17:45
	1 PREC TR-1B1B PRI VOLTS	VOLTS	P1OV08P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-1B2A PRI VOLTS	VOLTS	P1OV09P.PV	240.5	243.5	236.4	244.9	192.7	241.9	241.2	243.5	244.7	235.9	245.4	239.2	240.8	240.3	241.1		
	1 PREC TR-1B2B PRI VOLTS	VOLTS	P1OV10P.PV	292.9	295.3	300.9	292.9	283.0	288.0	287.7	294.9	290.6	293.0	301.7	291.2	301.9	280.1	293.4		
	1 PREC TR-1B3A PRI VOLTS	VOLTS	P1OV11P.PV	270.2	265.4	265.8	262.1	258.5	265.1	272.3	257.8	266.1	211.1	268.4	263.7	272.3	271.9	264.9		
	1 PREC TR-1B3B PRI VOLTS	VOLTS	P1OV12P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
New Precip East	1 PREC TR-01 SEC AMPS	mA	P1NA01S.PV	107.9	106.3	224.7	217.6	214.5	213.0	205.5	211.5	176.9	182.7	225.9	226.5	228.3	117.9	74.9		
	1 PREC TR-03 SEC AMPS	mA	P1NA03S.PV	181.7	117.6	95.0	234.2	216.8	241.2	240.9	235.4	238.8	209.9	179.7	236.5	243.7	214.1	232.5		
	1 PREC TR-05 SEC AMPS	mA	P1NA05S.PV	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	208.8	241.7	225.3	60.6	250.0	250.0	250.0		
	1 PREC TR-07 SEC AMPS	mA	P1NA07S.PV	200.2	248.6	247.3	238.2	243.0	250.0	250.0	250.0	250.0	250.0	245.3	250.0	250.0	250.0	250.0		
	1 PREC TR-09 SEC AMPS	mA	P1NA09S.PV	250.0	250.0	250.0	250.0	250.0	250.0	200.6	250.0	250.0	250.0	245.3	250.0	250.0	250.0	250.0		
	1 PREC TR-11 SEC AMPS	mA	P1NA11S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-13 SEC AMPS	mA	P1NA13S.PV	158.3	250.0	250.0	108.3	125.0	250.0	250.0	75.0	158.3	250.0	250.0	25.0	208.3	250.0	250.0		
	1 PREC TR-15 SEC AMPS	mA	P1NA15S.PV	93.5	175.9	250.0	250.0	200.6	250.0	110.0	175.9	250.0	250.0	200.6	250.0	44.1	225.3	250.0		
	1 PREC TR-17 SEC AMPS	mA	P1NA17S.PV	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0		
	1 PREC TR-19 SEC AMPS	mA	P1NA19S.PV	485.4	484.8	490.1	492.0	492.3	493.0	490.8	492.3	491.3	486.5	488.8	489.6	489.6	488.4	487.8		
	1 PREC TR-21 SEC AMPS	mA	P1NA21S.PV	490.2	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9		
	1 PREC TR-01 SEC KV 1	KV	P1NV01S1.PV	35.4	32.1	62.8	62.0	62.5	62.0	61.2	61.6	59.2	59.7	62.3	63.3	62.4	37.4	24.7		
	1 PREC TR-03 SEC KV 1	KV	P1NV03S1.PV	57.4	41.5	29.7	60.8	59.7	61.4	60.6	60.4	60.6	59.3	48.9	61.2	60.9	58.8	60.5		
	1 PREC TR-05 SEC KV 1	KV	P1NV05S1.PV	56.5	56.7	55.5	55.0	55.0	55.0	55.0	55.0	47.0	54.2	50.5	18.4	55.0	55.7	55.4		
	1 PREC TR-07 SEC KV 1	KV	P1NV07S1.PV	51.6	62.9	62.2	61.4	62.1	61.7	61.2	61.5	61.7	62.2	61.7	62.0	62.0	62.0	62.0		
	1 PREC TR-09 SEC KV 1	KV	P1NV09S1.PV	64.0	64.0	64.0	64.0	64.0	64.0	51.8	64.0	64.0	64.1	63.7	64.0	64.0	64.0	64.0		
	1 PREC TR-11 SEC KV 1	KV	P1NV11S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-13 SEC KV 1	KV	P1NV13S1.PV	42.7	63.6	63.3	30.7	34.9	63.5	63.0	23.1	42.6	63.6	63.2	11.7	53.6	63.4	63.8		
	1 PREC TR-15 SEC KV 1	KV	P1NV15S1.PV	27.6	47.9	65.6	65.3	53.5	66.0	32.0	47.3	65.0	65.0	53.5	64.8	15.7	59.8	65.4		
	1 PREC TR-17 SEC KV 1	KV	P1NV17S1.PV	66.0	66.0	65.9	65.9	65.9	65.8	65.8	65.8	65.8	65.7	65.7	65.7	65.6	65.6	65.6		
	1 PREC TR-19 SEC KV 1	KV	P1NV19S1.PV	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0		
	1 PREC TR-21 SEC KV 1	KV	P1NV21S1.PV	72.5	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9		
	1 PREC TR-23 SEC KV 1	KV	P1NV23S1.PV	69.1	69.1	69.1	69.1	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0		
	1 PREC TR-01 PRI AMPS	AMPS	P1NA01P.PV	24.0	23.2	50.2	49.2	47.5	48.1	46.7	47.8	41.1	41.6	50.9	50.7	51.4	26.7	16.2		
	1 PREC TR-03 PRI AMPS	AMPS	P1NA03P.PV	41.8	26.7	21.0	51.9	48.6	53.4	52.9	51.9	53.1	47.7	40.4	52.8	53.8	48.6	51.5		
	1 PREC TR-05 PRI AMPS	AMPS	P1NA05P.PV	39.5	39.5	39.6	39.7	39.7	39.8	39.8	39.9	33.3	38.6	36.0	8.9	38.1	38.3	38.6		
	1 PREC TR-07 PRI AMPS	AMPS	P1NA07P.PV	44.8	56.0	56.0	54.1	54.8	56.0	56.0	56.0	56.0	56.0	55.2	56.0	56.0	56.0	56.0		
	1 PREC TR-09 PRI AMPS	AMPS	P1NA09P.PV	61.0	61.0	61.0	61.0	61.0	61.0	49.4	62.0	62.0	62.0	60.5	61.1	61.1	61.2	61.2		
	1 PREC TR-11 PRI AMPS	AMPS	P1NA11P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-13 PRI AMPS	AMPS	P1NA13P.PV	42.9	67.2	66.6	28.6	33.9	67.6	67.3	20.1	42.4	67.0	67.0	6.7	56.5	67.5	67.2		
	1 PREC TR-15 PRI AMPS	AMPS	P1NA15P.PV	23.1	44.7	63.6	63.3	50.4	63.1	27.9	44.1	63.0	63.0	50.4	63.0	11.0	56.7	63.0		
	1 PREC TR-17 PRI AMPS	AMPS	P1NA17P.PV	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0		
	1 PREC TR-19 PRI AMPS	AMPS	P1NA19P.PV	105.2	105.7	105.6	105.4	105.2	105.1	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9		
	1 PREC TR-21 PRI AMPS	AMPS	P1NA21P.PV	112.8	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0		
	1 PREC TR-23 PRI AMPS	AMPS	P1NA23P.PV	106.6	106.5	106.4	106.3	106.3	106.2	106.1	106.0	106.0	107.9	108.1	108.1	108.1	108.1	108.1		
	1 PREC TR-01 PRI VOLTS	VOLTS	P1NV01P.PV	166.6	154.8	304.5	296.8	298.9	296.3	293.3	295.5	276.5	272.6	304.1	308.0	302.9	176.7	116.8		
	1 PREC TR-03 PRI VOLTS	VOLTS	P1NV03P.PV	275.2	191.9	146.5	311.8	296.8	314.4	310.2	309.6	311.7	294.8	243.9	312.6	313.3	292.9	306.0		
	1 PREC TR-05 PRI VOLTS	VOLTS	P1NV05P.PV	279.6	280.6	276.6	275.1	273.0	271.0	270.5	269.2	230.8	266.9	248.4	88.9	274.1	275.0	274.2		
	1 PREC TR-07 PRI VOLTS	VOLTS	P1NV07P.PV	149.4	185.0	186.0	184.7	185.2	187.0	187.0	187.0	187.0	187.0	185.9	188.8	188.5	188.2	187.8		
	1 PREC TR-09 PRI VOLTS	VOLTS	P1NV09P.PV	318.3	317.6	316.8	316.1	315.3	314.5	256.0	315.3	314.6	317.0	311.3	316.0	316.0	316.0	316.0		
	1 PREC TR-11 PRI VOLTS	VOLTS	P1NV11P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-13 PRI VOLTS	VOLTS	P1NV13P.PV	204.4	310.9	309.9	144.8	163.8	307.2	305.4	104.6	204.4	310.7	309.6	48.1	259.2	307.9	308.5		
	1 PREC TR-15 PRI VOLTS	VOLTS	P1NV15P.PV	130.7	230.2	317.2	315.5	257.7	319.1	151.9	228.4	316.0	316.9	258.7	314.8	72.4	286.8	316.0		
	1 PREC TR-17 PRI VOLTS	VOLTS	P1NV17P.PV	330.9	330.0	328.7	326.2	326.3	326.6	326.8	327.0	327.2	327.4	327.6	327.9	328.0	328.2	329.4		
	1 PREC TR-19 PRI VOLTS	VOLTS	P1NV19P.PV	389.6	390.3	389.7	389.1	388.5	388.0	387.4	386.8	386.2	386.5	387.0	387.5	388.1	388.6	389.1		
	1 PREC TR-21 PRI VOLTS	VOLTS	P1NV21P.PV	373.1	375.5	375.1	374.6	374.2	373.8	373.4	372.9	372.5	372.1	372.2	372.5	372.8	373.1	373.4		
	1 PREC TR-23 PRI VOLTS	VOLTS	P1NV23P.PV	361.8	359.3	360.2	363.2	359.9	360.9	361.8	362.0	361.7	361.3	360.9	360.5	360.1	360.5	360.9		
New Precip West	1 PREC TR-02 SEC AMPS	mA	P1NA02S.PV	171.1	243.7	244.2	244.8	245.4	246.0	246.5	247.1	247.7	248.3	248.9	249.4	126.4	142.9	250.0		
	1 PREC TR-04 SEC AMPS	mA	P1NA04S.PV	250.0	250.0	199.0	244.6	245.5	246.4	247.3	248.1	249.0	158.3	120.5	244.7	245.5	246.3	247.1		
	1 PREC TR-06 SEC AMPS	mA	P1NA06S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-08 SEC AMPS	mA	P1NA08S.PV	250.0	250.0	250.0	250.0	250.0	250.0	250.0	241.7	41.7	250.0	250.0	250.0	200.0	250.0	250.0		
	1 PREC TR-10 SEC AMPS	mA	P1NA10S.PV	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	216.0	250.0	250.0	250.0	250.0	250.0		
	1 PREC TR-12 SEC AMPS	mA	P1NA12S.PV	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0		
	1 PREC TR-14 SEC AMPS	mA	P1NA14S.PV	250.0	108.3	125.0	250.0	250.0	91.7	141.7	250.0	250.0	91.7	141.7	250.0	250.0	58.3	175.0		
	1 PREC TR-16 SEC AMPS	mA	P1NA16S.PV	250.0	250.0	142.9	142.9	200.6	250.0	250.0	250.0	110.0	159.4	217.0	250.0	250.0	250.0	93.5		
	1 PREC TR-18 SEC AMPS	mA	P1NA18S.PV	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9		
	1 PREC TR-20 SEC AMPS	mA	P1NA20S.PV	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9		
	1 PREC TR-22 SEC AMPS	mA	P1NA22S.PV	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.2	499.9	499.9	499.9	499.9	499.9	499.9		
	1 PREC TR-24 SEC AMPS	mA	P1NA24S.PV	499.9	499.9	499.9	499.9	499.9	498.9	498.4	499.9	499.9	499.9	499.9	499.9	499.9	499.2	499.9		
	1 PREC TR-02 SEC KV 1	KV	P1NV02S1.PV	34.3	46.1	46.1	46.0	46.2	46.1	46.7	45.6	46.8	46.0	46.2	46.6	26.6	29.1	46.1		
	1 PREC TR-04 SEC KV 1	KV	P1NV04S1.PV	53.4	53.7	44.2	54.0	53.9	53.5	54.0	53.7	53.5	35.8	29.5	53.5	54.0	54.0	54.0		
	1 PREC TR-06 SEC KV 1	KV	P1NV06S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	1 PREC TR-08 SEC KV 1	KV	P1NV08S1.PV	55.0	55.0	55.0	55.0	55.0	55.0	55.0	53.4	13.5	55.0	54.2	54.7	45.0	55.0	55.0		
	1 PREC TR-10 SEC KV 1	KV	P1NV10S1.PV	56.7	56.7	56.6	56.5	56.4	56.3	56.2	56.2	56.1	49.6	57.0	57.0	57.0	57.0	57.0		
	1 PREC TR-12 SEC KV 1	KV	P1NV12S1.PV	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0		
	1 PREC TR-14 SEC KV 1	KV	P1NV14S1.PV	58.7	28.9	32.0	58.0	58.0	25.1	35.9	58.2	57.5	24.7	35.5	58.0	58.0	18.1	42.4		
	1 PREC TR-16 SEC KV 1	KV	P1NV16S1.PV	56.0	56.0	33.9	34.6	46.6	57.0	57.0	57.0	27.5	37.3	49.5	56.8	56.5	56.3	23.7		
	1 PREC TR-18 SEC KV 1	KV	P1NV18S1.PV	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0		
	1 PREC TR-20 SEC KV 1	KV	P1NV20S1.PV	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0		
	1 PREC TR-22 SEC KV 1	KV	P1NV22S1.PV	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0		
	1 PREC TR-24 SEC KV 1	KV	P1NV24S1.PV	62.1	62.1	62.0	62.0	62.0	62.0	62.1	62.1	62.1	62.2	62.2	62.2	62.3	62.3	62.3		
	1 PREC TR-23 SEC AMPS	mA	P1NA23S.PV	499.9	499.9	499.9	499.9	499.9	499.9	499.0	499.8	499.7	499.7	499.6	499.5	499.4	499.3	499.2		

				Unit 1 Test 2															
				8/31/99 14:00	8/31/99 14:15	8/31/99 14:30	8/31/99 14:45	8/31/99 15:00	8/31/99 15:15	8/31/99 15:30	8/31/99 15:45	8/31/99 16:00	8/31/99 16:15	8/31/99 16:30	8/31/99 16:45	8/31/99 17:00	8/31/99 17:15	8/31/99 17:30	8/31/99 17:45
	1 PREC TR-02 PRI AMPS	AMPS	P1NA02P.PV	28.1	40.8	41.6	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	21.0	23.8	41.9	
	1 PREC TR-04 PRI AMPS	AMPS	P1NA04P.PV	56.0	56.0	44.6	55.0	55.0	55.0	55.0	55.0	55.0	34.8	26.8	55.1	55.3	55.4	55.5	
	1 PREC TR-06 PRI AMPS	AMPS	P1NA06P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-08 PRI AMPS	AMPS	P1NA08P.PV	58.5	58.4	58.3	58.3	58.2	58.2	58.1	56.1	9.5	57.2	57.5	57.8	45.8	57.0	57.0	
	1 PREC TR-10 PRI AMPS	AMPS	P1NA10P.PV	64.7	64.6	64.5	64.5	64.4	64.3	64.2	64.1	64.0	54.9	64.0	64.0	64.0	64.0	64.0	
	1 PREC TR-12 PRI AMPS	AMPS	P1NA12P.PV	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	
	1 PREC TR-14 PRI AMPS	AMPS	P1NA14P.PV	64.7	28.1	32.0	64.0	64.0	23.5	36.8	64.6	64.3	23.5	35.7	63.4	63.7	14.9	44.3	
	1 PREC TR-16 PRI AMPS	AMPS	P1NA16P.PV	66.4	66.7	37.9	37.5	53.4	67.0	67.0	67.0	29.0	42.4	57.8	66.2	66.5	66.7	24.5	
	1 PREC TR-18 PRI AMPS	AMPS	P1NA18P.PV	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	
	1 PREC TR-20 PRI AMPS	AMPS	P1NA20P.PV	117.5	117.5	117.4	117.4	117.3	117.3	117.3	117.2	117.2	117.1	117.1	117.1	117.0	116.9	116.8	
	1 PREC TR-22 PRI AMPS	AMPS	P1NA22P.PV	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	
	1 PREC TR-24 PRI AMPS	AMPS	P1NA24P.PV	108.1	108.1	108.6	109.2	109.8	108.8	109.6	109.7	109.4	109.1	109.2	109.4	109.5	109.7	109.8	
	1 PREC TR-02 PRI VOLTS	VOLTS	P1NV02P.PV	144.9	193.0	193.8	196.6	194.9	193.9	196.8	194.7	195.8	192.8	196.8	196.0	112.6	124.9	198.0	
	1 PREC TR-04 PRI VOLTS	VOLTS	P1NV04P.PV	269.8	271.4	223.0	272.3	271.8	271.0	273.3	274.7	272.8	180.9	146.4	273.8	271.6	272.7	273.0	
	1 PREC TR-06 PRI VOLTS	VOLTS	P1NV06P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-08 PRI VOLTS	VOLTS	P1NV08P.PV	355.1	355.1	355.0	354.5	353.8	353.1	352.4	343.7	81.2	354.7	352.9	355.3	209.8	356.0	356.8	
	1 PREC TR-10 PRI VOLTS	VOLTS	P1NV10P.PV	235.1	236.0	236.8	236.3	235.5	234.8	234.0	233.2	232.4	202.7	232.8	233.3	233.9	234.5	235.1	
	1 PREC TR-12 PRI VOLTS	VOLTS	P1NV12P.PV	247.0	247.0	247.0	247.0	247.0	247.0	247.0	247.0	247.0	247.0	247.0	247.0	247.2	247.9	248.6	
	1 PREC TR-14 PRI VOLTS	VOLTS	P1NV14P.PV	211.0	103.4	114.5	208.1	209.5	90.6	128.5	209.9	208.9	89.7	127.2	209.2	210.3	65.3	150.9	
	1 PREC TR-16 PRI VOLTS	VOLTS	P1NV16P.PV	245.9	246.4	147.8	148.0	202.2	245.7	247.0	247.5	119.7	161.3	214.0	244.0	244.0	244.0	102.8	
	1 PREC TR-18 PRI VOLTS	VOLTS	P1NV18P.PV	343.2	343.2	343.3	343.4	343.4	343.5	343.6	343.6	343.7	343.7	343.8	343.9	343.9	344.0	344.1	
	1 PREC TR-20 PRI VOLTS	VOLTS	P1NV20P.PV	348.7	348.8	348.9	348.9	349.0	349.1	349.1	349.2	349.3	349.3	349.4	349.5	349.5	349.6	349.7	
	1 PREC TR-22 PRI VOLTS	VOLTS	P1NV22P.PV	321.5	321.6	321.7	321.8	321.9	322.0	322.1	322.2	322.2	322.3	322.4	322.5	322.6	322.7	322.8	
	1 PREC TR-24 PRI VOLTS	VOLTS	P1NV24P.PV	319.1	319.1	319.1	319.1	319.1	319.1	316.6	318.2	319.1	319.1	319.1	319.1	319.1	319.1	319.1	

				Unit 1 Test 3																	
				9/1/99 8:30	9/1/99 8:45	9/1/99 9:00	9/1/99 9:15	9/1/99 9:30	9/1/99 9:45	9/1/99 10:00	9/1/99 10:15	9/1/99 10:30	9/1/99 10:45	9/1/99 11:00	9/1/99 11:15	9/1/99 11:30	9/1/99 11:45	9/1/99 12:00	9/1/99 12:15	9/1/99 12:30
	11 FEEDER COAL FLOW	TONS/HR	1F113.PV	24.7	24.6	24.5	24.5	24.5	24.4	24.5	24.4	24.5	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.5
	12 FEEDER COAL FLOW	TONS/HR	1F124.PV	23.7	23.6	23.5	23.4	23.4	23.4	23.8	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.4	23.5
	13 FEEDER COAL FLOW	TONS/HR	1F133.PV	26.9	26.7	26.6	26.6	26.6	26.5	26.6	26.6	26.6	26.5	26.6	26.5	26.5	26.6	26.6	26.5	26.5	26.6
	14 FEEDER COAL FLOW	TONS/HR	1F143.PV	15.4	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.3	15.4	15.5	15.6
	UNIT 1 TOT COAL BURNED	TONS/HR	1F152.PV	90.2	90.3	90.0	89.6	89.7	89.9	90.0	89.7	90.3	90.0	89.6	90.0	89.5	89.9	89.6	89.7	91.3
	UNIT 1 GROSS GENERATION	MW	1k211.pv	253.3	251.4	250.9	250.8	249.8	251.3	249.8	249.7	249.6	250.3	249.6	250.2	249.3	248.2	247.8	248.2	247.7
	UNIT 1 TOTAL STEAM FLOW	KLBS/HR	1BM1P12.PV	1793.1	1794.7	1793.8	1792.1	1790.4	1788.7	1787.0	1785.3	1783.6	1781.8	1779.7	1777.8	1775.5	1773.4	1771.2	1769.1	1767.8
	UN 1 MN STM @ SV AVERAGE	DEG F	1T202.PV	993.6	993.4	994.1	992.6	993.6	993.6	994.0	993.6	993.7	994.2	993.6	994.3	992.5	993.8	994.6	994.8	993.1
	THROTTLE PRESS SELECT	PSIG	1BM1P06.PV	2470.7	2478.5	2476.2	2473.7	2471.2	2468.8	2466.3	2463.8	2461.3	2458.8	2456.4	2453.9	2452.8	2452.1	2451.4	2449.0	2448.3
	BOILER 1 FEEDWATER FLOW	KLBS/HR	C1P411A.PV	1751.8	1740.6	1721.0	1730.2	1728.8	1728.7	1725.3	1715.6	1721.6	1723.1	1721.1	1725.5	1742.0	1742.8	1734.2	1731.5	1730.4
	FURNACE 1 EAST DRAFT NR	"WC	C1P050A.PV	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
	FURNACE 1 WEST DRAFT NR	"WC	C1P050B.PV	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1
	U1 WBox to Furn Diff Pres	PSID	1SA1P01.PV	5.2	5.2	5.2	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
	APH 11 GAS IN TEMP	DEG F	1T007.PV	640.5	639.9	639.8	640.2	640.5	640.9	641.1	641.2	641.3	641.3	641.4	641.5	641.8	641.3	641.0	641.1	641.3
	APH 12 GAS IN TEMP	DEG F	1T008.PV	664.4	664.4	664.5	664.6	664.8	664.9	665.0	665.3	665.8	666.1	666.3	666.5	668.3	664.7	665.0	665.5	665.7
	UNIT 1 APH 11 OUTLET TEMP	DEG F	C1T033A.PV	287.7	288.3	289.3	289.9	291.2	291.4	292.3	292.0	293.9	296.1	294.4	294.4	295.5	295.2	295.6	296.2	296.2
	UNIT 1 APH 12 OUTLET TEMP	DEG F	C1T033B.PV	313.3	314.8	314.5	314.8	315.4	315.9	316.1	316.3	317.1	317.8	317.7	317.8	318.8	318.2	318.0	318.1	318.1
	Boiler 1 East Flueges O2	%	C1G007.PV	3.5	3.6	3.6	3.6	3.5	3.6	3.6	3.6	3.8	3.8	3.7	3.7	3.6	3.5	3.6	3.6	3.7
	Boiler 1 West Flueges O2	%	C1G005.PV	2.6	2.6	2.6	2.7	2.8	2.6	2.7	2.8	2.8	2.7	2.8	2.7	2.9	2.9	2.8	2.8	2.8
	ID FAN 11 INLET TEMP	DEG F	1T013.PV	285.4	287.1	288.5	289.5	290.4	291.2	292.1	293.0	293.8	294.3	294.8	295.3	295.8	296.2	296.6	297.2	297.5
	ID FAN 12 INLET TEMP	DEG F	1T014.PV	292.0	293.6	295.0	295.7	296.3	296.9	297.6	298.2	298.9	299.5	300.2	300.7	300.9	301.1	301.3	301.4	301.4
	ID FAN 11 INLET PRESS	"WC	1P013.PV	-13.8	-13.7	-13.9	-13.9	-13.9	-13.9	-14.0	-14.0	-13.9	-14.0	-14.0	-13.9	-14.1	-13.9	-14.0	-14.0	-14.0
	ID FAN 12 INLET PRESS	"WC	1P014.PV	-14.0	-13.8	-14.1	-14.0	-14.1	-14.1	-14.0	-14.1	-14.0	-14.1	-14.1	-14.0	-14.2	-14.0	-14.1	-14.1	-14.1
	APH 11 GAS INLET PRESS	"WC	1P007.PV	-5.9	-5.8	-5.9	-5.9	-5.9	-5.9	-5.8	-5.9	-5.8	-5.9	-6.0	-5.9	-6.0	-5.9	-5.9	-6.0	-5.9
	APH 12 GAS INLET PRESS	"WC	1P008.PV	-5.3	-5.2	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3	-5.4	-5.3	-5.3	-5.3	-5.4
	APH 11 GAS OUTLET PRESS	"WC	1P009.PV	-9.8	-9.7	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.8	-9.9	-9.9	-9.9	-10.0	-9.8	-9.9	-9.9	-9.9
	APH 12 GAS OUTLET PRESS	"WC	1P010.PV	-9.9	-9.8	-10.0	-9.9	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0	-10.1	-10.0	-10.2	-10.0	-10.1	-10.0	-10.1
	CEM - Unit #1 CO	PPM	E1G123 .PV	12.0	12.8	10.8	10.2	9.6	10.0	8.5	9.3	9.5	8.3	8.6	8.1	8.7	8.6	8.2	8.5	7.8
EPRICON	U1-East Epricon Inlet Temp	DEG F	C1T022.PV	876.1	874.3	875.1	874.4	874.2	873.8	872.7	872.8	873.3	873.9	874.0	874.2	873.4	871.8	871.9	871.9	872.1
	U1-West Epricon Inlet Temp	DEG F	C1T027.PV	885.6	883.9	884.7	882.9	880.9	881.6	882.3	882.5	881.6	882.2	881.5	882.3	872.5	870.4	870.5	872.2	872.1
	U1-East Epricon Outlt Temp	DEG F	C1T021.PV	862.1	862.1	862.2	862.3	862.4	862.5	862.5	862.6	862.7	862.8	862.8	862.9	862.8	862.6	862.4	862.9	862.9
	U1-West Epricon Outlt Temp	DEG F	C1T026.PV	876.5	876.5	876.5	876.5	876.5	876.6	876.6	876.6	876.6	876.6	876.7	876.7	875.7	873.0	870.4	868.6	868.5
	U1-East Epricon Gas Flow	KSCFM	C1F021.PV	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
	U1-West Epricon Gas Flow	KSCFM	C1F026.PV	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
ESP																				
Old Precip East	1 PREC TR-1A1A SEC AMPS	mA	P1OA01S.PV	179.6	186.5	173.3	182.9	183.5	191.1	153.9	196.3	167.8	191.2	177.7	174.8	176.0	190.0	165.7	192.7	165.3
	1 PREC TR-1A1B SEC AMPS	mA	P1OA02S.PV	295.3	287.7	280.1	279.1	290.7	285.3	291.9	293.5	242.9	291.9	288.4	288.7	285.1	254.0	280.4	288.5	286.0
	1 PREC TR-1A2A SEC AMPS	mA	P1OA03S.PV	403.7	364.3	340.9	368.4	331.2	351.3	324.3	346.9	345.7	322.2	314.5	381.1	358.8	340.6	346.9	357.7	365.0
	1 PREC TR-1A2B SEC AMPS	mA	P1OA04S.PV	445.4	428.8	404.2	407.1	449.0	444.9	455.6	438.6	396.7	468.6	440.1	422.4	413.9	422.8	434.1	412.3	471.7
	1 PREC TR-1A3A SEC AMPS	mA	P1OA05S.PV	416.7	418.4	317.1	407.4	379.7	384.3	343.9	419.2	394.5	370.4	315.8	285.1	398.4	459.7	432.0	455.8	370.0
	1 PREC TR-1A3B SEC AMPS	mA	P1OA06S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1A1A SEC KV 1	KV	P1OV01S1.PV	56.2	56.8	56.5	57.9	58.5	57.7	29.2	58.0	57.1	57.3	55.7	56.9	57.6	57.0	57.4	57.4	55.0
	1 PREC TR-1A1B SEC KV 1	KV	P1OV02S1.PV	57.3	57.8	58.0	55.9	56.1	57.7	58.0	57.5	15.4	54.4	58.0	56.5	56.9	58.5	56.0	58.0	57.0
	1 PREC TR-1A2A SEC KV 1	KV	P1OV03S1.PV	27.4	26.4	26.8	27.0	26.3	27.5	26.5	25.9	26.2	26.1	25.9	27.5	26.6	26.8	25.7	26.7	25.7
	1 PREC TR-1A2B SEC KV 1	KV	P1OV04S1.PV	24.5	24.7	25.1	24.7	24.8	24.9	25.2	25.4	25.3	25.7	24.6	24.6	24.4	24.4	24.9	24.6	25.5
	1 PREC TR-1A3A SEC KV 1	KV	P1OV05S1.PV	23.2	23.9	22.5	24.3	23.5	23.1	23.0	23.6	23.2	22.7	21.9	17.9	23.4	24.4	23.8	24.4	22.8
	1 PREC TR-1A3B SEC KV 1	KV	P1OV06S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1A1A PRI AMPS	AMPS	P1OA01P.PV	44.8	46.2	43.6	45.9	45.6	46.9	37.0	47.3	43.2	46.6	43.9	43.9	43.4	46.1	41.2	47.1	41.7
	1 PREC TR-1A1B PRI AMP	AMPS	P1OA02P.PV	54.2	58.0	59.2	59.2	56.8	60.0	55.0	61.1	33.2	57.6	52.9	57.5	57.7	56.9	55.2	59.0	55.0
	1 PREC TR-1A2A PRI AMPS	AMPS	P1OA03P.PV	49.7	54.4	41.0	57.4	48.0	47.1	41.1	46.7	53.5	50.4	48.7	39.0	52.8	40.4	49.9	43.9	or this point fo
	1 PREC TR-1A2B PRI AMPS	AMPS	P1OA04P.PV	or this point fo	or this point fo	57.0	61.0	or this point fo	or this point fo	or this point fo	or this point fo	42.9	or this point fo	or this point fo	51.0	62.0	50.0	or this point fo	64.0	or this point fo
	1 PREC TR-1A3A PRI AMPS	AMPS	P1OA05P.PV	54.5	50.0	45.2	61.3	55.8	45.1	43.8	61.0	55.7	47.3	43.9	18.2	49.6	62.0	55.4	or this point fo	or this point fo
	1 PREC TR-1A3B PRI AMPS	AMPS	P1OA06P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1A1A PRI VOLTS	VOLTS	P1OV01P .PV	201.1	197.4	208.0	210.0	208.0	207.5	164.7	216.7	206.7	212.1	203.7	206.8	202.9	207.4	203.3	211.6	193.6
	1 PREC TR-1A1B PRI VOLTS	VOLTS	P1OV02p.PV	236.8	236.0	241.2	232.1	238.1	236.7	243.8	241.6	193.2	237.6	238.7	232.3	229.6	237.0	240.2	234.5	236.3
	1 PREC TR-1A2A PRI VOLTS	VOLTS	P1OV03P.PV	312.9	301.7	306.9	310.5	296.1	318.8	293.7	292.5	292.9	296.4	294.8	318.0	296.6	300.3	302.1	305.2	300.7
	1 PREC TR-1A2B PRI VOLTS	VOLTS	P1OV04P.PV	301.6	301.5	307.6	303.4	305.6	306.3	309.7	313.9	303.4	319.6	302.7	302.1	295.7	299.9	304.8	299.0	311.9
	1 PREC TR-1A3A PRI VOLTS	VOLTS	P1OV05P.PV	298.2	312.4	283.4	312.7	302.2	298.7	290.5	308.4	299.4	289.4	272.5	228.7	304.4	317.3	307.4	321.0	286.8
	1 PREC TR-1A3B PRI VOLTS	VOLTS	P1OV06P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Old Precip West	1 PREC TR-1B1A SEC AMPS	mA	P1OA07S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1B SEC AMPS	mA	P1OA08S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B2A SEC AMPS	mA	P1OA09S.PV	68.4	73.4	73.2	72.0	75.8	60.8	74.0	72.8	68.4	70.0	70.6	75.0	70.6	74.5	72.3	68.6	65.0
	1 PREC TR-1B2B SEC AMPS	mA	P1OA10S.PV	230.6	213.8	234.0	193.4	218.4	187.8	197.6	223.4	158.8	201.8	178.2	197.4	153.6	188.0	197.4	163.0	180.0
	1 PREC TR-1B3A SEC AMPS	mA	P1OA11S.PV	165.6	142.4	174.8	170.0	160.2	140.8	175.9	158.1	161.0	156.8	169.4	170.4	154.6	154.2	149.6	157.6	124.0
	1 PREC TR-1B3B SEC AMPS	mA	P1OA12S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1A SEC KV 1	KV	P1OV07S1.PV	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	1 PREC TR-1B1B SEC KV 1	KV	P1OV08S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B2A SEC KV 1	KV	P1OV09S1.PV	27.0	27.3	27.2	26.9	27.2	20.2	27.2	27.5	26.8	27.0	26.9	27.2	27.2	27.2	26.9	26.7	27.1
	1 PREC TR-1B2B SEC KV 1	KV	P1OV10S1.PV	27.7	27.0	26.2	27.7	26.4	26.7	27.7	27.8	27.2	27.1	27.3	27.6	27.0	27.3	27.5	26.6	26.7
	1 PREC TR-1B3A SEC KV 1	KV	P1OV11S1.PV	25.0	24.7	25.4	25.2	25.4	25.3	25.5	24.9	25.4	24.6	25.4	25.4	25.2	24.8	25.2	25.2	24.4
	1 PREC TR-1B3B SEC KV 1	KV	P1OV12S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1A PRI AMPS	AMPS	P1OA07P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1B PRI AMPS	AMPS	P1OA08P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B2A PRI AMPS	AMPS	P1OA09P.PV	21.0	20.7	21.7	21.0	21.7	16.7	21.2	21.0	20.4	20.8	21.2	21.2	19.9	22.0	20.8	21.0	20.4
	1 PREC TR-1B2B PRI AMPS	AMPS	P1OA10P.PV	50.3	45.9	48.3	42.6	44.9	40.0	43.9	46.8	35.7	42.9	39.6	42.5	34.1	40.9	42.1	38.7	39.1
	1 PREC TR-1B3A PRI AMPS	AMPS	P1OA11P.PV	35.4	32.8	36.9	36.5	35.8	31.5	37.1	34.4	35.8	34.1	36.6	35.7	33.0	33.5	33.7	33.9	29.3
	1 PREC TR-1B3B PRI AMPS	AMPS	P1OA12P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1A PRI VOLTS	VOLTS	P1OV07P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Unit 1 Test 3

				9/1/99 8:30	9/1/99 8:45	9/1/99 9:00	9/1/99 9:15	9/1/99 9:30	9/1/99 9:45	9/1/99 10:00	9/1/99 10:15	9/1/99 10:30	9/1/99 10:45	9/1/99 11:00	9/1/99 11:15	9/1/99 11:30	9/1/99 11:45	9/1/99 12:00	9/1/99 12:15	9/1/99 12:30
	1 PREC TR-1B1B PRI VOLTS	VOLTS	P1OV08P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B2A PRI VOLTS	VOLTS	P1OV09P.PV	232.7	234.9	232.7	232.8	233.9	176.7	234.1	235.2	228.0	230.2	230.2	234.5	231.9	235.7	229.1	228.6	227.7
	1 PREC TR-1B2B PRI VOLTS	VOLTS	P1OV10P.PV	296.8	282.3	293.1	286.4	299.8	274.2	286.7	291.7	275.9	278.0	283.5	282.0	264.1	280.7	285.6	268.7	257.9
	1 PREC TR-1B3A PRI VOLTS	VOLTS	P1OV11P.PV	255.7	251.1	261.2	259.4	262.1	252.8	264.9	252.1	262.6	245.5	264.6	255.9	254.3	254.3	255.0	255.6	236.9
	1 PREC TR-1B3B PRI VOLTS	VOLTS	P1OV12P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Precip East	1 PREC TR-01 SEC AMPS	mA	P1NA01S.PV	168.9	194.2	214.7	200.9	149.7	162.8	164.7	24.2	231.9	234.2	219.4	216.5	201.7	165.5	160.0	189.1	122.4
	1 PREC TR-03 SEC AMPS	mA	P1NA03S.PV	28.6	238.5	244.5	229.5	232.8	211.5	218.7	197.9	204.1	240.1	213.5	240.9	238.3	231.6	70.4	137.4	250.0
	1 PREC TR-05 SEC AMPS	mA	P1NA05S.PV	250.0	217.0	250.0	250.0	35.9	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
	1 PREC TR-07 SEC AMPS	mA	P1NA07S.PV	250.0	250.0	250.0	250.0	250.0	250.0	247.5	250.0	250.0	250.0	245.5	250.0	216.6	244.8	246.4	246.5	247.1
	1 PREC TR-09 SEC AMPS	mA	P1NA09S.PV	250.0	250.0	250.0	250.0	250.0	250.0	245.3	250.0	250.0	250.0	248.9	250.0	250.0	225.3	225.3	250.0	250.0
	1 PREC TR-11 SEC AMPS	mA	P1NA11S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-13 SEC AMPS	mA	P1NA13S.PV	91.7	141.7	250.0	250.0	58.3	189.0	250.0	250.0	8.3	225.0	250.0	250.0	41.7	191.7	250.0	250.0	41.7
	1 PREC TR-15 SEC AMPS	mA	P1NA15S.PV	250.0	200.6	250.0	93.5	192.3	250.0	250.0	200.6	250.0	27.7	241.7	250.0	250.0	200.6	250.0	44.1	208.8
	1 PREC TR-17 SEC AMPS	mA	P1NA17S.PV	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
	1 PREC TR-19 SEC AMPS	mA	P1NA19S.PV	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.0	499.8	499.9	499.9	499.9	496.8	496.3
	1 PREC TR-21 SEC AMPS	mA	P1NA21S.PV	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	496.7	498.6	498.5	498.4	498.3	499.9	499.9
	1 PREC TR-01 SEC KV 1	KV	P1NV01S1.PV	69.4	60.6	61.5	60.6	56.8	57.9	49.9	12.7	62.1	63.5	63.2	61.8	61.8	68.0	56.9	59.3	64.0
	1 PREC TR-03 SEC KV 1	KV	P1NV03S1.PV	12.3	61.3	62.0	60.8	61.0	60.4	60.0	59.4	58.7	61.6	59.9	61.4	61.8	61.3	22.4	40.1	62.0
	1 PREC TR-05 SEC KV 1	KV	P1NV05S1.PV	55.4	49.2	55.0	55.0	13.6	56.0	55.6	56.3	55.9	55.7	55.5	55.4	55.2	55.7	56.6	56.0	55.0
	1 PREC TR-07 SEC KV 1	KV	P1NV07S1.PV	63.0	63.0	63.0	63.0	63.0	63.0	62.9	63.0	63.0	63.0	62.7	63.0	55.3	63.4	63.5	63.0	63.0
	1 PREC TR-09 SEC KV 1	KV	P1NV09S1.PV	65.0	65.0	65.0	65.0	65.0	65.0	64.5	65.0	65.0	65.0	65.0	65.0	65.0	58.9	60.2	65.6	65.4
	1 PREC TR-11 SEC KV 1	KV	P1NV11S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-13 SEC KV 1	KV	P1NV13S1.PV	27.6	39.4	64.6	64.2	19.5	51.1	65.0	65.0	7.9	59.1	65.0	65.0	15.8	51.1	64.5	64.2	15.6
	1 PREC TR-15 SEC KV 1	KV	P1NV15S1.PV	65.5	53.6	66.0	28.0	52.0	66.0	66.0	54.1	65.4	12.0	64.6	65.9	65.3	53.9	66.0	16.0	56.7
	1 PREC TR-17 SEC KV 1	KV	P1NV17S1.PV	66.0	66.1	66.3	66.6	66.9	66.0	66.0	66.0	66.1	66.0	66.0	66.0	66.0	66.0	66.0	66.4	66.4
	1 PREC TR-19 SEC KV 1	KV	P1NV19S1.PV	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
	1 PREC TR-21 SEC KV 1	KV	P1NV21S1.PV	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9
	1 PREC TR-23 SEC KV 1	KV	P1NV23S1.PV	69.9	69.9	69.8	69.8	69.7	69.6	69.6	69.5	69.5	69.4	69.3	69.3	69.2	69.2	69.1	70.0	70.0
	1 PREC TR-01 PRI AMPS	AMPS	P1NA01P.PV	43.4	44.5	48.4	45.7	36.0	37.9	37.5	5.2	51.3	52.4	49.2	48.4	45.9	38.7	37.6	42.8	31.0
	1 PREC TR-03 PRI AMPS	AMPS	P1NA03P.PV	6.5	52.8	53.9	51.1	52.0	48.3	49.0	44.8	45.5	53.1	47.9	53.5	52.8	51.4	15.1	30.3	56.0
	1 PREC TR-05 PRI AMPS	AMPS	P1NA05P.PV	40.0	34.6	39.6	39.2	5.4	40.9	40.8	40.7	40.6	40.6	40.5	40.4	40.3	40.2	40.1	40.2	40.1
	1 PREC TR-07 PRI AMPS	AMPS	P1NA07P.PV	56.0	56.0	56.0	56.0	56.0	56.0	55.6	56.0	56.0	56.0	55.2	56.0	48.5	55.2	55.5	55.4	56.5
	1 PREC TR-09 PRI AMPS	AMPS	P1NA09P.PV	62.0	62.0	62.0	62.0	62.0	62.0	60.9	61.7	61.5	61.3	60.9	61.8	61.5	55.0	55.9	62.0	62.0
	1 PREC TR-11 PRI AMPS	AMPS	P1NA11P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-13 PRI AMPS	AMPS	P1NA13P.PV	24.6	39.5	68.0	68.0	15.9	51.1	67.5	67.2	2.2	60.4	67.4	67.8	11.3	51.4	67.4	67.8	11.3
	1 PREC TR-15 PRI AMPS	AMPS	P1NA15P.PV	63.3	50.4	63.0	23.1	48.3	63.0	63.0	50.4	63.0	6.3	60.9	63.0	63.0	50.4	63.0	10.5	52.5
	1 PREC TR-17 PRI AMPS	AMPS	P1NA17P.PV	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	66.9	66.9
	1 PREC TR-19 PRI AMPS	AMPS	P1NA19P.PV	108.4	108.2	108.1	108.0	107.9	107.9	107.8	107.7	107.6	107.6	107.5	107.4	107.4	107.3	107.2	107.3	107.3
	1 PREC TR-21 PRI AMPS	AMPS	P1NA21P.PV	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0	114.0
	1 PREC TR-23 PRI AMPS	AMPS	P1NA23P.PV	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1
	1 PREC TR-01 PRI VOLTS	VOLTS	P1NV01P.PV	278.0	293.3	296.6	285.7	253.7	263.1	239.5	57.2	307.4	312.7	305.8	299.3	293.6	265.4	252.2	273.6	238.8
	1 PREC TR-03 PRI VOLTS	VOLTS	P1NV03P.PV	61.5	315.4	317.5	306.8	311.9	299.2	295.2	290.6	288.9	316.0	293.7	316.5	313.7	314.0	113.4	189.4	319.1
	1 PREC TR-05 PRI VOLTS	VOLTS	P1NV05P.PV	273.0	244.2	274.7	273.0	66.1	278.5	274.7	278.1	275.2	273.6	274.5	275.4	275.2	275.8	282.1	279.6	276.0
	1 PREC TR-07 PRI VOLTS	VOLTS	P1NV07P.PV	189.0	189.0	189.0	189.0	189.0	189.0	187.2	187.5	188.1	188.6	186.5	187.9	164.0	187.0	187.0	187.0	187.0
	1 PREC TR-09 PRI VOLTS	VOLTS	P1NV09P.PV	320.2	320.4	320.6	320.9	321.1	321.1	316.5	323.2	322.6	321.9	321.0	324.6	325.6	294.4	295.2	324.1	323.2
	1 PREC TR-11 PRI VOLTS	VOLTS	P1NV11P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-13 PRI VOLTS	VOLTS	P1NV13P.PV	127.1	184.9	310.8	309.8	86.7	243.7	315.1	314.3	28.9	284.5	314.0	314.0	68.4	246.2	313.6	311.1	67.4
	1 PREC TR-15 PRI VOLTS	VOLTS	P1NV15P.PV	317.4	255.4	316.4	131.5	250.4	316.8	319.0	261.2	317.9	53.2	310.9	320.2	319.5	262.9	324.1	74.0	271.5
	1 PREC TR-17 PRI VOLTS	VOLTS	P1NV17P.PV	327.8	328.0	330.0	331.0	331.0	330.6	332.1	332.4	329.1	330.6	332.1	332.0	334.4	331.8	332.2	330.7	328.0
	1 PREC TR-19 PRI VOLTS	VOLTS	P1NV19P.PV	392.3	392.6	391.0	391.0	391.0	391.0	391.0	391.0	391.0	391.0	391.0	391.0	391.0	391.0	391.0	392.8	392.9
	1 PREC TR-21 PRI VOLTS	VOLTS	P1NV21P.PV	374.4	372.5	372.0	372.0	372.0	372.2	372.5	372.9	373.2	373.5	373.8	373.8	373.5	373.1	372.8	374.0	374.0
	1 PREC TR-23 PRI VOLTS	VOLTS	P1NV23P.PV	362.4	358.9	360.0	361.8	362.0	362.0	362.0	362.0	361.4	360.5	360.0	360.0	360.0	360.0	360.0	361.3	361.4
New Precip West	1 PREC TR-02 SEC AMPS	mA	P1NA02S.PV	250.0	250.0	250.0	208.8	239.4	141.2	142.9	249.3	250.0	250.0	250.0	249.1	250.0	250.0	250.0	250.0	250.0
	1 PREC TR-04 SEC AMPS	mA	P1NA04S.PV	247.5	247.0	246.4	245.9	245.3	244.8	236.2	222.4	250.0	158.3	125.2	249.7	249.3	249.0	248.7	250.0	250.0
	1 PREC TR-06 SEC AMPS	mA	P1NA06S.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-08 SEC AMPS	mA	P1NA08S.PV	245.4	245.2	245.0	244.8	244.7	244.5	244.3	244.1	33.1	250.0	200.0	249.7	249.3	249.0	248.6	250.0	250.0
	1 PREC TR-10 SEC AMPS	mA	P1NA10S.PV	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	225.3	225.3	250.0	250.0	250.0	250.0	250.0	250.0	250.0
	1 PREC TR-12 SEC AMPS	mA	P1NA12S.PV	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	91.7	0.0
	1 PREC TR-14 SEC AMPS	mA	P1NA14S.PV	250.0	250.0	58.3	158.3	250.0	250.0	75.0	158.3	250.0	250.0	41.7	191.7	250.0	250.0	25.0	208.3	250.0
	1 PREC TR-16 SEC AMPS	mA	P1NA16S.PV	159.4	200.6	250.0	250.0	250.0	93.5	175.9	217.0	250.0	250.0	250.0	77.1	208.8	200.6	250.0	250.0	250.0
	1 PREC TR-18 SEC AMPS	mA	P1NA18S.PV	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9
	1 PREC TR-20 SEC AMPS	mA	P1NA20S.PV	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9
	1 PREC TR-22 SEC AMPS	mA	P1NA22S.PV	498.1	498.0	498.2	498.4	498.9	498.4	497.8	499.9	499.9	499.2	499.9	499.9	499.9	499.9	499.9	499.9	499.9
	1 PREC TR-24 SEC AMPS	mA	P1NA24S.PV	499.9	499.6	499.2	498.7	498.6	499.9	499.9	499.2	499.9	499.2	498.5	495.6	496.4	497.6	498.8	496.7	499.3
	1 PREC TR-02 SEC KV 1	KV	P1NV02S1.PV	46.1	45.8	46.0	39.6	44.8	29.1	29.6	46.6	46.5	46.3	46.0	47.6	46.1	46.1	46.1	46.1	46.1
	1 PREC TR-04 SEC KV 1	KV	P1NV04S1.PV	54.0	54.0	54.0	54.0	54.0	54.3	52.8	49.6	54.6	36.3	29.9	54.4	54.1	54.9	54.6	54.5	54.4
	1 PREC TR-06 SEC KV 1	KV	P1NV06S1.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-08 SEC KV 1	KV	P1NV08S1.PV	56.0	56.0	56.0	56.0	56.0	56.7	56.1	56.0	11.9	56.7	45.9	56.0	56.0	56.0	56.0	56.0	56.0
	1 PREC TR-10 SEC KV 1	KV	P1NV10S1.PV	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	51.9	51.9	57.0	57.0	57.0	57.0	57.0	57.0	57.0
	1 PREC TR-12 SEC KV 1	KV	P1NV12S1.PV	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	24.4	5.0
	1 PREC TR-14 SEC KV 1	KV	P1NV14S1.PV	58.1	58.6	18.3	38.9	58.0	57.6	21.3	38.9	58.0	58.0	14.6	45.9	58.0	58.0	11.2	49.1	57.3
	1 PREC TR-16 SEC KV 1	KV	P1NV16S1.PV	37.9	46.6	57.0	57.0	57.0	24.1	40.9	49.9	56.7	56.3	56.0	20.4	48.3	46.6	57.0	57.0	57.0
	1 PREC TR-18 SEC KV 1	KV	P1NV18S1.PV	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
	1 PREC TR-20 SEC KV 1	KV	P1NV20S1.PV	67.9	67.8	67.8	67.7	67.7	67.6	67.5	67.5	67.4	67.4	68.0	68.0	68.0	68.0	68.0	68.0	68.0
	1 PREC TR-22 SEC KV 1	KV	P1NV22S1.PV	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
	1 PREC TR-24 SEC KV 1	KV	P1NV24S1.PV	62.7	62.7	62.8	62.6	62.5	62.5	62.4	62.4	62.3	62.3	62.3	62.2	62.2	62.1	62.1	62.1	62.1
	1 PREC TR-23 SEC AMPS	mA	P1NA23S.PV	499.9	499.8	499.6	499.5	499.4	499.3	499.1	499.0	498.9	498.8	498.7	498.6	498.5	498.4	498.2	499.9	499.9

Unit 1 Test 3

			9/1/99 8:30	9/1/99 8:45	9/1/99 9:00	9/1/99 9:15	9/1/99 9:30	9/1/99 9:45	9/1/99 10:00	9/1/99 10:15	9/1/99 10:30	9/1/99 10:45	9/1/99 11:00	9/1/99 11:15	9/1/99 11:30	9/1/99 11:45	9/1/99 12:00	9/1/99 12:15	9/1/99 12:30
1 PREC TR-02 PRI AMPS	AMPS	P1NA02P.PV	42.6	42.7	42.8	35.9	39.9	23.7	23.9	41.9	41.9	41.9	41.9	41.7	41.9	41.9	41.9	41.9	41.9
1 PREC TR-04 PRI AMPS	AMPS	P1NA04P.PV	54.6	54.5	54.4	54.3	54.3	54.2	52.3	48.8	55.0	34.8	28.0	56.0	56.0	56.0	55.0	55.6	55.6
1 PREC TR-06 PRI AMPS	AMPS	P1NA06P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 PREC TR-08 PRI AMPS	AMPS	P1NA08P.PV	57.4	57.3	57.3	57.2	57.2	57.1	57.1	57.0	7.7	58.0	46.4	57.9	57.7	57.5	57.4	57.8	57.8
1 PREC TR-10 PRI AMPS	AMPS	P1NA10P.PV	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	57.6	58.4	64.8	64.7	64.5	64.4	64.3	64.1	64.1
1 PREC TR-12 PRI AMPS	AMPS	P1NA12P.PV	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	63.9	63.7	63.5	63.4	63.2	23.1	0.0
1 PREC TR-14 PRI AMPS	AMPS	P1NA14P.PV	65.0	65.0	15.7	41.1	64.6	64.3	19.2	40.5	64.0	64.0	10.7	49.8	65.0	65.0	6.5	54.0	64.7
1 PREC TR-16 PRI AMPS	AMPS	P1NA16P.PV	42.4	53.6	67.0	67.0	67.0	24.6	46.9	58.0	67.0	67.0	67.0	20.1	55.8	53.6	67.0	66.4	66.3
1 PREC TR-18 PRI AMPS	AMPS	P1NA18P.PV	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.0	112.7	112.7
1 PREC TR-20 PRI AMPS	AMPS	P1NA20P.PV	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0
1 PREC TR-22 PRI AMPS	AMPS	P1NA22P.PV	109.9	110.0	110.1	110.1	110.2	110.3	110.3	110.4	110.5	110.6	110.6	110.7	110.8	110.8	110.9	109.1	109.1
1 PREC TR-24 PRI AMPS	AMPS	P1NA24P.PV	108.8	108.9	109.0	109.1	109.1	109.2	109.3	109.4	109.4	109.5	109.6	109.7	109.7	109.8	109.9	108.1	108.1
1 PREC TR-02 PRI VOLTS	VOLTS	P1NV02P.PV	194.9	195.2	195.5	168.3	191.2	124.8	126.0	197.6	197.6	196.0	195.9	203.4	194.4	195.1	195.8	195.9	195.9
1 PREC TR-04 PRI VOLTS	VOLTS	P1NV04P.PV	273.0	273.0	273.0	273.0	273.0	274.4	287.1	247.0	277.4	182.5	150.8	275.2	271.5	273.6	274.3	273.0	273.0
1 PREC TR-06 PRI VOLTS	VOLTS	P1NV06P.PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 PREC TR-08 PRI VOLTS	VOLTS	P1NV08P.PV	360.1	360.5	360.8	361.2	361.6	362.4	360.3	360.0	71.8	363.3	294.9	361.6	361.1	360.5	360.1	360.0	360.0
1 PREC TR-10 PRI VOLTS	VOLTS	P1NV10P.PV	236.1	236.8	237.6	238.3	239.0	241.0	242.8	237.5	214.1	213.7	235.9	236.6	237.3	237.9	238.6	239.3	239.7
1 PREC TR-12 PRI VOLTS	VOLTS	P1NV12P.PV	251.1	251.7	252.2	252.7	253.2	253.8	250.2	251.6	250.2	247.5	248.4	249.4	250.5	251.8	253.0	106.4	21.0
1 PREC TR-14 PRI VOLTS	VOLTS	P1NV14P.PV	207.7	209.6	65.3	141.2	209.9	208.8	77.2	141.4	211.0	211.0	52.7	166.9	211.9	212.6	40.2	174.9	204.6
1 PREC TR-16 PRI VOLTS	VOLTS	P1NV16P.PV	163.0	202.6	245.1	244.4	249.2	105.2	174.8	215.5	248.4	248.3	244.2	88.1	209.9	203.7	245.5	246.3	247.3
1 PREC TR-18 PRI VOLTS	VOLTS	P1NV18P.PV	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0
1 PREC TR-20 PRI VOLTS	VOLTS	P1NV20P.PV	350.1	350.1	350.1	350.1	350.1	350.1	350.1	350.1	348.6	348.3	347.9	347.9	347.9	347.9	347.9	348.4	348.5
1 PREC TR-22 PRI VOLTS	VOLTS	P1NV22P.PV	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1
1 PREC TR-24 PRI VOLTS	VOLTS	P1NV24P.PV	319.0	318.7	318.4	318.1	317.8	317.5	317.2	316.9	316.7	316.4	316.3	319.1	319.1	319.1	319.1	319.1	319.1

					Unit 1 Test 4														
				9/1/99 12:33	9/1/99 14:15	9/1/99 14:30	9/1/99 14:45	9/1/99 15:00	9/1/99 15:15	9/1/99 15:30	9/1/99 15:45	9/1/99 16:00	9/1/99 16:15	9/1/99 16:30	9/1/99 16:45	9/1/99 17:00	9/1/99 17:15	9/1/99 17:30	9/1/99 17:45
	11 FEEDER COAL FLOW	TONS/HR	1F113.PV		24.7	25.3	27.5	28.7	29.0	29.1	29.2	29.2	29.2	29.2	29.2	29.3	29.2	29.3	29.4
	12 FEEDER COAL FLOW	TONS/HR	1F124.PV		23.7	24.3	26.5	27.7	28.0	28.1	28.2	28.2	28.2	28.2	28.2	28.2	28.3	28.4	28.3
	13 FEEDER COAL FLOW	TONS/HR	1F133.PV		26.8	27.5	29.7	30.9	31.2	31.3	31.4	31.4	31.4	31.4	31.4	31.5	31.4	31.6	31.6
	14 FEEDER COAL FLOW	TONS/HR	1F143.PV		14.3	10.1	3.4	0.8	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	UNIT 1 TOT COAL BURNED	TONS/HR	1F152.PV	90.0	88.4	85.9	88.1	87.9	88.6	88.6	88.5	89.0	88.9	88.7	88.5	88.9	89.1	89.3	88.5
	UNIT 1 GROSS GENERATION	MW	1k211.pv		246.7	239.7	242.5	244.3	243.6	246.4	246.0	247.1	246.3	246.0	245.9	243.5	244.4	243.7	244.3
	UNIT 1 TOTAL STEAM FLOW	KLBS/HR	1BM1P12.PV		1767.8	1712.6	1736.5	1740.5	1744.7	1748.9	1753.0	1757.2	1756.4	1751.7	1747.0	1743.9	1744.5	1745.1	1745.5
	UN 1 MN STM @ SV AVERAGE	DEG F	1T202.PV		993.9	996.7	996.4	995.2	995.5	995.4	995.7	995.2	996.0	995.2	995.8	995.5	995.7	995.8	996.7
	THROTTLE PRESS SELECT	PSIG	1BM1P06.PV		2426.5	2437.0	2445.4	2438.2	2448.1	2458.0	2467.9	2475.2	2468.1	2459.0	2449.8	2444.7	2448.2	2452.0	2454.3
	BOILER 1 FEEDWATER FLOW	KLBS/HR	C1P411A.PV		1725.8	1648.3	1663.6	1673.5	1666.0	1683.7	1685.7	1693.9	1681.6	1683.0	1676.8	1657.9	1662.6	1660.4	1656.5
	FURNACE 1 EAST DRAFT NR	"WC	C1P050A.PV		-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
	FURNACE 1 WEST DRAFT NR	"WC	C1P050B.PV		-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
	U1 WBox to Furn Diff Pres	PSID	1SA1P01.PV		5.1	4.8	5.1	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	APH 11 GAS IN TEMP	DEG F	1T007.PV		642.9	637.9	638.6	638.2	639.1	639.1	639.2	639.3	639.6	639.9	640.1	640.2	640.4	640.5	640.6
	APH 12 GAS IN TEMP	DEG F	1T008.PV		666.6	660.0	660.0	660.2	661.4	662.3	662.6	662.7	662.9	662.9	662.7	662.5	662.6	662.7	663.0
	UNIT 1 APH 11 OUTLET TEMP	DEG F	C1T033A.PV		297.6	296.6	297.1	291.7	290.8	290.0	289.4	289.6	290.2	290.1	290.5	290.4	290.2	289.6	289.8
	UNIT 1 APH 12 OUTLET TEMP	DEG F	C1T033B.PV		318.0	321.9	321.9	310.3	307.8	307.4	307.2	307.0	306.3	306.6	306.6	306.6	306.4	305.9	305.6
	Boiler 1 East Fluegas O2	%	C1G007.PV		3.6	3.3	3.0	2.9	3.0	3.0	2.9	2.9	3.0	2.9	3.0	3.0	3.0	3.2	3.1
	Boiler 1 West Fluegas O2	%	C1G005.PV		2.8	2.9	2.9	2.9	3.0	2.9	2.9	2.9	3.0	3.1	3.0	3.1	3.1	3.1	3.1
	ID FAN 11 INLET TEMP	DEG F	1T013.PV		299.5	299.1	298.4	297.4	295.8	294.3	293.6	293.1	292.8	292.7	292.7	292.7	292.7	292.6	292.6
	ID FAN 12 INLET TEMP	DEG F	1T014.PV		301.1	302.1	303.0	302.0	299.3	296.6	294.7	293.9	293.4	293.0	292.5	292.2	292.0	291.7	291.5
	ID FAN 11 INLET PRESS	"WC	1P013.PV		-13.8	-13.2	-13.0	-13.3	-13.2	-13.4	-13.3	-13.4	-13.6	-13.4	-13.5	-13.5	-13.5	-13.6	-13.7
	ID FAN 12 INLET PRESS	"WC	1P014.PV		-13.9	-13.1	-12.9	-13.1	-13.2	-13.3	-13.3	-13.3	-13.5	-13.4	-13.5	-13.5	-13.5	-13.6	-13.7
	APH 11 GAS INLET PRESS	"WC	1P007.PV		-6.0	-5.7	-5.6	-5.7	-5.7	-5.8	-5.7	-5.8	-5.8	-5.8	-5.8	-5.8	-5.8	-5.9	-5.9
	APH 12 GAS INLET PRESS	"WC	1P008.PV		-5.4	-5.1	-5.0	-5.1	-5.1	-5.2	-5.2	-5.2	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3	-5.2
	APH 11 GAS OUTLET PRESS	"WC	1P009.PV		-9.8	-9.3	-9.1	-9.3	-9.3	-9.4	-9.3	-9.4	-9.5	-9.4	-9.5	-9.5	-9.5	-9.6	-9.6
	APH 12 GAS OUTLET PRESS	"WC	1P010.PV		-9.9	-9.4	-9.2	-9.4	-9.4	-9.5	-9.5	-9.5	-9.6	-9.6	-9.6	-9.6	-9.6	-9.7	-9.7
	CEM - Unit #1 CO	PPM	E1G123 _PV		9.6	11.5	29.1	22.2	16.5	18.9	19.6	21.6	16.6	17.3	16.9	15.1	12.5	10.7	10.6
EPRICON	U1-East Epricon Inlet Temp	DEG F	C1T022.PV		871.4	872.1	874.5	873.0	872.1	872.7	871.5	871.6	872.5	871.3	871.6	871.8	872.8	874.4	875.5
	U1-West Epricon Inlet Temp	DEG F	C1T027.PV		871.9	866.7	868.1	874.1	875.0	876.4	876.1	877.2	876.9	876.7	877.6	878.1	878.9	879.4	879.3
	U1-East Epricon Outlt Temp	DEG F	C1T021.PV		862.4	861.1	860.0	860.1	860.3	860.4	860.5	860.7	860.8	860.9	861.1	861.2	861.3	861.5	861.6
	U1-West Epricon Outlt Temp	DEG F	C1T026.PV		868.6	867.7	865.1	863.9	865.0	866.2	867.4	868.5	869.6	870.1	870.4	870.7	871.1	871.4	871.6
	U1-East Epricon Gas Flow	KSCFM	C1F021.PV		22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
	U1-West Epricon Gas Flow	KSCFM	C1F026.PV		22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.4	22.5	22.5	22.5	22.5	22.5
ESP																			
Old Precip East	1 PREC TR-1A1A SEC AMPS	mA	P1OA01S.PV		182.5	171.2	167.9	202.0	183.6	167.3	188.5	155.9	225.9	205.5	227.0	200.7	190.8	242.8	212.7
	1 PREC TR-1A1B SEC AMPS	mA	P1OA02S.PV		292.7	279.5	264.4	281.2	276.9	268.1	283.3	286.7	289.1	300.8	278.7	245.1	306.0	316.4	299.3
	1 PREC TR-1A2A SEC AMPS	mA	P1OA03S.PV		368.5	327.1	317.2	381.0	328.2	322.7	316.1	241.1	358.7	358.2	320.1	360.0	320.3	308.8	388.7
	1 PREC TR-1A2B SEC AMPS	mA	P1OA04S.PV		439.1	423.4	419.1	428.5	446.5	418.8	428.2	412.9	386.4	413.7	394.5	362.1	432.1	448.0	467.7
	1 PREC TR-1A3A SEC AMPS	mA	P1OA05S.PV		439.4	377.0	429.1	390.2	420.6	434.3	373.3	355.8	427.3	467.6	405.2	421.9	409.8	448.8	452.0
	1 PREC TR-1A3B SEC AMPS	mA	P1OA06S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1A1A SEC KV 1	KV	P1OV01S1.PV		55.9	56.2	56.8	56.6	55.2	54.0	55.7	39.8	57.7	57.4	57.1	56.0	55.7	57.4	56.0
	1 PREC TR-1A1B SEC KV 1	KV	P1OV02S1.PV		57.6	57.5	57.3	57.6	56.3	58.4	57.4	57.7	56.3	55.4	57.3	26.0	55.5	58.5	55.0
	1 PREC TR-1A2A SEC KV 1	KV	P1OV03S1.PV		26.5	25.6	25.9	26.1	25.5	25.1	25.7	24.5	25.7	24.9	24.8	25.7	25.6	25.3	26.0
	1 PREC TR-1A2B SEC KV 1	KV	P1OV04S1.PV		24.6	24.6	24.3	23.9	24.6	24.2	24.4	24.7	24.0	24.3	23.8	24.6	23.8	24.3	24.0
	1 PREC TR-1A3A SEC KV 1	KV	P1OV05S1.PV		24.1	23.6	23.9	23.4	24.2	24.0	23.3	23.2	23.6	24.5	23.3	23.0	24.0	24.5	23.8
	1 PREC TR-1A3B SEC KV 1	KV	P1OV06S1.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1A1A PRI AMPS	AMPS	P1OA01P.PV		44.9	42.9	41.9	48.6	43.9	43.9	46.7	38.0	53.7	50.4	54.0	48.7	47.4	56.2	52.5
	1 PREC TR-1A1B PRI AMP	AMPS	P1OA02P.PV		53.6	57.0	56.0	57.8	58.3	56.5	60.4	59.4	56.4	58.7	57.0	25.7	59.5	61.2	59.8
	1 PREC TR-1A2A PRI AMPS	AMPS	P1OA03P.PV	this time: -106	46.1	39.4	47.5	57.5	41.8	45.4	47.5	42.3	51.5	51.1	44.2	52.3	49.7	42.8	55.0
	1 PREC TR-1A2B PRI AMPS	AMPS	P1OA04P.PV	this time: -106	No good data for this point f	59.5	54.5	r this point f	r this point f	62.0	r this point f	56.5	51.1	63.0	57.0	41.8	43.0	57.0	r this point f
	1 PREC TR-1A3A PRI AMPS	AMPS	P1OA05P.PV	this time: -106	62.0	54.0	56.0	54.7	55.7	52.0	43.5	52.1	51.4	r this point f	55.2	60.5	48.0	55.0	54.0
	1 PREC TR-1A3B PRI AMPS	AMPS	P1OA06P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1A1A PRI VOLTS	VOLTS	P1OV01P .PV		200.1	201.9	200.4	207.0	195.8	191.7	198.3	159.4	217.2	210.7	212.3	208.2	207.8	216.9	213.7
	1 PREC TR-1A1B PRI VOLTS	VOLTS	P1OV02p.PV		234.8	229.6	229.2	228.8	224.7	230.2	227.3	231.4	232.5	230.0	229.8	181.1	235.6	235.9	237.5
	1 PREC TR-1A2A PRI VOLTS	VOLTS	P1OV03P.PV		302.4	287.9	294.0	298.6	287.1	277.3	289.3	261.3	292.7	283.2	277.5	294.4	293.2	285.3	299.2
	1 PREC TR-1A2B PRI VOLTS	VOLTS	P1OV04P.PV		305.0	301.6	299.2	294.2	304.8	299.7	304.0	302.4	295.6	297.8	292.8	293.6	294.0	300.5	300.9
	1 PREC TR-1A3A PRI VOLTS	VOLTS	P1OV05P.PV		315.0	304.8	308.1	302.6	314.5	311.4	300.6	296.3	304.6	322.6	305.2	298.6	310.5	316.9	313.9
	1 PREC TR-1A3B PRI VOLTS	VOLTS	P1OV06P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Old Precip West	1 PREC TR-1B1A SEC AMPS	mA	P1OA07S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1B SEC AMPS	mA	P1OA08S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B2A SEC AMPS	mA	P1OA09S.PV		76.7	68.1	66.8	77.2	81.2	81.4	78.2	62.6	94.6	85.4	89.6	84.4	88.0	89.2	99.0
	1 PREC TR-1B2B SEC AMPS	mA	P1OA10S.PV		249.6	220.6	228.0	224.0	216.0	229.0	216.8	208.6	203.6	226.4	253.4	231.8	228.0	212.2	280.0
	1 PREC TR-1B3A SEC AMPS	mA	P1OA11S.PV		143.0	148.8	136.6	115.2	148.4	144.8	143.0	142.4	167.9	145.5	128.0	150.7	166.9	173.4	141.0
	1 PREC TR-1B3B SEC AMPS	mA	P1OA12S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1A SEC KV 1	KV	P1OV07S1.PV		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	1 PREC TR-1B1B SEC KV 1	KV	P1OV08S1.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B2A SEC KV 1	KV	P1OV09S1.PV		26.4	26.4	26.3	26.7	27.2	26.8	27.0	21.7	27.2	27.2	27.3	26.6	27.2	27.3	26.9
	1 PREC TR-1B2B SEC KV 1	KV	P1OV10S1.PV		28.3	27.0	27.3	26.5	26.4	27.0	26.8	26.7	26.4	26.5	26.5	26.5	26.9	26.5	26.4
	1 PREC TR-1B3A SEC KV 1	KV	P1OV11S1.PV		24.4	24.3	23.7	23.4	24.1	24.0	23.9	24.4	24.8	24.1	20.2	24.1	24.8	24.3	23.5
	1 PREC TR-1B3B SEC KV 1	KV	P1OV12S1.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1A PRI AMPS	AMPS	P1OA07P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1B PRI AMPS	AMPS	P1OA08P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B2A PRI AMPS	AMPS	P1OA09P.PV		21.7	20.5	20.2	22.0	22.5	22.7	23.0	17.8	24.3	23.4	25.0	23.9	23.9	24.6	25.9
	1 PREC TR-1B2B PRI AMPS	AMPS	P1OA10P.PV		49.8	46.4	47.6	45.2	43.8	41.5	45.5	44.5	41.4	45.1	47.1	43.9	44.6	42.5	49.8
	1 PREC TR-1B3A PRI AMPS	AMPS	P1OA11P.PV		32.2	32.6	29.6	28.6	32.2	30.5	31.5	30.3	36.0	31.2	26.6	33.1	35.9	36.0	31.5
	1 PREC TR-1B3B PRI AMPS	AMPS	P1OA12P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B1A PRI VOLTS	VOLTS	P1OV07P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

					Unit 1 Test 4														
				9/1/99 12:33	9/1/99 14:15	9/1/99 14:30	9/1/99 14:45	9/1/99 15:00	9/1/99 15:15	9/1/99 15:30	9/1/99 15:45	9/1/99 16:00	9/1/99 16:15	9/1/99 16:30	9/1/99 16:45	9/1/99 17:00	9/1/99 17:15	9/1/99 17:30	9/1/99 17:45
	1 PREC TR-1B1B PRI VOLTS	VOLTS	P1OV08P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-1B2A PRI VOLTS	VOLTS	P1OV09P.PV		227.6	231.1	226.2	231.9	235.9	233.2	237.4	193.7	238.6	238.1	243.3	237.7	240.8	241.4	243.0
	1 PREC TR-1B2B PRI VOLTS	VOLTS	P1OV10P.PV		306.8	283.5	290.0	281.6	281.3	287.3	291.9	282.2	277.6	282.3	285.1	281.7	292.5	277.7	284.2
	1 PREC TR-1B3A PRI VOLTS	VOLTS	P1OV11P.PV		247.5	247.2	234.5	230.6	246.4	241.9	243.0	248.3	257.0	241.2	207.3	249.2	258.6	250.0	235.6
	1 PREC TR-1B3B PRI VOLTS	VOLTS	P1OV12P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Precip East	1 PREC TR-01 SEC AMPS	mA	P1NA01S.PV		219.8	224.7	195.5	160.9	164.7	153.5	146.2	173.9	142.2	161.1	125.6	1.0	224.9	210.1	239.6
	1 PREC TR-03 SEC AMPS	mA	P1NA03S.PV		221.3	229.2	228.5	189.3	233.9	135.1	116.3	204.0	212.3	230.9	168.2	161.1	214.9	213.8	222.9
	1 PREC TR-05 SEC AMPS	mA	P1NA05S.PV		250.0	250.0	159.4	110.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	217.0	250.0	250.0
	1 PREC TR-07 SEC AMPS	mA	P1NA07S.PV		250.0	250.0	250.0	250.0	250.0	250.0	200.0	249.5	248.7	241.4	248.9	242.3	244.9	241.7	240.0
	1 PREC TR-09 SEC AMPS	mA	P1NA09S.PV		249.3	250.0	249.3	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	200.6	250.0	250.0
	1 PREC TR-11 SEC AMPS	mA	P1NA11S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-13 SEC AMPS	mA	P1NA13S.PV		250.0	8.3	225.0	250.0	225.0	8.3	250.0	250.0	158.3	75.0	250.0	250.0	208.3	25.0	250.0
	1 PREC TR-15 SEC AMPS	mA	P1NA15S.PV		250.0	250.0	213.2	241.7	27.7	250.0	250.0	241.7	204.5	191.1	93.5	250.0	250.0	225.3	126.5
	1 PREC TR-17 SEC AMPS	mA	P1NA17S.PV		250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
	1 PREC TR-19 SEC AMPS	mA	P1NA19S.PV		496.1	497.2	498.3	499.4	495.5	495.4	495.2	494.5	494.9	494.8	494.7	494.6	494.5	494.4	494.3
	1 PREC TR-21 SEC AMPS	mA	P1NA21S.PV		499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9
	1 PREC TR-01 SEC KV 1	KV	P1NV01S1.PV		61.3	61.3	59.0	56.9	57.5	56.1	55.7	58.6	54.9	56.6	53.5	6.4	60.0	60.1	61.7
	1 PREC TR-03 SEC KV 1	KV	P1NV03S1.PV		60.0	60.2	60.5	56.8	60.8	37.2	35.9	53.8	58.8	60.3	56.7	56.0	59.1	58.8	59.0
	1 PREC TR-05 SEC KV 1	KV	P1NV05S1.PV		55.5	55.3	37.4	28.3	55.3	55.6	55.5	55.1	54.4	54.9	55.7	55.4	48.4	54.0	54.0
	1 PREC TR-07 SEC KV 1	KV	P1NV07S1.PV		63.0	63.0	63.0	63.0	62.9	62.5	50.9	62.3	62.0	61.6	62.3	62.0	62.0	61.5	61.3
	1 PREC TR-09 SEC KV 1	KV	P1NV09S1.PV		65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	52.8	64.8	64.8
	1 PREC TR-11 SEC KV 1	KV	P1NV11S1.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-13 SEC KV 1	KV	P1NV13S1.PV		63.8	7.9	58.9	64.5	58.3	8.0	64.5	64.0	42.7	23.5	64.0	64.0	54.3	11.8	63.9
	1 PREC TR-15 SEC KV 1	KV	P1NV15S1.PV		65.8	65.3	57.8	64.0	12.0	66.0	66.0	64.0	56.0	52.0	28.3	66.5	65.8	59.3	36.0
	1 PREC TR-17 SEC KV 1	KV	P1NV17S1.PV		66.9	67.0	67.0	66.5	66.6	67.0	67.0	66.9	66.8	66.6	66.5	66.3	66.2	66.0	66.0
	1 PREC TR-19 SEC KV 1	KV	P1NV19S1.PV		59.8	59.8	59.7	59.7	59.7	59.6	59.6	59.5	59.5	59.5	59.4	59.4	59.3	59.3	59.3
	1 PREC TR-21 SEC KV 1	KV	P1NV21S1.PV		72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9
	1 PREC TR-23 SEC KV 1	KV	P1NV23S1.PV		70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
	1 PREC TR-01 PRI AMPS	AMPS	P1NA01P.PV		49.7	49.8	44.6	37.7	39.1	36.5	34.8	40.6	34.1	38.9	30.9	0.0	50.1	48.0	53.7
	1 PREC TR-03 PRI AMPS	AMPS	P1NA03P.PV		50.2	51.0	51.1	43.1	52.0	29.7	26.3	45.1	48.3	50.9	39.2	38.3	49.0	47.8	49.3
	1 PREC TR-05 PRI AMPS	AMPS	P1NA05P.PV		40.0	40.0	25.3	17.3	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	34.6	40.0	40.0
	1 PREC TR-07 PRI AMPS	AMPS	P1NA07P.PV		56.0	56.0	56.0	56.0	56.0	56.0	44.8	56.0	56.0	54.7	56.0	54.8	56.0	54.7	54.7
	1 PREC TR-09 PRI AMPS	AMPS	P1NA09P.PV		60.7	61.3	61.4	61.6	61.8	61.4	61.2	61.3	61.5	61.6	61.8	61.9	49.6	62.0	62.0
	1 PREC TR-11 PRI AMPS	AMPS	P1NA11P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-13 PRI AMPS	AMPS	P1NA13P.PV		67.0	2.2	60.3	67.0	60.3	2.2	67.0	67.0	42.4	20.1	67.7	68.5	56.2	6.7	67.0
	1 PREC TR-15 PRI AMPS	AMPS	P1NA15P.PV		63.0	63.0	53.4	60.9	6.3	63.0	63.0	60.9	51.9	48.1	23.4	63.7	63.4	56.8	31.5
	1 PREC TR-17 PRI AMPS	AMPS	P1NA17P.PV		66.7	66.7	66.6	66.6	66.6	66.5	66.5	66.5	66.5	66.4	66.4	66.4	66.3	66.3	66.3
	1 PREC TR-19 PRI AMPS	AMPS	P1NA19P.PV		107.1	107.1	107.1	107.2	107.2	107.3	107.3	107.4	107.4	107.5	107.5	107.6	107.6	107.7	107.7
	1 PREC TR-21 PRI AMPS	AMPS	P1NA21P.PV		114.1	114.1	114.2	114.2	114.2	114.3	114.3	114.3	114.3	114.4	114.4	114.4	114.5	114.5	114.5
	1 PREC TR-23 PRI AMPS	AMPS	P1NA23P.PV		108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1	108.1
	1 PREC TR-01 PRI VOLTS	VOLTS	P1NV01P.PV		300.7	296.8	277.0	257.4	264.8	251.9	245.2	271.2	238.4	254.3	230.6	28.4	294.8	289.0	306.5
	1 PREC TR-03 PRI VOLTS	VOLTS	P1NV03P.PV		300.7	304.6	307.3	274.5	312.2	185.6	175.8	275.9	294.5	308.2	261.8	260.0	295.9	295.3	303.1
	1 PREC TR-05 PRI VOLTS	VOLTS	P1NV05P.PV		274.8	277.1	186.1	139.3	273.9	274.6	272.7	273.0	273.2	274.3	276.0	274.9	239.9	268.2	268.0
	1 PREC TR-07 PRI VOLTS	VOLTS	P1NV07P.PV		187.3	187.6	187.9	188.1	188.4	188.7	151.7	187.4	188.2	186.0	187.9	186.4	188.1	187.0	186.2
	1 PREC TR-09 PRI VOLTS	VOLTS	P1NV09P.PV		318.2	323.2	324.1	324.1	324.1	323.4	323.3	322.5	321.8	321.0	320.2	319.5	260.5	320.8	320.6
	1 PREC TR-11 PRI VOLTS	VOLTS	P1NV11P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-13 PRI VOLTS	VOLTS	P1NV13P.PV		313.6	28.9	284.2	313.0	283.0	29.1	317.4	314.1	205.1	107.4	312.0	312.0	263.2	48.3	311.8
	1 PREC TR-15 PRI VOLTS	VOLTS	P1NV15P.PV		320.7	319.2	278.8	314.1	53.7	319.8	320.9	313.1	270.3	251.4	133.9	322.0	319.4	287.7	172.5
	1 PREC TR-17 PRI VOLTS	VOLTS	P1NV17P.PV		330.2	332.4	331.2	331.0	331.0	331.0	331.0	331.6	332.0	331.7	332.8	332.5	332.0	331.5	331.2
	1 PREC TR-19 PRI VOLTS	VOLTS	P1NV19P.PV		391.6	391.8	392.1	392.3	392.5	392.7	392.6	391.1	391.3	391.5	391.7	391.8	392.0	392.2	392.3
	1 PREC TR-21 PRI VOLTS	VOLTS	P1NV21P.PV		372.5	372.8	373.1	373.4	373.7	373.9	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0	374.0
	1 PREC TR-23 PRI VOLTS	VOLTS	P1NV23P.PV		363.1	363.3	363.5	363.7	363.5	363.8	363.5	363.2	362.9	362.7	362.4	362.1	362.0	362.0	362.0
New Precip West	1 PREC TR-02 SEC AMPS	mA	P1NA02S.PV		250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	225.3	60.6	250.0	200.6	250.0	250.0
	1 PREC TR-04 SEC AMPS	mA	P1NA04S.PV		215.0	59.8	225.1	249.8	249.6	249.5	249.3	249.2	249.0	248.9	248.7	248.6	248.4	248.3	248.2
	1 PREC TR-06 SEC AMPS	mA	P1NA06S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-08 SEC AMPS	mA	P1NA08S.PV		245.6	245.4	245.2	245.0	244.8	244.6	244.5	244.3	235.9	25.0	250.0	250.0	196.6	244.3	244.5
	1 PREC TR-10 SEC AMPS	mA	P1NA10S.PV		250.0	250.0	249.3	250.0	250.0	250.0	250.0	250.0	250.0	250.0	200.6	250.0	250.0	250.0	250.0
	1 PREC TR-12 SEC AMPS	mA	P1NA12S.PV		250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
	1 PREC TR-14 SEC AMPS	mA	P1NA14S.PV		225.0	250.0	225.0	8.3	250.0	250.0	218.5	8.3	250.0	250.0	208.3	25.0	250.0	250.0	250.0
	1 PREC TR-16 SEC AMPS	mA	P1NA16S.PV		27.7	241.7	200.6	250.0	250.0	250.0	35.9	250.0	200.6	250.0	250.0	225.3	44.1	250.0	126.5
	1 PREC TR-18 SEC AMPS	mA	P1NA18S.PV		499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9
	1 PREC TR-20 SEC AMPS	mA	P1NA20S.PV		499.9	499.9	499.9	499.9	499.9	499.2	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9
	1 PREC TR-22 SEC AMPS	mA	P1NA22S.PV		499.9	498.1	495.9	499.6	499.9	499.9	498.4	496.8	495.0	495.0	495.5	496.9	498.4	498.2	499.9
	1 PREC TR-24 SEC AMPS	mA	P1NA24S.PV		499.0	499.3	499.6	498.4	498.9	499.9	499.9	499.9	499.2	499.9	499.9	499.9	499.9	499.1	499.6
	1 PREC TR-02 SEC KV 1	KV	P1NV02S1.PV		46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.4	46.1	42.0	16.2	47.6	38.3	45.9	46.1
	1 PREC TR-04 SEC KV 1	KV	P1NV04S1.PV		48.4	16.7	49.5	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.3	55.1	54.7	54.5	54.4
	1 PREC TR-06 SEC KV 1	KV	P1NV06S1.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1 PREC TR-08 SEC KV 1	KV	P1NV08S1.PV		56.0	56.0	56.0	56.0	56.0	56.0	56.0	56.0	54.3	10.2	56.8	56.3	45.8	56.0	56.0
	1 PREC TR-10 SEC KV 1	KV	P1NV10S1.PV		57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	57.0	46.8	57.0	57.0	57.0	57.0
	1 PREC TR-12 SEC KV 1	KV	P1NV12S1.PV		58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
	1 PREC TR-14 SEC KV 1	KV	P1NV14S1.PV		52.1	57.5	52.7	7.7	58.0	58.0	52.4	7.7	58.0	58.0	49.3	11.2	58.0	58.0	58.0
	1 PREC TR-16 SEC KV 1	KV	P1NV16S1.PV		10.1	55.3	46.6	57.0	57.0	57.0	11.8	56.5	46.6	56.7	56.4	51.0	13.7	57.0	31.0
	1 PREC TR-18 SEC KV 1	KV	P1NV18S1.PV		67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
	1 PREC TR-20 SEC KV 1	KV	P1NV20S1.PV		68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0
	1 PREC TR-22 SEC KV 1	KV	P1NV22S1.PV		63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
	1 PREC TR-24 SEC KV 1	KV	P1NV24S1.PV		62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0
	1 PREC TR-23 SEC AMPS	mA	P1NA23S.PV		499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9

					Unit 1 Test 4														
				9/1/99 12:33	9/1/99 14:15	9/1/99 14:30	9/1/99 14:45	9/1/99 15:00	9/1/99 15:15	9/1/99 15:30	9/1/99 15:45	9/1/99 16:00	9/1/99 16:15	9/1/99 16:30	9/1/99 16:45	9/1/99 17:00	9/1/99 17:15	9/1/99 17:30	9/1/99 17:45
1 PREC TR-02 PRI AMPS	AMPS	P1NA02P.PV			41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	37.8	9.8	41.9	33.6	41.9	41.9
1 PREC TR-04 PRI AMPS	AMPS	P1NA04P.PV			47.2	12.8	50.4	55.9	55.8	55.8	55.7	55.6	55.6	55.5	55.4	55.3	55.3	55.2	55.1
1 PREC TR-06 PRI AMPS	AMPS	P1NA06P.PV			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 PREC TR-08 PRI AMPS	AMPS	P1NA08P.PV			57.4	57.4	57.3	57.3	57.2	57.2	57.1	57.1	55.1	5.8	57.8	57.3	45.6	57.1	57.1
1 PREC TR-10 PRI AMPS	AMPS	P1NA10P.PV			65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	52.0	64.0	64.1	64.1	64.1
1 PREC TR-12 PRI AMPS	AMPS	P1NA12P.PV			64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
1 PREC TR-14 PRI AMPS	AMPS	P1NA14P.PV			57.7	64.5	58.3	2.1	64.0	64.0	56.2	2.2	65.0	65.0	54.2	6.4	64.2	64.6	64.8
1 PREC TR-16 PRI AMPS	AMPS	P1NA16P.PV			6.7	64.7	53.6	67.0	67.0	67.0	8.9	67.0	53.6	67.0	67.0	60.3	11.2	67.0	33.5
1 PREC TR-18 PRI AMPS	AMPS	P1NA18P.PV			113.0	113.0	113.0	113.0	113.0	112.9	112.9	112.9	112.9	112.8	112.8	112.8	112.7	112.7	112.7
1 PREC TR-20 PRI AMPS	AMPS	P1NA20P.PV			117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0	117.0
1 PREC TR-22 PRI AMPS	AMPS	P1NA22P.PV			109.3	109.3	109.4	109.4	109.5	109.6	109.6	109.7	109.8	109.8	109.9	109.9	110.0	110.1	110.1
1 PREC TR-24 PRI AMPS	AMPS	P1NA24P.PV			108.1	108.2	108.3	108.3	108.4	108.5	108.5	108.6	108.6	108.7	108.8	108.8	108.9	109.0	109.0
1 PREC TR-02 PRI VOLTS	VOLTS	P1NV02P.PV			195.9	195.9	195.9	194.9	193.9	193.9	196.0	199.1	197.7	178.7	69.9	204.4	163.3	195.9	195.9
1 PREC TR-04 PRI VOLTS	VOLTS	P1NV04P.PV			243.8	83.3	251.4	273.4	274.1	274.8	275.5	275.1	272.0	273.6	275.3	279.0	277.4	276.9	276.7
1 PREC TR-06 PRI VOLTS	VOLTS	P1NV06P.PV			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 PREC TR-08 PRI VOLTS	VOLTS	P1NV08P.PV			357.4	357.7	358.0	358.4	358.7	359.0	359.3	359.6	348.8	60.5	361.5	360.6	294.2	361.1	360.6
1 PREC TR-10 PRI VOLTS	VOLTS	P1NV10P.PV			237.6	238.0	238.3	238.6	239.0	239.3	239.7	244.4	239.4	236.8	193.1	235.2	235.5	235.8	235.9
1 PREC TR-12 PRI VOLTS	VOLTS	P1NV12P.PV			253.7	254.2	254.8	255.3	256.3	258.4	257.4	256.4	257.6	252.7	252.0	245.8	249.0	252.2	254.1
1 PREC TR-14 PRI VOLTS	VOLTS	P1NV14P.PV			189.7	209.5	191.6	27.4	211.0	211.0	188.5	27.4	212.0	209.9	180.2	39.7	209.1	210.9	212.0
1 PREC TR-16 PRI VOLTS	VOLTS	P1NV16P.PV			43.3	240.2	202.2	247.0	248.2	250.7	51.0	245.6	202.4	249.3	249.7	221.0	58.7	248.0	135.0
1 PREC TR-18 PRI VOLTS	VOLTS	P1NV18P.PV			345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.0	345.1	345.2	345.3	345.4	345.5	345.6
1 PREC TR-20 PRI VOLTS	VOLTS	P1NV20P.PV			349.0	349.0	349.1	349.2	349.2	349.3	349.4	349.4	349.5	349.6	349.6	349.7	349.8	349.9	349.9
1 PREC TR-22 PRI VOLTS	VOLTS	P1NV22P.PV			321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.1	321.2	321.3	321.4	321.5	321.6
1 PREC TR-24 PRI VOLTS	VOLTS	P1NV24P.PV			319.1	319.1	319.1	319.1	319.1	319.1	319.1	318.6	317.1	317.2	319.7	320.7	319.5	318.6	318.3

Unit 1 Test 5

				9/1/99 17:48	9/2/99 8:00	9/2/99 8:15	9/2/99 8:30	9/2/99 8:45	9/2/99 9:00	9/2/99 9:15	9/2/99 9:30	9/2/99 9:45	9/2/99 10:00	9/2/99 10:15	9/2/99 10:30	9/2/99 10:45	9/2/99 11:00	9/2/99 11:30	9/3/99 11:15
	11 FEEDER COAL FLOW	TONS/HR	1F113.PV		29.1	29.1	29.1	29.2	29.3	29.4	29.4	29.5	29.4	29.4	29.5	29.5	28.7	27.1	
	12 FEEDER COAL FLOW	TONS/HR	1F124.PV		29.2	29.2	29.2	29.3	29.3	29.5	29.5	29.5	29.6	29.5	29.6	29.6	28.8	27.3	
	13 FEEDER COAL FLOW	TONS/HR	1F133.PV		31.3	31.3	31.3	31.3	31.4	31.6	31.6	31.7	31.7	31.6	31.7	31.7	30.9	29.3	
	14 FEEDER COAL FLOW	TONS/HR	1F143.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	
	UNIT 1 TOT COAL BURNED	TONS/HR	1F152.PV	88.5	89.3	89.7	89.6	89.9	90.3	90.6	90.4	91.0	90.5	90.8	90.6	90.8	85.8	86.1	89.7
	UNIT 1 GROSS GENERATION	MW	1K211.pv		250.9	250.8	249.8	249.1	251.5	249.2	252.4	251.3	250.2	251.0	251.5	249.6	240.5	237.0	
	UNIT 1 TOTAL STEAM FLOW	KLBS/HR	1BM1P12:PV		1792.0	1791.4	1785.5	1778.0	1795.2	1790.6	1781.6	1779.0	1779.4	1789.3	1785.9	1773.4	1673.8	1667.3	
	UN 1 MN STM @ SV AVERAGE	DEG F	1T202.PV		991.5	992.4	991.9	992.9	988.5	990.8	992.3	992.8	992.5	991.2	993.0	992.2	993.7	989.6	
	THROTTLE PRESS SELECT	PSIG	1BM1P06.PV		2451.2	2443.5	2435.9	2434.8	2460.2	2462.5	2450.1	2445.4	2443.0	2449.7	2457.5	2436.3	2435.9	2464.4	
	BOILER 1 FEEDWATER FLOW	KLBS/HR	C1P411A.PV		1705.4	1701.5	1690.4	1675.9	1721.8	1725.5	1733.4	1723.5	1705.9	1720.7	1706.2	1687.7	1603.5	1583.7	
	FURNACE 1 EAST DRAFT NR	"WC	C1P050A.PV		-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	
	FURNACE 1 WEST DRAFT NR	"WC	C1P050B.PV		-0.1	-0.1	-0.1	-0.1	-0.2	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	
	U1 WBox to Furn Diff Pres	PSID	1SA1P01.PV		5.5	5.5	5.5	5.5	5.4	5.6	5.5	5.5	5.5	5.5	5.5	5.5	5.3	5.5	
	APH 11 GAS IN TEMP	DEG F	1T007.PV		646.6	645.8	645.1	644.2	643.1	643.2	646.3	645.4	644.7	644.4	644.0	643.6	641.4	638.8	
	APH 12 GAS IN TEMP	DEG F	1T008.PV		668.2	668.2	668.2	668.2	667.3	666.6	669.6	669.9	670.1	669.6	669.7	669.5	667.8	662.0	
	UNIT 1 APH 11 OUTLET TEMP	DEG F	C1T033A.PV		288.3	289.4	289.6	290.0	290.7	291.6	293.7	293.7	294.1	294.5	295.0	296.1	298.1	299.4	
	UNIT 1 APH 12 OUTLET TEMP	DEG F	C1T033B.PV		303.7	303.7	304.5	304.4	304.8	303.6	303.9	304.8	304.9	305.5	305.2	305.8	313.5	318.3	
	Boiler 1 East Fluegas O2	%	C1G007.PV		3.3	3.3	3.3	3.4	3.2	3.4	3.5	3.4	3.5	3.4	3.4	3.5	3.7	4.0	
	Boiler 1 West Fluegas O2	%	C1G005.PV		3.2	3.2	3.2	3.3	3.1	3.3	3.3	3.4	3.4	3.2	3.2	3.4	3.7	3.7	
	ID FAN 11 INLET TEMP	DEG F	1T013.PV		285.6	286.2	286.9	287.6	288.4	289.1	290.1	291.3	292.0	292.7	293.3	294.0	294.6	295.8	
	ID FAN 12 INLET TEMP	DEG F	1T014.PV		285.9	286.3	286.8	287.2	287.7	288.1	288.3	288.5	288.8	289.3	289.7	290.2	291.3	294.5	
	ID FAN 11 INLET PRESS	"WC	1P013.PV		-14.1	-14.2	-14.1	-14.2	-14.0	-14.3	-14.6	-14.4	-14.6	-14.3	-14.4	-14.4	-13.9	-13.7	
	ID FAN 12 INLET PRESS	"WC	1P014.PV		-14.4	-14.4	-14.4	-14.4	-14.2	-14.5	-14.9	-14.7	-14.8	-14.6	-14.6	-14.7	-14.2	-13.9	
	APH 11 GAS INLET PRESS	"WC	1P007.PV		-6.1	-6.1	-6.1	-6.1	-6.1	-6.0	-6.3	-6.1	-6.2	-6.1	-6.1	-6.2	-6.0	-5.8	
	APH 12 GAS INLET PRESS	"WC	1P008.PV		-5.4	-5.5	-5.5	-5.5	-5.4	-5.4	-5.7	-5.5	-5.6	-5.6	-5.5	-5.6	-5.4	-5.3	
	APH 11 GAS OUTLET PRESS	"WC	1P009.PV		-10.0	-10.1	-10.0	-10.1	-10.0	-10.2	-10.4	-10.3	-10.4	-10.2	-10.2	-10.3	-10.0	-9.8	
	APH 12 GAS OUTLET PRESS	"WC	1P010.PV		-10.2	-10.2	-10.2	-10.2	-10.1	-10.3	-10.6	-10.5	-10.6	-10.4	-10.4	-10.5	-10.1	-9.9	
	CEM - Unit #1 CO	PPM	E1G123 _PV		40.9	40.1	42.3	39.4	50.1	42.0	24.2	28.2	22.4	32.9	33.4	32.0	20.4	11.4	
EPRICON	U1-East Epricon Inlet Temp	DEG F	C1T022.PV		893.6	893.2	892.3	893.1	886.0	884.9	887.6	886.7	887.1	885.4	887.0	887.5	885.5	879.9	
	U1-West Epricon Inlet Temp	DEG F	C1T027.PV		893.9	893.7	892.8	893.9	889.7	887.8	890.6	890.6	892.1	891.0	892.8	892.5	887.0	882.0	
	U1-East Epricon Outll Temp	DEG F	C1T021.PV		879.2	879.8	879.8	879.8	879.7	877.5	875.7	875.8	875.9	876.0	876.1	876.2	876.3	875.8	
	U1-West Epricon Outll Temp	DEG F	C1T026.PV		886.6	886.4	886.2	886.0	885.7	884.9	883.7	883.9	884.2	884.6	884.9	885.2	885.5	884.3	
	U1-East Epricon Gas Flow	KSCFM	C1F021.PV		22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	
	U1-West Epricon Gas Flow	KSCFM	C1F026.PV		22.6	22.5	22.5	22.6	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	
ESP																			
Old Precip East	1 PREC TR-1A1A SEC AMPS	mA	P1OA01S.PV		236.3	223.0	232.9	224.7	213.7	225.3	218.6	221.7	219.7	212.4	186.8	213.8	223.1	205.7	
	1 PREC TR-1A1B SEC AMPS	mA	P1OA02S.PV		288.9	287.9	279.2	244.5	274.6	280.7	288.7	296.4	285.9	274.7	277.2	274.1	298.4	277.5	
	1 PREC TR-1A2A SEC AMPS	mA	P1OA03S.PV		440.1	430.0	376.5	372.3	405.0	412.0	406.8	390.9	378.5	367.4	296.1	368.3	393.4	353.5	
	1 PREC TR-1A2B SEC AMPS	mA	P1OA04S.PV		457.5	459.4	425.2	409.4	455.1	397.1	425.3	418.3	433.8	416.5	363.0	425.5	445.8	457.1	
	1 PREC TR-1A3A SEC AMPS	mA	P1OA05S.PV		408.8	451.1	435.4	470.8	452.3	425.2	437.9	447.7	433.7	441.8	347.2	434.2	458.8	462.4	
	1 PREC TR-1A3B SEC AMPS	mA	P1OA06S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1A1A SEC KV 1	KV	P1OV01S1.PV		58.0	56.5	57.1	57.6	56.8	56.8	57.8	56.3	56.8	56.9	41.4	57.8	55.8	56.8	
	1 PREC TR-1A1B SEC KV 1	KV	P1OV02S1.PV		57.1	57.4	57.7	28.7	56.5	57.1	54.8	55.3	56.8	56.8	57.9	57.2	57.3	57.4	
	1 PREC TR-1A2A SEC KV 1	KV	P1OV03S1.PV		27.0	26.6	26.0	26.4	26.3	26.5	26.9	25.8	26.7	25.6	25.6	26.1	26.5	26.2	
	1 PREC TR-1A2B SEC KV 1	KV	P1OV04S1.PV		25.1	24.9	24.9	25.3	24.7	24.4	24.5	24.3	24.4	24.4	24.2	24.7	24.5	24.6	
	1 PREC TR-1A3A SEC KV 1	KV	P1OV05S1.PV		23.1	24.1	23.6	24.1	23.3	23.6	23.9	23.1	23.9	23.9	23.3	23.6	24.0	24.7	
	1 PREC TR-1A3B SEC KV 1	KV	P1OV06S1.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1A1A PRI AMPS	AMPS	P1OA01P.PV		55.4	53.2	55.2	52.0	50.3	53.2	52.7	53.0	52.1	51.6	43.5	52.2	53.6	50.2	
	1 PREC TR-1A1B PRI AMP	AMPS	P1OA02P.PV		58.2	58.0	52.1	25.3	56.8	55.6	58.2	57.0	58.2	58.7	57.2	53.4	56.7	59.1	
	1 PREC TR-1A2A PRI AMPS	AMPS	P1OA03P.PV		64.0	56.5	54.2	48.0	50.9	33.0	49.5	45.8	53.7	53.0	41.7	52.1	58.6	54.8	
	1 PREC TR-1A2B PRI AMPS	AMPS	P1OA04P.PV	this time: -106o good data for this point fo	r this point f	r this point f	r this point f	50.8	r this point f	61.0	r this point f	61.0	48.1	61.0	59.4	56.0	62.0	r this point for this time: -106	
	1 PREC TR-1A3A PRI AMPS	AMPS	P1OA05P.PV		55.9	59.0	50.1	r this point f	r this point f	52.0	62.7	r this point f	54.0	r this point f	48.0	60.0	44.9	57.0	
	1 PREC TR-1A3B PRI AMPS	AMPS	P1OA06P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1A1A PRI VOLTS	VOLTS	P1OV01P _PV		220.6	215.1	217.7	214.6	212.2	212.9	217.4	209.0	213.2	211.3	174.0	213.4	216.3	209.3	
	1 PREC TR-1A1B PRI VOLTS	VOLTS	P1OV02p.PV		241.4	233.5	225.6	184.5	229.7	234.7	227.9	235.3	224.2	227.1	227.1	224.7	233.6	228.2	
	1 PREC TR-1A2A PRI VOLTS	VOLTS	P1OV03P.PV		320.9	310.5	304.1	308.2	306.5	307.7	314.0	295.6	310.7	293.4	279.9	297.1	310.5	301.4	
	1 PREC TR-1A2B PRI VOLTS	VOLTS	P1OV04P.PV		312.3	307.1	303.5	304.6	303.9	295.9	300.7	298.7	299.5	299.3	293.5	302.6	301.0	306.7	
	1 PREC TR-1A3A PRI VOLTS	VOLTS	P1OV05P.PV		300.9	313.6	310.2	314.9	303.3	308.5	314.4	302.1	309.3	312.5	296.0	306.9	314.3	320.3	
	1 PREC TR-1A3B PRI VOLTS	VOLTS	P1OV06P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Old Precip West	1 PREC TR-1B1A SEC AMPS	mA	P1OA07S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1B1B SEC AMPS	mA	P1OA08S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1B2A SEC AMPS	mA	P1OA09S.PV		64.6	71.8	76.0	78.3	76.5	76.8	78.0	76.2	78.0	81.6	79.4	64.4	77.8	81.0	
	1 PREC TR-1B2B SEC AMPS	mA	P1OA10S.PV		296.0	251.4	165.0	273.8	281.1	258.6	283.0	231.8	219.4	206.2	235.4	193.2	208.8	229.6	
	1 PREC TR-1B3A SEC AMPS	mA	P1OA11S.PV		155.2	171.2	175.8	166.4	164.0	158.7	193.8	159.2	150.4	176.8	175.2	147.6	179.4	195.0	
	1 PREC TR-1B3B SEC AMPS	mA	P1OA12S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1B1A SEC KV 1	KV	P1OV07S1.PV		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
	1 PREC TR-1B1B SEC KV 1	KV	P1OV08S1.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1B2A SEC KV 1	KV	P1OV09S1.PV		28.1	27.7	27.5	27.8	27.8	28.2	27.6	27.6	27.4	27.7	27.4	20.7	26.9	26.6	
	1 PREC TR-1B2B SEC KV 1	KV	P1OV10S1.PV		27.3	27.6	22.4	28.4	29.0	27.7	28.6	27.2	27.8	26.9	27.5	26.8	27.1	27.2	
	1 PREC TR-1B3A SEC KV 1	KV	P1OV11S1.PV		25.2	25.1	25.6	24.6	25.0	24.3	25.1	24.6	25.0	25.8	25.1	26.0	26.6	25.4	
	1 PREC TR-1B3B SEC KV 1	KV	P1OV12S1.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1B1A PRI AMPS	AMPS	P1OA07P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1B1B PRI AMPS	AMPS	P1OA08P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1B2A PRI AMPS	AMPS	P1OA09P.PV		20.0	21.3	22.0	21.9	21.7	22.1	22.7	22.5	21.9	22.0	22.7	17.8	21.9	22.7	
	1 PREC TR-1B2B PRI AMPS	AMPS	P1OA10P.PV		43.1	45.0	35.3	55.8	54.2	50.6	55.6	48.4	47.9	45.3	49.1	41.6	42.5	45.6	
	1 PREC TR-1B3A PRI AMPS	AMPS	P1OA11P.PV		33.4	36.6	38.2	35.1	35.1	34.6	38.6	34.0	32.6	38.2	36.3	32.7	36.8	40.7	
	1 PREC TR-1B3B PRI AMPS	AMPS	P1OA12P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1B1A PRI VOLTS	VOLTS	P1OV07P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Unit 1 Test 5

				9/1/99 17:48	9/2/99 8:00	9/2/99 8:15	9/2/99 8:30	9/2/99 8:45	9/2/99 9:00	9/2/99 9:15	9/2/99 9:30	9/2/99 9:45	9/2/99 10:00	9/2/99 10:15	9/2/99 10:30	9/2/99 10:45	9/2/99 11:00	9/2/99 11:30	9/3/99 11:15
	1 PREC TR-1B1B PRI VOLTS	VOLTS	P1OV08P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-1B2A PRI VOLTS	VOLTS	P1OV09P.PV		238.9	240.6	238.0	240.2	239.3	245.8	241.6	241.3	239.4	243.1	237.5	180.6	230.7	232.0	
	1 PREC TR-1B2B PRI VOLTS	VOLTS	P1OV10P.PV		282.2	294.1	238.5	315.2	320.3	296.5	312.0	287.7	298.9	281.6	297.7	282.5	280.7	290.3	
	1 PREC TR-1B3A PRI VOLTS	VOLTS	P1OV11P.PV		261.4	262.3	270.9	251.6	258.5	248.5	262.1	251.5	258.4	255.6	259.7	253.1	267.2	267.7	
	1 PREC TR-1B3B PRI VOLTS	VOLTS	P1OV12P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
New Precip East	1 PREC TR-01 SEC AMPS	mA	P1NA01S.PV		178.2	157.0	149.0	186.5	169.8	201.9	188.8	203.8	6.3	215.9	214.9	212.8	192.3	186.6	
	1 PREC TR-03 SEC AMPS	mA	P1NA03S.PV		211.5	248.2	193.2	216.7	234.8	200.1	40.3	233.7	216.0	217.3	234.2	198.1	217.5	236.5	
	1 PREC TR-05 SEC AMPS	mA	P1NA05S.PV		250.0	250.0	250.0	250.0	250.0	250.0	250.0	200.6	250.0	250.0	250.0	250.0	250.0	250.0	
	1 PREC TR-07 SEC AMPS	mA	P1NA07S.PV		241.7	250.0	250.0	250.0	250.0	200.4	250.0	250.0	247.1	250.0	250.0	242.9	250.0	250.0	
	1 PREC TR-09 SEC AMPS	mA	P1NA09S.PV		250.0	200.6	250.0	250.0	249.3	250.0	250.0	250.0	250.0	246.3	250.0	250.0	250.0	250.0	
	1 PREC TR-11 SEC AMPS	mA	P1NA11S.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-13 SEC AMPS	mA	P1NA13S.PV		225.3	1.4	241.7	250.0	191.7	25.0	250.0	250.0	141.7	91.7	250.0	250.0	191.0	41.7	
	1 PREC TR-15 SEC AMPS	mA	P1NA15S.PV		250.0	250.0	217.0	225.3	57.2	250.0	250.0	225.3	225.3	175.1	109.5	250.0	250.0	208.8	
	1 PREC TR-17 SEC AMPS	mA	P1NA17S.PV		250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	
	1 PREC TR-19 SEC AMPS	mA	P1NA19S.PV		499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	
	1 PREC TR-21 SEC AMPS	mA	P1NA21S.PV		499.1	499.0	498.9	498.8	498.7	498.6	498.5	498.4	498.3	498.2	498.1	498.0	499.1	499.9	
	1 PREC TR-01 SEC KV 1	KV	P1NV01S1.PV		58.3	56.7	56.7	58.8	57.4	60.1	58.9	56.3	8.6	61.2	61.0	60.9	59.8	58.6	
	1 PREC TR-03 SEC KV 1	KV	P1NV03S1.PV		58.4	61.3	57.6	59.1	59.9	53.9	16.0	60.5	59.0	58.7	60.3	60.6	59.2	60.3	
	1 PREC TR-05 SEC KV 1	KV	P1NV05S1.PV		54.6	54.6	55.2	54.1	54.0	53.9	54.2	44.8	55.2	53.9	54.1	55.0	55.0	55.0	
	1 PREC TR-07 SEC KV 1	KV	P1NV07S1.PV		60.1	61.5	61.7	61.2	61.5	50.6	61.3	61.3	62.0	61.1	61.0	61.0	61.6	62.0	
	1 PREC TR-09 SEC KV 1	KV	P1NV09S1.PV		64.0	52.0	64.7	64.0	64.0	64.0	64.0	64.0	64.0	64.2	64.6	64.2	64.0	64.0	
	1 PREC TR-11 SEC KV 1	KV	P1NV11S1.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-13 SEC KV 1	KV	P1NV13S1.PV		58.2	6.0	62.1	64.0	50.0	11.9	64.4	63.4	36.6	27.5	63.4	63.4	50.3	15.6	
	1 PREC TR-15 SEC KV 1	KV	P1NV15S1.PV		65.4	65.1	57.9	60.0	19.6	65.2	65.5	59.9	59.7	47.4	31.9	65.7	65.4	55.2	
	1 PREC TR-17 SEC KV 1	KV	P1NV17S1.PV		66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	
	1 PREC TR-19 SEC KV 1	KV	P1NV19S1.PV		58.0	58.0	58.0	58.0	58.0	58.0	58.1	58.2	58.3	58.4	58.5	58.6	58.7	58.8	
	1 PREC TR-21 SEC KV 1	KV	P1NV21S1.PV		72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	72.9	
	1 PREC TR-23 SEC KV 1	KV	P1NV23S1.PV		69.7	69.6	69.6	69.6	69.5	69.5	69.5	69.4	69.4	69.3	69.3	69.3	69.2	69.2	
	1 PREC TR-01 PRI AMPS	AMPS	P1NA01P.PV		41.1	37.2	35.6	44.2	40.0	46.5	43.5	45.2	1.4	49.4	49.2	48.5	43.9	42.9	
	1 PREC TR-03 PRI AMPS	AMPS	P1NA03P.PV		48.0	56.2	44.1	48.9	52.5	45.4	8.2	52.1	48.9	49.0	52.5	43.9	49.2	52.8	
	1 PREC TR-05 PRI AMPS	AMPS	P1NA05P.PV		40.0	40.0	40.0	40.0	40.0	40.0	40.0	32.0	40.0	40.1	40.1	40.2	40.3	40.4	
	1 PREC TR-07 PRI AMPS	AMPS	P1NA07P.PV		53.3	55.3	55.5	55.6	55.8	44.8	56.0	56.0	55.4	56.0	56.0	54.7	56.0	56.0	
	1 PREC TR-09 PRI AMPS	AMPS	P1NA09P.PV		61.9	49.6	62.0	62.0	62.0	62.0	62.0	62.0	62.0	61.1	62.0	62.0	62.0	62.0	
	1 PREC TR-11 PRI AMPS	AMPS	P1NA11P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-13 PRI AMPS	AMPS	P1NA13P.PV		61.2	0.0	66.5	68.4	52.2	6.8	68.0	68.0	38.5	24.9	68.0	68.0	51.6	11.2	
	1 PREC TR-15 PRI AMPS	AMPS	P1NA15P.PV		63.5	63.1	54.8	57.4	13.6	63.0	63.0	56.7	57.3	44.2	27.3	63.0	63.0	52.5	
	1 PREC TR-17 PRI AMPS	AMPS	P1NA17P.PV		67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	
	1 PREC TR-19 PRI AMPS	AMPS	P1NA19P.PV		108.5	108.5	108.9	109.2	109.6	109.8	107.2	107.3	107.5	107.6	107.8	107.9	108.0	108.1	
	1 PREC TR-21 PRI AMPS	AMPS	P1NA21P.PV		115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	114.8	115.0	
	1 PREC TR-23 PRI AMPS	AMPS	P1NA23P.PV		109.0	109.0	108.9	108.8	108.7	108.6	108.5	108.4	108.3	108.2	108.1	108.1	108.3	108.5	
	1 PREC TR-01 PRI VOLTS	VOLTS	P1NV01P.PV		269.2	250.5	248.2	283.7	265.4	290.9	274.5	273.4	37.8	299.4	298.2	297.9	281.9	275.9	
	1 PREC TR-03 PRI VOLTS	VOLTS	P1NV03P.PV		287.5	311.8	280.1	298.2	307.0	271.1	74.2	308.7	295.7	294.6	307.8	299.1	297.1	308.2	
	1 PREC TR-05 PRI VOLTS	VOLTS	P1NV05P.PV		267.8	268.0	273.7	268.0	266.7	268.4	270.6	221.2	274.4	267.2	269.4	270.3	270.0	272.3	
	1 PREC TR-07 PRI VOLTS	VOLTS	P1NV07P.PV		182.2	189.0	189.0	189.0	189.0	152.6	189.0	189.0	186.9	187.8	188.5	187.0	189.5	189.9	
	1 PREC TR-09 PRI VOLTS	VOLTS	P1NV09P.PV		315.3	256.4	317.8	316.0	316.0	316.0	316.0	316.0	316.0	311.2	317.8	316.9	316.0	318.9	
	1 PREC TR-11 PRI VOLTS	VOLTS	P1NV11P.PV		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	1 PREC TR-13 PRI VOLTS	VOLTS	P1NV13P.PV		262.3	18.1	299.3	308.8	240.3	48.5	313.5	312.8	185.2	126.7	308.4	309.2	243.0	67.4	
	1 PREC TR-15 PRI VOLTS	VOLTS	P1NV15P.PV		316.4	314.8	279.6	289.6	87.5	315.0	316.7	288.9	288.3	228.0	151.8	318.2	317.2	267.6	
	1 PREC TR-17 PRI VOLTS	VOLTS	P1NV17P.PV		331.0	331.0	331.0	331.0	330.2	326.5	327.4	328.0	328.0	327.6	328.1	327.6	329.9	331.3	
	1 PREC TR-19 PRI VOLTS	VOLTS	P1NV19P.PV		391.0	390.7	389.6	389.3	389.5	389.7	388.8	389.0	389.2	389.4	389.6	389.8	390.0	390.2	
	1 PREC TR-21 PRI VOLTS	VOLTS	P1NV21P.PV		370.6	370.9	371.2	371.5	371.8	371.9	369.3	369.2	369.3	369.5	369.7	369.8	370.0	370.1	
	1 PREC TR-23 PRI VOLTS	VOLTS	P1NV23P.PV		360.3	360.4	360.5	360.6	360.7	360.8	360.9	361.0	361.1	361.2	361.4	361.5	361.6	361.7	
New Precip West	1 PREC TR-02 SEC AMPS	mA	P1NA02S.PV		250.0	250.0	200.6	250.0	250.0	250.0	208.8	77.1	250.0	250.0	250.0	250.0	250.0	250.0	
	1 PREC TR-04 SEC AMPS	mA	P1NA04S.PV		250.0	250.0	250.0	142.5	126.0	250.0	250.0	250.0	250.0	214.5	249.6	249.2	248.9	248.5	
	1 PREC TR-06 SEC AMPS	mA	P1NA06S.PV		158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	
	1 PREC TR-08 SEC AMPS	mA	P1NA08S.PV		250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	225.0	58.3	250.0	250.0	200.0	
	1 PREC TR-10 SEC AMPS	mA	P1NA10S.PV		250.0	250.0	250.0	250.0	249.3	250.0	250.0	250.0	250.0	250.0	250.0	200.6	249.1	250.0	
	1 PREC TR-12 SEC AMPS	mA	P1NA12S.PV		250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	
	1 PREC TR-14 SEC AMPS	mA	P1NA14S.PV		250.0	250.0	208.3	25.0	250.0	250.0	208.3	41.2	250.0	250.0	191.7	41.2	249.1	250.0	
	1 PREC TR-16 SEC AMPS	mA	P1NA16S.PV		35.9	250.0	200.8	250.0	250.0	241.7	44.1	250.0	200.6	250.0	250.0	208.8	60.8	250.0	
	1 PREC TR-18 SEC AMPS	mA	P1NA18S.PV		499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	
	1 PREC TR-20 SEC AMPS	mA	P1NA20S.PV		499.8	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	
	1 PREC TR-22 SEC AMPS	mA	P1NA22S.PV		499.9	499.9	497.4	498.8	496.1	496.2	498.0	496.0	498.4	494.1	492.0	492.0	492.3	493.2	
	1 PREC TR-24 SEC AMPS	mA	P1NA24S.PV		498.3	498.2	498.2	498.1	498.0	498.7	499.2	498.6	495.3	495.6	499.5	499.9	499.9	499.9	
	1 PREC TR-02 SEC KV 1	KV	P1NV02S1.PV		45.6	45.0	37.8	45.6	45.0	45.2	38.8	18.5	45.6	45.1	45.8	45.8	45.4	45.6	
	1 PREC TR-04 SEC KV 1	KV	P1NV04S1.PV		53.5	53.7	53.9	32.6	29.5	54.0	53.7	53.4	54.0	44.2	54.0	54.0	54.0	54.0	
	1 PREC TR-06 SEC KV 1	KV	P1NV06S1.PV		46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	
	1 PREC TR-08 SEC KV 1	KV	P1NV08S1.PV		55.0	55.0	55.1	54.9	55.0	55.0	55.0	55.0	55.0	50.0	16.9	55.2	55.6	45.7	
	1 PREC TR-10 SEC KV 1	KV	P1NV10S1.PV		56.8	56.8	56.4	56.2	56.1	56.0	56.0	56.0	56.0	56.0	56.0	46.8	57.0	57.0	
	1 PREC TR-12 SEC KV 1	KV	P1NV12S1.PV		58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	57.8	57.0	57.0	57.1	
	1 PREC TR-14 SEC KV 1	KV	P1NV14S1.PV		58.0	58.0	49.3	11.2	58.0	58.0	49.3	14.6	58.0	58.0	45.9	14.5	57.0	57.4	
	1 PREC TR-16 SEC KV 1	KV	P1NV16S1.PV		11.9	57.0	46.6	57.0	57.0	56.3	13.6	56.5	46.5	58.7	56.4	47.6	17.1	57.0	
	1 PREC TR-18 SEC KV 1	KV	P1NV18S1.PV		67.7	67.7	67.6	67.6	67.6	67.5	67.5	67.4	67.4	67.3	67.3	67.3	67.2	67.2	
	1 PREC TR-20 SEC KV 1	KV	P1NV20S1.PV		68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	
	1 PREC TR-22 SEC KV 1	KV	P1NV22S1.PV		62.9	62.9	62.9	62.8	62.8	62.8	62.7	62.7	62.7	62.6	62.6	62.6	62.5	62.5	
	1 PREC TR-24 SEC KV 1	KV	P1NV24S1.PV		62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	62.0	
	1 PREC TR-23 SEC AMPS	mA	P1NA23S.PV		499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	

Unit 1 Test 5

			9/1/99 17:48	9/2/99 8:00	9/2/99 8:15	9/2/99 8:30	9/2/99 8:45	9/2/99 9:00	9/2/99 9:15	9/2/99 9:30	9/2/99 9:45	9/2/99 10:00	9/2/99 10:15	9/2/99 10:30	9/2/99 10:45	9/2/99 11:00	9/2/99 11:30	9/3/99 11:15
1 PREC TR-02 PRI AMPS	AMPS	P1NA02P.PV		41.9	41.9	33.6	41.9	41.9	41.9	35.0	12.6	42.0	42.1	42.2	42.2	42.3	42.4	
1 PREC TR-04 PRI AMPS	AMPS	P1NA04P.PV		55.7	55.8	55.9	31.7	28.0	56.0	56.0	56.0	56.0	47.8	55.9	55.8	55.7	55.6	
1 PREC TR-06 PRI AMPS	AMPS	P1NA06P.PV		34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	
1 PREC TR-08 PRI AMPS	AMPS	P1NA08P.PV		58.5	58.6	58.6	58.7	58.7	58.8	58.8	58.8	58.9	53.1	13.1	56.5	57.2	46.2	
1 PREC TR-10 PRI AMPS	AMPS	P1NA10P.PV		64.5	64.6	64.6	64.7	64.7	64.7	64.8	64.8	64.9	64.9	65.0	51.8	64.0	64.0	
1 PREC TR-12 PRI AMPS	AMPS	P1NA12P.PV		64.0	64.0	64.0	64.0	64.0	63.9	63.8	63.8	63.7	63.6	63.5	63.4	63.3	63.2	
1 PREC TR-14 PRI AMPS	AMPS	P1NA14P.PV		64.4	65.0	64.2	8.5	65.0	65.0	64.2	10.6	64.2	64.5	49.7	10.7	64.6	64.4	
1 PREC TR-16 PRI AMPS	AMPS	P1NA16P.PV		8.9	67.0	53.6	67.0	67.0	64.7	11.2	67.0	53.6	67.0	67.0	55.8	15.6	67.0	
1 PREC TR-18 PRI AMPS	AMPS	P1NA18P.PV		112.1	112.1	112.1	112.2	112.2	112.3	112.3	112.3	112.4	112.4	112.4	112.5	112.5	112.6	
1 PREC TR-20 PRI AMPS	AMPS	P1NA20P.PV		116.5	116.6	116.7	116.7	116.8	116.9	116.9	117.0	117.0	117.1	117.2	117.2	117.3	117.4	
1 PREC TR-22 PRI AMPS	AMPS	P1NA22P.PV		110.4	110.5	110.5	110.5	110.6	110.6	110.6	110.7	110.7	110.7	110.8	110.8	110.9	110.9	
1 PREC TR-24 PRI AMPS	AMPS	P1NA24P.PV		109.2	108.6	110.6	109.8	109.1	109.0	108.9	108.8	108.8	108.7	108.6	108.6	108.5	108.4	
1 PREC TR-02 PRI VOLTS	VOLTS	P1NV02P.PV		192.0	192.0	160.2	191.5	188.1	188.7	164.3	79.9	193.9	193.9	193.8	192.1	192.7	193.4	
1 PREC TR-04 PRI VOLTS	VOLTS	P1NV04P.PV		267.4	267.5	266.8	163.9	148.8	272.3	268.1	267.2	271.5	222.8	271.2	271.0	271.0	271.0	
1 PREC TR-06 PRI VOLTS	VOLTS	P1NV06P.PV		180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	
1 PREC TR-08 PRI VOLTS	VOLTS	P1NV08P.PV		356.1	356.5	356.8	355.5	356.2	357.0	357.7	358.4	359.1	326.4	104.3	360.0	360.0	293.9	
1 PREC TR-10 PRI VOLTS	VOLTS	P1NV10P.PV		236.2	235.9	235.6	235.3	235.1	235.0	235.0	235.0	235.0	235.0	235.0	191.8	235.3	235.8	
1 PREC TR-12 PRI VOLTS	VOLTS	P1NV12P.PV		257.4	253.9	250.5	250.4	253.3	252.6	251.9	251.2	250.5	249.8	249.2	249.0	249.0	249.0	
1 PREC TR-14 PRI VOLTS	VOLTS	P1NV14P.PV		206.9	208.7	178.8	40.0	210.4	209.4	177.2	51.9	208.6	209.7	166.4	51.9	206.8	208.8	
1 PREC TR-16 PRI VOLTS	VOLTS	P1NV16P.PV		51.2	248.3	203.7	245.8	248.5	243.1	57.9	244.6	203.5	250.4	249.3	206.2	73.8	248.2	
1 PREC TR-18 PRI VOLTS	VOLTS	P1NV18P.PV		348.5	348.2	348.0	347.7	347.5	347.3	347.0	346.8	346.5	346.3	346.1	345.8	345.6	345.3	
1 PREC TR-20 PRI VOLTS	VOLTS	P1NV20P.PV		350.3	350.1	349.8	349.5	349.2	349.0	348.7	348.4	348.2	347.9	347.6	347.4	347.1	346.8	
1 PREC TR-22 PRI VOLTS	VOLTS	P1NV22P.PV		320.1	319.9	319.6	319.4	319.2	318.9	318.7	318.5	318.2	318.0	317.8	317.5	317.3	317.0	
1 PREC TR-24 PRI VOLTS	VOLTS	P1NV24P.PV		319.5	319.3	317.9	318.9	318.5	318.1	317.7	317.4	317.0	316.6	316.2	319.2	319.2	316.6	

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00002

FUEL TOTALIZER DATA LOG

RUN No. 1

	DATE	TIME	FUEL TOTALIZER (TONS) 1	2	3	4
	8/31/99	1000	12535328	1000:10 61937436	1000:15 158958.300	349 50149 1000:30
	8/31/99	1108	12535328	1109 61999478	1110 158994.100	1111 35017604
STOP	8/31/99	1147	12535328	1148 62036219	1149 159015.000	1149:10 35055849

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00002

FUEL TOTALIZER DATA LOG

RUN No. 2 Unit 1

DATE	TIME	FUEL TOTALIZER (TONS) 1	2	3	4
8/31/99	1400	12535328	62160610	1400:22 159085500	1401 35187678
8/31/99	1507	12535328	1507 62223921	1508 159121.800	1508:30 35255346
8/31/99	1607	12535328	1608 62281449	1608 159154.200	1609 35315974
8/31/99	1707	12535328	1707 62337261	1708 159186.400	35375299
8/31/99	1742	12535328	1742 62370323	1742 159204.800	1743 3540 mob 8/31/99
					35410295 1743

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00002

FUEL TOTALIZER DATA LOG

RUN No. 3 Unit 1

M. O'Brien

	DATE	TIME	FUEL TOTALIZER (TONS) 1	2	3	4
	9/1/99	0830	12586906	830:15 63180941	830:30 159663.305	831 36233417
STOP		0942	12646466	942:30 63238238	943 159695.906	943:30 36271299
START		1005	12664385	1005:15 63255222	1005:30 159705.15	1005:45 36282281
		1116	12722164	1116:30 63310685	1117 159737.100	1117:30 36319330
		1230	12782540	1230:30 63368607	1230:45 159769.80	1231 36357400

TRC

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00002

FUEL TOTALIZER DATA LOG

RUN No. 4 Unit 1

M. O'Brien

DATE	TIME	FUEL TOTALIZER (TONS) 1	2	3	4
9/1/99	1415	12868422	1415:30 63451043	1416 159816.600	1416:30 36411456
	1452				36419313
	1524	12931839	1524:15 63512096	1524:45 159850.900	36419313
	1620	12986317	1620:30 63564445	1620:45 159880.100	36419313
	1745	13069254	1745:15 63644805	1745:45 159924.700	1745: 36419313

1448 M.114 Stop

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00002

FUEL TOTALIZER DATA LOG

RUN No. 5 Unit 1

M. O'Brien

DATE	TIME	FUEL TOTALIZER (TONS) 1	2	3	4
8/2/99	0800	13761230	0800:15 64321557	0800:30 160301.100	36841931 3
	0906	13825371	0906:15 64385915	0906:30 160335.500	36419313
	1006	13884413	1006:15 64445039	1006:45 160367.400	36419313
	1127	13961303	1127:15 64522263	1127:45 160408.200	1128:45 36423502

Silo Car #4 On 1115

Appendix G.2

Unit 3

				Unit 3 Test 2																
				9/9/99 9 10	9/9/99 9 25	9/9/99 9 40	9/9/99 9 55	9/9/99 10 10	9/9/99 10 25	9/9/99 10 40	9/9/99 10 55	9/9/99 11 10	9/9/99 11 25	9/9/99 11 40	9/9/99 11 55	9/9/99 12 10	9/9/99 12 25	9/9/99 12 40	9/9/99 12 55	
	COAL TO 31 PULVERIZER	TONS/HR	3F021 PV	45.9	45 8	45 8	45.7	45.6	45 6	45.5	45 5	45.5	45 7	45 8	46 0	46 1	46.2	46.4	46 5	45 8
	COAL TO 32 PULVERIZER	TONS/HR	3F022 PV	41 5	41 5	41 4	41 4	41.3	41 2	41 2	41 1	41 2	41 2	41 3	41 4	41 5	41 6	41 6	41 7	41 4
	COAL TO 33 PULVERIZER	TONS/HR	3F023 PV	23 4	23 4	23 4	23 3	23 3	23 2	23 2	23 1	23 1	23 0	23 0	22 9	22.9	22 8	22 8	22 7	23 1
	COAL TO 34 PULVERIZER	TONS/HR	3F024 PV	42 4	42 4	42 3	42 2	42 1	42 0	42 0	41 9	41 8	41 7	41 7	41 6	41 5	41 4	41 3	41 3	41 8
	COAL TO 35 PULVERIZER	TONS/HR	3F025 PV	39 4	39 3	39 3	39 2	39 2	39 1	39 1	39 0	39 1	39 1	39 2	39 3	39 4	39 5	39 6	39 7	39 3
	GENERATOR 3 LOAD	MW	3K211 PV	626 7	628 8	628 5	626 3	626 8	628 0	628 4	610 9	595 0	615 2	625 1	624 3	626 5	627 0	627 5	628 4	191.6
	U3 1ST STG STEAM FLOW CALC	PERCENT	3TM1P05 PV	82 6	83 0	82 9	82 6	92 7	82 8	82 9	80 8	78 8	81 7	82.7	82 7	82 8	82 8	82 8	82 8	
	MAIN STEAM TEMP AVERAGE	DEG F	3TM1P06 PV	996 5	994 8	996 0	996 6	996 1	995 7	996 1	998 1	995 6	993 5	996.6	995 3	995 8	995 7	995 3	997 0	
	MAIN STEAM PRES RH-NORTH	PSIG	3P201 PV	3640 1	3640 3	3640 6	3640 9	3641 1	3641.4	3641 7	3641 9	3642 4	3643 4	3644 5	3645 6	3646 6	3645 7	3645 2	3644 8	
	FEEDWATER MID SELECT	PERCENT	3FW1P05 PP	80 2	80 2	80 2	80 2	80 1	80 1	80 1	79 3	78 0	80 0	80 8	80 7	80 5	80 4	80 3	80 2	
	BOILER 3 FURNACE PRESS A	"WC	C3P050A PV	-0 5	-0 5	-0 5	-0 5	-0 5	-0 5	-0 5	-0 5	-0 5	-0 6	-0 5	-0 5	-0 5	-0 5	-0 5	-0 5	
	APH 31 AIR IN TEMP	DEG F	C3T030A PV	96 8	97 0	96 9	97 1	97 1	97 0	96 5	96 4	96 6	97 1	97 8	97 8	98 1	98 2	98 5	98 6	
	APH 32 AIR IN TEMP	DEG F	C3T030B PV	99 0	99 0	99 1	99 2	99 3	99 2	99 0	98 9	99 9	99 5	100 2	100 3	100 5	100 7	101 1	101 5	
	SEC AH 31 AIR OUT	DEG F	3T017 PV	582 1	582 1	582 1	582 1	582 2	582 2	582 2	582 2	580 1	579 2	580 6	581 8	582 0	582 0	582 1	582 2	
	SEC AH 32 AIR OUT	DEG F	3T018 PV	580 3	580 4	580 6	580 7	580 8	580 9	581 1	581 0	578 9	578 2	579 6	580 9	581 1	581 3	581 5	581 7	
	SEC AH 31 GAS IN	DEG F	3T020 PV	625 1	625 2	625 2	625 3	625 4	625 6	625 7	624 6	619 7	621 2	624 6	625 0	625 2	625 4	625 6	625 9	
	SEC AH 32 GAS IN	DEG F	3T021 PV	625 0	625 3	625 5	625 5	625 3	625 2	625 0	624 2	620 7	621 5	624 8	625 5	625 8	626 1	626 5	626 7	
	APH 31 GAS OUT TEMP	DEG F	C3T033A PV	263 9	263 8	263 8	263 8	263 9	263 9	264 0	264 0	263 2	262 4	263 1	263 8	264 0	264 3	264 5	264 7	
	APH 32 GAS OUT TEMP	DEG F	C3T033B PV	233 7	233 7	233 7	233 7	233 8	233 8	233 9	233 9	233 8	233 6	233 7	234 0	234 3	234 6	234 8	235 0	
	BOILER 3 EAST FLUEGAS O2	PERCENT	C3G003 PV	3 6	3 8	3 7	3 6	3 5	3 5	3 5	3 6	3 6	3 7	3 4	3 4	3 4	3 4	3 4	3 5	
	BOILER 3 WEST FLUEGAS O2	PERCENT	C3G005 PV	2 4	2 6	2 4	2 2	2 1	2 1	2 1	2 1	2 1	2 1	2 1	2 1	2 1	2 0	2 2	2 2	
	ID FAN 31 INLET	DEG F	3T028 PV	260 9	261 1	261 4	261 6	261 7	261 7	261 7	261 7	261 7	261 8	261.8	261 8	261 8	261 8	261 8	261 8	
	ID FAN 32 INLET	DEG F	3T029 PV	242 8	243 1	243 5	243 8	244 2	244 4	244 5	244 5	244 5	244 6	244 6	244 6	244 7	244 7	244 7	244 5	
	ID FAN 31 INLET PRESS	"WC	3P028 PV	-26 8	-27 2	-27 1	-27 0	-27 1	-27 1	-27 1	-25 8	-25 1	-26 8	-26 9	-26 8	-27 2	-27 1	-27 5	-27 6	
	ID FAN 32 INLET PRESS	"WC	3P029 PV	-27 3	-27 4	-27 5	-27 5	-27 4	-27 4	-27 4	-26 0	-25 3	-27 1	-27 2	-27 1	-27 3	-27 4	-27 7	-27 8	
	APH 31 GAS INLET PRESS	"WC	3P020 PV	-9 3	-9 4	-9 3	-9 4	-9 2	-9 4	-9 4	-8 9	-8 8	-9 3	-9 4	-9 3	-9 4	-9 3	-9 5	-9 6	
	APH 32 GAS INLET PRESS	"WC	3P021 PV	-9 0	-9 1	-9 0	-9 1	-9 0	-9 1	-9 1	-8 6	-8 5	-9 0	-9 0	-8 9	-9 1	-9 0	-9 2	-9 2	
	APH 31 GAS OUTLET PRESS	"WC	3P022 PV	-20 7	-21 0	-20 9	-20 9	-20 9	-20 8	-20 8	-19 9	-19 4	-20 6	-20 7	-20 7	-20 8	-20 9	-21 0	-21 2	
	APH 32 GAS OUTLET PRESS	"WC	3P023 PV	-21 6	-21 8	-21 7	-21 7	-21 5	-21 7	-21 8	-20 8	-20 0	-21 5	-21 7	-21 6	-21 7	-21 6	-21 9	-22 2	
	CEM - Unit #3 CO	PPM	E3G123 PV	110 5	112 9	100 8	84 4	105 5	90 6	105 9	97 3	104 7	101 5	73 1	87 8	103 0	120 3	82 2	84 2	
ESP																				
Old Precip East	3 PREC TR-1A1A SEC AMPS	mA	P3AA01S PV	225 1	227 2	232 7	228 5	224 1	229 7	228 1	226 8	226 4	227 4	228 4	226 1	222 8	225 6	227 2	224 9	
	3 PREC TR-1A1B SEC AMPS	mA	P3AA02S PV	193 7	193 1	192 6	192 0	191 4	190 8	190 2	189 3	190 0	193 4	194 0	194 5	195 1	195 6	191 2	190 1	
	3 PREC TR-1A1C SEC AMPS	mA	P3AA03S PV	234 4	233 8	230 9	232 5	236 7	234 4	234 1	236 5	235 1	233 8	232 4	230 5	233 1	231 4	234 5	232 2	
	3 PREC TR-1A2A SEC AMPS	mA	P3AA04S PV	433 8	436 6	399 4	408 4	424 8	374 7	350 7	435 8	391 4	418 7	436 1	401 7	417 8	412 7	404 5	388 0	
	3 PREC TR-1A2B SEC AMPS	mA	P3AA05S PV	476 9	480 9	465 3	469 9	480 5	461 5	463 7	464 7	465 3	450 1	475 5	430 2	462 1	403 2	420 3	430 2	
	3 PREC TR-1A2C SEC AMPS	mA	P3AA06S PV	317 0	324 6	310 9	325 3	321 4	317 6	328 5	328 5	325 8	333 2	335 0	338 6	328 5	336 7	327 5	330 8	
	3 PREC TR-1A3A SEC AMPS	mA	P3AA07S PV	473 8	496 2	497 3	486 6	486 5	492 8	493 9	461 0	494 6	477 8	491 2	488 6	458 8	480 3	409 1	489 4	
	3 PREC TR-1A3B SEC AMPS	mA	P3AA08S PV	489 6	487 9	490 0	491 5	487 6	457 0	476 7	486 9	464 7	488 6	487 8	489 8	488 7	471 5	486 2	458 2	
	3 PREC TR-1A3C SEC AMPS	mA	P3AA09S PV	479 9	480 9	451 9	463 0	474 8	474 4	478 6	481 5	457 1	459 3	485 9	464 2	457 3	459 2	478 5	484 6	
	3 PREC TR-1A1A SEC KV 1	KV	P3AV01S1 PV	55 2	55 3	55 3	55 1	55 2	55 8	55 8	55 5	55 0	55 4	55 8	55 6	55 2	55 2	55 7	55 8	
	3 PREC TR-1A1B SEC KV 1	KV	P3AV02S1 PV	50 8	51 2	50 9	50 7	50 7	51 0	51 0	50 9	50 5	51 1	51 1	50 8	50 5	50 6	50 7	51 2	
	3 PREC TR-1A1C SEC KV 1	KV	P3AV03S1 PV	57 6	57 5	56 7	56 9	56 8	56 9	57 5	57 1	57 0	57 5	57 7	57 7	57 9	58 8	59 3	59 1	
	3 PREC TR-1A2A SEC KV 1	KV	P3AV04S1 PV	59 7	60 0	58 3	58 5	59 5	57 5	56 6	60 0	58 2	59 4	59 9	58 5	59 5	59 0	58 5	58 0	
	3 PREC TR-1A2B SEC KV 1	KV	P3AV05S1 PV	58 4	58 9	58 3	58 8	58 9	58 3	59 5	58 4	58 5	58 0	58 6	56 9	58 0	55 9	56 7	57 3	
	3 PREC TR-1A2C SEC KV 1	KV	P3AV06S1 PV	58 8	59 8	58 8	59 9	59 4	59 5	60 0	59 9	59 5	59 9	60 0	60 0	59 9	60 0	59 9	59 8	
	3 PREC TR-1A3A SEC KV 1	KV	P3AV07S1 PV	58 4	59 3	59 6	59 2	59 0	59 6	59 5	58 1	59 7	59 5	59 0	59 2	58 1	58 9	56 1	59 7	
	3 PREC TR-1A3B SEC KV 1	KV	P3AV08S1 PV	60 0	59 9	59 9	60 0	59 8	57 7	59 3	60 0	59 1	60 0	60 0	60 0	60 0	59 3	60 0	58 8	
	3 PREC TR-1A3C SEC KV 1	KV	P3AV09S1 PV	37 8	37 8	37 3	37 4	37 7	37 9	38 0	38 1	37 5	37 3	38 0	37 7	37 7	37 5	37 9	38 1	
	3 PREC TR-1A1A PRI AMPS	AMPS	P3AA01P PV	48 1	48 1	48 1	48 1	48 1	48 1	48 1	48 1	48 1	48 1	48 1	48 1	48 1	48 1	48 1	48 1	
	3 PREC TR-1A1B PRI AMPS	AMPS	P3AA02P PV	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	
	3 PREC TR-1A1C PRI AMPS	AMPS	P3AA03P PV	48 2	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	
	3 PREC TR-1A2A PRI AMPS	AMPS	P3AA04P PV	87 3	86 8	87 9	87 1	87 2	80 8	82 7	85 7	84 3	86 5	84 5	88 9	87 0	84 9	86 9	80 6	
	3 PREC TR-1A2B PRI AMPS	AMPS	P3AA05P PV	96 7	95 8	95 6	95.7	97 6	95 7	96 6	95 9	97 8	88 7	95.8	92 1	90 1	86 7	91 9	93 0	
	3 PREC TR-1A2C PRI AMPS	AMPS	P3AA06P PV	71 2	70 5	70 6	71.7	70 1	68 8	70 1	72 3	68 3	71 2	72 6	72 3	72 2	72 3	70 3	71 0	
	3 PREC TR-1A3A PRI AMPS	AMPS	P3AA07P PV	94 2	98 0	96 9	98 0	96 4	96 8	98 0	94 3	95 9	97 5	94 3	98 0	91 6	94 9	90 1	95 7	
	3 PREC TR-1A3B PRI AMPS	AMPS	P3AA08P PV	98 0	97 4	97 4	95 5	97 8	87 1	95 2	97 8	95 5	96 9	97 6	98 0	97 3	93 9	97 2	94 6	
	3 PREC TR-1A3C PRI AMPS	AMPS	P3AA09P PV	96 5	96 2	97 0	92 4	97 7	95 9	97 0	95 1	96 7	92 2	94 0	97 4	95 7	98 0	97 8	96 4	
	3 PREC TR-1A1A PRI VOLTS	VOLTS	P3AV01P PV	307 7	309 7	309 2	307 7	308 6	312 2	311 7	310 4	307 5	310 4	311 7	310 9	309 0	309 1	310 3	311 1	
	3 PREC TR-1A1B PRI VOLTS	VOLTS	P3AV02P PV	302 5	304 1	300 6	301 0	300 7	304 9	302 8	302 2	300 2	302 5	301 6	300 4	299 2	299 9	301 9	303 5	
	3 PREC TR-1A1C PRI VOLTS	VOLTS	P3AV03P PV	326 8	326 7	321 2	321 2	321 9	322 6	325 5	324 3	319 1	321 5	321 3	321 6	322 3	322 1	323 1	322 1	
	3 PREC TR-1A2A PRI VOLTS	VOLTS	P3AV04P PV	357 0	358 0	342 7	344 2	353 5	333 0	325 8	358 0	341 8	353 7	358 3	344 3	353 4	349 8	343.4	338 5	
	3 PREC TR-1A2B PRI VOLTS	VOLTS	P3AV05P PV	352 1	354 0	349 9	353 2	352 7	349 3	352 0	350 3	350 0	343 6	351 6	336 6	348 8	327 5	336 1	339 4	
	3 PREC TR-1A2C PRI VOLTS	VOLTS	P3AV06P PV	300 0	306 9	300 3	309 3	302 9	305 3	310 2	309 1	307 0	309 4	310 6	310 0	309 7	311 3	308.5	307 9	
	3 PREC TR-1A3A PRI VOLTS	VOLTS	P3AV07P PV	353 7	360 0	360 0	358 2	356 5	360 2	360 3	347 4	362 0	359 7	359 8	359 2	348 0	356 6	327 6	358 0	
	3 PREC TR-1A3B PRI VOLTS	VOLTS	P3AV08P PV	351 2	351 1	351 2	353 9	350 7	338 2	349 6	351 6	345 7	352 1	352 1	351 4	353 7	348 3	352 4	342 7	
	3 PREC TR-1A3C PRI VOLTS	VOLTS	P3AV09P PV	350 3	351 4	341 6	346.5	349 6	349 9	350 6	352 8	341 0	342 5	351 8	347 0	346 3	342 6	349 9	352 7	
Old Precip West	3 PREC TR-1B1A SEC KV 1	KV	P3BV03S1 PV	54 4	54 6	55 3	55 4	56 2	55 2	56 0	55 8	55 8	55 8	54 8	55 1	54 8	55 3	54 5	10 5	
	3 PREC TR-1B1B SEC KV 1	KV	P3BV02S1 PV	59.9	59 7	59 9	59 5	59 6	59 2	58 1	58 8	59 2	57 8	17 8	55 3	59 7	59 7	58 5	58 9	
	3 PREC TR-1B1C SEC KV 1	KV	P3BV01S1 PV	50 7	51 2	50 9	50 5	50 7	50 6	50 2	50 1	49 8	21 3	36 1	50 2	50 2	50 1	50 2	50 6	
	3 PREC TR-1B2A SEC KV 1	KV	P3BV06S1 PV	59 7	59 8	59 5	59 7	58 5	58 4	58 7	59 3	59 4	57 8	58 9	57 9	57 4	58 0	55 8	58 1	
	3 PREC TR-1B2B SEC KV 1	KV	P3BV05S1 PV	59 7	59 5	59 9	59 5	59 1	58 9	58 9	58 1	58 3	58 0	57 9	56 8	56 6	56 9	55 9	57 9	
	3 PREC TR-1B2C SEC KV 1	KV	P3BV04S1 PV	58 5	58 2	57 5	58 6	58 2	58 0	58 4	59 5	57 9	58 5	58 5	58 2	58 3	58 5	58 3	58 7	
	3 PREC TR-1B3A SEC KV 1	KV	P3BV09S1 PV	57 9	56 7	58 4	51 2	57 9	58 5	57 0	58 1	55 4	58 3	54 8	57 0	57 7	57 2	54 8	54 8	
	3 PREC TR-1B3B SEC KV 1	KV	P3BV08S1 PV	59 4	59 7	59 7	59 8	58 7	59 7	59 3	59 0	60 0	57 5	59 0	59 0	57 6	57 3	55 9	58 5	
	3 PREC TR-1B3C SEC KV 1	KV	P3BV07S1 PV	60 0	59 9	59 9	59 5	59 9	59 9	59 7	59 7	60 0	59 7	60 0	60 0	60 0	60 0	59 8	59 8	
	3 PREC TR-1B1A SEC AMPS	mA	P3BA03S PV	232 5	238 5	239 1	230 4	239 8	227 1	230 6	230 7	229 0	226 7	225 0	222 7	225 6	208 1	228.8	33 4	
	3 PREC TR-1B1B SEC AMPS	mA	P3BA02S PV	192 3	181 4	182 8	176 2	176 6	173 2	157 3	169 6	168 5	157 4	48 9	171 4	180 7	169 2	171 8	166 1	
	3 PREC TR-1B1C SEC AMPS	mA	P3BA01S PV	234 0	234 2	232 8	235 0	231 5	231 5	233 9	234 5	231 9	97 0	167 8	232 0	235 3	231 2	230 9	232 3	
	3 PREC TR-1B2A SEC AMPS	mA	P3BA06S PV	448 4	450 0	445 9	443 5	416 4	413 5	413 9	426 0	435 6	393 9	428 4	404 8	382 5	392 8	357 6	284 4	
	3 PREC TR-1B2B SEC AMPS	mA	P3BA05S PV	428 5	417 6	422 9	415 1	410 8	407 2	408 1	397 8	399 5	387 9	355 8	369 4	368 7	371 4	357 5	386 9	
	3 PREC TR-1B2C SEC AMPS	mA	P3BA04S PV	458 1	444 1	430 8	453 3	436 0	431 6	449 6	461 6	446 5	370 0	416 0	441 1	449 4	460 8	446 0	443 9	
	3 PREC TR-1B3A SEC AMPS	mA	P3BA09S PV	493 8	461 4	497 7	468 2	490 5	494 2	470 0	488 6	433 4	487 2	415 0	470 4	482 8	468 8	421 9	377 4	
	3 PREC TR-1B3B SEC AMPS	mA	P3BA08S PV	486 3	490 6	489 0	489 9	463 1	487 0	483 7	470 8	488 5	446 0	450 6	476 3	441 9	436 9	397 5	464 6	

				Unit 3 Test 2																
				9/9/99 9 10	9/9/99 9 25	9/9/99 9 40	9/9/99 9 55	9/9/99 10 10	9/9/99 10 25	9/9/99 10 40	9/9/99 10 55	9/9/99 11 10	9/9/99 11 25	9/9/99 11 40	9/9/99 11 55	9/9/99 12 10	9/9/99 12 25	9/9/99 12 40	9/9/99 12 55	
	3 PREC TR-1B3C SEC AMPS	mA	P3BA07S PV	482 9	482 3	490 6	475 1	476 7	473 9	472 1	478 9	481 2	447 6	467 9	480 6	476 9	481 1	480 1	477 9	
	3 PREC TR-1B1A PRI AMPS	AMPS	P3BA03P PV	48 9	49 1	47 8	47 6	47 3	45 8	47 6	46 7	46 7	46 7	48 5	47 5	46 0	46 2	45 0	9 4	
	3 PREC TR-1B1B PRI AMPS	AMPS	P3BA02P PV	39 6	39 9	38 1	37 2	38 8	38 3	34 8	36 0	38 8	35 7	11 8	35 4	39 1	37 9	38 3	37 9	
	3 PREC TR-1B1C PRI AMPS	AMPS	P3BA01P PV	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	20 9	34 0	48 1	48 1	48 1	48 1	48 1	
	3 PREC TR-1B2A PRI AMPS	AMPS	P3BA06P PV	89 2	91 6	90 5	89 2	87 1	86 3	89 0	85 6	87 0	79 6	80 4	85 1	95 3	82 5	71 8	63 1	
	3 PREC TR-1B2B PRI AMPS	AMPS	P3BA05P PV	97 5	97 3	91 3	93 3	93 3	88 0	88 6	95 2	87 0	88 0	77 2	81 7	90 4	81 6	86 9	87 0	
	3 PREC TR-1B2C PRI AMPS	AMPS	P3BA04P PV	88 8	87 5	88 7	89 6	87 5	87 0	89 3	88 9	92 2	77 2	81 5	85 0	89 7	91 5	89 1	88 2	
	3 PREC TR-1B3A PRI AMPS	AMPS	P3BA09P PV	98 0	93 2	98 0	94 5	96 2	96 8	97 0	98 0	80 9	98 0	82 6	94 6	97 5	87 4	85 2	82 5	
	3 PREC TR-1B3B PRI AMPS	AMPS	P3BA08P PV	97 0	98 0	93 8	97 4	92 5	94 7	95 9	96 3	96 5	89 5	91 4	92 8	89 0	95 8	90 5	95 8	
	3 PREC TR-1B3C PRI AMPS	AMPS	P3BA07P PV	97 8	96 5	97 2	96 1	96 5	97 0	96 4	95 2	97 4	92 1	95 6	96 7	97 6	96 6	96 9	95 7	
	3 PREC TR-1B1A PRI VOLTS	VOLTS	P3BV03P PV	314 6	320 2	323 8	324 7	328 2	321 3	327 5	325 3	325 1	325 9	317 2	321 7	319 9	315 2	317 6	53 4	
	3 PREC TR-1B1B PRI VOLTS	VOLTS	P3BV02P PV	345 0	339 3	343 9	338 7	340 2	337 0	327 6	333 8	335 7	321 8	101 7	317 5	342 1	338 8	332 6	331 1	
	3 PREC TR-1B1C PRI VOLTS	VOLTS	P3BV01P PV	306 8	308 1	307 6	304 6	305 9	306 6	305 8	303 8	300 4	132 2	220 6	306 0	305 9	302 5	302 3	306 8	
	3 PREC TR-1B2A PRI VOLTS	VOLTS	P3BV06P PV	345 4	347 3	346 8	345 7	336 5	334 4	336 6	341 3	342 7	327 7	339 9	330 3	326 2	331 8	312 0	314 5	
	3 PREC TR-1B2B PRI VOLTS	VOLTS	P3BV05P PV	358 1	356 5	359 6	355 3	350 2	348 7	350 2	343 4	343 8	341 1	337 9	332 0	330 4	332 7	324 7	343 2	
	3 PREC TR-1B2C PRI VOLTS	VOLTS	P3BV04P PV	342 0	340 3	335 1	341 5	338 4	337 3	341 4	343 4	338 4	333 0	336 4	339 4	341 6	342 6	339 9	342 6	
	3 PREC TR-1B3A PRI VOLTS	VOLTS	P3BV09P PV	349 4	338 6	350 1	343 0	349 1	348 7	340 8	348 5	328 0	348 4	321 4	341 6	345 7	338 4	319 3	311 9	
	3 PREC TR-1B3B PRI VOLTS	VOLTS	P3BV08P PV	354 6	355 1	358 1	359 5	348 5	357 0	354 5	350 3	354 8	340 1	349 4	352 6	344 1	339 8	326 3	349 5	
	3 PREC TR-1B3C PRI VOLTS	VOLTS	P3BV07P PV	351 9	352 0	351 1	349 8	350 7	351 0	348 4	348 9	351 3	348 7	350 1	350 1	350 1	350 1	348 6	349 7	
New Precip 3A (East) East	3E PRC TR-02 SEC AMPS	mA	P3EA15S PV	275 0	275 0	275 0	275 0	275 0	275 0	275 0	274 7	274 8	275 0	275 0	64 6	104 5	273 1	274 5	275 0	
	3E PRC TR-04 SEC AMPS	mA	P3EA16S PV	275 0	275 0	273 7	275 0	275 0	274 5	274 5	274 7	269 0	264 1	3 0	205 4	274 2	273 0	271 7	268 3	
	3E PRC TR-06 SEC AMPS	mA	P3EA19S PV	272 7	273 4	273 9	274 2	274 6	209 1	3 1	266 0	238 7	274 2	275 0	275 0	275 0	275 0	274 2	274 8	
	3E PRC TR-08 SEC AMPS	mA	P3EA20S PV	275 0	274 7	273 7	275 0	275 0	275 0	274 3	274 2	273 5	273 5	275 0	275 0	275 0	274 9	238 8	275 0	
	3E PRC TR-10 SEC AMPS	mA	P3EA23S PV	400 0	400 0	400 0	400 0	400 0	400 0	400 0	400 0	400 0	400 0	400 0	400 0	400 0	400 0	400 0	400 0	
	3E PRC TR-12 SEC AMPS	mA	P3EA24S PV	395 0	397 8	399 5	396 6	398 4	398 3	398 8	397 8	396 8	398 5	396 1	396 3	397 5	395 8	396 6	396 6	
	3E PRC TR-14 SEC AMPS	mA	P3EA03S PV	397 3	397 4	397 5	396 5	397 7	398 5	399 0	119 4	177 7	398 7	394 5	397 3	397 2	396 0	397 1	396 3	
	3E PRC TR-16 SEC AMPS	mA	P3EA04S PV	397 3	395 9	397 7	397 3	398 2	397 3	396 0	396 2	395 3	395 0	398 2	396 7	396 3	396 9	394 8	397 9	
	3E PRC TR-18 SEC AMPS	mA	P3EA07S PV	495 8	496 0	498 0	496 1	496 0	496 4	497 0	496 8	498 4	494 2	439 4	496 1	496 5	495 4	493 4	494 9	
	3E PRC TR-20 SEC AMPS	mA	P3EA08S PV	499 2	500 0	498 4	499 4	497 6	499 2	496 8	498 0	498 0	498 1	495 9	496 1	497 5	497 8	496 5	497 8	
	3E PRC TR-22 SEC AMPS	mA	P3EA11S PV	498 4	496 7	494 8	496 3	497 4	498 6	497 2	495 8	496 1	494 6	495 3	494 2	497 1	496 7	496 1	494 7	
	3E PRC TR-24 SEC AMPS	mA	P3EA12S PV	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	
	3E PRC TR-02 SEC KV 1	KV	P3EV15S1 PV	46 8	46 7	46 9	46 9	46 7	46 9	47 0	46 8	47 0	47 2	46 6	16 0	21 8	46 9	46 4	47 4	
	3E PRC TR-04 SEC KV 1	KV	P3EV16S1 PV	49 5	49 3	49 2	49 5	49 5	49 3	49 8	49 4	49 5	48 1	5 0	39 0	49 2	49 4	49 5	49 6	
	3E PRC TR-06 SEC KV 1	KV	P3EV19S1 PV	50 3	50 2	50 3	50 4	50 5	40 5	8 0	49 4	45 1	50 8	50 7	50 8	50 5	50 3	50 2	50 3	
	3E PRC TR-08 SEC KV 1	KV	P3EV20S1 PV	52 1	52 0	52 0	52 0	52 2	51 9	51 1	52 1	52 5	52 1	52 3	52 1	52 0	51 6	45 7	51 8	
	3E PRC TR-10 SEC KV 1	KV	P3EV23S1 PV	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	
	3E PRC TR-12 SEC KV 1	KV	P3EV24S1 PV	55 5	55 3	55 7	55 4	55 6	55 8	55 8	55 9	55 8	55 9	55 9	55 8	55 8	55 3	55 4	55 2	
	3E PRC TR-14 SEC KV 1	KV	P3EV03S1 PV	55 3	55 2	55 3	55 1	55 2	55 3	55 3	20 6	27 6	55 0	55 0	55 0	55 0	55 0	55 0	55 0	
	3E PRC TR-16 SEC KV 1	KV	P3EV04S1 PV	52 3	52 2	52 2	52 2	52 3	52 0	52 0	51 3	51 5	52 0	52 0	52 1	52 0	52 0	52 0	52 0	
	3E PRC TR-18 SEC KV 1	KV	P3EV07S1 PV	49 4	49 3	49 4	49 2	49 4	49 2	49 2	49 3	49 5	49 3	49 2	49 4	49 4	49 3	49 2	49 1	
	3E PRC TR-20 SEC KV 1	KV	P3EV08S1 PV	48 0	47 8	47 8	47 8	47 7	47 8	48 0	48 1	47 9	47 9	47 9	47 8	47 8	47 8	47 5	47 7	
	3E PRC TR-22 SEC KV 1	KV	P3EV11S1 PV	48 0	47 8	47 7	47 7	48 0	48 0	47 9	48 0	48 0	47 9	47 9	47 8	47 8	47 8	47 6	47 6	
	3E PRC TR-24 SEC KV 1	KV	P3EV12S1 PV	46 1	46 1	46 1	46 1	46 1	46 1	46 1	46 1	46 1	46 1	46 1	46 1	46 1	46 1	46 0	45 7	
	3E PRC TR-02 PRI AMPS	AMPS	P3EA15P PV	69 5	69 2	69 2	69 4	69 9	70 0	70 0	69 8	70 0	70 0	69 8	15 9	26 3	69 7	69 2	69 4	
	3E PRC TR-04 PRI AMPS	AMPS	P3EA16P PV	67 3	67 6	67 4	67 2	68 2	67 9	67 4	67 9	66 7	67 0	0 0	51 8	68 5	67 0	68 0	67 0	
	3E PRC TR-06 PRI AMPS	AMPS	P3EA19P PV	67 4	65 0	67 6	67 6	67 7	51 9	0 0	65 7	59 0	68 0	68 1	67 9	67 5	68 0	67 7	67 7	
	3E PRC TR-08 PRI AMPS	AMPS	P3EA20P PV	68 3	68 4	68 3	67 9	68 3	68 0	68 3	68 0	67 9	68 0	68 5	68 3	68 3	68 1	59 8	68 3	
	3E PRC TR-10 PRI AMPS	AMPS	P3EA23P PV	or this point for	for this point for	or this point for	for this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for this time	-106
	3E PRC TR-12 PRI AMPS	AMPS	P3EA24P PV	90 7	91 4	91 1	90 7	91 2	91 3	91 3	91 8	91 6	91 2	91 1	91 0	91 2	90 8	90 9	90 9	
	3E PRC TR-14 PRI AMPS	AMPS	P3EA03P PV	91 2	91 0	90 9	91 0	91 2	91 2	90 5	26 9	40 2	91 3	90 3	90 9	90 8	90 8	91 0	90 8	
	3E PRC TR-16 PRI AMPS	AMPS	P3EA04P PV	92 9	92 6	92 1	91 9	92 3	91 8	91 7	92 2	92 1	92 3	93 0	92 3	92 2	92 3	92 1	92 7	
	3E PRC TR-18 PRI AMPS	AMPS	P3EA07P PV	114 2	113 3	113 9	113 5	113 5	113 6	113 7	114 0	114 3	113 5	113 7	113 6	114 1	113 7	113 5	113 4	
	3E PRC TR-20 PRI AMPS	AMPS	P3EA08P PV	120 2	119 9	120 1	120 2	119 7	120 1	119 8	120 5	120 0	120 1	119 7	119 9	119 8	120 5	120 2	120 0	
	3E PRC TR-22 PRI AMPS	AMPS	P3EA11P PV	118 8	119 2	118 6	119 0	118 6	118 8	118 9	118 5	118 6	119 1	119 1	118 8	119 2	118 6	118 6	118 8	
	3E PRC TR-24 PRI AMPS	AMPS	P3EA12P PV	117 4	118 9	118 6	118 4	118 1	118 0	118 6	117 4	118 2	118 4	117 6	118 6	119 0	119 0	117 1	117 0	
	3E PRC TR-02 PRI VOLTS	VOLTS	P3EV15P PV	207 0	206 7	208 0	208 0	208 0	208 6	207 6	208 5	207 8	203 6	209 1	205 9	62 9	90 5	207 3	206 3	210 0
	3E PRC TR-04 PRI VOLTS	VOLTS	P3EV16P PV	218 0	218 3	219 1	218 1	220 8	220 9	221 2	220 1	218 3	213 3	19 1	171 3	218 7	220 1	220 0	218 9	
	3E PRC TR-06 PRI VOLTS	VOLTS	P3EV19P PV	211 1	211 9	210 8	211 5	212 3	166 1	21 1	207 7	188 1	211 9	212 5	212 9	211 8	210 9	211 0	211 0	
	3E PRC TR-08 PRI VOLTS	VOLTS	P3EV20P PV	229 8	229 8	230 1	230 1	230 1	229 3	226 0	229 2	230 7	230 1	231 5	231 5	229 0	228 2	202 2	229 5	
	3E PRC TR-10 PRI VOLTS	VOLTS	P3EV23P PV	or this point for	for this point for	or this point for	for this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for this time	-106
	3E PRC TR-12 PRI VOLTS	VOLTS	P3EV24P PV	308 7	309 3	309 0	309 0	308 8	309 7	309 8	309 3	309 0	309 0	309 0	309 6	309 0	309 0	309 0	309 3	
	3E PRC TR-14 PRI VOLTS	VOLTS	P3EV03P PV	293 7	293 2	292 6	292 7	292 9	292 4	293 8	103 5	141 2	290 8	291 5	292 3	291 5	291 2	291 5	291 3	
	3E PRC TR-16 PRI VOLTS	VOLTS	P3EV04P PV	281 8	282 9	281 2	283 1	282 5	283 0	283 0	277 2	277 9	283 0	283 0	283 0	283 0	283 0	283 0	283 0	
	3E PRC TR-18 PRI VOLTS	VOLTS	P3EV07P PV	277 4	276 0	277 5	276 0	277 4	275 7	276 0	276 0	278 0	277 2	277 0	276 3	277 1	275 9	276 6	275 6	
	3E PRC TR-20 PRI VOLTS	VOLTS	P3EV08P PV	276 0	276 0	276 0	276 0	276 0	276 0	276 0	276 0	276 2	274 8	274 0	274 9	275 4	275 4	275 1	274 2	
	3E PRC TR-22 PRI VOLTS	VOLTS	P3EV11P PV	235 0	235 0	233 9	234 5	232 6	235 0	234 9	233 1	234 0	234 0	232 1	233 2	233 9	234 9	234 8	233 3	
	3E PRC TR-24 PRI VOLTS	VOLTS	P3EV12P PV	230 1	230 1	230 1	230 1	230 1	230 1	230 1	229 7	230 1	230 1	230 1	230 1	230 1	230 1	226 1	225 0	
New Precip 3A (East) West	3E PRC TR-01 SEC AMPS	mA	P3EA13S PV	275 0	275 0	272 9	273 1	273 3	273 5	273 7	273 9	274 2	274 4	274 6	274 8	174 5	6 1	267 7	275 0	
	3E PRC TR-03 SEC AMPS	mA	P3EA14S PV	3 1	267 7	274 4	274 6	274 2	273 7	273 3	272 8	272 3	271 9	271 4	271 0	270 5	271 4	275 0	119 0	
	3E PRC TR-05 SEC AMPS	mA	P3EA17S PV	275 0	275 0	275 0	275 0	275 0	275 0	275 0	274 5	155 3	13 9	273 4	274 2	274 5	275 0	275 0	275 0	
	3E PRC TR-07 SEC AMPS	mA	P3EA18S PV	270 7	236 7	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	46 5	158 9	
	3E PRC TR-09 SEC AMPS	mA	P3EA21S PV	395 9	395 6	396 6	398 5	395 0	395 1	397 0	399 4	398 0	396 2	397 4	397 0	398 3	398 5	396 8	396 5	
	3E PRC TR-11 SEC AMPS	mA	P3EA22S PV	398 4	398 3	397 7	396 2	396 0	398 4	397 6	10 6	227 1	396 3	396 1	396 0	394 8	394 8	395 8	395 7	
	3E PRC TR-13 SEC AMPS	mA	P3EA01S PV	394 7	397 6	397 5	398 1	251 3	45 1	396 4	396 7	345 0	395 1	395 7	397 0	398 4	395 7	397 7	397 8	
	3E PRC TR-15 SEC AMPS	mA	P3EA02S PV	394 5	394 8	396 5	397 6	396 3	396 0	395 4	394 8	397 8	396 7	395 3	399 1	395 4	396 8	397 7	396 3	
	3E PRC TR-17 SEC AMPS	mA	P3EA05S PV	497 7	497 7	496 5	498 1	495 0	498 1	499 2	497 0	498 9	496 7	496 9	498 4	496 2	496 8	496 2	497 0	
	3E PRC TR-19 SEC AMPS	mA	P3EA06S PV	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	
	3E PRC TR-21 SEC AMPS	mA	P3EA09S PV	496 3	495 6	495 3	496 1	494 0	497 6	495 9	496 4	499 4	495 9	493 4	497 2	495 5	495 1	498 4	493 1	
	3E PRC TR-23 SEC AMPS	mA	P3EA10S PV	492 6	497 6	496 2	499 1	497 0	497 6	496 7	499 0	493 9	495 9	495 2	496 4	496 2	496 9	496 9	493 5	
	3E PRC TR-01 SEC KV 1	KV	P3EV13S1 PV	48 1	48 5	48 5	48 7	48 3	48 8	48 8	48 8	48 9	48 9	48 5	48 8	32 8	6 0	47 1	48 5	
	3E PRC TR-03 SEC KV 1	KV	P3EV14S1 PV	3.0	51 4	52 9	52 9	53 0	53 0	53 0	53 0	53 0	53 0	53 0	53 0	52 6	51 9	52 8	24 3	
	3E PRC TR-05 SEC KV 1	KV	P3EV17S1 PV	50 4	50 2	50 8	50 8	50 5	50 7	51 0	50 7	31 0	7 7	50 1	50 3	50 3	50 4	50 0	50 3	
	3E PRC TR-07 SEC KV 1	KV	P3EV18S1 PV	42 0	36 8	41 9	42 0	42 3	42 3	42 2	42 6	42 4	41 9	41 9	41 9	41 9	42 0	9 2	25 3	
	3E PRC TR-09 SEC KV 1	KV	P3EV21S1 PV	44 9	44 9	44 9	44 9	44 9	44 9	44 9	44 4	44 7	44 9	44 9	44 9	44 9	44 9	44 7	44 3	
	3E PRC TR-11 SEC KV 1	KV	P3EV22S1 PV	44 6	44 5	44 6	44 4	44 7	44 7	44 4	6 0	27 7	44 2	44 1	44 2	44 3	44 3	44 3	44 3	

				Unit 3 Test 2																
				9/9/99 9 10	9/9/99 9 25	9/9/99 9 40	9/9/99 9 55	9/9/99 10 10	9/9/99 10 25	9/9/99 10 40	9/9/99 10 55	9/9/99 11 10	9/9/99 11 25	9/9/99 11 40	9/9/99 11 55	9/9/99 12 10	9/9/99 12 25	9/9/99 12 40	9/9/99 12 55
	3E PRC TR-13 SEC KV 1	KV	P3EV01S1 PV	42 9	42 9	42 9	42 9	28 4	9 1	42 9	42 7	37 7	42 7	42 9	42 9	42 9	42 9	42 9	42 9
	3E PRC TR-15 SEC KV 1	KV	P3EV02S1 PV	41 9	42 1	42 0	42 1	42 0	41 9	42 0	41 9	42 1	42 0	41 9	42 2	41 9	42 2	41 9	41 9
	3E PRC TR-17 SEC KV 1	KV	P3EV05S1 PV	42 1	42 1	42 1	41 9	42 1	42 0	42 1	42 1	42 1	42 1	42 0	42 1	41 9	42 0	41 9	42 0
	3E PRC TR-19 SEC KV 1	KV	P3EV06S1 PV	39 0	39 1	39 0	39 1	39 1	39 1	39 1	39 0	39 4	39 3	39 0	39 0	39 0	39 0	39 0	39 0
	3E PRC TR-21 SEC KV 1	KV	P3EV09S1 PV	47 2	47 2	47 1	47 2	47 3	47 2	47 2	47 3	47 4	47 2	47 2	47 2	47 1	47 2	47 2	47 2
	3E PRC TR-23 SEC KV 1	KV	P3EV10S1 PV	43 9	43 9	43 9	43 9	43 9	43 9	43 9	43 9	43 9	43 9	43 9	43 9	43 8	43 9	43 9	43 9
	3E PRC TR-01 PRI AMPS	AMPS	P3EA13P PV	69 0	68 5	68 8	69 0	68 5	68 6	69 5	69 8	69 0	68 9	68 9	69 3	43 6	0 0	66 9	68 9
	3E PRC TR-03 PRI AMPS	AMPS	P3EA14P PV	0 0	69 4	71 3	71 6	71 9	71 8	71 8	72 0	71 7	71 7	71 9	71 7	71 7	71 1	71 6	30 7
	3E PRC TR-05 PRI AMPS	AMPS	P3EA17P PV	69 7	69 2	69 2	69 5	69 8	69 3	69 6	69 1	33 8	2 8	69 2	69 4	69 1	68 7	69 2	69 0
	3E PRC TR-07 PRI AMPS	AMPS	P3EA18P PV	66 4	58 1	66 5	67 0	67 0	67 0	67 5	67 5	67 0	67 0	67 0	67 0	67 0	67 0	10 7	38 2
	3E PRC TR-09 PRI AMPS	AMPS	P3EA21P PV	91 2	90 8	90 8	91 6	90 8	91 0	90 6	91 3	91 1	90 7	90 9	90 6	91 0	91 5	91 2	90 6
	3E PRC TR-11 PRI AMPS	AMPS	P3EA22P PV	93 3	93 0	92 5	92 8	92 9	93 1	92 9	2 5	53 4	92 2	92 0	92 0	92 0	92 3	93 0	92 4
	3E PRC TR-13 PRI AMPS	AMPS	P3EA01P PV	91 0	91 3	91 4	91 6	57 5	9 9	91 2	91 8	79 3	90 8	91 1	90 9	91 0	90 7	91 9	91 2
	3E PRC TR-15 PRI AMPS	AMPS	P3EA02P PV	89 8	89 9	89 7	90 0	90 0	89 9	90 0	90 0	90 2	90 0	89 9	90 7	90 4	91 0	90 1	90 3
	3E PRC TR-17 PRI AMPS	AMPS	P3EA05P PV	116 4	115 8	115 6	115 5	115 8	116 2	116 0	116 1	116 0	115 8	115 9	116 4	115 8	116 0	115 6	115 7
	3E PRC TR-19 PRI AMPS	AMPS	P3EA06P PV	106 2	106 3	106 5	106 6	106 7	106 9	107 0	104 0	105 7	106 9	103 9	103 9	103 9	103 9	103 5	103 8
	3E PRC TR-21 PRI AMPS	AMPS	P3EA09P PV	114 3	114 2	114 1	113 8	113 6	113 9	113 9	114 2	114 5	114 3	113 9	114 2	113 8	113 8	114 7	114 2
	3E PRC TR-23 PRI AMPS	AMPS	P3EA10P PV	110 1	110 5	110 8	110 4	110 2	110 2	110 2	110 4	110 3	110 5	109 7	110 4	110 9	111 4	109 9	110 0
	3E PRC TR-01 PRI VOLTS	VOLTS	P3EV13P PV	218 0	218 0	218 0	218 6	217 2	218 0	218 0	218 0	219 4	218 5	217 4	216 6	144 9	24 1	212 7	217 8
	3E PRC TR-03 PRI VOLTS	VOLTS	P3EV14P PV	14 0	227 2	234 9	235 5	236 7	236 9	236 9	238 9	239 4	238 5	233 2	235 0	233 6	230 3	233 8	108 7
	3E PRC TR-05 PRI VOLTS	VOLTS	P3EV17P PV	220 0	220 0	220 4	221 0	221 6	222 1	222 6	221 7	133 3	23 0	220 1	222 2	221 2	220 0	218 8	221 1
	3E PRC TR-07 PRI VOLTS	VOLTS	P3EV18P PV	233 6	205 2	233 6	235 3	237 5	244 7	245 4	249 7	248 8	229 4	232 4	233 5	233 6	238 4	53 3	141 2
	3E PRC TR-09 PRI VOLTS	VOLTS	P3EV21P PV	295 1	295 8	294 8	296 1	294 4	295 1	295 1	293 3	293 8	294 1	294 5	292 9	294 0	295 9	294 1	292 1
	3E PRC TR-11 PRI VOLTS	VOLTS	P3EV22P PV	292 1	292 1	292 1	292 1	292 1	292 1	293 3	26 4	175 7	290 9	292 0	290 1	292 9	292 7	292 8	292 1
	3E PRC TR-13 PRI VOLTS	VOLTS	P3EV01P PV	244 9	245 1	245 6	244 8	163 6	47 6	244 6	241 5	213 3	242 6	243 7	244 1	244 6	244 3	245 3	244 5
	3E PRC TR-15 PRI VOLTS	VOLTS	P3EV02P PV	235 0	235 0	235 0	234 3	233 1	231 7	234 2	235 7	236 2	233 8	234 9	235 7	234 8	234 2	233 9	234 8
	3E PRC TR-17 PRI VOLTS	VOLTS	P3EV05P PV	256 1	253 7	253 1	252 2	252 2	254 4	254 0	254 4	256 8	254 3	253 6	254 6	252 3	254 1	250 9	252 8
	3E PRC TR-19 PRI VOLTS	VOLTS	P3EV06P PV	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 5	234 2	232 5	230 9	230 1	230 1	230 1	230 1
	3E PRC TR-21 PRI VOLTS	VOLTS	P3EV09P PV	220 0	220 0	220 4	220 6	221 1	221 7	222 2	222 6	222 2	223 0	223 0	223 0	223 0	223 0	223 0	223 0
	3E PRC TR-23 PRI VOLTS	VOLTS	P3EV10P PV	218 0	217 9	216 7	217 8	217 4	217 0	216 6	216 3	218 0	218 0	218 0	218 0	218 0	218 0	218 0	218 0
New Precip 3B (West) West	3W PRC TR-02 SEC AMPS	mA	P3WA13S PV	271 9	238 7	275 0	274 5	42 9	162 6	274 6	272 9	273 8	275 0	275 0	275 0	275 0	275 0	274 2	237 2
	3W PRC TR-04 SEC AMPS	mA	P3WA14S PV	17 5	274 6	273 8	273 6	275 0	272 9	274 5	275 0	238 1	274 5	274 9	274 5	274 5	275 0	275 0	132 9
	3W PRC TR-06 SEC AMPS	mA	P3WA17S PV	272 2	274 1	205 3	0 8	267 1	273 9	275 0	271 8	273 5	273 7	272 8	275 0	220 0	274 4	272 7	272 7
	3W PRC TR-08 SEC AMPS	mA	P3WA18S PV	274 5	275 0	274 5	274 4	273 6	274 2	274 1	274 8	275 0	274 0	273 2	274 4	272 0	274 9	275 0	274 2
	3W PRC TR-10 SEC AMPS	mA	P3WA21S PV	394 5	396 7	395 5	396 2	396 2	396 0	397 0	397 6	395 2	396 8	395 9	396 8	396 2	395 3	396 6	395 3
	3W PRC TR-12 SEC AMPS	mA	P3WA22S PV	398 8	396 9	398 3	399 1	399 5	397 7	398 8	399 2	396 8	396 8	396 2	397 0	397 3	396 4	31 9	259 3
	3W PRC TR-14 SEC AMPS	mA	P3WA01S PV	395 6	395 7	396 7	398 1	396 3	396 9	396 5	395 9	397 3	397 8	396 0	394 9	397 2	397 1	395 8	395 7
	3W PRC TR-16 SEC AMPS	mA	P3WA02S PV	396 4	396 1	396 9	395 8	396 1	395 7	396 1	395 3	399 5	393 3	396 7	394 9	395 9	394 2	397 1	396 2
	3W PRC TR-18 SEC AMPS	mA	P3WA05S PV	496 0	494 8	497 3	494 9	499 2	500 0	499 2	497 8	497 8	496 1	496 0	498 4	496 2	493 3	495 9	494 8
	3W PRC TR-20 SEC AMPS	mA	P3WA06S PV	495 8	493 6	499 2	498 8	498 5	499 4	499 2	497 2	497 0	495 6	497 0	495 9	498 8	498 1	496 5	499 2
	3W PRC TR-22 SEC AMPS	mA	P3WA09S PV	495 6	492 1	491 9	496 2	495 1	495 7	493 4	497 2	495 6	495 2	495 3	496 7	495 0	493 5	497 9	495 1
	3W PRC TR-24 SEC AMPS	mA	P3WA10S PV	497 6	497 0	494 8	495 7	496 9	497 6	493 5	497 2	496 3	494 7	494 9	495 1	497 0	497 8	496 7	498 3
	3W PRC TR-02 SEC KV 1	KV	P3WV13S1 PV	42 9	38 0	43 2	43 2	12 6	28 1	43 3	43 3	43 2	43 2	43 3	43 2	42 9	43 1	43 5	38 1
	3W PRC TR-04 SEC KV 1	KV	P3WV14S1 PV	6 7	45 0	45 4	45 6	44 4	44 9	45 5	45 8	40 0	45 8	45 6	45 3	45 5	45 2	45 9	23 6
	3W PRC TR-06 SEC KV 1	KV	P3WV17S1 PV	48 5	48 3	37 2	6 3	48 3	49 5	49 9	49 0	49 0	49 0	49 1	49 1	43 3	49 0	49 1	48 8
	3W PRC TR-08 SEC KV 1	KV	P3WV18S1 PV	50 9	50 8	50 5	49 5	50 7	51 0	51 0	51 0	51 0	51 0	51 1	51 0	51 0	51 0	51 1	51 1
	3W PRC TR-10 SEC KV 1	KV	P3WV21S1 PV	55 0	55 1	55 2	55 1	55 1	55 0	55 1	55 2	55 2	55 2	55 2	55 1	55 3	55 0	54 3	54 9
	3W PRC TR-12 SEC KV 1	KV	P3WV22S1 PV	53 0	53 0	53 1	53 1	53 0	53 0	53 0	53 0	53 0	53 0	53 0	53 0	53 0	53 0	8 2	36 4
	3W PRC TR-14 SEC KV 1	KV	P3WV01S1 PV	55 0	54 7	54 6	54 6	54 7	54 8	54 5	54 8	54 9	54 8	54 9	54 8	55 0	55 0	54 2	54 3
	3W PRC TR-16 SEC KV 1	KV	P3WV02S1 PV	50 2	49 9	50 0	50 1	50 1	50 1	50 0	50 1	50 1	50 1	50 1	50 1	50 0	50 1	50 0	49 9
	3W PRC TR-18 SEC KV 1	KV	P3WV05S1 PV	52 0	52 0	52 0	52 0	52 0	52 0	52 0	52 0	52 0	52 0	52 0	52 0	52 0	52 0	52 0	52 0
	3W PRC TR-20 SEC KV 1	KV	P3WV06S1 PV	50 9	51 0	51 0	50 8	51 0	51 0	51 0	51 0	51 0	50 9	51 0	51 0	51 0	51 0	51 0	51 0
	3W PRC TR-22 SEC KV 1	KV	P3WV09S1 PV	46 4	46 3	46 2	46 1	46 3	46 4	46 2	46 3	46 4	46 1	46 4	46 1	46 3	46 1	46 1	46 1
	3W PRC TR-24 SEC KV 1	KV	P3WV10S1 PV	15 3	15 6	15 2	15 4	15 1	15 3	15 2	15 3	15 5	15 6	15 3	15 5	15 2	15 4	15 3	15 2
	3W PRC TR-02 PRI AMPS	AMPS	P3WA13P PV	68 5	59 3	68 8	68 5	19 9	40 9	68 9	68 4	68 4	68 0	68 4	68 7	69 0	68 7	68 3	59 5
	3W PRC TR-04 PRI AMPS	AMPS	P3WA14P PV	3 6	66 7	66 8	66 9	67 2	66 7	67 2	66 7	58 1	66 9	66 7	66 7	66 5	66 9	66 7	31 7
	3W PRC TR-06 PRI AMPS	AMPS	P3WA17P PV	71 2	71 3	53 1	0 2	69 8	71 4	71 0	71 2	71 1	71 1	71 0	71 2	56 9	71 3	70 9	70 8
	3W PRC TR-08 PRI AMPS	AMPS	P3WA18P PV	67 7	67 4	67 2	67 6	67 4	67 3	67 6	67 5	67 4	67 5	67 7	67 9	67 1	67 9	67 8	67 3
	3W PRC TR-10 PRI AMPS	AMPS	P3WA21P PV	89 8	89 7	90 0	89 9	90 0	89 7	90 0	90 1	89 8	90 0	89 7	89 7	89 7	89 8	90 1	89 9
	3W PRC TR-12 PRI AMPS	AMPS	P3WA22P PV	98 2	98 0	98 0	98 1	98 4	97 9	97 9	98 0	97 8	98 0	98 1	97 8	97 9	97 8	7 9	64 1
	3W PRC TR-14 PRI AMPS	AMPS	P3WA01P PV	94 3	94 4	94 6	94 7	94 3	94 6	94 5	94 6	94 5	94 1	94 9	94 1	94 6	94 3	94 9	94 3
	3W PRC TR-16 PRI AMPS	AMPS	P3WA02P PV	91 3	90 8	90 5	91 1	91 3	91 1	91 5	90 9	91 7	90 8	90 9	90 4	90 8	90 5	91 1	91 3
	3W PRC TR-18 PRI AMPS	AMPS	P3WA05P PV	117 5	117 6	117 3	117 6	117 9	118 4	117 9	118 1	117 4	118 3	117 9	117 6	117 6	117 7	117 8	117 4
	3W PRC TR-20 PRI AMPS	AMPS	P3WA06P PV	114 3	113 8	114 0	114 6	113 8	114 6	114 2	114 0	114 3	114 1	114 3	114 8	114 0	114 2	114 2	114 1
	3W PRC TR-22 PRI AMPS	AMPS	P3WA09P PV	111 2	111 8	111 2	111 7	111 3	111 8	111 9	111 7	111 7	111 2	111 5	111 3	111 7	110 8	111 6	111 0
	3W PRC TR-24 PRI AMPS	AMPS	P3WA10P PV	114 8	115 0	114 5	114 7	115 0	114 7	113 8	114 7	114 6	114 2	114 6	114 3	114 7	115 3	114 5	114 4
	3W PRC TR-02 PRI VOLTS	VOLTS	P3WV13P PV	198 0	176 2	200 2	199 5	52 5	127 1	200 7	200 6	200 1	201 1	201 1	201 1	200 4	199 6	201 9	174 5
	3W PRC TR-04 PRI VOLTS	VOLTS	P3WV14P PV	32 4	219 0	221 5	223 0	217 3	218 6	221 7	221 5	192 9	220 6	221 0	221 5	222 0	222 5	222 0	113 6
	3W PRC TR-06 PRI VOLTS	VOLTS	P3WV17P PV	219 9	219 8	168 1	22 7	218 3	220 2	221 6	222 2	221 2	222 0	222 7	222 5	195 3	222 1	223 5	221 2
	3W PRC TR-08 PRI VOLTS	VOLTS	P3WV18P PV	228 0	227 2	226 0	222 1	227 8	227 2	228 2	231 0	231 1	228 8	229 5	230 1	228 4	229 1	230 1	230 1
	3W PRC TR-10 PRI VOLTS	VOLTS	P3WV21P PV	293 1	292 2	292 7	292 0	292 7	292 1	292 1	293 4	294 9	294 4	293 9	293 4	292 8	292 3	288 6	290 5
	3W PRC TR-12 PRI VOLTS	VOLTS	P3WV22P PV	237 7	238 4	238 2	238 3	237 5	238 7	237 1	237 5	237 5	238 1	236 9	236 7	236 7	238 0	35 4	162 5
	3W PRC TR-14 PRI VOLTS	VOLTS	P3WV01P PV	282 7	283 0	282 6	283 0	283 0	283 0	283 0	283 0	282 8	281 9	280 8	280 5	281 2	282 3	275 9	275 9
	3W PRC TR-16 PRI VOLTS	VOLTS	P3WV02P PV	242 1	241 7	241 7	242 0	242 2	241 7	240 7	242 1	242 9	242 8	241 1	242 3	241 8	242 3	240 5	241 2
	3W PRC TR-18 PRI VOLTS	VOLTS	P3WV05P PV	265 6	266 7	267 3	268 1	267 8	268 6	265 8	265 8	266 3	265 1	266 6	266 1	265 6	265 9	265 5	264 5
	3W PRC TR-20 PRI VOLTS	VOLTS	P3WV06P PV	240 1	240 5	242 0	242 0	242 0	240 9	240 0	239 5	242 0	240 7	240 7	240 9	240 1	239 6	242 0	240 0
	3W PRC TR-22 PRI VOLTS	VOLTS	P3WV09P PV	220 0	220 0	220 0	220 0	220 0	220 0	220 0	220 0	220 6	220 6	220 0	220 0	220 0	220 0	220 0	220 0
	3W PRC TR-24 PRI VOLTS	VOLTS	P3WV10P PV	218 0	218 0	218 0	218 0	218 0	218 0	218 0	218 0	218 0	218 0	218 0	218 0	218 0	218 1	218 4	218 8
New Precip 3B (West) East	3W PRC TR-01 SEC AMPS	mA	P3WA15S PV	274 1	274 4	238 7	274 2	273 5	275 0	275 0	275 0	275 0	275 0	275 0	274 5	152 0	53 8	274 4	275 0
	3W PRC TR-03 SEC AMPS	mA	P3WA16S PV	274 5	273 7	273 4	272 2	274 1	168 8	35 6	275 0	260 0	248 7	270 0	270 0	271 4	274 5	274 2	275 0
	3W PRC TR-05 SEC AMPS	mA	P3WA19S PV	260 5	39 3	108 2	273 3	238 3	238 6	243 2	198 0	200 1	184 3	201 0	274 5	236 4	255 8	252 7	275 0
	3W PRC TR-07 SEC AMPS	mA	P3WA20S PV	272 8	273 2	273 9	274 4	273 7	273 5	275 0	275 0	274 0	275 0	273 4	4 5	214 5	235 3	272 1	274 9
	3W PRC TR-09 SEC AMPS	mA	P3WA23S PV	394 1	396 4	396 8	396 1	397 2	397 1	398 2	397 7	395 6	396 6	396 9	397 1	396 0	396 4	397 0	397 8
	3W PRC TR-11 SEC AMPS	mA	P3WA24S PV	394 9	396 0	395 7	394 4	396 8	397 1	395 6	398 7	397 1	396 7	395 5	394 9	397 0	398 9	395 5	395 2
	3W PRC TR-13 SEC AMPS	mA	P3WA03S PV	397 1	396 3	395 2	396 9	396 9	394 9	394 4	394 4	397 7	396 8	394 1	396 2	398 1	395 5	394 1	397 7

			Unit 3 Test 2																
				9/9/99 9 10	9/9/99 9 25	9/9/99 9 40	9/9/99 9 55	9/9/99 10 10	9/9/99 10 25	9/9/99 10 40	9/9/99 10 55	9/9/99 11 10	9/9/99 11 25	9/9/99 11 40	9/9/99 11 55	9/9/99 12 10	9/9/99 12 25	9/9/99 12 40	9/9/99 12 55
3W PRC TR-15 SEC AMPS	mA	P3WA04S PV	396 1	394 4	398 2	398 2	396 0	396 9	395 9	396 9	392 9	395 2	396 9	396 4	395 9	397 6	397 6	396 5	
3W PRC TR-17 SEC AMPS	mA	P3WA07S PV	496 4	495 2	495 1	494 3	496 4	496 9	495 8	495 5	496 1	497 4	497 8	493 9	496 5	493 6	497 2	496 5	
3W PRC TR-19 SEC AMPS	mA	P3WA08S PV	497 4	494 8	495 8	496 6	495 3	496 1	494 9	496 6	496 3	488 5	496 7	493 3	496 4	494 5	494 7	497 2	
3W PRC TR-21 SEC AMPS	mA	P3WA11S PV	495 8	493 5	495 2	495 5	495 7	493 5	495 8	493 3	493 6	493 9	494 0	494 1	494 2	493 7	496 0	496 2	
3W PRC TR-23 SEC AMPS	mA	P3WA12S PV	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	
3W PRC TR-01 SEC KV 1	KV	P3WV15S1 PV	42 0	42 1	37 3	42 2	42 2	42 4	42 3	42 3	42 0	42 3	42 2	42 2	25 0	12 9	42 2	42 1	
3W PRC TR-03 SEC KV 1	KV	P3WV16S1 PV	46 8	47 1	46 9	47 0	46 9	30 3	10 6	46 8	44 1	44 1	46 7	46 7	46 5	46 0	46 7	46 6	
3W PRC TR-05 SEC KV 1	KV	P3WV19S1 PV	43 5	11 3	22 1	45 7	41 1	38 1	40 9	35 0	30 0	35 5	35 5	45 6	40 6	43 3	43 5	46 1	
3W PRC TR-07 SEC KV 1	KV	P3WV20S1 PV	48 3	47 5	48 0	48 8	48 8	48 7	48 7	48 4	48 5	48 5	48 1	4 3	36 2	42 1	48 1	48 1	
3W PRC TR-09 SEC KV 1	KV	P3WV23S1 PV	55 9	55 5	56 3	55 6	55 7	56 0	56 2	56 0	56 0	55 8	55 9	55 0	55 3	55 5	55 3	55 4	
3W PRC TR-11 SEC KV 1	KV	P3WV24S1 PV	55 4	55 3	55 4	55 4	55 3	55 6	55 6	55 3	55 5	55 6	55 4	55 3	55 4	55 3	55 0	55 1	
3W PRC TR-13 SEC KV 1	KV	P3WV01S1 PV	55 7	55 4	55 5	55 6	55 6	55 6	55 2	55 8	55 7	55 4	55 6	55 3	55 3	55 2	55 4	55 1	
3W PRC TR-15 SEC KV 1	KV	P3WV04S1 PV	50 8	50 6	50 7	51 0	50 8	50 8	50 8	51 0	51 0	50 8	50 8	50 7	50 5	50 8	50 6	50 6	
3W PRC TR-17 SEC KV 1	KV	P3WV07S1 PV	50 0	49 9	49 9	49 9	49 7	49 7	49 8	49 8	50 0	49 6	49 7	49 5	49 7	49 7	49 8	49 7	
3W PRC TR-19 SEC KV 1	KV	P3WV08S1 PV	48 4	48 5	48 3	48 6	48 5	48 6	48 4	48 6	48 3	48 0	48 5	48 5	48 6	46 3	48 4	48 4	
3W PRC TR-21 SEC KV 1	KV	P3WV11S1 PV	43 9	43 9	43 7	43 9	43 9	44 0	43 9	43 9	44 1	43 9	43 9	43 9	43 9	44 0	43 9	43 9	
3W PRC TR-23 SEC KV 1	KV	P3WV12S1 PV	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	
3W PRC TR-01 PRI AMPS	AMPS	P3WA15P PV	69 4	69 7	60 6	69 4	69 4	69 5	69 7	69 8	69 7	69 1	70 0	69 8	37 9	13 1	69 7	69 3	
3W PRC TR-03 PRI AMPS	AMPS	P3WA16P PV	69 2	68 9	68 4	68 5	68 7	41 6	8 3	68 6	65 7	63 1	68 7	68 7	68 2	69 1	68 4	68 9	
3W PRC TR-05 PRI AMPS	AMPS	P3WA19P PV	65 7	9 3	27 1	69 4	60 3	59 9	61 1	50 0	51 0	46 4	50 8	69 6	60 5	65 5	63 6	69 1	
3W PRC TR-07 PRI AMPS	AMPS	P3WA20P PV	67 3	67 8	67 7	67 9	67 8	67 6	67 5	67 7	67 8	67 7	67 9	1 1	52 8	58 7	67 6	67 9	
3W PRC TR-09 PRI AMPS	AMPS	P3WA23P PV	92 5	92 4	92 7	92 9	92 5	92 7	92 3	92 5	92 5	92 6	92 2	92 2	92 4	92 4	92 6	92 4	
3W PRC TR-11 PRI AMPS	AMPS	P3WA24P PV	92 0	92 0	92 2	92 0	92 0	92 3	91 9	92 1	91 8	91 8	92 3	91 7	92 0	92 5	92 3	91 9	
3W PRC TR-13 PRI AMPS	AMPS	P3WA03P PV	94 4	94 7	94 5	94 5	94 7	94 4	94 4	94 4	94 7	95 3	94 4	94 6	94 6	94 4	94 8	94 8	
3W PRC TR-15 PRI AMPS	AMPS	P3WA04P PV	82 9	83 1	83 2	83 1	83 1	83 6	83 0	83 1	82 1	82 9	83 1	82 9	83 1	83 2	83 2	82 9	
3W PRC TR-17 PRI AMPS	AMPS	P3WA07P PV	113 3	113 4	113 4	112 7	113 4	113 3	113 5	113 9	114 1	113 2	114 0	113 4	113 9	113 1	113 2	113 8	
3W PRC TR-19 PRI AMPS	AMPS	P3WA08P PV	122 1	122 3	122 5	122 8	121 5	121 8	122 3	122 2	122 6	120 7	122 4	121 9	122 7	122 1	121 6	122 4	
3W PRC TR-21 PRI AMPS	AMPS	P3WA11P PV	119 5	118 4	118 7	118 4	118 7	118 5	119 4	119 4	119 6	118 3	118 6	118 8	118 1	118 7	118 9	119 3	
3W PRC TR-23 PRI AMPS	AMPS	P3WA12P PV	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	
3W PRC TR-01 PRI VOLTS	VOLTS	P3WV15P PV	191 9	192 5	170 8	193 1	193 1	193 9	192 5	194 9	193 6	194 6	193 6	194 7	114 7	57 5	193 4	194 6	
3W PRC TR-03 PRI VOLTS	VOLTS	P3WV16P PV	210 9	211 4	212 3	211 7	212 7	135 1	46 4	210 7	197 4	198 3	210 2	210 2	209 9	207 5	210 2	210 4	
3W PRC TR-05 PRI VOLTS	VOLTS	P3WV19P PV	196 7	48 6	97 6	206 7	185 9	172 6	195 9	158 6	135 4	159 8	160 4	207 0	184 3	195 0	195 3	207 1	
3W PRC TR-07 PRI VOLTS	VOLTS	P3WV20P PV	214 5	210 8	213 3	215 9	215 3	216 6	215 9	214 0	215 4	215 9	213 7	22 7	162 2	187 3	214 7	213 4	
3W PRC TR-09 PRI VOLTS	VOLTS	P3WV23P PV	280 4	278 9	277 5	280 1	280 0	280 9	283 0	282 2	283 0	282 9	281 0	274 9	275 4	279 8	278 2	279 5	
3W PRC TR-11 PRI VOLTS	VOLTS	P3WV24P PV	296 9	299 1	297 0	296 7	297 4	298 9	298 7	297 5	298 6	297 5	297 0	297 0	297 7	295 1	295 1	295 1	
3W PRC TR-13 PRI VOLTS	VOLTS	P3WV03P PV	294 6	294 1	293 6	293 1	292 6	292 8	292 1	292 1	293 6	292 4	293 2	292 2	292 1	289 6	292 1	291 9	
3W PRC TR-15 PRI VOLTS	VOLTS	P3WV04P PV	244 6	243 7	242 6	243 7	242 0	242 0	242 7	243 9	244 9	244 0	243 3	242 4	242 4	242 3	241 5	242 7	
3W PRC TR-17 PRI VOLTS	VOLTS	P3WV07P PV	235 5	235 0	235 0	235 0	235 0	235 0	234 9	236 1	236 3	235 1	235 0	235 5	235 0	236 0	235 5	235 6	
3W PRC TR-19 PRI VOLTS	VOLTS	P3WV08P PV	234 7	234 0	235 0	235 0	234 6	233 6	234 1	235 0	234 4	231 9	234 3	233 9	233 2	234 0	233 8	232 6	
3W PRC TR-21 PRI VOLTS	VOLTS	P3WV11P PV	210 7	213 0	210 4	211 0	211 0	211 0	212 3	212 9	212 6	212 4	212 2	212 0	211 7	211 5	211 3	210 9	
3W PRC TR-23 PRI VOLTS	VOLTS	P3WV12P PV	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	

Unit 3 Test 3

				9/9/99 16:02	9/9/99 16:17	9/9/99 16:32	9/9/99 16:47	9/9/99 17:02	9/9/99 17:17	9/9/99 17:32	9/9/99 17:47	9/9/99 18:02	9/9/99 18:17	9/9/99 18:32	9/9/99 18:47	9/9/99 19:02	9/9/99 19:17	
	COAL TO 31 PULVERIZER	TONS/HR	3F021 PV	42.2	41.8	41.7	43.3	45.1	46.0	45.4	44.8	44.4	45.5	46.8	46.8	46.8	46.6	44.8
	COAL TO 32 PULVERIZER	TONS/HR	3F022 PV	38.1	37.9	38.5	39.7	40.0	40.2	40.4	40.1	39.8	41.2	42.1	42.3	42.1	42.0	40.3
	COAL TO 33 PULVERIZER	TONS/HR	3F023 PV	22.4	22.4	22.3	22.8	22.3	22.3	22.3	22.3	22.3	22.3	22.3	22.2	22.2	22.2	22.3
	COAL TO 34 PULVERIZER	TONS/HR	3F024 PV	40.3	40.2	40.1	40.0	40.0	39.9	39.8	39.7	39.7	39.5	39.3	39.1	39.0	38.9	39.7
	COAL TO 35 PULVERIZER	TONS/HR	3F025 PV	36.9	36.0	35.7	36.6	38.3	39.5	39.0	39.3	37.8	38.9	40.2	40.2	40.0	39.9	39.3
	GENERATOR 3 LOAD	MW	3H211 PV	573.3	575.5	587.9	612.5	619.8	621.7	605.7	587.7	602.9	621.1	616.0	614.5	613.7	612.8	186.4
	U3 1ST STG STEAM FLOW CALC	PERCENT	3TM1P05 PV	75.9	76.3	75.3	81.5	82.2	82.6	80.2	77.4	80.4	82.4	82.7	82.5	82.3	82.3	
	MAIN STEAM TEMP AVERAGE	DEG F	3TM1P06 PV	999.5	995.2	998.2	991.2	999.0	995.7	996.8	995.9	993.4	998.9	992.4	989.7	990.7	989.3	
	MAIN STEAM PRES RH-NORTH	PSIG	3P201 PV	3641.9	3641.3	3640.6	3640.0	3639.8	3641.5	3643.4	3645.2	3647.1	3647.6	3645.8	3645.0	3645.0	3645.0	
	FEEDWATER MID SELECT	PERCENT	3FW1P05 PP	74.7	74.0	74.6	79.8	80.4	80.4	78.9	76.0	78.6	80.1	80.1	80.0	80.0	80.0	
	BOILER 3 FURNACE PRESS A	"WC	C3P050A PV	-0.6	-0.5	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	-0.5	-0.5	-0.5	-0.4	
	APH 31 AIR IN TEMP	DEG F	C3T030A PV	99.0	98.9	98.9	99.3	99.6	99.2	99.4	99.2	98.9	98.7	99.4	98.3	97.8	97.5	
	APH 32 AIR IN TEMP	DEG F	C3T030B PV	101.5	101.4	101.6	101.7	101.9	101.6	101.9	101.6	101.5	101.5	101.3	101.1	100.9	100.8	
	SEC AH 31 AIR OUT	DEG F	3T017 PV	576.6	575.9	575.5	576.5	581.2	582.0	581.6	579.8	578.5	581.0	582.7	582.5	582.4	582.4	
	SEC AH 32 AIR OUT	DEG F	3T018 PV	574.6	573.8	573.2	574.2	578.7	579.7	579.4	577.7	575.6	578.3	580.0	579.9	579.8	579.7	
	SEC AH 31 GAS IN	DEG F	3T020 PV	616.3	613.5	612.4	617.4	625.2	625.1	624.1	620.0	619.1	625.4	628.3	626.0	625.8	625.7	
	SEC AH 32 GAS IN	DEG F	3T021 PV	618.5	613.8	612.6	616.7	623.4	624.3	622.5	619.2	619.0	624.0	624.8	624.8	624.8	624.5	
	APH 31 GAS OUT TEMP	DEG F	C3T033A PV	262.9	262.6	262.3	263.3	264.9	265.2	264.6	263.9	263.7	264.6	264.5	264.0	263.6	263.3	
	APH 32 GAS OUT TEMP	DEG F	C3T033B PV	234.1	234.4	234.6	235.0	235.5	235.7	235.5	235.2	234.9	234.8	234.9	234.6	234.3	234.0	
	BOILER 3 EAST FLUEGAS O2	PERCENT	C3G007 PV	3.6	3.6	3.4	3.6	3.5	3.5	3.5	3.5	3.4	3.6	3.7	3.8	3.7	3.7	
	BOILER 3 WEST FLUEGAS O2	PERCENT	C3G005 PV	2.3	2.2	1.9	2.2	2.2	2.3	2.2	2.3	2.3	2.4	2.5	2.7	2.6	2.6	
	ID FAN 31 INLET	DEG F	3T028 PV	259.9	260.0	260.2	260.4	260.5	260.6	260.6	260.6	260.5	260.5	260.5	260.5	260.5	260.5	
	ID FAN 32 INLET	DEG F	3T029 PV	243.3	243.2	243.1	243.1	243.0	243.0	243.0	243.0	243.0	243.0	243.0	243.0	243.0	243.0	
	ID FAN 31 INLET PRESS	"WC	3P028 PV	-23.3	-23.5	-22.5	-26.4	-26.6	-26.8	-25.5	-24.0	-25.9	-27.3	-27.1	-27.1	-27.1	-27.1	
	ID FAN 32 INLET PRESS	"WC	3P029 PV	-23.4	-23.7	-22.8	-26.8	-27.0	-27.1	-25.7	-24.3	-26.2	-27.6	-27.4	-27.4	-27.5	-27.4	
	APH 31 GAS INLET PRESS	"WC	3P020 PV	-8.1	-8.1	-7.8	-9.3	-9.1	-9.3	-8.7	-8.3	-9.0	-9.5	-9.3	-9.5	-9.3	-9.2	
	APH 32 GAS INLET PRESS	"WC	3P021 PV	-7.8	-8.0	-7.6	-9.0	-8.8	-9.0	-8.4	-8.1	-8.7	-9.1	-9.0	-9.1	-9.0	-8.9	
	APH 31 GAS OUTLET PRESS	"WC	3P022 PV	-17.9	-18.2	-17.5	-20.5	-20.5	-20.5	-19.5	-18.6	-20.1	-21.0	-20.8	-20.8	-20.9	-20.8	
	APH 32 GAS OUTLET PRESS	"WC	3P023 PV	-18.8	-18.9	-18.2	-21.3	-21.5	-21.4	-20.8	-19.3	-20.7	-21.9	-21.8	-21.8	-21.7	-21.7	
	CEM - Unit #3 CO	PPM	E3G123 PV	66.7	69.8	104.0	107.1	117.9	80.7	114.9	73.7	98.8	# this point fo	118.5	85.7	68.7	61.9	
ESP																		
Old Precip East	3 PREC TR-1A1A SEC AMPS	mA	P3AA01S PV	228.3	226.8	226.5	225.0	226.7	228.7	225.6	229.1	227.4	228.2	223.9	224.7	223.0	229.5	
	3 PREC TR-1A1B SEC AMPS	mA	P3AA02S PV	191.0	191.2	191.3	191.4	191.5	191.6	191.8	191.9	192.3	193.1	193.8	194.0	194.0	194.0	
	3 PREC TR-1A1C SEC AMPS	mA	P3AA03S PV	232.0	234.6	233.4	226.2	229.5	236.0	233.6	232.4	231.8	232.5	233.0	231.0	233.7	233.0	
	3 PREC TR-1A2A SEC AMPS	mA	P3AA04S PV	429.3	411.1	433.7	88.9	391.8	431.8	431.1	424.7	422.5	406.5	402.7	400.4	406.5	423.0	
	3 PREC TR-1A2B SEC AMPS	mA	P3AA05S PV	477.7	465.9	446.6	453.0	449.1	249.5	306.6	475.4	465.3	477.0	472.2	477.8	473.2	466.4	
	3 PREC TR-1A2C SEC AMPS	mA	P3AA06S PV	332.1	328.1	330.5	311.5	313.7	312.5	321.2	318.3	45.7	319.0	313.8	301.8	314.0	319.0	
	3 PREC TR-1A3A SEC AMPS	mA	P3AA07S PV	497.5	496.8	495.8	461.7	488.5	493.5	494.1	498.3	496.5	498.9	495.6	493.0	494.6	497.2	
	3 PREC TR-1A3B SEC AMPS	mA	P3AA08S PV	488.9	488.9	489.9	487.6	490.0	465.7	474.1	489.3	489.8	486.9	490.9	490.6	489.4	489.0	
	3 PREC TR-1A3C SEC AMPS	mA	P3AA09S PV	485.8	288.8	284.5	488.0	484.4	488.8	483.4	491.9	485.7	485.6	483.3	486.5	486.5	487.8	
	3 PREC TR-1A1A SEC KV 1	KV	P3AV01S1 PV	55.5	56.2	56.4	57.3	57.2	57.5	57.2	57.2	57.3	57.5	56.9	57.2	57.2	57.5	
	3 PREC TR-1A1B SEC KV 1	KV	P3AV02S1 PV	50.9	51.2	51.7	52.7	52.7	52.4	52.1	52.1	52.7	52.8	52.5	52.5	52.5	52.5	
	3 PREC TR-1A1C SEC KV 1	KV	P3AV03S1 PV	59.3	59.2	58.7	59.8	59.8	59.5	59.1	59.8	59.4	59.6	59.4	59.4	59.5	59.6	
	3 PREC TR-1A2A SEC KV 1	KV	P3AV04S1 PV	59.9	59.4	60.0	16.5	55.6	59.9	60.0	59.8	58.9	59.5	59.2	59.3	59.5	60.0	
	3 PREC TR-1A2B SEC KV 1	KV	P3AV05S1 PV	58.9	58.7	57.9	59.0	58.5	33.9	40.2	59.4	59.7	59.6	59.4	59.4	59.7	60.0	
	3 PREC TR-1A2C SEC KV 1	KV	P3AV06S1 PV	60.0	59.7	60.0	59.8	59.9	59.4	59.9	59.7	13.2	59.9	59.7	59.5	60.0	60.0	
	3 PREC TR-1A3A SEC KV 1	KV	P3AV07S1 PV	59.8	59.8	59.7	60.0	59.5	60.0	59.9	60.0	60.0	60.0	59.9	60.0	60.0	60.0	
	3 PREC TR-1A3B SEC KV 1	KV	P3AV08S1 PV	60.0	60.0	60.0	60.0	60.0	60.0	59.9	60.0	60.0	60.0	60.0	59.9	60.0	60.0	
	3 PREC TR-1A3C SEC KV 1	KV	P3AV09S1 PV	38.3	24.4	23.8	38.0	38.0	38.0	38.0	38.0	38.9	38.0	38.4	38.1	38.0	38.0	
	3 PREC TR-1A1A PRI AMPS	AMPS	P3AA01P PV	49.1	49.1	49.1	49.1	49.1	48.5	47.9	49.1	49.1	49.1	49.1	48.9	49.1	49.1	
	3 PREC TR-1A1B PRI AMPS	AMPS	P3AA02P PV	48.5	48.5	48.6	49.6	48.6	48.7	48.7	48.8	48.8	48.8	48.9	48.9	49.0	49.0	
	3 PREC TR-1A1C PRI AMPS	AMPS	P3AA03P PV	49.3	49.1	49.1	48.7	48.6	49.1	49.1	49.1	48.9	49.1	49.1	48.9	48.8	48.9	
	3 PREC TR-1A2A PRI AMPS	AMPS	P3AA04P PV	88.6	87.1	89.0	12.8	88.0	88.8	89.3	89.0	88.1	87.0	84.9	82.4	85.5	87.0	
	3 PREC TR-1A2B PRI AMPS	AMPS	P3AA05P PV	97.5	96.7	95.1	90.2	92.6	53.3	62.7	97.6	97.3	94.8	97.4	97.6	96.1	98.0	
	3 PREC TR-1A2C PRI AMPS	AMPS	P3AA06P PV	72.9	72.6	72.5	69.2	69.9	69.6	69.2	70.1	9.2	69.3	70.2	68.7	69.5	70.0	
	3 PREC TR-1A3A PRI AMPS	AMPS	P3AA07P PV	98.0	98.0	98.0	91.6	97.7	97.8	98.0	98.0	98.0	98.5	98.0	98.5	98.5	98.0	
	3 PREC TR-1A3B PRI AMPS	AMPS	P3AA08P PV	98.0	98.0	97.3	97.8	96.2	93.7	94.8	99.0	97.6	96.9	97.8	98.0	97.0	98.0	
	3 PREC TR-1A3C PRI AMPS	AMPS	P3AA09P PV	98.8	59.7	58.2	98.0	98.0	98.0	98.0	99.0	97.5	98.0	98.0	98.0	98.0	98.0	
	3 PREC TR-1A1A PRI VOLTS	VOLTS	P3AV01P PV	311.0	315.1	316.2	321.7	321.5	321.3	319.7	320.0	320.6	321.8	316.9	319.9	318.7	320.4	
	3 PREC TR-1A1B PRI VOLTS	VOLTS	P3AV02P PV	303.0	304.0	306.9	312.9	310.6	310.7	309.6	310.8	312.3	312.7	311.8	312.4	312.9	313.9	
	3 PREC TR-1A1C PRI VOLTS	VOLTS	P3AV03P PV	322.1	323.4	324.8	331.7	332.1	332.4	329.5	325.7	331.3	330.9	330.8	332.1	332.5	332.4	
	3 PREC TR-1A2A PRI VOLTS	VOLTS	P3AV04P PV	357.7	353.8	358.6	85.8	330.4	356.9	357.2	357.0	357.9	353.0	352.4	351.1	352.4	356.4	
	3 PREC TR-1A2B PRI VOLTS	VOLTS	P3AV05P PV	354.6	352.5	343.8	351.8	348.6	193.2	232.9	356.3	353.5	357.4	357.4	354.9	355.6	357.0	
	3 PREC TR-1A2C PRI VOLTS	VOLTS	P3AV06P PV	309.8	307.8	309.5	305.4	306.3	303.3	307.3	304.9	45.3	307.6	307.3	301.5	307.0	307.8	
	3 PREC TR-1A3A PRI VOLTS	VOLTS	P3AV07P PV	362.9	363.2	363.5	363.8	359.8	360.3	360.5	360.7	360.9	361.1	361.4	361.6	361.8	361.9	
	3 PREC TR-1A3B PRI VOLTS	VOLTS	P3AV08P PV	349.0	350.9	352.1	352.1	352.3	351.5	352.0	352.1	352.1	352.5	353.8	352.8	352.1	352.1	
	3 PREC TR-1A3C PRI VOLTS	VOLTS	P3AV09P PV	354.6	213.5	207.0	349.7	349.6	349.0	348.4	347.9	357.8	349.6	351.7	350.5	350.1	350.2	
Old Precip West	3 PREC TR-1B1A SEC KV 1	KV	P3BV03S1 PV	55.3	56.4	57.3	55.5	56.9	57.0	55.9	56.5	57.3	57.0	55.0	54.6	26.9	1.0	
	3 PREC TR-1B1B SEC KV 1	KV	P3BV02S1 PV	59.4	59.3	59.5	58.8	58.7	57.6	57.5	57.5	29.8	43.4	59.9	60.0	58.8	57.7	
	3 PREC TR-1B1C SEC KV 1	KV	P3BV01S1 PV	50.9	50.8	51.3	52.9	53.2	52.0	51.8	32.0	27.6	52.2	52.3	52.4	52.0	51.7	
	3 PREC TR-1B2A SEC KV 1	KV	P3BV06S1 PV	58.4	57.8	59.8	58.7	56.3	58.8	58.5	57.4	56.0	56.8	56.1	32.5	36.2	60.0	
	3 PREC TR-1B2B SEC KV 1	KV	P3BV05S1 PV	57.9	59.3	57.1	58.0	56.2	58.1	57.4	59.6	58.5	19.0	58.3	59.4	59.7	54.2	
	3 PREC TR-1B2C SEC KV 1	KV	P3BV04S1 PV	58.3	58.7	58.5	58.5	58.4	58.6	44.7	25.1	58.8	58.5	58.7	58.7	58.6	59.0	
	3 PREC TR-1B3A SEC KV 1	KV	P3BV09S1 PV	56.8	58.3	56.4	57.3	54.8	57.3	57.2	56.0	51.0	55.9	55.5	54.1	54.4	59.0	
	3 PREC TR-1B3B SEC KV 1	KV	P3BV08S1 PV	59.6	59.4	59.5	57.1	57.7	57.7	57.2	58.3	56.6	56.5	55.1	53.8	57.9	55.5	
	3 PREC TR-1B3C SEC KV 1	KV	P3BV07S1 PV	59.7	59.7	60.0	60.0	60.0	59.0	60.0	59.7	60.0	59.9	59.7	59.8	59.9	60.0	
	3 PREC TR-1B1A SEC AMPS	mA	P3BA03S PV	228.4	231.4	231.8	214.1	214.2	225.4	213.5	232.8	223.9	199.4	196.1	201.9	94.5	0.0	
	3 PREC TR-1B1B SEC AMPS	mA	P3BA02S PV	172.2	163.6	158.3	155.2	142.7	134.0	137.6	144.1	81.7	106.6	184.6	189.5	154.4	149.0	
	3 PREC TR-1B1C SEC AMPS	mA	P3BA01S PV	231.7	233.9	233.3	233.8	233.0	227.1	232.1	142.1	119.7	233.9	229.7	231.2	231.6	231.9	
	3 PREC TR-1B2A SEC AMPS	mA	P3BA06S PV	411.7	398.1	434.8	412.4	368.0	419.6	409.7	387.8	343.0	384.5	347.2	194.4	183.7	297.5	
	3 PREC TR-1B2B SEC AMPS	mA	P3BA05S PV	364.7	400.0	356.6	376.8	336.8	335.7	364.9	351.5	350.0	92.0	397.1	409.4	410.4	310.2	
	3 PREC TR-1B2C SEC AMPS	mA	P3BA04S PV	437.3	440.2	438.7	416.3	419.4	419.5	322.6	108.2	360.0	434.8	430.1	423.2	419.1	414.3	
	3 PREC TR-1B3A SEC AMPS	mA	P3BA09S PV	463.9	397.0	458.7	479.7	416.3	479.4	476.3	444.3	468.1	440.7	477.8	392.9	360.1	466.1	
	3 PREC TR-1B3B SEC AMPS	mA	P3BA08S PV	475.1	451.1	464.5	425.7	429.6	433.9	471.4	440.9	401.4	350.9	377.4	351.7	437.8	377.0	

Unit 3 Test 3

				9/9/99 16:02	9/9/99 16:17	9/9/99 16:32	9/9/99 16:47	9/9/99 17:02	9/9/99 17:17	9/9/99 17:32	9/9/99 17:47	9/9/99 18:02	9/9/99 18:17	9/9/99 18:32	9/9/99 18:47	9/9/99 19:02	9/9/99 19:17
	3 PREC TR-1B3C SEC AMPS	mA	P3BA07S PV	464.1	466.1	473.8	468.7	473.2	451.9	447.4	410.5	447.9	471.7	456.4	463.3	467.9	470.5
	3 PREC TR-1B1A PRI AMPS	AMPS	P3BA03P PV	47.0	46.6	47.7	46.0	40.1	44.1	44.3	47.0	45.9	42.4	39.9	43.8	21.8	0.0
	3 PREC TR-1B1B PRI AMPS	AMPS	P3BA02P PV	35.8	39.2	38.4	35.1	29.8	32.9	30.8	33.6	17.5	73.8	35.0	36.4	33.9	32.2
	3 PREC TR-1B1C PRI AMPS	AMPS	P3BA01P PV	48.7	48.8	49.0	48.0	47.4	48.4	48.7	30.7	24.9	49.1	49.1	49.1	49.1	49.1
	3 PREC TR-1B2A PRI AMPS	AMPS	P3BA06P PV	81.8	82.2	85.4	83.2	74.5	76.2	74.3	78.0	78.5	74.2	64.6	36.8	37.2	63.3
	3 PREC TR-1B2B PRI AMPS	AMPS	P3BA05P PV	90.7	93.7	88.7	85.5	78.4	84.4	79.3	82.9	76.2	71.3	96.9	94.4	93.8	78.7
	3 PREC TR-1B2C PRI AMPS	AMPS	P3BA04P PV	89.8	88.1	89.3	86.2	80.4	84.0	86.7	23.1	74.4	87.6	87.9	85.8	86.1	86.8
	3 PREC TR-1B3A PRI AMPS	AMPS	P3BA09P PV	88.7	97.4	87.1	91.8	89.6	94.3	92.1	93.3	94.7	84.0	91.1	75.6	79.0	89.7
	3 PREC TR-1B3B PRI AMPS	AMPS	P3BA08P PV	96.5	89.1	94.6	85.9	89.5	90.0	84.7	91.6	78.4	73.1	81.3	78.5	85.7	80.4
	3 PREC TR-1B3C PRI AMPS	AMPS	P3BA07P PV	98.4	96.4	98.8	95.0	95.1	95.3	93.6	94.8	92.0	95.7	95.7	94.4	95.8	95.5
	3 PREC TR-1B1A PRI VOLTS	VOLTS	P3BV03P PV	322.3	330.5	334.9	320.4	328.1	332.7	321.8	331.8	333.3	328.5	312.5	312.1	150.3	4.0
	3 PREC TR-1B1B PRI VOLTS	VOLTS	P3BV02P PV	337.7	335.2	337.7	328.2	324.8	314.5	312.7	314.3	188.8	241.5	340.2	340.5	326.3	320.7
	3 PREC TR-1B1C PRI VOLTS	VOLTS	P3BV01P PV	308.2	306.2	309.9	319.7	322.1	313.3	313.8	194.7	167.9	316.5	315.7	317.1	312.5	314.5
	3 PREC TR-1B2A PRI VOLTS	VOLTS	P3BV06P PV	335.6	330.9	345.6	337.3	313.7	339.8	335.5	326.3	311.5	315.2	311.6	169.7	189.1	329.2
	3 PREC TR-1B2B PRI VOLTS	VOLTS	P3BV05P PV	343.7	353.0	351.5	342.4	321.6	324.8	335.6	330.2	339.0	101.8	346.3	354.1	357.1	309.0
	3 PREC TR-1B2C PRI VOLTS	VOLTS	P3BV04P PV	339.4	340.7	340.6	338.9	340.0	339.8	257.8	126.8	331.1	340.8	339.4	340.2	339.1	340.0
	3 PREC TR-1B3A PRI VOLTS	VOLTS	P3BV09P PV	335.0	348.6	334.5	344.1	320.0	341.9	340.7	330.9	341.2	327.6	325.5	310.2	310.0	350.5
	3 PREC TR-1B3B PRI VOLTS	VOLTS	P3BV08P PV	353.9	344.5	352.8	334.8	340.3	338.9	336.9	342.2	327.7	322.2	322.0	310.4	341.1	324.5
	3 PREC TR-1B3C PRI VOLTS	VOLTS	P3BV07P PV	350.0	349.8	353.1	351.4	351.2	346.5	349.2	246.0	351.1	353.0	349.8	350.7	349.2	350.7
New Precip 3A (East) East	3E PRC TR-02 SEC AMPS	mA	P3EA15S PV	274.9	226.9	3.0	213.3	274.5	275.0	275.0	274.5	274.7	278.3	275.0	275.0	275.0	275.0
	3E PRC TR-04 SEC AMPS	mA	P3EA16S PV	155.3	50.1	275.0	275.0	275.0	274.5	275.0	270.9	275.0	274.5	275.0	271.1	275.0	275.0
	3E PRC TR-06 SEC AMPS	mA	P3EA19S PV	374.5	375.0	374.3	274.0	122.4	2.1	265.7	272.8	274.4	273.0	272.0	273.8	275.0	275.0
	3E PRC TR-08 SEC AMPS	mA	P3EA20S PV	275.0	275.0	274.5	275.0	274.5	375.0	275.0	275.0	274.3	273.0	239.7	275.0	275.0	275.0
	3E PRC TR-10 SEC AMPS	mA	P3EA23S PV	199.5	400.0	400.0	400.0	400.0	400.0	400.0	400.0	352.3	400.0	400.0	400.0	400.0	400.0
	3E PRC TR-12 SEC AMPS	mA	P3EA24S PV	397.5	398.4	396.8	398.5	396.9	398.0	396.3	398.2	355.1	359.8	399.6	396.5	398.2	394.0
	3E PRC TR-14 SEC AMPS	mA	P3EA03S PV	398.1	395.1	398.7	399.5	396.5	395.4	399.2	394.8	395.2	395.9	395.3	397.9	394.8	395.8
	3E PRC TR-16 SEC AMPS	mA	P3EA04S PV	398.3	395.3	395.6	396.1	396.3	396.1	395.9	397.5	397.7	119.4	197.8	398.2	396.2	394.3
	3E PRC TR-18 SEC AMPS	mA	P3EA07S PV	499.4	496.9	496.0	495.5	497.2	496.2	499.2	493.8	497.0	498.3	494.5	493.0	498.8	498.8
	3E PRC TR-20 SEC AMPS	mA	P3EA08S PV	497.3	498.9	495.4	498.7	496.0	499.2	499.4	497.8	499.2	492.6	496.4	496.5	496.5	500.0
	3E PRC TR-22 SEC AMPS	mA	P3EA11S PV	494.1	498.0	495.5	493.9	493.6	496.0	498.9	497.9	494.8	495.0	494.5	497.0	497.1	499.9
	3E PRC TR-24 SEC AMPS	mA	P3EA12S PV	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
	3E PRC TR-02 SEC KV 1	KV	P3EV15S1 PV	46.8	40.6	7.0	38.3	46.7	47.0	46.9	46.8	47.0	46.7	46.9	47.1	46.8	46.9
	3E PRC TR-04 SEC KV 1	KV	P3EV18S1 PV	20.3	13.2	49.2	49.4	49.2	49.3	49.3	49.4	49.5	49.2	49.5	49.1	49.5	49.4
	3E PRC TR-06 SEC KV 1	KV	P3EV19S1 PV	51.2	51.3	51.1	50.9	34.6	8.0	49.6	50.6	50.8	50.7	50.4	50.4	50.5	50.4
	3E PRC TR-08 SEC KV 1	KV	P3EV20S1 PV	53.0	52.9	52.8	52.2	51.8	51.1	51.3	52.4	52.2	52.1	45.8	52.0	52.0	52.0
	3E PRC TR-10 SEC KV 1	KV	P3EV23S1 PV	11.3	23.0	23.0	23.0	23.0	23.0	23.0	23.0	20.2	23.0	23.0	23.0	23.0	23.0
	3E PRC TR-12 SEC KV 1	KV	P3EV24S1 PV	54.4	55.4	55.7	55.5	55.7	55.6	55.8	56.0	50.7	50.8	55.8	55.7	56.0	55.7
	3E PRC TR-14 SEC KV 1	KV	P3EV03S1 PV	55.0	55.0	55.3	55.0	55.0	55.1	55.3	55.3	55.4	54.3	54.5	55.0	55.1	55.4
	3E PRC TR-16 SEC KV 1	KV	P3EV04S1 PV	52.6	52.4	52.6	52.4	52.3	52.2	52.4	52.7	52.5	18.9	28.7	52.1	52.2	52.4
	3E PRC TR-18 SEC KV 1	KV	P3EV07S1 PV	49.7	49.5	49.5	49.4	49.4	49.2	49.5	49.4	49.5	49.1	49.1	49.3	49.2	49.1
	3E PRC TR-20 SEC KV 1	KV	P3EV08S1 PV	48.1	48.1	48.1	48.0	47.9	47.9	48.1	48.0	48.1	47.9	47.8	47.8	47.9	47.7
	3E PRC TR-22 SEC KV 1	KV	P3EV11S1 PV	48.1	48.1	48.1	47.8	47.7	47.9	48.1	48.1	47.8	47.8	47.8	47.8	47.8	48.1
	3E PRC TR-24 SEC KV 1	KV	P3EV12S1 PV	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1
	3E PRC TR-02 PRI AMPS	AMPS	P3EA15P PV	69.8	51.5	0.0	54.0	69.8	69.8	70.0	69.7	69.5	69.3	69.6	69.8	69.7	69.5
	3E PRC TR-04 PRI AMPS	AMPS	P3EA16P PV	38.0	12.2	66.3	67.1	67.4	67.9	67.6	66.6	67.3	67.5	67.9	66.3	68.0	67.6
	3E PRC TR-06 PRI AMPS	AMPS	P3EA19P PV	68.4	67.8	67.6	68.4	42.8	0.0	66.0	67.8	68.3	67.9	67.7	67.6	67.9	67.5
	3E PRC TR-08 PRI AMPS	AMPS	P3EA20P PV	68.4	68.6	68.5	68.1	68.5	69.3	68.4	68.4	68.2	69.2	58.8	68.3	68.1	68.6
	3E PRC TR-10 PRI AMPS	AMPS	P3EA23P PV	0.0	r this point fo	or this point fo	r this point fo	r this point fo	r this point fo	r this point fo	r this point fo	0.0	r this point fo	r this point fo	r this point fo	r this point fo	r this point for this time -106 No good dat
	3E PRC TR-12 PRI AMPS	AMPS	P3EA24P PV	91.3	91.2	90.8	91.1	91.3	91.2	90.9	91.5	81.4	82.1	91.7	90.9	91.1	91.2
	3E PRC TR-14 PRI AMPS	AMPS	P3EA03P PV	90.7	91.0	90.5	90.8	91.0	90.9	91.1	90.8	90.7	91.7	90.7	90.7	90.5	91.9
	3E PRC TR-16 PRI AMPS	AMPS	P3EA04P PV	92.4	92.5	92.0	92.0	92.1	92.3	92.6	92.8	92.7	27.1	45.5	92.0	92.0	92.0
	3E PRC TR-18 PRI AMPS	AMPS	P3EA07P PV	114.3	113.7	113.3	113.7	113.9	113.4	114.1	113.2	114.0	114.2	113.5	114.2	113.9	113.4
	3E PRC TR-20 PRI AMPS	AMPS	P3EA08P PV	120.3	120.2	120.2	120.5	120.0	120.2	120.6	120.1	120.4	120.4	120.0	120.3	119.8	119.8
	3E PRC TR-22 PRI AMPS	AMPS	P3EA11P PV	118.7	119.7	118.5	118.4	118.3	118.7	119.8	119.0	118.8	119.0	119.2	118.9	118.8	119.8
	3E PRC TR-24 PRI AMPS	AMPS	P3EA12P PV	119.6	119.4	119.2	118.9	118.2	118.5	119.1	119.8	119.1	120.0	119.1	116.9	116.7	116.6
	3E PRC TR-02 PRI VOLTS	VOLTS	P3EV15P PV	208.1	178.0	21.0	167.4	205.9	208.8	207.5	207.5	207.3	205.8	207.5	208.6	207.4	211.1
	3E PRC TR-04 PRI VOLTS	VOLTS	P3EV16P PV	135.4	56.6	219.3	219.1	219.0	220.5	218.4	218.1	219.3	218.5	219.6	218.2	219.4	221.3
	3E PRC TR-06 PRI VOLTS	VOLTS	P3EV19P PV	213.5	214.4	213.9	213.4	141.8	24.1	207.0	211.3	212.0	212.1	210.4	211.9	211.3	211.0
	3E PRC TR-08 PRI VOLTS	VOLTS	P3EV20P PV	234.0	234.3	233.4	230.6	227.9	225.0	228.7	230.4	230.6	229.8	201.8	229.4	230.3	231.3
	3E PRC TR-10 PRI VOLTS	VOLTS	P3EV23P PV	19.1	r this point fo	or this point fo	r this point fo	r this point fo	r this point fo	r this point fo	r this point fo	19.1	r this point fo	r this point fo	r this point fo	r this point fo	r this point for this time -106 No good dat
	3E PRC TR-12 PRI VOLTS	VOLTS	P3EV24P PV	302.3	308.2	309.0	309.0	308.0	309.0	309.0	309.6	278.3	281.9	309.5	312.0	312.0	312.0
	3E PRC TR-14 PRI VOLTS	VOLTS	P3EV03P PV	291.8	292.4	294.0	292.4	292.6	293.1	293.6	294.0	293.4	287.0	289.7	292.2	292.4	292.6
	3E PRC TR-16 PRI VOLTS	VOLTS	P3EV04P PV	284.8	282.9	285.8	282.6	284.1	283.0	283.0	284.9	283.8	100.2	151.7	283.2	283.0	283.0
	3E PRC TR-18 PRI VOLTS	VOLTS	P3EV07P PV	278.0	277.2	278.0	277.3	277.3	277.9	278.5	278.8	278.2	274.7	272.8	276.3	277.4	278.0
	3E PRC TR-20 PRI VOLTS	VOLTS	P3EV08P PV	278.0	277.5	277.1	276.1	274.7	274.7	275.8	276.0	276.4	274.5	273.3	274.1	275.4	274.8
	3E PRC TR-22 PRI VOLTS	VOLTS	P3EV11P PV	234.8	235.0	235.3	233.3	233.8	234.7	233.7	234.7	233.1	233.5	235.4	235.2	233.8	237.0
	3E PRC TR-24 PRI VOLTS	VOLTS	P3EV12P PV	230.1	230.1	230.1	229.2	228.4	230.1	230.1	230.1	229.4	230.1	230.1	228.0	228.9	230.1
New Precip 3A (East) West	3E PRC TR-01 SEC AMPS	mA	P3EA13S PV	275.0	275.0	275.0	68.9	106.4	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0
	3E PRC TR-03 SEC AMPS	mA	P3EA14S PV	273.4	273.7	274.0	274.3	274.6	274.8	10.3	177.1	275.0	275.0	275.0	275.0	275.0	275.0
	3E PRC TR-05 SEC AMPS	mA	P3EA17S PV	275.0	275.0	275.0	274.2	271.4	273.6	272.0	97.7	66.7	274.3	275.0	275.0	275.0	275.0
	3E PRC TR-07 SEC AMPS	mA	P3EA18S PV	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	246.0	3.0	230.9	275.0
	3E PRC TR-09 SEC AMPS	mA	P3EA21S PV	397.5	397.8	395.8	395.1	396.3	396.3	396.8	393.3	397.3	396.9	397.7	396.4	398.5	398.7
	3E PRC TR-11 SEC AMPS	mA	P3EA22S PV	398.4	395.4	397.2	395.5	395.9	395.5	398.6	397.1	395.4	396.5	397.5	398.1	395.7	393.8
	3E PRC TR-13 SEC AMPS	mA	P3EA01S PV	399.5	397.9	397.4	397.0	396.7	394.6	395.7	396.5	396.9	396.7	394.1	396.6	396.8	396.7
	3E PRC TR-15 SEC AMPS	mA	P3EA02S PV	396.4	394.9	397.1	394.5	393.1	396.5	397.4	118.8	201.2	394.9	317.2	397.8	394.6	391.3
	3E PRC TR-17 SEC AMPS	mA	P3EA05S PV	498.1	498.3	497.2	498.1	497.3	497.5	497.0	496.3	497.1	495.9	489.0	498.4	496.5	497.4
	3E PRC TR-19 SEC AMPS	mA	P3EA06S PV	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
	3E PRC TR-21 SEC AMPS	mA	P3EA09S PV	495.3	496.0	497.6	494.8	498.3	496.2	497.0	496.2	498.7	496.8	496.6	494.5	493.7	498.0
	3E PRC TR-23 SEC AMPS	mA	P3EA10S PV	494.8	495.7	497.2	495.3	497.0	498.4	496.1	494.9	497.9	495.8	493.8	499.2	496.3	496.7
	3E PRC TR-01 SEC KV 1	KV	P3EV13S1 PV	49.0	49.2	49.1	15.7	22.0	48.8	48.6	48.7	48.9	48.8	48.9	48.9	48.9	48.7
	3E PRC TR-03 SEC KV 1	KV	P3EV14S1 PV	53.0	53.0	53.0	52.3	52.3	52.9	4.3	35.0	52.9	53.0	53.0	53.0	53.0	53.0
	3E PRC TR-05 SEC KV 1	KV	P3EV17S1 PV	51.0	50.9	51.0	50.9	50.5	50.7	50.9	22.1	16.6	50.3	50.8	50.1	50.5	50.9
	3E PRC TR-07 SEC KV 1	KV	P3EV18S1 PV	42.9	42.8	42.6	42.5	42.5	42.3	42.6	42.2	41.9	41.9	38.0	3.0	35.7	41.9
	3E PRC TR-09 SEC KV 1	KV	P3EV21S1 PV	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.9	44.8	44.7	44.9
	3E PRC TR-11 SEC KV 1	KV	P3EV22S1 PV	44.7	44.5	44.7	44.5	44.2	44.7	44.6	44.7	44.4	44.6	44.7	44.6	44.7	44.5

Unit 3 Test 3

				9/9/99 16:02	9/9/99 16:17	9/9/99 16:32	9/9/99 16:47	9/9/99 17:02	9/9/99 17:17	9/9/99 17:32	9/9/99 17:47	9/9/99 18:02	9/9/99 18:17	9/9/99 18:32	9/9/99 18:47	9/9/99 19:02	9/9/99 19:17
	3E PRC TR-13 SEC KV 1	KV	P3EV01S1 PV	43.5	43.3	43.2	42.9	42.9	43.0	43.0	43.0	42.9	42.9	42.9	43.0	42.9	42.9
	3E PRC TR-15 SEC KV 1	KV	P3EV02S1 PV	42.4	42.2	42.5	42.1	42.0	42.2	42.4	16.0	23.7	41.9	34.6	41.9	42.0	41.9
	3E PRC TR-17 SEC KV 1	KV	P3EV05S1 PV	42.4	42.4	42.4	42.2	42.0	42.1	42.0	42.4	42.0	42.1	42.0	42.1	42.1	41.9
	3E PRC TR-19 SEC KV 1	KV	P3EV05S1 PV	39.0	39.0	39.0	39.0	39.2	39.4	39.0	39.6	39.6	39.0	39.0	39.0	39.0	39.0
	3E PRC TR-21 SEC KV 1	KV	P3EV09S1 PV	47.4	47.4	47.5	47.3	47.3	47.3	47.3	47.5	47.4	47.4	47.1	47.2	47.2	47.1
	3E PRC TR-23 SEC KV 1	KV	P3EV10S1 PV	44.0	44.0	44.0	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9
	3E PRC TR-01 PRI AMPS	AMPS	P3EA13P PV	69.7	68.9	70.0	15.9	25.7	69.0	68.7	68.7	68.7	69.0	68.8	68.8	69.0	69.0
	3E PRC TR-03 PRI AMPS	AMPS	P3EA14P PV	71.8	71.9	71.7	71.7	71.6	71.5	1.9	45.7	71.3	71.8	72.0	72.0	71.3	71.4
	3E PRC TR-05 PRI AMPS	AMPS	P3EA17P PV	68.9	68.7	69.4	69.0	68.9	69.4	69.0	24.9	16.5	68.8	69.2	68.8	68.9	69.5
	3E PRC TR-07 PRI AMPS	AMPS	P3EA18P PV	67.5	67.2	67.5	67.0	67.3	67.5	67.2	67.1	67.0	67.0	60.1	0.0	56.3	67.0
	3E PRC TR-09 PRI AMPS	AMPS	P3EA21P PV	91.3	91.5	91.1	91.1	91.3	90.7	91.4	90.6	91.0	91.2	91.1	90.5	90.9	90.9
	3E PRC TR-11 PRI AMPS	AMPS	P3EA22P PV	92.8	92.6	92.9	92.5	92.9	92.6	92.3	92.5	92.6	92.9	93.2	92.9	92.8	93.0
	3E PRC TR-13 PRI AMPS	AMPS	P3EA01P PV	91.7	91.3	91.8	91.3	90.9	91.2	91.1	91.3	91.6	91.2	90.9	91.4	91.2	91.6
	3E PRC TR-15 PRI AMPS	AMPS	P3EA02P PV	90.3	89.8	90.8	90.2	90.0	90.3	90.2	26.6	45.5	89.7	71.9	89.9	89.4	89.0
	3E PRC TR-17 PRI AMPS	AMPS	P3EA05P PV	115.9	116.2	115.5	116.0	115.9	116.1	115.7	115.9	115.8	115.5	116.0	115.7	115.9	115.7
	3E PRC TR-19 PRI AMPS	AMPS	P3EA06P PV	104.6	104.4	104.3	104.1	105.1	107.1	104.0	106.4	106.5	103.4	103.4	102.6	103.0	103.1
	3E PRC TR-21 PRI AMPS	AMPS	P3EA09P PV	113.8	114.4	113.2	113.7	114.6	114.2	113.1	114.3	114.1	114.5	114.2	114.0	114.2	113.0
	3E PRC TR-23 PRI AMPS	AMPS	P3EA10P PV	110.7	110.7	110.9	110.1	110.6	110.7	110.7	110.4	110.6	110.4	110.1	110.2	110.4	109.1
	3E PRC TR-01 PRI VOLTS	VOLTS	P3EV13P PV	218.9	221.2	219.0	88.0	96.4	218.0	217.3	217.5	218.3	219.3	219.4	219.3	220.0	220.0
	3E PRC TR-03 PRI VOLTS	VOLTS	P3EV14P PV	238.6	237.9	239.3	233.0	231.8	234.5	20.0	156.3	234.4	233.6	235.2	238.0	236.4	235.8
	3E PRC TR-05 PRI VOLTS	VOLTS	P3EV17P PV	220.8	221.8	222.7	220.1	220.1	221.7	221.2	92.7	68.7	220.0	220.0	219.6	220.0	220.0
	3E PRC TR-07 PRI VOLTS	VOLTS	P3EV18P PV	262.7	262.2	262.2	259.4	248.0	245.5	256.9	243.8	230.5	234.8	213.3	19.1	188.0	232.1
	3E PRC TR-09 PRI VOLTS	VOLTS	P3EV21P PV	294.3	296.0	295.6	295.1	294.9	293.0	295.1	295.1	295.3	294.4	295.6	295.1	295.0	294.5
	3E PRC TR-11 PRI VOLTS	VOLTS	P3EV22P PV	294.6	293.7	292.7	292.4	292.1	292.0	292.8	292.8	293.9	293.7	292.1	292.1	292.6	292.1
	3E PRC TR-13 PRI VOLTS	VOLTS	P3EV01P PV	248.2	247.5	249.1	246.8	245.6	245.9	246.7	242.6	242.7	246.3	244.3	246.6	247.2	251.3
	3E PRC TR-15 PRI VOLTS	VOLTS	P3EV02P PV	235.6	236.1	235.5	234.4	234.1	235.0	235.0	85.9	130.1	235.9	192.7	237.0	237.0	237.0
	3E PRC TR-17 PRI VOLTS	VOLTS	P3EV05P PV	257.0	256.7	258.3	256.0	255.5	255.7	255.3	256.8	254.7	251.6	254.4	254.6	255.1	254.6
	3E PRC TR-19 PRI VOLTS	VOLTS	P3EV06P PV	230.1	230.1	230.1	230.1	231.8	233.2	231.3	233.1	233.7	232.5	231.2	230.2	230.2	230.3
	3E PRC TR-21 PRI VOLTS	VOLTS	P3EV09P PV	222.3	221.2	223.1	220.9	221.0	222.1	221.9	222.2	220.8	220.9	221.6	222.4	222.5	221.5
	3E PRC TR-23 PRI VOLTS	VOLTS	P3EV10P PV	217.5	217.2	218.1	217.3	216.8	216.3	217.0	217.5	218.0	218.0	218.0	218.0	218.0	218.0
New Precip 3B (West) West	3W PRC TR-02 SEC AMPS	mA	P3WA13S PV	275.0	274.5	238.1	272.5	271.7	221.4	-3.0	251.7	274.2	274.4	275.0	275.0	275.0	275.0
	3W PRC TR-04 SEC AMPS	mA	P3WA14S PV	275.0	273.1	274.5	274.6	151.6	53.2	275.0	274.4	273.4	273.9	237.3	275.0	275.0	272.5
	3W PRC TR-06 SEC AMPS	mA	P3WA17S PV	0.0	251.8	271.9	273.8	274.5	274.6	274.9	275.0	275.0	275.0	238.3	275.0	274.2	274.9
	3W PRC TR-08 SEC AMPS	mA	P3WA18S PV	275.0	275.0	274.5	275.0	274.5	275.0	274.5	275.0	274.5	275.0	275.0	272.7	271.4	273.7
	3W PRC TR-10 SEC AMPS	mA	P3WA21S PV	395.3	394.9	397.7	348.8	389.6	398.5	397.7	395.3	396.5	393.9	395.7	395.5	395.1	398.9
	3W PRC TR-12 SEC AMPS	mA	P3WA22S PV	398.3	397.6	399.5	397.4	397.3	396.9	398.4	398.1	397.3	397.8	397.8	399.5	395.7	396.3
	3W PRC TR-14 SEC AMPS	mA	P3WA01S PV	397.8	396.2	397.0	395.8	395.9	395.1	397.9	395.2	398.4	400.0	395.5	395.5	396.3	392.6
	3W PRC TR-16 SEC AMPS	mA	P3WA02S PV	100.4	395.5	396.9	395.4	394.0	395.4	397.0	395.0	397.7	395.6	394.8	396.3	398.9	395.9
	3W PRC TR-18 SEC AMPS	mA	P3WA05S PV	497.8	496.6	497.1	497.6	497.3	495.7	497.4	496.6	498.4	497.4	492.3	497.8	495.1	497.4
	3W PRC TR-20 SEC AMPS	mA	P3WA06S PV	500.0	497.0	497.6	499.9	497.3	497.8	498.5	499.3	498.7	498.9	498.5	496.7	496.5	496.9
	3W PRC TR-22 SEC AMPS	mA	P3WA09S PV	494.0	493.9	496.9	492.3	493.4	491.0	493.0	496.1	493.2	494.7	494.6	496.5	495.7	493.1
	3W PRC TR-24 SEC AMPS	mA	P3WA10S PV	497.2	496.6	497.7	496.5	497.4	493.8	495.8	496.6	495.2	498.5	494.8	497.3	488.0	495.9
	3W PRC TR-02 SEC KV 1	KV	P3WV13S1 PV	43.6	43.7	38.5	43.3	43.0	35.3	5.0	41.3	43.5	43.8	43.3	43.3	43.8	43.5
	3W PRC TR-04 SEC KV 1	KV	P3WV14S1 PV	46.1	46.0	46.0	46.0	26.3	12.0	44.7	45.4	45.7	45.6	39.6	45.3	45.5	45.7
	3W PRC TR-06 SEC KV 1	KV	P3WV17S1 PV	0.0	46.1	49.0	49.1	48.6	48.5	48.8	49.9	48.9	49.0	43.0	48.6	49.0	49.1
	3W PRC TR-08 SEC KV 1	KV	P3WV18S1 PV	49.8	51.0	51.1	51.1	51.1	51.0	51.1	51.2	51.0	51.1	51.0	51.0	51.1	51.0
	3W PRC TR-10 SEC KV 1	KV	P3WV21S1 PV	55.0	55.1	55.1	48.8	54.7	55.2	55.2	55.3	55.2	55.0	55.0	55.0	55.3	55.4
	3W PRC TR-12 SEC KV 1	KV	P3WV22S1 PV	52.8	52.9	53.0	52.9	52.6	52.8	53.0	53.0	53.0	52.7	52.0	53.0	53.0	53.0
	3W PRC TR-14 SEC KV 1	KV	P3WV01S1 PV	54.0	54.7	55.0	54.8	55.0	55.0	55.1	55.0	55.0	55.0	55.0	55.0	55.0	55.0
	3W PRC TR-16 SEC KV 1	KV	P3WV02S1 PV	17.8	50.1	50.1	49.7	49.8	49.9	49.9	50.1	49.9	49.9	50.0	50.1	49.8	50.1
	3W PRC TR-18 SEC KV 1	KV	P3WV05S1 PV	52.0	52.0	52.0	51.9	51.9	51.8	52.0	52.0	52.0	51.8	52.0	51.8	52.0	52.0
	3W PRC TR-20 SEC KV 1	KV	P3WV06S1 PV	51.0	51.0	51.2	50.9	50.9	51.0	51.0	51.0	51.0	51.0	50.8	51.0	51.0	50.8
	3W PRC TR-22 SEC KV 1	KV	P3WV09S1 PV	46.5	46.7	46.6	46.1	46.4	46.2	46.4	46.6	46.5	46.4	46.5	46.2	46.7	46.4
	3W PRC TR-24 SEC KV 1	KV	P3WV10S1 PV	15.7	15.8	15.7	15.2	15.2	15.2	15.5	15.8	15.7	15.4	15.1	15.3	15.3	16.0
	3W PRC TR-02 PRI AMPS	AMPS	P3WA13P PV	68.6	68.9	60.1	69.6	68.9	58.1	1.0	63.0	68.1	68.4	68.5	68.3	69.0	68.5
	3W PRC TR-04 PRI AMPS	AMPS	P3WA14P PV	67.3	67.3	67.1	66.6	36.4	12.4	66.7	67.3	66.8	66.7	57.9	66.6	66.9	66.3
	3W PRC TR-06 PRI AMPS	AMPS	P3WA17P PV	0.0	65.4	70.9	71.3	71.4	71.0	70.8	71.0	71.3	70.6	61.9	71.4	71.0	71.3
	3W PRC TR-08 PRI AMPS	AMPS	P3WA18P PV	67.2	67.6	67.3	67.7	66.8	67.4	67.4	67.6	67.8	68.2	67.2	67.3	67.1	67.0
	3W PRC TR-10 PRI AMPS	AMPS	P3WA21P PV	89.9	89.3	90.4	79.1	88.1	89.7	90.1	89.8	89.5	89.3	89.6	90.0	89.7	90.5
	3W PRC TR-12 PRI AMPS	AMPS	P3WA22P PV	97.9	98.2	98.6	98.1	98.0	97.9	98.1	98.0	98.0	98.7	98.1	99.2	97.6	97.7
	3W PRC TR-14 PRI AMPS	AMPS	P3WA01P PV	94.5	94.2	94.4	94.0	94.2	93.7	94.7	94.6	94.6	94.7	94.4	94.3	94.6	94.1
	3W PRC TR-16 PRI AMPS	AMPS	P3WA02P PV	23.1	90.8	90.9	90.4	90.7	91.4	90.6	91.0	91.3	90.9	90.7	90.8	90.8	91.0
	3W PRC TR-18 PRI AMPS	AMPS	P3WA05P PV	117.7	117.9	118.1	118.0	118.0	117.7	118.6	117.9	117.8	117.4	117.3	118.4	117.5	117.2
	3W PRC TR-20 PRI AMPS	AMPS	P3WA06P PV	114.3	114.1	114.4	114.4	114.3	114.4	114.3	114.4	114.7	115.0	114.8	114.4	114.1	113.7
	3W PRC TR-22 PRI AMPS	AMPS	P3WA09P PV	111.5	111.7	111.9	111.2	111.4	112.1	111.1	111.9	111.2	111.0	111.3	111.5	111.5	111.8
	3W PRC TR-24 PRI AMPS	AMPS	P3WA10P PV	114.3	115.2	115.9	114.6	114.9	114.3	114.4	114.1	114.3	114.6	114.2	114.8	114.8	113.9
	3W PRC TR-02 PRI VOLTS	VOLTS	P3WV13P PV	201.1	201.1	176.2	199.2	198.7	161.3	16.1	188.7	201.1	202.9	200.4	201.1	202.2	201.6
	3W PRC TR-04 PRI VOLTS	VOLTS	P3WV14P PV	223.0	222.6	223.2	223.0	126.6	58.5	219.1	219.4	221.7	220.9	193.1	220.6	220.0	220.0
	3W PRC TR-06 PRI VOLTS	VOLTS	P3WV17P PV	21.0	207.6	222.6	220.3	220.0	220.0	221.1	221.5	221.8	221.5	194.1	222.0	222.3	221.1
	3W PRC TR-08 PRI VOLTS	VOLTS	P3WV18P PV	223.3	229.4	229.7	229.0	229.1	230.2	230.1	230.4	230.5	229.3	229.7	230.1	230.3	229.8
	3W PRC TR-10 PRI VOLTS	VOLTS	P3WV21P PV	292.1	292.8	292.1	257.9	286.8	295.0	291.7	292.1	293.3	292.6	292.6	293.4	295.1	295.0
	3W PRC TR-12 PRI VOLTS	VOLTS	P3WV22P PV	233.7	235.5	236.1	235.3	233.6	236.4	235.4	236.0	234.6	235.3	235.4	235.8	236.5	236.9
	3W PRC TR-14 PRI VOLTS	VOLTS	P3WV01P PV	271.9	278.0	279.8	278.5	277.7	278.0	279.8	290.2	278.7	278.2	278.7	279.3	279.7	278.0
	3W PRC TR-16 PRI VOLTS	VOLTS	P3WV02P PV	80.2	241.2	241.2	240.3	241.2	240.3	241.5	240.7	242.0	242.0	242.0	242.0	242.0	242.0
	3W PRC TR-18 PRI VOLTS	VOLTS	P3WV05P PV	265.6	263.9	267.3	263.0	263.8	261.8	264.6	268.8	264.2	265.2	267.1	264.2	265.7	268.0
	3W PRC TR-20 PRI VOLTS	VOLTS	P3WV06P PV	241.4	241.9	241.8	239.7	240.5	240.5	243.2	241.9	240.9	240.1	239.7	241.1	239.6	239.8
	3W PRC TR-22 PRI VOLTS	VOLTS	P3WV09P PV	220.4	221.3	221.2	220.3	220.7	221.0	221.3	221.7	222.0	222.3	222.7	222.3	223.0	223.0
	3W PRC TR-24 PRI VOLTS	VOLTS	P3WV10P PV	221.2	220.4	221.0	218.1	218.7	219.3	218.7	219.2	219.8	219.6	219.4	219.1	218.9	218.8
New Precip 3B (West) East	3W PRC TR-01 SEC AMPS	mA	P3WA15S PV	274.5	61.7	145.6	275.0	239.1	274.0	274.5	275.0	275.0	275.0	275.0	273.9	275.0	275.0
	3W PRC TR-03 SEC AMPS	mA	P3WA16S PV	275.0	274.5	275.0	275.0	275.0	275.0	275.0	115.4	90.0	274.4	273.6	237.3	275.0	275.0
	3W PRC TR-05 SEC AMPS	mA	P3WA19S PV	271.6	236.7	273.7	270.5	237.3	271.2	271.0	236.1	238.4	272.7	199.6	183.9	201.8	113.9
	3W PRC TR-07 SEC AMPS	mA	P3WA20S PV	273.7	275.0	275.0	275.0	273.9	275.0	273.9	275.0	223.7	0.0	214.6	274.1	275.0	275.0
	3W PRC TR-09 SEC AMPS	mA	P3WA23S PV	397.3	395.6	242.4	47.7	291.3	398.6	396.7	397.0	398.3	396.1	396.4	397.7	398.5	393.5
	3W PRC TR-11 SEC AMPS	mA	P3WA24S PV	397.2	396.3	394.8	394.4	397.6	395.3	397.0	344.5	395.2	395.7	397.8	395.7	395.9	398.9
	3W PRC TR-13 SEC AMPS	mA	P3WA03S PV	398.5	398.1	397.0	394.5	396.1	398.8	395.9	395.6	396.5	397.2	390.9	399.0	396.7	399.0

Unit 3 Test 3

			9/9/99 16:02	9/9/99 16:17	9/9/99 16:32	9/9/99 16:47	9/9/99 17:02	9/9/99 17:17	9/9/99 17:32	9/9/99 17:47	9/9/99 18:02	9/9/99 18:17	9/9/99 18:32	9/9/99 18:47	9/9/99 19:02	9/9/99 19:17
3W PRC TR-15 SEC AMPS	mA	P3WA04S PV	397.6	395.7	397.7	395.8	397.3	397.4	398.2	396.9	396.0	397.0	397.7	396.3	397.0	397.4
3W PRC TR-17 SEC AMPS	mA	P3WA07S PV	494.4	494.8	497.1	497.6	497.0	496.3	497.7	495.4	494.8	495.3	496.5	496.4	496.5	496.9
3W PRC TR-19 SEC AMPS	mA	P3WA08S PV	496.4	495.3	497.1	494.9	494.5	494.4	499.3	497.9	496.7	496.4	494.4	496.4	493.1	496.0
3W PRC TR-21 SEC AMPS	mA	P3WA11S PV	494.7	496.7	493.1	498.1	494.6	493.5	496.9	493.7	493.8	493.6	495.5	494.7	495.4	495.9
3W PRC TR-23 SEC AMPS	mA	P3WA12S PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3W PRC TR-01 SEC Kv 1	KV	P3WV15S1 PV	42.7	13.3	25.1	47.0	37.0	41.9	42.2	42.1	42.0	42.5	42.0	42.3	42.3	42.3
3W PRC TR-03 SEC Kv 1	KV	P3WV16S1 PV	47.0	46.3	46.5	47.0	46.5	46.5	46.9	21.8	18.9	46.6	46.3	40.9	46.5	46.7
3W PRC TR-05 SEC Kv 1	KV	P3WV19S1 PV	46.3	41.1	46.5	45.8	41.1	46.1	46.1	40.9	40.6	45.4	32.7	35.4	35.2	21.0
3W PRC TR-07 SEC Kv 1	KV	P3WV20S1 PV	49.2	49.2	49.4	49.2	49.8	48.6	48.8	49.0	39.9	3.0	39.2	48.0	48.0	48.1
3W PRC TR-09 SEC Kv 1	KV	P3WV23S1 PV	56.2	56.6	36.7	13.2	42.2	55.0	55.1	55.5	55.4	54.9	55.0	55.1	55.2	55.1
3W PRC TR-11 SEC Kv 1	KV	P3WV24S1 PV	55.7	55.9	55.2	53.8	54.5	55.2	55.4	49.0	56.7	55.2	55.1	55.1	55.4	55.3
3W PRC TR-13 SEC Kv 1	KV	P3WV03S1 PV	55.6	55.4	55.5	55.0	55.1	55.4	55.3	55.4	55.5	55.3	55.2	55.3	55.4	55.7
3W PRC TR-15 SEC Kv 1	KV	P3WV04S1 PV	50.5	50.8	50.9	50.2	50.4	50.2	50.5	50.6	50.6	50.5	50.6	50.8	50.5	51.0
3W PRC TR-17 SEC Kv 1	KV	P3WV07S1 PV	50.0	49.8	50.7	49.6	49.5	49.7	49.7	49.9	49.9	49.5	49.6	49.6	49.6	50.0
3W PRC TR-19 SEC Kv 1	KV	P3WV08S1 PV	49.0	48.9	49.0	48.6	48.4	48.4	48.8	48.8	48.6	48.6	48.4	48.5	48.4	48.5
3W PRC TR-21 SEC Kv 1	KV	P3WV11S1 PV	44.5	44.3	44.5	43.9	43.9	44.0	44.1	44.2	43.9	43.9	43.9	43.9	43.9	43.9
3W PRC TR-23 SEC Kv 1	KV	P3WV12S1 PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3W PRC TR-01 PRI AMPS	AMPS	P3WA15P PV	68.6	14.8	36.4	70.0	69.3	69.4	69.5	69.0	69.1	68.8	63.6	69.4	69.1	69.0
3W PRC TR-03 PRI AMPS	AMPS	P3WA16P PV	68.8	69.0	69.0	69.2	70.0	68.9	68.4	28.1	22.1	68.6	68.4	68.3	68.6	69.0
3W PRC TR-05 PRI AMPS	AMPS	P3WA19P PV	69.7	59.8	69.1	69.2	60.4	69.4	69.0	60.1	60.0	69.0	50.7	48.3	50.5	28.4
3W PRC TR-07 PRI AMPS	AMPS	P3WA20P PV	67.5	67.7	68.3	68.3	67.8	68.2	67.8	68.0	55.0	0.0	53.3	67.9	67.9	67.5
3W PRC TR-09 PRI AMPS	AMPS	P3WA23P PV	92.8	92.6	56.8	11.2	68.0	92.5	92.7	92.3	93.2	92.4	92.6	92.5	92.7	92.3
3W PRC TR-11 PRI AMPS	AMPS	P3WA24P PV	92.0	91.8	91.8	92.0	92.2	91.6	92.0	79.8	91.9	92.2	92.4	92.2	91.4	92.7
3W PRC TR-13 PRI AMPS	AMPS	P3WA03P PV	94.9	94.5	94.4	94.7	94.9	94.6	94.4	94.7	94.7	95.0	94.7	95.4	94.9	95.5
3W PRC TR-15 PRI AMPS	AMPS	P3WA04P PV	83.4	83.1	83.3	82.9	83.4	83.1	83.6	82.5	82.9	82.5	82.8	83.2	83.1	83.5
3W PRC TR-17 PRI AMPS	AMPS	P3WA07P PV	113.4	113.3	114.2	113.8	114.0	113.9	114.3	113.7	113.3	113.7	113.8	113.8	113.9	115.0
3W PRC TR-19 PRI AMPS	AMPS	P3WA08P PV	122.6	122.0	121.7	122.3	122.3	121.8	122.5	122.6	122.1	121.9	122.3	122.3	121.8	123.0
3W PRC TR-21 PRI AMPS	AMPS	P3WA11P PV	118.6	119.1	118.6	118.7	118.5	119.2	118.8	118.9	119.3	119.0	118.4	119.1	118.4	119.3
3W PRC TR-23 PRI AMPS	AMPS	P3WA12P PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3W PRC TR-01 PRI VOLTS	VOLTS	P3WV15P PV	195.6	59.2	113.8	192.0	169.5	192.0	193.5	134.6	192.8	195.8	194.1	193.8	193.3	193.3
3W PRC TR-03 PRI VOLTS	VOLTS	P3WV16P PV	210.6	208.6	209.9	212.3	209.4	208.0	210.3	96.9	83.9	209.5	208.9	184.0	209.9	211.0
3W PRC TR-05 PRI VOLTS	VOLTS	P3WV19P PV	208.6	185.9	209.3	207.3	184.3	208.0	207.0	184.0	183.0	208.3	146.4	159.1	159.0	95.7
3W PRC TR-07 PRI VOLTS	VOLTS	P3WV20P PV	218.8	217.7	218.7	218.2	215.6	214.9	216.6	217.1	179.1	21.0	174.5	212.7	214.1	213.0
3W PRC TR-09 PRI VOLTS	VOLTS	P3WV23P PV	285.1	287.1	181.2	53.7	206.5	274.0	276.7	279.4	278.9	268.5	273.1	276.0	277.3	276.0
3W PRC TR-11 PRI VOLTS	VOLTS	P3WV24P PV	298.0	299.4	291.8	279.0	292.2	295.9	297.2	262.0	297.5	298.2	295.0	295.7	298.0	297.1
3W PRC TR-13 PRI VOLTS	VOLTS	P3WV03P PV	292.1	292.2	293.6	289.8	290.9	293.2	291.6	292.1	293.6	293.3	292.1	292.0	293.1	294.7
3W PRC TR-15 PRI VOLTS	VOLTS	P3WV04P PV	241.8	242.1	242.2	241.1	242.3	240.5	241.9	243.1	241.6	242.4	242.0	242.4	242.0	246.1
3W PRC TR-17 PRI VOLTS	VOLTS	P3WV07P PV	235.5	236.0	237.4	236.1	235.0	235.0	235.4	236.9	236.5	235.5	235.0	236.2	236.2	235.6
3W PRC TR-19 PRI VOLTS	VOLTS	P3WV08P PV	235.4	235.0	237.0	234.1	233.2	233.9	234.6	235.8	234.6	233.6	233.6	233.7	233.4	233.5
3W PRC TR-21 PRI VOLTS	VOLTS	P3WV11P PV	214.2	213.1	215.3	211.2	211.6	212.1	212.5	212.8	211.9	211.9	211.8	211.1	211.7	211.0
3W PRC TR-23 PRI VOLTS	VOLTS	P3WV12P PV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

				Unit 3 Test 4																	
				10/6/99 11 05	10/6/99 11 20	10/6/99 11 35	10/00 11 05	10/6/99 12 05	10/6/99 12 20	10/6/99 12 35	10/6/99 12 50	10/6/99 13 05	10/6/99 13 20	10/6/99 13 35	10/6/99 13 50	10/6/99 14 05	10/6/99 14 20	10/6/99 14 35	10/6/99 14 50	
	COAL TO 31 PULVERIZER	TONS/HR	3F021 PV	54 4	54 4	54 4	54 5	54 5	54 5	54 5	54 6	54 6	54 6	54 7	54 7	54 6	54 5	54 4	54 3	54 5
	COAL TO 32 PULVERIZER	TONS/HR	3F022 PV	54 1	54 0	54 0	53 9	53 9	53 8	53 8	53 7	53 7	53 6	53 6	53 5	53 5	53 4	53 4	53 2	53 7
	COAL TO 33 PULVERIZER	TONS/HR	3F023 PV	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
	COAL TO 34 PULVERIZER	TONS/HR	3F024 PV	55 1	55 2	55 2	55 3	55 4	55 4	55 5	55 6	55 6	55 7	55 7	55 8	55 7	55 7	55 6	55 5	55 5
	COAL TO 35 PULVERIZER	TONS/HR	3F025 PV	45 5	45 5	45 5	45 5	45 6	45 6	45 5	45 4	45 4	45 3	45 2	45 1	45 1	45 0	44 9	44 8	45 3
	GENERATOR 3 LOAD	MW	3K211 PV	628 9	629 1	630 2	625 7	620 7	619 0	620 4	621 6	622 3	623 3	622 3	621 9	622 8	622 8	622 4	624 3	209 0
	U3 1ST STG STEAM FLOW CALC	PERCENT	3TM1P05 PV	80 8	80 7	80 9	80 4	80 0	80 1	80 2	80 2	80 3	80 3	80 2	80 2	80 2	80 2	80 3	80 4	
	MAIN STEAM TEMP AVEPAGE	DEG F	3TM1P06 PV	995 5	996 5	995 2	997 7	996 6	996 8	995 3	995 0	995 5	996 2	996 8	996 3	996 3	996 4	995.4	995 9	
	MAIN STEAM PRES RH-NORTH	PSIG	3P201 PV	3652 0	3652 3	3652 5	3652 7	3652 9	3653 2	3653 4	3653.6	3653 8	3652 9	3651 2	3649 4	3647 7	3646 0	3644 3	3642 8	
	FEEDWATER MID SELECT	PERCENT	3FW1P05 PP	78 7	78 7	78 7	78 7	78 7	78 7	78 7	78 7	78 7	78 6	78 6	78 6	78 6	78 6	78 6	78 6	
	BOILER 3 FURNACE PRESS A	"WC	C3P050A PV	-1 0	-0 9	-1 0	-0 9	-0 9	-0 9	-0 9	-0 9	-1 0	-1 0	-1 0	-0 9	-0 9	-1 0	-1 0	-1 0	
	APH 31 AIR IN TEMP	DEG F	C3T030A PV	82 8	83 9	84 6	84 4	84 4	85 6	86 4	87 5	87 8	88 5	88 4	88 1	88 1	88 2	88 6	88 9	
	APH 32 AIR IN TEMP	DEG F	C3T030B PV	101 1	102 4	103 5	103 5	103 3	104 2	104 9	105 9	106 4	107 1	107 3	107 3	107 4	107 5	108 2	108 3	
	SEC AH 31 AIR OUT	DEG F	3T017 PV	572 9	572 8	572 7	572 7	572 6	572 5	572 4	572 3	572 2	572 3	572 4	572 5	572 6	572 8	572 9	572 7	
	SEC AH 32 AIR OUT	DEG F	3T018 PV	570 1	570 3	570 5	570 6	570 8	570 8	570 8	570 9	570 9	570 9	571 0	571 0	571 1	571 1	571 1	570 7	
	SEC AH 31 GAS IN	DEG F	3T020 PV	624 7	624 7	624 8	624 8	623 4	622 9	623 0	623 1	623 2	623 2	623 3	623 4	623 3	623 3	623 3	623 0	
	SEC AH 32 GAS IN	DEG F	3T021 PV	623 5	623 3	623 2	623 0	622 7	622 3	621 9	621 7	621 7	621 7	621 7	621 7	621 7	621 6	621 6	621 3	
	APH 31 GAS OUT TEMP	DEG F	C3T033A PV	241 4	241 6	241 9	242 3	242 6	242 9	243 2	243 6	244 0	244 6	245 2	245 9	246 3	246 4	246 6	246 8	
	APH 32 GAS OUT TEMP	DEG F	C3T033B PV	216 9	217 5	218 1	218 8	219 2	219 5	219 9	220 3	220 7	221 2	221 6	222 1	222 6	223 1	223 4	223 6	
	BOILER 3 EAST FLUEGAS O2	PERCENT	C3G007 PV	4 2	4 3	4 3	4 4	4 3	4 4	4 4	4 4	4 4	4 3	4 3	4 2	4 2	4 2	4 2	4 0	
	BOILER 3 WEST FLUEGAS O2	PERCENT	C3G005 PV	3 1	3 1	3 1	3 5	3 2	3 4	3 5	3 5	3 5	3 5	3 4	3 3	3 3	3 4	3 5	3 5	
	ID FAN 31 INLET	DEG F	3T028 PV	241 9	242 3	242 8	243 2	243 7	243 9	244 1	244 2	244 4	244 6	244 7	244 9	245 1	245 3	245 4	245 5	
	ID FAN 32 INLET	DEG F	3T029 PV	236 9	237 4	237 8	238 3	238 7	238 8	238 9	239 9	239 0	239 0	239 1	239 1	239 2	239 2	239 3	239 7	
	ID FAN 31 INLET PRESS	"WC	3P028 PV	-26 7	-26 7	-27 1	-26 8	-26 1	-26 3	-26 5	-26 7	-26 9	-26 8	-26 5	-26 1	-26 3	-26 4	-26 6	-26 5	
	ID FAN 32 INLET PRESS	"WC	3P029 PV	-27 0	-27 2	-27 3	-27 0	-26 5	-26 6	-26 7	-26 9	-27 0	-27 0	-26 8	-26 5	-26 6	-26 6	-26 8	-26 9	
	APH 31 GAS INLET PRESS	"WC	3P020 PV	-9 5	-9 3	-9 5	-9 4	-9 1	-9 2	-9 3	-9 1	-9 4	-9.3	-9 1	9 0	-9 2	-9 3	-9 3	-9 2	
	APH 32 GAS INLET PRESS	"WC	3P021 PV	-9 0	-8 9	-9 0	-9 0	-8 7	-8 8	-8 9	-8 9	-8 9	-8 9	-8 8	-8 8	-8 8	-8 9	-8 9	-8 9	
	APH 31 GAS OUTLET PRESS	"WC	3P022 PV	-20 6	-20 7	-20 9	-20 5	-20 2	-20 3	-20 3	-20 5	-20 6	-20 7	-20 5	-20 4	-20 4	-20 4	-20 4	-20 5	
	APH 32 GAS OUTLET PRESS	"WC	3P023 PV	-21 5	-21 6	-21 7	-21 6	-21 1	-21 2	-21 2	-21 5	-21 6	-21 7	-21 3	-21 2	-21 3	-21 5	-21 6	-21 5	
	CEM - Unit #3 CO	PPM	E3G123 PV	49 6	58 8	41 8	56 3	31 2	22 6	12 5	15 5	15 2	12 1	13 9	15 4	15 6	18 3	21 2	22 1	
ESP																				
Old Precip East	3 PREC TR-1A1A SEC AMPS	mA	P3AA01S PV	229 6	224 0	220 4	220 4	227 1	219 2	229 7	219 8	230 6	227 7	228 6	228 4	222 6	225 0	231 5	231 2	
	3 PREC TR-1A1B SEC AMPS	mA	P3AA02S PV	194 8	198 5	199 4	197 6	195 8	193 4	194 7	197 3	197 7	198 2	198 6	199 1	199 5	198 6	196 9	196 5	
	3 PREC TR-1A1C SEC AMPS	mA	P3AA03S PV	207 8	203 4	202 1	202 7	207 2	205 9	201 5	201 0	200 2	200 6	199 9	200 7	201 4	202 8	203 3	204 7	
	3 PREC TR-1A2A SEC AMPS	mA	P3AA04S PV	366 9	364 2	350 4	402 3	396 8	380 5	395 4	355 2	383 0	389 9	402 2	395 5	415 6	421 0	419 2	430 9	
	3 PREC TR-1A2B SEC AMPS	mA	P3AA05S PV	435 3	434 0	435 7	440 2	467 3	429 6	450 9	449 1	450 4	458 4	461 8	459 3	446 6	459 2	447 0	461 9	
	3 PREC TR-1A2C SEC AMPS	mA	P3AA06S PV	286 0	288 7	294 5	288 8	292 0	290 0	287 5	292 3	291 4	296 6	275 1	274 6	271 1	292 9	265 9	267 5	
	3 PREC TR-1A3A SEC AMPS	mA	P3AA07S PV	439 2	471 9	400 1	469 8	450 9	464 9	435 4	428 2	480 2	422 8	413 3	469 8	455 7	493 8	422 7	461 4	
	3 PREC TR-1A3B SEC AMPS	mA	P3AA08S PV	480 6	482 3	491 6	490 1	488 7	479 5	491 7	488 8	473 4	493 6	486 6	491 6	487 6	494 2	491 7	469 6	
	3 PREC TR-1A3C SEC AMPS	mA	P3AA09S PV	487 9	487 7	489 5	492 1	487 0	489 0	489 2	488 5	483 0	482 6	484 2	490 1	489 1	481 9	489 3	489 5	
	3 PREC TR-1A1A SEC KV 1	KV	P3AV01S1 PV	56 8	56 3	56 3	56 1	56 2	55 6	56 2	55 8	56 7	56 3	56 3	56 4	55 8	56 2	56 7	56 2	
	3 PREC TR-1A1B SEC KV 1	KV	P3AV02S1 PV	52 8	52 9	53 2	52 8	52 4	52 2	52 6	52 8	52 9	52 8	52 9	53 1	53 0	53 4	53 0	52 9	
	3 PREC TR-1A1C SEC KV 1	KV	P3AV03S1 PV	60 0	60 0	60 0	60 0	60 0	60 0	60 0	60 0	59 9	60 0	60 0	60 0	60 0	60 0	60 0	60 0	
	3 PREC TR-1A2A SEC KV 1	KV	P3AV04S1 PV	57 3	57 3	56 9	58 2	58 8	58 1	58 2	57 0	57 8	58 5	58 8	58 7	59 5	59 6	59 7	60 0	
	3 PREC TR-1A2B SEC KV 1	KV	P3AV05S1 PV	59 0	58 9	58 6	59 0	59 8	58 1	59 2	59 1	59 3	59 6	59 7	59 8	59 1	59 6	59 1	59 7	
	3 PREC TR-1A2C SEC KV 1	KV	P3AV06S1 PV	59.9	60 0	60 0	59 9	59 9	60 0	59 8	59 8	59 9	60 0	60 0	59 9	60 0	59 9	59 7	59 9	
	3 PREC TR-1A3A SEC KV 1	KV	P3AV07S1 PV	56 5	58 2	55 2	57 6	57 9	57 9	56 6	56 6	58 8	58 1	55 9	58 3	57 2	59 4	55 9	58 2	
	3 PREC TR-1A3B SEC KV 1	KV	P3AV08S1 PV	59 2	59 0	59 4	58 7	59 4	58 8	59 4	59 2	58 8	59 5	59 2	59 2	59 3	59 5	59 5	58 8	
	3 PREC TR-1A3C SEC KV 1	KV	P3AV09S1 PV	38 0	38 0	38 2	37 9	38 0	38 0	38 0	38 0	38 1	37 8	38 0	38 1	38 0	37 8	38 0	38 0	
	3 PREC TR-1A1A PRI AMPS	AMPS	P3AA01P PV	47 9	47 1	48 9	48 7	48 1	48 5	47 8	47 3	46 8	48 4	47 1	49 1	48 1	47 8	49 1	49 1	
	3 PREC TR-1A1B PRI AMPS	AMPS	P3AA02P PV	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	
	3 PREC TR-1A1C PRI AMPS	AMPS	P3AA03P PV	44 2	44 3	43 1	43 2	44 4	43 2	42 7	43 1	42 7	42 8	43 0	43 0	42 9	43 5	43 2	42 6	
	3 PREC TR-1A2A PRI AMPS	AMPS	P3AA04P PV	73 7	74 5	70 5	80 7	77 9	81 3	85 2	83 5	83 9	79 4	83 6	79 1	84 2	87 7	85 4	88 5	
	3 PREC TR-1A2B PRI AMPS	AMPS	P3AA05P PV	90 3	89 3	89 6	94 4	92 1	94 3	93 3	90 1	93 1	93 6	93 8	92 2	93 1	93 3	92 4	92 2	
	3 PREC TR-1A2C PRI AMPS	AMPS	P3AA06P PV	63 8	64 8	63 8	65 0	65 0	64 3	63 4	63 9	64 5	64 7	62 5	61 8	61 6	65 6	60 2	59 9	
	3 PREC TR-1A3A PRI AMPS	AMPS	P3AA07P PV	73 2	93 0	80 5	91 6	87 9	81 1	87 5	82 0	94 7	86 2	88 3	95 4	87 7	96 7	88 4	94 9	
	3 PREC TR-1A3B PRI AMPS	AMPS	P3AA08P PV	97 2	97 8	96 5	97 0	97 3	95 7	97 4	97 8	96 3	97 5	96 1	98 0	97 0	96 6	97 2	95 8	
	3 PREC TR-1A3C PRI AMPS	AMPS	P3AA09P PV	97 4	97 7	98 0	98 0	99 0	98 0	97 8	95 3	98 0	96 8	98 0	98 0	98 0	98 0	97 5	95 8	
	3 PREC TR-1A1A PRI VOLTS	VOLTS	P3AV01P PV	318 8	311 9	312 4	313 5	314 9	309 2	316 3	312 0	318 5	314 6	315 3	318 9	310 6	313 3	316 8	316 3	
	3 PREC TR-1A1B PRI VOLTS	VOLTS	P3AV02P PV	311 8	315 4	314 4	310 8	311 7	311 3	310 8	313 3	314 1	313 5	313 6	315 9	315 7	316 1	314 5	314 3	
	3 PREC TR-1A1C PRI VOLTS	VOLTS	P3AV03P PV	320 1	318 9	318 5	316 8	318 0	316 7	316 3	316 7	317 4	317 9	316 0	317 3	317 2	318 2	318 5	320 5	
	3 PREC TR-1A2A PRI VOLTS	VOLTS	P3AV04P PV	330 0	329 1	326 5	348 4	346 2	339 8	339 5	326 4	335 9	343 2	348 6	344 7	354 1	355 0	355 2	357 9	
	3 PREC TR-1A2B PRI VOLTS	VOLTS	P3AV05P PV	349 0	348 9	348 7	349 5	357 0	344 7	353 0	351 4	352 9	353 9	356 3	357 1	353 8	356 1	352 7	355 8	
	3 PREC TR-1A2C PRI VOLTS	VOLTS	P3AV06P PV	303 5	304 0	304 1	303 2	305 3	303 4	303 5	306 5	305 5	307 1	299 5	298 1	298 0	306 4	296 4	294 5	
	3 PREC TR-1A3A PRI VOLTS	VOLTS	P3AV07P PV	332 6	351 9	323 0	349 1	346 8	350 1	339 4	333 4	355 5	330 9	331 4	352 8	344 9	359 2	333 2	351 1	
	3 PREC TR-1A3B PRI VOLTS	VOLTS	P3AV08P PV	352 8	352 1	355 5	351 4	355 7	350 5	356 0	354 8	351 7	355 9	355 7	356 8	355 7	355 7	356 5	348 7	
	3 PREC TR-1A3C PRI VOLTS	VOLTS	P3AV09P PV	359 5	358 7	360 7	360 7	359 3	358 8	360 0	360 5	358 6	358 0	359 2	361 1	360 9	358 9	360 0	360 0	
Old Precip West	3 PREC TR-1B1A SEC KV 1	KV	P3BV03S1 PV	56 2	56 2	55 9	55 8	56 5	56 4	56 1	55 9	55 9	56 0	56 2	56 2	56 1	56 1	56 4	56 5	
	3 PREC TR-1B1B SEC KV 1	KV	P3BV02S1 PV	59 9	59 5	59 3	59 4	59 4	59 9	59 6	60 0	59 8	59 2	59 8	59 8	60 0	26 0	47 6	60 0	
	3 PREC TR-1B1C SEC KV 1	KV	P3BV01S1 PV	52 0	52 3	52 5	51 9	51 9	52 0	52 2	52 1	52.2	52 5	52 1	52 2	32 4	30 9	51 8	52 1	
	3 PREC TR-1B2A SEC KV 1	KV	P3BV06S1 PV	60 0	60 0	60 0	59 6	59 6	60 0	59 9	59 9	60 0	59 1	60 0	59 5	59 9	59 7	59 8	60 0	
	3 PREC TR-1B2B SEC KV 1	KV	P3BV05S1 PV	56 4	59 7	59 0	58 1	58 2	57 8	58 6	59 1	58 8	58 0	57 6	59 3	58 7	59.7	57 6	59 4	
	3 PREC TR-1B2C SEC KV 1	KV	P3BV04S1 PV	57 8	56 2	58 3	58 2	57 4	56 2	58 2	58 1	58 3	57 9	58 1	57 8	58 6	57 9	57 9	58 2	
	3 PREC TR-1B3A SEC KV 1	KV	P3BV09S1 PV	58 9	60 0	58 7	58 9	59 9	59 3	60 0	59 2	60 0	59 6	58 8	59 4	58 6	60 0	60 0	59 7	
	3 PREC TR-1B3B SEC KV 1	KV	P3BV08S1 PV	58 7	58 5	58 4	59 6	57 7	59 0	57 5	58 8	58 6	57 3	58 7	57 4	59 5	59 7	57 8	59 1	
	3 PREC TR-1B3C SEC KV 1	KV	P3BV07S1 PV	59 9	58 8	59 4	60 0	59 8	59 9	59 7	60 0	59 1	59 8	59 7	60 0	59 8	59 5	59 9	55 4	
	3 PREC TR-1B1A SEC AMPS	mA	P3BA03S PV	234 4	232 7	231 7	237 0	240 9	238 9	237 9	232 5	232 9	231 1	237 9	239 5	237 8	239 4	236 9	237 6	
	3 PREC TR-1B1B SEC AMPS	mA	P3BA02S PV	168 6	168 0	162 3	169 0	164 2	171 5	167 2	171 5	166 0	162 1	167 2	167 2	169 9	67 0	135 7	168 4	
	3 PREC TR-1B1C SEC AMPS	mA	P3BA01S PV	235 8	233 1	228 2	235 1	235 7	233 9	233 8	235 0	236 3	234 9	237 0	235 1	144 7	137 4	231 5	234 2	
	3 PREC TR-1B2A SEC AMPS	mA	P3BA06S PV	395 0	397 6	399 7	393 2	394 5	396 5	392 9	393 1	389 5	377 6	393 0	386 6	394 5	389 1	391 9	395 5	
	3 PREC TR-1B2B SEC AMPS	mA	P3BA05S PV	343 5	388 1	396 9	388 1	381 9	370 7	386 0	401 2	392 1	377 7	364 4	400 7	387 2	374 8	356 9	404 8	
	3 PREC TR-1B2C SEC AMPS	mA	P3BA04S PV	415 1	379 8	427 4	433 7	408 2	370 8	422 4	428 1	411 9	417 9	426 9	415 7	369 0	361.2	421 0	433 0	
	3 PREC TR-1B3A SEC AMPS	mA	P3BA09S PV	471 4	497 0	463 3	469 2	491 1	471 6	492 4	472 9	494 3	483 2	469 8	479 7	462 3	494 9	494 1	489 4	
	3 PREC TR-1B3B SEC AMPS	mA	P3BA08S PV	439 9	441 8	441 7	473 8	432 1	452 0	422 3	449 8	443 3	416 1	448 7	419 0	462 4	428 6	421 9	462 9	

				Unit 3 Test 4																
				10/6/99 11 05	10/6/99 11 20	10/6/99 11 35	10/00 11 05	10/6/99 12 05	10/6/99 12 20	10/6/99 12 35	10/6/99 12 50	10/6/99 13 05	10/6/99 13 20	10/6/99 13 35	10/6/99 13 50	10/6/99 14 05	10/6/99 14 20	10/6/99 14 35	10/6/99 14 50
	3 PREC TR-1B3C SEC AMPS	mA	P3BA07S PV	467 1	441 7	455 4	474 1	464 3	467 2	465 6	471 8	449 9	468 5	465 9	472 5	446 2	444 7	467 0	436 8
	3 PREC TR-1B1A PRI AMPS	AMPS	P3BA03P PV	49 1	48 1	48.1	48 9	48 6	49 1	49 1	49 1	49 1	48 9	49 9	49 1	49 1	49 1	49 1	49 1
	3 PREC TR-1B1B PRI AMPS	AMPS	P3BA02P PV	36 2	35 8	36 7	34 6	38 1	36 2	36 3	36 5	36 2	36 2	36 7	37 3	35 4	15 8	28 8	37.5
	3 PREC TR-1B1C PRI AMPS	AMPS	P3BA01P PV	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	49 1	30 7	28 1	49 0	48 9
	3 PREC TR-1B2A PRI AMPS	AMPS	P3BA06P PV	80 4	80 4	82 4	81 0	78 6	81 3	81 6	81 5	80 5	79 8	80 5	80 6	81 6	81 3	82 4	82 5
	3 PREC TR-1B2B PRI AMPS	AMPS	P3BA05P PV	79 9	81 8	81 3	86 5	87 6	86 3	79 2	86 9	89 5	88 8	86 7	85 8	88 6	80 5	96 1	97 4
	3 PREC TR-1B2C PRI AMPS	AMPS	P3BA04P PV	78 9	81 1	83 9	82 6	84 7	85 1	82 4	85 7	83 9	82 8	83 3	84 1	77 9	77 6	87 6	85 7
	3 PREC TR-1B3A PRI AMPS	AMPS	P3BA09P PV	87 2	97 5	93 9	95 4	96 9	94 3	97 5	96 4	98 0	96 1	96 5	97 2	95 7	97 3	95 3	93 2
	3 PREC TR-1B3B PRI AMPS	AMPS	P3BA08P PV	91 6	85 7	84 7	90 9	87 5	94 3	84 2	91 9	91 0	88 6	90 8	85 6	92 9	84 5	88 2	91 7
	3 PREC TR-1B3C PRI AMPS	AMPS	P3BA07P PV	94 0	93 8	92 9	96 4	94 4	95 9	95 0	94 5	95 3	94 4	94 5	96 2	90 9	90 7	94 2	90 7
	3 PREC TR-1B1A PRI VOLTS	VOLTS	P3BV03P PV	327 3	326 3	324 8	324 9	328 6	328 6	327 3	325 5	326 5	325 9	327 9	328 7	327 5	327 0	328 7	331 1
	3 PREC TR-1B1B PRI VOLTS	VOLTS	P3BV02P PV	339 2	335 4	334 4	334 8	335 9	338 4	336 1	338 9	335 6	332 5	337 8	336 5	337 0	145 4	270 0	338 9
	3 PREC TR-1B1C PRI VOLTS	VOLTS	P3BV01P PV	313 7	315 0	316 8	313 0	312 3	314 3	314 5	315 1	316 9	318 6	315 5	316 5	197 6	188 2	313 9	314 0
	3 PREC TR-1B2A PRI VOLTS	VOLTS	P3BV06P PV	340 0	340 0	339 6	337 0	337 0	340 6	338 5	339 8	337 8	332 4	339 6	336 0	339 6	336 6	338 6	341 9
	3 PREC TR-1B2B PRI VOLTS	VOLTS	P3BV05P PV	323 2	346 4	351 7	344 7	341 3	339 5	346 6	353 6	348 4	342 9	335 3	352 5	346 7	350 0	334 9	354 1
	3 PREC TR-1B2C PRI VOLTS	VOLTS	P3BV04P PV	335 9	325 0	342 4	341 9	334 1	324 1	342 1	341 1	338 7	337 9	340 4	335 5	334 2	330 9	339 6	342 3
	3 PREC TR-1B3A PRI VOLTS	VOLTS	P3BV09P PV	347 2	357 0	347 0	349 3	355 9	348 2	357 0	349 6	357 0	354 4	349 3	352 7	344 7	359 4	358 2	355 5
	3 PREC TR-1B3B PRI VOLTS	VOLTS	P3BV08P PV	348 8	347 6	344 9	356 2	342 0	351 6	340 0	351 2	349 2	337 5	348 4	339 3	356 6	347 1	343 2	354 3
	3 PREC TR-1B3C PRI VOLTS	VOLTS	P3BV07P PV	348 9	340 9	345 3	350 1	347 3	349 6	348 6	351 2	342 2	350 7	349 6	350 1	349 0	348 1	350 4	324 1
New Precip 3A (East) East	3E PRC TR-02 SEC AMPS	mA	P3EA15S PV	271 6	274 6	273 9	272 1	275 0	275 0	275 0	274 5	64 6	104 5	275 0	275 0	275 0	275 0	275 0	275 0
	3E PRC TR-04 SEC AMPS	mA	P3EA16S PV	272 7	275 0	275 0	275 0	272.0	272 1	256 4	3 0	213 3	275 0	275 0	274 5	275 0	275 0	272 5	273 0
	3E PRC TR-06 SEC AMPS	mA	P3EA19S PV	275 0	275 0	275 0	275 0	275 0	275 0	274 5	274 3	273 5	274 5	274 2	275 0	275 0	275 0	275 0	275 0
	3E PRC TR-08 SEC AMPS	mA	P3EA20S PV	275 0	275.0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	274 5	275 0	275 0	275 0	274 5
	3E PRC TR-10 SEC AMPS	mA	P3EA23S PV	400 0	400 0	400 0	400 0	400 0	400 0	400 9	400 0	400 0	400 0	400 0	400 0	400 0	399 9	51 6	170 8
	3E PRC TR-12 SEC AMPS	mA	P3EA24S PV	397 2	398 9	396 9	397 7	116 7	175 5	396 8	396 7	396 2	398 0	397 7	399 3	399 0	398 5	397 8	399 3
	3E PRC TR-14 SEC AMPS	mA	P3EA03S PV	393 5	395 1	396 3	396 6	395 7	395 8	397 0	396 6	397 7	397 3	396 1	397 6	398 7	397 2	397 1	394 8
	3E PRC TR-16 SEC AMPS	mA	P3EA04S PV	396 8	397 1	397 5	397 0	395 9	170 1	124 7	398 1	396 9	397 7	395 4	396 1	396 0	394 4	398 4	398 0
	3E PRC TR-18 SEC AMPS	mA	P3EA07S PV	497 3	495 7	497 6	497 7	499 1	498 7	499 0	497 6	496 3	496 5	494 1	499 3	499 4	493.6	495 7	492 9
	3E PRC TR-20 SEC AMPS	mA	P3EA08S PV	497 5	497 1	497 5	498 3	497 8	496 4	499 2	498 4	497 0	497 4	498 1	499 2	499 6	500 0	499 4	499 2
	3E PRC TR-22 SEC AMPS	mA	P3EA11S PV	497 1	495 2	496 8	494 6	496 6	496 0	497 8	495 9	497 1	496 6	494 9	494 8	494 2	495 5	497 0	495 3
	3E PRC TR-24 SEC AMPS	mA	P3EA12S PV	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0
	3E PRC TR-02 SEC KV 1	KV	P3EV15S1 PV	46 7	46 7	46 5	46 5	46 4	46 5	46 8	46 3	15 8	21 6	46 4	46 6	46 6	46 6	46 5	46 6
	3E PRC TR-04 SEC KV 1	KV	P3EV16S1 PV	49 3	49 4	49 5	49 2	49 4	49 3	47 3	5 0	39 1	48 6	49 3	49 1	49 2	49 4	49 1	49 1
	3E PRC TR-06 SEC KV 1	KV	P3EV19S1 PV	51 1	51 0	51 0	50 8	51 1	51 3	51 1	51 1	51 1	51 2	50 8	51 0	51 1	51 0	51 0	51 1
	3E PRC TR-08 SEC KV 1	KV	P3EV20S1 PV	52 8	52 8	52 8	53 0	53 0	53 0	53 0	53 0	53 0	52 8	52 2	52 5	52 8	52 8	53 0	52 9
	3E PRC TR-10 SEC KV 1	KV	P3EV23S1 PV	23 0	23 0	23 0	23 0	22 8	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	23 0	2 6	9 6
	3E PRC TR-12 SEC KV 1	KV	P3EV24S1 PV	56 0	56 0	56 0	56 0	22 1	28 7	55 2	55 4	55 2	55 5	55 4	55 6	55 8	55 8	53 4	54 4
	3E PRC TR-14 SEC KV 1	KV	P3EV03S1 PV	55 3	55 4	55 4	55 5	55 0	54 4	54 8	55 5	55 8	55 4	55 3	55 4	55 6	55 5	55 2	55 2
	3E PRC TR-16 SEC KV 1	KV	P3EV04S1 PV	53 0	52 9	52 7	52 9	52 8	25 8	20 2	52 3	52 5	52 8	52 4	52 6	52 6	52 2	52 7	52 6
	3E PRC TR-18 SEC KV 1	KV	P3EV07S1 PV	49 1	49 1	49 2	49 2	49 1	49 2	49 0	49 1	49 1	49 1	49 2	49 1	49 1	49 1	49 1	49 7
	3E PRC TR-20 SEC KV 1	KV	P3EV08S1 PV	47 3	47 3	47 4	47 3	47 7	47 6	47 7	47 5	47 5	47 6	47 4	47 8	47 7	47 8	47 6	47 7
	3E PRC TR-22 SEC KV 1	KV	P3EV11S1 PV	47 6	47 4	47 4	47 5	47 7	47 6	48 0	47 7	47 3	47 6	47 3	47 5	47 6	47 5	47 7	47 6
	3E PRC TR-24 SEC KV 1	KV	P3EV12S1 PV	45 4	45 3	45 4	45 8	45 8	45 7	46 0	45 7	46 1	45 8	46 0	46 1	45 6	45 6	46 1	46 1
	3E PRC TR-02 PRI AMPS	AMPS	P3EA15P PV	69 4	69 8	69 4	69.8	70 0	69 6	69 4	69 2	15 5	26 1	69 8	70 0	69 6	69 6	69 7	69 3
	3E PRC TR-04 PRI AMPS	AMPS	P3EA16P PV	67 1	68 4	68 3	68 9	67 3	67 3	63 3	0 0	53 4	66 4	67 9	68 8	67 5	67 8	67 2	67 0
	3E PRC TR-06 PRI AMPS	AMPS	P3EA19P PV	67 3	67 7	67 2	67 2	68 1	67 6	67 3	67 7	67 2	67 8	67 7	67 1	67 6	67 6	67 4	66 6
	3E PRC TR-08 PRI AMPS	AMPS	P3EA20P PV	67 6	68 1	67 8	67 6	68 2	67 8	67 8	67 7	68 2	67 4	67 4	67 3	68 0	67 7	67 8	67 3
	3E PRC TR-10 PRI AMPS	AMPS	P3EA23P PV	for this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	0 0	0 0
	3E PRC TR-12 PRI AMPS	AMPS	P3EA24P PV	90 9	91 5	90 7	91 1	26 9	39 5	91 0	90 4	89 9	90 8	90 7	90 7	90 9	90 9	90 8	90 4
	3E PRC TR-14 PRI AMPS	AMPS	P3EA03P PV	90 2	90 4	90 6	91 0	90 2	91 1	90 5	90 6	90 5	90 4	90 2	90 0	90 9	90 8	90 4	90 3
	3E PRC TR-16 PRI AMPS	AMPS	P3EA04P PV	92 5	92 3	92 1	92 2	92 1	39 2	28 4	27 5	92 4	92 2	91 9	92 0	92 4	92 2	92 2	92 3
	3E PRC TR-18 PRI AMPS	AMPS	P3EA07P PV	113 7	113 5	113 6	113 6	113 6	113 8	113 6	113 5	113 3	113 1	113 0	113 2	113 4	112 7	113 0	112 5
	3E PRC TR-20 PRI AMPS	AMPS	P3EA08P PV	120 0	119 7	119 4	120 0	120 2	119 9	120 6	119 9	119 3	119 6	119 2	119 5	119 8	120 0	119 9	119 5
	3E PRC TR-22 PRI AMPS	AMPS	P3EA11P PV	118 3	118 1	118 2	118 4	118 5	118 2	119 2	118 8	118 1	118 1	117 9	117.7	118 3	118 1	118 2	117 5
	3E PRC TR-24 PRI AMPS	AMPS	P3EA12P PV	116 4	116 3	116 2	117 8	118 1	117 8	119 2	117 5	119 0	118 0	116 9	119 0	116 8	116 5	119 6	119 4
	3E PRC TR-02 PRI VOLTS	VOLTS	P3EV15P PV	206 8	206 8	207 2	205 3	206 0	207 8	205 6	204 9	62 0	89 9	206 0	206 6	206 3	207 5	207 2	205 1
	3E PRC TR-04 PRI VOLTS	VOLTS	P3EV16P PV	218 2	218 7	218 0	219 3	218 5	218 8	207 8	19 1	172 6	215 8	218 0	217 4	217 6	218 5	217 9	217 4
	3E PRC TR-06 PRI VOLTS	VOLTS	P3EV19P PV	213 0	212 3	213 4	213 0	214 3	215 2	213 0	214 8	214 5	214 7	213 3	212 9	213 9	214 7	215 5	214 9
	3E PRC TR-08 PRI VOLTS	VOLTS	P3EV20P PV	231 2	230 3	230 9	230 7	231 8	232 1	231 7	233 7	233 3	231 2	230 6	229 3	231 2	230 6	231 6	232 4
	3E PRC TR-10 PRI VOLTS	VOLTS	P3EV23P PV	for this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	or this point for	19 1	19 1
	3E PRC TR-12 PRI VOLTS	VOLTS	P3EV24P PV	308 5	309 0	308 9	309 6	104 5	144 4	306 8	306 8	308 2	307 1	306 8	307 8	307 4	308 5	294 3	299 6
	3E PRC TR-14 PRI VOLTS	VOLTS	P3EV03P PV	292 1	291 7	292 0	293 0	288 1	283 0	297 0	292 2	292 1	292 1	293 1	293 9	293 8	293 7	291 6	292 5
	3E PRC TR-16 PRI VOLTS	VOLTS	P3EV04P PV	283 0	283 3	282 3	281 7	281 5	133 2	102 9	281 5	283 0	283 0	283 0	283 0	282 1	280 4	280 0	281 6
	3E PRC TR-18 PRI VOLTS	VOLTS	P3EV07P PV	269 8	267 7	267 0	269 1	269 0	265 7	260 9	265 9	267 9	269 4	269 8	269 5	269 6	267 5	269 4	269 3
	3E PRC TR-20 PRI VOLTS	VOLTS	P3EV08P PV	266 0	265 2	265 7	265 4	267 4	267 8	268 8	268 5	266 3	269 3	267 5	270 1	269 4	269 7	270 2	271 2
	3E PRC TR-22 PRI VOLTS	VOLTS	P3EV11P PV	232 2	231 5	231 1	233 2	232 7	231 5	234 2	231 6	232 9	232 7	232 6	233 2	233 3	232 7	233 7	232 5
	3E PRC TR-24 PRI VOLTS	VOLTS	P3EV12P PV	223 6	223 3	223 1	225 8	226 5	225 6	225.6	226 0	228 2	227 0	225 5	230 1	225 9	224 2	229 1	229 6
New Precip 3A (East) West	3E PRC TR-01 SEC AMPS	mA	P3EA13S PV	275 0	275 0	275 0	275 0	275 0	275 0	275 0	274 7	274 4	273 6	245 5	6 0	211 4	271 4	272 7	273 8
	3E PRC TR-03 SEC AMPS	mA	P3EA14S PV	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	119 0	68 3	275 0	275 0
	3E PRC TR-05 SEC AMPS	mA	P3EA17S PV	275 0	274 5	275 0	274 5	273 0	274 9	275 0	275 0	275 0	173 5	32 0	272 5	220 1	275 0	274 5	275 0
	3E PRC TR-07 SEC AMPS	mA	P3EA18S PV	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0	275 0
	3E PRC TR-09 SEC AMPS	mA	P3EA21S PV	398 9	397 8	397 7	395 0	396 9	222 1	16 0	396 7	395 7	397 9	398 4	397 9	397 2	397 3	396 3	396 8
	3E PRC TR-11 SEC AMPS	mA	P3EA22S PV	395 9	396 3	394 8	396 5	396 6	395 6	395 4	396 9	396 7	396 3	395.4	393 9	396 2	398 8	395 2	395 9
	3E PRC TR-13 SEC AMPS	mA	P3EA01S PV	397 7	396 4	394 7	395 3	396 0	396 3	396 0	395 1	395 4	396 9	395 9	394 5	395 5	399 0	396 6	396 5
	3E PRC TR-15 SEC AMPS	mA	P3EA02S PV	396 2	395 8	397 9	169 8	123 0	398 1	342 6	394 0	396 5	395 8	394 6	396 7	395 6	396 4	396 2	395 1
	3E PRC TR-17 SEC AMPS	mA	P3EA05S PV	497 6	496 4	497 8	496 1	495 1	497 9	496 8	497 3	497 2	496 6	498 5	497 0	496 5	497 9	496 2	499 2
	3E PRC TR-19 SEC AMPS	mA	P3EA06S PV	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0	500 0
	3E PRC TR-21 SEC AMPS	mA	P3EA09S PV	497 0	497 2	495 9	496 0	496 4	495 0	494 5	497 0	495 2	495 0	497 1	498 0	494 7	497 4	498 0	493 1
	3E PRC TR-23 SEC AMPS	mA	P3EA10S PV	495 2	498 1	494 7	498 1	497 6	495 3	494 8	495 5	496 5	495 1	498 1	496 6	497 3	496 1	498 9	494 8
	3E PRC TR-01 SEC KV 1	KV	P3EV13S1 PV	48 1	48 0	48 1	48 0	48 1	48 1	48 1	48 1	48 1	48 1	43 6	6 0	38 4	47 8	48 0	48 0
	3E PRC TR-03 SEC KV 1	KV	P3EV14S1 PV	53 8	54 0	54 0	54 0	54 0	54 0	54 0	53 8	53 8	54 0	53 9	52 9	24 3	15 1	53 9	54 0
	3E PRC TR-05 SEC KV 1	KV	P3EV17S1 PV	51 0	51 0	51 0	51 0	51 0	51 0	51 0	51 0	50 9	34 2	10 6	51 0	41 6	50 8	50 7	50 9
	3E PRC TR-07 SEC KV 1	KV	P3EV18S1 PV	42 9	42 9	42 9	42 9	42 9	42 9	42 9	42 9	42 9	42 5	42 0	42 9	42 8	42 9	42 8	42 9
	3E PRC TR-09 SEC KV 1	KV	P3EV21S1 PV	44 9	44 9	44 9	44 9	44 9	27 4	6 6	44 9	44 9	44 9	44 9	44 9	44 9	44 9	44 9	44 9
	3E PRC TR-11 SEC KV 1	KV	P3EV22S1 PV	44 4	44 6	44 3	44 7	44 5	43 9	43 6	44 4	44 5	44 5	44 6	44 5	44 6	44 9	44 6	44 7

				Unit 3 Test 4																
				10/6/99 11 05	10/6/99 11 20	10/6/99 11 35	10/6/99 11 05	10/6/99 12 05	10/6/99 12 20	10/6/99 12 35	10/6/99 12 50	10/6/99 13 05	10/6/99 13 20	10/6/99 13 35	10/6/99 13 50	10/6/99 14 05	10/6/99 14 20	10/6/99 14 35	10/6/99 14 50
	3E PRC TR-13 SEC KV 1	KV	P3EV01S1 PV	43 7	43 5	43 4	43 3	43 1	43 7	43 3	43 5	43 4	43 5	43 6	43 5	43 4	43 7	43 5	43 7
	3E PRC TR-15 SEC KV 1	KV	P3EV02S1 PV	41 9	41 9	41 9	29 8	16 1	41 7	36 7	41 5	41 6	41 6	41 9	41 8	41 9	41 9	41 9	41 9
	3E PRC TR-17 SEC KV 1	KV	P3EV05S1 PV	42 1	42 2	42 2	42 1	42 0	42 2	42 2	42 1	42 1	42 0	42 2	42 1	42 2	42 3	42 0	42 2
	3E PRC TR-19 SEC KV 1	KV	P3EV06S1 PV	39 0	39 0	39 0	39 0	39 0	39 0	39 0	39 0	39 0	39 2	39 5	39 0	39 0	39 0	39 0	39 0
	3E PRC TR-21 SEC KV 1	KV	P3EV08S1 PV	47 4	47 3	47 2	47 4	47 1	47 2	47 2	47 1	47 2	47 2	47 6	47 2	47 1	47 2	47 4	47 2
	3E PRC TR-23 SEC KV 1	KV	P3EV10S1 PV	43 9	43 9	43 9	43 8	43 9	43 9	43 9	43 7	43 8	43 8	43 9	43 8	43 9	43 9	43 9	43 9
	3E PRC TR-01 PRI AMPS	AMPS	P3EA13P PV	69 0	68 7	68 5	68 9	69 0	69 0	68 6	68 4	68 9	69 0	61 2	0 0	53 0	68 6	68 3	68 5
	3E PRC TR-03 PRI AMPS	AMPS	P3EA14P PV	71 4	72 0	71 6	71 2	71 5	71 8	71 3	71 6	71 2	71 3	71 8	71 7	30 4	17 0	71 0	71 0
	3E PRC TR-05 PRI AMPS	AMPS	P3EA17P PV	69 5	69 1	69 4	69 2	69 4	68 9	69 7	69 5	68 5	43 2	7 4	68 8	55 1	69 0	68 7	68 9
	3E PRC TR-07 PRI AMPS	AMPS	P3EA18P PV	67 0	67 0	67 0	67 0	67 0	67 0	67 0	67 0	67 0	67 0	67 0	67 0	67 0	67 0	67 0	67 0
	3E PRC TR-09 PRI AMPS	AMPS	P3EA21P PV	91 4	91 2	91 4	91 2	91 6	50 7	3 7	91 3	90 7	91 0	91 3	91 0	91 1	91 4	91 0	90 8
	3E PRC TR-11 PRI AMPS	AMPS	P3EA22P PV	92 0	92 2	92 0	92 3	92 9	92 6	92 9	92 9	92 7	92 6	92 3	92 2	92 6	93 0	91 8	93 0
	3E PRC TR-13 PRI AMPS	AMPS	P3EA01P PV	91 6	90 9	90 7	90 8	91 0	91 3	90 7	90 8	90 7	90 6	90 7	90 6	90 6	90 9	90 7	90 7
	3E PRC TR-15 PRI AMPS	AMPS	P3EA02P PV	89 3	89 9	90 0	38 0	27 4	89 7	77 8	89 3	89 8	89 5	89 7	89 9	89 6	90 2	89 5	90 1
	3E PRC TR-17 PRI AMPS	AMPS	P3EA05P PV	115 5	115 9	115 8	115 4	115 1	115 7	115 6	115 1	115 4	115 6	115 3	115 5	115 7	115 7	115 3	116 0
	3E PRC TR-19 PRI AMPS	AMPS	P3EA06P PV	103 2	103 3	103 4	103 5	103 6	103 7	103 8	104 0	104 4	106 0	107 0	103 9	104 6	103 9	103 9	103 9
	3E PRC TR-21 PRI AMPS	AMPS	P3EA09P PV	113 9	113 9	113 4	113 7	113 7	113 5	113 7	113 7	113 6	113 3	113 9	113 5	113 1	113 8	114 0	113 4
	3E PRC TR-23 PRI AMPS	AMPS	P3EA10P PV	110 4	110 4	109 7	110 4	110 5	110 0	110 6	109 8	110 4	110 1	109 8	110 4	110 4	109 6	110 9	110 4
	3E PRC TR-01 PRI VOLTS	VOLTS	P3EV13P PV	215 1	215 5	214 1	214 5	214 4	216 0	215 7	215 3	216 0	216 0	195 2	21 0	168 9	214 5	213 4	214 0
	3E PRC TR-03 PRI VOLTS	VOLTS	P3EV14P PV	238 3	238 4	239 3	239 7	240 7	238 6	238 3	237 2	238 1	239 7	240 5	232 3	108 7	67 5	238 2	239 3
	3E PRC TR-05 PRI VOLTS	VOLTS	P3EV17P PV	223 0	223 0	223 0	223 0	223 0	223 0	223 0	223 0	223 0	147 6	42 3	220 0	180 4	221 2	220 6	222 3
	3E PRC TR-07 PRI VOLTS	VOLTS	P3EV18P PV	254 9	260 9	264 4	264 8	264 9	266 2	265 6	266 6	267 6	251 4	232 9	260 9	258 5	265 2	258 9	264 9
	3E PRC TR-09 PRI VOLTS	VOLTS	P3EV21P PV	294 4	294 3	295 4	294 5	295 4	174 5	31 9	294 1	295 1	295 1	295 1	295 1	294 0	294 7	292 4	294 2
	3E PRC TR-11 PRI VOLTS	VOLTS	P3EV22P PV	291 2	292 6	290 8	291 7	291 4	288 8	285 8	291 9	292 8	294 9	294 5	294 1	293 7	293 4	293 0	292 7
	3E PRC TR-13 PRI VOLTS	VOLTS	P3EV01P PV	244 0	243 1	243 6	239 9	240.2	243 9	242 7	244 2	244 4	244 4	244 1	243 5	244 6	245 2	243 9	244 1
	3E PRC TR-15 PRI VOLTS	VOLTS	P3EV02P PV	235 0	235 0	233 7	112 8	87 2	234 2	204 6	234 3	232 7	232 2	232 1	232 5	232 1	232 1	232 1	232 1
	3E PRC TR-17 PRI VOLTS	VOLTS	P3EV05P PV	249 7	249 6	249 2	248 5	246 2	249 1	249 5	248 8	248 7	249 0	250 6	249 6	250 1	250 7	249 4	250 7
	3E PRC TR-19 PRI VOLTS	VOLTS	P3EV06P PV	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1	232 1
	3E PRC TR-21 PRI VOLTS	VOLTS	P3EV09P PV	222 4	222 0	220 5	221 4	222 7	222 2	222 0	221 7	221 3	221 0	220 7	220 3	220 0	220 0	220 0	220 6
	3E PRC TR-23 PRI VOLTS	VOLTS	P3EV10P PV	216 0	216 0	215 7	215 2	214 6	216 2	214 9	215 8	215 9	214 7	216 0	215 3	216 0	216 0	215 8	215 5
New Precip 3B (West) West	3W PRC TR-02 SEC AMPS	mA	P3WA13S PV	162 6	274 5	275 0	275 0	274 2	273 2	274 5	275 0	243 2	270 6	275 0	275 0	275 0	79 2	126 3	275 0
	3W PRC TR-04 SEC AMPS	mA	P3WA14S PV	272 5	187 9	17 5	272 3	274 0	274 1	271 8	272 8	273 2	238 7	275 0	274 1	274 0	273 1	275 0	273 2
	3W PRC TR-06 SEC AMPS	mA	P3WA17S PV	271 7	271 3	270 7	271 4	272 0	272 4	274 0	236 4	273 8	274 4	273 3	275 0	275 0	273 7	273 3	273 8
	3W PRC TR-08 SEC AMPS	mA	P3WA18S PV	274 5	274 5	274 3	274 9	275 0	274 5	275 0	274 5	274 3	273 2	271 2	273 2	274 6	274 9	275 0	275 0
	3W PRC TR-10 SEC AMPS	mA	P3WA21S PV	397 3	395 6	395 7	395 9	397 8	392 9	394 5	395 5	398 7	394 7	397 2	394 3	398 5	397 1	269 6	0 0
	3W PRC TR-12 SEC AMPS	mA	P3WA22S PV	396 4	399 0	399 2	396 0	399 0	349 1	0 0	338 5	396 6	395 5	397 2	397 2	396 3	397 4	343 1	398 0
	3W PRC TR-14 SEC AMPS	mA	P3WA01S PV	395 9	395 9	398 5	395 2	394 4	395 6	395 1	399 0	396 1	396 4	396 4	399 3	396 4	400 0	398 1	396 4
	3W PRC TR-16 SEC AMPS	mA	P3WA02S PV	395 1	396 1	395 9	394 6	395 8	396 9	396 2	397 4	396 5	394 4	398 5	397 2	397 5	396 7	394 5	396 5
	3W PRC TR-18 SEC AMPS	mA	P3WA05S PV	496 0	496 0	496 5	494 6	497 2	497 4	495 8	497 1	496 5	496 6	496 3	496 9	497 8	497 3	494 9	497 2
	3W PRC TR-20 SEC AMPS	mA	P3WA06S PV	496 4	435 2	496 8	499 5	497 5	498 5	497 2	496 9	495 0	498 2	497 5	497 9	496 3	496 2	496 6	500 0
	3W PRC TR-22 SEC AMPS	mA	P3WA09S PV	494 7	496 4	496 7	494 2	495 1	495 1	493 2	494 9	496 6	495 2	495 4	496 5	496 0	493 0	494 4	493 8
	3W PRC TR-24 SEC AMPS	mA	P3WA10S PV	495 7	497 6	498 4	496 6	497 0	499 0	499 3	495 5	496 2	495 7	499 2	496 1	497 8	497 7	497 6	495 2
	3W PRC TR-02 SEC KV 1	KV	P3WV13S1 PV	28 5	44 0	43 9	44 1	43 9	44 0	44 2	43 9	39 1	43 6	44 0	43.9	44 1	15 4	23 2	44 1
	3W PRC TR-04 SEC KV 1	KV	P3WV14S1 PV	45 0	34 3	4 3	45 2	45 5	45 3	46 1	45 5	45 2	39 4	45 4	45 1	45 3	44 4	44 6	45 7
	3W PRC TR-06 SEC KV 1	KV	P3WV17S1 PV	48 2	48 5	48 1	48 4	48 6	48 6	48 9	42 8	48 7	48 1	48 5	48 7	48 6	48 8	48 5	49 0
	3W PRC TR-08 SEC KV 1	KV	P3WV18S1 PV	50 2	50 2	50 2	50 0	50 2	50 3	50 7	50 2	50 4	50 3	50 4	50 3	50 6	50 6	50 7	50 5
	3W PRC TR-10 SEC KV 1	KV	P3WV21S1 PV	54 9	54 6	54 9	54 8	54 7	54 8	54 0	54 4	54 7	54 6	54 8	54 9	54 9	55 0	38 0	5 0
	3W PRC TR-12 SEC KV 1	KV	P3WV22S1 PV	51 0	51 0	51 0	51 0	51 0	48 0	5 2	41 8	51 0	51 0	51 0	51 0	51 0	51 0	44 2	49 3
	3W PRC TR-14 SEC KV 1	KV	P3WV01S1 PV	54 0	54 0	54 0	54 0	54 0	54 0	53 9	54 0	54 0	54 0	54 0	54 0	54 0	54 0	54 0	54 0
	3W PRC TR-16 SEC KV 1	KV	P3WV02S1 PV	48 6	48 4	48 6	48 6	48 9	48 7	48 6	48 6	48 6	48 5	48 5	48 4	48 9	48 7	48 8	49 3
	3W PRC TR-18 SEC KV 1	KV	P3WV05S1 PV	51 4	51 5	51 5	51 4	51 6	51 6	51 6	51 7	51 5	51 4	51 5	51 5	51 6	51 6	51 4	51 4
	3W PRC TR-20 SEC KV 1	KV	P3WV06S1 PV	50 8	50 7	50 3	50 4	50 8	50 8	50 6	50 6	50 5	50 7	50 7	50 5	50 5	50 7	50 8	50 7
	3W PRC TR-22 SEC KV 1	KV	P3WV09S1 PV	46 6	46 8	46 7	46 6	46 8	46 7	46 8	46 6	46 7	46 7	46 4	46 8	46 7	46 9	46 9	46 7
	3W PRC TR-24 SEC KV 1	KV	P3WV10S1 PV	15 1	15 3	15 4	15 3	15 4	15 6	15 3	15 3	15 2	15 4	15 7	15 4	15 4	15 8	15 8	15 7
	3W PRC TR-02 PRI AMPS	AMPS	P3WA13P PV	40 2	68 7	68 7	68 8	68 1	68 3	68 8	68 8	60 9	67 4	68 6	68 8	68 7	19 8	31 7	69 0
	3W PRC TR-04 PRI AMPS	AMPS	P3WA14P PV	66 4	45 0	3 6	65 8	66 4	66 5	66 2	67 0	66 6	57 1	66 4	66 5	66 5	65 8	66 0	65 6
	3W PRC TR-06 PRI AMPS	AMPS	P3WA17P PV	70 7	70 9	71 0	70 7	71 4	70 5	71 5	61 1	70 8	70 7	70 9	70 8	70 7	70 1	71 1	70 9
	3W PRC TR-08 PRI AMPS	AMPS	P3WA18P PV	66 9	67 3	67 9	67 6	67 4	67 5	67 5	67 2	67 4	67 1	66 9	66 8	66 7	67 3	66 9	66 6
	3W PRC TR-10 PRI AMPS	AMPS	P3WA21P PV	90 3	89 6	89 8	89 4	90 1	89 4	89 5	89 8	89 8	89 7	89 8	89 5	89 5	89 5	61 0	0 0
	3W PRC TR-12 PRI AMPS	AMPS	P3WA22P PV	97 8	98 6	98 0	97 9	98 6	86 2	0 0	83 1	97 2	97 6	97 6	97 5	98 2	98 1	84 7	98 0
	3W PRC TR-14 PRI AMPS	AMPS	P3WA01P PV	94 1	94 5	94 9	94 2	94 2	94 7	94 6	94 5	94 3	94 3	94 7	94 1	94 6	94 1	94 1	93 9
	3W PRC TR-16 PRI AMPS	AMPS	P3WA02P PV	90 1	91 2	90 9	90 5	91 4	90 9	90 6	91 6	90 7	90 0	90 9	90 8	90 8	90 3	90 4	90 8
	3W PRC TR-18 PRI AMPS	AMPS	P3WA05P PV	117 4	117 8	117 8	116.9	117 7	117 6	117 8	117 3	117 7	117 2	117 1	117 3	117 3	118 0	117 9	117 6
	3W PRC TR-20 PRI AMPS	AMPS	P3WA06P PV	113 0	113 4	113 1	113 6	113 6	113 3	112 9	112 9	112 7	113 3	113 0	113 2	113 3	113 5	113 0	114 0
	3W PRC TR-22 PRI AMPS	AMPS	P3WA09P PV	111 2	111 5	111 7	111 0	111 1	111 4	110 5	111 6	111 5	110 9	110 7	111.1	110 9	110.3	110.3	110 5
	3W PRC TR-24 PRI AMPS	AMPS	P3WA10P PV	114 6	114 5	115 0	114 3	114 9	115 1	114 9	114 1	114 0	114 3	114 3	114 1	114 2	114 1	114 0	114 5
	3W PRC TR-02 PRI VOLTS	VOLTS	P3WV13P PV	130 0	205 0	202 9	204 9	203 9	203 1	204 0	203 7	179 3	202 6	204 0	204 3	205 4	66 7	103 2	204 2
	3W PRC TR-04 PRI VOLTS	VOLTS	P3WV14P PV	219 3	166 4	20 8	218 7	220 0	220 0	222 1	222 1	220 6	191 9	220 3	219 9	222 2	218 1	219 1	221 6
	3W PRC TR-06 PRI VOLTS	VOLTS	P3WV17P PV	220 0	220 1	218 1	218 5	219 2	220 3	220 0	192 5	219 8	220 0	220 0	220 0	220 0	220 0	220 0	220 0
	3W PRC TR-08 PRI VOLTS	VOLTS	P3WV18P PV	225 6	225 5	226 1	224 3	225 2	227 4	227 2	226 0	226 0	226 3	226 0	227 1	227 5	226 6	227 2	228 1
	3W PRC TR-10 PRI VOLTS	VOLTS	P3WV21P PV	288 1	287 0	290 1	288.9	288 0	287 7	283 1	286 4	298 8	287 0	289 1	287 9	287 9	287 9	198 5	20 0
	3W PRC TR-12 PRI VOLTS	VOLTS	P3WV22P PV	226 7	225 6	225 0	225 9	225 6	211 4	21 0	184 2	226 0	226 7	225 3	225 0	224 9	225 6	197 5	220 1
	3W PRC TR-14 PRI VOLTS	VOLTS	P3WV01P PV	258 6	260 7	260 5	261 9	260 9	261 4	254 8	258 2	264 4	262 4	260 9	263 0	261 4	262 9	262 9	261 8
	3W PRC TR-16 PRI VOLTS	VOLTS	P3WV02P PV	233 5	234 4	234 5	234 7	234 5	234 2	233 9	233 6	233 3	233 0	232 8	232 5	232 2	233 2	234 6	235 0
	3W PRC TR-18 PRI VOLTS	VOLTS	P3WV05P PV	252 5	251 6	253 0	252 9	255 0	253 6	253 9	255 4	252 5	254 2	255 4	254 6	255 4	255 0	253 1	254 7
	3W PRC TR-20 PRI VOLTS	VOLTS	P3WV06P PV	238 1	238 3	237 9	236 9	238 1	238 2	237 3	237 5	237 6	238 2	239 2	238 4	238 7	238 5	237 1	238 7
	3W PRC TR-22 PRI VOLTS	VOLTS	P3WV09P PV	220 0	220 0	220 0	221 2	221 8	221 0	221 9	221 4	220 0	220 3	221 5	223 5	222 4	222 6	221 8	223 0
	3W PRC TR-24 PRI VOLTS	VOLTS	P3WV10P PV	219 2	218 9	218 7	218 4	218 2	220 3	220 9	219 7	219 7	219 7	220 1	220 1	220 5	220 0	220 0	220 0
New Precip 3B (West) East	3W PRC TR-01 SEC AMPS	mA	P3WA15S PV	275 0	275 0	275 0	274 5	135 1	74 1	275 0	275 0	275 0	238 8	273 6	272 4	271 2	271 3	274 7	274 5
	3W PRC TR-03 SEC AMPS	mA	P3WA16S PV	275 0	274 5	273 7	272 8	275 0	275 0	273 9	133 9	91 0	274 2	237 4	275 0	275 0	275 0	272 1	274 9
	3W PRC TR-05 SEC AMPS	mA	P3WA19S PV	206 5	212 9	257 7	253 2	237 4	236 1	275 0	220 6	273 0	187 4	112 3	37 5	275 0	238 1	275 0	274 2
	3W PRC TR-07 SEC AMPS	mA	P3WA20S PV	274 5	275 0	275 0	22 0	179 7	275 0	275 0	274 1	218 3	273 9	275 0	274 5	274 5	275 0	274 5	275 0
	3W PRC TR-09 SEC AMPS	mA	P3WA23S PV	397 9	396 0	395 4	394 7	394 8	396 8	398 8	397 0	397 2	396 5	398 1	395 8	395 4	399 4	395 8	398 6
	3W PRC TR-11 SEC AMPS	mA	P3WA24S PV	396 5	394 0	393 7	396 5	397 3	397 6	394 5	396 8	396 6	397 4	396 7	348 8	0 0	338 8	396 4	397 0
	3W PRC TR-13 SEC AMPS	mA	P3WA03S PV	399 3	397 5	396 7	394 5	396 0	396 8	393 6	394 7	387 8	396 6	396 5	400 0	396 0	396 5	397 7	393 2

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			10/6/99 11 05	10/6/99 11 20	10/6/99 11 35	1/0/00 11 05	10/6/99 12 05	10/6/99 12 20	10/6/99 12 35	10/6/99 12 50	10/6/99 13 05	10/6/99 13 20	10/6/99 13 35	10/6/99 13 50	10/6/99 14 05	10/6/99 14 20	10/6/99 14 35	10/6/99 14 50
3W PRC TR-15 SEC AMPS	mA	P3WA04S PV	397 3	393 2	394 1	395 3	396 4	395 4	395 6	396 5	396 9	396 2	398 6	395 5	397 3	390 8	397 0	381 8
3W PRC TR-17 SEC AMPS	mA	P3WA07S PV	496 3	496 6	498 5	496 6	493 3	497 4	492 7	494 8	495 4	495 3	495 2	495 7	496 5	496 3	494 2	493 2
3W PRC TR-19 SEC AMPS	mA	P3WA08S PV	494 3	497 9	498 6	493 9	494 4	499 7	494 8	496 7	495 4	497 0	497 0	498 0	497 0	495 9	494 3	491 7
3W PRC TR-21 SEC AMPS	mA	P3WA11S PV	495 1	497 6	496 3	497 6	496 0	493 8	494 9	495 1	494 1	494 0	495 5	495 6	496 8	495 6	492 3	493 0
3W PRC TR-23 SEC AMPS	mA	P3WA12S PV	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
3W PRC TR-01 SEC KV 1	KV	P3WV15S1 PV	43 6	43 8	43 5	43 0	25 9	15 9	43 3	43 1	43 1	38 2	43 4	43 1	43 7	44 1	43 6	43 5
3W PRC TR-03 SEC KV 1	KV	P3WV16S1 PV	48 4	48 7	48 2	48 4	48 0	47 4	48 3	25 5	16 5	48 1	42 5	48 3	48 3	48 5	48 1	48 1
3W PRC TR-05 SEC KV 1	KV	P3WV19S1 PV	36 1	39 8	46 7	41 3	41 6	38 7	47 1	41 6	46 7	33 8	22 3	11 5	47 1	41 5	46 9	47 0
3W PRC TR-07 SEC KV 1	KV	P3WV20S1 PV	49 9	50 1	50 1	10 1	31 4	49 8	49 9	49 8	43 9	49 7	49 0	48 9	50 3	50 1	50 0	50 3
3W PRC TR-09 SEC KV 1	KV	P3WV23S1 PV	57 1	57 0	57 0	56 6	57 0	57 0	57 0	57 1	57 2	57 1	56 9	56 7	55 7	56 9	57 1	57 2
3W PRC TR-11 SEC KV 1	KV	P3WV24S1 PV	56 0	56 0	56 0	56 1	56 0	56 0	55 9	56 0	56 0	56 0	55 9	49 2	5 0	48 9	56 0	56 0
3W PRC TR-13 SEC KV 1	KV	P3WV03S1 PV	55 0	55 0	55 0	55 0	55 0	55 0	55 0	55 0	55 0	55 0	55 0	55 0	54 0	54 6	55 0	55 0
3W PRC TR-15 SEC KV 1	KV	P3WV04S1 PV	49 4	49 4	49 4	49 5	49 4	49 5	49 6	49 3	49 3	49 4	49 4	49 6	49 4	49 2	49 4	49 6
3W PRC TR-17 SEC KV 1	KV	P3WV07S1 PV	49 0	49 1	48 9	49 1	49 1	49 1	49 0	49 0	49 0	49 1	49 1	49 1	48 9	49 0	49 1	49 1
3W PRC TR-19 SEC KV 1	KV	P3WV08S1 PV	48 3	48 3	49 4	48 3	48 4	48 4	48 2	48 4	48 4	48 4	48 2	48 2	48 4	48 2	48 4	48 3
3W PRC TR-21 SEC KV 1	KV	P3WV11S1 PV	43.9	43 9	43 8	43 9	43 9	43 9	43 9	43 7	43 8	43 9	43 9	43 9	43 8	43 9	43 9	43 9
3W PRC TR-23 SEC KV 1	KV	P3WV12S1 PV	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
3W PRC TR-01 PRI AMPS	AMPS	P3WA15P PV	69 4	69 1	69 4	69 6	33 7	17 5	69 3	69 5	69 3	60 4	68 9	69 9	69 2	69 3	69 8	70 0
3W PRC TR-03 PRI AMPS	AMPS	P3WA16P PV	67 8	69 5	68 6	68 0	68 3	68 1	68 1	33 0	21 9	68 0	58 8	68 0	67 8	68 3	69 0	68 0
3W PRC TR-05 PRI AMPS	AMPS	P3WA19P PV	51 4	53 7	64 1	62 5	59 6	59 2	68 3	54 8	68 2	46 5	27 2	8 3	68 8	59 2	68 9	68 6
3W PRC TR-07 PRI AMPS	AMPS	P3WA20P PV	67 8	67 9	67 2	5 9	44 1	67 9	68 0	67 5	53 7	66 8	67 2	67 3	67 8	67 4	67 8	67 5
3W PRC TR-09 PRI AMPS	AMPS	P3WA23P PV	92 5	92 0	92 4	91 8	92 3	92 5	92 5	91 9	92 4	92 4	92 1	92 2	92 2	92 2	91 9	92 6
3W PRC TR-11 PRI AMPS	AMPS	P3WA24P PV	91 8	91 9	91 8	92 0	91 8	92 0	91 9	91 5	91 1	92 0	92 0	80 5	0 0	78 0	91 7	91 5
3W PRC TR-13 PRI AMPS	AMPS	P3WA03P PV	94 6	95 0	94 2	94 4	94 4	94 6	94 2	94 2	92 4	94 1	94 2	94 3	94 5	94 2	94 9	93 4
3W PRC TR-15 PRI AMPS	AMPS	P3WA04P PV	82 8	81 8	82 1	82 5	82 9	83 2	80 6	82 7	82 6	82 9	83 0	82 9	82 6	81 6	82 2	80 1
3W PRC TR-17 PRI AMPS	AMPS	P3WA07P PV	113 9	112 8	113 8	113 3	112 3	113 3	113 0	113 0	113 0	113 1	113 1	112 5	113 0	113 2	113 1	112 8
3W PRC TR-19 PRI AMPS	AMPS	P3WA08P PV	121 5	122 3	121 9	121 3	120 2	121 6	121 6	121 5	120 8	121 6	122 0	121 7	121 5	121 6	121 2	121 2
3W PRC TR-21 PRI AMPS	AMPS	P3WA11P PV	118 7	119 2	118 6	118 8	118 4	118 5	119 2	118 9	118 3	118 3	118 1	118 4	118 7	118 6	118 0	118 1
3W PRC TR-23 PRI AMPS	AMPS	P3WA12P PV	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
3W PRC TR-01 PRI VOLTS	VOLTS	P3WV15P PV	197 9	199 7	200 8	199 2	115 0	68 2	199 0	196 5	196 8	175 3	199 2	198 5	200 5	200 5	199 5	199 6
3W PRC TR-03 PRI VOLTS	VOLTS	P3WV16P PV	215 9	216 4	215 3	216 4	214 3	212 2	215 5	112 1	73 0	216 0	189 7	215 9	218 2	217 5	215 7	216 5
3W PRC TR-05 PRI VOLTS	VOLTS	P3WV19P PV	162 0	173 9	211 6	185 4	187 0	174 6	212 9	187 5	210 7	152 1	99 6	49 0	211 9	187 6	211 2	212 9
3W PRC TR-07 PRI VOLTS	VOLTS	P3WV20P PV	220 0	220 0	220 0	47 3	139 0	220 0	218 0	218 8	193 1	218 6	216 3	216 1	219 9	220 5	219 4	220 1
3W PRC TR-09 PRI VOLTS	VOLTS	P3WV23P PV	287 7	287 5	287 5	283 9	287 2	289 4	287 1	287 5	289 4	288 2	288 9	296 4	278 3	288 1	290 0	290 1
3W PRC TR-11 PRI VOLTS	VOLTS	P3WV24P PV	299 5	297 5	297 0	298 1	299 2	299 0	297 1	297 1	298 5	298 8	297 4	260 6	24 0	258 8	297 3	298 0
3W PRC TR-13 PRI VOLTS	VOLTS	P3WV03P PV	288 0	287 7	286 9	287 3	289 5	289 5	287 1	287 6	289 1	287 9	287 9	287 8	281 9	284 8	289 5	287 9
3W PRC TR-15 PRI VOLTS	VOLTS	P3WV04P PV	236 8	237 0	236 3	238 5	237 2	237 5	238 6	237 0	236 0	236 8	237 0	237 0	237 9	237 2	239 0	235 5
3W PRC TR-17 PRI VOLTS	VOLTS	P3WV07P PV	231 3	231 6	231 9	230 7	230 7	231 2	231 7	232 0	231 8	231 6	231 4	231 3	231 1	230 9	230 7	230 5
3W PRC TR-19 PRI VOLTS	VOLTS	P3WV08P PV	232 3	232 1	232 8	232 3	234 2	232 6	232 1	232 1	232 1	233 7	232 3	233 1	232 9	232 6	232 1	233 7
3W PRC TR-21 PRI VOLTS	VOLTS	P3WV11P PV	211 0	210 9	209 0	210 9	211 0	211 0	211 0	211 3	210 5	211 3	211 6	212 0	212 4	212 8	211 3	212 4
3W PRC TR-23 PRI VOLTS	VOLTS	P3WV12P PV	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00002

FUEL TOTALIZER DATA LOG

RUN No. Unit 3, Run 2

DATE	TIME	FUEL TOTALIZER (TONS) 1	2	3	091A	5
9/9/99	0910	89206.288	34211602	37420510	204140.600	84000322
	1017	89259.012	34307035	37528545	204187.900	84091654
	1105	89303.725	34388371	37620621	204228.600	84168141
	1215	89350.683	34472551	37715603	204268.700	84249394
	1309	89393.422	34554990	37802959	204305.200	84322650
	1314		34556813			

PG & E GENERATING
BRAYTON POINT STATION
26046-0030-00002

FUEL TOTALIZER DATA LOG

RUN No. Unit 3 Run 3

DATE	TIME	FUEL TOTALIZER (TONS) 1	1602:30 2	1603 3	1603:30 4	5 1604
9/9/99	1602	89520.823	34729184	38063962	204422.50	84539782
	1706	89568.284	:30 34862657	:45 38158936	1707 204465.600	1708 84619059
	1805	89611.143	30 34941554	1806 38248908	:15 204506.300	84683601
	1920	89669.474	1920:30 35047044	1920:45 38367778	1921 204554.900	1921:30 84798335

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BRAYTON POINT STATION
26046-0030-00003

FUEL TOTALIZER DATA LOG

RUN No. ~~3-3~~ 4 unit 3

units are in Tons

Renstart 1105, End 1456

DATE	TIME	FUEL TOTALIZER (TONS) 3-1 1 Tons	3-2	3	3-4	3-5	
10/6/99	1100	23966.313		out of Service			start
10/6/99	1100.35		88526973				
10/6/99	1101.59			—	228858.80		
10/6/99	1102.30					32542844	
10/6/99	1457.57	24182.992		out of Service			End
10/6/99	1458.20		88953606				
10/6/99	1458.58				229067.000		
10/6/99	1459.33					32503176	