APPENDIX A
DETAILED TEST DATA AND TEST RESULTS

ESP INLET

TABLE A-1
ALABAMA POWER COMPANY
ONTARIO HYDRO METHOD DATA INPUTS
UNIT NO. 1 ESP INLET

Test Data			
Run number	1	2	3
Location		Unit No. 1 ESP Inlet	
Date	11/10/99	11/11/99	11/11/99
Time period	1155-1607	0739-1143	1340-1703
Operator	JW/KA/TB/JM	JW/KA/TB/JM	JW/KA/TB/JM
Process Data			
Unit Load, MW	269	271	267
Coal feed rate, lb/hr.	194741	184110	171640
Coal Btu content, Btu/lb.(as received)	12610	12420	12640
Heat Input, 10^6 Btu/hr	2456	2287	2170
Inputs For Calcs.			
Sq. rt. delta P	0.610	0.600	0.622
Delta H	0.852	0.802	0.829
Stack temp. (deg.F)	637	633	643
Meter temp. (deg.F)	101	91	88
Sample volume (act.)	74.794	72.058	72.997
Barometric press. (in.Hg)	29.80	29.71	29.71
Volume H_2O imp. (ml)	108.0	112.0	103.3
Weight chnge sil. gel (g)	21.3	27.4	18.8
% CO_2	14.3	14.4	14.3
% O_2	4.2	4.2	4.1
% N	81.5	81.5	81.6
Area of stack (sq.ft.)	418.4	418.4	418.4
Sample time (min.)	150.00	150.00	150.00
Static pressure (in.H_2O)	-6.10	-6.10	-6.00
Nozzle dia. (in.)	0.250	0.250	0.250
Meter box cal.	1.0090	1.0090	1.0090
Cp of pitot tube	0.84	0.84	0.84
Traverse points	50	50	50
Mercury Laboratory Report Data			
Particulate bound, ug	8.000	4.700	0.790
Oxidized, ug	1.600	1.300	7.400
Elemental, ug	4.940	6.510	5.320
Total mercury catch, ug	14.540	12.510	13.510

TABLE A-1
BIRCHWOOD POWER
SUMMARY OF MERCURY SPECIATION TEST DATA AND TEST RESULTS
UNIT NO. 1 ESP INLET

TEST DATA:				
Test run number	1	2	3	AVERAGE
Location		Unit No. 1 ESP Inlet		
Test date	11/10/99	11/11/99	11/11/99	-------
Test time period	1155-1607	0739-1143	1340-1703	-------
PROCESS DATA:				
Unit Load, MW	269	271	267	269
Coal feed rate, lb/hr.	194741	184110	171640	183497
Coal Btu content, Btu/lb.	12610	12420	12640	12557
Heat Input, 10^6 Btu/hr	2456	2287	2170	2304
SAMPLING DATA:				
Sampling duration, min.	150.0	150.0	150.0	150
Nozzle diameter, in.	0.250	0.250	0.250	0.250
Cross sectional nozzle area, sq.ft.	3.41E-04	3.41E-04	3.41E-04	3.41E-04
Barometric pressure, in. Hg	29.80	29.71	29.71	29.74
Avg. orifice press. diff., in H_2O	0.85	0.80	0.83	0.83
Avg. dry gas meter temp., deg F	101.0	91.3	87.9	93.4
Avg. abs. dry gas meter temp., deg. R	561	551	548	553
Total liquid collected by train, ml	129.3	139.4	122.1	130.3
Std. vol. of H_2O vapor coll., cu.ft.	6.1	6.6	5.7	6.1
Dry gas meter calibration factor	1.0090	1.0090	1.0090	1.009
Sample vol. at meter cond., dcf	74.794	72.058	72.997	73.283
Sample vol. at std. cond., dscf (1)	70.863	69.254	70.597	70.238
Percent of isokinetic sampling	107.7	107.8	105.4	107.0
Sample vol. at std. cond., dscm (1)	2.007	1.961	1.999	1.989
GAS STREAM COMPOSITION DATA:				
CO_2, % by volume, dry basis	14.3	14.4	14.3	14.3
O_2, % by volume, dry basis	4.2	4.2	4.1	4.2
N_2, % by volume, dry basis	81.5	81.5	81.6	81.5
Molecular wt. of dry gas, lb/lb mole	30.46	30.50	30.45	30.47
H_2O vapor in gas stream, prop. by vol.	0.079	0.087	0.075	0.080
Mole fraction of dry gas	0.921	0.913	0.925	0.920
Molecular wt. of wet gas, lb/lb mole	29.47	29.42	29.51	29.47
GAS STREAM VELOCITY AND VOLUMETRIC FLOW DATA:				
Static pressure, in. H_2O	-6.10	-6.10	-6.00	-6.07
Absolute pressure, in. Hg	29.35	29.26	29.27	29.29
Avg. temperature, deg. F	637	633	643	638
Avg. absolute temperature, deg.R	1097	1093	1103	1098
Pitot tube coefficient	0.84	0.84	0.84	0.84
Total number of traverse points	50	50	50	50
Avg. gas stream velocity, ft./sec.	49.3	48.6	50.4	49.4
Stack/duct cross sectional area, sq.ft.	418.400	418.400	418.400	418.40
Avg. gas stream volumetric flow, wacf/min.	1238176	1219242	1266446	1241288
Avg. gas stream volumetric flow, dscf/min. (1)	538355	525943	548171	537490
MERCURY LABORATORY REPORT DATA:				
Particulate bound, ug	8.00	4.70	0.79	4.50
Oxidized, ug	1.60	1.30	7.40	3.43
Elemental, ug	4.94	6.51	5.32	5.59
Total catch, ug (3)	14.54	12.51	13.51	13.52
PARTICULATE BOUND MERCURY EMISSIONS:				
Conc., ug/m^3	3.99	2.40	0.40	2.260
Conc., ug/Nm^3 (2)	4.28	2.57	0.42	2.424
Emission rate, lbs/10^{12} Btu.	3.27	2.06	0.37	1.90
Emission rate, lbs/hr	8.04E-03	4.72E-03	8.11E-04	4.52E-03
OXIDIZED MERCURY EMISSIONS:				
Conc., ug/m^3	0.80	0.66	3.70	1.72
Conc., ug/Nm^3 (2)	0.86	0.71	3.97	1.85
Emission rate, lbs/10^{12} Btu.	0.65	0.57	3.50	1.58
Emission rate, lbs/hr	1.61E-03	1.31E-03	7.60E-03	3.50E-03
ELEMENTAL MERCURY EMISSIONS:				
Conc., ug/m^3	2.46	3.32	2.66	2.81
Conc., ug/Nm^3 (2)	2.64	3.56	2.86	3.02
Emission rate, lbs/10^{12} Btu.	2.02	2.86	2.52	2.47
Emission rate, lbs/hr	4.96E-03	6.54E-03	5.46E-03	5.66E-03
TOTAL MERCURY EMISSIONS: (3)				
Conc., ug/m^3	7.25	6.38	6.76	6.80
Conc., ug/Nm^3 (2)	7.77	6.84	7.25	7.29
Emission rate, lbs/10^{12} Btu.	5.95	5.50	6.40	5.95
Emission rate, lbs/hr	1.46E-02	1.26E-02	1.39E-02	1.37E-02

(1) Standard conditions = 68 deg. F. (20 deg. C.) and 29.92 inches Hg (760mm Hg).
(2) Nm3 = Normal cubic meter (32 deg. F. (0 deg. C.) and 29.92 inches Hg (760mm Hg)).

ESP OUTLET

TABLE A-1
ALABAMA POWER COMPANY
ONTARIO HYDRO METHOD DATA INPUTS
UNIT NO. 1 ESP OUTLET

Test Data			
Run number	1	2	3
Location		Unit No. 1 Outlet	
Date	11-10-99	11-11-99	11-11-99
Time period	1155-1612	0730-1155	1340-1721
Operator	TB/JM	TB/JM	TB/JM
Process Data			
Unit Load, MW	269	271	267
Coal feed rate, lb/hr.	194741	184110	171640
Coal Btu content, Btu/lb.(as received)	12610	12420	12640
Heat Input, 10^6 Btu/hr	2456	2287	2170
Inputs For Calcs.			
Sq. rt. delta P	0.486	0.505	0.508
Delta H	1.038	1.224	1.228
Stack temp. (deg.F)	262	255	264
Meter temp. (deg.F)	85	77	80
Sample volume (act.)	99.854	103.876	105.286
Barometric press. (in.Hg)	29.80	29.68	29.68
Volume H_2O imp. (ml)	112.9	130.9	110.0
Weight chnge sil. gel (g)	25.2	29.8	31.4
% CO_2	12.1	12.0	12.1
% O_2	7.1	6.9	6.5
% N	80.9	81.1	81.3
Area of stack (sq.ft.)	432.00	432.00	432.00
Sample time (min.)	180.00	180.00	180.00
Static pressure (in.H_2O)	-10.50	-10.50	-10.50
Nozzle dia. (in.)	0.275	0.275	0.275
Meter box cal.	0.9961	0.9961	0.9961
Cp of pitot tube	0.84	0.84	0.84
Traverse points	60	60	60
Mercury Laboratory Report Data			
Particulate bound, ug	1.56	0.90	2.67
Oxidized, ug	9.90	13.00	11.00
Elemental, ug	4.92	7.80	4.73
Total mercury catch, ug	16.38	21.70	18.40

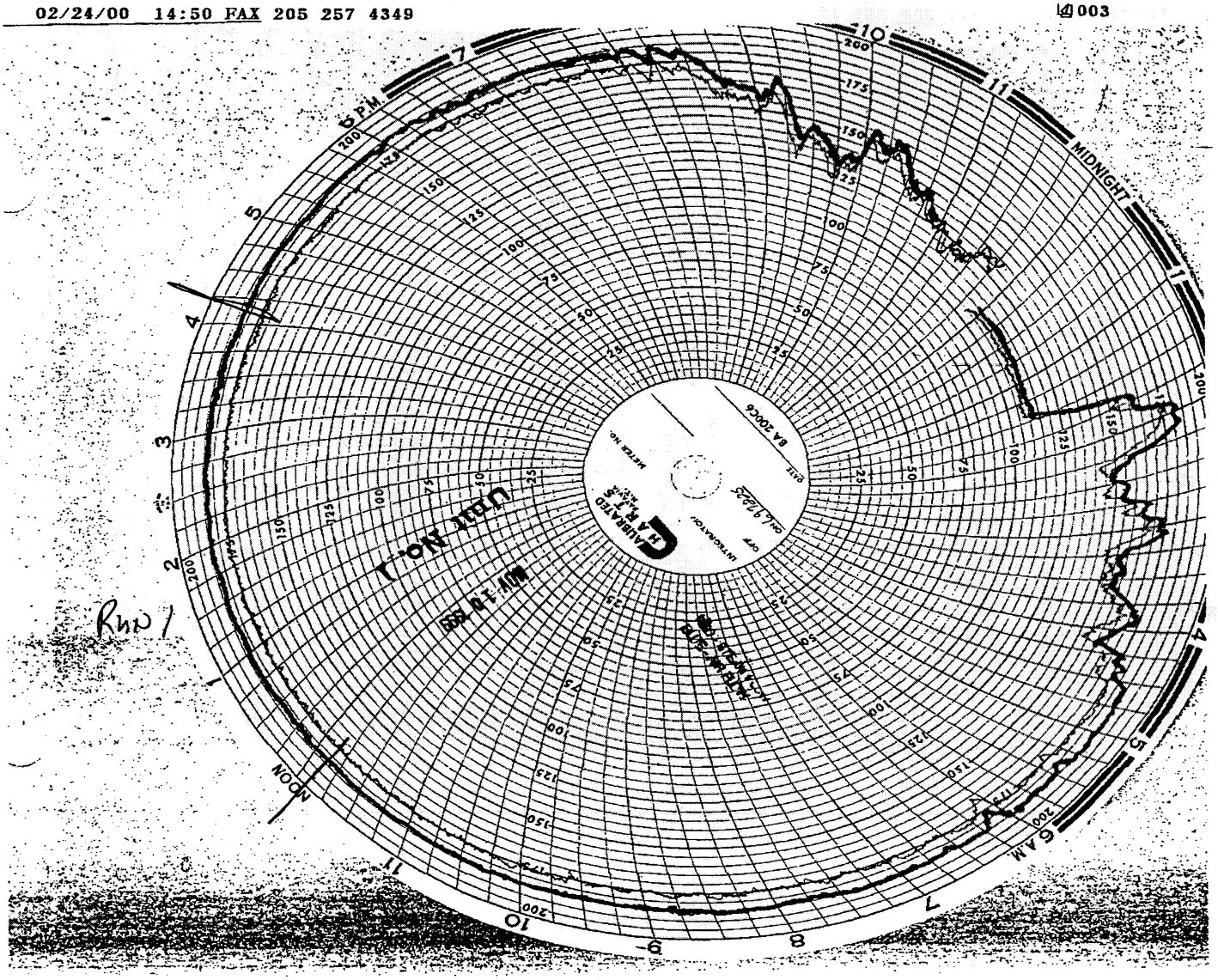
TABLE A-1
SMEPA
SUMMARY OF MERCURY SPECIATION TEST DATA AND TEST RESULTS
UNIT NO. 1 ESP OUTLET

TEST DATA:				
Test run number	1	2	3	
Location		Unit No. 1 Outlet		
Test date	11-10-99	11-11-99	11-11-99	-------
Test time period	1155-1612	0730-1155	1340-1721	-------
PROCESS DATA:				
Unit Load, MW	269	271	267	269
Coal feed rate, lb/hr.	194741	184110	171640	183497
Coal Btu content, Btu/lb.	12610	12420	12640	12557
Heat Input, 10^6 Btu/hr	2456	2287	2170	2304
SAMPLING DATA:				
Sampling duration, min.	180.0	180.0	180.0	180
Nozzle diameter, in.	0.275	0.275	0.275	0.275
Cross sectional nozzle area, sq.ft.	4.12E-04	4.12E-04	4.12E-04	4.12E-04
Barometric pressure, in. Hg	29.80	29.68	29.68	29.72
Avg. orifice press. diff., in H_2O	1.04	1.22	1.23	1.16
Avg. dry gas meter temp., deg F	84.6	77.1	80.3	80.6
Avg. abs. dry gas meter temp., deg. R	545	537	540	541
Total liquid collected by train, ml	138.1	160.7	141.4	146.7
Std. vol. of H_2O vapor coll., cu.ft.	6.5	7.6	6.7	6.9
Dry gas meter calibration factor	0.9961	0.9961	0.9961	0.996
Sample vol. at meter cond., dcf	99.854	103.876	105.286	103.005
Sample vol. at std. cond., dscf (1)	96.253	101.177	101.944	99.791
Percent of isokinetic sampling	101.5	102.8	102.8	102.4
Sample vol. at std. cond., dscm (1)	2.726	2.865	2.887	2.826
GAS STREAM COMPOSITION DATA:				
CO_2, % by volume, dry basis	12.1	12.0	12.1	12.1
O_2, % by volume, dry basis	7.1	6.9	6.5	6.8
N_2, % by volume, dry basis	80.9	81.1	81.3	81.1
Molecular wt. of dry gas, lb/lb mole	30.25	30.20	30.17	30.20
H_2O vapor in gas stream, prop. by vol.	0.063	0.070	0.061	0.065
Mole fraction of dry gas	0.937	0.930	0.939	0.935
Molecular wt. of wet gas, lb/lb mole	29.47	29.35	29.42	29.41
GAS STREAM VELOCITY AND VOLUMETRIC FLOW DATA:				
Static pressure, in. H_2O	-10.50	-10.50	-10.50	-10.50
Absolute pressure, in. Hg	29.03	28.91	28.91	28.95
Avg. temperature, deg. F	262	255	264	260
Avg. absolute temperature, deg.R	722	715	724	720
Pitot tube coefficient	0.84	0.84	0.84	0.84
Total number of traverse points	30	30	30	30
Avg. gas stream velocity, ft./sec.	32.1	33.3	33.7	33.0
Stack/duct cross sectional area, sq.ft.	432.000	432.000	432.000	432.00
Avg. gas stream volumetric flow, wacf/min.	831283	863172	872980	855812
Avg. gas stream volumetric flow, dscf/min. (1)	552136	572696	577091	567308
MERCURY LABORATORY REPORT DATA:				
Particulate bound, ug	1.5600	0.8980	2.6700	1.71
Oxidized, ug	9.9000	13.0000	11.0000	11.30
Elemental, ug	4.9200	7.8000	4.7300	5.82
Total catch, ug(3)	16.3800	21.6980	18.4000	18.83
PARTICULATE BOUND MERCURY EMISSIONS:				
Conc., ug/m^3	0.57	0.31	0.93	0.604
Conc., ug/Nm^3 (2)	0.61	0.34	0.99	0.648
Emission rate, lbs/10^{12} Btu.	0.48	0.29	0.92	0.57
Emission rate, lbs/hr	1.18E-03	6.72E-04	2.00E-03	1.29E-03
OXIDIZED MERCURY EMISSIONS:				
Conc., ug/m^3	3.63	4.54	3.81	3.99
Conc., ug/Nm^3 (2)	3.90	4.87	4.09	4.28
Emission rate, lbs/10^{12} Btu.	3.06	4.26	3.80	3.70
Emission rate, lbs/hr	7.51E-03	9.73E-03	8.24E-03	8.49E-03
ELEMENTAL MERCURY EMISSIONS:				
Conc., ug/m^3	1.81	2.72	1.64	2.06
Conc., ug/Nm^3 (2)	1.94	2.92	1.76	2.21
Emission rate, lbs/10^{12} Btu.	1.52	2.55	1.63	1.90
Emission rate, lbs/hr	3.73E-03	5.84E-03	3.54E-03	4.37E-03
TOTAL MERCURY EMISSIONS: (3)				
Conc., ug/m^3	6.01	7.57	6.37	6.65
Conc., ug/Nm^3 (2)	6.45	8.13	6.84	7.14
Emission rate, lbs/10^{12} Btu.	5.06	7.10	6.35	6.17
Emission rate, lbs/hr	1.24E-02	1.62E-02	1.38E-02	1.42E-02

(1) Standard conditions = 68 deg. F. (20 deg. C.) and 29.92 inches Hg (760mm Hg).
(2) Nm3 = Normal cubic meter (32 deg. F. (0 deg. C.) and 29.92 inches Hg (760mm Hg)).

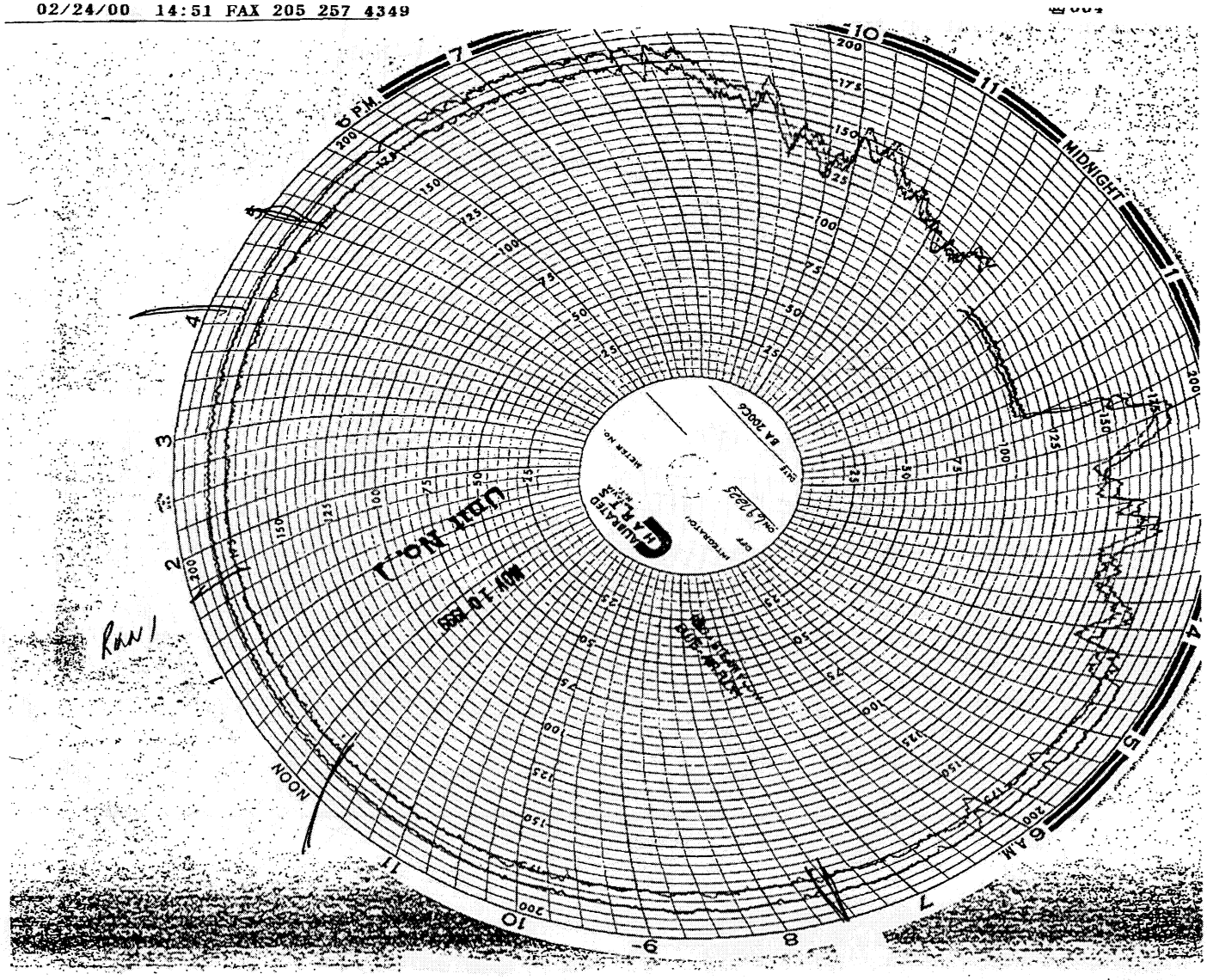
APPENDIX B
PROCESS OPERATIONS, FACILITY CEMS, AND ESP DATA

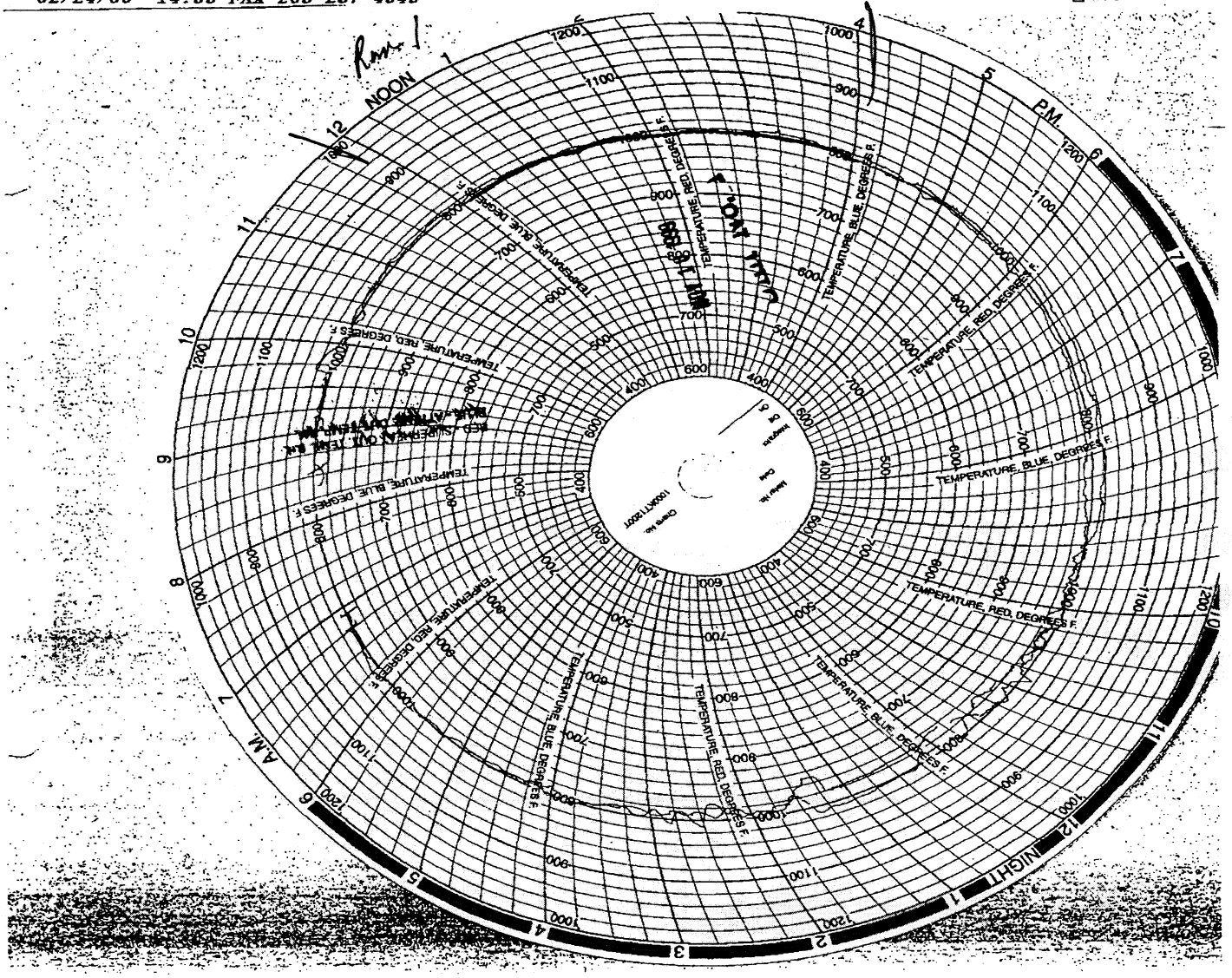
Time	Generator Meter	[illegible]	Running Station Service	4160 Volt Station Service	600 Volt Station Service	Total Station Service	[illegible]
12 MN	816764	169	973667	14607	7676	10	159
1 AM	816933	169	973677	14607	7676	10	159
2 AM	817129	196	973689	14607	7676	12	184
3 AM	817370	241	973701	14607	7676	12	229
4 AM	817614	244	973714	14607	7676	13	231
5 AM	817875	261	973727	14607	7676	13	248
6 AM	818147	272	973741	14607	7676	14	258
7 AM	818418	271	973755	14607	7676	14	257
8 AM	818690	272	973769	14607	7676	14	258
9 AM	818961	271	973782	14607	7676	13	258
10 AM	819233	272	973796	14607	7676	14	258
11 AM	819506	273	973810	14607	7676	14	259
12 Noon	819778	272	973824	14607	7676	14	258
1 PM	820049	271	973837	14607	7676	13	258
2 PM	820321	272	973851	14607	7676	14	258
3 PM	820592	271	973865	14607	7676	14	257
4 PM	820864	272	973878	14607	7676	13	259
5 PM	821135	271	973892	14607	7676	14	257
6 PM	821406	271	973906	14607	7676	14	257
7 PM	821676	270	973919	14607	7676	13	257
8 PM	821947	271	973933	14607	7676	14	257
9 PM	822205	258	973947	14607	7676	14	244
10 PM	822426	221	973959	14607	7676	12	209
11 PM	822642	216	973970	14607	7676	11	205
12 MN	822837	195	973981	14607	7676	11	184
Totals		6073	314	0	0	314	5759



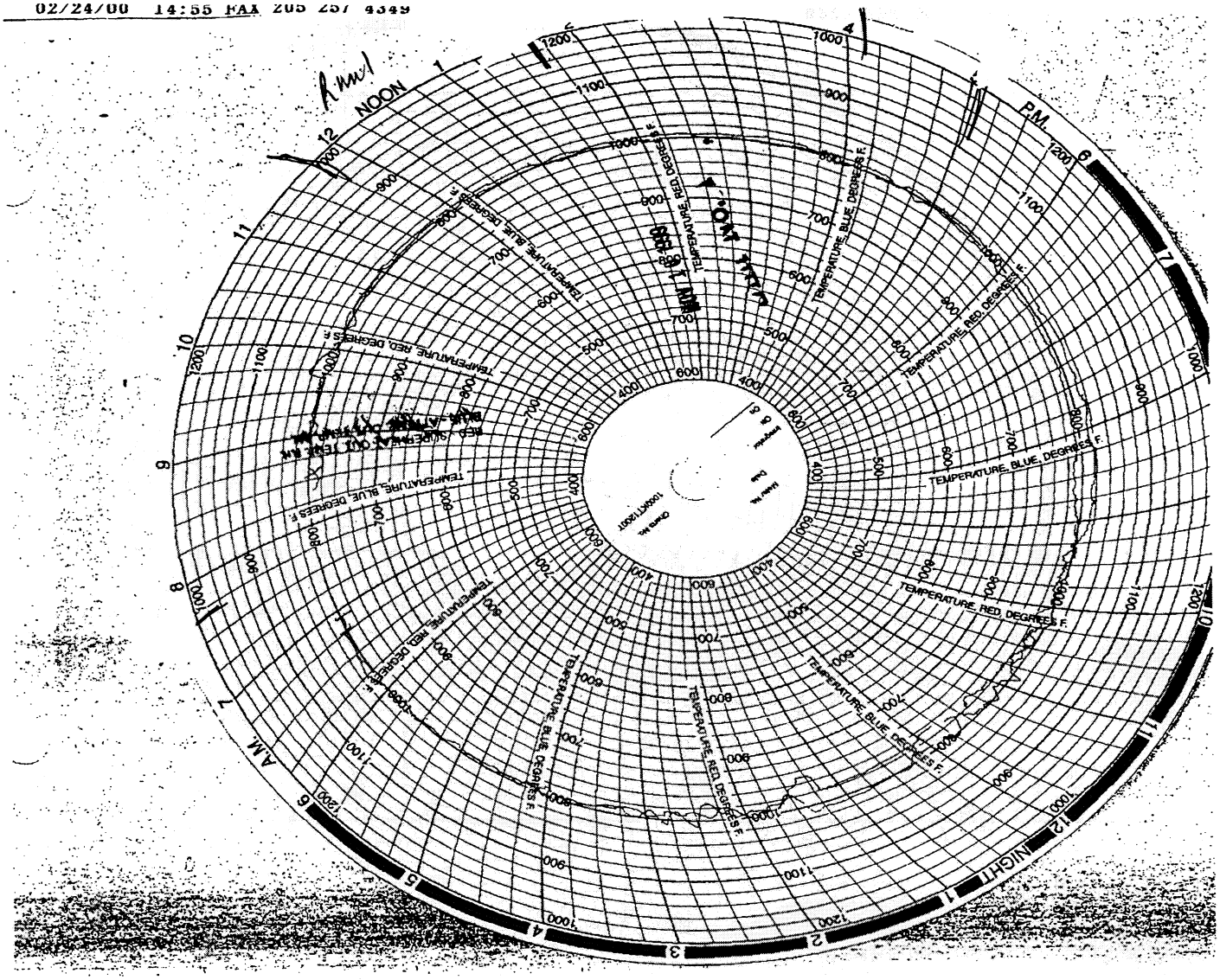
RED - MAIN STEAM FLOW

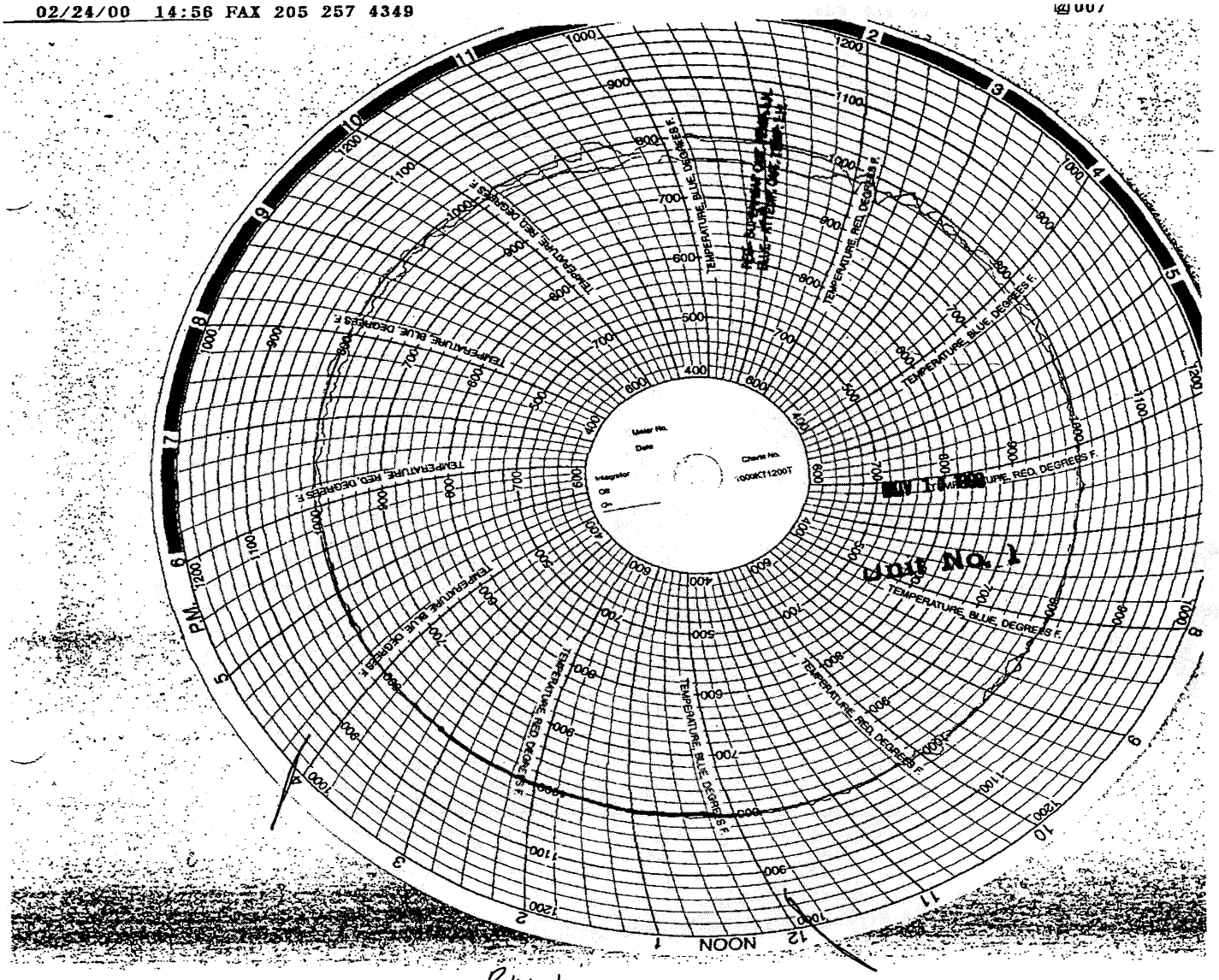
VALUE X 10,000


6 P.M.
MIDNIGHT
6 A.M.
NOON
Unit No. 1
Run 1



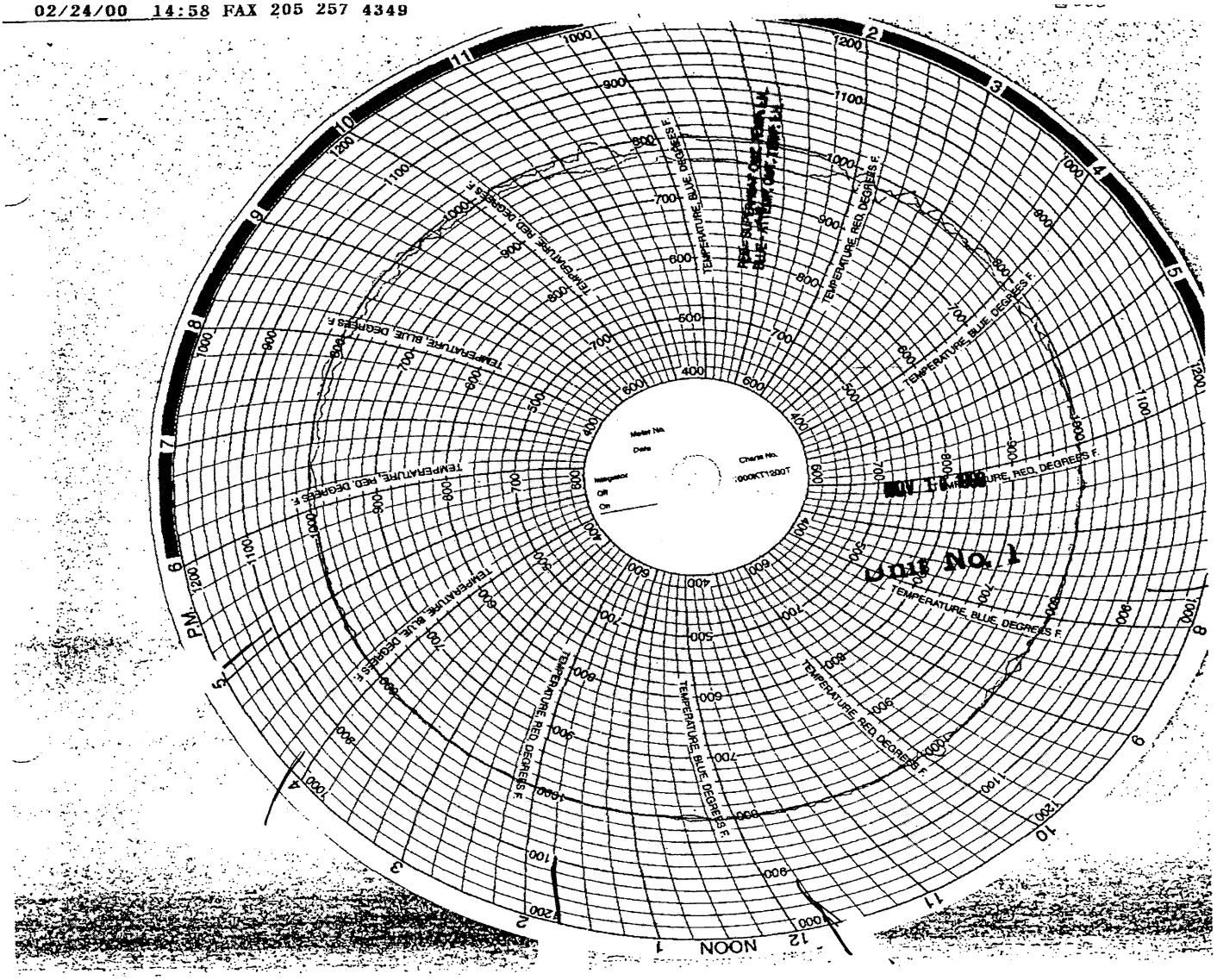
RED - SUPERHEAT RIGHT HAND TEMP.


NOON
P.M.
A.M.
MIDNIGHT
TEMPERATURE, BLUE, DEGREES F.
TEMPERATURE, RED, DEGREES F.



RUN 1

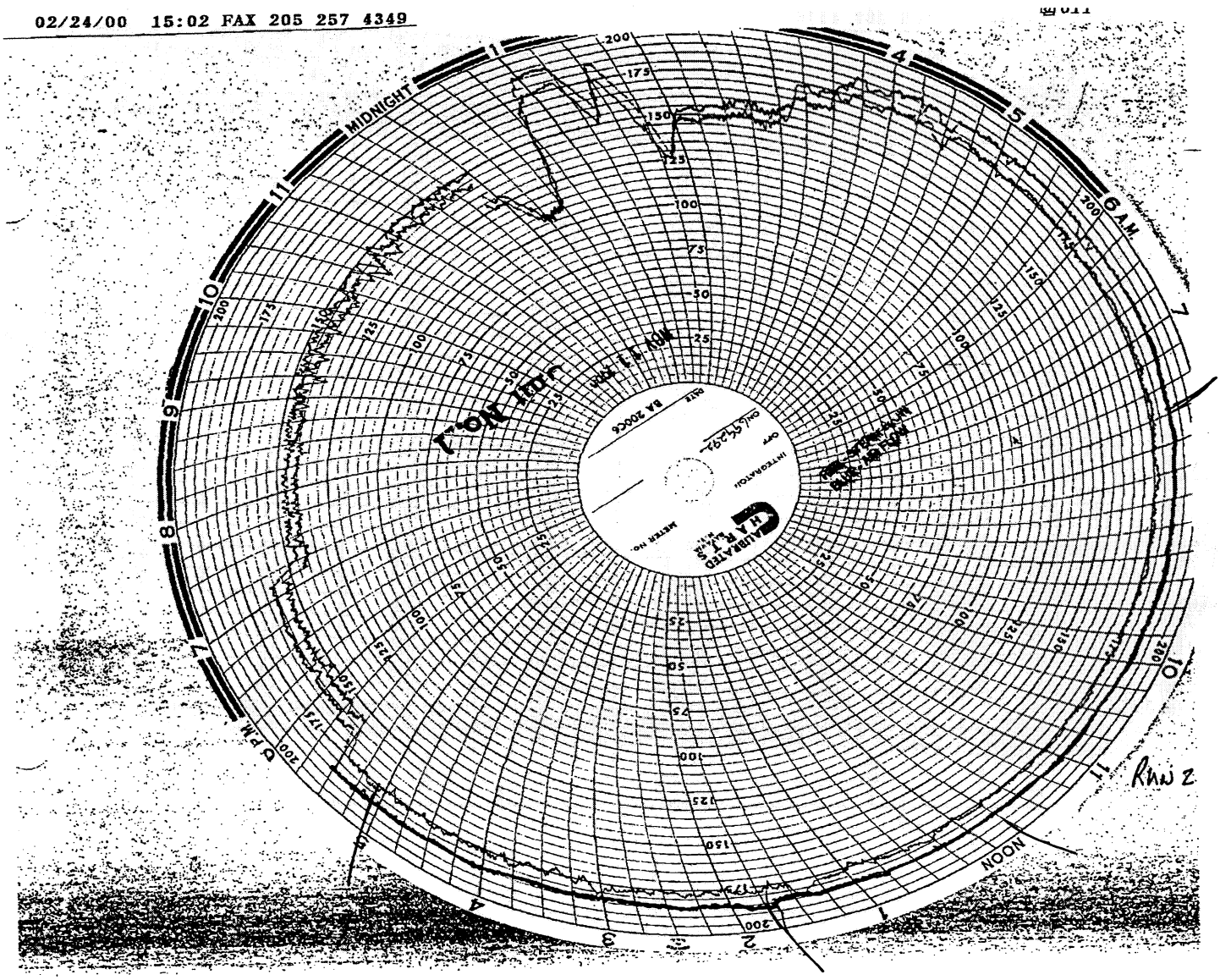
RED - SUPERHEAT OUTLET TEMP, LEFT HAND


NOON
PM
TEMPERATURE, BLUE, DEGREES F.
TEMPERATURE, RED, DEGREES F.
Unit No. 1
Chart No.
Date
Refrigerator

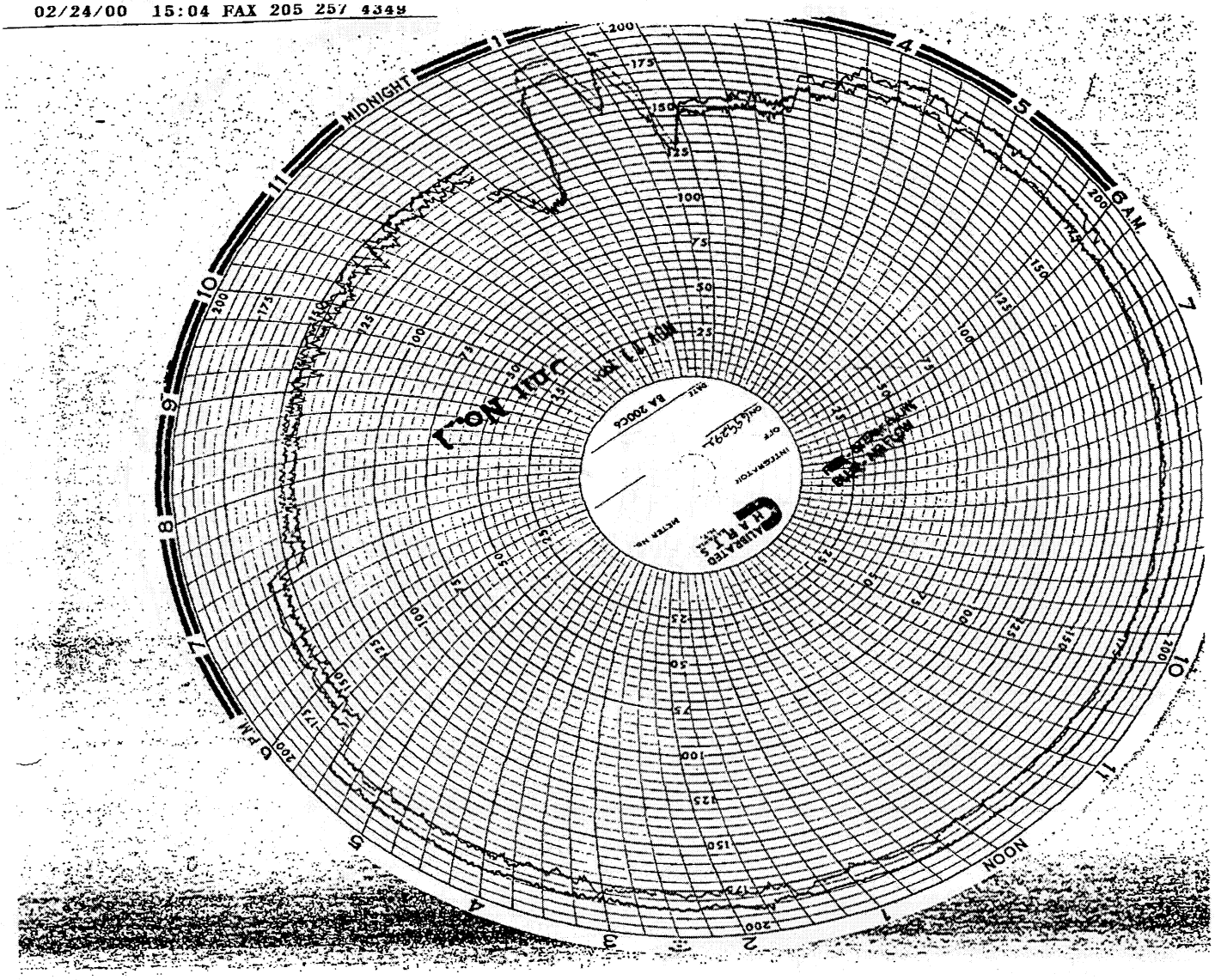
Run 1

Time	Generator Meter	[illegible]	Hangard Station Service	4160 Volt Station Service	600 Volt Station Service	Total Station Service	[illegible]
12 MN	822837	195	973981	14607	7676	11	184
1AM	823042	205	973992	14607	7676	11	194
2AM	823285	243	974005	14607	7676	13	230
3AM	823518	233	974017	14607	7676	12	221
4AM	823777	259	974030	14607	7676	13	246
5AM	824047	270	974044	14607	7676	14	256
6AM	824319	272	974058	14607	7676	14	258
7AM	824591	272	974072	14607	7676	14	258
8AM	824864	273	974085	14607	7676	13	260
9AM	825137	273	974099	14607	7676	14	259
10AM	825411	274	974113	14607	7676	14	260
11AM	825684	273	974127	14607	7676	14	259
12 Noon	825957	273	974140	14607	7676	13	260
1PM	826229	272	974154	14607	7676	14	258
2PM	826502	273	974168	14607	7676	14	259
3PM	826774	272	974182	14607	7676	14	258
4PM	827046	272	974196	14607	7676	14	259
5PM	827318	272	974210	14607	7676	14	258
6PM	827575	257	974223	14607	7676	13	244
7PM	827817	242	974235	14607	7676	12	230
8PM	828042	225	974247	14607	7676	12	213
9PM	828264	222	974258	14607	7676	11	211
10PM	828485	221	974270	14607	7676	12	209
11PM	828703	218	974282	14607	7676	12	206
12 MN	828925	222	974294	14607	7676	12	210
Totals		6088	313	0	0	313	5775

R-2



RED - MAIN STEAM FLOW


NOON
1
2
3
4
5
6 AM
7
8
9
10
11
MIDNIGHT
1
2
3
4
5
6 PM
7
8
9
10
11
200
175
150
125
100
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CALIBRATED
CHART
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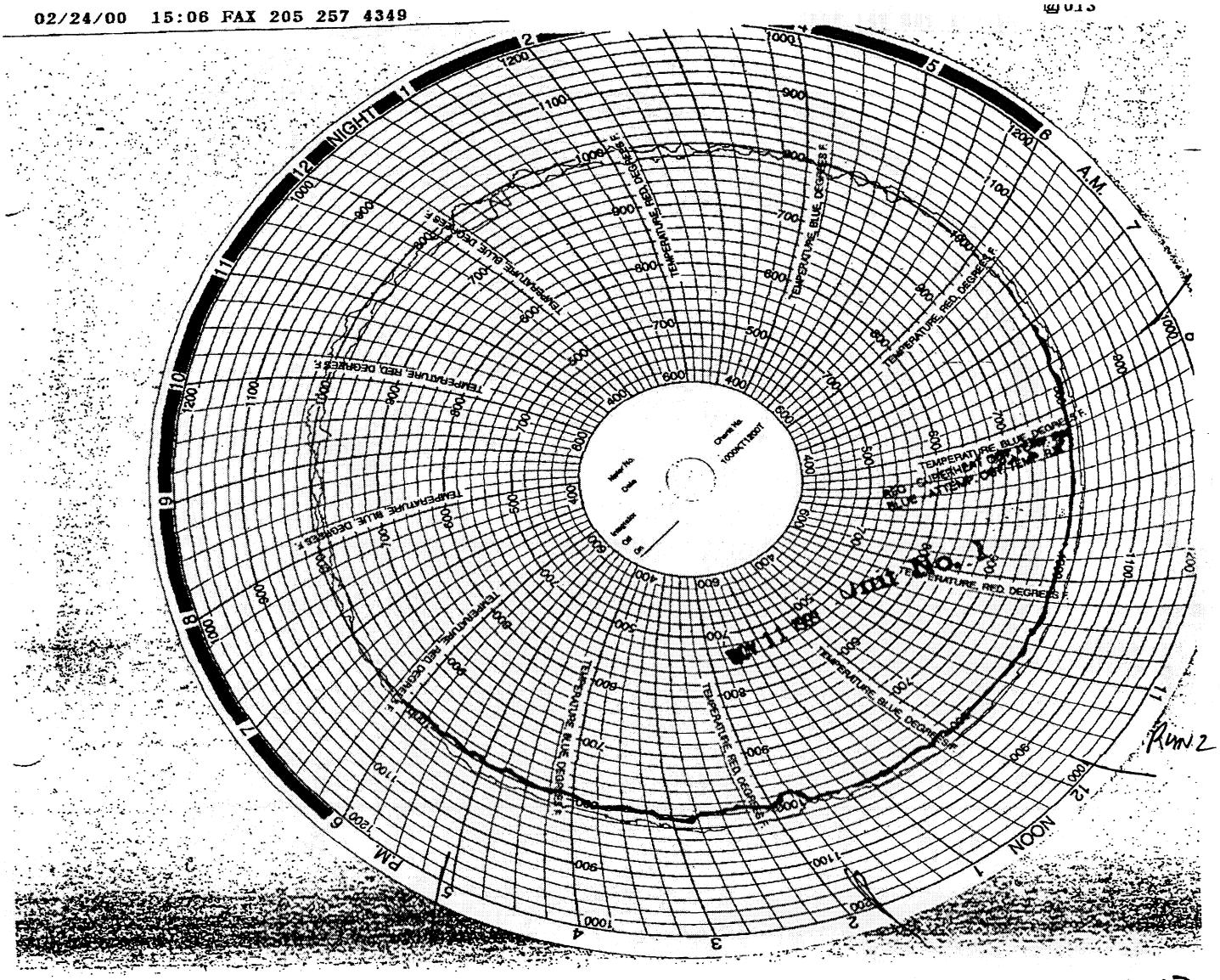
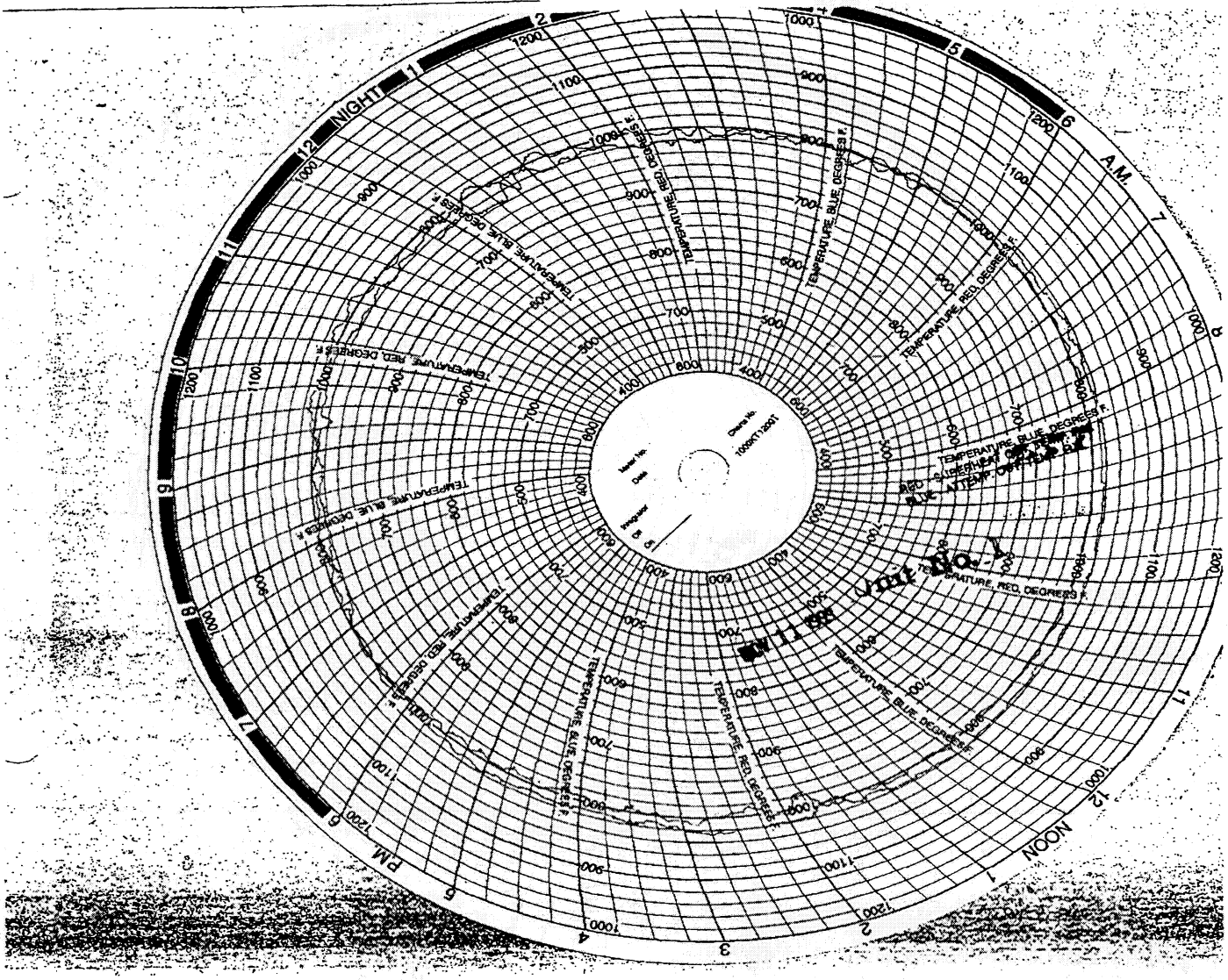
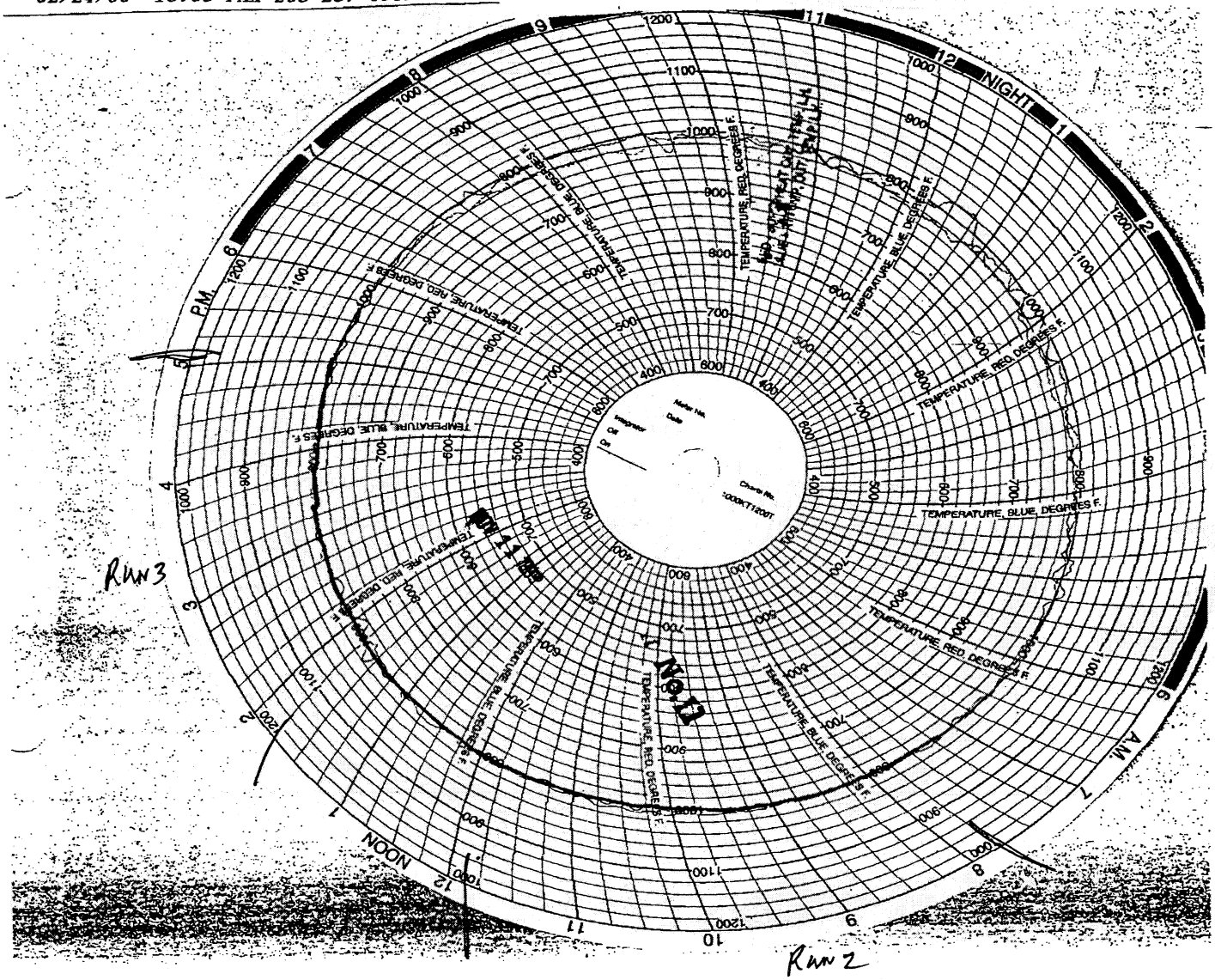
MOTION
MOTION

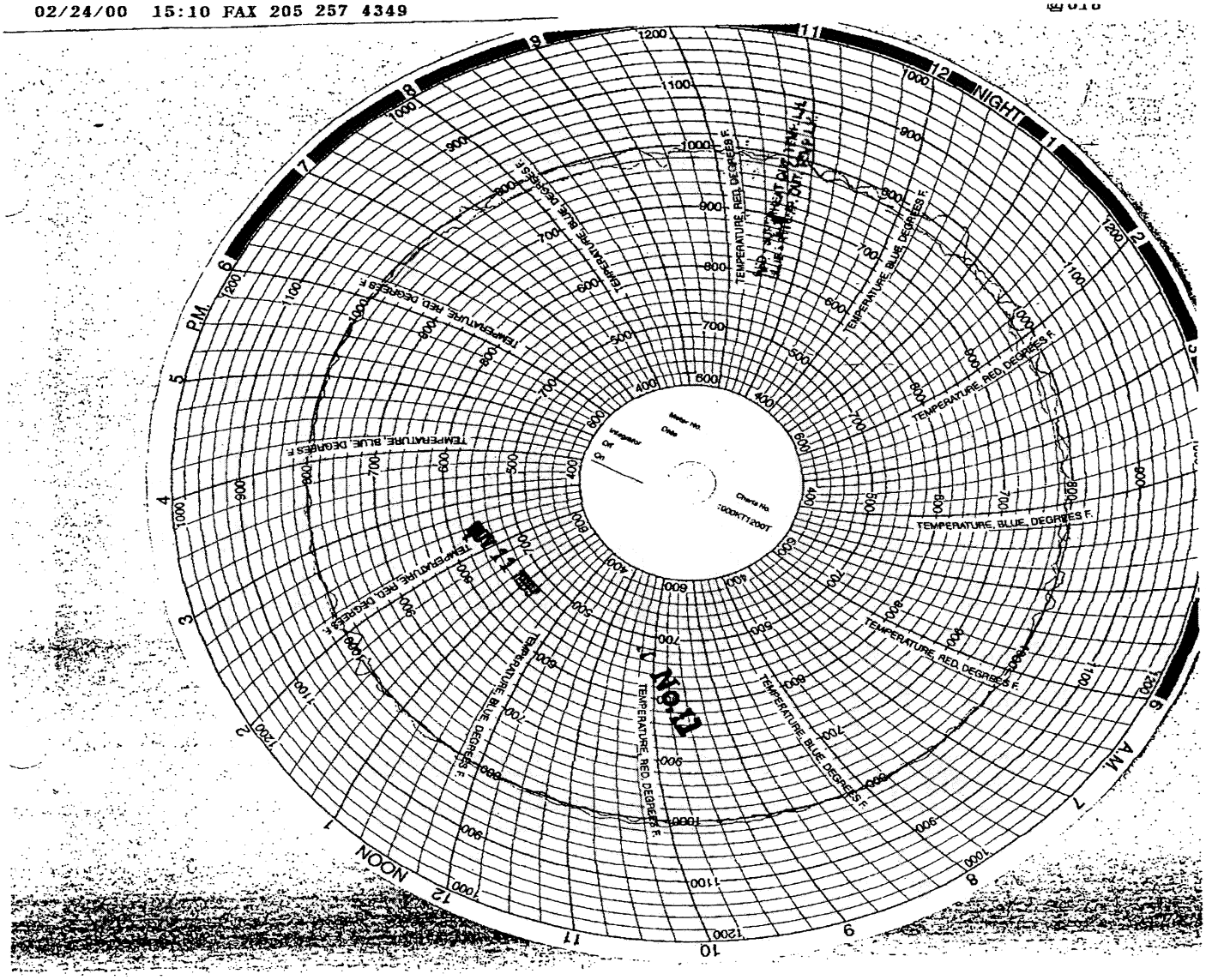


RED - SUPERHEAT OUTLET TEMP, RIGHT HAND


NIGHT
A.M.
NOON
P.M.
TEMPERATURE, BLUE, DEGREES F.
TEMPERATURE, RED, DEGREES F.
Meter No.
Date
Chart No.
1000KT1201
Integrator
Off
On



RED - SUPERHEAT OUTLET TEMP, LEFT HAND


NIGHT
A.M.
NOON
P.M.
TEMPERATURE, RED, DEGREES F.
TEMPERATURE, BLUE, DEGREES F.
Meter No.
Date
Integrator
Chart No.
200KTT1200T

ALABAMA POWER COMPANY

CEMS CORRECTED DATA SUMMARY

ORIS CODE/PLANT: 0026 GASTON SITE: 1-2

INVALID DATA = -999

11/10/99

RUN DATE: 30-NOV-99
TIME: 15:27

HR	FR	SO2 1-2 (PPM)	NOX 1-2 (PPM)	CO2 1-2 (%)	FLOW 1-2 (KCFH)	CO2 1-2 (TONS)	NOX 1-2 (#MBTU)	SO2 1-2 (#/HR)	LOAD 1 (MW)	LOAD 2 (MW)	HEATIN 1 (MMBTU)	HEATIN 2 (MMBTU)
0	4	534.7	193.1	9.9	57506.	324.5	0.419	5104.2	167.	165.	1590.8	1571.8
1	4	502.4	205.2	9.9	64006.	361.2	0.445	5338.0	193.	190.	1773.9	1746.3
2	4	508.4	253.6	10.3	81861.	480.6	0.529	6908.6	239.	240.	2337.2	2346.9
3	4	501.7	254.8	10.3	81506.	478.5	0.531	6788.0	242.	241.	2336.7	2327.1
4	4	502.5	258.5	10.4	83268.	493.6	0.534	6945.8	259.	246.	2467.3	2343.5
5	4	492.4	265.0	10.3	88774.	521.2	0.552	7256.2	269.	266.	2554.0	2525.6
6	4	481.3	261.7	10.3	88970.C	522.3	0.546	7108.3	269.	265.	2564.5	2526.4
7	4	471.0C	247.5C	10.1C	89718.	516.5C	0.526C	7014.7C	270.	265.	2540.5	2493.5
8	4	446.7	258.6	10.2	90218.	524.5	0.544	6689.9	268.	267.	2560.9	2551.3
9	4	413.3	253.9	10.5	89192.	533.8	0.519	6119.3	270.	266.	2620.8	2581.9
10	4	406.5	254.0	10.6	89167.	538.7	0.514	6016.9	270.	265.	2649.9	2600.8
11	4	404.8	259.9	10.6	88679.	535.8	0.526	5958.9	270.	265.	2635.4	2586.6
12	4	403.1	262.1	10.6	88203.	532.9	0.531	5902.1	269.	265.	2616.5	2577.5
13	4	405.5	273.1	10.4	88647.	525.5	0.564	5967.1	269.	266.	2575.2	2546.4
14	4	421.1	283.3	10.6	92657.	559.8	0.574	6477.0	269. 269	266.	2743.4	2712.9
15	4	427.5	278.8	10.6	92217.	557.2	0.585	6544.2	269.	266.	2730.4	2699.9
16	4	433.6	276.9	10.7	94133.	574.1	0.576	6775.5	269.	266.	2813.4	2782.1
17	4	431.0	281.7	10.7	95035.	579.6	0.585	6799.4	269.	266.	2840.4	2808.7
18	4	535.0	276.7	10.6	94868.	573.2	0.581	8425.2	268.	267.	2798.5	2788.0
19	4	578.7	262.4	10.2	95756.	556.7	0.572	9198.7	268.	265.	2728.3	2697.7
20	4	656.6	269.7	10.3	95175.	558.8	0.582	10373.7	256.	266.	2670.8	2775.1
21	4	666.8	256.7	10.2	91315.	530.9	0.559	10107.5	220.	267.	2337.5	2836.8
22	4	619.0	250.1	10.0	90093.	513.5	0.556	9257.4	213.	260.	2253.8	2751.2
23	4	523.2	217.8	9.3	81765.	433.4	0.521	7101.4	193.	197.	2090.5	2133.9
DAILY % AVAILABILITY		100.0		100.0	100.0		100.0					
YTD % AVAILABILITY		99.9		99.9	99.8		99.9					

Run 1-1 Avg = 2695.8

STATUS CODES: (*) = GREATER THAN 2 REPETITIONS, P = POWER DOWN, D = CHANNEL DISABLED, B = BAD STATUS CONDITION, C = CALIBRATION IN PROGRESS, (-) = AVG < MINIMUM, (+) = AVG > MAXIMUM, R = RATE CHANGE EXCEEDED, ( ) = GOOD AVERAGE, S = SUBSTITUTED DATA

ALABAMA POWER COMPANY

CEMS CORRECTED DATA SUMMARY

ORIS CODE/PLANT: 0026 GASTON SITE: 1-2

INVALID DATA = -999

11/10/99

RUN DATE: 30-NOV-99
TIME: 15:27

HR	FR	SO2 (LBS/MMBTU)
0	4	1.61
1	4	1.52
2	4	1.47
3	4	1.46
4	4	1.44
5	4	1.43
6	4	1.40
7	4	1.39
8	4	1.31
9	4	1.18
10	4	1.15
11	4	1.14
12	4	1.14
13	4	1.17
14	4	1.19
15	4	1.21
16	4	1.21
17	4	1.20
18	4	1.51
19	4	1.70
20	4	1.90
21	4	1.95
22	4	1.85
23	4	1.68

ALABAMA POWER COMPANY

ALABAMA POWER COMPANY

CEMS CORRECTED DATA SUMMARY

ORIS CODE/PLANT: 0026 GASTON SITE: 1-2

INVALID DATA = -999

11/11/99

RUN DATE: 30-NOV-99
TIME: 15:31

HR	FR	SO2 1-2 (PPM)	NOX 1-2 (PPM)	CO2 1-2 (%)	FLOW 1-2 (KCFH)	CO2 1-2 (TONS)	NOX 1-2 (#MBTU)	SO2 1-2 (#/HR)	LOAD 1 (MW)	LOAD 2 (MW)	HEATIN 1 (MMBTU)	HEATIN 2 (MMBTU)
0	4	439.0	183.5	8.3	70693.	334.4	0.492	5151.7	203.	113.	2094.0	1165.6
1	4	401.0	184.9	7.2	70520.	289.4	0.571	4694.2	241.	60.-	2258.4	562.2
2	4	244.2	114.7	4.0	80076.	182.6	0.638	3246.1	230.	0.-	1779.4	0.0
3	4	256.2	114.2	3.9	87335.	194.1	0.652	3714.3	257.	0.-	1892.2	0.0
4	4	262.1	116.8	3.9	90166.	200.4	0.666	3923.0	268.	0.-	1953.5	0.0
5	4	249.3	114.1	3.8	89812.	194.5	0.668	3716.8	269.	0.-	1896.0	0.0
6	4	263.9	121.3	4.1	95963.C	224.3	0.658	4203.9	270.	0.-	2185.8	0.0
7	4	320.8C	157.1C	5.4C	83802.	257.9C	0.648C	4462.7C	271.	0.-	2514.0	0.0
8	4	204.5	104.1	3.5	109005.	217.5	0.662	3700.4	271.	0.-	2119.5	0.0
9	4	192.5	102.6	3.4	114007.	220.9	0.671	3643.1	271.	0.-	2153.4	0.0
10	4	176.4	109.9	3.7	110441.	232.9	0.661	3234.0	271. 271	0.-	2270.1	0.0
11	4	395.7	257.8	8.7	58927.	292.2	0.659	3870.7	271.	0.-	2848.0	0.0
12	4	441.6	291.6	10.1	50379.	290.0	0.642	3693.1	270.	0.-	2826.7	0.0
13	4	428.3	296.1	9.8	51220.	286.1	0.672	3641.6	271.	0.-	2788.6	0.0
14	4	431.5	268.7	10.1	50920.	293.1	0.592	3647.3	269.	0.-	2857.1	0.0
15	4	428.3	292.5	10.1	51127.	294.3	0.644	3635.0	270. 266.8	0.-	2868.7	0.0
16	4	426.9	317.7	10.2	50225.	292.0	0.693	3559.2	269.	0.-	2846.0	0.0
17	4	421.4	306.9	10.0	48903.	278.7	0.683	3420.9	255.	0.-	2716.7	0.0
18	4	408.8	300.8	10.0	46018.	262.3	0.669	3122.8	240.	0.-	2556.5	0.0
19	4	399.5	281.8	9.5	43881.	237.6	0.660	2910.1	224.	0.-	2315.9	0.0
20	4	409.9	286.9	9.7	44529.	246.2	0.658	3029.9	219.	0.-	2399.5	0.0
21	4	676.7	206.4	9.6	44215.	241.9	0.479	4966.8	219.	0.-	2358.1	0.0
22	4	721.4	201.6	9.4	43721.	234.3	0.477	5235.7	217.	0.-	2283.1	0.0
23	4	724.9	203.8	9.4	44636.	239.2	0.482	5371.2	220.	0.-	2330.9	0.0
DAILY % AVAILABILITY		100.0		100.0	100.0		100.0					
YTD % AVAILABILITY		99.9		99.9	99.8		99.9					

Run 2-1 Avg = 2455

RUN 3-1 Avg = 2815

STATUS CODES: (*) = GREATER THAN 2 REPETITIONS, P = POWER DOWN, D = CHANNEL DISABLED, B = BAD STATUS CONDITION, C = CALIBRATION IN PROGRESS, (-) = AVG < MINIMUM, (+) = AVG > MAXIMUM, R = RATE CHANGE EXCEEDED, ( ) = GOOD AVERAGE, S = SUBSTITUTED DATA

ALABAMA POWER COMPANY

CEMS CORRECTED DATA SUMMARY

ORIS CODE/PLANT: 0026 GASTON SITE: 1-2

INVALID DATA = -999

11/11/99

RUN DATE: 30-NOV-99
TIME: 15:31

HR	FR	SO2 (LBS/MMBTU)
0	4	1.58
1	4	1.66
2	4	1.82
3	4	1.96
4	4	2.01
5	4	1.96
6	4	1.92
7	4	1.78
8	4	1.75
9	4	1.69
10	4	1.42
11	4	1.36
12	4	1.31
13	4	1.31
14	4	1.28
15	4	1.27
16	4	1.25
17	4	1.26
18	4	1.22
19	4	1.26
20	4	1.26
21	4	2.11
22	4	2.29
23	4	2.30

GENERAL TEST LABORATORY
P.O. Box 2641
BIRMINGHAM, ALABAMA 35291
(205) 664 - 6081

CERTIFICATE OF ANALYSIS

TO: Mr. Rick Wilson
Address: E. C. Gaston Steam Plant

Description : Gaston Unit 1 Mercury Study

Customer Account : GAS01SP
Sample Date : 10-Nov-99
Laboratory Account : GAS01SP
Received Date : 15-Nov-99

Run 1
Laboratory ID Number : AD37519

Test Name	Reference	Result	Units
Dry Basis			
Ash, Dry	ASTM D 5142	13.43	% By Weight
Heat of Combustion, Dry	ASTM D 5865	13434	Btu/lb
Carbon, Dry Basis	ASTM D 5373	77.53	% By Weight
Hydrogen, Dry Basis	ASTM D 5373	4.14	% By Weight
Nitrogen, Dry Basis	ASTM D 5373	1.48	% By Weight
Oxygen, Dry Basis	ASTM D 3176	2.61	% By Weight
Chlorine, Dry Basis	ASTM D 2361	126.	mg/kg
Sulfur, Dry Basis	ASTM D 4239	0.81	% By Weight
Mercury in Coal, Dry	EPA 3051	0.054	mg/kg
As Received			
Moisture, Total	ASTM D 2013	7.86	% By Weight
Ash, As Received	ASTM D 5142	12.37	% By Weight
Heat of Combustion, As Received	ASTM D 5865	12378	Btu/lb
Carbon, As Received	ASTM D 5373	71.44	% By Weight
Hydrogen, As Received	ASTM D 5373	3.81	% By Weight
Nitrogen, As Received	ASTM D 5373	1.36	% By Weight
Oxygen, As Received	ASTM D 3176	2.40	% By Weight
Chlorine, As Received	ASTM D 2361	116.	mg/kg
Sulfur, As Received	ASTM D 4239	0.75	% By Weight
Mercury in Coal, As Received	EPA 3051	0.05	mg/kg
Ignited as Element			
Aluminum, Ignited Basis	ASTM D 3682	14.46	% By Weight
Calcium, Ignited Basis	ASTM D 3682	2.64	% By Weight
Iron, Ignited Basis	ASTM D 3682	4.82	% By Weight
Magnesium, Ignited Basis	ASTM D 3682	0.84	% By Weight
Phosphorus, Ignited Basis	ASTM D 3682	0.22	% By Weight

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments:

Ms. Donna Hill

Mr. Roy Clarkson

Quality Control _____ **Supervision** _____ Date : 12/3/99
CC:

smk/coa

GENERAL TEST LABORATORY
P.O. Box 2641
BIRMINGHAM, ALABAMA 35291
(205) 664 - 6081

CERTIFICATE OF ANALYSIS

TO: Mr. Rick Wilson
Address: E. C. Gaston Steam Plant

Description : Gaston Unit 1 Mercury Study

Customer Account : GAS01SP
Sample Date : 10-Nov-99
Laboratory Account : GAS01SP
Received Date : 15-Nov-99

Run 1
Laboratory ID Number : AD37519

Test Name	Reference	Result	Units
Potassium, Ignited Basis	ASTM D 3682	1.86	% By Weight
Silicon, Ignited Basis	ASTM D 3682	22.97	% By Weight
Sodium, Ignited Basis	ASTM D 3682	0.29	% By Weight
Sulfur, Ignited Basis	ASTM D 5016	1.13	% By Weight
Titanium, Ignited Basis	ASTM D 3682	0.83	% By Weight
Ignited as Oxide			
Aluminum Oxide, Ignited	ASTM D 3682	27.32	% By Weight
Calcium Oxide, Ignited	ASTM D 3682	3.69	% By Weight
Iron Oxide, Ignited	ASTM D 3682	6.89	% By Weight
Magnesium Oxide, Ignited	ASTM D 3682	1.39	% By Weight
Phosphorus Pentoxide, Ignited	ASTM D 3682	0.50	% By Weight
Potassium Oxide, Ignited	ASTM D 3682	2.24	% By Weight
Silicon Dioxide, Ignited	ASTM D 3682	49.14	% By Weight
Sodium Oxide, Ignited	ASTM D 3682	0.39	% By Weight
Sulfur Trioxide, Ignited	ASTM D 5016	2.83	% By Weight
Titanium Oxide, Ignited	ASTM D 3682	1.38	% By Weight
Sum, Major Oxides, Ignited Basis		95.8	% By Weight
General			
Heat of Combustion, MAF	ASTM D 5865	15518	Btu/lb
Sulfur - lbs/mmBTU	ASTM D 3180	0.603	lbs/mmBTU
Coal Contract Sulf - #/mmBtu	ASTM D 3180	0.603	lbs/mmBTU

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments:

Ms. Donna Hill

Mr. Roy Clarkson

Quality Control _____ **Supervision** _____ Date : 12/3/99
CC:

smk/coa

GENERAL TEST LABORATORY
P.O. Box 2641
BIRMINGHAM, ALABAMA 35291
(205) 664 - 6081

CERTIFICATE OF ANALYSIS

TO: Mr. Rick Wilson
Address: E. C. Gaston Steam Plant

Customer Account : GAS01SP
Sample Date : 11-Nov-99
Laboratory Account : GAS01SP
Received Date : 15-Nov-99

Description : Gaston Unit 1 Mercury Study

Run 2
Laboratory ID Number : AD37520

Test Name	Reference	Result	Units
Dry Basis			
Ash, Dry	ASTM D 5142	14.31	% By Weight
Heat of Combustion, Dry	ASTM D 5865	13357	Btu/lb
Carbon, Dry Basis	ASTM D 5373	75.82	% By Weight
Hydrogen, Dry Basis	ASTM D 5373	3.87	% By Weight
Nitrogen, Dry Basis	ASTM D 5373	1.48	% By Weight
Oxygen, Dry Basis	ASTM D 3176	3.53	% By Weight
Chlorine, Dry Basis	ASTM D 2361	140.	mg/kg
Sulfur, Dry Basis	ASTM D 4239	0.99	% By Weight
Mercury in Coal, Dry	EPA 3051	0.067	mg/kg
As Received			
Moisture, Total	ASTM D 2013	7.13	% By Weight
Ash, As Received	ASTM D 5142	13.29	% By Weight
Heat of Combustion, As Received	ASTM D 5865	12405	Btu/lb
Carbon, As Received	ASTM D 5373	70.41	% By Weight
Hydrogen, As Received	ASTM D 5373	3.59	% By Weight
Nitrogen, As Received	ASTM D 5373	1.37	% By Weight
Oxygen, As Received	ASTM D 3176	3.28	% By Weight
Chlorine, As Received	ASTM D 2361	130.	mg/kg
Sulfur, As Received	ASTM D 4239	0.92	% By Weight
Mercury in Coal, As Received	EPA 3051	0.06	mg/kg
Ignited as Element			
Aluminum, Ignited Basis	ASTM D 3682	13.70	% By Weight
Calcium, Ignited Basis	ASTM D 3682	2.26	% By Weight
Iron, Ignited Basis	ASTM D 3682	5.88	% By Weight
Magnesium, Ignited Basis	ASTM D 3682	0.86	% By Weight
Phosphorus, Ignited Basis	ASTM D 3682	0.22	% By Weight

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments:

Ms. Donna Hill

Mr. Roy Clarkson

Quality Control _____ **Supervision** _____ Date : 12/3/99
CC:

smk/coa

GENERAL TEST LABORATORY
P.O. Box 2641
BIRMINGHAM, ALABAMA 35291
(205) 664 - 6081

CERTIFICATE OF ANALYSIS

TO: Mr. Rick Wilson
Address: E. C. Gaston Steam Plant

Description : Gaston Unit 1 Mercury Study

Run 2
Laboratory ID Number : AD37520

Customer Account : GAS01SP
Sample Date : 11-Nov-99
Laboratory Account : GAS01SP
Received Date : 15-Nov-99

Test Name	Reference	Result	Units
Potassium, Ignited Basis	ASTM D 3682	2.07	% By Weight
Silicon, Ignited Basis	ASTM D 3682	23.93	% By Weight
Sodium, Ignited Basis	ASTM D 3682	0.29	% By Weight
Sulfur, Ignited Basis	ASTM D 5016	0.93	% By Weight
Titanium, Ignited Basis	ASTM D 3682	0.80	% By Weight
Ignited as Oxide			
Aluminum Oxide, Ignited	ASTM D 3682	25.89	% By Weight
Calcium Oxide, Ignited	ASTM D 3682	3.16	% By Weight
Iron Oxide, Ignited	ASTM D 3682	8.41	% By Weight
Magnesium Oxide, Ignited	ASTM D 3682	1.43	% By Weight
Phosphorus Pentoxide, Ignited	ASTM D 3682	0.50	% By Weight
Potassium Oxide, Ignited	ASTM D 3682	2.49	% By Weight
Silicon Dioxide, Ignited	ASTM D 3682	51.20	% By Weight
Sodium Oxide, Ignited	ASTM D 3682	0.39	% By Weight
Sulfur Trioxide, Ignited	ASTM D 5016	2.33	% By Weight
Titanium Oxide, Ignited	ASTM D 3682	1.33	% By Weight
Sum, Major Oxides, Ignited Basis		97.1	% By Weight
General			
Heat of Combustion, MAF	ASTM D 5865	15588	Btu/lb
Sulfur - lbs/mmBTU	ASTM D 3180	0.741	lbs/mmBTU
Coal Contract Sulf - #/mmBtu	ASTM D 3180	0.741	lbs/mmBTU

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments:

Ms. Donna Hill

Mr. Roy Clarkson

Quality Control _____ **Supervision** _____ Date : 12/3/99
CC:

smk/coa

GENERAL TEST LABORATORY
P.O. Box 2641
BIRMINGHAM, ALABAMA 35291
(205) 664 - 6081

CERTIFICATE OF ANALYSIS

TO: Mr. Rick Wilson
Address: E. C. Gaston Steam Plant

Description : Gaston Unit 1 Mercury Study

Run 3
Laboratory ID Number : AD37521

Customer Account : GAS01SP
Sample Date : 11-Nov-99
Laboratory Account : GAS01SP
Received Date : 15-Nov-99

Test Name	Reference	Result	Units
Dry Basis			
Ash, Dry	ASTM D 5142	13.07	% By Weight
Heat of Combustion, Dry	ASTM D 5865	13629	Btu/lb
Carbon, Dry Basis	ASTM D 5373	77.69	% By Weight
Hydrogen, Dry Basis	ASTM D 5373	3.85	% By Weight
Nitrogen, Dry Basis	ASTM D 5373	1.50	% By Weight
Oxygen, Dry Basis	ASTM D 3176	3.04	% By Weight
Chlorine, Dry Basis	ASTM D 2361	170.	mg/kg
Sulfur, Dry Basis	ASTM D 4239	0.85	% By Weight
Mercury in Coal, Dry	EPA 3051	0.057	mg/kg
As Received			
Moisture, Total	ASTM D 2013	7.13	% By Weight
Ash, As Received	ASTM D 5142	12.14	% By Weight
Heat of Combustion, As Received	ASTM D 5865	12657	Btu/lb
Carbon, As Received	ASTM D 5373	72.15	% By Weight
Hydrogen, As Received	ASTM D 5373	3.58	% By Weight
Nitrogen, As Received	ASTM D 5373	1.39	% By Weight
Oxygen, As Received	ASTM D 3176	2.82	% By Weight
Chlorine, As Received	ASTM D 2361	158.	mg/kg
Sulfur, As Received	ASTM D 4239	0.79	% By Weight
Mercury in Coal, As Received	EPA 3051	0.05	mg/kg
Ignited as Element			
Aluminum, Ignited Basis	ASTM D 3682	14.17	% By Weight
Calcium, Ignited Basis	ASTM D 3682	2.13	% By Weight
Iron, Ignited Basis	ASTM D 3682	4.99	% By Weight
Magnesium, Ignited Basis	ASTM D 3682	0.79	% By Weight
Phosphorus, Ignited Basis	ASTM D 3682	0.21	% By Weight

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments:

Ms. Donna Hill

Mr. Roy Clarkson

Quality Control _____ **Supervision** _____ Date : 12/3/99
CC:

smk/coa

GENERAL TEST LABORATORY
P.O. Box 2641
BIRMINGHAM, ALABAMA 35291
(205) 664 - 6081

CERTIFICATE OF ANALYSIS

TO: Mr. Rick Wilson
Address: E. C. Gaston Steam Plant

Description : Gaston Unit 1 Mercury Study

Run 3
Laboratory ID Number : AD37521

Customer Account : GAS01SP
Sample Date : 11-Nov-99
Laboratory Account : GAS01SP
Received Date : 15-Nov-99

Test Name	Reference	Result	Units
Potassium, Ignited Basis	ASTM D 3682	1.89	% By Weight
Silicon, Ignited Basis	ASTM D 3682	24.19	% By Weight
Sodium, Ignited Basis	ASTM D 3682	0.42	% By Weight
Sulfur, Ignited Basis	ASTM D 5016	0.78	% By Weight
Titanium, Ignited Basis	ASTM D 3682	0.84	% By Weight
Ignited as Oxide			
Aluminum Oxide, Ignited	ASTM D 3682	26.77	% By Weight
Calcium Oxide, Ignited	ASTM D 3682	2.98	% By Weight
Iron Oxide, Ignited	ASTM D 3682	7.13	% By Weight
Magnesium Oxide, Ignited	ASTM D 3682	1.31	% By Weight
Phosphorus Pentoxide, Ignited	ASTM D 3682	0.48	% By Weight
Potassium Oxide, Ignited	ASTM D 3682	2.28	% By Weight
Silicon Dioxide, Ignited	ASTM D 3682	51.75	% By Weight
Sodium Oxide, Ignited	ASTM D 3682	0.57	% By Weight
Sulfur Trioxide, Ignited	ASTM D 5016	1.95	% By Weight
Titanium Oxide, Ignited	ASTM D 3682	1.40	% By Weight
Sum, Major Oxides, Ignited Basis		96.6	% By Weight
General			
Heat of Combustion, MAF	ASTM D 5865	15678	Btu/lb
Sulfur - lbs/mmBTU	ASTM D 3180	0.624	lbs/mmBTU
Coal Contract Sulf - #/mmBtu	ASTM D 3180	0.624	lbs/mmBTU

This Certificate states the physical and/or chemical characteristics of the sample as submitted.

Comments:

Ms. Donna Hill

Mr. Roy Clarkson

Quality Control _____ **Supervision** _____ Date : 12/3/99
CC:

smk/coa

Totalized Meter Reading Weight (lb)

	time	a	b	c	d	e
	1210	19224978	64639042	6511961	21867665	7582520
R1	1555	19375974	64784210	6655981	22018794	7721487
	735	19765061	65463812	7303812	22678373	8367089
R2	1150	19909079	65634380	7452810	22840313	8524033
	1350	19966110	65724635	7536812	22916906	8609877
R3	1720	20087864	65860327	7691286	23032828	8682775

Weight (final weight - initial weight) for time (dt)

Total time	a	b	c	d	e	total	lb/hr	Hg mg/kg	Hg lb/hr
min	---	---	---	---	---	---	---		
225	150996	145168	144020	151129	138967	730280	**194741**	0.054	0.011
255	144018	170568	148998	161940	156944	782468	**184110**	0.067	0.012
210	121754	135692	154474	115922	72898	600740	**171640**	0.057	0.010
						Ave	**183497**	0.059	0.011

MERCURY TESTING ON UNIT 1

RUN1 NOTES SAY RUN 1 WAS FROM 1200-1615
11/10/99

	12:10	12:25	12:40	12:55	13:25	13:55	14:25	14:55	15:25	15:55	3HR.45MI
A MILL	19224978	19237480	19245959	19257487	19275977	19296944	19316481	19335973	19357469	19375974	150996
B MILL	64639042	64650544	64659043	64670540	64689062	64709663	64729541	64749006	64766224	64784210	145168
C MILL	6511961	6521460	6528979	6534961	6557467	6571970	6591463	6616479	6631501	6655981	144020
D MILL	21867665	2187359	21886351	21897857	21917351	21938322	21958320	21977834	21999811	22018794	151129
E MILL	75~~0~~2520 8	7591521	7599013	7609513	7627498	7646498	7665498	7683509	7704005	7721487	~~218967~~
											810280

RUN 2
11/11/99

	7:35	8:05	8:35	9:05	9:35	10:05	10:35	11:05	11:35	11:50	4:15 ~~3HR.55MI~~
A MILL	19765061	19771062	19786547	19803563	19826054	19840066	19862074	19878590	1990081	19909074	144013
B MILL	65463812	65470330	65789334	65510679	65538868	65556853	65582381	65600904	65625876	65634380	170568
C MILL	7303817	7304337	7325841	7344850	7364032	7385321	7407835	7423834	7445075	7452810	148993
D MILL	22678373	22683851	22201349	22721860	22748856	22765349	22790838	22808356	22831843	22840313	161940
E MILL	8367089	8371579	8388952	8408570	8435058	8451545	8476005	8493032	8515549	8524033	156944
											782458

RUN 3
11/11/99

	1350 ~~13:30~~	14:20	14:50	15:20	15:50	16:20	16:50	17:20			3 3HR.~~5~~0MI
A MILL	19966110	19971102	19995593	20014101	20031602	20048007	20069603	20087864			121754
B MILL	65724635	65735358	65760388	65779055	65798405	65816892	65839844	65860327			135692
C MILL	7536812	7548818	7577299	7594286	7620815	7642322	7668328	7691286			154474
D MILL	22916906	22926891	22951258	22968384	22984891	22999816	23016820	23032828			115922
E MILL	8609877	8614085	8615587	8624114	8634589	8652585	8672585	8682775			72898
											600740

COAL FEEDER ~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: ALABAMA POWER

Location: COAL FEEDER

Date: 11-10-99 Run No.: 1

Operators: BJR

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pitot Tube ID No.: _____ Cp: _____

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	~~Traverse Point Number~~ COAL FEEDER	~~Velocity Head (Δp), in. H₂O~~ Totalized Weight	Stack Temperature (T_s), °F	Static Pressure (P_{static}), in. H_2O	Cyclonic Flow Determination. Δp at 0° Reference	Angle (α) which yields a null Δp
Begin 12:10	A	19224978				
	B	64639042				
	C	06511961				
	D	21867665				
	E	07582520				
12:25	A	19237480				
	B	64650544				
	C	06521460				
	D	21878359				
	E	07591521				
12:40	A	19245469				
	B	64659043				
	C	06528979				
	D	21886351				
	E	07599013				
12:55	A	19257487				
	B	64670540				
	C	06534961				
	D	21897857				
	E	07609513				
~~13:10~~ 13:25	A	19275877				
	B	64689062				
	C	06557467				
	D	21917351				
	E	07627498				
~~13:55~~ 13:55	A	19296944				
	B	64709663				
	C	06571970				
	D	21938322				
	E	07646498				
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

Coal Feeder

~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: Alabama Power

Location: Coal Feeder

Date: 11-10-99 Run No.: 1

Operators: _____

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pitot Tube ID No.: _____ Cp: –

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	~~Traverse Point Number~~ Coal Feeder	~~Velocity Head (Δp), in. H_2O~~ Totalizer Weight	Stack Temperature (T_s), °F	Static Pressure (P_{static}), in. H_2O	Cyclonic Flow Determination. Δp at 0° Reference	Angle (α) which yields a null Δp
~~1340~~ 14:25	A	19316481				
	B	64772541				
	C	06591463				
	D	21958320				
	E	07665498				
1455	A	19335973				
	B	64749006				
	C	06616479				
	D	21977834				
	E	07683509				
~~14:10~~ 15:25	A	19357469				
	B	64766224				
	C	06631501				
	D	21999811				
	E	07704005				
~~1425~~ 15:55	A	19375974				
	B	64782210				
	C	06655981				
	D	22018794				
	E	07721487				
16:25 ~~14:40~~	A					
	B					
	C					
	D					
	E					
16:35 ~~1455~~	A					
	B					
	C					
	D					
	E					
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α^a

[a] ...

~~COALFEEDER~~ ESP

~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: Alabama Power

Location: ESP

Date: 11-10-99 Run No.: 1

Operators: _____

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pilot Tube ID No.: _____ Cp: _____

Pilot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	
	AAC	VAC	MADC	KUBC	Δp at [redacted] Reference	[redacted] angle (α) which yields [redacted] null Δp
Begin 12:00	84	252	380	33.0	AB1	
	126	220	580	34.7	AB2	
	55	164	497	22.8	AB3	
	44	168	175	29.7	AB4	
	44	187	155	32.0	AB5	
	40	162	115	26.7	AB6	
	18	114	45	27.0	AB7	
	16	88	55	25.4	AB8	
	84	228	510	31.1	CD1	
	112	198	610	29.7	CD2	
	91	216	640	34.4	CD3	
	88	232	170	31.6	CD4	
	50	168	130	32.0	CD5	
	13	120	30	34.2	CD6	
	35	168	135	34.7	CD7	
	29	36	185	38.9	CD8	
13:00	41	136	65	31.1	AB1	
	80	198	540	32.6	AB2	
	117	179	655	22.6	AB3	
	48	180	135	29.7	AB4	
	36	174	205	32.2	AB5	
	40	182	130	28.8	AB6	
	14	124	60	28.1	AB7	
	15	88	60	25.2	AB8	
	45	154	170	28.4	CD1	
	110	188	610	29.7	CD2	
	142	246	825	34.0	CD3	
	79	216	393	32.0	CD4	
	49	194	155	30.2	CD5	
	16	124	35	34.8	CD6	
	41	158	140	36.2	CD7	
	28	34	160	34.4	CD8	
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

ESP

~~COAL FEEDER~~ GAS VELOCITY AND VOLUME DATA FORM

Company: _____

Plant: Alabama Power

Location: ESP

Date: 11-10-99 Run No.: 1

Operators: _____

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pitot Tube ID No.: _____ Cp: _____

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	~~Traverse Point Number~~ AAC	~~Velocity Head (Δp), in. H_2O~~ UAC	~~Stack Temperature (T_s), °F~~ MADC	~~Static Pressure (P_{static}), in. H_2O~~ KUDC	Cyclonic Flow Determination. Δp at 0° Reference	Angle (α) which yields a null Δp
14:00	89	240	355	34.0	AB1	
	74	196	440	33.5	AB2	
	113	197	646	22.8	AB3	
	32	158	155	29.7	AB4	
	62	174	215	33.3	AB5	
	32	168	145	28.6	AB6	
	20	118	55	27.4	AB7	
	25	88	70	25.7	AB8	
	19	136	90	26.3	CD1	
	114	186	615	29.7	CD2	
	141	250	810	32.6	CD3	
	72	207	441	30.8	CD4	
	45	186	180	32.0	CD5	
	14	122	30	39.2	CD6	
	30	158	125	36.0	CD7	
	35	36	190	37.1	CD8	
15:00	103	238	405	33.8	AB1	
	127	218	775	32.9	AB2	
	100	179	519	24.4	AB3	
	39	166	170	30.6	AB4	
	36	180	220	29.9	AB5	
	28	162	155	27.2	AB6	
	22	120	55	27.7	AB7	
	17	98	75	25.7	AB8	
	32	144	110	27.5	CD1	
	108	152	510	29.0	CD2	
	136	228	265	31.5	CD3	
	81	181	288	32.0	CD4	
	50	194	215	36.5	CD5	
	16	124	30	39.4	CD6	
	28	148	135	35.3	CD7	
	36	36	225	40.5	CD8	
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

~~COAL FEEDER~~ GAS VELOCITY AND VOLUME DATA FORM

Company: _____

Plant: Alabama Power

Location: ESP

Date: 11-16-99 Run No.: 1

Operators: _____

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pitot Tube ID No.: _____ Cp: _____

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	Traverse Point Number	Velocity Head (Δp), in. H_2O	Stack Temperature (T_s), °F	Static Pressure (P_{static}), in. H_2O	Cyclonic Flow Determination	
	AAC	VAC	MADC	KVDC	Δp at 0° Reference	Angle (α) which yields a null Δp
16:00	56	216	330	33.5	AB1	
	84	188	485	31.5	AB2	
	116	174	611	23.6	AB3	
	61	190	175	30.2	AB4	
	44	184	255	34.0	AB5	
	39	180	115	28.4	AB6	
	21	122	55	27.7	AB7	
	24	112	70	25.9	AB8	
	142	262	740	35.1	CD1	
	112	180	600	28.8	CD2	
	142	246	810	34.0	CD3	
	102	207	489	33.8	CD4	
	48	162	130	30.6	CD5	
	16	126	40	39.8	CD6	
	42	174	105	34.9	CD7	
	32	38	185	40.1	CD8	
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

COAL FEEDER ~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: Ala. Power

Location: Coal Feeder

Date: 11-14-99 Run No.: 2

Operators: BR

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pitot Tube ID No.: _____ Cp: _____

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	Traverse Point Number (Coal Feeder)	Velocity Head (Δp), in. H_2O (Tabulated weight)	Stack Temperature (T_s), °F	Static Pressure (P_{static}), in. H_2O	Cyclonic Flow Determination: Δp at 0° Reference	Cyclonic Flow Determination: Angle (α) which yields a null Δp
735	A	19765061				
	B	65463812				
	C	07303812				
	D	22678373				
	E	08367084				
805	A	19771062				
	B	65470330				
	C	07304337				
	D	22683851				
	E	08371579				
835	A	19786547				
	B	65489334				
	C	07325841				
	D	22701349				
	E	08388952				
905	A	19803563				
	B	65510679				
	C	07344850				
	D	22721860				
	E	08408570				
9:35	A	19826654				
	B	65538868				
	C	07364832				
	D	22748856				
	E	08435058				
10:05	A	19840066				
	B	65556853				
	C	07385321				
	D	22765349				
	E	08451545				
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a] ...

Coal Feeder ~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____
Plant: Ala. Power
Location: Coal Feeder
Date: 11-11-94 Run No.: 2
Operators: BR
Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____
Cross Sectional Area (AS), ft^2: _____
Pitot Tube ID No.: _____ Cp: _____
Pitot Tube Leak Check: _____
Notes: _____

24-Hour Clock Time	Traverse Point Number (Coal Feeder)	Velocity Head (Δp), in. H_2O (Totalized weight)	Stack Temperature (T_s), °F	Static Pressure (P_{static}), in. H_2O	Cyclonic Flow Determination: Δp at 0° Reference	Cyclonic Flow Determination: Angle (α) which yields a null Δp
10:35	A	19862074				
	B	65582381				
	C	07407835				
	D	22740838				
	E	08476005				
11:05	A	19878590				
	B	65600904				
	C	07423834				
	D	22808356				
	E	08493032				
11:35	A	19901081				
	B	65625876				
	C	07445075				
	D	22831843				
	E	08515549				
11:50	A	19909074				
	B	65634380				
	C	07452810				
	D	22840313				
	E	08524033				
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

ESP ~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: Alabama Power

Location: ESP Readings

Date: 11-11-99 Run No.: 2

Operators: BR

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pitot Tube ID No.: _____ Cp: _____

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	~~Traverse Point Number~~ AAC	~~Velocity Head (Δp), in. H₂O~~ UAC	~~Stack Temperature (Ts), °F~~ MADC	~~Static Pressure (Pstatic), in. H₂O~~ KUDC²	Cyclonic Flow Determination. Δp at 0° Reference	Angle (α) which yields a null Δp
07:30	74	244	415	35.6	A31	
	108	226	665	33.8	A32	
	96	207	903	24.0	A33	
	33	166	145	30.8	A34	
	32	176	170	34.4	A35	
	26	162	125	28.6	A36	
	17	136	60	28.1	A37	
	16	82	55	26.6	A38	
	28	156	130	28.4	CD1	
	122	194	670	30.2	CD2	
	143	260	820	36.0	CD3	
	92	204	371	33.2	CD4	
	36	152	80	30.2	CD5	
	14	124	30	40.3	CD6	
	24	150	100	35.3	CD7	
	34	38	195	41.0	CD8	
08:30	73	230	385	34.9	A31	
	80	210	510	24.5	A32	
	76	192	362	22.6	A33	
	40	170	105	30.4	A34	
	34	158	110	33.3	A35	
	23	152	120	24.5	A36	
	13	120	30	26.6	A37	
	12	82	60	25.9	A38	
	60	194	245	31.7	CD1	
	103	188	620	29.7	CD2	
	90	220	660	32.4	CD3	
	97	211	432	33.2	CD4	
	32	172	140	29.5	CD5	
	13	122	30	40.1	CD6	
	26	162	100	35.3	CD7	
	34	36	205	40.3	CD8	
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

ESP

~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: Alabama Power

Location: Esp Reading

Date: 11-11-99 Run No.: 2

Operators: _____

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft^2: _____

Pitot Tube ID No.: _____ Cp: _____

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	~~Traverse Point Number~~ AAC	~~Velocity Head (Δp), in. H_2O~~ UAC	~~Stack Temperature (T_s), °F~~ MADC	~~Static Pressure (P_{static}), in. H_2O~~ KUDC	Cyclonic Flow Determination. Δp at 0° Reference	Angle (α) which yields a null Δp
0930	92	242	415	36.2	AB1	
	68	198	430	33.1	AB2	
	86	174	427	24.0	AB3	
	41	180	185	32.0	AB4	
	53	178	180	33.3	AB5	
	29	168	75	28.1	AB6	
	15	128	30	27.0	AB7	
	20	96	55	26.1	AB8	
	18	134	45	25.2	CD1	
	66	152	415	30.6	CD2	
	124	210	540	34.2	CD3	
	70	216	462	33.8	CD4	
	26	164	120	30.6	CD5	
	14	122	30	34.8	CD6	
	36	174	120	35.3	CD7	
	27	34	155	38.4	CD8	
10:30	30	192	290	34.4	AB1	
	68	198	255	31.1	AB2	
	48	155	345	21.6	AB3	
	35	168	160	29.7	AB4	
	24	164	140	32.6	AB5	
	28	162	80	27.2	AB6	
	19	120	45	28.1	AB7	
	14	92	40	25.4	AB8	
	15	128	75	25.9	CD1	
	103	190	660	29.9	CD2	
	128	254	815	35.8	CD3	
	90	213	371	32.6	CD4	
	40	180	175	32.4	CD5	
	13	120	30	34.2	CD6	
	23	148	100	36.0	CD7	
	40	316	210	40.7	CD8	
					~~[illegible]~~	
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

ESP ~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: Ala Power

Location: ESP

Date: 11-11-99 Run No.: 2

Operators: _____

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pitot Tube ID No.: _____ Cp: —

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	~~Traverse Point Number~~ AAC	~~Velocity Head (Δp), in. H_2O~~ UAC	~~Stack Temperature (T_s), °F~~ mADS	~~Static Pressure (P_{static}), in. H_2O~~ KUDC	Cyclonic Flow Determination. Δp at 0° Reference	Angle (α) which yields a null Δp
11.30	24	132	70	29.9	AB1	
	66	176	270	29.9	AB2	
	58	162	253	21.6	AB3	
	39	176	175	30.4	AB4	
	57	182	185	32.4	AB5	
	31	170	155	29.3	AB6	
	14	126	65	27.0	AB7	
	18	80	55	25.9	AB8	
	129	232	520	34.7	CD1	
	101	180	600	29.3	CD2	
	132	250	810	34.4	CD3	
	90	230	419	32.0	CD4	
	45	190	130	30.4	CD5	
	16	122	35	39.4	CD6	
	26	152	110	35.6	CD7	
	44	38	200	40.1	CD8	
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

Coal Feeder

GAS VELOCITY AND VOLUME DATA FORM

Company: _____

Plant: Alta Power

Location: Coal Feeder

Date: 11-11-99 Run No.: 3

Operators: BR

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pitot Tube ID No.: _____ Cp: _____

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	Traverse Point Number	Velocity Head (Δp), in. H_2O	Stack Temperature (T_s), °F	Static Pressure (P_{static}), in. H_2O	Cyclonic Flow Determination. Δp at 0° Reference	Angle (α) which yields a null Δp
	Coal Feeder	Totalized weight				
~~13:50~~ 13:50	A 19966110	19966110	←			
	B 65724635	65724635				
	C 07536812	07536812				
	D	22916906				
	E	08609877				
14:20	A	19971102				
	B	65735358				
	C	07548818				
	D	22926891				
	E	08614085				
14:50	A	19995593				
	B	65760388				
	C	07577299				
	D	22951258				
	E	08615587				
~~15:20~~ 15:20	A	20014101				
	B	65779055				
	C	07594286				
	D	22968384				
	E	08624114				
15:50	A	20031602				
	B	65798405				
	C	07620815				
	D	22984891				
	E	08634589				
16:20	A	20048007				
	B	65816892	–			
	C	07642322				
	D	22999816				
	E	08652585				
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

COAL FEEDER ~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: ALA Power

Location: Coal Feeder

Date: 11-11-99 Run No.: 3

Operators: _____

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft^2: _____

Pitot Tube ID No.: _____ Cp: —

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	Traverse Point Number (Coal Feeder)	Velocity Head (Δp), in. H_2O (Totalized weight)	Stack Temperature (T_s), °F	Static Pressure (P_{static}), in. H_2O	Cyclonic Flow Determination: Δp at 0° Reference	Cyclonic Flow Determination: Angle (α) which yields a null Δp
16:50	A 20069603					
	B 36583984					
	C 07668328					
	D 23016820					
	E 08677585					
17:20	A	20087864				
	B	65860327				
	C	07691286				
	D	23032828	END			
	E	08682775				
17:50	A					
	B					
	C					
	D					
	E					
18:20	A					
	B					
	C					
	D					
	E					
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

ESP

~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: Ala. Power

Location: ESP

Date: 11-11-99 Run No.: 3

Operators: _____

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft²: _____

Pitot Tube ID No.: _____ Cp: _____

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	~~Traverse Point Number~~ AAC	~~Velocity Head (Δp), in. H_2O~~ UAC	~~Stack Temperature (T_s), °F~~ MADC	~~Static Pressure (P_{static}), in. H_2O~~ KU BC	Cyclonic Flow Determination. Δp at 0° Reference	Angle (~~α~~) which yields a null Δp
13:45	51	220	225	28.1	AB1	
	79	208	725	34.4	AB2	
	70	176	585	22.6	AB3	
	32	162	145	30.4	AB4	
	36	180	140	31.1	AB5	
	39	150	115	28.8	AB6	
	14	124	65	28.4	AB7	
	11	80	55	25.7	AB8	
	53	152	110	28.8	CD1	
	100	184	610	31.5	CD2	
	141	252	815	35.4	CD3	
	108	206	445	31.0	CD4	
	48	190	200	32.0	CD5	
	16	124	35	40.1	CD6	
	39	150	110	34.4	CD7	
	36	36	200	39.4	CD8	
14:45	20	148	80	29.0	AB1	
	13	122	95	27.2	AB2	
	42	153	345	21.4	AB3	
	33	160	145	28.6	AB4	
	50	200	165	32.9	AB5	
	28	162	50	25.2	AB6	
	19	116	50	27.2	AB7	
	15	80	45	25.4	AB8	
	123	226	525	34.2	CD1	
	113	182	670	30.2	CD2	
	141	246	485	31.7	CD3	
	65	185	227	29.9	CD4	
	60	170	170	32.0	CD5	
	16	126	35	39.8	CD6	
	34	166	135	34.4	CD7	
	38	38	140	38.5	CD8	
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

ESP ~~GAS VELOCITY AND VOLUME~~ DATA FORM

Company: _____

Plant: AIA POWER

Location: ESP

Date: 11-11-99 Run No.: 3

Operators: _____

Barometric Pressure, in. Hg: _____

Stack Diameter, in.: _____

Cross Sectional Area (AS), ft^2: _____

Pitot Tube ID No.: _____ Cp: —

Pitot Tube Leak Check: _____

Notes: _____

24-Hour Clock Time	~~Traverse Point Number~~ AAC	~~Velocity Head (Δp), in. H_2O~~ UAC	~~Stack Temperature (T), °F~~ MADC	~~Static Pressure (P_{static}), in. H_2O~~ KVDC	Cyclonic Flow Determination. Δp at 0° Reference	Angle (~~α~~) which yields a null Δp
15:45	18	140	70	28.8	AB1	
	36	134	80	27.0	AB2	
	11	96	61	18.7	AB3	
	25	146	100	29.3	AB4	
	48	204	175	33.5	AB5	
	42	154	130	28.4	AB6	
	22	138	45	27.2	AB7	
	16	92	85	26.1	AB8	
	61	216	425	34.7	CD1	
	112	198	665	29.7	CD2	
	142	246	820	34.2	CD3	
	90	214	366	31.6	CD4	
	49	190	205	29.3	CD5	
	19	133	40	40.3	CD6	
	38	164	90	33.1	CD7	
	49	40	215	39.8	CD8	
16:45	68	166	155	34.0	AB1	
	81	188	350	32.6	AB2	
	72	169	502	22.4	AB3	
	44	170	195	30.2	AB4	
	44	182	140	31.5	AB5	
	26	152	100	27.7	AB6	
	22	136	50	27.2	AB7	
	20	96	55	25.7	AB8	
	25	166	150	28.6	CD1	
	113	194	505	30.40	CD2	
	92	212	680	34.9	CD3	
	91	234	711	32.0	CD4	
	59	170	140	31.7	CD5	
	17	131	40	40.1	CD6	
	48	180	180	36.2	CD7	
	37	36	215	40.3	CD8	
		Avg. $\sqrt{\Delta p}$	Avg. T_s	Avg. P_{static}		Avg. α[a]

[a]

OPACITY SUMMARY FOR 11/10/99

PLANT 0026 GASTON RUN DATE: 4-MAY-00

TIME: 12:31

OPACITY SIX-MINUTE AVERAGES (%OP)

HR CST	DST	UNIT	01-06	07-12	13-18	19-24	25-30	31-36	37-42	43-48	49-54	55-60	#EXC EMIS.
0	1	OP 1-2	5	10	6	4	6	3	4	4	3	6	0
0	1	OP 3-4	5	26E	18	13	11	9	8	7	3	3	0
0	1	OP 5	8	7	9	7	7	9	7	7	8	8	0
1	2	OP 1-2	3	2	3	3	4	4	11	20	12	25E	0
1	2	OP 3-4	3	2	3	6	2	2	2	5	2	1	0
1	2	OP 5	7	9	7	9	7	10	6	7	8	7	0
2	3	OP 1-2	18	10	8	2	3	3	3	6	7	6	0
2	3	OP 3-4	1	1	1	1	2	3	4	2	4	7	0
2	3	OP 5	7	11	7	8	10	8	7	10	7	8	0
3	4	OP 1-2	8	8	4	3	3	5	3	4	4	7	0
3	4	OP 3-4	3	3	2	2	4	5	2	2	2	6	0
3	4	OP 5	10	10	10	11	12	9	8	11	9	10	0
4	5	OP 1-2	10	3	6	6	6	7	9	13	8	7	0
4	5	OP 3-4	6	5	5	5	5	4	6	5	7	10	0
4	5	OP 5	11	8	11	12	8	9	11	9	7	10	0
5	6	OP 1-2	7C	-999C	9C	12	8	8	8	12	11	12	0
5	6	OP 3-4	7C	-999C	28E	20	10	11	12	16	13	11	0
5	6	OP 5	-999C	9	8	14	14	15	14	12	13	12	0
6	7	OP 1-2	11	7	9	15	11	13	12	8	9	8	0
6	7	OP 3-4	12	7	5	11	11	11	14	12	9	7	0

6	7	OP 5	10	11	13	11	12	14	10	10	15	9	
0													
7	8	OP 1-2	10	16	12	13	10	13	15	8	12	12	
0													
7	8	OP 3-4	11	5	3	3	31E	12	12	12	12	15	
0													
7	8	OP 5	12	9	13	9	10	14	10	9	15	8	
0													
8	9	OP 1-2	10	18	11	13	13	14	11	14	10	23E	
0													
8	9	OP 3-4	11	11	11	11	12	9	12	9	8	12	
0													
8	9	OP 5	10	15	10	8	12	9	11	10	9	8	
0													
9	10	OP 1-2	15	15	13	11	14	12	10	25*	17	24E	
1													
9	10	OP 3-4	13	10	10	9	10	8	9	8	8	7	
0													
9	10	OP 5	8	9	10	9	12	8	9	13	8	9	
0													
10	11	OP 1-2	14	14	13	14	20	12	10	17	15	15	
0													
10	11	OP 3-4	6	7	7	7	6	9	8	11	8	8	
0													
10	11	OP 5	11	9	9	11	10	8	15	10	11	13	
0													
11	12	OP 1-2	17	16	15	14	13	14	12	14	16	12	
0													
11	12	OP 3-4	7	5	6	6	7	7	7	10	7	6	
0													
11	12	OP 5	12	11	11	14	13	10	15	12	10	13	
0													
12	13	OP 1-2	15	12	17	10	10	14	11	15	11	11	
0													
12	13	OP 3-4	10	7	8	7	10	7	8	8	8	9	
0													
12	13	OP 5	9	9	15	12	9	14	10	11	12	12	
0													

OPACITY SUMMARY FOR 11/10/99

PLANT 0026 GASTON RUN DATE: 4-MAY-00

TIME: 12:31

OPACITY SIX-MINUTE AVERAGES (%OP)

HR CST	DST	UNIT	01-06	07-12	13-18	19-24	25-30	31-36	37-42	43-48	49-54	55-60	#EXC EMIS.

13	14	OP 1-2	13	11	11	12	12	14	11	12	14	10	
0													
13	14	OP 3-4	6	8	6	7	7	7	7	7	7	8	
0													
13	14	OP 5	10	10	18	11	11	16	10	12	15	12	
0													
14	15	OP 1-2	10	9	10	14	10	10	10	13	13	10	
0													
14	15	OP 3-4	8	17	14	9	9	6	7	8	8	7	
0													
14	15	OP 5	11	14	11	9	15	15	8	14	5	6	
0													
15	16	OP 1-2	13	11	13	10	9	11	13	9	10	7	
0													
15	16	OP 3-4	7	11	6	6	8	6	7	8	7	6	
0													
15	16	OP 5	9	13	8	7	11	9	6	14	8	6	
0													
16	17	OP 1-2	10	14	10	10	11	10	12	11	13	11	11.6
0													
16	17	OP 3-4	17	4	3	6	4	3	3	6	8	11	
0													
16	17	OP 5	13	8	7	14	7	7	11	9	8	10	
0													
17	18	OP 1-2	10	11	10	10	11	10	11	8	10	16	
0													
17	18	OP 3-4	10	10	9	11	16	10	10	10	9	8	
0													
17	18	OP 5	11	8	7	15	7	9	13	9	8	14	
0													
18	19	OP 1-2	8	10	9	9	9	10	10	9	8	13	
0													
18	19	OP 3-4	8	8	8	6	9	7	9	11	13	6	
0													
18	19	OP 5	8	9	12	9	7	12	9	7	9	10	
0													
19	20	OP 1-2	10	12	14	8	9	9	10	14	10	10	
0													
19	20	OP 3-4	6	8	7	5	4	3	4	3	4	4	
0													
19	20	OP 5	7	9	13	8	7	10	8	10	17	16	
0													
20	21	OP 1-2	9	9	9	10	9	11	6	9	6	6	
0													
20	21	OP 3-4	4	7	3	4	4	3	3	2	2	3	
0													
20	21	OP 5	16	15	17	13	16	15	13	13	10	11	
0													
21	22	OP 1-2	10	6	8	7	5	7	7	6	6	8	

0												
21	22	OP 3-4	3	2	4	3	3	3	3	11	7	5
0												
21	22	OP 5	12	13	9	11	15	10	12	13	13	12
0												
22	23	OP 1-2	10	9	9	9	9	8	6	4	9	6
0												
22	23	OP 3-4	5	5	3	3	3	3	3	3	3	2
0												
22	23	OP 5	14	12	14	13	14	10	17	10	11	13
0												
23	0	OP 1-2	6	9	4	8	6	5	11	6	10	7
0												
23	0	OP 3-4	3	2	2	2	2	2	3	3	3	3
0												
23	0	OP 5	14	9	12	12	10	10	13	10	9	13
0												

OPACITY SUMMARY FOR: 11/10/99 PLANT: 0026 GASTON UNITS:(%OP)

GENERATING UNIT	OP 1-2	OP 3-4	OP 5
EXCUSED EMISSIONS	3	3	0
EXCESS EMISSIONS	1	0	0
24-HOUR AVERAGES	10	7	11

OPACITY SUMMARY FOR 11/11/99

PLANT 0026 GASTON RUN DATE: 4-MAY-00

TIME: 12:39

OPACITY SIX-MINUTE AVERAGES (%OP)

HR CST	DST	UNIT	01-06	07-12	13-18	19-24	25-30	31-36	37-42	43-48	49-54	55-60	#EXC EMIS.
0	1	OP 1-2	6	6	16	33E	37*	26*	24*	26*	41*	38*	6
0	1	OP 3-4	3	4	3	2	2	3	12	19	7	6	0
0	1	OP 5	13	10	13	12	11	12	10	11	13	12	0
1	2	OP 1-2	31*	31*	22*	18	21E	26*	37*	39*	37*	31*	8
1	2	OP 3-4	8	5	3	2	6	5	2	2	2	3	0
1	2	OP 5	11	12	16	10	10	16	11	10	11	8	0

2	3	OP 1-2	26*	29*	30*	36*	45*	50*	43*	42*	37E	35*	9
2	3	OP 3-4	2	2	2	3	2	2	2	3	3	2	0
2	3	OP 5	8	16	12	16	15	14	11	16	14	13	0
3	4	OP 1-2	47*	48*	48*	51*	52*	49*	54*	57*	56*	59*	10
3	4	OP 3-4	3	4	4	7	6	9	7	17	11	7	0
3	4	OP 5	15	21E	11	14	19	15	13	16	13	12	0
4	5	OP 1-2	56*	49*	51*	49*	43*	-999	45*	43*	47*	53*	9
4	5	OP 3-4	6	6	6	12	10	9	7	6	8	15	0
4	5	OP 5	16	14	17	28E	22*	25*	22*	14	11	16	3
5	6	OP 1-2	61*	-999C	64*	87*	76*	74*	72*	74*	71*	65*	9
5	6	OP 3-4	22E	-999C	25*	16	17	19	20	17	19	10	1
5	6	OP 5	-999C	13	12	15	15	14	14	18	12	17	0
6	7	OP 1-2	68*	66*	78*	82*	93*	94*	90*	84*	77*	29E	9
6	7	OP 3-4	18	11	15	25E	17	20	19	17	15	19	0
6	7	OP 5	13	16	16	14	17	19	14	14	15	19	0
7	8	OP 1-2	30*	29*	23*	66*	65*	67*	64*	60*	63*	59*	10
7	8	OP 3-4	18	19	14	15	21E	15	13	21*	16	15	1
7	8	OP 5	12	14	18	15	16	18	15	19	22E	18	0
8	9	OP 1-2	58*	53*	53*	58*	61*	53*	43*	39E	43*	44*	9
8	9	OP 3-4	13	13	13	17	14	15	12	13	13	10	0
8	9	OP 5	17	22*	18	15	24*	15	15	26*	22E	18	3
9	10	OP 1-2	43*	45*	39*	38*	43*	40*	43*	42*	40E	36*	9
9	10	OP 3-4	9	10	12	12	11	10	14	14	16	-999C	0
9	10	OP 5	17	24*	18	13	22*	17	16	17	18	13	2

10	11	OP 1-2	38*	37*	37*	37*	42*	39*	39*	29*	31E	42*
9												
10	11	OP 3-4	-999C	11C	15	14	12	12	14	10	12	10
0												
10	11	OP 5	19	12	19	16	16	15	20	18	14	13
0												
11	12	OP 1-2	28*	31*	26*	27*	35*	26*	30*	33*	21E	33*
9												
11	12	OP 3-4	17	14	13	18	18	21E	16	16	53*	15
1												
11	12	OP 5	21E	14	13	19	15	15	17	16	17	20
0												
12	13	OP 1-2	25*	27*	40*	20	35*	24*	29*	41*	26E	31*
8												
12	13	OP 3-4	8	9	13	10	13	10	9	8	9	11
0												
12	13	OP 5	15	12	20	17	13	20	13	14	16	20
0												

42.1

OPACITY SUMMARY FOR 11/11/99

PLANT 0026 GASTON RUN DATE: 4-MAY-00

TIME: 12:39

OPACITY SIX-MINUTE AVERAGES (%OP)

HR CST	HR DST	UNIT	01-06	07-12	13-18	19-24	25-30	31-36	37-42	43-48	49-54	55-60	#EXC EMIS.
13	14	OP 1-2	28*	20	35*	30*	35*	41*	22*	40*	27E	36*	8
13	14	OP 3-4	9	9	6	5	4	5	11	6	16	17	0
13	14	OP 5	16	12	16	16	11	19	17	13	16	13	0
14	15	OP 1-2	38*	24*	47*	37*	37*	64*	35*	51*	38E	27*	9
14	15	OP 3-4	17	17	13	9	9	15	19	9	10	14	0
14	15	OP 5	13	21E	11	14	16	13	11	18	15	13	0
15	16	OP 1-2	46*	33*	31*	35*	24*	41*	29*	32*	45*	26E	9
15	16	OP 3-4	14	11	16	15	16	10	12	6	8	6	0
15	16	OP 5	11	24E	10	16	15	10	17	20	10	15	0
16	17	OP 1-2	37*	20	24*	37*	26*	31*	29*	24*	33*	27E	8
16	17	OP 3-4	7	4	5	6	4	6	8	13	14	12	

33.1

0													
16	17	OP 5	17	12	10	16	13	9	18	15	9	12	
0													
17	18	OP 1-2	27*	30*	20	29*	23*	14	19	16	18	19	
4													
17	18	OP 3-4	17	18	19	15	13	20	15	16	18	16	
0													
17	18	OP 5	18	10	12	16	10	11	21E	12	8	22*	
1													
18	19	OP 1-2	18	20	18	19	20	19	21E	15	22*	21*	
2													
18	19	OP 3-4	14	10	28E	53*	43*	8	6	6	7	9	
2													
18	19	OP 5	11	9	21*	11	10	15	14	14	11	18	
1													
19	20	OP 1-2	17	22*	16	14	24*	17	18	14	16	17	
2													
19	20	OP 3-4	8	7	7	9	9	11	14	13	11	13	
0													
19	20	OP 5	15	10	21E	13	13	16	14	13	17	10	
0													
20	21	OP 1-2	12	16	18	15	18	16	16	16	11	18	
0													
20	21	OP 3-4	12	11	18	16	15	21E	13	10	10	14	
0													
20	21	OP 5	13	14	14	9	15	11	11	11	12	11	
0													
21	22	OP 1-2	14	17	14	12	13	17	14	28E	10	15	
0													
21	22	OP 3-4	8	13	9	6	4	3	3	4	3	3	
0													
21	22	OP 5	13	19	11	11	12	11	12	14	12	10	
0													
22	23	OP 1-2	24*	11	17	14	10	13	10	16	15	16	
1													
22	23	OP 3-4	3	2	2	4	3	2	3	3	2	3	
0													
22	23	OP 5	12	12	11	12	10	12	15	10	11	14	
0													
23	0	OP 1-2	17	16	12	19	15	16	13	18	24E	15	
0													
23	0	OP 3-4	4	9	6	3	3	3	2	4	4	9	
0													
23	0	OP 5	13	9	16	16	9	13	16	8	11	14	
0													

OPACITY SUMMARY FOR: 11/11/99 PLANT: 0026 GASTON UNITS:(%OP)

GENERATING UNIT	OP 1-2	OP 3-4	OP 5
EXCUSED EMISSIONS	16	6	9
EXCESS EMISSIONS	157	5	10
24-HOUR AVERAGES	35	11	15

APPENDIX C
RAW TEST DATA

ESP OUTLET

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client	Alabama Power
W.O.#	12251-001-001
Project ID	APG
Mode/Source ID	ESP
Samp. Loc. ID	IN
Run No.ID	1
Test Method ID	OHM
Date ID	9NOV1999
Source/Location	ESP Inlet
Sample Date	11-10-99
Baro. Press (in Hg)	29.80
Operator	J. Wallis

Stack Conditions

	Assumed	Actual
% Moisture	8	
Impinger Vol (ml)		
Silica gel (g)		
CO2, % by Vol		
O2, % by Vol		
Temperature (°F)		
Meter Temp (°F)		
Static Press (in H_2O)		-6.1
Ambient Temp (°F)	89	

Meter Box	WC 12
Meter Box Y	1.009
Meter Box Del H	1.9055
Probe ID / Length	9 ft
Probe Material	Glass
Pitot / Thermocouple ID	P16 / WC-12
Pitot Coefficient	0.84
Nozzle ID	254
Avg Nozzle Dia (in)	.250
Area of Stack (ft^2)	418.4
Sample Time	150
Total Traverse Pts	50

K Factor 2.02

Leak Checks	Initial	Mid-Point	Final
Sample Train (ft^3)	.018		.010
Leak Check @ (in Hg)	15		15
Pitot good	yes / no	yes / no	yes / no
Orsat good	yes / no	yes / no	yes / no

Temp Check	Pre-Test Set	Post-Test Set
Meter Box Temp	90	88
Reference Temp	88	86
Pass/Fail (+/- 2°)	Pass / Fail	Pass / Fail
Temp Change Response	yes / no	yes / no

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft^3)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)		COMMENTS
	0	1155			19.951									
A 1	3		.31	.63	19.36	608	103	103	265	253	Sub 32	3.5		
2	6		.30	.61	20.7	627	103	102	277	251	50	3.5		
3	9		.37	.75	22.22	631	105	104	316	261	51	4		
4	12		.38	.77	23.74	631	106	104	348	273	52	4		
5	15	1210	.25	.51	25.020/25.182	628	106	104	360	274	52	3.5		
B 1	18	1213	.32	.65	26.49	622	105	104	316	271	53	3.5		
2	21		.29	.59	27.83	626	105	103	367	277	53	3.5		
3	24		.21	.42	28.98	631	106	104	375	280	53	3.0		
4	27		.12	.24	29.9	615	105	104	337	274	54	2.5		
5	30	1228	0.05	.10	30.610/30.78	603	106	104	284	270	55	2.5		
C 1	33 3	1243	0.02	.04	31.20	620	101	101	305	272	55	1		
2	36 6		.02	.04	31.60	609	97	98	312	274	55	1		
3	39 9		.02	.04	31.99	620	97	97	326	270	55	1		
4	42 12		.02	.04	32.38	610	100	100	336	272	56	1		
5	45 15	1258	.02	.04	32.780/32.850	606	101	100	354	270	56	1		
D 1	48	1303	.64	1.29	34.74	633	100	99	362	280	57	5		
2	51		.76	1.54	36.82	640	100	99	363	282	58	6		
3	54		.85	1.72	39.00	649	99	97	376	276	56	7		
4	57		.88	1.78	41.25	646	101	98	389	280	56	8		
5	60	1318	.61	1.23	43.182/43.300	622	101	100	364	277	56	6.5		
E 1	63	1321	1.05	2.12	45.70	632	101	98	324	277	61	7.5		
2	66		1.1	2.22	48.16	637	103	98	328	278	59	9		
3	69		.88	1.78	50.40	640	104	99	306	280	60	9		
4	72		.63	1.27	52.36	644	106	100	354	278	62	8		
			Avg Sqrt Delta P .6100	Avg Delta H .8527	Total Volume 74.794	Avg Ts 636.6	Avg Tm 101		Min/Max 248/389	Min/Max 251/290	Max Temp 60	Max Vac 9.5	Max Temp	TOTAL
			.4222	Avg Sqrt Del H .8675	Comments:						Ontario Hydro Method			

WESTON MANAGERS DESIGNERS/CONSULTANTS

C-1

41813

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client: Alabama Power | Operator: J. Wallis
Source: ESP | Run No.: 1
Sample Loc.: Inlet | Date: 11-10-99 | K Factor: 2.02

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)		COMMENTS
	0													
E 5	75	1336	.68	1.37	54.282/54.500	627	106	101	349	275	64	8		
F 1	78	1405	.29	.59	55.85	640	101	100	300	290	60	4		
2	81		.33	.67	57.23	643	101	101	274	274	58	5		
3	84		.37	.75	58.72	647	101	101	321	266	59	5.5		
4	87		.42	.85	60.30	645	103	101	352	268	60	6		
5	90	1420	.32	.65	61.24/61.820	632	103	101	368	267	61	5.5		
G 1	93 3	1425	.46	.93	63.45	642	103	101	346	267	66	5.5		
2	96 6		.38	.77	65.00	649	104	101	320	267	62	5.5		
3	99 9		.43	.87	66.6	653	105	102	264	266	61	6.5		
4	102 12		.34	.69	68.06	651	106	102	330	265	61	6.5		
5	105 15	1440	.17	.34	69.151/69.240	640	106	102	359	266	61	5		
H 1	108	1444	.63	1.27	71.13	646	104	103	271	270	65	7		
2	111		.64	1.29	73.02	659	105	103	267	268	61	7.5		
3	114		.52	1.05	74.77	661	105	103	279	269	61	8		
4	117		.56	1.13	76.53	662	106	103	280	263	62	9.5		
5	120	1459	.36	.73	78.025/78.216	651	106	103	282	268	62	9		
I 1	123	1533	.37	.75	79.68	647	100	101	277	272	60	5		
2	126		.57	1.15	81.48	661	101	101	290	273	60	8		
3	129		.66	1.33	83.40	665	102	101	297	275	61	9		
4	132		.51	1.03	85.20	664	102	101	288	279	61	9.5		
5	135	1548	.33	.67	86.54/86.770	647	103	101	278	273	62	7.5		
J 1	138	1552	.37	.75	88.25	642	103	100	280	268	64	5.5		
2	141		.25	.51	89.55	632	103	101	269	270	61	5		
3	144		.32	.65	91.0	632	103	100	274	268	61	6		
4	147		.40	.81	92.45	638	103	100	279	271	62	6.5		
5	150	1607	.33	.67	93.903	629	103	100	269	273	63	6.5		
			~~.6002~~	~~.8023~~										
			Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm		Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	
			~~.6100~~	~~.8530~~	74.794	~~636.6~~	101	101	264/389	251/290	66	9.5		
				Avg Sqrt Del H	Comments:									
				~~.8675~~										
				~~.8384~~										

Avg 422 ~~95.4~~ ~~94~~ Avg 94.5

WESTON MANAGERS DESIGNERS/CONSULTANTS

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client	Alabama Power
W.O.#	12251-001-001
Project ID	APG
Mode/Source ID	ESP
Samp. Loc. ID	IN
Run No.ID	2
Test Method ID	OHM
Date ID	9NOV1999
Source/Location	ESP Inlet
Sample Date	11-NOV-1999
Baro. Press (in Hg)	29.71
Operator	JW, KA

Stack Conditions

	Assumed	Actual
% Moisture	8%	
Impinger Vol (ml)		
Silica gel (g)		
CO2, % by Vol		
O2, % by Vol		
Temperature (°F)		
Meter Temp (°F)		
Static Press (in H_2O)		-6.1
Ambient Temp (°F)	65	

Meter Box ID	WC 12
Meter Box Y	1.009
Meter Box Del H	1.9055
Probe ID / Length	8 ft
Probe Material	Boro
Pitot / Thermocouple ID	P16
Pitot Coefficient	0.84
Nozzle ID	25A
Avg Nozzle Dia (in)	.250
Area of Stack (ft^2)	418.4
Sample Time	150
Total Traverse Pts	50

K Factor 1.95

Leak Checks	Initial	Mid-Point	Final
Sample Train (ft^3)	0.015		0.016
Leak Check @ (in Hg)	15		11
Pitot good	yes / no	yes / no	yes / no
Orsat good	yes / no	yes / no	yes / no

Temp Check	Pre-Test Set	Post-Test Set
Meter Box Temp	80	84
Reference Temp	80	83
Pass/Fail (+/- 2°)	Pass / Fail	Pass / Fail
Temp Change Response	yes / no	yes / no

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	GAS METER READING (ft^3)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)		COMMENTS
	0	0739			97.000									
AJ 1	3		.39	.76	98.53	628	84	84	256	267	65	3		
2	6		.27	.53	99.78	627	84	84	262	265	55	2.5		
3	9		.33	.64	101.18	613	80	80	271	268	47	2.5		
4	12		~~2.40~~ .42	~~2.78~~ .82	102.15	621	82	81	268	262	47	3		
5	15	0754	.32	.62	104.10/104.160	618	80	78	265	257	43	2.5		LC=0.002
AI 1	3	0757	.35	.68	105.6	642	89	87	268	280	58	2.5		
2	6		.58	1.13	107.32	648	91	88	269	278	54	4		
3	9		.66	1.29	109.22	651	92	88	263	275	54	4		
4	12		.54	1.05	111.05	651	93	89	260	274	53	3.5		
5	15	0812	.35	.68	112.460/112.480	645	94	89	262	275	54	3		LC=0.002
AH 1	3	0816	.71	1.38	114.45	648	90	88	265	270	59	4		
2	6		.70	1.37	116.43	649	92	88	271	278	55	4.5		
3	9		.51	.99	118.14	653	92	88	270	272	54	4		
4	12		.55	1.07	119.88	653	93	89	268	273	55	4		
5	15	0831	.38	.74	121.358/121.530	641	93	89	270	278	55	3.5		LC=0.001
AG 1	3	0845	.47	.92	123.18	643	88	87	269	276	65	5		
2	6		.38	.74	124.65	647	88	87	265	272	58	4		
3	9		.43	.84	126.25	648	88	87	267	273	56	5		
4	12		.36	.70	127.67	649	90	87	265	267	55	4.5		
5	15	0900	.20	.39	128.773/128.850	641	90	87	267	268	55	3.0		LC=0.002
AF 1	3	0903	.29	.57	130.15	642	91	89	265	270	61	4		
2	6		.32	.62	131.52	644	91	89	268	287	59	4		
3	9		.37	.72	132.97	648	92	89	265	279	58	4.5		
4	12		.37	.72	134.41	648	93	90	267	281	56	4.5		
			Avg Sqrt Delta P .6002	Avg Delta H .8022	Total Volume 72.058	Avg Ts 633	Avg Tm 92.6	90.0	Min/Max 256/277	Min/Max 267/284	Max Temp 65	Max Vac	Max Temp	

Avg Sqrt Del H .8384

Comments:

Ave .4114

WESTON MANAGERS DESIGNERS/CONSULTANTS

Ontario Hydro Method

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client: Alabama Power | Operator: J. Wallis
Source: ESP | Run No.: 2
Sample Loc.: Inlet | Date: 11-NOV-1999 | K Factor: 1.95

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)		COMMENTS
F 5	15	0918	.39	.76	135.416/136.050	647	93	89	267	271	57	4.5		Lc=0.001
E 1	3	0945	1.3	2.53	138.66	637	90	89	265	278	63	9		
2	6		1.2	2.34	141.24	640	91	89	263	276	57	10		
3	9		.83	1.62	143.40	643	94	90	266	279	55	8		
4	12		.63	1.23	145.25	644	95	91	277	280	56	7		
5	15	1000	.64	1.25	147.140/147.280	639	98	92	276	281	58	7		Lc=0.00[illegible]
D 1	3	1003	.60	1.17	149.04	641	96	92	275	284	61	6		
2	6		.70	1.37	150.95	643	96	92	273	282	59	7		
3	9		.83	1.62	153.07	646	98	92	275	276	58	9		
4	12		.35	.68	154.45	649	98	93	270	277	58	6.5		
5	15	1013	.05	.10	155.048/155.240	640	98	93	265	268	60	3.5		Lc=0.002
C 1	3	1052	.02	.04	155.67	585	94	93	264	282	64	2		
2	6		.02	.04	156.12	607	95	93	266	279	61	2		
3	9		.05	.10	156.72	609	96	94	268	271	60	2		
4	12		.05	.10	157.34	578	96	94	266	273	59	2		
5	15	1107	.05	.10	157.946/158.020	588	96	94	263	275	58	2		Lc=0.00[illegible]
B 1	3	1110	.33	.64	159.42	623	96	94	266	271	64	4		
2	6		.28	.55	160.70	625	97	95	269	273	58	3.5		
3	9		.18	.35	161.78	625	99	96	264	274	56	3		
4	12		.06	.12	162.43	618	99	95	269	282	57	2		
5	15	1125	.02	.04	162.826/162.90	615	100	97	261	272	60	2		Lc=0.001
A 1	3	1128	~~.04~~ .32	.62	164.28	615	99	96	265	273	64	3.5		
2	6		.33	.64	165.68	618	95	94	268	271	60	4		
3	9		.43	.84	167.27	628	95	93	261	275	53	5		
4	12		.41	.80	168.81	629	94	93	262	274	52	5		
5	15	1143	.25	.49	170.051	615	94	93	264	277	52	4		
~~[illegible]~~							~~98~~	~~94~~	~~265~~	~~274~~	~~52~~	~~4~~		
			Avg Sqrt Delta P .6002	Avg Delta H .8022	Total Volume 72.058	Avg Ts 633	Avg Tm 92.6 / 90		Min/Max 256/277	Min/Max 261/284	Max Temp 65	Max Vac 10	Max Temp	
				Avg Sqrt Del H .8384	Comments:									

WESTON MANAGERS DESIGNERS/CONSULTANTS

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client	Alabama Power
W.O.#	12251-001-001
Project ID	APG
Mode/Source ID	ESP
Samp. Loc. ID	IN
Run No.ID	3
Test Method ID	OHM
Date ID	9NOV1999
Source/Location	ESP Inlet
Sample Date	11-NOV-1999
Baro. Press (in Hg)	29.71
Operator	JWallis

Stack Conditions

	Assumed	Actual
% Moisture	8	
Impinger Vol (ml)		
Silica gel (g)		
CO2, % by Vol		
O2, % by Vol		
Temperature (°F)		
Meter Temp (°F)		
Static Press (in H_2O)		-6.0
Ambient Temp (°F)	75	

Meter Box ID	WC12
Meter Box Y	1.009
Meter Box Del H	1.9055
Probe ID / Length	8FT
Probe Material	Boro
Pitot / Thermocouple ID	1165
Pitot Coefficient	0.84
Nozzle ID	25A
Avg Nozzle Dia (in)	.250
Area of Stack (ft^2)	418.4
Sample Time	150
Total Traverse Pts	50

K Factor 1.90

Leak Checks	Initial	Mid-Point	Final
Sample Train (ft^3)	0.012		0.018
Leak Check @ (in Hg)	15		17
Pitot good	yes / no	yes / no	yes / no
Orsat good	yes / no	yes / no	yes / no

Temp Check	Pre-Test Set	Post-Test Set
Meter Box Temp	86	90
Reference Temp	85	88
Pass/Fail (+/- 2°)	Pass / Fail	Pass / Fail
Temp Change Response	yes / no	yes / no

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft^3)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)		COMMENTS
	0	~~1340~~ 1340			174.1									
A 1	3		.32	.61	175.49	616	89	88	265	262	Ice Bath	4		
2	6		.33	.63	176.87	621	89	89	267	265	54	4		
3	9		.39	.74	178.31	627	90	89	269	274	54	4.5		
4	12		.41	.78	179.8	630	91	89	265	270	55	4.5		
5	15	1355	.26	.49	181.032/181.100	621	90	89	267	270	55	4		LC=0.001
B 1	3	1358	.31	.59	182.41	627	90	89	266	273	55	4		
2	6		.32	.61	183.75	628	90	89	267	268	54	4		
3	9		.23	.44	184.95	639	90	88	265	266	56	4		
4	12		.15	.29	185.87	623	91	89	263	267	56	3.5		
5	15	1413	.05	.10	186.463/186.530	619	91	89	267	265	57	2.5		LC=0.001
C 1	3	1416	.03	.06	186.92	617	89	88	266	267	55	2		
2	6		.03	.06	187.39	619	89	88	261	262	50	2		
3	9		.03	.06	187.85	628	89	88	264	267	51	2		
4	12		.03	.06	188.30	627	89	88	263	268	51	2		
5	15	1431	.03	.06	188.772/188.830	619	89	88	265	263	51	2		LC=0.001
D 1	3	1434	.59	1.12	190.61	640	88	88	263	266	52	5		
2	6		.73	1.39	192.43	648	89	88	262	267	52	5.5		
3	9		.84	1.60	194.52	651	90	88	267	266	53	7		
4	12		.88	1.67	196.63	654	90	88	271	265	54	7		
5	15	1449	.76	1.44	198.620/198.750	623	91	88	269	272	53	7		LC=0.001
E 1	3	1452	1.2	2.28	201.24	647	89	88	268	268	55	7.5		
2	6		1.2	2.28	203.67	646	89	88	266	271	55	8.5		
3	9		.93	1.77	205.89	651	92	88	269	270	54	9		
4	12		.67	1.27	207.83	654	92	88	268	272	55	8.5		
			Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm		Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	
			.6217	.8286	72.97	643	88.6	87.1	261/269	262/274	64	9		
				Avg Sqrt Del H	Comments:									
				.8580										

WESTON MANAGERS DESIGNERS/CONSULTANTS

Ontario Hydro Method

ISOKINETIC FIELD DATA SHEET — Ontario Hydro Method - Mercury

Client: Alabama Power | Operator: J. Wallis
Source: ESP | Run No.: 3
Sample Loc.: Inlet | Date: 11-Nov-1999 | K Factor: 1.90

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)		COMMENTS
E 5	15	1507	.71	1.35	209.804/210.100	638	94	88	263	271	56	9		LC=0.001
F 1	3	1536	.33	.63	211.46	645	86	86	266	265	64	4		
2	6		.36	.68	212.88	649	86	86	267	270	56	4.5		
3	9		.39	.74	214.36	653	86	86	262	264	55	4.5		
4	12		.43	.82	215.89	651	87	86	263	270	54	5		
5	15	1551	.31	.59	217.227/217.300	640	87	86	266	273	54	4.5		LC=0.001
G 1	3	1554	.45	.86	218.89	651	86	86	265	271	61	4.5		
2	6		.36	.68	220.45	652	87	85	266	263	57	4.5		
3	9		.38	.72	221.82	657	88	86	263	264	57	5		
4	12		.35	.67	223.52	655	88	86	260	264	57	5		
5	15	1609	.16	.30	224.26/224.300	658	88	86	265	264	57	4		LC=0.001
H 1	3	1613	.62	1.18	226.07	663	86	86	267	264	63	5.5		
2	6		.61	1.16	227.86	665	87	86	263	269	56	5.5		
3	9		.52	.99	229.55	666	87	86	265	267	54	5.5		
4	12		.54	1.03	231.26	668	88	86	262	265	55	6		
5	15	1628	.46	.87	232.857/232.900	661	88	86	267	271	56	6		LC=0.001
I 1	3	1631	.36	.68	234.35	655	87	86	268	270	64	5		
2	6		.55	1.05	236.07	659	87	86	263	265	60	6		
3	9		.63	1.2	237.88	669	87	86	261	266	57	6		
4	12		.52	.99	239.60	668	88	86	263	271	56	6		
5	15	1646	.32	.61	240.900/241.050	658	88	86	265	270	56	5		LC=0.001
J 1	3	1648	.35	.67	242.47	638	87	86	264	268	61	5		
2	6		.27	.51	243.72	640	87	86	262	269	60	5		
3	9		.31	.59	245.03	642	87	86	263	271	59	5		
4	12		.40	.76	246.54	647	87	85	265	270	59	5.5		
5	15	1703	.37	.70	248.002	635	87	85	261	263	59	5		

Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm	Min/Max	Min/Max	Max Temp	Max Vac	Max Temp
.6217	.8286	72.997	643	88.6 / 87.1	261/269	262/274	64	9	

Avg Sqrt Del H: .8580

Comments:

Ave .4357

WESTON — MANAGERS DESIGNERS/CONSULTANTS

SAMPLE RECOVERY FIELD DATA

Method Ontario Hydro Mercury Method

Client: Alabama Power
Location/Plant: Barry
W.O. #: 12251.001.001.0002
Source & Location: Inlet

Run No. 1 — Sample Date 11/10/99 — Recovery Date 11/10/99

Sample I.D. APG-ESP-IN-1-OHM-9Nov1999 — Analyst JM — Filter Number W-7 W-8

	Impinger 1	2	3	4	5	6	7 Imp.Total	7 Total LIQ	Silica Gel Total
Contents	KCl	KCl	KCl	HNO_3/H_2O_2	$KMnO_4$	$KMnO_4$	$KMnO_4$		
Final	732.7	685.6	588.2	701.4	689.0	710.7	714.7		321.3
Initial	653.3	666.3	584.7	697.7	688.1	710.1	714.1		300.0
Gain	79.4	19.3	3.5	3.7	0.9	0.6	0.6	108.0	21.3

Impinger Color 1-4 Clear colorless — Labeled? ✓

Silica Gel Condition good — Sealed? ✓ T 129.3

Run No. 2 — Sample Date 11/11/99 — Recovery Date 11/11/99

Sample I.D. APG-ESP-IN-2-OHM-9Nov1999 — Analyst — Filter Number W-9, W-10, W-11

	Impinger 1	2	3	4	5	6	7 Imp.Total	7 Total LIQ	Silica Gel Total
Contents									
Final	752.1	673.0	590.4	705.5	688.9	712.6	722.0		327.4
Initial	660.2	660.9	588.8	700.8	688.8	710.4	722.6		300.0
Gain	91.9	12.1	1.6	4.7	0.1	2.2	-0.6	112	27.4

Impinger Color 1-4 Clear colorless — Labeled? ✓

Silica Gel Condition 1/2 Blue — Sealed? ✓ T 139.4

Run No. 3 — Sample Date 11/11/99 — Recovery Date 11/11/99

Sample I.D. APG-ESP-IN-3-OHM-9Nov1999 — Analyst — Filter Number W12 W13

	Impinger 1	2	3	4	5	6	Imp.Total	7	Total
Contents									
Final	777.9	632.4	760.3	628.3	604.3	708.8	718.7		318.8
Initial	692.6	622.0	759.0	624.0	603.4	708.2	718.2		300.0
Gain	85.3	10.4	1.3	4.3	0.9	0.6	0.5	103.3	18.8

Impinger Color 1-4 Clear colorless — Labeled? ✓

Silica Gel Condition 1/2 Blue — Sealed? ✓ T 122.1

Check COC for Sample IDs of Media Blanks

WESTON

Source Gas Analysis Data Sheet - Method 3

Client ALABAMA POWER

Analyst TB

Location/Plant WILSONVILLE, AL

Date 10-99

Source INLET

Analytical Method ~~(circle one)~~ ORSAT

W.O. Number

Run Number 1

Leak Check Good? (circle one) Yes No

Analysis Number	Analysis Time	Percent CO_2 (A)	Percent Total (B)	Percent O_2 (B - A)	Percent N_2 (100 - B)
1		14.4	18.6	4.2	
2		14.2	18.4	4.2	
3		14.4	18.6	4.2	
	Average	14.3	18.5	4.2	

Run Number 2

Leak Check Good? (circle one) Yes No

Analysis Number	Analysis Time	Percent CO_2 (A)	Percent Total (B)	Percent O_2 (B - A)	Percent N_2 (100 - B)
1		14.2	18.2	4.0	
2		14.4	18.6	4.2	
3		14.5	18.8	4.3	
	Average	14.4	18.5	4.2	

Run Number 3

Leak Check Good? (circle one) Yes No

Analysis Number	Analysis Time	Percent CO_2 (A)	Percent Total (B)	Percent O_2 (B - A)	Percent N_2 (100 - B)
1		14.2	18.4	4.2	
2		14.4	18.6	4.2	
3		14.2	18.2	4.0	
	Average	14.3	18.4	4.1	

Acceptable differences for repeat analysis:

if CO_2 > 4% than +/- 0.3%

if CO_2 < or = 4% than +/- 0.2%

if O_2 > or = 15% than +/- 0.2%

if O_2 < 15% than +/- 0.3%

Ambient Check

Oxygen 20.8

Carbon Dioxide 0.0

Report all values to the nearest 0.1 percent

Comments

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Sample and Velocity Traverse Point Data Sheet Method 1

Client: Al. Power
Loaction/Plant: Childersburg
Source: Inlet

Operator: KA
Date: 11-9-99

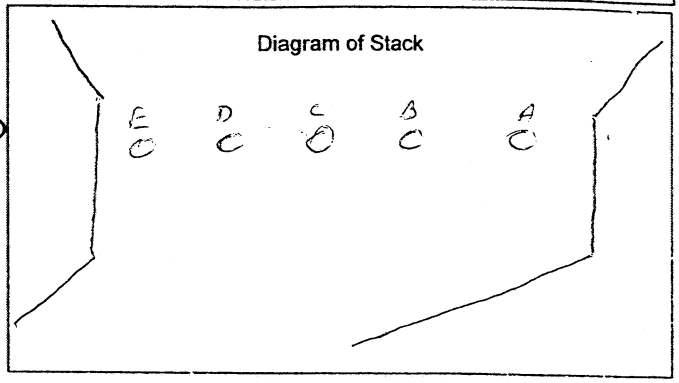
Duct Type	☐ Circular	☒ Rectangular Duct	Indicate appropriate type
Traverse Type	☒ Particulate Traverse	☐ Velocity Traverse	

Distance from far wall to outside of port (in.) = C	87.5
Port Depth (in.) = D	1.6
Depth of Duct, diameter (in.) = C-D	71.5
Area of Duct (ft^2)	209.2 X 2
Total Traverse Points	25/Duct
Total Traverse Points per Port	5

Rectangular Ducts Only	
Width of Duct, rectangular duct only (in.)	72.25
Total Ports (rectangular duct only)	5/Duct (x2)

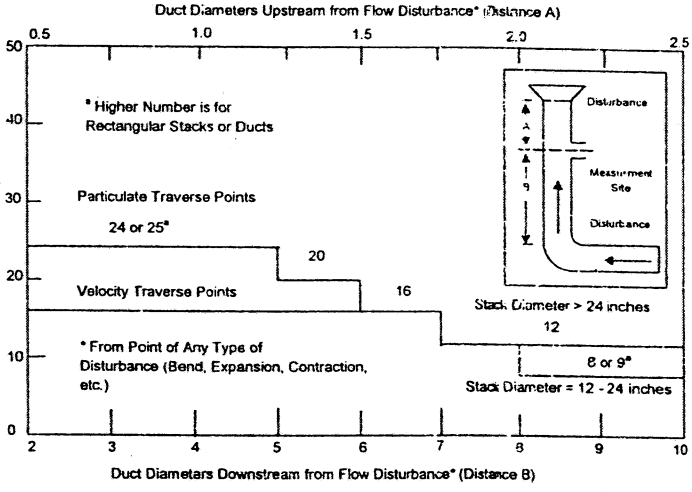
Flow Disturbances	
Upstream - A (ft)	42"
Downstream - B (ft)	28"
Upstream - A (duct diameters)	
Downstream - B (duct diameters)	

Diagram of Stack



Traverse Point Locations

Traverse Point	% of Duct	Distance from Inside Duct Wall (in)	Distance from Outside of Port (in)
1	10.0	7.15	23.15
2	30.0	21.45	37.45
3	50.0	35.75	51.75
4	70.0	50.05	66.55
5	90.0	64.35	80.35
6			
7			
8			
9			
10			
11			
12			



Equivalent Diameter = (2*L*W)/(L+W)

Traverse Point Location Percent of Stack -Circular

Traverse Point	Number of Traverse Points: 1	2	3	4	5	6	7	8	9	10	11	12
1		14.6		6.7		4.4		3.2		2.6		2.1
2		85.4		25		14.6		10.5		8.2		6.7
3				75		29.6		19.4		14.6		11.8
4				93.3		70.4		32.3		22.6		17.7
5						85.4		67.7		34.2		25
6						95.6		80.6		65.8		35.6
7								89.5		77.4		64.4
8								96.8		85.4		75
9										91.8		82.3
10										97.4		88.2
11												93.3
12												97.9

Traverse Point Location Percent of Stack -Rectangular

Traverse Point	Number of Traverse Points: 1	2	3	4	5	6	7	8	9	10	11	12
1		25.0	16.7	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2
2		75.0	50.0	37.5	30.0	25.0	21.4	18.8	16.7	15.0	13.6	12.5
3			83.3	62.5	50.0	41.7	35.7	31.3	27.8	25.0	22.7	20.8
4				87.5	70.0	58.3	50.0	43.8	38.9	35.0	31.8	29.2
5					90.0	75.0	64.3	56.3	50.0	45.0	40.9	37.5
6						91.7	78.6	68.8	61.1	55.0	50.0	45.8
7							92.9	81.3	72.2	65.0	59.1	54.2
8								93.8	83.3	75.0	68.2	62.5
9									94.4	85.0	77.3	70.8
10										95.0	86.4	79.2
11											95.5	87.5
12												95.8

Rectangular Stack Points & Matrix
9 - 3 x 3
12 - 4 x 3
16 - 4 x 4
20 - 5 x 4
25 - 5 x 5
30 - 6 x 5
36 - 6 x 6
42 - 7 x 6
49 - 7 x 7

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Method1.xls

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ESP INLET

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client	Alabama Power
W.O.#	12251-001-001
Project ID	APG
Mode/Source ID	ESPO
Samp. Loc. ID	STK
Run No.ID	1
Test Method ID	OHM
Date ID	9NOV1999
Source/Location	ESP Stack
Sample Date	11-10-99
Baro. Press (in Hg)	29.80
Operator	TB

Stack Conditions

	Assumed	Actual
% Moisture	7.5	
Impinger Vol (ml)		112.9g
Silica gel (g)		25.2g
CO2, % by Vol	12	
O2, % by Vol	6	
Temperature (°F)	250	
Meter Temp (°F)	80	
Static Press (in H_2O)	-10.5	-0.5
Ambient Temp (°F)	72°	

Meter Box ID	15
Meter Box Y	0.9961
Meter Box Del H	2.0355
Probe ID / Length	8'
Probe Material	Boro
Pitot / Thermocouple ID	P167
Pitot Coefficient	0.84
Nozzle ID	0.275
Avg Nozzle Dia (in)	0.275
Area of Stack (ft^2)	~~946~~ 432
Sample Time	180 min
Total Traverse Pts	60

K Factor 4.56

Leak Checks	Initial	Mid-Point	Final
Sample Train (ft^3)	.011		.010
Leak Check @ (in Hg)	15		13
Pitot good	yes / no	yes / no	yes / no
Orsat good	yes / no	yes / no	yes / no

Temp Check	Pre-Test Set	Post-Test Set
Meter Box Temp	77	75
Reference Temp	75	78
Pass/Fail (+/- 2°)	Pass / Fail	Pass / Fail
Temp Change Response	yes / no	yes / no

	TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft^3)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	HEATED LINE TEMP (°F)	COMMENTS
		0	1155			976.785									
A	1	3		.05	0.23	977.8	240	80	78	264	253	67	3	243	
	2	6		.05	0.23	978.7	239	80	78	261	254	61	3	244	
	3	9		.08	0.36	979.7	241	81	79	257	264	60	3	244	
	4	12		.12	0.55	980.8	243	82	79	255	263	57	4	243	
	5	15	1210	.14	0.64	982.132	240	83	79	257	264	55	4	245	
		0	1215	–	–	982.350	–	–	–	–	–	–	–	–	
B	1	3		.08	0.36	983.3	244	81	78	248	264	62	3	244	
	2	6		.13	0.59	984.6	248	81	77	254	264	60	4	244	
	3	9		.18	0.82	986.1	255	83	79	254	263	60	4	242	
	4	12		.22	1.00	987.7	259	84	79	256	262	58	5	243	
	5	15	1230	.24	1.09	989.325	260	85	79	256	263	58	5	243	
		0	1236	–	–	989.470	–	–	–	–	–	–	–	–	
C	1	3		.18	0.82	990.9	257	80	77	265	264	64	4	245	
	2	6		.22	1.00	992.5	260	83	78	248	262	61	5	245	
	3	9		.27	1.23	994.3	266	84	78	255	263	60	5	245	
	4	12		.33	1.51	996.3	267	84	78	255	263	60	6	241	
	5	15	1251	.45	2.05	998.542	265	85	78	255	264	61	7	245	
		0	1257	–	–	998.785	–	–	–	–	–	–	–	–	
D	1	3		.22	1.00	1000.4	266	86	81	248	267	65	5	244	
	2	6		.17	0.78	1001.8	266	86	80	251	265	61	4	246	
	3	9		.17	0.78	1003.3	273	86	80	256	262	63	4	245	
	4	12		.22	1.00	1004.9	275	86	80	264	263	61	5	249	
	5	15	1312	.24	1.09	1006.575	274	86	81	256	263	61	5	250	
					1.1295										
				Avg Sqrt Delta P: .4861	Avg Delta H: ~~1.135~~	Total Volume: 99.854	Avg Ts: 262.15		Avg Tm: 84.6	Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	

AVG ΔP: .2478

Avg Sqrt Del H: ~~1.0411~~ 1.0378

Comments: LEAK CHECKS

Ontario Hydro Method

PORT A PRE: .011@15" POST: .008@7"

PORT B PRE: .010@8" POST: .009@7"

PORT C PRE: .006@7" POST: .014@11"

PORT D PRE: .010@10" POST: .008@7"

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ISOKINETIC FIELD DATA SHEET — Ontario Hydro Method - Mercury

Client: Alabama Power | Operator: TB
Source: ESP | Run No.: 1
Sample Loc.: Stack | Date: 11-10-99 | K Factor: 4.56

	TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	[illegible]	COMMENTS
		0	1317			1006.800									
E	1	3		.18	0.82	1006.3	275	86	82	257	261	63	4	251	
	2	6		.22	1.00	1009.9	276	86	82	256	265	60	5	250	
	3	9		.20	0.91	1011.4	279	88	84	257	265	60	5	254	
	4	12		.25	1.14	1013.1	282	88	82	260	262	59	5	255	
	5	15	1332	.27	1.23	1014.847	280	89	83	260	264	60	6	255	
		0	1337	—	—	1014.978	—	—	—	—	—	—	—	—	
F	1	3		.22	1.00	1016.5	264	87	84	261	262	66	5	257	
	2	6		.26	1.19	1018.3	266	88	84	260	262	63	5	256	
	3	9		.33	1.50	1020.2	272	89	84	257	265	61	6	256	
	4	12		.41	1.87	1022.4	280	89	84	259	262	60	7	257	
	5	15	1352	.40	1.82	1024.560	281	91	84	259	263	58	7	257	
		0	1403			1024.750									
G	1	3		.20	0.91	1026.3	230	86	82	264	265	65	5	259	
	2	6		.24	1.09	1028.0	233	88	83	262	263	61	5	258	
	3	9		.34	1.55	1030.0	234	89	84	239	257	54	6	253	
	4	12		.43	1.96	1032.2	242	91	84	237	244	52	8	250	
	5	15	1418	.46	2.10	1034.536	244	91	84	236	238	52	8	250	
		0	1421	—	—	1034.680	—	—	—	—	—	—	—	—	
H	1	3		.23	1.05	1036.3	250	88	84	241	254	60	5	249	
	2	6		.33	1.50	1038.3	255	90	84	248	255	57	6	249	
	3	9		.35	1.60	1040.3	264	92	84	249	254	54	6	250	
	4	12		.41	1.87	1042.4	266	92	85	267	264	54	7	250	
	5	15	1436	.40	1.82	1044.650	259	93	84	262	264	55	7	250	
		0	1440	—	—	1044.782	—	—	—	—	—	—	—	—	
I	1	3		.12	0.55	1045.8	254	90	84	260	261	59	3	249	
	2	6		.16	0.73	1047.2	258	88	84	263	260	57	4	250	
	3	9		.21	0.96	1048.8	261	90	84	262	263	54	5	250	
	4	12		.29	1.32	1050.6	260	90	84	266	264	55	6	250	
	5	15	1455	.37	1.69	1052.1065	267	92	84	266	264	57	7	250	
				Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm		Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	

Avg Sqrt Del H

Comments:
PORT E PRE: .007@8" POST: .005@8" | PORT F PRE: .005@8" POST: .011@8" | PORT G PRE: .010@10" POST: .005@10" | PORT H PRE: .008@10" POST: .006@10" | PORT I PRE: POST:

WESTON MANAGERS DESIGNERS/CONSULTANTS

7883 9.97

ISOKINETIC FIELD DATA SHEET — Ontario Hydro Method - Mercury

Client: Alabama Power | Operator: TB
Source: ESP | Run No.: 1
Sample Loc.: Stack | Date: 11-10-99 | K Factor: 4.56

	TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	[illegible]	COMMENTS
		0	1507			1053.168									
J	1	3		.24	1.09	1054.8	264	86	83	268	269	64	6	255	
	2	6		.25	1.14	1056.5	266	87	84	266	259	60	6	254	
	3	9		.27	1.32	1058.4	273	90	85	266	270	57	6	254	
	4	12		.29	1.32	1060.2	278	90	83	267	264	58	6	255	
	5	15	1522	.31	1.41	1062.085	279	90	84	263	264	58	6	254	
		0	1533	—	—	1062.480	—	—	—	—	—	—	—	—	
K	1	3		.12	0.55	1063.7	260	88	84	271	262	63	4	256	
	2	6		.16	0.73	1064.8	265	88	84	269	267	60	4	256	
	3	9		.23	1.05	1066.5	267	89	83	266	263	58	5	250	
	4	12		.27	1.23	1068.4	271	89	84	263	262	58	6	251	
	5	15	1548	.43	1.96	1070.548	280	90	84	267	264	59	8	252	
		0	1557	—	—	1071.100	—	—	—	—	—	—	—	—	
L	1	3		.12	0.55	1072.3	263	87	84	271	269	66	4	254	
	2	6		.17	0.78	1073.8	266	88	84	266	265	63	5	255	
	3	9		.27	1.23	1075.5	269	89	85	265	272	60	6	254	
	4	12		.31	1.41	1077.5	273	89	84	263	264	61	6	254	
	5	15	1612	.36	1.69	1079.517	279	89	84	263	264	63	7	249	
				Avg Sqrt Delta P .4861	Avg Delta H	Total Volume	Avg Ts	Avg Tm		Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	
				Avg Sqrt Del H											

WESTON MANAGERS DESIGNERS/CONSULTANTS

AVGAP: .2478

Comments:

PORT J PRE: .014 @ 10" POST: .010 @ 10" | PORT K PRE: .010 @ 10" POST: .007 @ 10" | PORT L PRE: .013 @ 10" POST: .010 @ 10"

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client	Alabama Power
W.O.#	12251-001-001
Project ID	APG
Mode/Source ID	ESPO
Samp. Loc. ID	STK
Run No.ID	2
Test Method ID	OHM
Date ID	9NOV1999
Source/Location	ESP Stack
Sample Date	11-11-99
Baro. Press (in Hg)	29.68
Operator	TB

Stack Conditions

	Assumed	Actual
% Moisture	6.3	
Impinger Vol (ml)		130.9g
Silica gel (g)		29.8g
CO2, % by Vol	12	
O2, % by Vol	6	
Temperature (°F)	262	
Meter Temp (°F)	80	
Static Press (in H_2O)	-10.5	-10.5
Ambient Temp (°F)	64°F	

Meter Box ID	15
Meter Box Y	0.9961
Meter Box Del H	2.0355
Probe ID / Length	8'
Probe Material	Boro
Pitot / Thermocouple ID	P167
Pitot Coefficient	0.84
Nozzle ID	0.275
Avg Nozzle Dia (in)	0.275
Area of Stack (ft^2)	432
Sample Time	180 MIN
Total Traverse Pts	60

K Factor 4.58

Leak Checks	Initial	Mid-Point	Final
Sample Train (ft^3)	.015		.013
Leak Check @ (in Hg)	15		10
Pitot good	yes / no	yes / no	yes / no
Orsat good	yes / no	yes / no	yes / no

Temp Check	Pre-Test Set	Post-Test Set
Meter Box Temp	65	75
Reference Temp	63	76
Pass/Fail (+/- 2°)	Pass / Fail	Pass / Fail
Temp Change Response	yes / no	yes / no

	TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft^3)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	[illegible]	COMMENTS
		0	0730			80.675									
L	1	3		.15	0.69	82.0	251	69	68	267	269	67	4	250	
	2	6		.18	0.82	83.5	252	71	68	260	265	61	4	248	
	3	9		.26	1.19	85.2	261	72	68	266	264	58	4	250	
	4	12		.33	1.51	87.1	263	74	69	263	264	57	5	250	
	5	15	0745	.41	1.88	89.335	266	76	70	266	263	54	6	249	
		0	0750	—	—	89.517	—	—	—	—	—	—	—	—	
K	1	3		.12	0.55	90.7	251	70	67	269	265	56	3	247	
	2	6		.18	0.82	92.1	255	73	67	264	269	56	4	248	
	3	9		.24	1.18	93.8	257	73	68	264	262	54	4	248	
	4	12		.30	1.37	95.7	257	73	67	266	262	51	5	249	
	5	15	0805	.51	2.34	98.063	267	74	67	264	260	49	5	250	
		0	0813	—	—	98.250	—	—	—	—	—	—	—	—	
J	1	3		.25	1.15	99.9	254	72	69	270	270	57	5	249	
	2	6		.28	1.28	101.2	257	74	69	262	266	54	5	250	
	3	9		.31	1.42	103.5	260	75	69	266	263	53	5	250	
	4	12		.33	1.51	105.5	263	76	69	265	264	52	5	250	
	5	15	0828	.41	1.88	107.650	263	77	70	267	262	52	6	250	
		0	0834	—	—	107.842	—	—	—	—	—	—	—	—	
I	1	3		.15	0.69	109.2	252	78	74	261	267	61	4	247	
	2	6		.17	0.78	110.6	252	79	74	265	266	60	4	244	
	3	9		.20	0.92	112.2	253	79	74	265	262	58	4	245	
	4	12		.27	1.24	114.0	256	80	74	266	261	57	5	249	
	5	15	0849	.36	1.65	116.040	257	80	74	266	262	57	5	249	
						108.876									
				Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm		Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	
				.5051	1.2235	95.065	255.1	77.05							
					Avg Sqrt Del H	Comments: LEAK CHECKS									
					1.0812										

AVG ΔP: .267

Ontario Hydro Method

PORT L PRE: .015 @ 15" POST: .013 @ 12" | PORT K PRE: .011 @ 8" POST: .010 @ 7" | PORT J PRE: .010 @ 10" POST: .009 @ 10" | PORT I PRE: .010 @ 10" POST: .013 @ 10"

WESTON MANAGERS DESIGNERS/CONSULTANTS

MW ADEM

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client: Alabama Power | Operator: TB
Source: ESP | Run No.: 2
Sample Loc.: Stack | Date: 11-11-99 | K Factor: 4.58

	TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	HEATED LINE TEMP	COMMENTS
		0	0853			116.214									
H	1	3		.25	1.15	117.9	251	78	74	266	262	61	5	250	
	2	6		.32	1.47	119.8	251	79	74	266	265	58	5	250	
	3	9		.44	2.02	122.0	253	80	74	263	261	57	6	251	
	4	12		.46	2.11	124.3	255	82	74	267	263	57	6	250	
	5	15	0908	.42	1.92	126.470	253	83	74	262	261	57	6	250	
		0	0913	–	–	127.940	–	–	–	–	–	–	–	–	
G	1	3		.21	0.96	128.6	223	79	74	268	267	61	4	250	
	2	6		.21	0.96	130.2	225	80	75	261	260	60	4	249	
	3	9		.33	1.51	132.2	225	79	74	238	247	59	5	250	
	4	12		.40	1.83	134.3	230	81	74	236	239	58	6	250	
	5	15	0928	.50	2.29	136.753	232	82	75	237	242	58	7	250	
		0	0943	–	–	137.633	–	–	–	–	–	–	–	–	
F	1	3		.24	1.10	139.2	258	77	75	247	245	67	5	249	
	2	6		.26	1.19	141.0	260	79	75	248	247	63	5	249	
	3	9		.31	1.42	142.9	264	80	75	253	264	60	5	250	
	4	12		.41	1.88	145.0	274	81	76	266	262	59	6	251	
	5	15	0958	.52	2.38	147.452	275	83	76	265	265	59	7	251	
		0	1001	–	–	147.645	–	–	–	–	–	–	–	–	
E	1	3		.17	0.78	149.1	263	81	77	273	265	63	4	251	
	2	6		.21	0.96	150.7	265	83	77	267	265	63	4	250	
	3	9		.24	1.10	152.4	271	83	77	263	264	63	5	250	
	4	12		.24	1.10	154.1	277	83	77	267	262	63	5	249	
	5	15	1016	.32	1.47	156.010	280	83	77	263	262	64	5	251	
		0	1019	–	–	156.113	–	–	–	–	–	–	–	–	
D	1	3		.23	1.05	157.6	266	83	78	259	265	67	5	251	
	2	6		.18	0.82	159.2	267	84	78	266	266	62	5	251	
	3	9		.21	0.96	160.7	269	84	78	263	260	62	5	251	
	4	12	1034	.24	1.10	162.5	270	84	78	264	263	60	5	250	
	5	15		.32	1.47	164.426	271	84	78	264	262	57	5	251	
				Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm		Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	
					Avg Sqrt Del H	Comments: LEAK CHECKS									

WESTON MANAGERS DESIGNERS/CONSULTANTS

PORT H PRE: .010@9" POST: .014@10" | PORT G PRE: .011@10" POST: .018@10" | PORT F PRE: .015@10" POST: .014@10" | PORT E PRE: .009@10" POST: | PORT D PRE: POST: .015@

ISOKINETIC FIELD DATA SHEET — Ontario Hydro Method - Mercury

Client: Alabama Power | Operator: TB
Source: ESP | Run No.: 2
Sample Loc.: Stack | Date: 11-11-99 | K Factor: 4.58

TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	[illegible]	COMMENTS
	0	1100			166.335									
C 1	3	|	.13	0.60	167.6	253	81	79	260	266	66	TB ~~64~~	251	
2	6	|	.20	0.92	169.2	255	83	79	254	266	64	4	251	
3	9	|	.27	1.24	171.0	259	83	79	255	261	61	5	251	
4	12	|	.32	1.47	172.9	261	83	79	253	251	61	5	251	
5	15	1115	.43	1.97	175.146	261	85	79	255	254	61	6	252	
	0	1120	—	—	175.326	—	—	—	—	—	—	—	—	
B 1	3	|	.15	0.68	176.7	244	83	79	262	252	65	4	251	
2	6	|	.16	0.73	178.1	246	85	80	255	256	63	4	250	
3	9	|	.22	1.01	179.7	250	84	79	255	252	62	5	251	
4	12	|	.28	1.28	181.6	252	83	78	256	251	62	5	251	
5	15	1135	.28	1.28	183.464	253	85	79	255	252	63	5	250	
	0	1140	—	—	183.710	—	—	—	—	—	—	—	—	
A 1	3	|	.06	0.27	184.7	237	80	78	258	257	66	3	251	
2	6	|	.07	0.32	185.7	237	82	79	241	249	64	3	250	
3	9	|	.08	0.37	186.7	239	82	79	246	243	65	3	251	
4	12	|	.10	0.46	187.8	241	82	79	246	240	64	3	250	
5	15	1155	.22	1.01	189.377	241	82	79	246	239	65		250	
			Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm		Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	
				Avg Sqrt Del H	Comments:									

PORT C PRE: .013@10" POST: .009@10" | PORT B PRE: .009@10" POST: .008@10" | PORT A PRE: .013@10" POST:

WESTON MANAGERS DESIGNERS/CONSULTANTS

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client	Alabama Power
W.O.#	12251-001-001
Project ID	APG
Mode/Source ID	ESPO
Samp. Loc. ID	STK
Run No.ID	3
Test Method ID	OHM
Date ID	9NOV1999
Source/Location	ESP Stack
Sample Date	11-11-99
Baro. Press (in Hg)	29.68
Operator	TB

Stack Conditions

	Assumed	Actual
% Moisture	7.0	
Impinger Vol (ml)		
Silica gel (g)		
CO2, % by Vol	12	
O2, % by Vol	6	
Temperature (°F)	260	
Meter Temp (°F)	80	
Static Press (in H_2O)	-10.5	-10.5
Ambient Temp (°F)	77°F	

Meter Box ID	15
Meter Box Y	0.9961
Meter Box Del H	2.0355
Probe ID / Length	8'
Probe Material	Boro
Pitot / Thermocouple ID	P167
Pitot Coefficient	0.84
Nozzle ID	.275
Avg Nozzle Dia (in)	.275
Area of Stack (ft^2)	452
Sample Time	180
Total Traverse Pts	60

K Factor 4.54

Leak Checks	Initial	Mid-Point	Final
Sample Train (ft^3)	.015		.007
Leak Check @ (in Hg)	15		10
Pitot good	yes no	yes no	yes no
Orsat good	yes no	yes no	yes no

Temp Check	Pre-Test Set	Post-Test Set
Meter Box Temp	77	72
Reference Temp	77	73
Pass/Fail (+/- 2°)	Pass Fail	Pass Fail
Temp Change Response	yes no	yes no

	TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft^3)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPINGER EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	HEATED BOX TEMP	COMMENTS
		0	1340			189.835									
A	1	3		.07	0.32	190.9	235	79	78	250	238	67	3	250	
	2	6		.07	0.32	191.8	235	79	78	245	242	65	3	249	
	3	9		.10	0.45	192.9	236	80	78	246	237	67	3	249	
	4	12		.10	0.45	194.0	238	80	78	246	235	60	3	246	
	5	15	1355	.12	1.00	195.702	238	80	78	245	237	60	3	249	
		0	1358	—	—	195.847	—	—	—	—	—	—	—	—	
B	1	3		.12	0.54	197.1	250	80	78	252	238	65	3	249	
	2	6		.16	0.73	198.5	250	81	78	245	240	63	3	250	
	3	9		.22	1.00	200.1	253	82	79	250	240	67	3	250	
	4	12		.29	1.32	202.0	256	82	78	254	242	60	4	249	
	5	15	1413	.32	1.45	203.891	256	84	79	256	244	59	4	250	
		0	1417	—	—	204.000	—	—	—	—	—	—	—	—	
C	1	3		.13	0.59	205.3	266	81	79	252	258	66	3	250	
	2	6		.22	1.00	206.0	262	82	79	253	262	64	3	251	
	3	9		.26	1.18	208.7	265	83	79	257	257	62	3	250	
	4	12		.33	1.50	210.7	264	84	79	265	260	60	4	249	
	5	15	1432	.43	1.95	212.948	263	85	79	265	257	60	4	249	
		0	1436	—	—	213.075	—	—	—	—	—	—	—	—	
D	1	3		.19	0.86	214.6	265	82	79	271	268	64	3	250	
	2	6		.17	0.77	216.0	265	83	79	266	264	64	3	249	
	3	9		.19	0.86	217.5	267	84	80	265	256	63	3	250	
	4	12		.22	1.00	219.2	270	83	79	264	258	62	3	250	
	5	15	1451	.33	1.50	221.158	272	84	79	264	258	62	4	250	
				Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm		Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	
				.5083	1.2275	105.286	264.1	80.25							
					Avg Sqrt Del H										
					1.0830										

WESTON MANAGERS DESIGNERS/CONSULTANTS

AVG ΔP: .2054

Comments: LEAK CHECKS

Ontario Hydro Method

PORT A PRE: .015@15" POST: .010@8" | PORT B PRE: .010@10" POST: .007@5" | PORT C PRE: .007@5" POST: .008@5" | PORT D PRE: .008@5 POST: .007@5

ISOKINETIC FIELD DATA SHEET — Ontario Hydro Method - Mercury

Client: Alabama Power | Operator: TB
Source: ESP | Run No.: 3
Sample Loc.: Stack | Date: 11-11-99 | K Factor: 4.54

	TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	Heated Leak Check	COMMENTS
		0	1454			221.345									
E	1	3		.18	0.82	222.8	270	83	79	267	257	64	3	249	
	2	6		.23	1.04	224.4	272	83	79	263	259	64	4	250	
	3	9		.27	1.23	226.3	276	84	80	266	257	64	4	250	
	4	12		.29	1.32	228.1	282	84	79	266	258	64	4	250	
	5	15	1509	.34	1.54	230.105	285	85	80	266	264	65	4	250	
		0	1512	—	—	230.270	—	—	—	—	—	—	—	—	
F	1	3		.22	1.00	231.9	269	82	79	270	260	67	3	249	
	2	6		.24	1.09	233.6	269	84	79	266	264	66	3	250	
	3	9		.31	1.41	235.5	271	83	80	260	269	65	4	250	
	4	12		.37	1.68	237.5	277	84	79	264	269	65	4	250	
	5	15	1527	.44	2.00	239.755	278	85	80	266	267	66	5	250	
		0	1534	—	—	239.971	—	—	—	—	—	—	—	—	
G	1	3		.22	1.00	241.6	241	81	79	269	270	67	4	250	
	2	6		.24	1.09	243.3	241	81	79	258	260	64	4	251	
	3	9		.37	1.68	245.4	245	82	79	244	257	64	4	251	
	4	12		.47	2.13	247.7	251	84	79	246	234	62	5	250	
	5	15	1549	.55	2.50	250.222	251	85	79	245	240	62	5	250	
		0	1552	—	—	250.362	—	—	—	—	—	—	—	—	
H	1	3		.29	1.32	252.7	265	82	78	258	250	64	4	250	
	2	6		.35	1.59	254.1	268	83	79	255	251	64	4	251	
	3	9		.49	2.22	256.5	272	84	79	262	259	63	5	250	
	4	12		.48	2.18	258.8	270	85	79	266	264	62	5	250	
	5	15	1607	.45	2.04	261.150	267	85	80	266	265	63	5	250	
		0	1610	—	—	261.305	—	—	—	—	—	—	—	—	
I	1	3		.15	0.68	262.705	264	81	79	270	261	67	3	251	
	2	6		.18	0.82	264.2	265	82	79	264	267	67	3	251	
	3	9		.24	1.09	265.9	267	82	79	265	264	64	4	250	
	4	12		.32	1.45	267.8	270	83	79	266	262	63	4	250	
	5	15	1625	.47	2.13	270.190	271	83	79	266	262	62	5	250	
				Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm		Min/Max	Min/Max	Max Temp	Max Vac	Max Temp	
					Avg Sqrt Del H	Comments: LEAK CHECK									

WESTON MANAGERS DESIGNERS/CONSULTANTS

PORT E PRE: .009@5" POST: .006@5" | PORT F PRE: .006@7" POST: .007@6" | PORT G PRE: .011@7" POST: .010@8" | PORT H PRE: .009@8" POST: .006@6" | PORT I PRE: .007 POST: .010

ISOKINETIC FIELD DATA SHEET

Ontario Hydro Method - Mercury

Client: Alabama Power | Operator: TB
Source: ESP | Run No.: 3
Sample Loc.: Stack | Date: 11-11-99 | K Factor: 1.54

	TRAVERSE POINT NO.	SAMPLE TIME (min)	CLOCK TIME (plant time)	VELOCITY PRESSURE Delta P (in H2O)	ORIFICE PRESSURE Delta H (in H2O)	DRY GAS METER READING (ft³)	STACK TEMP (°F)	DGM INLET TEMP (°F)	DGM OUTLET TEMP (°F)	PROBE TEMP (°F)	FILTER BOX TEMP (F)	IMPING EXIT TEMP (°F)	SAMPLE TRAIN VAC (in Hg)	HEATED LINE	COMMENTS
		0	1629			270.340									
J	1	3		.24	1.09	271.9	272	80	78	267	260	66	4	250	
	2	6		.26	1.18	273.7	273	80	78	262	264	64	4	251	
	3	9		.28	1.27	275.5	276	82	78	265	263	63	4	250	
	4	12		.32	1.45	277.4	280	82	77	265	263	63	4	251	
	5	15	1644	.38	1.73	279.595	281	83	78	264	264	63	5	251	
		0	1648	—	—	279.785	—	—	—	—	—	—	—	—	
K	1	3		.13	0.59	281.0	264	79	77	271	261	65	3	250	
	2	6		.18	0.82	282.3	265	80	77	261	269	63	3	250	
	3	9		.25	1.14	284.2	266	80	77	266	262	62	4	251	
	4	12		.31	1.41	286.0	272	81	77	266	263	62	4	250	
	5	15	1703	.43	1.95	288.367	279	81	77	267	263	63	5	250	
		0	1706	—	—	288.380		—	—	—	—	—	—		
L	1	3		.13	0.59	289.7	266	79	77	270	268	65	3	250	
	2	6		.20	0.91	291.2	270	79	76	261	270	63	3	251	
	3	9		.25	1.14	292.9	274	79	76	265	262	62	4	250	
	4	12		.28	1.27	294.8	275	79	76	266	262	62	4	250	
	5	15	1721	.28	1.27	296.718	275	80	76	266	264	63		250	

Avg Sqrt Delta P	Avg Delta H	Total Volume	Avg Ts	Avg Tm	Min/Max	Min/Max	Max Temp	Max Vac	Max Temp

Avg Sqrt Del H

Comments: LEAK CHECK

PORT J PRE: .009@9" | PORT K PRE: .009@8" | PORT L PRE: .008@10"
POST: .013@10" | POST: .006@10" | POST: .007@10"

WESTON MANAGERS DESIGNERS/CONSULTANTS

Source Gas Analysis Data Sheet - Method 3

Client ALABAMA Power

Analyst SM TB

Location/Plant EC GASTON

Date 11/10/99 11/11/99

Source UNIT 1 EXHAUST

Analytical Method ~~(circle one)~~ OLSAT

W.O. Number

Run Number 1

Leak Check Good? (circle one) Yes No

Analysis Number	Analysis Time	Percent CO_2 (A)	Percent Total (B)	Percent O_2 (B - A)	Percent N_2 (100 - B)
1		12.0	19.2	7.2	
2		12.0	19.0	7.0	
3		12.2	19.2	7.0	
	Average	12.1	19.1	7.1	

Run Number 2

Leak Check Good? (circle one) Yes No

Analysis Number	Analysis Time	Percent CO_2 (A)	Percent Total (B)	Percent O_2 (B - A)	Percent N_2 (100 - B)
1		12.0	18.8	6.8	
2		12.0	18.8	6.8	
3		12.0	19.0	7.0	
	Average	12	18.9	6.9	

Run Number 3

Leak Check Good? (circle one) Yes No

Analysis Number	Analysis Time	Percent CO_2 (A)	Percent Total (B)	Percent O_2 (B - A)	Percent N_2 (100 - B)
1		12.2	18.6	6.4	
2		12.2	18.8	6.6	
3		12.0	18.6	6.6	
	Average	12.1	18.7	6.5	

Acceptable differences for repeat analysis:

if CO_2 > 4% than +/- 0.3%

if CO_2 < or = 4% than +/- 0.2%

if O_2 > or = 15% than +/- 0.2%

if O_2 < 15% than +/- 0.3%

Ambient Check

Oxygen 20.8

Carbon Dioxide 0.0

Report all values to the nearest 0.1 percent

Comments

WESTON MANAGERS DESIGNERS/CONSULTANTS

Method3

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SAMPLE RECOVERY FIELD DATA

Method Ontario Hydro Mercury

Client Alabama Power W.O. #

Location/Plant Gaston Source & Location Outlet

Run No. 1 Sample Date 11/10/99 Recovery Date 11/10/99

Sample I.D. ABG-ESPO-STK-1-OHM-9NOV1999 Analyst JM Filter Number W-129

	Impinger 1	2	3	4	5	6	~~Imp.Total~~ 7	~~7~~ TOTAL LIQ	Total Silica Gel
Contents									
Final	752.7	638.6	736.2	692.8	617.4	626.4	678.2		375.2
Initial	674.4	603.3	731.7	688.7	617.3	625.0	679.0		300
Gain	78.3	25.3	4.5	4.1	.1	1.4	-0.8	112.9g	25.2

Impinger Color 1-4 clear Labeled? ✓

Silica Gel Condition good Sealed? ✓ 138.1

Run No. 2 Sample Date 11/11/99 Recovery Date 11/11/99

Sample I.D. ABG-ESPO-STK-2-OHM-9NOV1999 Analyst Filter Number W130

	Impinger 1	2	3	4	5	6	Imp.Total	7	Total
Contents									
Final	782.9	624.6	732.2	694.4	627.6	622.8	675.9		329.8
Initial	686.7	600.1	728.3	688.8	627.0	622.6	676.0		300.0
Gain	96.2	24.5	3.9	5.6	.6	.2	-.1	130.9	29.8

Impinger Color 1-4 Clear Colorless Labeled? ✓

Silica Gel Condition 1/2 Blue Sealed? ✓ 160.7

Run No. 3 Sample Date 11/11/99 Recovery Date 11/11/99

Sample I.D. ABG-ESPO-STK-3-OHM-9NOV1999 Analyst Filter Number W270

	Impinger 1	2	3	4	5	6	Imp.Total	7	Total
Contents									
Final	680.0	720.6	695.9	622.0	699.2	700.7	671.2		331.4
Initial	601.6	695.6	694.3	618.0	699.0	701.0	670.1		300.0
Gain	78.4	25.0	1.6	4.0	0.2	-0.3	1.1	110.0	31.4

Impinger Color 1-4 Clear Colorless Labeled? ✓

Silica Gel Condition 1/2 Blue Sealed? ✓ 141.4

Check COC for Sample IDs of Media Blanks

WESTON MANAGERS DESIGNERS/CONSULTANTS

Sample and Velocity Traverse Point Data Sheet - Method 1

Client: ALABAMA POWER
Loaction/Plant: WILSONVILLE, AL
Source: STACK

Operator: TB
Date: 11-10-99
W.O. Number:

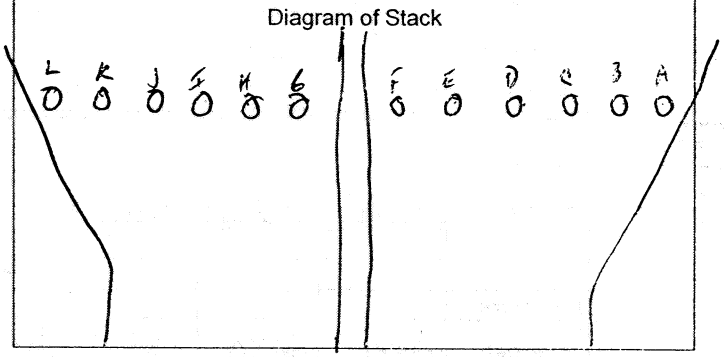
Duct Type	☐ Circular	☒ Rectangular Duct	Indicate appropriate type
Traverse Type	☒ Particulate Traverse	☐ Velocity Traverse	

Distance from far wall to outside of port (in.) = C	84"
Port Depth (in.) = D	12"
Depth of Duct, diameter (in.) = C-D	72"
Area of Duct (ft^2) 1 DUCT ONLY	216 ft²
Total Traverse Points	
Total Traverse Points per Port	

Rectangular Ducts Only	
Width of Duct, rectangular duct only (in.)	432"
Total Ports (rectangular duct only)	30

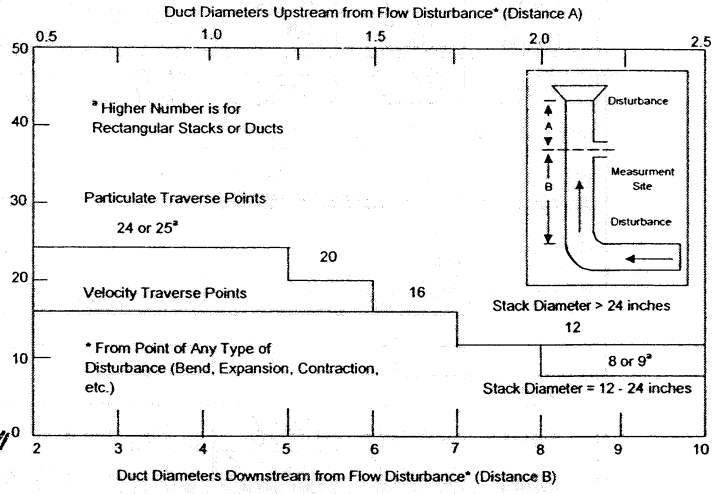
Flow Disturbances	
Upstream - A (ft)	
Downstream - B (ft)	
Upstream - A (duct diameters)	
Downstream - B (duct diameters)	

Diagram of Stack



Traverse Point Locations

Traverse Point	% of Duct	Distance from Inside Duct Wall (in)	Distance from Outside of Port (in)
1	10	7.2	19.2
2	30	21.6	33.6
3	50	36	48
4	70	50.4	62.4
5	90	64.8	76.8
6			
7			
8			
9			
10			
11			
12			



Equivalent Diameter = (2*L*W)/(L+W) = 123.4"

Traverse Point Location Percent of Stack -Circular

Traverse Point Location	Number of Traverse Points: 1	2	3	4	5	6	7	8	9	10	11	12
1		14.6		6.7		4.4		3.2		2.6		2.1
2		85.4		25		14.6		10.5		8.2		6.7
3				75		29.6		19.4		14.6		11.8
4				93.3		70.4		32.3		22.6		17.7
5						85.4		67.7		34.2		25
6						95.6		80.6		65.8		35.6
7								89.5		77.4		64.4
8								96.8		85.4		75
9										91.8		82.3
10										97.4		88.2
11												93.3
12												97.9

Traverse Point Location Percent of Stack -Rectangular

Traverse Point Location	Number of Traverse Points: 1	2	3	4	5	6	7	8	9	10	11	12
1		25.0	16.7	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2
2		75.0	50.0	37.5	30.0	25.0	21.4	18.8	16.7	15.0	13.6	12.5
3			83.3	62.5	50.0	41.7	35.7	31.3	27.8	25.0	22.7	20.8
4				87.5	70.0	58.3	50.0	43.8	38.9	35.0	31.8	29.2
5					90.0	75.0	64.3	56.3	50.0	45.0	40.9	37.5
6						91.7	78.6	68.8	61.1	55.0	50.0	45.8
7							92.9	81.3	72.2	65.0	59.1	54.2
8								93.8	83.3	75.0	68.2	62.5
9									94.4	85.0	77.3	70.8
10										95.0	86.4	79.2
11											95.5	87.5
12												95.8

Rectangular Stack Points & Matrix
9 - 3 x 3
12 - 4 x 3
16 - 4 x 4
20 - 5 x 4
25 - 5 x 5
30 - 6 x 5
36 - 6 x 6
42 - 7 x 6
49 - 7 x 7

WESTON MANAGERS DESIGNERS/CONSULTANTS

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APPENDIX D
LABORATORY ANALYTICAL REPORTS

ONTARIO HYDRO SAMPLES ANALYTICAL REPORT

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

• EPA/NVLAP 101262-0
• AIHA ACCREDITATION NO. 100439
• NY DOH 10903
• PA DER 06-353
• NJ DEP 77678

February 4, 2000

Jack Mills
Roy F. Weston, Inc.
Weston Way
West Chester PA 19380-1499

Laboratory Project: 188323
Client Reference: Alabama Power, Gaston Electric Gen Stn
WO#12251-001-001 Ontario Hydro Method Hg

Dear Mr. Mills:

The samples which were logged in on 24-NOV-99 have been analyzed as requested. The analytical results are enclosed in the attached report.

Please note that any unused portion of the samples will be disposed after 05-JAN-00, unless you have requested otherwise.

Thank you for the opportunity to provide these services to you. If you have any questions concerning this report, please contact a Client Services representative at 610/921-8833.

Sincerely,

Fred Usbeck, CIH
Director, Laboratory Services

4418 POTTSVILLE PIKE, READING, PENNSYLVANIA 19605 610-921-8833 FAX 610-921-9667

PHILIP ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

• EPA/NVLAP 101262-0
• AIHA ACCREDITATION NO. 100439
• NY DOH 10903
• PA DER 06-353
• NJ DEP 77678

ANALYTICAL REPORT

Client: Roy F. Weston, Inc.

Report to: Jack Mills
Roy F. Weston, Inc.
Weston Way
West Chester PA 19380-1499

Project: 188323
Received: 22-NOV-99
Reported: 04-FEB-00

PURCHASE ORDER: 0008214

Project Description: Alabama Power, Gaston Electric Gen Stn
WO#12251-001-001 Ontario Hydro Method Hg

	RESULT	UNITS	METHOD	DATE	ANALYST
APG-ESPO-SB-OHM-9NOV1999-FILT					
Lab Sample: 1384160					
sampled: 11-NOV-99					
Hg by Ont. Hydro Method, Draft	< 0.02	ug/sample	Ont Hydro	30-NOV-99	JLP
APG-ESPO-STK-1-OHM-9NOV1999-FILT (W129)					
Lab Sample: 1384167					
sampled: 10-NOV-99					
Hg by Ont. Hydro Method, Draft	1.39	ug/sample	Ont Hydro	30-NOV-99	JLP
APG-ESPO-STK-2-OHM-9NOV1999-FILT (W130)					
Lab Sample: 1384172					
sampled: 11-NOV-99					
Hg by Ont. Hydro Method, Draft	0.768	ug/sample	Ont Hydro	30-NOV-99	JLP
APG-ESPO-STK-3-OHM-9NOV1999-FILT (W270)					
Lab Sample: 1384177					
sampled: 11-NOV-99					
Hg by Ont. Hydro Method, Draft	2.47	ug/sample	Ont Hydro	30-NOV-99	JLP

PHILIP ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

• EPA/NVLAP 101262-0
• AIHA ACCREDITATION NO. 100439
• NY DOH 10903
• PA DER 06-353
• NJ DEP 77678

Client: Roy F. Weston, Inc.
Project: 188323

	RESULT	UNITS	METHOD	DATE	ANALYST
APG-ESPO-STK-BT-OHM-9NOV1999-FILT Lab Sample: 1384182 sampled: 10-NOV-99					
Hg by Ont. Hydro Method, Draft	< 0.02	ug/sample	Ont Hydro	30-NOV-99	JLP

< Indicates less than the limit of quantitation.

4418 POTTSVILLE PIKE, READING, PENNSYLVANIA 19605 610-921-8833 FAX 610-921-9667

PASC - Certificate of Analysis

	Client ID:		GEG ESP Inlet-SB	GEG ESP Inlet-BT	GEG ESP Inlet-R1	GEG ESP Inlet-R2	GEG ESP Inlet-R3
	Lab No.:		073511 99	073512 99	073513 99	073514 99	073515 99
	Date Sampled:		99/11/17	99/11/17	99/11/17	99/11/17	99/11/17
Component	**MDL**	**Units**					
Mercury - filter	0.010	ug	-	<0.070	8.0	4.7	0.79
Mercury - KCl	0.030	"	<0.10	<0.10	1.6	1.3	7.4
Mercury - KMnO4	0.030	"	<0.10	<0.10	4.5	6.0	5.0
Mercury - H202	0.010	"	<0.25	<0.25	0.44	0.51	0.32
Mercury - probe rinse	0.010	"	<	-	-	-	-

PASC - Certificate of Analysis

	Client ID:		Method Blank	Blank Spike #1	Blank Spike #1	Blank Spike #2	Blank Spike #2	GEG ESP Stack BT	GEG ESP Stack-R1	GEG ESP Stack-R2	GEG ESP Stack-R3
	Lab No.:		073483 99	073483 99	073483 99	073483 99	073483 99	073489 99	073490 99	073491 99	073492 99
	Date Sampled:		-	-	-	-	-	99/11/17	99/11/17	99/11/17	99/11/17
Component	**MDL**	**Units**			% Recoveries		% Recoveries				
Mercury - KCl	0.030	ug	<0.10	0.31	100	0.31	100	<0.10	9.9	13	11
Mercury - KMnO4	0.030	"	<	0.29	97	0.29	97	<0.10	4.4	7.1	4.3
Mercury - H202	0.010	"	<	0.10	100	0.10	100	<0.25	0.52	0.70	0.43
Mercury - probe rinse	0.010	"	<	0.10	100	0.10	100	0.021	0.17	0.13	0.20

PHILIP
ANALYTICAL SERVICES®

Certificate of Analysis

CLIENT INFORMATION

Attention: Pamela Peters
Client Name: Philip Analytical Services Inc
Project: Misc.
Project Desc:

Address: 4418 Pottsville Pike
Reading, Pennsylvania
19605
Fax Number: 610 921-8407
Phone Number: 610 921-8833

LABORATORY INFORMATION

Contact: Ada Blythe, B.Sc., C.Chem.
Project: AN970416
Date Received: 99/12/07
Date Reported: 00/01/17

Submission No.: 9L0253
Sample No.: 073507-073515

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: _____

4418 Pottsville Pike, Reading, PA 19605 (610) 921-8833 (610) 921-9667 fax D-6

Lab Tracking Number

Alabama Power 100520

Chain-of-Custody Record/Lab Work Request

WESTON

Client	Alabama Power, Gaston Electric Generating Station		
Work Order Number	12251-001-001	Phone Number	610-701-7245
Contact Person	Jack Mills	Turn Around Time	Standard

Lab ID	Field Sample ID	Sample Collection Date	Analysis			Thimble ID #	Sample Check-off
	APG - ESP - IN - 1 - OHM - 9NOV1999 - FHHNO3	11/10/99	OHM				
	APG - ESP - IN - 1 - OHM - 9NOV1999 - FILT		OHM			W7+W8	
	APG - ESP - IN - 1 - OHM - 9NOV1999 - BHKCL		OHM				
	APG - ESP - IN - 1 - OHM - 9NOV1999 - BHHNO3		OHM				
	APG - ESP - IN - 1 - OHM - 9NOV1999 - BHKMNO4		OHM				
	APG - ESP - IN - 2 - OHM - 9NOV1999 - FHHNO3	11/11/99	OHM				
	APG - ESP - IN - 2 - OHM - 9NOV1999 - FILT		OHM			W9, W10, W11	
	APG - ESP - IN - 2 - OHM - 9NOV1999 - BHKCL		OHM				
	APG - ESP - IN - 2 - OHM - 9NOV1999 - BHHNO3		OHM				
	APG - ESP - IN - 2 - OHM - 9NOV1999 - BHKMNO4		OHM				
	APG - ESP - IN - 3 - OHM - 9NOV1999 - FHHNO3		OHM				
	APG - ESP - IN - 3 - OHM - 9NOV1999 - FILT		OHM			W12+W13	
	APG - ESP - IN - 3 - OHM - 9NOV1999 - BHKCL		OHM				
	APG - ESP - IN - 3 - OHM - 9NOV1999 - BHHNO3		OHM				
	APG - ESP - IN - 3 - OHM - 9NOV1999 - BHKMNO4		OHM				
	APG - ESP - IN - SB - OHM - 9NOV1999 - KCl		OHM				
	APG - ESP - IN - SB - OHM - 9NOV1999 - ~~FILT~~ Thimble		OHM				
	APG - ESP - IN - SB - OHM - 9NOV1999 - KMNO4		OHM				
	APG - ESP - IN - SB - OHM - 9NOV1999 - HNO3/H2O2		OHM				
	APG - ESP - IN - SB - OHM - 9NOV1999 - HNO3		OHM				
	APG - ESP - IN - BT - OHM - 9NOV1999 - FHHNO3		OHM				
	APG - ESP - IN - BT - OHM - 9NOV1999 - FILT		OHM				
	APG - ESP - IN - BT - OHM - 9NOV1999 - BHKCL		OHM				
	APG - ESP - IN - BT - OHM - 9NOV1999 - BHHNO3		OHM				
	APG - ESP - IN - BT - OHM - 9NOV1999 - BHKMNO4		OHM				
	~~APG - ESP - IN - SB - OHM - 9NOV1999 - 10% HNO3~~		OHM				
	~~APG - ESP - SB - OHM - 9NOV1999 - FILT~~		OHM				

Notes: OHM - Speciated Mercury Analysis per Ontario Hydro Method

Relinquished By	Received By	Date	Time	Lab Use Only	
[signature]	[signature]	11/22/99	1115	Shipper PAS	Air Bill #
A.S.	[signature]	11/22/99	1800	Opened By NAC	Date/Time
				Temp °C 22	Condition intact.
				Custody Seals: (Yes) No None N/A	

Laboratory Comments:

packing tape secure on each box and each Smp [signature] 11/22/99

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Lab Tracking Number

Alabama Power 188323

Chain-of-Custody Record/Lab Work Request

WESTON

Client	Alabama Power, Gaston Electric Generating Station		
Work Order Number	12251-001-001	Phone Number	610-701-7245
Contact Person	Jack Mills	Turn Around Time	Standard

Lab ID	Field Sample ID	Sample Collection Date	Analysis			Filter ID #	Sample Check-off
			Analyses Requested/Other Info				
	APG - ESPO - STK - 1 - OHM - 9NOV1999 - FHHNO3	11/10/99	OHM				
	APG - ESPO - STK - 1 - OHM - 9NOV1999 - FILT		OHM			W129	
	APG - ESPO - STK - 1 - OHM - 9NOV1999 - BHKCL		OHM				
	APG - ESPO - STK - 1 - OHM - 9NOV1999 - BHHNO3		OHM				
	APG - ESPO - STK - 1 - OHM - 9NOV1999 - BHKMNO4		OHM				
	APG - ESPO - STK - 2 - OHM - 9NOV1999 - FHHNO3	11/11/99	OHM				
	APG - ESPO - STK - 2 - OHM - 9NOV1999 - FILT		OHM			W130	
	APG - ESPO - STK - 2 - OHM - 9NOV1999 - BHKCL		OHM				
	APG - ESPO - STK - 2 - OHM - 9NOV1999 - BHHNO3		OHM				
	APG - ESPO - STK - 2 - OHM - 9NOV1999 - BHKMNO4		OHM				
	APG - ESPO - STK - 3 - OHM - 9NOV1999 - FHHNO3		OHM				
	APG - ESPO - STK - 3 - OHM - 9NOV1999 - FILT		OHM			W270	
	APG - ESPO - STK - 3 - OHM - 9NOV1999 - BHKCL		OHM				
	APG - ESPO - STK - 3 - OHM - 9NOV1999 - BHHNO3		OHM				
	APG - ESPO - STK - 3 - OHM - 9NOV1999 - BHKMNO4		OHM				
	~~APG - ESPO - STK - SB - OHM - 9NOV1999 - KCl~~		OHM				
	~~APG - ESPO - STK - SB - OHM - 9NOV1999 - FILT~~		OHM				
	~~APG - ESPO - STK - SB - OHM - 9NOV1999 - KMNO4~~		OHM				
	~~APG - ESPO - STK - SB - OHM - 9NOV1999 - HNO3/H2O2~~		OHM				
	~~APG - ESPO - STK - SB - OHM - 9NOV1999 - HNO3~~		OHM				
	APG - ESPO - STK - BT - OHM - 9NOV1999 - FHHNO3	11/10/99	OHM				
	APG - ESPO - STK - BT - OHM - 9NOV1999 - FILT		OHM				
	APG - ESPO - STK - BT - OHM - 9NOV1999 - BHKCL		OHM				
	APG - ESPO - STK - BT - OHM - 9NOV1999 - BHHNO3		OHM				
	APG - ESPO - STK - BT - OHM - 9NOV1999 - BHKMNO4		OHM				

Notes: OHM - Speciated Mercury Analysis per Ontario Hydro Method

Relinquished By	Received By	Date	Time	Lab Use Only	
[illegible]	[illegible]	11/22/99	11:15	Shipper PAS	Air Bill #
A.S.	[illegible]	11/22/99	1500	Opened By NAG	Date/Time
				Temp °C 22	Condition intact
				Custody Seals: Yes No None N/A	

Laboratory Comments:

packing tape on each sample jar and each box rec'd intact. [illegible] 11/22/99

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187900-04
187901-04
188322-04
188323-04

Data Package Cover Sheet for Atomic Absorption Spectroscopy by Automated Cold Vapor Analysis

Date of Analysis: 11/30/99	Element: HG - Ontario Hydro method
Analyst: JAP	Time of Analysis: 1015
Data Validated by: V. O'Neil 12/2/99	Instrument: Leeman PS 200

Calibration Standard Preparation Records

Preparation Record is in Notebook #	Date of Preparation
360 - 30 - 5 to 10	10/29/99

Quality Control Sample Preparation Records

Name	Preparation is in Notebook #	Date of Preparation
QCS/ICV	360-30-12	11/29/99
IPC/CCV	360-30-11	11/29/99

- All samples analyzed in this set were either thimble portions or filters. The samples were digested as Ontario Hydro method (10/27/99 Draft) States. The final volume was brought up to 0.100 l.

— Calculations: ug/l Hg X 0.100 l final vol. = ug Hg present in sample

D.L = 0.02 ug

— The Linear Dynamic Range for Hg is 25.0 ug/l.

I Certify that all QA/QC results were acceptable and that there were no problems except as noted.

Jennifer L. Paris 12/1/99
Signature of Analyst and Date

```
RunProt: ONTARIO
RunFold: 113099MB Seq: 0     Batch:
                  Prnt: R/T On
                  Rev: 4.0    09:36:36 30 Nov 1999 Xmit: Off  Gas:    0.30 LPM
  Idle                                             User:              A/S: On
```

```
 AUTOSAMPLER:  Rack entry   Rack RACK#1   Range  1-44 Clear seQ Undo eXit
cup ID         Extended id          Weight Volume Macro
 1 OCS         11/29 5.00UG/L       1.0000 1.0000
 2 LRB-ASH     11/29 DIH2O          1.0000 1.0000
 3 LFB-ASH     11/29 DIH2O          1.0000 1.0000
 4 NIST        COAL FLY ASH #1633B  1.0000 1.0000
 5 1382194     INLET SB             1.0000 1.0000
 6 1382186     INLET SB             1.0000 1.0000
 7 1382224     STACK SB             1.0000 1.0000
 8 1382157     OUTLET #1            1.0000 1.0000
 9 1382161     OUTLET #2            1.0000 1.0000
10 1382165     OUTLET #3            1.0000 1.0000
11 1382169     OUTLET BT            1.0000 1.0000
12 1382173     INLET #1             1.0000 1.0000
13 1382177     INLET #2             1.0000 1.0000
14 1382177     INLET #2             1.0000 1.0000
15 1382177 MS  INLET #2             1.0000 1.0000
                                                                    PgDn
```

```
                                          Full column entry Ins to switch
```

```
RunProt: ONTARIO
RunFold: 113099HG Seq: 0    Batch:
                  Prnt: R/T On
                  Rev: 4.0    09:36:37 30 Nov 1999 Xmit: Off  Gas:   0.30 LPM
  Idle                                          User:                A/S: On
```

```
 AUTOSAMPLER:  Rack entry   Rack RACK#1   Range  1-44 Clear seQ Undo eXit   PgUp
cup ID         Extended id          Weight Volume Macro
16 1382181     INLET #3             1.0000 1.0000
17 1382190     INLET BT             1.0000 1.0000
18 1382211     STACK #1             1.0000 1.0000
19 1382215     STACK #2             1.0000 1.0000
20 1382219     STACK #3             1.0000 1.0000
21 1382228     STACK BT             1.0000 1.0000
22 LRB-ASH     11/29 FILTERS/THIMB.1.0000 1.0000
23 LFB-ASH     11/29 FILTERS/THIMB.1.0000 1.0000
24 NIST        COAL FLY ASH #1633B 1.0000 1.0000
25 1384069     FGD-1 INLET          1.0000 1.0000
26 1384089     FGD-1 INLET          1.0000 1.0000
27 1384089 M2  FGD-1 INLET          1.0000 1.0000
28 1384095     FGD-2 INLET          1.0000 1.0000
29 1384101     FGD-3 INLET          1.0000 1.0000
30 1384107     FGD-BT INLET         1.0000 1.0000
                                                                            PgDn
```

```
                                        Full column entry Ins to switch
```

```
RunProt: ONTARIO
RunFold: 113099HG Seq: 0     Batch:
                  Prnt: R/T On
                  Rev: 4.0    09:36:40 30 Nov 1999 Xmit: Off  Gas:     0.30 LPM.
  Idle                                             User:              A/S: On
```

AUTOSAMPLER: Rack entry Rack RACK#1 Range 1-44 Clear seQ Undo eXit PgUp

cup	ID	Extended id	Weight	Volume	Macro
31	1384128	BH OUT SB	1.00000	1.00000	
32	1384129	BH OUT SB	1.00000	1.00000	
33	1384113	BH #1	1.00000	1.00000	
34	1384118	BH #2	1.00000	1.00000	
35	1384123	BH #3	1.00000	1.00000	
36	1384133	BH BT	1.00000	1.00000	
37	ESP.STACK	SB THIMBLE	1.00000	1.00000	
38	ESP.STACK	SB THIMBLE	1.00000	1.00000	
39	ESP.STACK	SB THIMBLE MS	1.00000	1.00000	
40	ESP INLET	SB FILTER	1.00000	1.00000	
41	1384167	ESFO#1	1.00000	1.00000	
42	1384172	ESFO#2	1.00000	1.00000	
43	1384177	ESFO#3	1.00000	1.00000	
44	1384182	ESFO ~~#4~~ 12.1.99 BT	1.00000	1.00000	

#1384155

#1384160

PgDn

Full column entry Ins to switch

Reagents, QC, Standards Preparation Log #360

Date/Time	Initials	Exp. Date	Solution	Vol/Wt of Reagents #	Vol/Wt of Reagents Units	Reagent SSM ID #	Reagent SSM ID # Conc.	Final Volume #	Final Volume Units	Dilution Matrix	Remarks
1) 11/23/99 1330	SMW		IPC/CCV 5.0ug/l	500	ml	360-29-18	1.00mg/l	100	ml		
2) ↓	↓		ICV/QCS 5.0ug/l	↓	↓	360-29-19	↓	↓	↓		
3) 11/29/99 0900	JH	11/30/99	1.00mg/l Hg Stock Std	100	ml	Hg-9951185019	1000mg/l	100	ml	0.15% HNO_3	
4) ↓	↓	↓	1.00mg/l Hg QCS Std	100	↓	Hg-995123001	↓	↓	↓	↓	
5) 11/29/99 1500	SMW		Cal Blk	—	—	—	—	100	ml	10% HCl	Ontario Method
6)			0.20ug/l Hg Std	20	ml	360-30-3	1.00mg/l				
7)			0.50	50							
8)			2.00	200							
9)			5.00	500							
10)			10.0	1000							
11)			IPC/CCV ~~2.0~~ 5.0ug/l	500							
12) ↓	↓		ICV/QCS 5.0ug/l	500	↓	360-30-4	↓	↓	↓	↓	↓
13)											
14)											
15)											
16)											
17)											
18)											
19)											
20)											
21)											
22)											
23)											
24)											
25)											

Book #118

Ontario Hydro Method (10/27/99 Draft)

187901

187900

Analyst, Date, Time, Initials	Sample ID	Initial sample wt (g)	Final volume (L) recent sample wt. brought up to	Total volume of sample taken (mL)	Vol. of 1 mol H_2SO_4 (mL)	Vol. of 1 mol NaOH (mL)	Vol. of 5% $KMnO_4$ added (mL)	Vol. of 1 mol HCl (mL)	Vol. of 5% H_2SO_3 added (mL)	Vol. of 10% hydroxylamine added (mL)	Analyst, Date
11/19/99 GHP 1300	1362166	0.750 L	0.750 L	30 mL	1.5 mL	0.75 mL	4.5 mL	—	2.25 mL	3.0 mL	11/23/99
	2170	0.480 L	0.500 L					—			
	2174	0.950 L	0.950 L					—			
200 points	2178	0.900 L	0.900 L					—			
	2182	0.840 L	0.840 L					—			
	2191	0.550 L	0.550 L					—			
	2212	0.695 L	0.695 L					—			
	2216	0.787 L	0.787 L					—			
	2220	0.800 L	0.800 L					—			
	2229	0.480 L	0.500 L					—			
11/22/99 0710 GHP	LRB-KMnO4	—	—	30 mL	—	1.5 mL	4.5 mL	—	2.25 mL	3.0 mL	
	LFB-KMnO4 control	—	—		—		4.5 mL	—			
	1382235 client BK	0.250 L	0.500 L		—		4.5 mL	—			
	1382187	0.350 L			—		4.5 mL ~~3.0 mL~~	—			
	1382160	0.480 L			—		4.5 mL ~~3.0 mL~~	—			
	2164	0.545 L	0.545 L		—		4.5 mL	—			
	2168	0.600 L	0.600 L		—		4.5 mL ~~3.0 mL~~	—			
	2172	0.495 L	0.500 L		—		4.5 mL ~~3.0 mL~~	—			
KMnO4 Pattern desired day of analysis	2176	0.470 L			—		4.5 mL	—			
	2180	0.480 L			—		5.0 mL	—			
	2184	0.490 L			—		7.5 mL	—			
	2193	0.514 L	0.514		—		4.5 mL	—			
	2214	0.430 L	0.500		—		4.5 mL ~~3.0 mL~~	—			
	2218	0.435 L	0.500 L		—		4.5 mL	—			
	2222	0.500 L	0.530 L		—		4.5 mL ~~3.0 mL~~	—			
	2231	0.430 L	0.500 L		—		10.5 mL	—			
11/23/99 0800 GHP	LRB-Ash	—	0.100 L	~~30 mL~~	—	1.25 mL	—	3.75 mL	—	—	
	LFB-Ash NIST-Coal 114 Pk-Kl #1633B	—	0.100 L	~~30 mL~~	—		—		—	—	
		—	0.100 L	0.50 g whole thimble	—		—		—	—	
200 points	1382194	3.0906 g			—		—		—	—	
	1382186	0.3908 g		filter thimble	—		—		—	—	
	1382224	3.2878 g			—		—		—	—	
	1382257	0.3965 g		filter	—		—		—	—	
	1382161	0.3928 g			—		—		—	—	
	1382165	0.3973 g			—		—		—	—	
	1382169	0.3990 g			—		—		—	—	
	1382173	3.0145 g		whole thimble	—		—		—	—	
	1382177	3.2872 g			—		—		—	—	
	1382181	3.3783 g			—		—		—	—	
	1382190	3.1694 g			—		—		—	—	

188322

Analyst, Date + Time	Sample ID.	Initial Sample Wt (Trac Lg)	Final Sample Wt (Lg)	Total Vol. of Sample Digested (ml)	Vol. of Trace metal H_2SO_4 (ml)	Vol. of trace metal HNO_3 (ml)	Vol. of 5% $KMnO_4$ (ml)	Vol. of HCl (ml)	Vol. of 5% $K_2S_2O_8$ (ml)	Vol. of 10% Hydroxylamine (ml)	Comments
11/29/99 GHP	1382211	3.4387g	0.100 L	whole thimble	—	1.25ml	—	3.75ml	—	—	Stack #1
	1382215	3.6599g			—		—		—	—	Stack #2
aw Ashin	1382219	3.2602g			—		—		—	—	Stack #3
	1382228	3.5245g			—		—		—	—	Stack BT
11/29/99 1210 GHP	LRB-Ash filter/thimble	N/A		-	—		—		-	—	—
	LFB-Ash filter/thimble			—	—		—		—	—	Spk w/ 25 ml std #4
	LIST-Coal Fly Ash-Lot #1626 E. filter			0.327g 0.504g 11/29/99 GHP	—		—		—	—	—
	1384089 2 Filters			whole filter 2 filters	—		—		—	—	FGD-1 Inlet
	1384095 Filter				—		—		—	—	FGD-2 Inlet
	1384101 Filter			whole filter	—		—		—	—	FGD-3 Inlet
	1384107 Thimble				—		—		—	—	FGD-BT Inlet
	1384138 Filter			whole thimble	—		—		—	—	BH out SB
	1384128 filter			whole filter	—		—		—	—	BH out SB
	1384113 filter				—		—		—	—	BH #1
	1384118 filter				—		—		—	—	BH #2
	1384123 filter				—		—		—	—	BH #3
	1384133 Thimble				—		—		—	—	BH BT
	Esp. Sme-SB 1384160 filter			whole thimble	—		—		—	—	ESP Sme SB
	ESP-Inlet-SB filter			whole filter	—		—		—	—	ESP Inlet
	1384167 filter				—		—		—	—	ESP #1
	1384172 filter				—		—		—	—	ESP #2
	1384177 filter				—		—		—	—	ESP #3
	1384182				—		—		—	—	ESP BT

Notes: Samples & QC prepared on 11/29/99 were placed in a 95°C water bath for 8 hours. After cooling, 3.5g of boric acid was added. GHP

11/22/99 Western (117)

1382157 Sample wt. = 0.3965g

1382173 Sample wt. = 3.0145g W-1 ← wt. = 0.0538g

1382165 Sample wt = 0.3973

1382186 Sample wt = 0.3908

1382190 Sample wt = 3.1694

1382177 Sample wt = 3.2812 W-3 ← wt. = 0.0539g

1382224 Sample wt = 3.2878

1382161 Sample wt = 0.3928

1382211 Sample wt = 3.4387 W-4 ← wt. = .0014g

1382219 Sample wt = 3.2602 W-6 ← wt. = ~~.0004g~~ .0023g

1382194 Sample wt = 3.0906

1382169 Sample wt = 0.3790

1382215 Sample wt = 3.6599 W-5 ← wt. = .0028g

1382181 Sample wt = 3.3983 W-2 ← wt. = ~~0.1356g~~ 0.0356g

1382228 Sample wt. = 3.5245

```
RunProt: ONTARIO
RunFold: 113099HG Seq: 0     Batch:
                  Prnt: R/T On
                  Rev: 4.0    09:38:15 30 Nov 1999 Xmit: Off  Gas:    0.30 LPM
  Idle                                             User:              A/S: On
```

```
UTILITY:  Diagnostics  Tip X      0 1   29
Aper test              Tip Y      0 1    1
Test optic             Tip Z     95 1    0
Tip home               Gas      300
Out port
In port
Run pcode
Cal A/S
```

aperture 21

acceptable Range = -100 to +100

```
Sensors on solenoid Error for test Iris fin motor More tests
Pcode hwit 4      @ 344
```

```
RunProt: ONTARIO
RunFold: 113099H6 Seq: 0    Batch:
                  Prnt: R/T On
                  Rev: 4.0    09:38:23 30 Nov 1999 Xmit: Off  Gas:    0.30 LPM
  Idle                                              User:             A/S: On
```

```
UTILITY:  Diagnostics  Tip X      0 1   28
Aper test              Tip Y      0 1    1
Test optic             Tip Z     95 1    0
Tip home               Gas      322
Out port                                        Smol. intensity    1104637
In port                                         Ref. intensity     1103677
Run scode
Cal A/S
```

} <10% difference

```
Sensors on solenoid Enter for test Ins for motor home tests
Pcode halt 0     @ 142
```

```
RunProt: ONTARIO
RunFold: 113099HB Seq: 0     Batch:
                  Prnt: R/T On
                  Rev: 4.0    09:58:48 30 Nov 1999 Xmit: Off  Gas:   0.30 LPM
  Idle                                             User:              A/S: On
```

INSTRUMENT: Scheduled Maintenance

		Uses left	Last service	Next service
replace:	Pump tubing	600	29-Nov-99	09-Dec-99
	Waste drain tubing	1748	12-Nov-99	27-Oct-00
	Liquid/gas separator	959	07-Sep-99	11-Oct-00
	pump head	10000	N/A	N/A
	Hg lamp	N/A	30-Aug-99	27-Jan-00
	Reductant bottle	16	22-Nov-99	30-May-00
	process tubing	959	N/A	N/A
Clean optical cell		600	N/A	N/A

* - needs maintenance

```
For help on <hotkey> press Shift <hotkey>
```

RunFold: 113099HG Seq: 152 Batch:
Prnt: R/T On
Rev: 4.0 15:48:48 30 Nov 1999 Xmit: Off Gas: 0.30 LPM
Idle User: A/S: On

INSTRUMENT: Scheduled Maintenance

		Uses left	Last service	Next service
replace:	Pump tubing	447	29-Nov-99	09-Dec-99
	Waste drain tubing	1595	12-Nov-99	27-Oct-00
	Liquid/gas separator	806	07-Sep-99	11-Oct-00
	pump head	10000	N/A	N/A
	Hg lamp	N/A	30-Aug-99	27-Jan-00
	Reductant bottle	400	30-Nov-99	28-May-00
	process tubing	906	N/A	N/A
Clean optical cell		600	N/A	N/A

* - needs maintenance

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 3		10:04:25 30 Nov 1999 HG		
Hg	.000	ug/l	269					
*** Standard: 1 Rep: 1				Seq: 4		10:15:14 30 Nov 1999 HG		
Hg	.000	ug/l	-49					
*** Standard: 1 Rep: 2				Seq: 5		10:17:24 30 Nov 1999 HG		
Hg	.000	ug/l	450					
*** Standard: 2 Rep: 1				Seq: 6		10:19:37 30 Nov 1999 HG		
Hg	.200	ug/l	18985					
*** Standard: 2 Rep: 2				Seq: 7		10:21:46 30 Nov 1999 HG		
Hg	.200	ug/l	19457					
*** Standard: 3 Rep: 1				Seq: 8		10:23:57 30 Nov 1999 HG		
Hg	.500	ug/l	49754					
*** Standard: 3 Rep: 2				Seq: 9		10:26:07 30 Nov 1999 HG		
Hg	.500	ug/l	49633					
*** Standard: 4 Rep: 1				Seq: 10		10:28:17 30 Nov 1999 HG		
Hg	2.00	ug/l	204003					
*** Standard: 4 Rep: 2				Seq: 11		10:30:31 30 Nov 1999 HG		
Hg	2.00	ug/l	203494					
*** Standard: 5 Rep: 1				Seq: 12		10:32:44 30 Nov 1999 HG		
Hg	5.00	ug/l	504555					
*** Standard: 5 Rep: 2				Seq: 13		10:35:08 30 Nov 1999 HG		
Hg	5.00	ug/l	509513					
*** Standard: 6 Rep: 1				Seq: 14		10:37:33 30 Nov 1999 HG		
Hg	10.0	ug/l	986885					

11/30/99 gp

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Standard: 6 Rep: 2 Seq: 15 10:40:02 30 Nov 1999 HG

Hg	10.0	ug/l	999073					

RunProt: ONTARIO

RunFold: 113099HG Seq: 16 Batch:

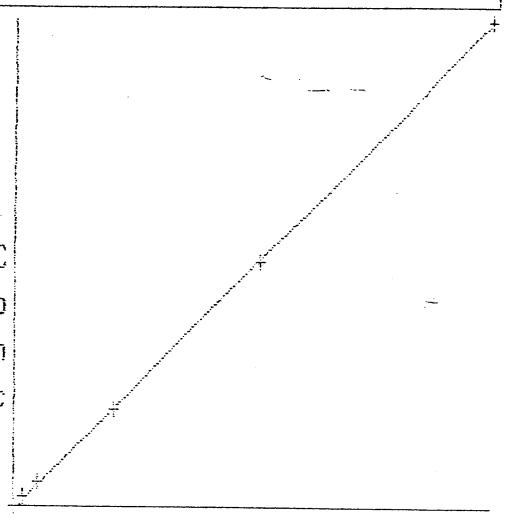
Prnt: R/T On

Rev: 4.0 10:48:18 30 Nov 1999 Xmit: Off Gas: 0.30 LPM

Idle User: A/S: On

CALIBRATION: Line proto: ONTARIO

	Hg Conc.	Calc.	Dev.	Accepted ->linear
S1	.000	-.017	-.017	Quadratic
S2	.200	.174	-.026	Wtdlinear
S3	.500	.481	-.019	C
S4	2.00	2.03	.029	Accept o
S5	5.00	5.08	.077	n
S6	10.0	9.96	-.044	c
A	.0000000	r	.999935	
B	1.00511e-5	C	-1.92614e-2	



	Mean	%RSD		Relative Absorbance
S1	200	175.98	-49	450
S2	19221	1.74	18985	19457
S3	49810	0.30	49954	49683
S4	203748	0.18	204003	203494
S5	507034	0.69	504555	509513
S6	992479	0.0	986885	998073

New cal coefficients stored

Line Conc. Units SD/RSD 1 2 3 4 5

*** Check Standard: 4 Ck4IPC/CCV Seq: 16 10:43:20 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		102.	5.11	5.00	ug/l	.000

$\bar{x}$ = 5.09 ug/l (102%R)

*** Check Standard: 3 Ck3IPC/CCV Seq: 17 10:45:48 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		101.	5.07	5.00	ug/l	.000

*** Check Standard: 2 Ck2ICB/CCB Seq: 18 10:48:10 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		-32400	-.032	.000	ug/l	.000

$\bar{x}$ = <0.2 ug/l

*** Check Standard: 1 Ck1ICB/CCB Seq: 19 10:50:16 30 Nov 1999 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.021	.200	ug/l	.000

*** Sample ID: QCS Seq: 20 10:52:22 30 Nov 1999 HG

11/29 5.00UG/L

Hg	5.00	ug/l	.000	5.00

$\bar{x}$ = 5.00 ug/l (100%R)

*** Sample ID: QCS Seq: 21 10:54:47 30 Nov 1999 HG

11/29 5.00UG/L

Hg	5.00	ug/l	.000	5.00

*** Sample ID: LRB-ASH Seq: 22 10:57:11 30 Nov 1999 HG

<0.2 11/29 DIH2O

Hg	.031	ug/l	.000	.031

$\bar{x}$ = <0.2 ug/l × 0.100 l = <0.02 ug

*** Sample ID: LRB-ASH Seq: 23 10:59:15 30 Nov 1999 HG

<0.2 11/29 DIH2O

Hg	.037	ug/l	.000	.037

*** Sample ID: LFB-ASH Seq: 24 11:01:20 30 Nov 1999 HG

11/29 DIH2O

Hg	2.01	ug/l	.000	2.01

LFB T.V. = 2.00 ug/l × 0.100 l = 0.200 ug

$\bar{x}$ = 2.03 ug/l × 0.100 l = 0.203 ug (101%R)

*** Sample ID: LFB-ASH Seq: 25 11:03:36 30 Nov 1999 HG

11/29 DIH2O

Hg	2.04	ug/l	.000	2.04

*** Sample ID: NIST Seq: 26 11:05:52 30 Nov 1999 HG

COAL FLY ASH #1633B

Hg	.750	ug/l	.000	.750

T.V. = 0.141 ± 0.019 mg/g

$\bar{x}$ = 0.749 ug/l × 0.100 l / 0.50 g = 0.150 mg/g

*** Sample ID: NIST Seq: 27 11:07:58 30 Nov 1999 HG

COAL FLY ASH #1633B

Hg	.747	ug/l	.000	.747

Line Conc. Units SD/RSD 1 2 3 4 5

*** Sample ID: 1382194 Seq: 28 11:10:03 30 Nov 1999 HG
<0.2
Hg .130 ug/l INLET SB .000 .130 $\bar{x}$ = <0.2 ug/l x 0.100 l = <0.02 ug

*** Sample ID: 1382194 Seq: 29 11:12:07 30 Nov 1999 HG
<0.2
Hg .135 ug/l INLET SB .000 .135

*** Check Standard: 4 Ck4IPC/CCV Seq: 30 11:14:13 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		104.	5.18	5.00	ug/l	.000

$\bar{x}$ = 5.15 ug/l 104 %R

*** Check Standard: 3 Ck3IPC/CCV Seq: 31 11:16:30 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		103.	5.13	5.00	ug/l	.000

*** Check Standard: 2 Ck2ICB/CCB Seq: 32 11:18:52 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		-28300	-.028	.000	ug/l	.000

$\bar{x}$ = <0.2 ug/l

*** Check Standard: 1 Ck1ICB/CCB Seq: 33 11:20:58 30 Nov 1999 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.023	.200	ug/l	.000

*** Sample ID: 1382186 Seq: 34 11:23:04 30 Nov 1999 HG
<0.2
Hg .081 ug/l INLET SB .000 .081 $\bar{x}$ = <0.2 ug/l x 0.100 l = <0.02 ug

*** Sample ID: 1382186 Seq: 35 11:25:08 30 Nov 1999 HG
<0.2
Hg .079 ug/l INLET SB .000 .079

*** Sample ID: 1382224 Seq: 36 11:27:13 30 Nov 1999 HG
<0.2
Hg .099 ug/l STACK SB .000 .099 $\bar{x}$ = <0.2 ug/l x 0.100 l = <0.02 ug

*** Sample ID: 1382224 Seq: 37 11:29:19 30 Nov 1999 HG
<0.2
Hg .100 ug/l STACK SB .000 .100

*** Sample ID: 1382157 Seq: 38 11:31:24 30 Nov 1999 HG
<0.2
Hg .051 ug/l OUTLET #1 .000 .051 $\bar{x}$ = <0.2 ug/l x 0.100 l = <0.02 ug

*** Sample ID: 1382157 Seq: 39 11:33:29 30 Nov 1999 HG
<0.2
Hg .049 ug/l OUTLET #1 .000 .049

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: 1382161 Seq: 40 11:35:33 30 Nov 1999 HG

<0.2 OUTLET #2

Hg .052 ug/l .000 .052 $\bar{x}$ = <0.2 ug/l x 0.100 l = (<0.02 ug)

*** Sample ID: 1382161 Seq: 41 11:37:39 30 Nov 1999 HG

<0.2 OUTLET #2

Hg .054 ug/l .000 .054

*** Sample ID: 1382165 Seq: 42 11:39:44 30 Nov 1999 HG

<0.2 OUTLET #3

Hg .019 ug/l .000 .019 $\bar{x}$ = <0.2 ug/l x 0.100 l = (<0.02 ug)

*** Sample ID: 1382165 Seq: 43 11:41:50 30 Nov 1999 HG

<0.2 OUTLET #3

Hg .020 ug/l .000 .020

*** Check Standard: 4 Ck4IPC/CCV Seq: 44 11:43:55 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		92.1	4.60	5.00	ug/l	.000

$\bar{x}$ = (4.75 ug/l) (95%) 6% difference

*** Check Standard: 3 Ck3IPC/CCV Seq: 45 11:46:40 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		97.8	4.89	5.00	ug/l	.000

*** Check Standard: 2 Ck2ICB/CCB Seq: 46 11:48:57 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		-33200	-.033	.000	ug/l	.000

$\bar{x}$ = (<0.2 ug/l)

*** Check Standard: 1 Ck1ICB/CCB Seq: 47 11:51:03 30 Nov 1999 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.024	.200	ug/l	.000

*** Sample ID: 1382169 Seq: 48 11:53:09 30 Nov 1999 HG

<0.2 OUTLET BT

Hg .016 ug/l .000 .016 $\bar{x}$ = <0.2 ug/l x 0.100 l = (<0.02 ug)

*** Sample ID: 1382169 Seq: 49 11:55:15 30 Nov 1999 HG

<0.2 OUTLET BT

Hg .019 ug/l .000 .019

*** Sample ID: 1382173 Seq: 50 11:57:19 30 Nov 1999 HG

<0.2 INLET #1

Hg .096 ug/l .000 .096 $\bar{x}$ = <0.2 ug/l x 0.100 l = (<0.02 ug)

*** Sample ID: 1382173 Seq: 51 11:59:22 30 Nov 1999 HG

<0.2 INLET #1

Hg .096 ug/l .000 .096

Line Conc. Units SD/RSD 1 2 3 4 5

quinch plicate replicates

*** Sample ID: 1382177 Seq: 52 12:01:26 30 Nov 1999 HG
<0.2 INLET #2
Hg .149 ug/l .000 .149 $\bar{X}$ = <0.2ug/l x 0.100l = <0.02ug

*** Sample ID: 1382177 Seq: 53 12:03:30 30 Nov 1999 HG
<0.2 INLET #2
Hg .151 ug/l .000 .151

*** Sample ID: 1382177 Seq: 54 12:05:34 30 Nov 1999 HG
<0.2 INLET #2
Hg .136 ug/l .000 .136

*** Sample ID: 1382177 Seq: 55 12:07:39 30 Nov 1999 HG
11/30/99 gp. INLET #2
Hg .132 ug/l .000 .132

*** Sample ID: 1382177 MS matrix Spk Seq: 56 12:09:46 30 Nov 1999 HG
INLET #2 matrix Spk T.V.= 2.00ug/l x 0.100l = 0.200ug
Hg 1.96 ug/l .000 1.96 $\bar{X}$ = 1.94ug/l x 0.100l = 0.194ug (97%R)

*** Sample ID: 1382177 MS Seq: 57 12:11:59 30 Nov 1999 HG
INLET #2
Hg 1.93 ug/l .000 1.93

*** Check Standard: 4 Ck4IPC/CCV Seq: 58 12:14:15 30 Nov 1999 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 94.8 4.74 ✓ 5.00 ✓ ug/l .000 $\bar{X}$ = 4.83ug/l (97%R) 6% difference

*** Check Standard: 3 Ck3IPC/CCV Seq: 59 12:16:43 30 Nov 1999 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 98.1 4.91 ✓ 5.00 ug/l .000

*** Check Standard: 2 Ck2ICB/CCB Seq: 60 12:19:07 30 Nov 1999 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg -29700 -.030 ✓ .000 ug/l .000 $\bar{X}$ = <0.2ug/l

*** Check Standard: 1 Ck1ICB/CCB Seq: 61 12:21:14 30 Nov 1999 HG
Line Flag Found Range(+/-) Units SD/RSD
Hg -.022 ✓ .200 ug/l .000

*** Sample ID: 1382181 Seq: 62 12:23:28 30 Nov 1999 HG
<0.2 INLET #3
Hg .041 ug/l .000 .041 $\bar{X}$ = <0.2ug/l x 0.100l = <0.02ug

*** Sample ID: 1382181 Seq: 63 12:25:23 30 Nov 1999 HG
<0.2 INLET #3
Hg .042 ug/l .000 .042

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: 1382190 Seq: 64 12:27:29 30 Nov 1999 HG
<0.2 INLET BT
Hg .071 ug/l .000 .071 $\bar{x}$ = <0.2ug/l x 0.100l = <0.02ug

*** Sample ID: 1382190 Seq: 65 12:29:33 30 Nov 1999 HG
<0.2 INLET BT
Hg .068 ug/l .000 .068

*** Sample ID: 1382211 Seq: 66 12:31:37 30 Nov 1999 HG
<0.2 STACK #1
Hg .048 ug/l .000 .048 $\bar{x}$ = <0.2ug/l x 0.100l = <0.02ug

*** Sample ID: 1382211 Seq: 67 12:33:41 30 Nov 1999 HG
<0.2 STACK #1
Hg .052 ug/l .000 .052

*** Sample ID: 1382215 Seq: 68 12:35:46 30 Nov 1999 HG
<0.2 STACK #2
Hg .176 ug/l .000 .176 $\bar{x}$ = <0.2ug/l x 0.100l = <0.02ug

*** Sample ID: 1382215 Seq: 69 12:37:50 30 Nov 1999 HG
<0.2 STACK #2
Hg .176 ug/l .000 .176

*** Sample ID: 1382219 Seq: 70 12:39:55 30 Nov 1999 HG
<0.2 STACK #3
Hg .067 ug/l .000 .067 $\bar{x}$ = <0.2ug/l x 0.100l = <0.02ug

*** Sample ID: 1382219 Seq: 71 12:42:00 30 Nov 1999 HG
<0.2 STACK #3
Hg .066 ug/l .000 .066

*** Check Standard: 4 CK4IPC/CCV Seq: 72 12:44:06 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		99.6	4.98	5.00	ug/l	.000

$\bar{x}$ = 4.95ug/l 99 %R

(overall: JPC into cup)

*** Check Standard: 3 CK3IPC/CCV Seq: 73 12:46:28 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		98.7	4.93	5.00	ug/l	.000

*** Check Standard: 2 CK2ICB/CCB Seq: 74 12:48:47 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		-29200	-.029	.000	ug/l	.000

$\bar{x}$ = <0.2ug/l

*** Check Standard: 1 CK1ICB/CCB Seq: 75 12:50:54 30 Nov 1999 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.021	.200	ug/l	.000

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: 1382228 Seq: 76 12:53:00 30 Nov 1999 HG
<0.2 STACK BT
Hg .064 ug/l .000 .064 $\bar{X}$ = <0.2ug/l x 0.100l = <0.02ug

*** Sample ID: 1382228 Seq: 77 12:55:05 30 Nov 1999 HG
<0.2 STACK BT
Hg .063 ug/l .000 .063

*** Sample ID: LRB-ASH For RJ# 188323 + 188322 Seq: 78 12:57:12 30 Nov 1999 HG
<0.2 11/29 FILTERS/THIMB.
Hg .024 ug/l .000 .024 $\bar{X}$ = <0.2ug/l x 0.100l = <0.02ug

*** Sample ID: LRB-ASH Seq: 79 12:59:18 30 Nov 1999 HG
<0.2 11/29 FILTERS/THIMB.
Hg .025 ug/l .000 .025

*** Sample ID: LFB-ASH Seq: 80 13:01:23 30 Nov 1999 HG
11/29 FILTERS/THIMB. LFB T.V. = 2.00ug/l x 0.100l = 0.200ug
Hg 1.97 ug/l .000 1.97 $\bar{X}$ = 1.98ug/l x 0.100l = 0.198ug 99%R

*** Sample ID: LFB-ASH Seq: 81 13:03:40 30 Nov 1999 HG
11/29 FILTERS/THIMB.
Hg 1.98 ug/l .000 1.98

See Recheck pg. #602

*** Sample ID: NIST Seq: 82 13:05:55 30 Nov 1999 HG
COAL FLY ASH #1633B T.V. = 0.141ug/g ± 0.019ug/g
Hg .847 ug/l .000 .847 $\bar{X}$ = 0.850ug/l x 0.100l / 0.500g = 0.163 ug/g
11/29/99 gh

*** Sample ID: NIST Seq: 83 13:08:00 30 Nov 1999 HG
COAL FLY ASH #1633B
Hg .853 ug/l .000 .853

*** Sample ID: 1384089 Seq: 84 13:10:06 30 Nov 1999 HG
<0.2 FGD-1 INLET
Hg .063 ug/l .000 .063 $\bar{X}$ = <0.2ug/l x 0.100l = <0.02ug

*** Sample ID: 1384089 Seq: 85 13:12:11 30 Nov 1999 HG
<0.2 FGD-1 INLET
Hg .059 ug/l .000 .059

*** Check Standard: 4 CK4IPC/CCV Seq: 86 13:14:19 30 Nov 1999 HG
98%R

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		98.2	4.91	5.00	ug/l	.000

$\bar{X}$ = 4.91ug/l

*** Check Standard: 3 CK3IPC/CCV Seq: 87 13:16:41 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		98.0	4.90	5.00	ug/l	.000

Line Conc. Units SD/RSD 1 2 3 4 5

*** Check Standard: 2 CK2ICB/CCB Seq: 88 13:19:01 30 Nov 1999 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg -302000 -.030 .000 ug/l .000 $\bar{x}$ = <0.2ug/l

*** Check Standard: 1 CK1ICB/CCB Seq: 89 13:21:08 30 Nov 1999 HG
Line Flag Found Range(+/-) Units SD/RSD
Hg -.024 .300 ug/l .000

*** Sample ID: 1384089 Seq: 90 13:23:15 30 Nov 1999 HG
<0.2
FGD-1 INLET
Hg .021 ug/l .000 .021 $\bar{x}$ = <0.2ug/l x 0.100 = <0.02mg

*** Sample ID: 1384089 Seq: 91 13:25:20 30 Nov 1999 HG
<0.2
FGD-1 INLET
Hg .023 ug/l .000 .023

*** Sample ID: 1384089 MS matrix Spk Seq: 92 13:27:25 30 Nov 1999 HG
FGD-1 INLET matrix Spk T.V. = 2.00ug/l x 0.100l = 0.200mg
Hg 1.90 ug/l .000 1.90 $\bar{x}$ = 1.88ug/l x 0.100l = 0.188mg 94%R

*** Sample ID: 1384089 MS Seq: 93 13:29:36 30 Nov 1999 HG
FGD-1 INLET
Hg 1.87 ug/l .000 1.87

*** Sample ID: 1384095 Seq: 94 13:31:46 30 Nov 1999 HG
FGD-2 INLET
Hg 1.19 ug/l .000 1.19 $\bar{x}$ = 1.20ug/l x 0.100l = 0.120mg

(Data was continued on pg #602)

*** Sample ID: 1384095 Seq: 95 13:33:54 30 Nov 1999 HG
FGD-2 INLET
Hg 1.21 ug/l .000 1.21

*** Sample ID: 1384101 Seq: 96 13:36:02 30 Nov 1999 HG
<0.2
FGD-3 INLET
Hg .015 ug/l .000 .015 $\bar{x}$ = <0.2ug/l x 0.100l = <0.02mg

*** Sample ID: 1384101 Seq: 97 13:38:08 30 Nov 1999 HG
<0.2
FGD-3 INLET
Hg .018 ug/l .000 .018

*** Sample ID: 1384107 Seq: 98 13:40:13 30 Nov 1999 HG
<0.2
FGD-BT INLET
Hg .111 ug/l .000 .111 $\bar{x}$ = <0.2ug/l x 0.100l = <0.02mg

*** Sample ID: 1384107 Seq: 99 13:42:20 30 Nov 1999 HG
<0.2
FGD-BT INLET
Hg .109 ug/l .000 .109

Line Conc. Units SD/RSD 1 2 3 4 5

*** Check Standard: 4 Ck4IPC/CCV Seq: 100 13:44:27 30 Nov 1999 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 101. 5.05 5.00 ug/l .000 $\bar{X}$ = 4.98 ug/l 100%R

*** Check Standard: 3 Ck3IPC/CCV Seq: 101 13:46:47 30 Nov 1999 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg 98.6 4.93 5.00 ug/l .000

*** Check Standard: 2 Ck2ICB/CCB Seq: 102 13:49:07 30 Nov 1999 HG
Line Flag %Rcv. Found True Units SD/RSD
Hg [illegible] -.029 ✓ .000 ug/l .000 $\bar{X}$ = <0.2 ug/l

*** Check Standard: 1 Ck1ICB/CCB Seq: 103 13:51:14 30 Nov 1999 HG
Line Flag Found Range(+/-) Units SD/RSD
Hg -.019 ✓ .200 ug/l .000

*** Sample ID: 1384138 Seq: 104 13:53:19 30 Nov 1999 HG
<0.2 BH OUT SB
Hg .047 ug/l .000 .047 $\bar{X}$ = <0.2 ug/l x 0.100 l = <0.02 ug

*** Sample ID: 1384138 Seq: 105 13:55:25 30 Nov 1999 HG
<0.2 BH OUT SB
Hg .047 ug/l .000 .047

*** Sample ID: 1384128 Seq: 106 13:57:31 30 Nov 1999 HG
<0.2 BH OUT SB
Hg .106 ug/l .000 .106 $\bar{X}$ = <0.2 ug/l x 0.100 l = <0.02 ug

*** Sample ID: 1384128 Seq: 107 13:59:37 30 Nov 1999 HG
<0.2 BH OUT SB
Hg .111 ug/l .000 .111

*** Sample ID: 1384113 Seq: 108 14:01:43 30 Nov 1999 HG
BH #1
Hg .218 ug/l .000 .218 $\bar{X}$ = 0.218 ug/l x 0.100 l = 0.0218 ug

*** Sample ID: 1384113 Seq: 109 14:03:48 30 Nov 1999 HG
BH #1
Hg .217 ug/l .000 .217

*** Sample ID: 1384118 Seq: 110 14:05:55 30 Nov 1999 HG
BH #2
Hg .233 ug/l .000 .233 $\bar{X}$ = 0.234 ug/l x 0.100 l = 0.0234 ug

*** Sample ID: 1384118 Seq: 111 14:08:01 30 Nov 1999 HG
BH #2
Hg .236 ug/l .000 .236

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: 1384123 Seq: 112 14:10:08 30 Nov 1999 HG

	<0.2		BH #3		
Hg	.095	ug/l	.000	.095	

$\bar{X}$ = <0.2ug/l X 0.100l = (<0.02ug)

*** Sample ID: 1384123 Seq: 113 14:12:15 30 Nov 1999 HG

	<0.2		BH #3		
Hg	.093	ug/l	.000	.093	

*** Check Standard: 4 Ck4IPC/CCV Seq: 114 14:14:21 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		100.	5.01 ✓	5.00	ug/l	.000

$\bar{X}$ = (4.98ug/l) (99%R)

*** Check Standard: 3 Ck3IPC/CCV Seq: 115 14:16:39 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		98.8	4.94 ✓	5.00	ug/l	.000

*** Check Standard: 2 Ck2ICB/CCB Seq: 116 14:18:58 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		-39000	-.029 ✓	.000	ug/l	.000

$\bar{X}$ = (<0.2ug/l)

*** Check Standard: 1 Ck1ICB/CCB Seq: 117 14:21:05 30 Nov 1999 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.019 ✓	.200	ug/l	.000

*** Sample ID: 1384133 Seq: 118 14:23:11 30 Nov 1999 HG

	<0.2		BH BT		
Hg	.046	ug/l	.000	.046	

$\bar{X}$ = <0.2ug/l X 0.100l = (<0.02ug)

*** Sample ID: 1384133 Seq: 119 14:25:18 30 Nov 1999 HG

	<0.2		BH BT		
Hg	.049	ug/l	.000	.049	

used private analysis.

*** Sample ID: ESP.STACK #1384155 Seq: 120 14:27:25 30 Nov 1999 HG

	<0.2		SB THIMBLE		
Hg	.041	ug/l	.000	.041	

$\bar{X}$ = <0.2ug/l X 0.100l = (<0.02ug)

*** Sample ID: ESP.STACK #1384155 Seq: 121 14:29:33 30 Nov 1999 HG

	<0.2		SB THIMBLE		
Hg	.032	ug/l	.000	.032	

*** Sample ID: ESP.STACK #1384155 Seq: 122 14:31:40 30 Nov 1999 HG

	<0.2		SB THIMBLE		
Hg	.036	ug/l	.000	.036	

*** Sample ID: ESP.STACK #1384155 Seq: 123 14:33:47 30 Nov 1999 HG

			SB THIMBLE		
Hg	.037	ug/l	.000	.037	

11/30/99 JR

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Sample ID: ESP.STACK Matrix Spk. #1384155 Seq: 124 14:35:54 30 Nov 1999 HG
SB THIMBLE MS
Hg 1.69 ug/l .000 1.69
Matrix Spike T.V. = 2.00ug/l X 0.100 l = 0.200 u
$\bar{x}$ = 1.69ug/l X 0.100 l = 0.169ug 85%R

*** Sample ID: ESP.STACK Seq: 125 14:38:03 30 Nov 1999 HG
SB THIMBLE MS
Hg 1.68 ug/l .000 1.68

*** Sample ID: ESP INLET #1384160 Seq: 126 14:40:13 30 Nov 1999 HG
<0.2
SB FILTER
Hg .008 ug/l .000 .008
$\bar{x}$ = <0.2ug/l X 0.100 l = <0.03ug

*** Sample ID: ESP INLET Seq: 127 14:42:20 30 Nov 1999 HG
<0.2
SB FILTER
Hg .009 ug/l .000 .009

*** Check Standard: 4 CK4IPC/CCV Seq: 128 14:44:28 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		100.	5.01 ✓	5.00	ug/l	.000

$\bar{x}$ = 4.96ug/l 99%R

*** Check Standard: 3 CK3IPC/CCV Seq: 129 14:46:45 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		98.2	4.91 ✓	5.00	ug/l	.000

*** Check Standard: 2 CK2ICB/CCB Seq: 130 14:49:02 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		-30000	-.030	.000	ug/l	.000

$\bar{x}$ = <0.2ug/l

*** Check Standard: 1 CK1ICB/CCB Seq: 131 14:51:09 30 Nov 1999 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.030	.200	ug/l	.000

*** Sample ID: 1384167 Seq: 132 14:53:15 30 Nov 1999 HG
ESFO#1
Hg 13.8 ug/l .000 13.8
$\bar{x}$ = 13.9ug/l X 0.100 l = 1.39ug

*** Sample ID: 1384167 Seq: 133 14:55:42 30 Nov 1999 HG
ESFO#1
Hg 13.9 ug/l .000 13.9

*** Sample ID: 1384172 Seq: 134 14:58:10 30 Nov 1999 HG
ESFO#2
Hg 7.67 ug/l .000 7.67
$\bar{x}$ = 7.68ug/l X 0.100 l = 0.768ug

*** Sample ID: 1384172 Seq: 135 15:00:30 30 Nov 1999 HG
ESFO#2
Hg 7.70 ug/l .000 7.70

15:02:48 30 Nov 1999 Folder: 113099HG Protocol: ONTARIO Page 002

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Sample ID: 1384177					Seq: 136	15:02:48 30 Nov 1999 HG		
				ESF043				
Hg	21.3	ug/l	.000	21.3				
*** Sample ID: 1384177					Seq: 137	15:05:18 30 Nov 1999 HG		
				ESF043				
Hg	21.6	ug/l	.000	21.6				
*** Sample ID: 1384182					Seq: 138	15:08:00 30 Nov 1999 HG		
	<0.2			ESF0~~44~~ gf BT				
Hg	-.002	ug/l	.000	-.002				
*** Sample ID: 1384182					Seq: 139	15:10:07 30 Nov 1999 HG		
	<0.2			ESF0~~44~~ gf BT				
Hg	.006	ug/l	.000	.006				
*** Sample ID: NIST					Seq: 140	15:14:23 30 Nov 1999 HG		
				COAL FLY ASH #1633B				
Hg	.641	ug/l	.000	.641				
*** Sample ID: NIST					Seq: 141	15:16:28 30 Nov 1999 HG		
				COAL FLY ASH #1633B				
Hg	.646	ug/l	.000	.646				
*** Sample ID: NIST					Seq: 142	15:22:40 30 Nov 1999 HG		
				COAL FLY ASH #1633B				
Hg	.742	ug/l	.000	.742				
*** Sample ID: NIST					Seq: 143	15:24:45 30 Nov 1999 HG		
				COAL FLY ASH #1633B				
Hg	.728	ug/l	.000	.728				
*** Sample ID: 1384095					Seq: 144	15:29:15 30 Nov 1999 HG		
				FGD-2 INLET				
Hg	1.17	ug/l	.000	1.17				
*** Sample ID: 1384095					Seq: 145	15:30:21 30 Nov 1999 HG		
				FGD-2 INLET				
Hg	1.16	ug/l	.000	1.16				
*** Sample ID: 1384177					Seq: 146	15:32:45 30 Nov 1999 HG		
				esp #3 1:10 dilution				
Hg	2.47	ug/l	.000	2.47				
*** Sample ID: 1384177					Seq: 147	15:34:57 30 Nov 1999 HG		
				esp #3 1:10				
Hg	2.47	ug/l	.000	2.47				

see dilution below.

11/30/99 gf

11/30/99 gf

Acid washed filter before analysis. - forgot to dump acid water before filtering. 11/30/99 gf

Refiltered 0.52g/100ml

2% difference

$\bar{x}$ = 0.735 ug/l × 0.100 l / 0.52 g = 0.141 ug/g

T.V. = 0.141 ± 0.019 ug/g

Contamination only.

$\bar{x}$ = 1.17 ug/l × 0.100 l = 0.117 ug

$\bar{x}$ = 2.47 ug/l × 0.100 l × 10 = 2.47 ug

Line	Conc.	Units	SD/RSD	1	2	3	4	5

*** Check Standard: 4 Ck4IPC/CCV Seq: 148 15:37:09 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		96.9	4.85	5.00	ug/l	.000

$\bar{x}$ = 4.87 ug/l 97%R

*** Check Standard: 3 Ck3IPC/CCV Seq: 149 15:39:31 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		97.7	4.89	5.00	ug/l	.000

*** Check Standard: 2 Ck2ICB/CCB Seq: 150 15:41:53 30 Nov 1999 HG

Line	Flag	%Rcv.	Found	True	Units	SD/RSD
Hg		-31100	-.031	.000	ug/l	.000

$\bar{x}$ = <0.2 ug/l

*** Check Standard: 1 Ck1ICB/CCB Seq: 151 15:44:02 30 Nov 1999 HG

Line	Flag	Found	Range(+/-)	Units	SD/RSD
Hg		-.019	.200	ug/l	.000

Projects #
187900
187901

Calculations for Total Amount of Particle-Bound Mercury (Hg_{tp}) by: (Eq. #7)

$$Hg_{(particle)}, \mu g = (Hg_{ash}) - Hg_{fb} + Hg_{pr}$$

where: Hg_{ash} = Mercury present in ash (thimble or filter), µg

Hg_{fb} = Client blk of Probe Rinse portion, µg - See 11/22/99 Data. All client blanks were below D.L.

Hg_{pr} = Probe Rinse, 0.1N HNO_3 result performed on 11/22/99, µg

The Hg_{ash} and Hg_{pr} portions were logged in as different sample ID # for some samples. Client notes were placed in LIMS.

(1) #1382186 (thimble) + 1382189 (Hg pr blk) (Inlet SB)

<0.02 µg Hg(ash) + <0.084 µg Hg pr = <0.08 µg Hg particle

(2) #1382224 thimble + 1382227 Probe Rinse (Stack SB)

<0.02 µg Hg ash + <0.046 µg Hg pr = <0.05 µg Hg particle

(3) #1382157 (ID for thimble + Probe rinse) (Outlet #1)

<0.02 µg + <0.076 µg = <0.08 µg Hg part

(4) #1382161 (ID for thimble + Probe Rinse) (Outlet #2)

<0.02 µg + <0.048 µg = <0.048 µg Hg

(5) #1382165 (ID for thimble + Probe Rinse) (Outlet #3)

<0.02 µg + <0.051 µg = <0.051 µg Hg part

(6) 1382169 (ID for Thimble + Probe Rinse) (Outlet BT)

<0.02 µg + <0.021 µg = <0.02 µg Hg part

Total Particle-Bound Mercury con't.

(7) # 1382173 (Inlet #1)

<0.02 ug Hg ash + 0.089 ug Hg pr = 0.089 ug Hg part

(8) 1382177 (Inlet #2)

<0.02 ug Hg ash + <0.025 ug Hg pr = <0.025 ug Hg part.

(9) 1382181 (Inlet #3)

<0.02 ug Hg ash + <0.031 ug Hg pr = <0.031 ug Hg part.

(10) 1382190 (Inlet BT)

<0.02 ug Hg ash + <0.027 ug Hg pr = <0.027 ug Hg part.

(11) 1382211 (Stack #1)

<0.02 ug Hg ash + <0.015 ug Hg pr = <0.02 ug Hg part

(12) 1382215 (Stack #2)

<0.02 ug Hg ash + <0.024 ug Hg pr = <0.02 ug Hg part

(13) 1382219 (Stack #3)

<0.02 ug Hg ash + <0.018 ug Hg pr = <0.02 ug Hg part

(14) 1382228 (Stack BT)

<0.02 ug Hg ash + <0.024 ug Hg pr = <0.02 ug Hg part

188322
& 188323

2A

Initial and Continuing Calibration Verification

Lab Name: *Philip Analytical Services*

File Name: *HG-113099*

Concentration Units: ug/l

Analyte	QCS			IPC/CCV				
	True	Found	%R	True	Found	%R	Found	%R
Mercury	5.00	5.00	100.0	5.00	5.09	101.8	5.15	103.0

rms 2/25/98 rev. 1
rms 5/20/98 rev. 2

Initial and Continuing Calibration Verification Continued

Lab Name: *Philip Analytical Services*

File Name: HG-113099

Analyte	IPC/CCV						
	True	Found	%R	Found	%R	Found	%R
Mercury	5.00	4.75	95.0	4.83	96.6	4.95	99.0

rms 2/25/98 rev. 1
rms 5/20/98 rev. 2

Initial and Continuing Calibration Verification Continued

Lab Name: *Philip Analytical Services*

File Name: HG-113099

Analyte	IPC/CCV						
	True	Found	%R	Found	%R	Found	%R
Mercury	5.00	4.91	98.2	4.98	99.6	4.98	99.6

rms 2/25/98 rev. 1
rms 5/20/98 rev. 2

Initial and Continuing Calibration Verification Continued

Lab Name: *Philip Analytical Services*

File Name: HG-113099

Analyte	IPC/CCV						
	True	Found	%R	Found	%R	Found	%R
Mercury	5.00	4.87	97.4		#VALUE!		

rms 2/25/98
rms 5/20/98

Initial & Continuing Calibration Blanks

Lab Name: *Philip Analytical Services*

File Name: *HG-113099*

Concentration Units: ug/l

Parameter	Initial Calibration Blank (ug/l)	c	Continuing Calibration Blanks (ug/l) #1	c	#2	c	#3	c	#4	c
Mercury	< 0.20		< 0.20		< 0.20		< 0.20		< 0.20	

5/19/98 rms

Initial & Continuing Calibration Blanks

Lab Name *Philip Analytical Services*

File Name *HG-113099*

Concentration Units: ug/l

	Continuing Calibration Blanks (ug/l)									
Parameter	#5		#6	c	#7	c	#8	c	#9	c
Mercury	< 0.20		< 0.20		< 0.20		< 0.20		< 0.20	

5/19/98 rms

3A
Method Blank

Lab Name: *Philip Analytical Services*
File Name: *HG-113099*
Batch: 112999B ASH

	1384155
	Method Blank
	(ug)
Mercury	< 0.02

3A
Method Blank

Lab Name: *Philip Analytical Services*
File Name: *HG-113099*
Batch: *112999B ASH*

	1384160
	Method Blank
	(ug)
Mercury	< 0.02

5B

SPIKE RECOVERY

Lab Name: *Philip Analytical Services*

File Name: *HG-113099* Batch: 112999B ASH

Sample Number: *1384155*

Concentration Unit: ug Hg

		MATRIX SPIKE									
	Sample	Spike	Matrix Spike								
Parameter	Conc.	Conc.	Conc.	% Recovery	c						c
Mercury	< 0.02	0.200	0.169	85.0							

5/20/98 rms

TRIPLICATE ANALYSIS

Lab Name: *Philip Analytical Services*

File Name: *HG-113099* Batch: 112999B ASH

Sample Number: *1384155*

Concentration Units: ug

Parameter	Sample Concentration	Sample Duplicate Concentration	Sample Triplicate Concentration	
Mercury	< 0.02	< 0.02	< 0.02	

Must be within 10 % difference

rms 5/20/1998

Metal PQLS

Lab Name: *Philip Analytical Services*
File Name: *HG-113099*

Element	Water PQL (ug/l)	Soil PQL (ug/g)
Mercury	< 0.20	< 0.04

PQLs
rms 5/21/98

PHILIP SERVICES

Wed m
1 88323,

DATA PACKAGE
FOR
Philip Analytical
Project # 1883223

Philip Analytical Services
5555 North Service Road
Burlington, Ontario
L7L 5H7
905-332-8788

Submission # 960253

Approved by : Ada Blythe – Project Manager

Initial : AB

1.0 CASE NARRATIVE

2a

PROJECT NARRATIVE

PHILIP Analytical Services (Burlington ON)
Philip Project: 188323
Philip Submission #:9L0253

Client: Philip Analytical Services Inc
Client Project:

I. SAMPLE RECEIPT/ANALYSIS
a) Sample Listing

Philip ID	Client Sample ID	Date Sampled	Date Received	Date Prepped	Run Date
Mercury - Ontario - Front Half					
73512 99	GEG ESP Inlet-BT	99/11/17	99/12/07	00/01/17	00/01/17
73513 99	GEG ESP Inlet-R1	99/11/17	99/12/07	00/01/17	00/01/17
73514 99	GEG ESP Inlet-R2	99/11/17	99/12/07	00/01/17	00/01/17
73515 99	GEG ESP Inlet-R3	99/11/17	99/12/07	00/01/17	00/01/17
Mercury - Ontario Hydro - KCL					
73489 99	GEG ESP Stack BT	99/11/17	99/12/07	00/01/07	00/01/07
73490 99	GEG ESP Stack-R1	99/11/17	99/12/07	00/01/07	00/01/07
73491 99	GEG ESP Stack-R2	99/11/17	99/12/07	00/01/07	00/01/07
73492 99	GEG ESP Stack-R3	99/11/17	99/12/07	00/01/07	00/01/07
73511 99	GEG ESP Inlet-SB	99/11/17	99/12/07	00/01/07	00/01/07
73512 99	GEG ESP Inlet-BT	99/11/17	99/12/07	00/01/07	00/01/07
73513 99	GEG ESP Inlet-R1	99/11/17	99/12/07	00/01/07	00/01/07
73514 99	GEG ESP Inlet-R2	99/11/17	99/12/07	00/01/07	00/01/07
73515 99	GEG ESP Inlet-R3	99/11/17	99/12/07	00/01/07	00/01/07
Mercury - Ontario Hydro - Permangnate					
73489 99	GEG ESP Stack BT	99/11/17	99/12/07	00/01/09	00/01/09
73490 99	GEG ESP Stack-R1	99/11/17	99/12/07	00/01/09	00/01/09
73491 99	GEG ESP Stack-R2	99/11/17	99/12/07	00/01/09	00/01/10
73492 99	GEG ESP Stack-R3	99/11/17	99/12/07	00/01/09	00/01/09
73511 99	GEG ESP Inlet-SB	99/11/17	99/12/07	00/01/09	00/01/09
73512 99	GEG ESP Inlet-BT	99/11/17	99/12/07	00/01/09	00/01/09
73513 99	GEG ESP Inlet-R1	99/11/17	99/12/07	00/01/09	00/01/09
73514 99	GEG ESP Inlet-R2	99/11/17	99/12/07	00/01/09	00/01/10
73515 99	GEG ESP Inlet-R3	99/11/17	99/12/07	00/01/09	00/01/09
Mercury-Ontario Hydro-Nitric Peroxide					
73489 99	GEG ESP Stack BT	99/11/17	99/12/07	00/01/07	00/01/07
73490 99	GEG ESP Stack-R1	99/11/17	99/12/07	00/01/07	00/01/07
73491 99	GEG ESP Stack-R2	99/11/17	99/12/07	00/01/07	00/01/07
73492 99	GEG ESP Stack-R3	99/11/17	99/12/07	00/01/07	00/01/07

73511 99	GEG ESP Inlet-SB	99/11/17	99/12/07	00/01/07	00/01/07
73512 99	GEG ESP Inlet-BT	99/11/17	99/12/07	00/01/07	00/01/07
73513 99	GEG ESP Inlet-R1	99/11/17	99/12/07	00/01/07	00/01/07
73514 99	GEG ESP Inlet-R2	99/11/17	99/12/07	00/01/07	00/01/07
73515 99	GEG ESP Inlet-R3	99/11/17	99/12/07	00/01/07	00/01/07

Mercury - Ontario Hydro - Probe Rinse

73489 99	GEG ESP Stack BT	99/11/17	99/12/07	00/01/10	00/01/10
73490 99	GEG ESP Stack-R1	99/11/17	99/12/07	00/01/10	00/01/10
73491 99	GEG ESP Stack-R2	99/11/17	99/12/07	00/01/10	00/01/10
73492 99	GEG ESP Stack-R3	99/11/17	99/12/07	00/01/10	00/01/10
73511 99	GEG ESP Inlet-SB	99/11/17	99/12/07	00/01/17	00/01/17

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:
The draft ASTM method has a defaulted hold time of 45 days for analysis after sampling. The authors at EERC (Denis Laudal) has indicated that this hold time is a very conservative value and that they have data demonstating that the levels do not change over several months in the recovered impinger solutions as submitted to the laboratory. We can confirm this by the tabulated data below which shows no measurable change in KCl and KMnO4 impinger contents over greater than four months. The filter captured solids of coal fly ash is within the heated zone of the train and therefore volatile mercury has already been stripped and hold time should not be a concern with the fraction. In fact NIST uses coal fly ash as mercury reference materials (eg. 1633b) because of its long term stability. Therefore despite the minor exceedence from the method recommended hold time, there should be no concern for sample integrity from sample storage of this time frame.

ASTM Mercury Speciation Train ('Ontario Hydro Method') Sample Stability Study

KCl Impinger

	PASC ID #:	044798 99	044799 99	044800 99
Analysis Data		**ug**	**ug**	**ug**
Sept 9th 1999		16.4	7.70	4.13
Nov. 1999		14.6	7.25	4.11
Jan 11th 2000		16.3	7.53	4.50

KMnO4 Impinger

	PASC ID #:	044798 99	044799 99	044800 99
Analysis Data		**ug**	**ug**	**ug**
Sept 9th 1999		3.66	0.383	0.570
Nov. 1999		3.33	0.361	0.505
Jan 11th 2000		3.62	0.391	0.538

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.

Ada Blythe, Project Manager

00/01/26
Date

2.0 RAW DATA
a) DATA SUMMARY

- Method blank
- Surrogate recoveries
- Date analysed and prepped

PHILIP SERVICES

Certificate of Analysis

CLIENT INFORMATION

Attention:	Pamela Peters
Client Name:	Philip Analytical Services Inc
Project:	Misc.
Project Desc:	
Address:	4418 Pottsville Pike Reading, Pennsylvania 19605
Fax Number:	610 921-8407
Phone Number:	610 921-8833

LABORATORY INFORMATION

Contact:	Ada Blythe, B.Sc., C.Chem.
Project:	AN970416
Date Received:	99/12/07
Date Reported:	00/01/17
Submission No.:	9L0253
Sample No.:	073507-073515

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

PASC - Certificate of Analysis

			Method Blank	Blank Spike #1	Blank Spike #1	Blank Spike #2	Blank Spike #2	GEG ESP Stack BT	GEG ESP Stack-R1	GEG ESP Stack-R2	GEG ESP Stack-R3
Client ID:											
Lab No.:			073483 99	073483 99	073483 99	073483 99	073483 99	073489 99	073490 99	073491 99	073492 99
Date Sampled:			-	-	-	-	-	99/11/17	99/11/17	99/11/17	99/11/17
Component	**MDL**	**Units**			% Recoveries		% Recoveries				
Mercury - KCl	0.030	ug	<0.10	0.31	100	0.31	100	<0.10	9.9	13	11
Mercury - KMnO4	0.030	"	<	0.29	97	0.29	97	<0.10	4.4	7.1	4.3
Mercury - H202	0.010	"	<	0.10	100	0.10	100	<0.25	0.52	0.70	0.43
Mercury - probe rinse	0.010	"	<	0.10	100	0.10	100	0.021	0.17	0.13	0.20

00004

PASC - Certificate of Analysis

	Client ID:		GEG ESP Inlet-SB	GEG ESP Inlet-BT	GEG ESP Inlet-R1	GEG ESP Inlet-R2	GEG ESP Inlet-R3
	Lab No.:		073511 99	073512 99	073513 99	073514 99	073515 99
	Date Sampled:		99/11/17	99/11/17	99/11/17	99/11/17	99/11/17
Component	**MDL**	**Units**					
Mercury - filter	0.010	ug	-	<0.070	8.0	4.7	0.79
Mercury - KCl	0.030	"	<0.10	<0.10	1.6	1.3	7.4
Mercury - KMnO4	0.030	"	<0.10	<0.10	4.5	6.0	5.0
Mercury - H202	0.010	"	<0.25	<0.25	0.44	0.51	0.32
Mercury - probe rinse	0.010	"	<	-	-	-	-

3.0 RAW DATA

00/01/18 12:42:13 Printed by MGAS LDCA DATA TO BE VALIDATED (METVAL') Analyzed by MGAS

Zenon Number	Client	Client ID	Parameter	TS	Result	Dup.	Spike	% Rec.	Dup. Spk	% Rec.	Batch Date	Batch Code	Run Date	Run Code	Day Old	Day In	Analyst's Comments
073483	PHIL-PAR	MB R456	Mercury -	PV	-0.010	-99999.0	0.101	101.	0.101	101.	00/01/17	1NFT	00/01/17	MG01	61.	41.	
[redacted]																	
073512	PHIL-PAR	GEG ESP Inlet-B1	Mercury -	PV	-0.070						00/01/17	1NFT	00/01/17	MG01	61.	41.	
073513	PHIL-PAR	GEG ESP Inlet-R1	Mercury -	PV	8.014						00/01/17	1NFT	00/01/17	MG01	61.	41.	
073514	PHIL-PAR	GEG ESP Inlet-R2	Mercury -	PV	4.688						00/01/17	1NFT	00/01/17	MG01	61.	41.	
073515	PHIL-PAR	GEG ESP Inlet-R3	Mercury -	PV	0.791						00/01/17	1NFT	00/01/17	MG01	61.	41.	
BL0117	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.101	101.	0.101	101.	00/01/17	1NFT	00/01/17	MG01	$$$	$$$	

10 Tests for OHFLT with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00007

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
073511	PHIL-PAR	GEG ESP Inlet-SB	Mercury -	PV	-0.010						00/01/17	1N1B	00/01/17	MG01	61.	41.	
BL0117	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.101	101.	0.101	101.	00/01/17	1N1B	00/01/17	MG01	$$$	$$$	

2 Tests for OHPROBE with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

_DC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.01.17 W 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			8L0117	INP		
13			"			
14			8L0117 S			
15			"			
16			8L0117 DS			
17			"			
18			73508			
19			"			
20			73508 D			
21			"			
22			73508 S			
23			"			
24			73508 DS			
25			"			
26			73507			
27			"			
28			73509			
29			"			
30			73510			
31			"			
32			~~735~~ CCV			
33			B			
34			D4			
35			73511			
36			"			
37			73512			
38			"			
39			73513			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			73514			
42			"			
43			73515			
44			"			
45			CCV			
46			B			
47			D4			
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Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 0.5 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.

00000

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~~ THIMBLE & RINSE COMBINE
- ✓ ~~Acids added~~ 7ml HF + 5ml AQUAREGIA.
- ✓ ~~Reagents added~~ SIT OVERNIGHT
- ✓ ~~Samples spiked~~ SAMPLES BULKED &
- ~~Bath at 95 degrees~~ C SUBMITTED.
- ~~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. Ver.)	1N18	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 0117	"	"	"	"	(Processed Blank)
	11	BL 0117 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	73508	"	"	"	"	FINALVOL 3500 ml
1	13	73508 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	73507	"	"	"	"	700 ml
3	17	73509	"	"	"	"	3400 ml
4	18	73510	"	"	"	"	1800 ml
5	19	73511	"	"	"	"	NO THIMBLE SUBMIT. ONLY RINSE PROCESSED 100 ml
6	20	73512	"	"	"	"	700 ml
7	21	73513	"	"	"	"	7200 ml
8	22	73514	"	"	"	"	8000 ml
9	23	73515	"	"	"	"	7000 ml
10	24		"	"	"	"	
	25	CCV (Cont. Calib. Ver.)		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		"	"	"	"	

* 7ml HF + 5ml AQUA REGIA ADDED TO EVERY 5g OF PART. WEIGHT

* STANDARDS MATRIX MATCHED WITH HF & AQUA REGIA *

Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C
DG29HGI, DG29HGF, DG101AA1, DG101AA2

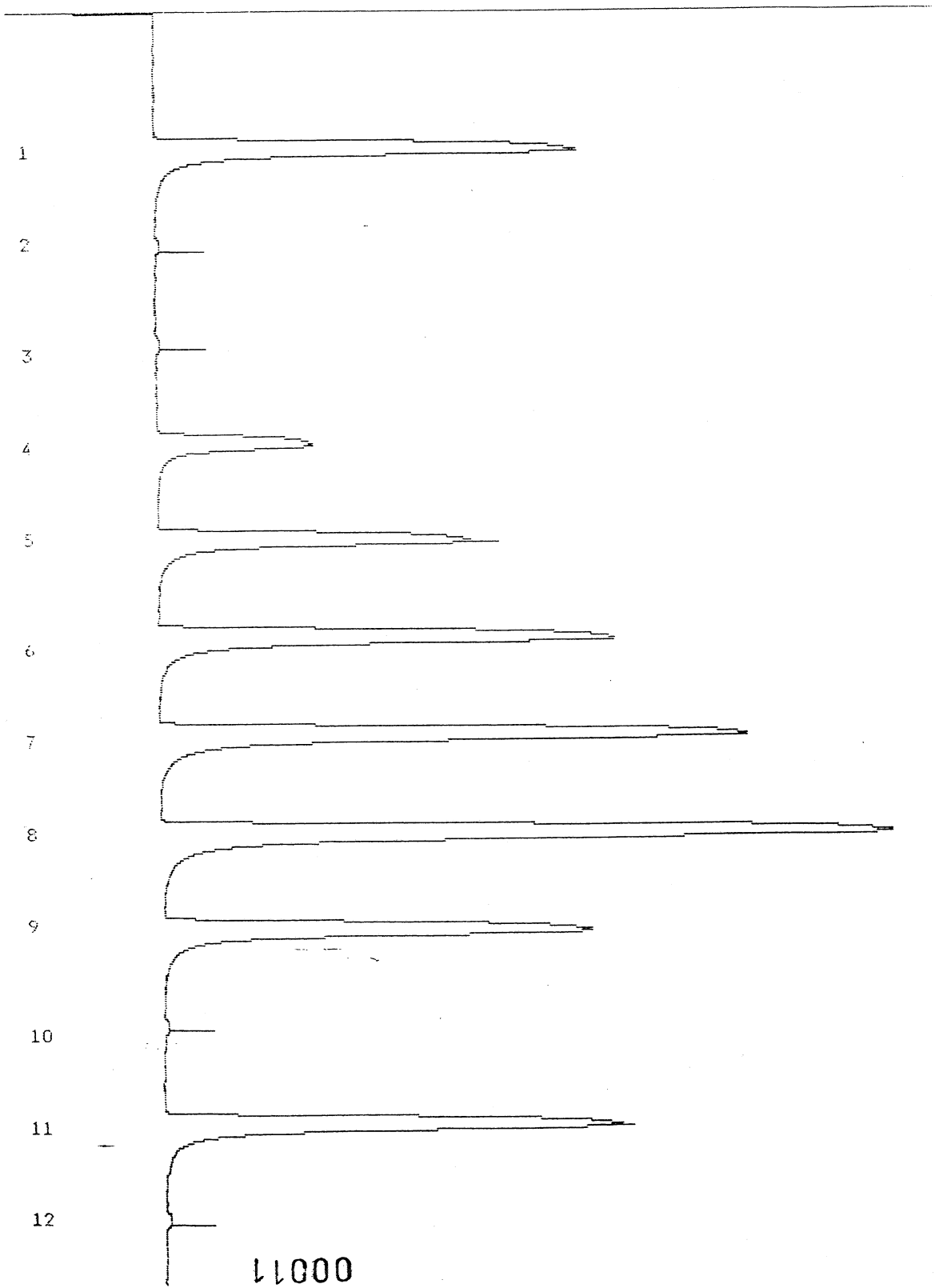
Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run

Prepare 0.05 ppm standards daily

HF. HNO3 Lot. No. 590070 | H2SO4 Lot. No. | Bath Temps. / / °C

Prepared By: M Nguyen Date: 000117 Checked by: M Nguyen

RUN DATE: 01-17-2000 CHART DATE: 01-17-2000
CHART SPEED: 30
DATA FILE NAME: C:\DP4\DATA\000117W.DAT



000117

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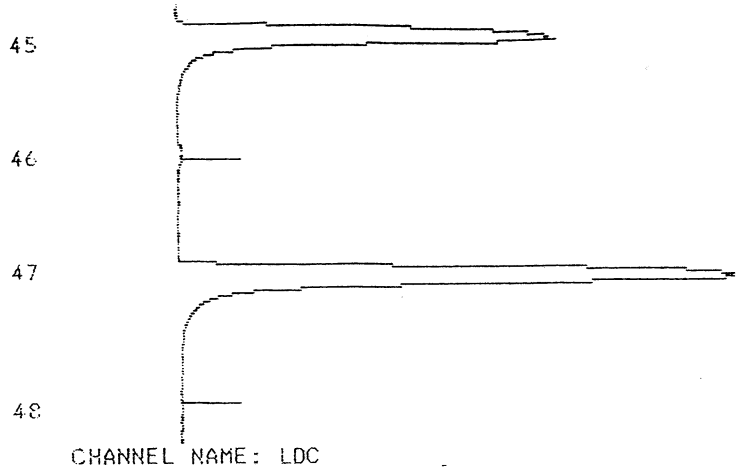
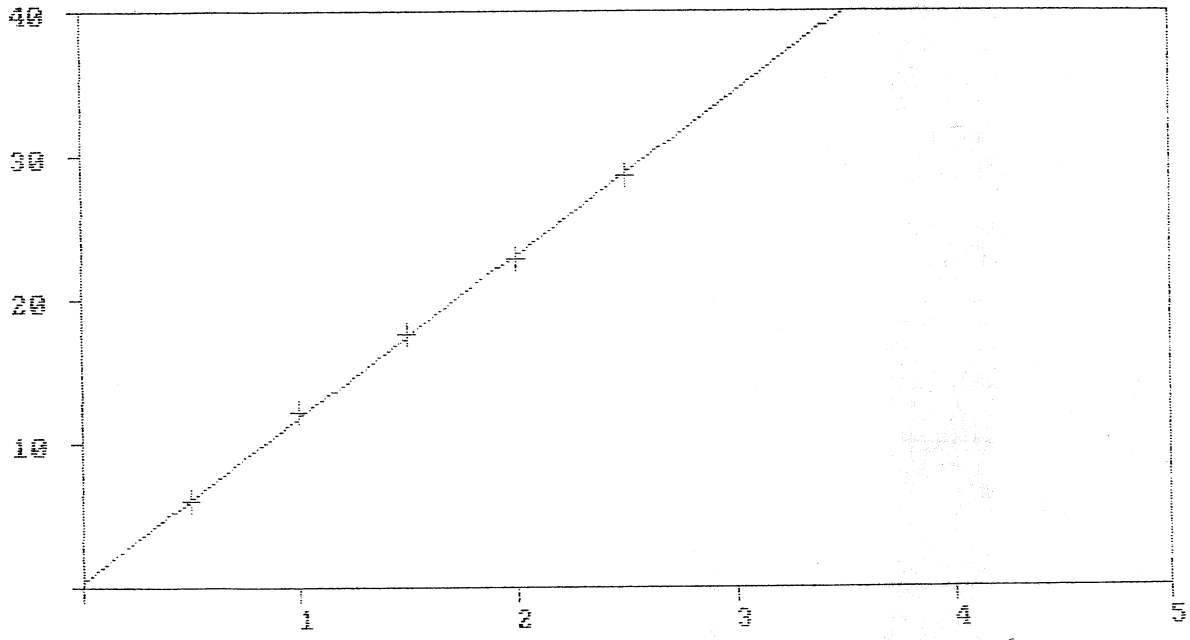
12	BL0117-1N1B	1	1	0.0	<0.01	-0.031	I	
13	BL0117-1N1B	1	1	0.0		-0.029	I	
14	BL0117S	1	1	11.8	0.101	1.009		101%
15	BL0117S	1	1	11.8		1.009		
16	BL0117DS	1	1	11.9	0.101	1.014		101%
17	BL0117DS	1	1	11.8		1.009		
18	73508	1	1	13.6	4.076	1.167		
19	73508	1	1	13.6		1.162		
20	73508D	1	1	13.7	4.121	1.175		
21	73508D	1	1	13.7		1.180		
22	73508S	1	1	24.4	7.417	2.117		95%
23	73508S	1	1	24.4		2.121		
24	73508DS	1	1	24.2	7.387	2.104		93%
25	73508DS	1	1	24.4		2.117		
26	73507	1	1	0.1	<0.07	-0.027	I	
27	73507	1	1	0.1		-0.021	I	
28	73509	1	1	13.5	3.905	1.154		
29	73509	1	1	13.3		1.143		
30	73510	1	1	21.2	3.326	1.839		
31	73510	1	1	21.4		1.856	s	
32	CCV	1	1	11.4		0.971		97%
33	B	1	1	0.0		-0.033	b	
34	D4	1	1	17.6		1.522	d	
35	73511	1	1	0.2	<0.01	-0.018	I	
36	73511	1	1	0.2		-0.018	I	
37	73512	1	1	0.0	<0.07	-0.029	I	
38	73512	1	1	0.0		-0.029	I	
39	73513	1	1	13.0	8.014	1.117		
40	73513	1	1	12.9		1.109		
41	73514	1	1	7.0	4.688	0.583		
42	73514	1	1	7.1		0.589		
43	73515	1	1	1.7	0.791	0.113		
44	73515	1	1	1.7		0.113		
45	CCV	1	1	11.7		1.003		100%
46	B	1	1	0.0		-0.033	b	
47	D4	1	1	17.6		1.522	d	

INTERCEPT: 0.38 LINEAR COEF: 11.33368
CORRELATION COEF: .9996292



CHANNEL NAME: LDC
RUN NAME: 000117W



DATA TYPE: FIA
CALIBRATION ORDER: 1
INTERCEPT = 0.38
SLOPE = 11.33368

CORRELATION: .9996292

CHANNEL NAME: LDC
RUN DATE: 01-17-2000
SAMPLE TABLE NAME: 000117W
METHOD NAME: HG-W-20

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION	EF
1	PRIMER	1	1	16.3	1.406	S
2	DUMMY	1	1	0.1	-0.023	I
3	S1: 0	1	1	0.1	-0.025	I
4	S2: .5	1	1	6.1	0.501	
5	S3: 1	1	1	12.1	1.035	
6	S4: 1.5	1	1	17.6	1.522	
7	S5: 2	1	1	22.7	1.970	
8	S6: 2.5	1	1	28.7	2.496	

00014

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
073483	PHIL-PAR	MB R456	Mercury -	PV	-0.010	-99999.0	0.101	101.	0.101	101.	00/01/10	MNF1	00/01/10	MG02	54.	34.	*BLKIMP*
[redacted]																	
073489	PHIL-PAR	GEG ESP Stack BT	Mercury -	PV	0.021						00/01/10	MNF1	00/01/10	MG02	54.	34.	
073490	PHIL-PAR	GEG ESP Stack-R1	Mercury -	PV	0.168						00/01/10	MNF1	00/01/10	MG02	54.	34.	
073491	PHIL-PAR	GEG ESP Stack-R2	Mercury -	PV	0.134						00/01/10	MNF1	00/01/10	MG02	54.	34.	
073492	PHIL-PAR	GEG ESP Stack-R3	Mercury -	PV	0.199						00/01/10	MNF1	00/01/10	MG02	54.	34.	
BL0110	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.101	101.	0.101	101.	00/01/10	MNF1	00/01/10	MG02	$$$	$$$	*BLKIMP*

11 Tests for OHPROBE with an MDL of 0.010 ug Validated By CMS Control Chart Updated N/A IO Requirements met N/A

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.01.10(WA) Run Code: MG02 Matrix: IMP.

Analyst: MG Units: ~~ug~~ 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	S2		
10			B (Std 1)			
11			D4 (Std 4)			
12			BL0110	MNF1.		
13			"			
14			BL0110 S			
15			"			
16			BL0110 DS			
17			"			
18			73486			
19			"			
20			73486 D			
21			"			
22			73486 S			
23			"			
24			73486 DS			
25			"			
26			73483			
27			"			
28			73484			
29			"			
30			73485			
31			"			
32			CCV			
33			B			
34			D4			
35			73487			
36			"			
37			73488			
38			"			
39			73489			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			73490			
42			"			
43			73491			
44			"			
45			73492			
46			"			
47		*	BL0110	MNF3		
48			"			
49			BL0110 S			
50			"			
51			BL0110 DS			
52			"			
53			74134			
54			"			
55			CCV			
56			B			
57			D4			
58			74134 D			
59			"			
60			74134 S			
61			"			
62			74134 DS			
63			"			
64			74131			
65			"			
66			74132			
67			"			
68			74133			
69			"			
70			74135			
71			"			
72			74136			
73			"			
74			74137			
75			"			
76			74138			
77			"			
78			CCV			
79			B			
80			D4			

* SAMPLE MISSED; RERUN ON 0111 RESULT WAS <0.01.

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.

00017 72

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.01.10(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)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.6		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
81 21			74139			
22			"			
23			74140			
24			"			
25			CCV			
26			B			
27			D4			
28						
29						
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						
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51						
52						
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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.

D-70

EPA 7470 WATER PREPARATION LOG - MERCURY

UUU48/470HG
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~~ BLANKS 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.)	MNF1	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 0110	"	"	"	"	(Processed Blank)
	11	BL 0110 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	72484	"	"	"	"	DGOH PRO FINALVOL 100 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	83	"	"	"	"	
3	17	85	"	"	"	"	
4	18	87	"	"	"	"	
5	19	89	"	"	"	"	
6	20	91	"	"	"	"	
7	21	93	"	"	"	"	
8	22	95	"	"	"	"	
9	23	97	"	"	"	"	
10	24	99	"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	MNF3	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 0110	"	"	"	"	(Processed Blank)
	27	BL 0110 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	74154	"	"	"	"	DGOH FLT FINALVOL 100 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	31	"	"	"	"	
3	33	32	"	"	"	"	
4	34	33	"	"	"	"	
5	35	35	"	"	"	"	
6	36	36	"	"	"	"	
7	37	37	"	"	"	"	
8	38	38	"	"	"	"	
9	39	39	"	"	"	"	
10	40	40	"	"	"	"	

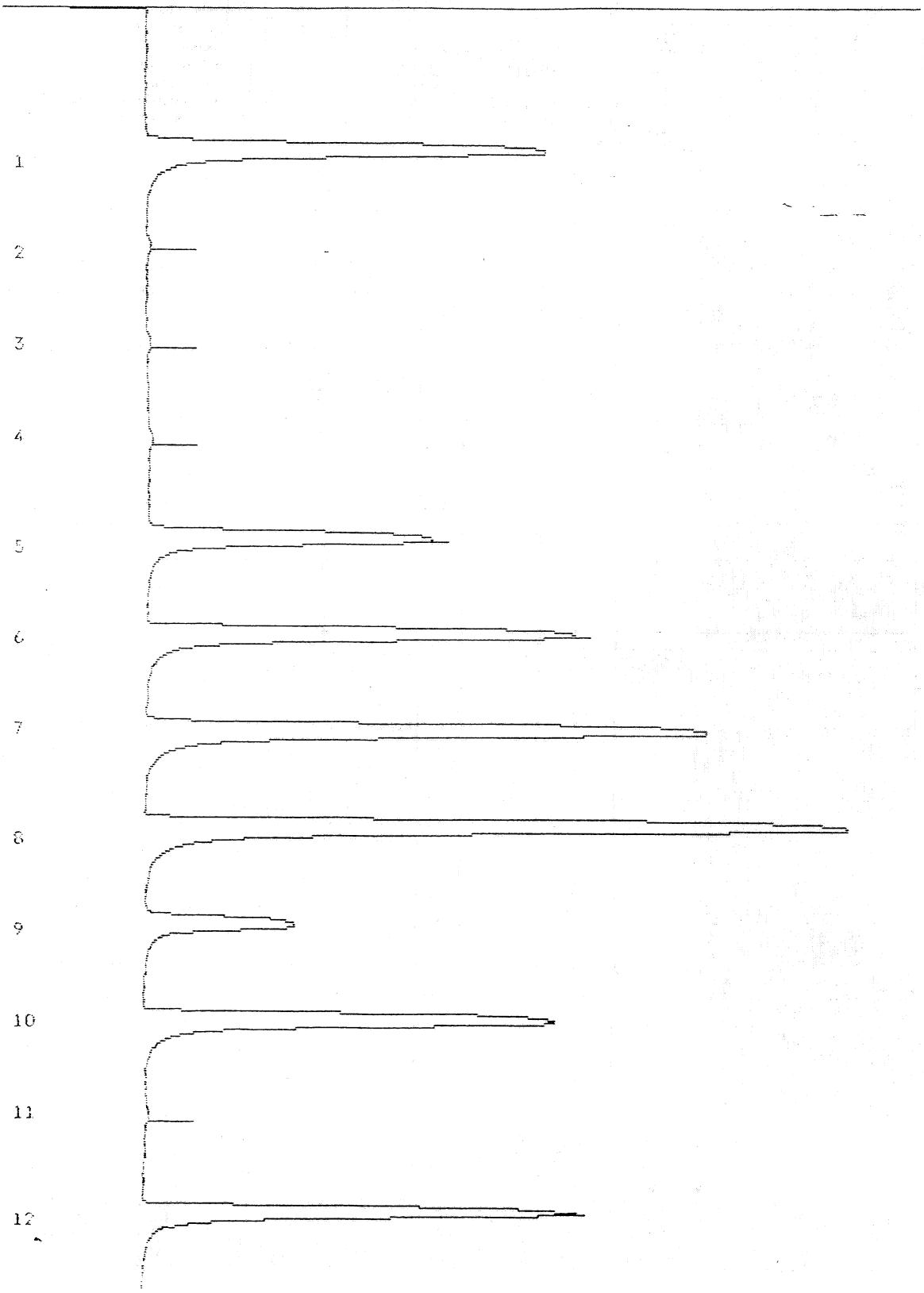
Notes: Other Applicable Test Codes: DG29HG-1B, DG29HG-2B, DG29HG-3A, DG29HG-3B, DG29HG-3C STANDARDS UNDIGESTED + DG29HGI, DG29HGF, DG101AA1, DG101AA2 MATRIX MATCHED WITH

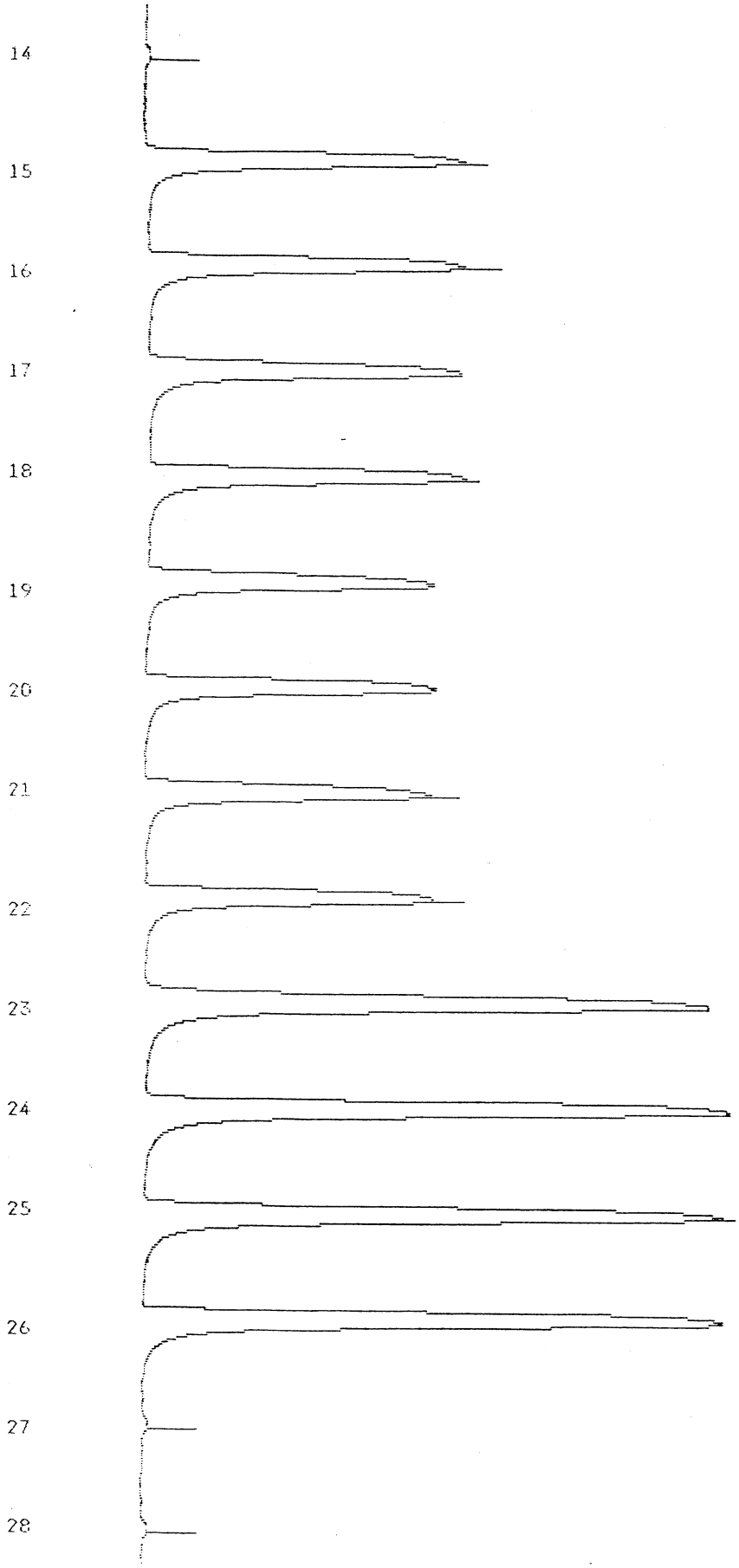
Include External Reference Material (EPA WS 378 or SPEX CertiPrep TM - WS) per run Prepare 0.05 ppm standards daily

HNO3 Lot. No.	H2SO4 Lot. No.	Bath Temps / / °C

Prepared By: M Alexpuros Date: 000110 Checked by: M Alexpuros

RUN DATE: 01-10-2000 CHART DATE: 01-11-2000 00019
CHART SPEED: 30
DATA FILE NAME: C:\DP4\DATA\000110WA.DAT

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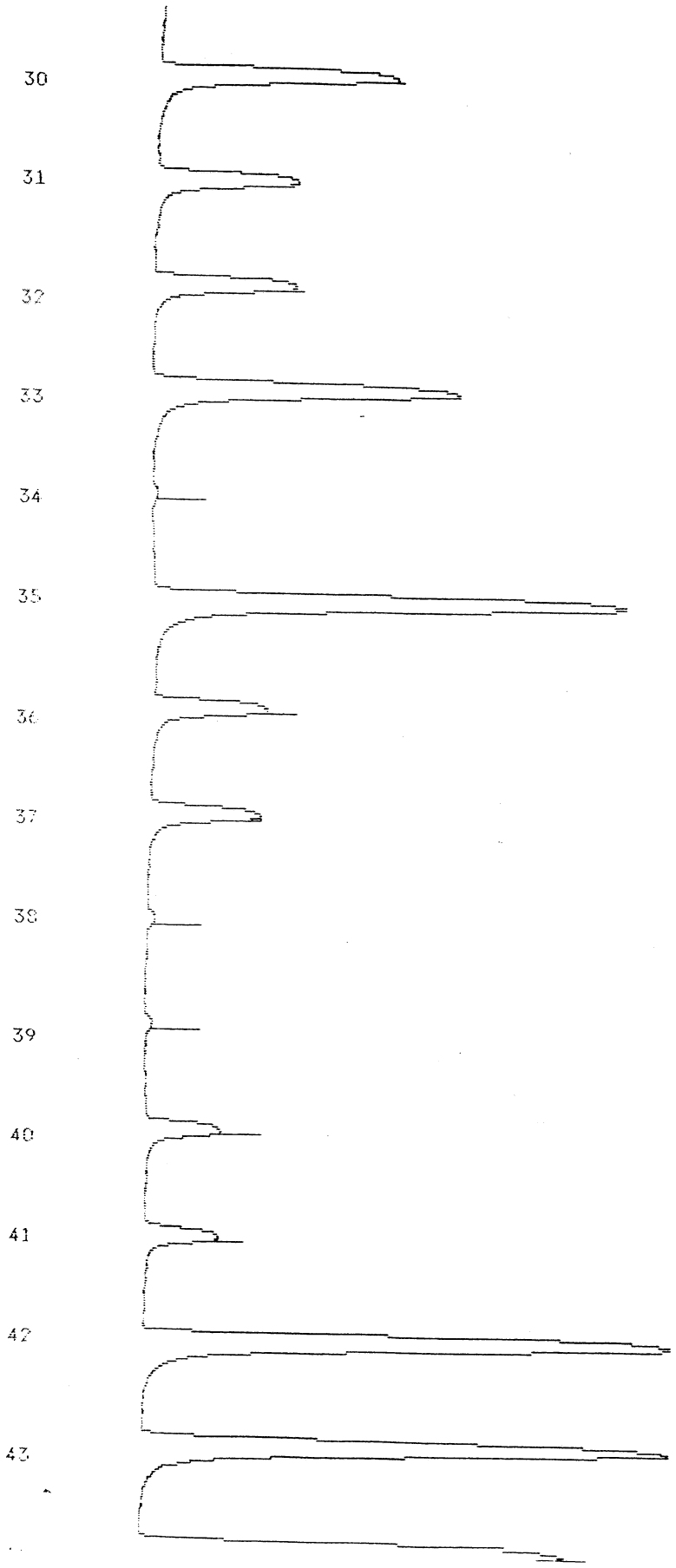
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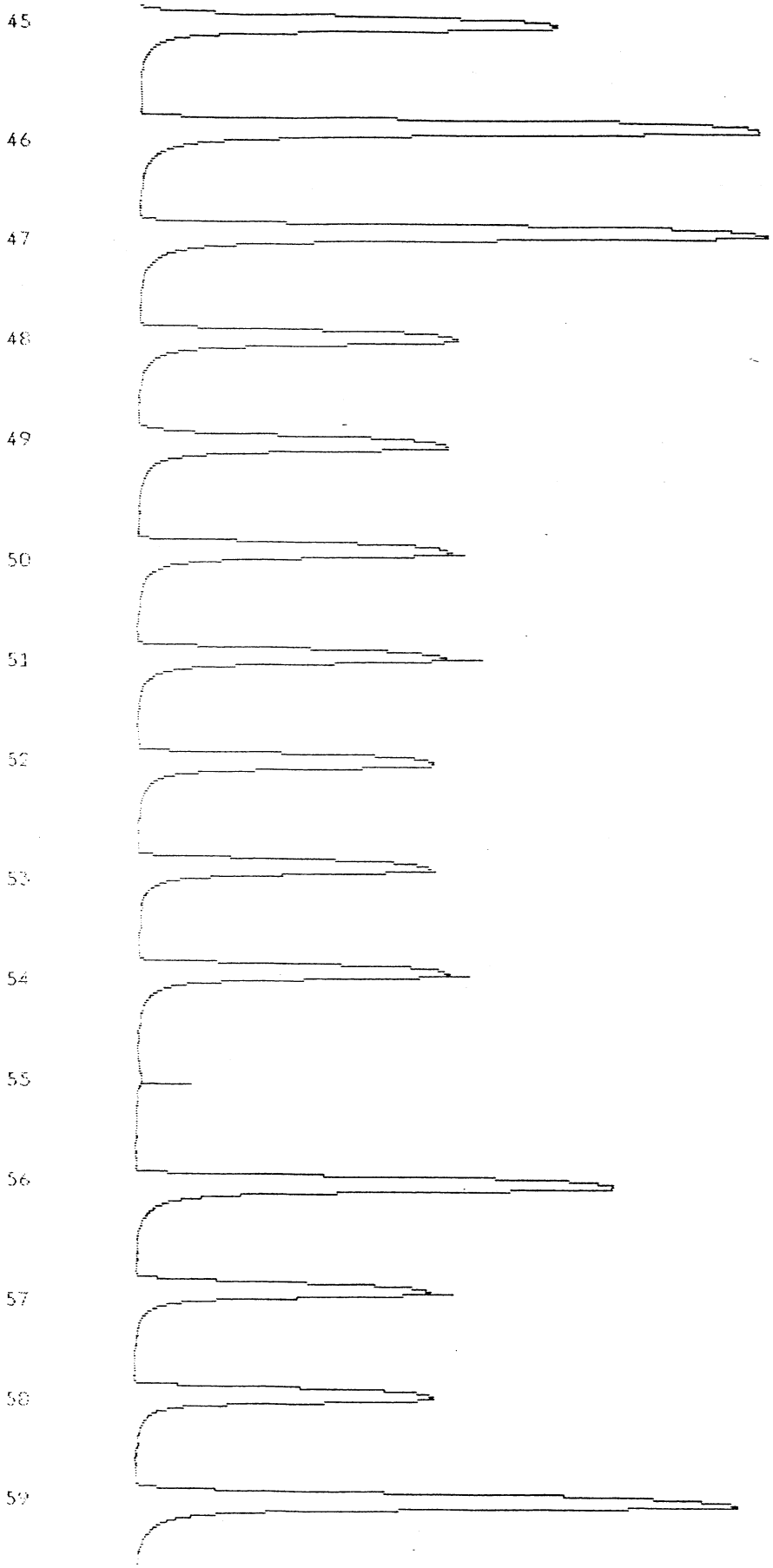
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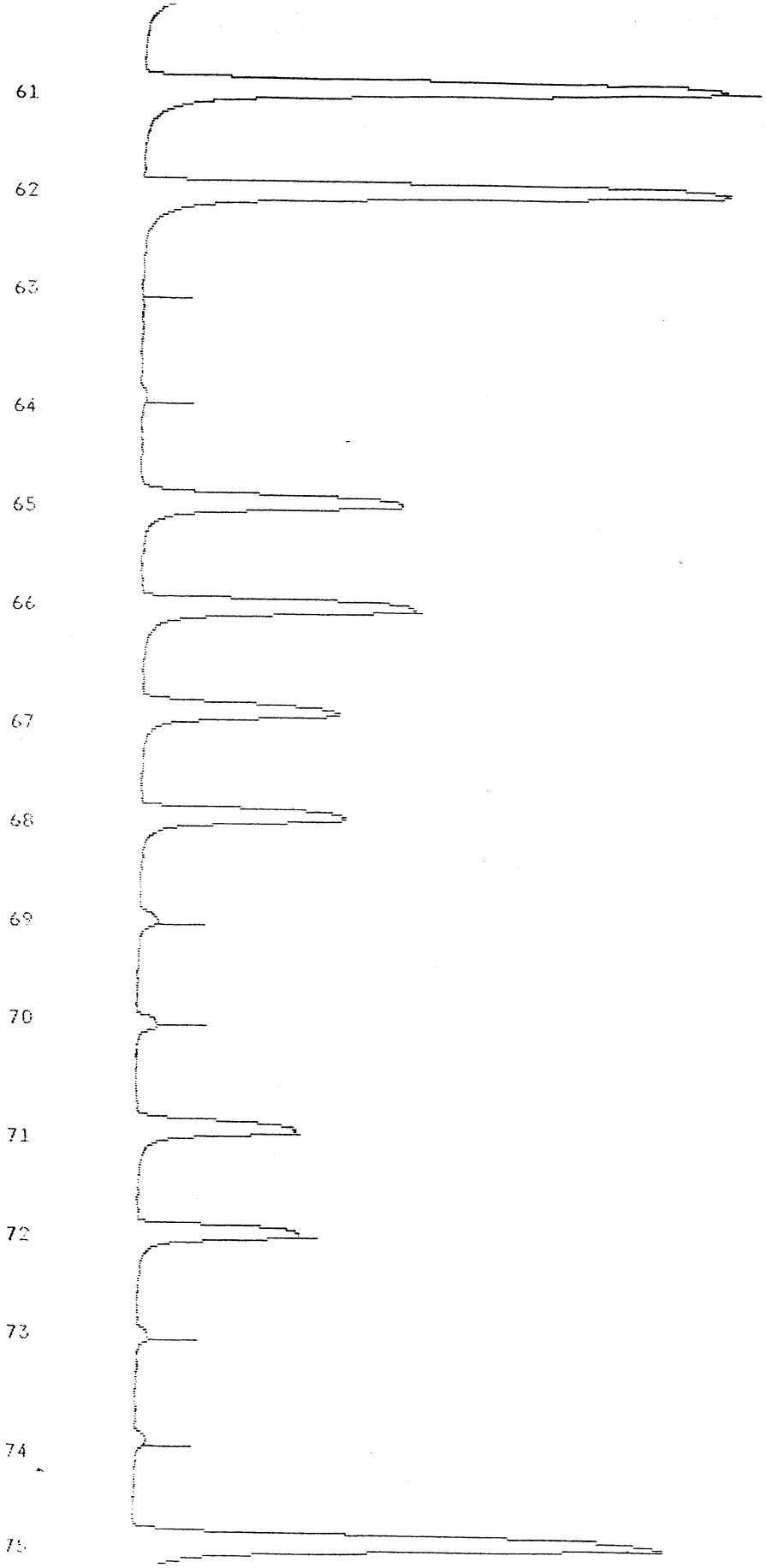
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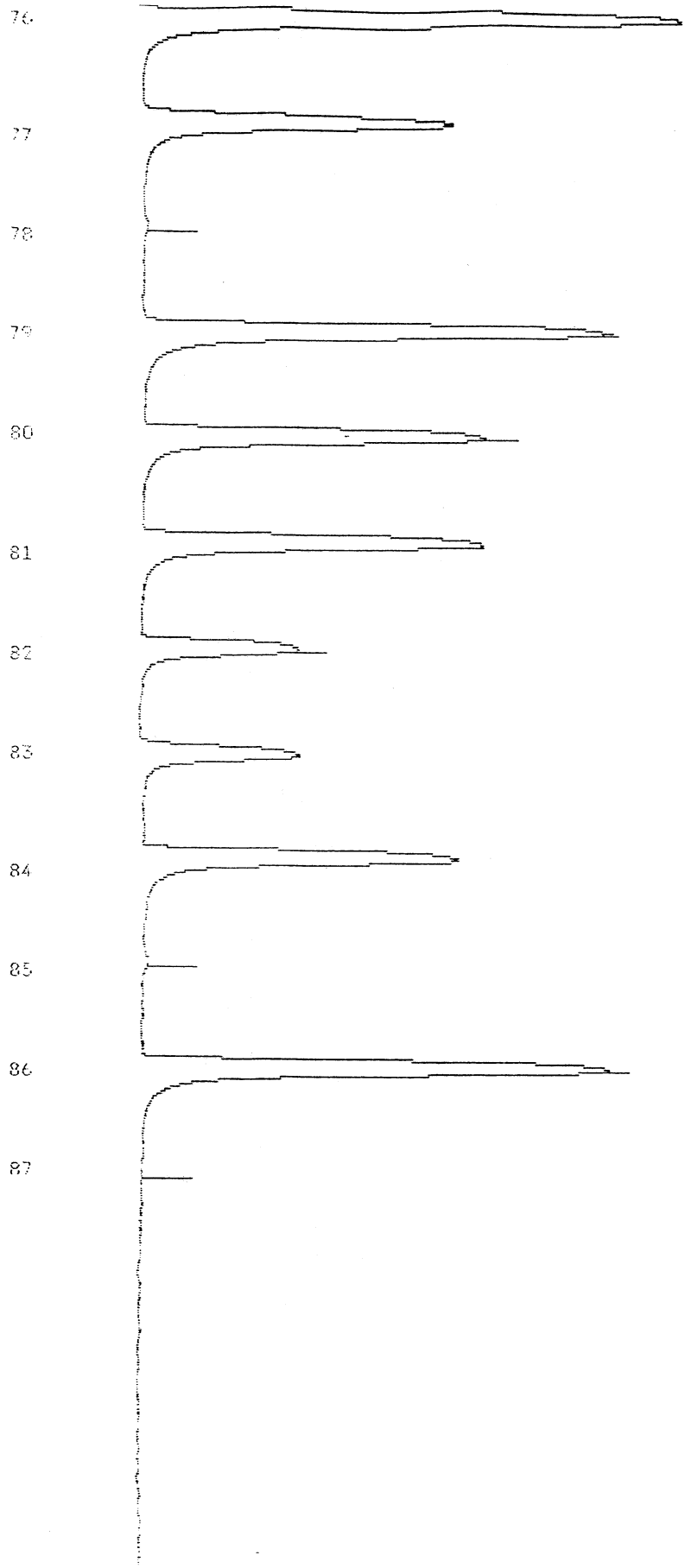
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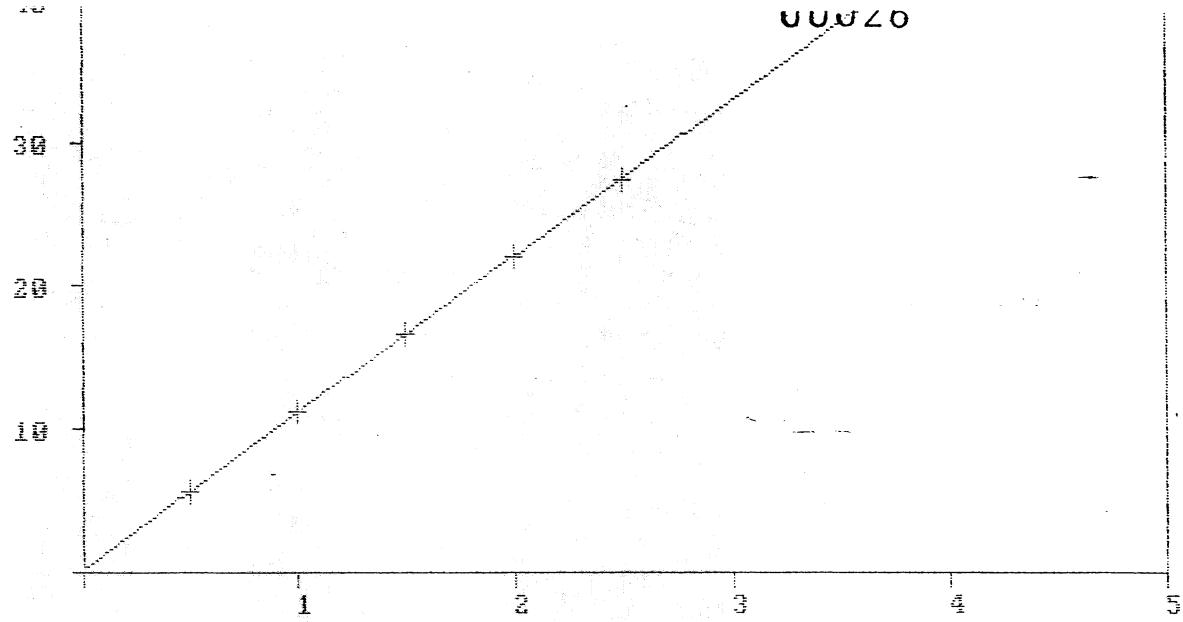
30	73484	1	1	8.4		0.751		
31	73485	1	1	4.8	0.043	0.425	s	0.0025
32	73485	1	1	4.8		0.427		
33	CCV	1	1	10.8		0.975	98%	
34	B	1	1	0.0		-0.017	b	
35	D4	1	1	16.7		1.513	d	
36	73487	1	1	3.8	0.033	0.333		
37	73487	1	1	3.7		0.324		
38	73488	1	1	0.0	<0.01	-0.012	I	
39	73488	1	1	0.1		-0.003	I	
40	73489	1	1	2.5	0.021	0.216		
41	73489	1	1	2.4		0.207		
42	73490	1	1	18.5	0.168	1.681		
43	73490	1	1	18.5		1.678		
44	73491	1	1	14.8	0.134	1.345		
45	73491	1	1	14.7		1.334		
46	73492	1	1	21.7	0.199	1.976	s	
47	73492	1	1	22.0		2.001		
48	BL0110S-MNF3	1	1	11.2	0.100	1.007	100%	
49	BL0110S-MNF3	1	1	10.9		0.987		
50	BL0110DS	1	1	11.1	0.099	1.004	99%	
51	BL0110DS	1	1	10.9		0.984		
52	74134	1	1	10.4	0.093	0.940		
53	74134	1	1	10.2		0.919		
54	CCV	1	1	10.9		0.980	98	
55	B	1	1	0.0		-0.017	b	
56	D4	1	1	16.7		1.513	d	
57	74134D	1	1	10.3	0.094	0.931		
58	74134D	1	1	10.5		0.942		
59	74134S	1	1	21.1	0.190	1.918	97%	
60	74134S	1	1	20.8		1.889		
61	74134DS	1	1	20.6	0.189	1.869	95%	
62	74134DS	1	1	20.9		1.902		
63	74131	1	1	0.0	<0.01	-0.017	I	
64	74131	1	1	0.0		-0.012	I	
65	74132	1	1	9.4	0.086	0.841		
66	74132	1	1	9.7		0.872		
67	74133	1	1	6.9	0.063	0.617		
68	74133	1	1	7.2		0.640		
69	74135	1	1	0.5	<0.01	0.030	I	
70	74135	1	1	0.5		0.030		
71	74136	1	1	5.6	0.050	0.498		
72	74136	1	1	5.6		0.501		
73	74137	1	1	0.3	<0.01	0.010	I	
74	74137	1	1	0.2		0.006	I	
75	74138	1	1	18.9	0.173	1.719		
76	74138	1	1	19.2		1.741	s	
77	CCV	1	1	10.9		0.987	99%	
78	B	1	1	0.0		-0.017	b	
79	D4	1	1	16.7		1.513	d	
80	74139	1	1	12.1	0.110	1.092		
81	74139	1	1	12.2		1.103		
82	74140	1	1	5.6	0.049	0.494		
83	74140	1	1	5.6		0.494		
84	CCV	1	1	11.2		1.009	101%	
85	B	1	1	0.0		-0.017	b	
86	D4	1	1	16.7		1.513	d	

INTERCEPT: 0.18 LINEAR COEF: 10.90668
CORRELATION COEF: .9999581



DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.18 SLOPE = 10.90668

CORRELATION: .9999581

CHANNEL NAME: LDC
RUN DATE: 01-10-2000
SAMPLE TABLE NAME: 000110WA
METHOD NAME: HG-W-20

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	TMG	CONCENTRATION (ppb)	EF	
1	PRIMER	1	1	15.8		1.428	s	
2	DUMMY	1	1	0.1		-0.008	I	
3	S1: 0	1	1	0.1		-0.010	I	
4	NO CUP	1	1	0.1		-0.003	I	
5	S3: 1	1	1	11.1		1.004		
6	S4: 1.5	1	1	16.7		1.513		
7	S5: 2	1	1	22.0		1.999		
8	S6: 2.5	1	1	27.4		2.491		
9	S2: .5	1	1	5.7		0.503		
10	ICV	1	1	15.9		1.441		96%
11	B	1	1	0.0		-0.017	b	
12	D4	1	1	16.7		1.513	d	
13	BL0110-MNF1 73483	1	1	0.0	<0.01	-0.012	I	
14	BL0110-MNF1	1	1	0.0		-0.012	I	
15	BL0110S	1	1	11.3	0.101	1.020		101%
16	BL0110S	1	1	11.2		1.013	s	
17	BL0110DS	1	1	11.1	0.101	1.002		101%
18	BL0110DS	1	1	11.2		1.009		
19	73486	1	1	10.3	0.093	0.924		
20	73486	1	1	10.3		0.926		
21	73486D	1	1	10.2	0.092	0.919		
22	73486D	1	1	10.2		0.922		
23	73486S	1	1	20.0	0.185	1.819		92%
24	73486S	1	1	20.6		1.875		
25	73486DS	1	1	20.3	0.185	1.849		92%
26	73486DS	1	1	20.4		1.858		

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
073483	PHIL-PAR	CD R	Mercury -	PV	-0.100	-99999.0	0.311	103.	0.308	103.	00/01/07	1NKC	00/01/07	MG02	51.	31.	
[redacted]																	
073489	PHIL-PAR	~~1206EG~~ ESP Stack-R1	Mercury -	PV	-0.100						00/01/07	1NKC	00/01/07	MG02	51.	31.	
073490	PHIL-PAR	GEG ESP Stack-R1	Mercury -	PV	9.931						00/01/07	1NKC	00/01/07	MG02	51.	31.	
073491	PHIL-PAR	GEG ESP Stack-R2	Mercury -	PV	12.635						00/01/07	1NKC	00/01/07	MG02	51.	31.	
073492	PHIL-PAR	GEG ESP Stack-R3	Mercury -	PV	11.323						00/01/07	1NKC	00/01/07	MG02	51.	31.	
BL0107	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.311	103.	0.308	103.	00/01/07	1NKC	00/01/07	MG02	$$$	$$$	
[redacted]																	
073511	PHIL-PAR	GEG ESP Inlet-SB	Mercury -	PV	-0.100						00/01/07	2NKC	00/01/07	MG02	51.	31.	
073512	PHIL-PAR	GEG ESP Inlet-BT	Mercury -	PV	-0.100						00/01/07	2NKC	00/01/07	MG02	51.	31.	
073513	PHIL-PAR	GEG ESP Inlet-R1	Mercury -	PV	1.557						00/01/07	2NKC	00/01/07	MG02	51.	31.	
073514	PHIL-PAR	GEG ESP Inlet-R2	Mercury -	PV	1.338						00/01/07	2NKC	00/01/07	MG02	51.	31.	
073515	PHIL-PAR	GEG ESP Inlet-R3	Mercury -	PV	7.372						00/01/07	2NKC	00/01/07	MG02	51.	31.	
BL0107	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.305	101.	0.309	103.	00/01/07	2NKC	00/01/07	MG02	$$$	$$$	
[redacted]																	
BL0107	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.315	105.	0.313	105.	00/01/07	3NKC	00/01/07	MG02	$$$	$$$	

32 Tests for OHKCL with an MDL of 0.030 ug Validated By CMS Control Chart Updated N/A IO Requirements met N/A

00027

D-80

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.01.07(WA) 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)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
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			BL0107	4NIB		
15			"			
16			BL0107 S			
17			"			
18			BL0107 DS			
19			"			
20	2		69886			
21			"			
22			69886 D			
23			"			
24			69886 S			
25			"			
26			69886 DS			
27			"			
28			69885			
29			"			
30		1/2	69887			
31			"			
32		1/4	69888			
33			"			
34			CCV			
35			B			
36			D4			
37			70235			
38			"			
39		1/4	70236			
40			"			
41			70237			
42			"			
43		1/5	70238			
44			"			
45			BL0107	5NKC		
46			"			
47			BL0107 S			
48			"			
49			BL0107 DS			
50			"			
51		1/4	65836			
52			"			
53			65836 D			
54			"			
55			65836 S			
56			"			
57			CCV			
58			B			
59			D4			
60		1/4	65836 DS			
61			"			
62			65835			
63			"			
64			65837			
65			"			
66			65838			
67			"			
68			BL0107	1NKC		
69			"			
70			BL0107 S			
71			"			
72			BL0107 DS			
73			"			
74			73486			
75			"			
76			73486 D			
77			"			
78			73486 S			
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: 00.01.07 (WA) Run Code: MG02 Matrix: HP

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			B			
22			D4			
23			73486 DS			
24			"			
25			73484			
26			"			
27			73485			
28			"			
29			73487			
30			"			
31			73488			
32			"			
33			73489			
34			"			
35		1/10	73490			
36			"			
37			73491			
38			"			
39			73492			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			BL0107	2NKC		
42			"			
43			CCV			
44			B			
45			D4			
46			BL0107 S			
47			"			
48			BL0107 DS			
49			"			
50			73508			
51			"			
52			73508 D			
53			"			
54			73508 S			
55			"			
56			73508 DS			
57			"			
58			73507			
59			"			
60			73509			
61			"			
62			73510			
63			"			
64			73511			
65			"			
66			CCV			
67			B			
68			D4			
69			73512			
70			"			
71			73513			
72			"			
73			73514			
74			"			
75		1/10	73515			
76		↓	"			
77			BL0107	3NKC		
78			"			
79			BL0107 S			
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: 99.01.07 Run Code: HG02 Matrix: IMP

Analyst: MG Units: µg (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21			BL0107 DS			
22			"			
23			74134			
24			"			
25			74134 D			
26			"			
27			74134 S			
28			"			
29			CCV			
30			B			
31			D4			
32			74134 DS			
33			"			
34			74132			
35			"			
36			74133			
37			"			
38			74135			
39			"			
40			74136			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			74136			
42			74137			
43			"			
44		1/10	74138			
45			"			
46			74139			
47			"			
48			74140			
49			"			
50		1/10	73485			
51			"			
52			WS 378			
53			ORG. REF			
54			CCV			
55			B			
56			D4			
57						
58						
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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.

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)	3NKC	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL 0107	"	"	"	"	(Processed Blank) 74131
	43	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44	74134	"	"	"	"	IMPVKC1 1000 ml
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	74132	"	"	"	"	
3	49	33	"	"	"	"	
4	50	35	"	"	"	"	
5	51	36	"	"	"	"	
6	52	37	"	"	"	"	
7	53	38	"	"	"	"	
8	54	39	"	"	"	"	
9	55	40	"	"	"	"	
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

EPA 7470 WATER PREPARATION LOG - MERCURY

000039 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.)	2NKC	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 0107	"	"	"	"	(Processed Blank)
	11	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	73486	"	"	"	"	MPVKCl 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	73484	"	"	"	"	
3	17	85	"	"	"	"	
4	18	87	"	"	"	"	
5	19	88	"	"	"	"	
6	20	89	"	"	"	"	
7	21	90	"	"	"	"	
8	22	91	"	"	"	"	
9	23	92	"	"	"	"	
10	24	~~92~~ MN	"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	2NKC	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 0107	"	"	"	"	(Processed Blank)
	27	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	73508	"	"	"	"	MPVKCl 1000 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	73507	"	"	"	"	
3	33	509	"	"	"	"	
4	34	510	"	"	"	"	
5	35	511	"	"	"	"	
6	36	512	"	"	"	"	
7	37	513	"	"	"	"	
8	38	514	"	"	"	"	
9	39	515	"	"	"	"	
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. 190911	H2SO4 Lot. No. 318020	Bath Temps. 1 195°C

Prepared By: M Alexpros Date: 000107 Checked by: M Alexpros

EPA 7470 WATER PREPARATION LOG - MERCURY

00099 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.)	4NIB	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 0107	"	"	"	"	(Processed Blank)
	11	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	69386	"	"	"	"	FINAL VOL 300 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	69385	"	"	"	"	
3	17	87	"	"	"	"	
4	18	88	"	"	"	"	
5	19	70235	"	"	"	"	
6	20	36	"	"	"	"	
7	21	37	"	"	"	"	
8	22	38	"	"	"	"	
9	23	69381	"	"	"	"	
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. 117091 | H2SO4 Lot. No. 318020 | Bath Temps. 1 196°C

Prepared By: M Aspera Date: 00/07 Checked by: M Aspera

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CHART SPEED: 30
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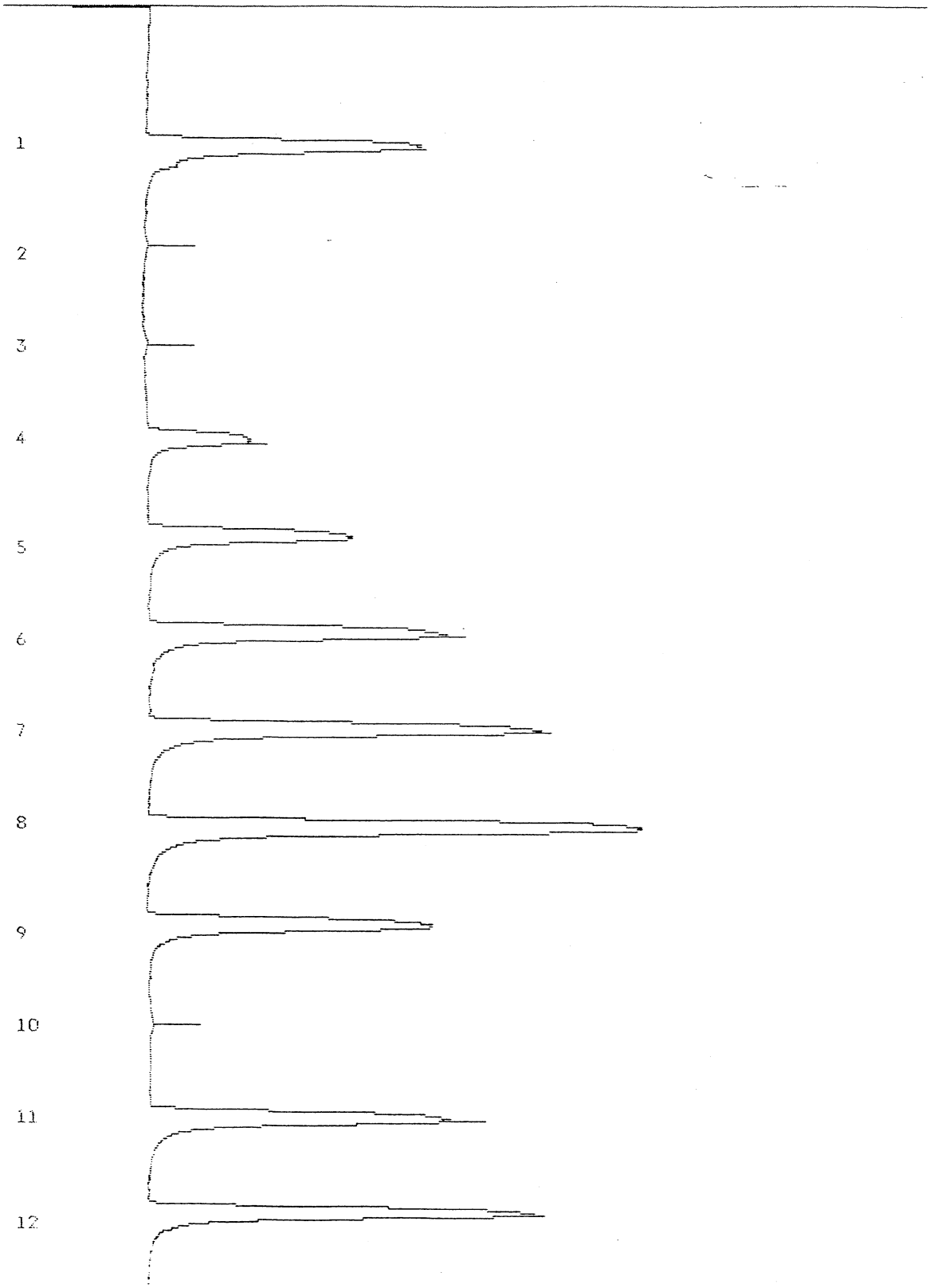

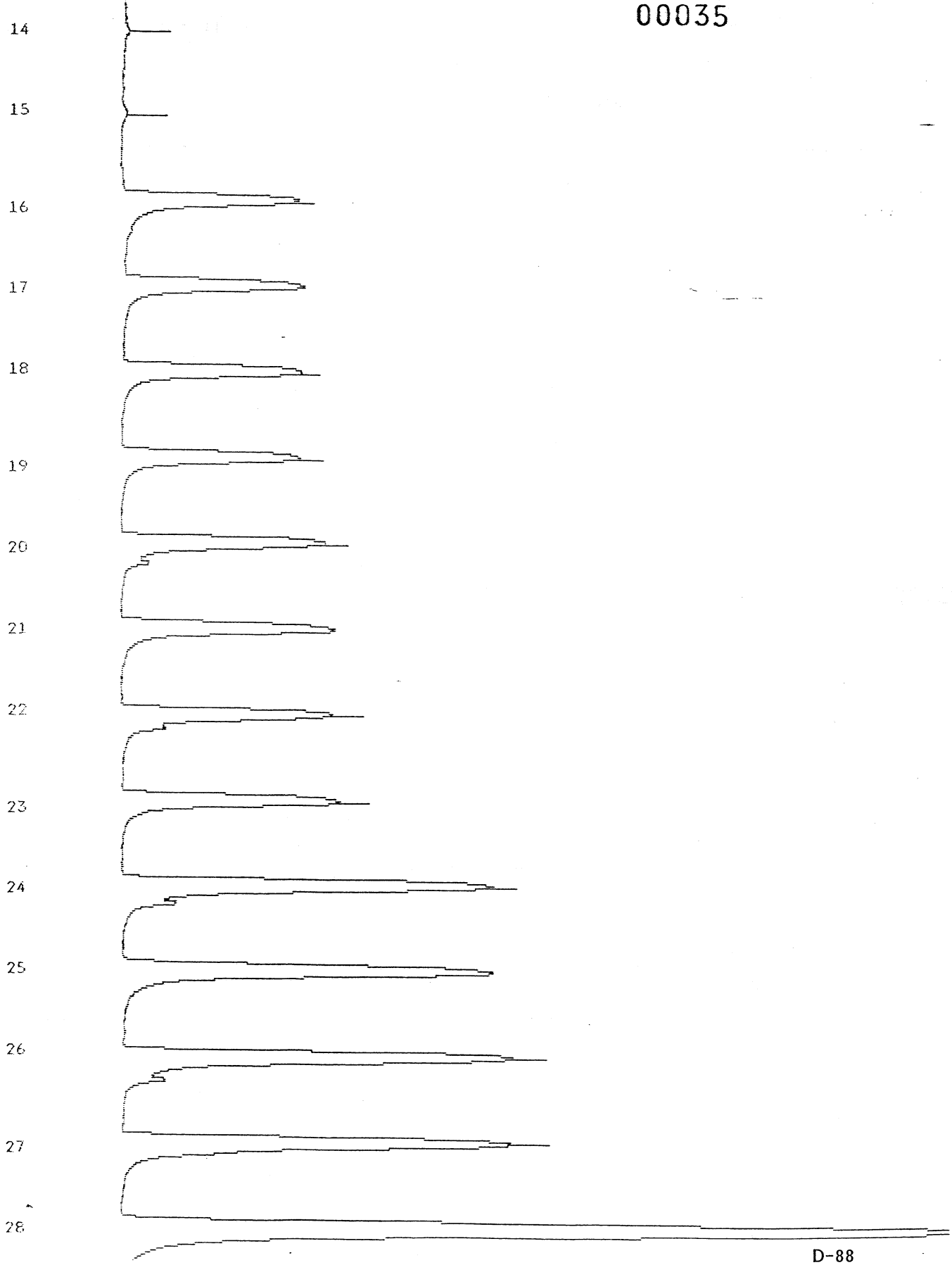
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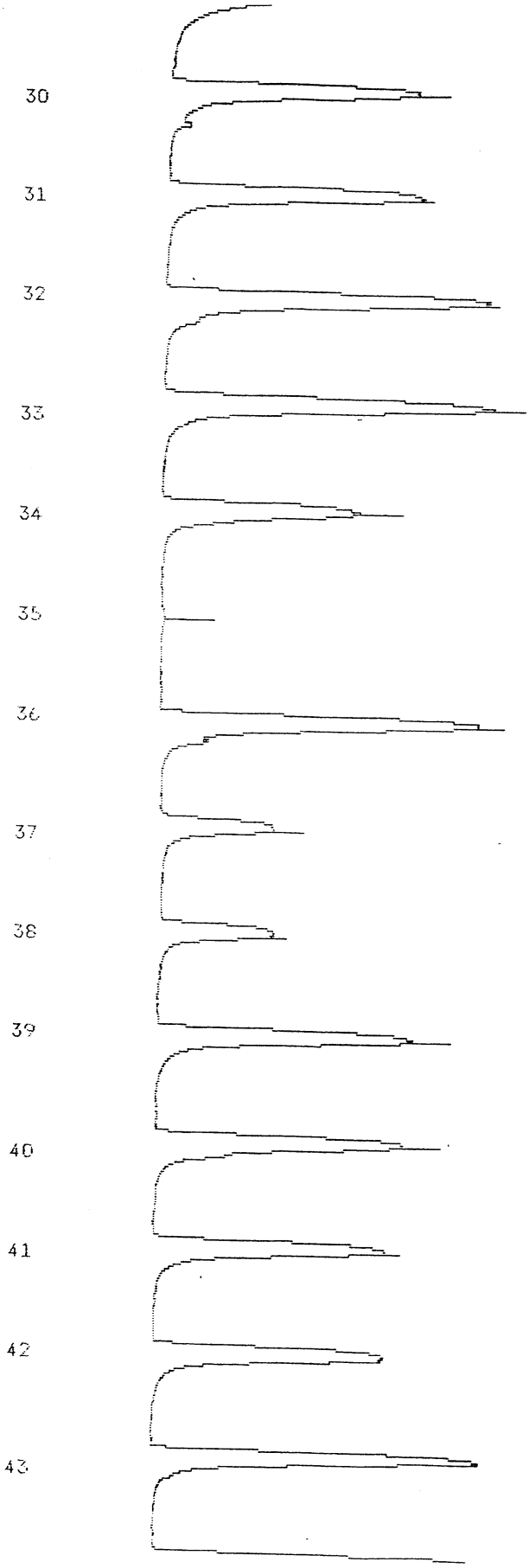
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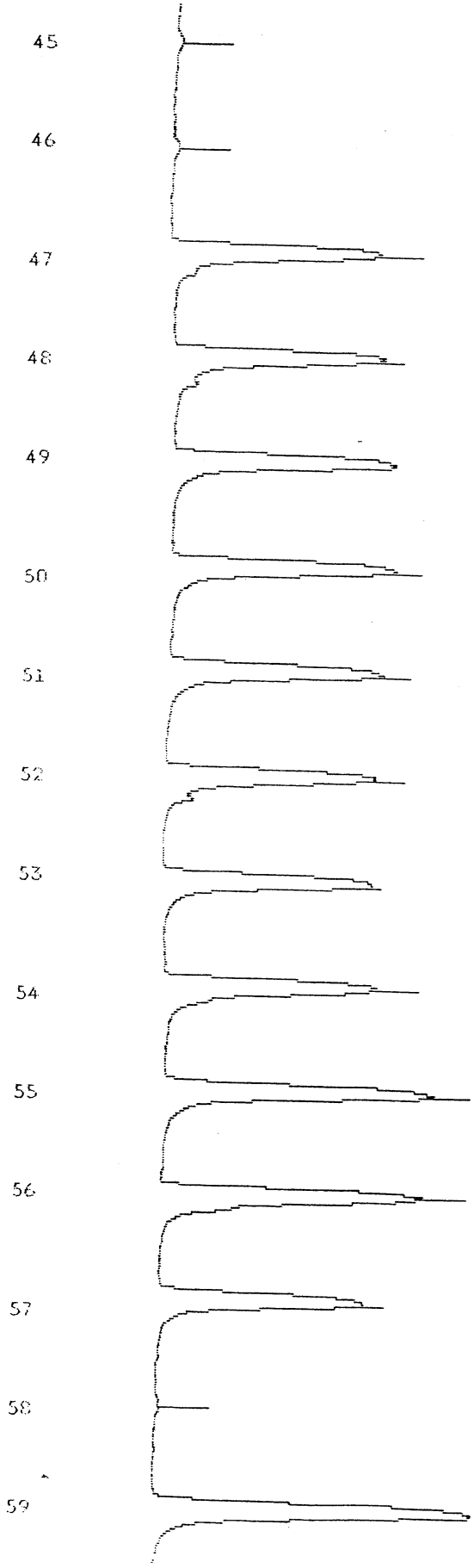
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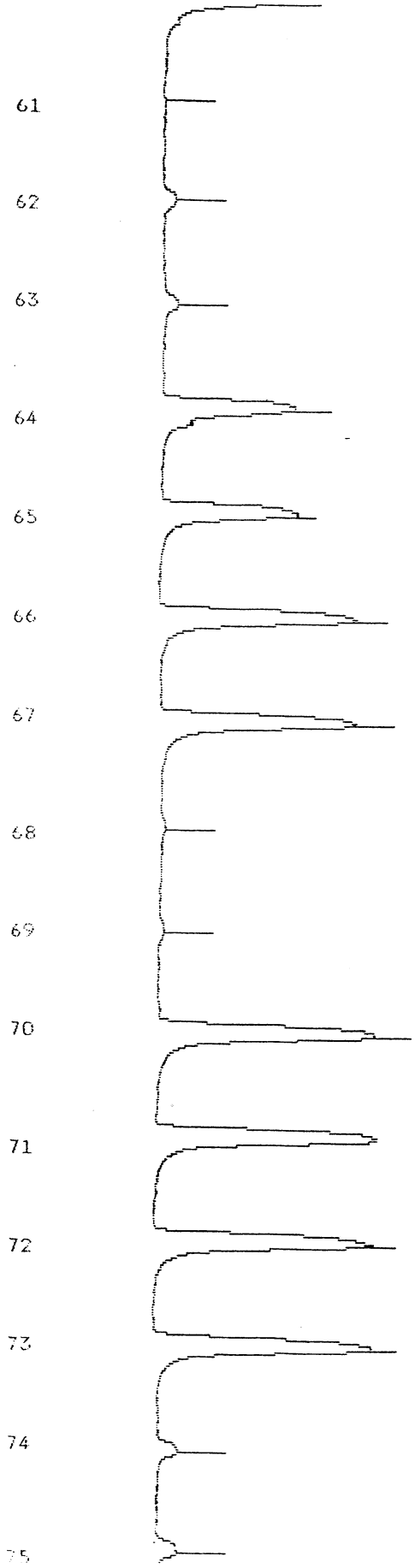
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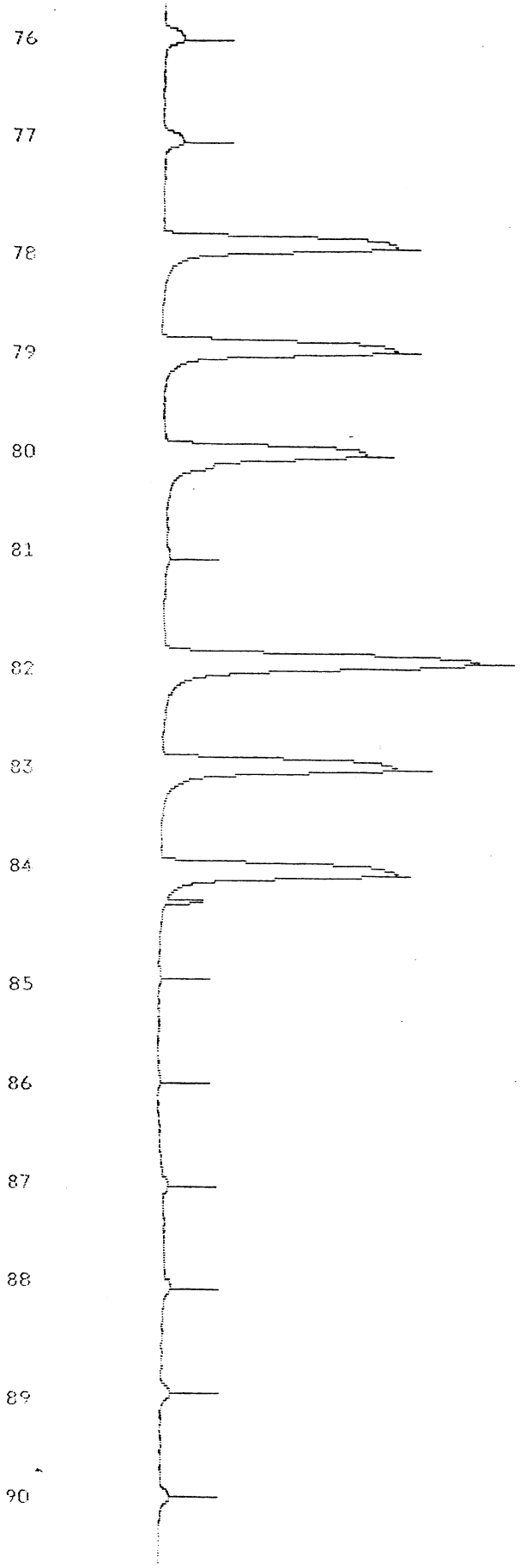
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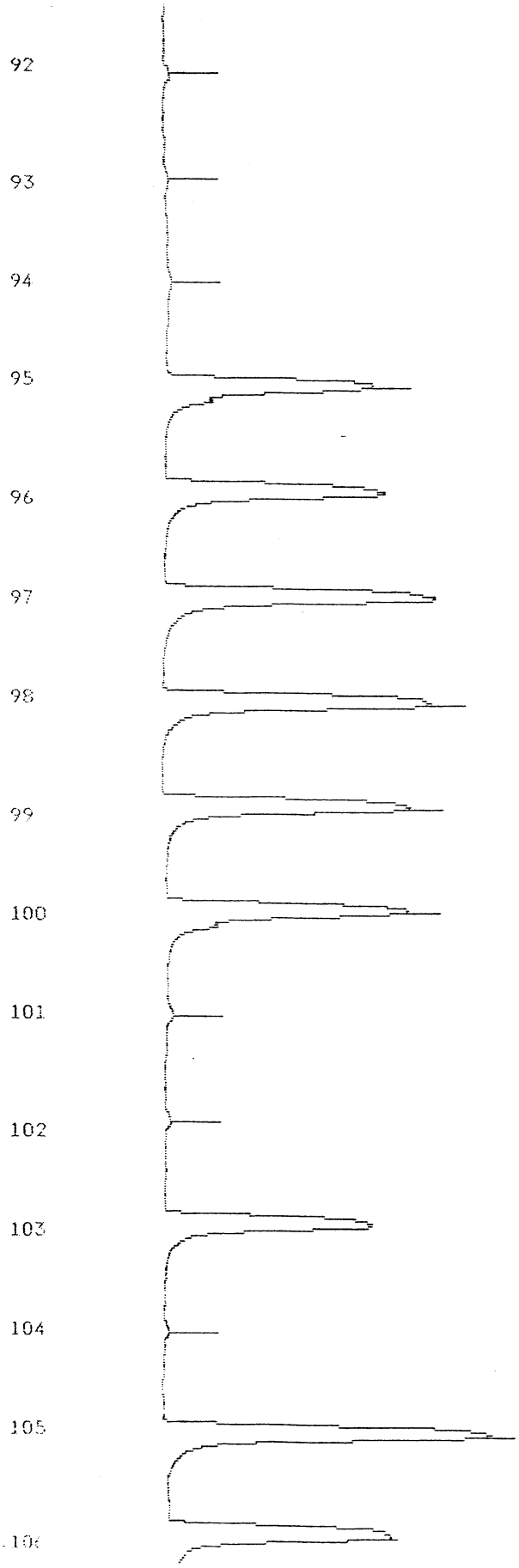
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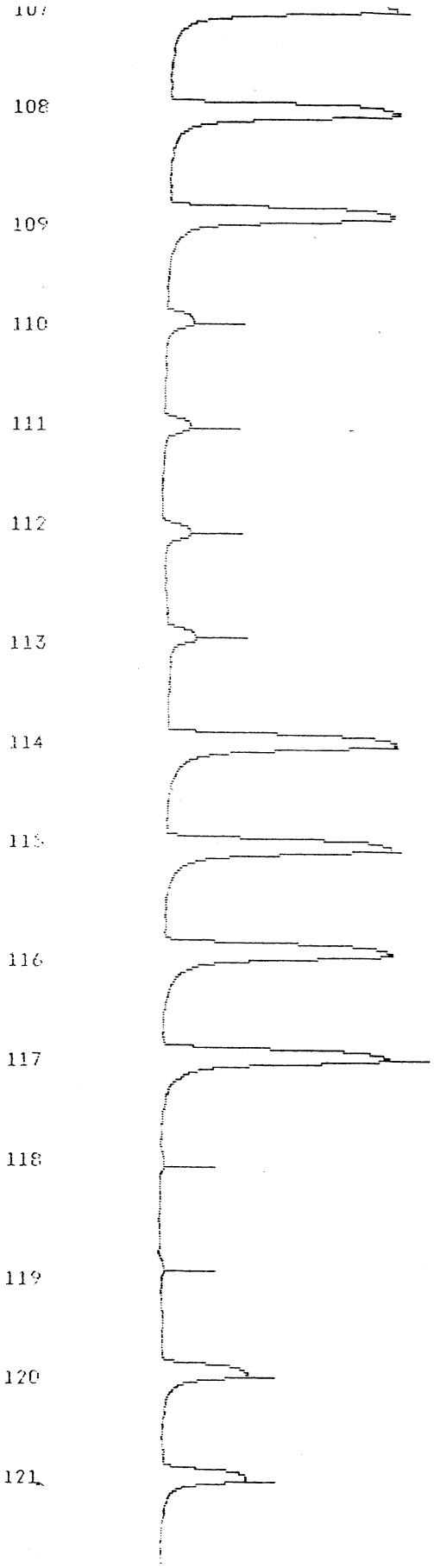
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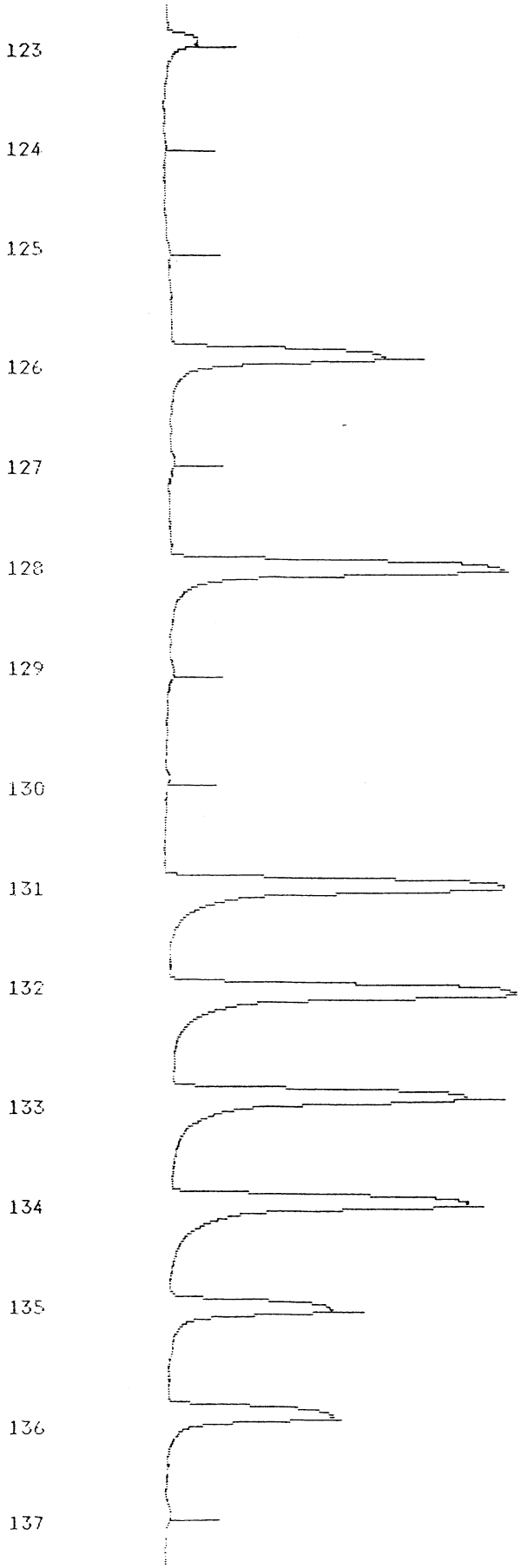
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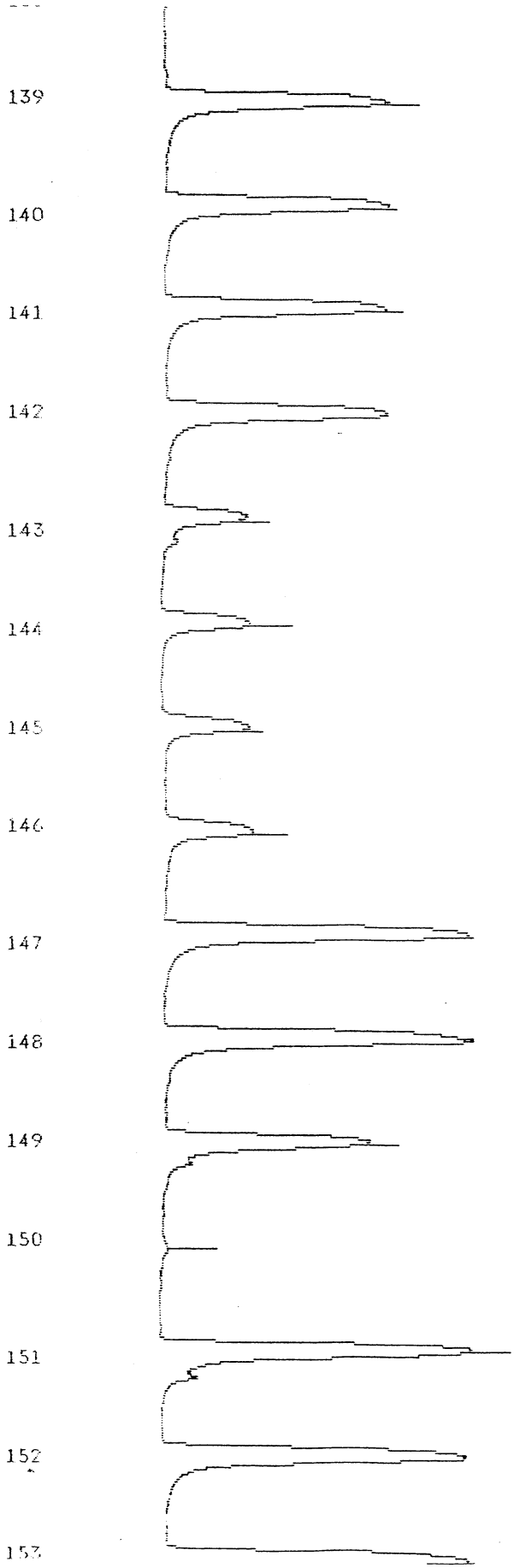
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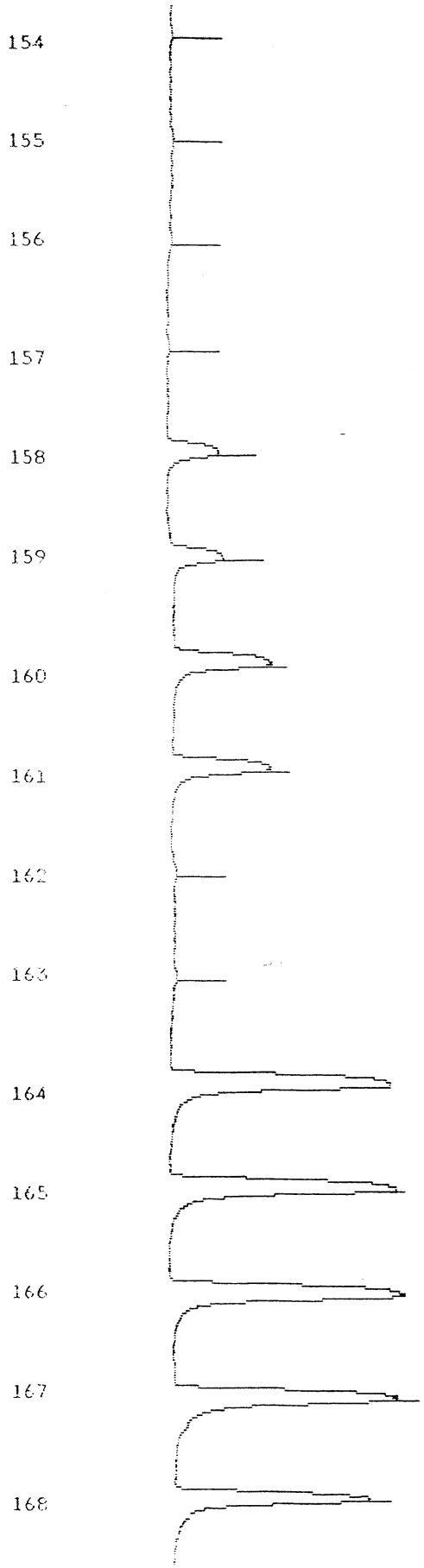
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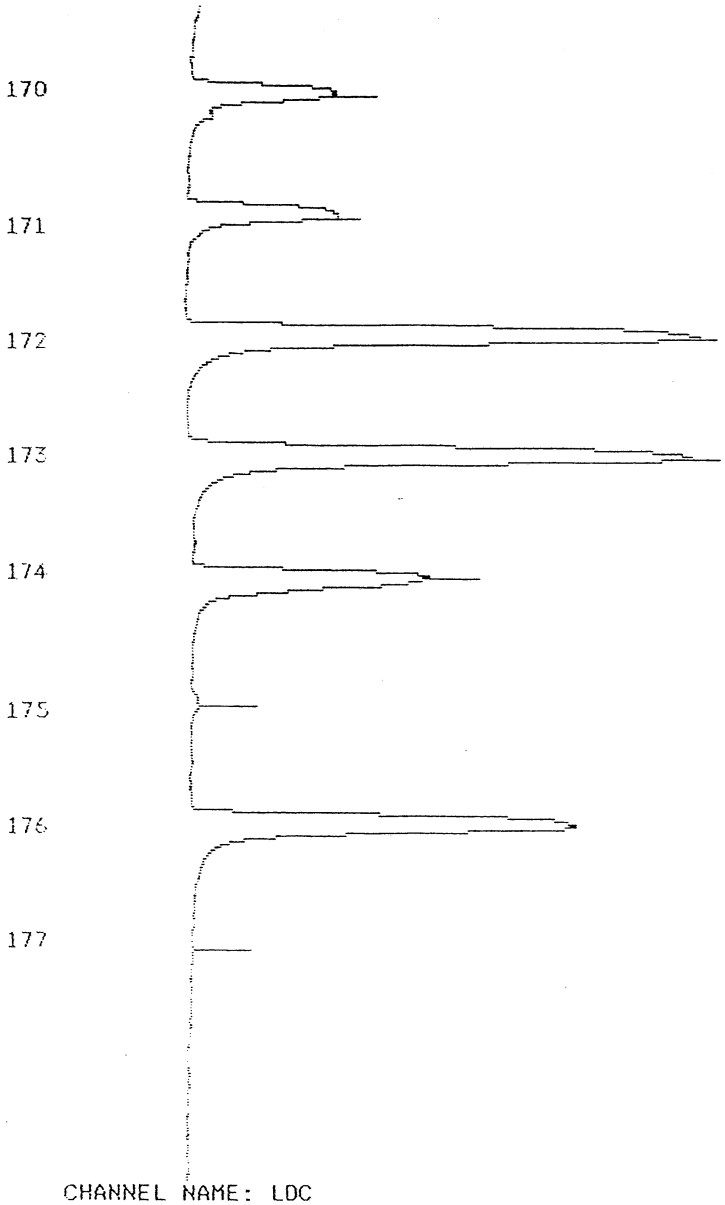

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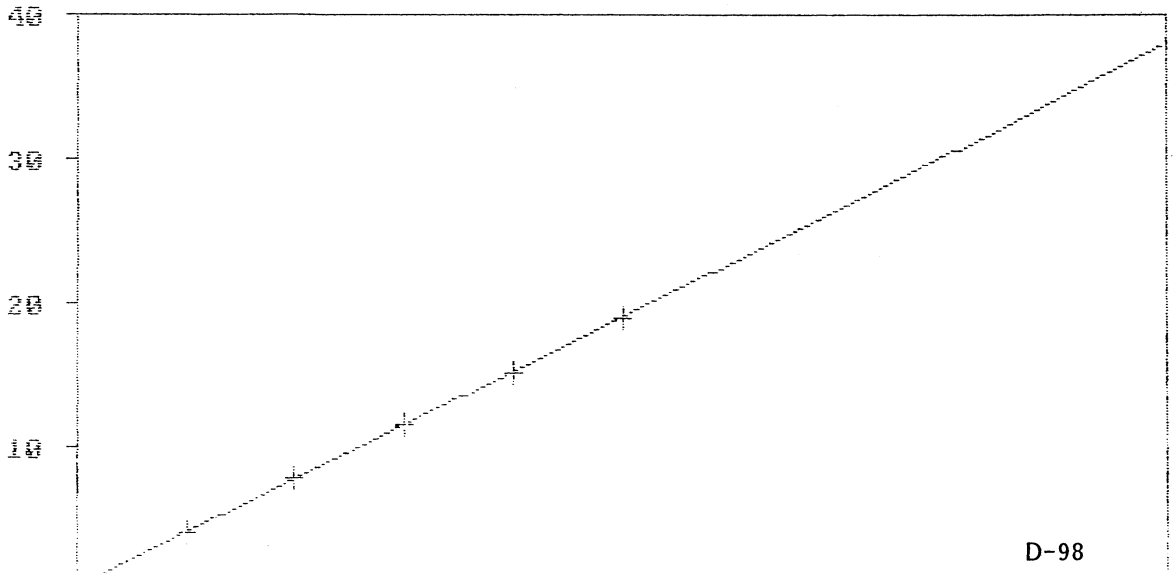

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CALIBRATION ORDER: 1 00046
SLOPE = 7.539508

CORRELATION: .9999012

CHANNEL NAME: LDC
RUN DATE: 01-07-2000
SAMPLE TABLE NAME: 000107WA
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	Total µg	CONCENTRATION (ppb)		EF
1	PRIMER	1	1	10.8		1.406		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	4.0		0.502		
5	S3: 1	1	1	7.9		1.017		
6	S4: 1.5	1	1	11.6		1.510		
7	S5: 2	1	1	15.1		1.983		
8	S6: 2.5	1	1	19.0		2.501		
9	ICV	1	1	10.9		1.425	95%	
10	B	1	1	0.0		-0.026		b
11	D4	1	1	11.6		1.510		d
12	WS 378	1	1	15.1		1.976	99%	
13	ORG REF	1	1	15.0		1.963	98%	
14	BL0107-4N1B 69884	1	1	0.1	<0.03	-0.016		I
15	BL0107-4N1B	1	1	0.1		-0.016		I
16	BL0107S	1	1	7.7	0.302	0.998	101%	
17	BL0107S	1	1	7.8		1.014		
18	BL0107DS	1	1	7.8	0.304	1.014	101%	
19	BL0107DS	1	1	7.8		1.011		
20	69886	2	1	9.0	0.721	2.346		M
21	69886	2	1	9.5		2.462		
22	69886D	2	1	9.4	0.744	2.430		
23	69886D	2	1	9.7		2.527		
24	69886S	2	1	16.5	1.295	4.315	93%	
25	69886S	2	1	16.5		4.315		
26	69886DS	2	1	17.3	1.362	4.529	105%	
27	69886DS	2	1	17.3		4.548		
28	69885	1	1	39.4		5.202		R RERUN @ END MD
29	69885	1	1	39.6		5.221		R
30	69887	2	1	8.9	0.706	2.307		
31	69887	2	1	9.2		2.397		s
32	69888	4	1	11.8	1.858	6.142		
33	69888	4	1	12.0		6.246		
34	CCV	1	1	7.2		0.930	93%	
35	B	1	1	0.0		-0.026		b
36	D4	1	1	11.6		1.510		d
37	70235	1	1	4.1	MD 0.155 ~~0.155~~	0.519		
38	70235	1	1	4.1		0.515		
39	70236	4	1	9.3	1.423	4.821		
40	70236	4	1	9.0		4.665		
41	70237	1	1	8.4	0.323	1.089		
42	70237	1	1	8.2		1.066		
43	70238	5	1	11.8	2.289	7.726		
44	70238	5	1	11.6		7.532		M
45	BL0107-5NKC	1	1	0.0	<0.03	-0.026		I
46	BL0107-5NKC	1	1	0.0		-0.022		s
47	BL0107S	1	1	7.6	0.295	0.978	99%	
48	BL0107S	1	1	7.7		0.991		
49	BL0107DS	1	1	8.1	0.317	1.053	105%	

53	65836D	4	1	7.6	3.9[illegible]	3.927		
54	65836D	4	1	7.6		3.940		
55	65836S	4	1	9.8	5.035	5.106	107%	
56	65836S	4	1	9.5		4.963		
57	CCV	1	1	7.4		0.949	95%	
58	B	1	1	0.0		-0.026	b	
59	D4	1	1	11.6		1.510	d	
60	65836DS	4	1	9.7	5.067	5.067	110%	
61	65836DS	4	1	0.0		-0.102	CLIP MISSED RERUN ON 010'	
62	65835	1	1	0.3	<0.100	0.010	I	
63	65835	1	1	0.3		0.020	I	
64	65837	1	1	4.8	0.627	0.612		
65	65837	1	1	5.0		0.642		
66	65838	1	1	7.2	0.925	0.930		
67	65838	1	1	7.1		0.920		
68	BL0107-1NKC 73483	1	1	0.0	<0.03	-0.019	I	
69	BL0107-1NKC	1	1	0.0		-0.022	I	
70	BL0107S	1	1	7.9	0.311	1.021	103%	
71	BL0107S	1	1	8.1		1.050		
72	BL0107DS	1	1	8.0	0.308	1.040	103%	
73	BL0107DS	1	1	7.8		1.014		
74	73486	1	1	0.5	<0.100	0.039		
75	73486	1	1	0.6		0.049		
76	73486D	1	1	0.6	<0.100	0.059	s	
77	73486D	1	1	0.6		0.049		
78	73486S	1	1	8.6	1.116	1.111	107%	
79	73486S	1	1	8.6		1.121		
80	CCV	1	1	7.4		0.959	96%	
81	B	1	1	0.0		-0.026	b	
82	D4	1	1	11.6		1.510	d	
83	73486DS	1	1	8.6	1.125	1.118	107%	
84	73486DS	1	1	8.7		1.131		
85	73484	1	1	0.0	<0.100	-0.026	I	
86	73484	1	1	0.0		-0.026	I	
87	73485	1	1	0.1	<0.100	-0.013	I	
88	73485	1	1	0.1		-0.006	I	
89	73487	1	1	0.2	<0.100	0.004	I	
90	73487	1	1	0.3		0.010	I	
91	73488	1	1	0.1	<0.100	-0.009	s	
92	73488	1	1	0.1		-0.013	I	
93	73489	1	1	0.0	<0.100	-0.026	I	
94	73489	1	1	0.0		-0.026	I	
95	73490	10	1	7.5	9.931	9.720		
96	73490	10	1	7.8		10.141		
97	73491	10	1	9.8	12.635	12.765		
98	73491	10	1	9.6		12.505		
99	73492	10	1	8.8	11.323	11.469		
100	73492	10	1	8.6		11.177		
101	BL0107-2NKC	1	1	0.1	<0.03	-0.016	I	
102	BL0107-2NKC	1	1	0.0		-0.019	I	
103	CCV	1	1	7.4		0.953	95%	
104	B	1	1	0.0		-0.026	b	
105	D4	1	1	11.6		1.510	d	
106	BL0107S	1	1	7.8	0.305	1.014	101%	
107	BL0107S	1	1	7.9		1.017		
108	BL0107DS	1	1	8.0	0.309	1.037	103%	
109	BL0107DS	1	1	7.9		1.021		
110	73508	1	1	0.8	<0.100	0.081		
111	73508	1	1	0.7		0.072		
112	73508D	1	1	0.7	<0.100	0.065		
113	73508D	1	1	0.8		0.075		
114	73508S	1	1	8.0	1.028	1.034	95%	
115	73508S	1	1	7.9		1.021		

00047

00048

119	73507	1	1	0.0		0.026	I	
120	73509	1	1	2.8	0.344	0.347		
121	73509	1	1	2.8		0.340	s	
122	73510	1	1	0.9	<0.100	0.097		
123	73510	1	1	0.9		0.097		
124	73511	1	1	0.0	<0.100	-0.026	I	
125	73511	1	1	0.0		-0.026	I	
126	CCV	1	1	7.5		0.969		97%
127	B	1	1	0.0		-0.026	b	
128	D4	1	1	11.6		1.510	d	
129	73512	1	1	0.0	<0.100	-0.026	I	
130	73512	1	1	0.0		-0.026	I	
131	73513	1	1	11.8	1.557	1.539		
132	73513	1	1	12.1		1.574		
133	73514	1	1	10.2	1.338	1.328		
134	73514	1	1	10.4		1.348		
135	73515	10	1	5.7	7.372	7.355		
136	73515	10	1	5.8		7.388	s	
137	BL0107-3NKC 74131	1	1	0.0	<0.03	-0.026	I	
138	BL0107-3NKC	1	1	0.0		-0.026	I	
139	BL0107S	1	1	8.1	0.315	1.046		105%
140	BL0107S	1	1	8.1		1.053		
141	BL0107DS	1	1	8.0	0.313	1.040		104%
142	BL0107DS	1	1	8.1		1.046		
143	74134	1	1	2.9	0.370	0.357		
144	74134	1	1	3.1		0.383		
145	74134D	1	1	3.1	0.383	0.379		
146	74134D	1	1	3.1		0.386		
147	74134S	1	1	11.3	1.492	1.477		111%
148	74134S	1	1	11.6		1.506		
149	CCV	1	1	7.6		0.978		98%
150	B	1	1	0.0		-0.026	b	
151	D4	1	1	11.6		1.510	M	
152	74134DS	1	1	11.3	1.466	1.471		109%
153	74134DS	1	1	11.2		1.461		
154	74132	1	1	0.0	<0.100	-0.026	I	
155	74132	1	1	0.0		-0.026	I	
156	74133	1	1	0.0	<0.100	-0.026	I	
157	74133	1	1	0.0		-0.026	I	
158	74135	1	1	1.6	0.200	0.191		
159	74135	1	1	1.8		0.208		
160	74136	1	1	3.5	0.434	0.434		
161	74136	1	1	3.5		0.434		
162	74137	1	1	0.0	<0.100	-0.026	I	
163	74137	1	1	0.0		-0.026	I	
164	74138	10	1	7.9	10.335	10.238		
165	74138	10	1	8.1		10.432		
166	74139	10	1	8.3	10.465	10.789	s	
167	74139	10	1	7.8		10.141		
168	74140	10	1	6.9	8.846	8.943		
169	74140	10	1	6.8		8.748		
170	73485	10	1	4.2	1.629 ~~5.429~~ mg	5.315		1.629 mg
171	73485	10	1	4.4		5.542		
172	WS 378	1	1	15.6		2.041		102%
173	ORG REF	1	1	15.1		1.983		99%
174	CCV	1	1	7.1		0.910		91%
175	B	1	1	0.0		-0.026	b	
176	D4	1	1	11.6		1.510	d	

INTERCEPT: 0.19 LINEAR COEF: 7.539508
CORRELATION COEF: .9999012

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073483 PHIL-PAR CD R	Mercury -	PV	-0.100	-99999.0	0.311 103.	0.308 103.	00/01/07 1NKC	00/01/07 MG02	51.	31.
[redacted]										
073489 PHIL-PAR ~~1206~~GEG ESP Stack-A	Mercury -	PV	-0.100				[redacted]	[redacted]		
073490 PHIL-PAR GEG ESP Stack-R1	Mercury -	PV	9.931				00/01/07 1NKC	00/01/07 MG02	51.	31.
073491 PHIL-PAR GEG ESP Stack-R2	Mercury -	PV	12.635				00/01/07 1NKC	00/01/07 MG02	51.	31.
073492 PHIL-PAR GEG ESP Stack-R3	Mercury -	PV	11.323				00/01/07 1NKC	00/01/07 MG02	51.	31.
BL0107 INTERNAL	Mercury -	PV	-0.030	-99999.0	0.311 103.	0.308 103.	00/01/07 1NKC	00/01/07 MG02	51.	31.
							00/01/07 1NKC	00/01/07 MG02	$$$	$$$
[redacted]										
073511 PHIL-PAR GEG ESP Inlet-SB	Mercury -	PV	-0.100				[redacted]	[redacted]		
073512 PHIL-PAR GEG ESP Inlet-BT	Mercury -	PV	-0.100				00/01/07 2NKC	00/01/07 MG02	51.	31.
073513 PHIL-PAR GEG ESP Inlet-R1	Mercury -	PV	1.557				00/01/07 2NKC	00/01/07 MG02	51.	31.
073514 PHIL-PAR GEG ESP Inlet-R2	Mercury -	PV	1.338				00/01/07 2NKC	00/01/07 MG02	51.	31.
073515 PHIL-PAR GEG ESP Inlet-R3	Mercury -	PV	7.372				00/01/07 2NKC	00/01/07 MG02	51.	31.
BL0107 INTERNAL	Mercury -	PV	-0.030	-99999.0	0.305 101.	0.309 103.	00/01/07 2NKC	00/01/07 MG02	$$$	$$$
074131 PHIL-PAR MB R456	Mercury -	PV	-0.100	-99999.0	0.315 105.	0.313 104.	00/01/07 3NKC	00/01/07 MG02	36.	30.
[redacted]										
BL0107 INTERNAL	Mercury -	PV	-0.030	-99999.0	0.315 105.	0.313 105.	[redacted]	[redacted]		

32 Tests for OHKCL with an MDL of 0.030 ug Validated By CMA Control Chart Updated N/A IO Requirements met N/A

00049

D-102

00050

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.01.07(WA) 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)	0.6		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.6		
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			BL0107	4NIB		
15			"			
16			BL0107 S			
17			"			
18			BL0107 DS			
19			"			
20	2		69886			
21			"			
22			69886 D			
23			"			
24			69886 S			
25			"			
26			69886 DS			
27			"			
28			69885			
29			"			
30		1/2	69887			
31		↓	"			
32		1/4	69888			
33		↓	"			
34			CCV			
35			B			
36			D4			
37			70235			
38			"			
39		1/4	70236			
40		↓	"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			70237			
42			"			
43		1/5	70238			
44		↓	"			
45			BL0107	5NKC		
46			"			
47			BL0107 S			
48			"			
49			BL0107 DS			
50			"			
51		1/4	65836			
52			"			
53			65836 D			
54			"			
55			65836 S			
56			"			
57			CCV			
58			B			
59			D4			
60		1/4	65836 DS			
61		↓	"			
62			65835			
63			"			
64			65837			
65			"			
66			65838			
67			"			
68			BL0107	1NKC		
69			"			
70			BL0107 S			
71			"			
72			BL0107 DS			
73			"			
74			73486			
75			"			
76			73486 D			
77			"			
78			73486 S			
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.

00051

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.01.07 (WA) Run Code: MG02 Matrix: HP

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			B			
22			D4			
23			73486 DS			
24			"			
25			73484			
26			"			
27			73485			
28			"			
29			73487			
30			"			
31			73488			
32			"			
33			73489			
34			"			
35		1/10	73490			
36			"			
37			73491			
38			"			
39			73492			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			BL0107	2NKC		
42			"			
43			CCV			
44			B			
45			D4			
46			BL0107 S			
47			"			
48			BL0107 DS			
49			"			
50			73508			
51			"			
52			73508 D			
53			"			
54			73508 S			
55			"			
56			73508 DS			
57			"			
58			73507			
59			"			
60			73509			
61			"			
62			73510			
63			"			
64			73511			
65			"			
66			CCV			
67			B			
68			D4			
69			73512			
70			"			
71			73513			
72			"			
73			73514			
74			"			
75		1/10	73515			
76		↓	"			
77			BL0107	3NKC		
78			"			
79			BL0107 S			
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.

00052

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 99.01.07 Run Code: HG02 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 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			GL0107 DS			
22			"			
23			74134			
24			"			
25			74134 D			
26			"			
27			74134 S			
28			"			
29			CCV			
30			B			
31			D4			
32			74134 DS			
33			"			
34			74132			
35			"			
36			74133			
37			"			
38			74135			
39			"			
40			74136			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			74136			
42			74137			
43			"			
44		1/10	74138			
45			"			
46			74139			
47			"			
48			74140			
49			"			
50		1/10	73485			
51			"			
52			WS 378			
53			ORG. REF			
54			CCV			
55			B			
56			D4			
57						
58						
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
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.

ICV = 1.5 mg/kg, CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)	JN,KC	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL 0107	"	"	"	"	(Processed Blank) 74131
	43	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44	74134	"	"	"	"	IMPVKCl 1000 ml
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	74132	"	"	"	"	
3	49	33	"	"	"	"	
4	50	35	"	"	"	"	
5	51	36	"	"	"	"	
6	52	37	"	"	"	"	
7	53	38	"	"	"	"	
8	54	39	"	"	"	"	
9	55	40	"	"	"	"	
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

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DG7HGLEACH, 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 (Int. Calib. Verif.)	INKC	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 0107	"	"	"	"	(Processed Blank)
	11	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	72486	"	"	"	"	MPV KCl 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	72484	"	"	"	"	
3	17	85	"	"	"	"	
4	18	87	"	"	"	"	
5	19	88	"	"	"	"	
6	20	89	"	"	"	"	
7	21	90	"	"	"	"	
8	22	91	"	"	"	"	
9	23	92	"	"	"	"	
10	24	93 MN	"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	INKC	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 0107	"	"	"	"	(Processed Blank)
	27	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	72508	"	"	"	"	MPV KCl 1000 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	72507	"	"	"	"	
3	33	509	"	"	"	"	
4	34	510	"	"	"	"	
5	35	511	"	"	"	"	
6	36	512	"	"	"	"	
7	37	513	"	"	"	"	
8	38	514	"	"	"	"	
9	39	515	"	"	"	"	
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: 1/9090 | H2SO4 Lot No: 21K020 | Bath Temps: 1 (95°C)

Prepared By: M Alexander | Date: 000707 | Checked by: M Alexander

EPA 7470 WATER PREPARATION LOG - MERCURY

DG7470HG
DG10LEACH, 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.)	4M16	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 0107	"	"	"	"	(Processed Blank)
	11	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	69486	"	"	"	"	FINAL VOL 300 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	69485	"	"	"	"	
3	17	87	"	"	"	"	
4	18	88	"	"	"	"	
5	19	70235	"	"	"	"	
6	20	36	"	"	"	"	
7	21	37	"	"	"	"	
8	22	38	"	"	"	"	
9	23	69881	"	"	"	"	
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. 112097 | H2SO4 Lot No. 313970 | Bath Temp. 95°C

Prepared By: [illegible] Date: 6/10/07 Checked by: [illegible]

RUN DATE: 01-07-2000 CHART DATE: 01-08-2000 00056
CHART SPEED: 30
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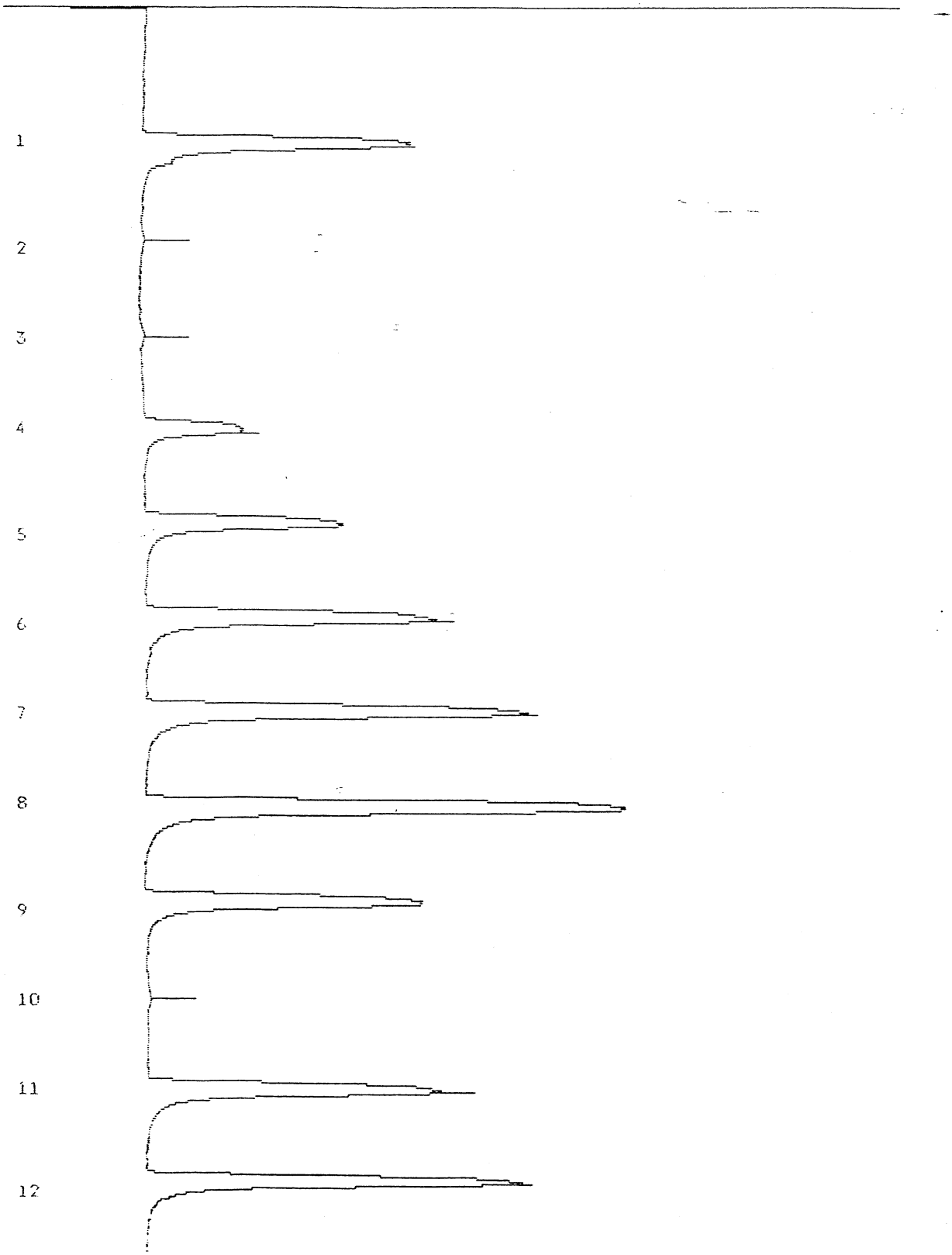

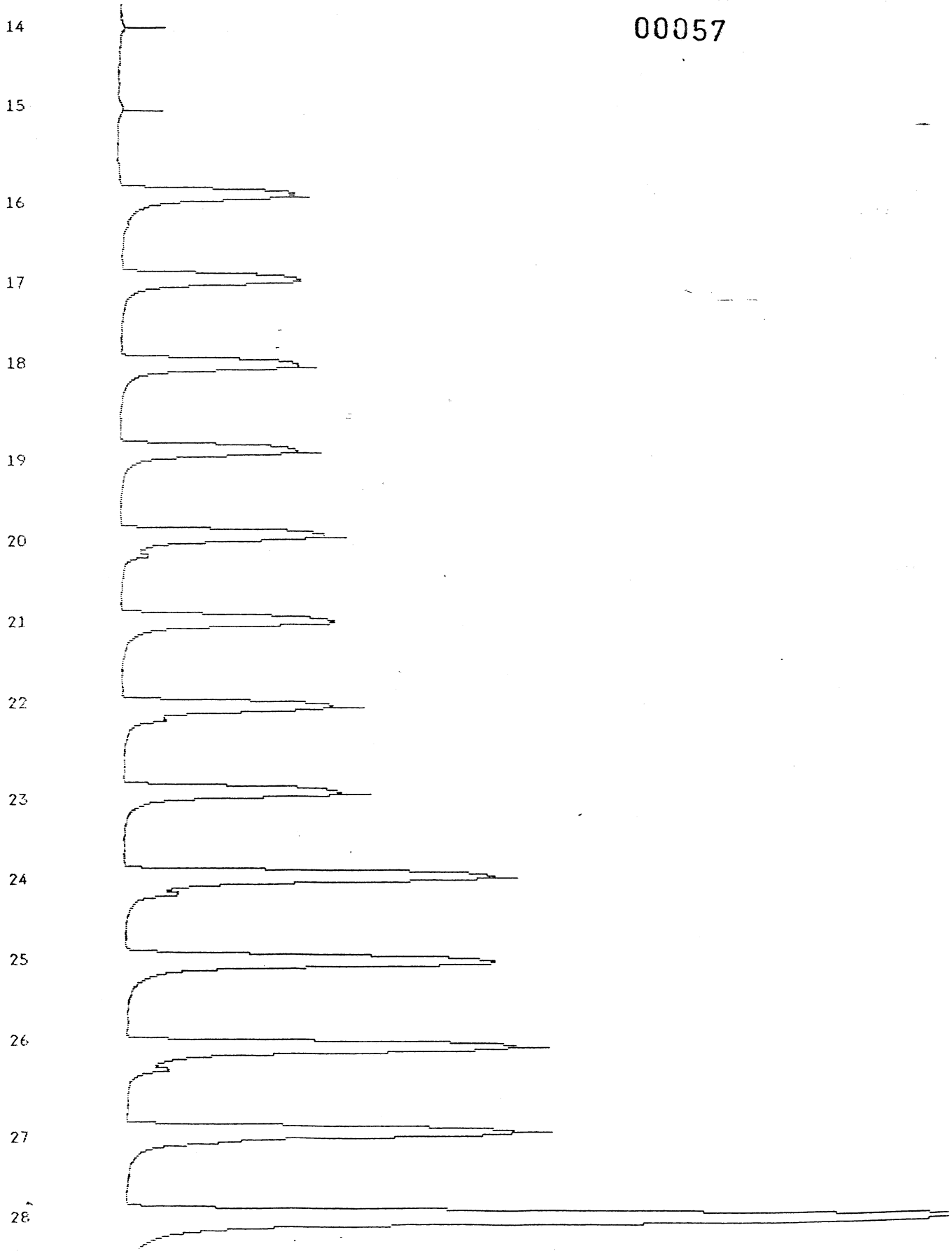
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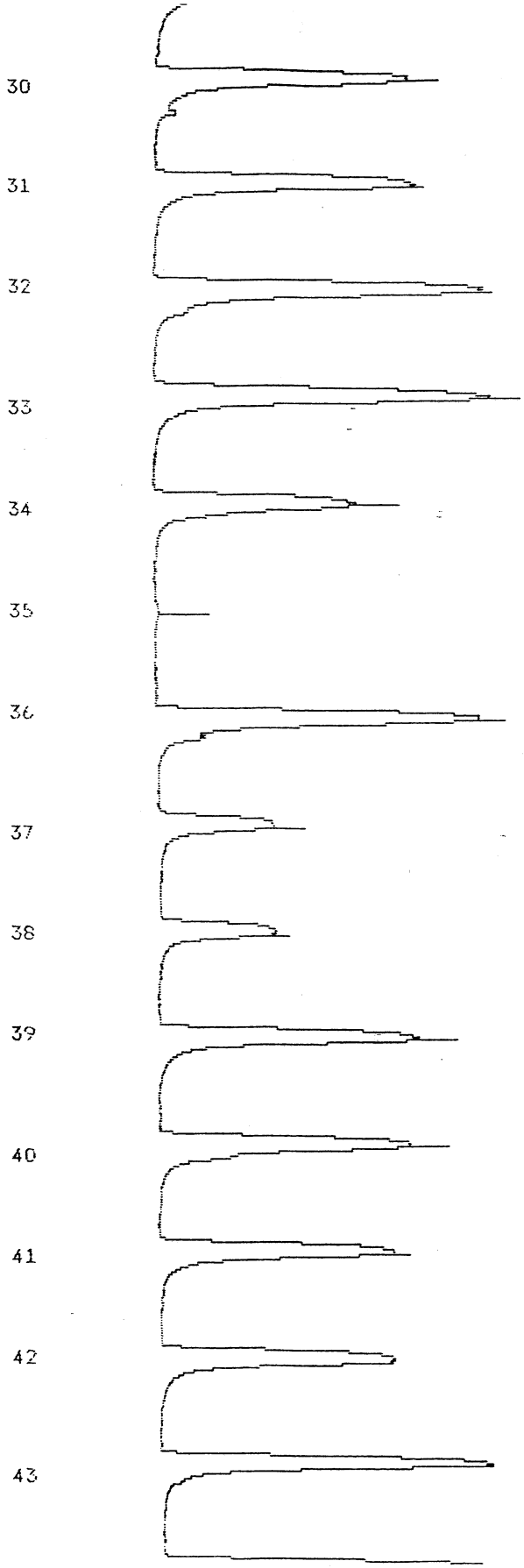
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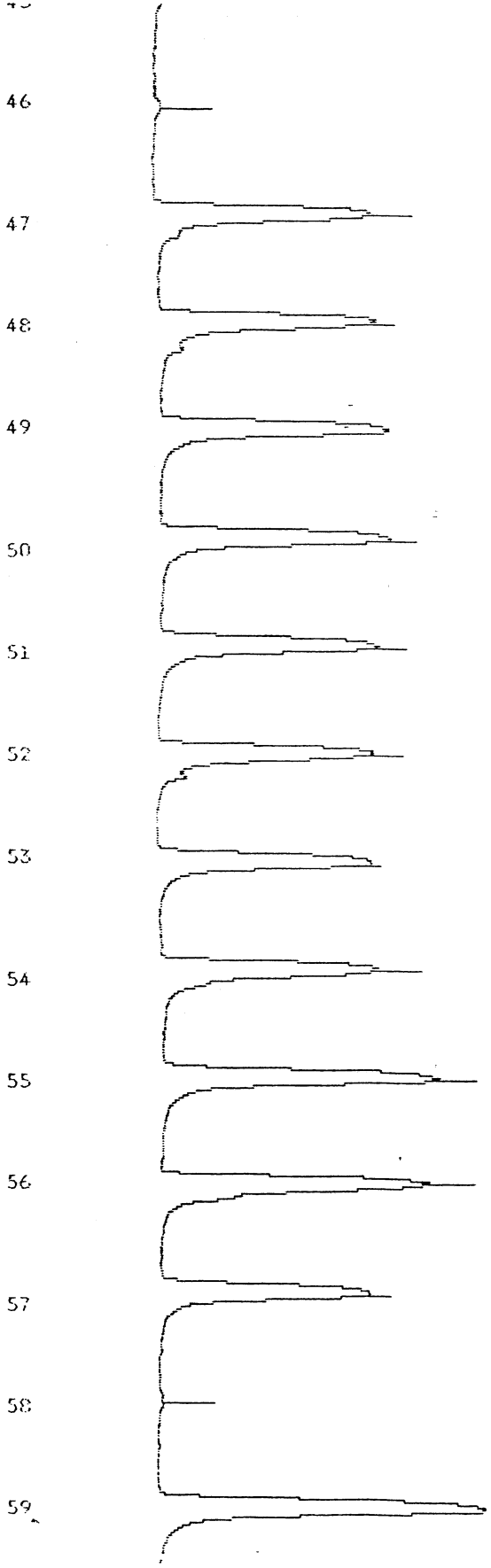
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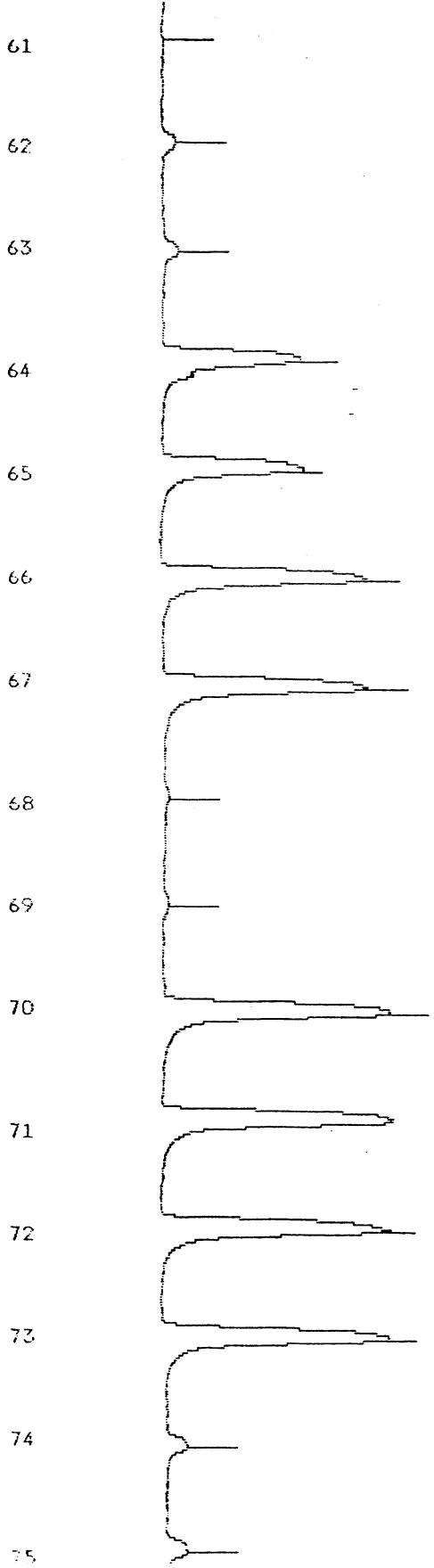
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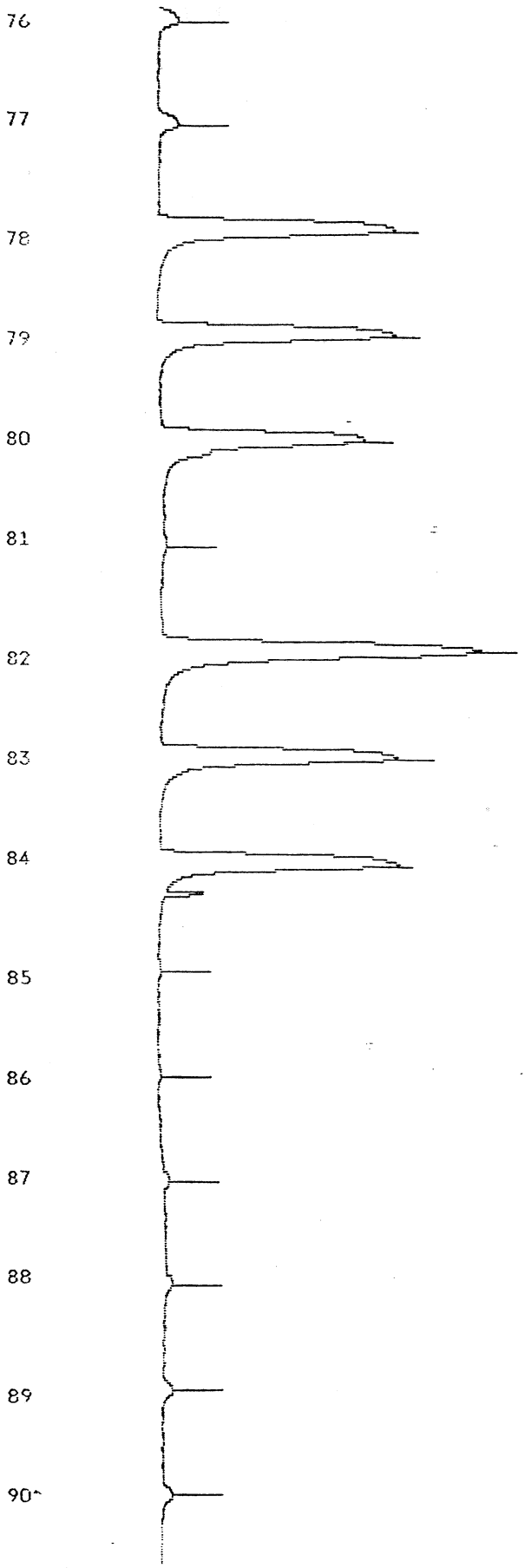
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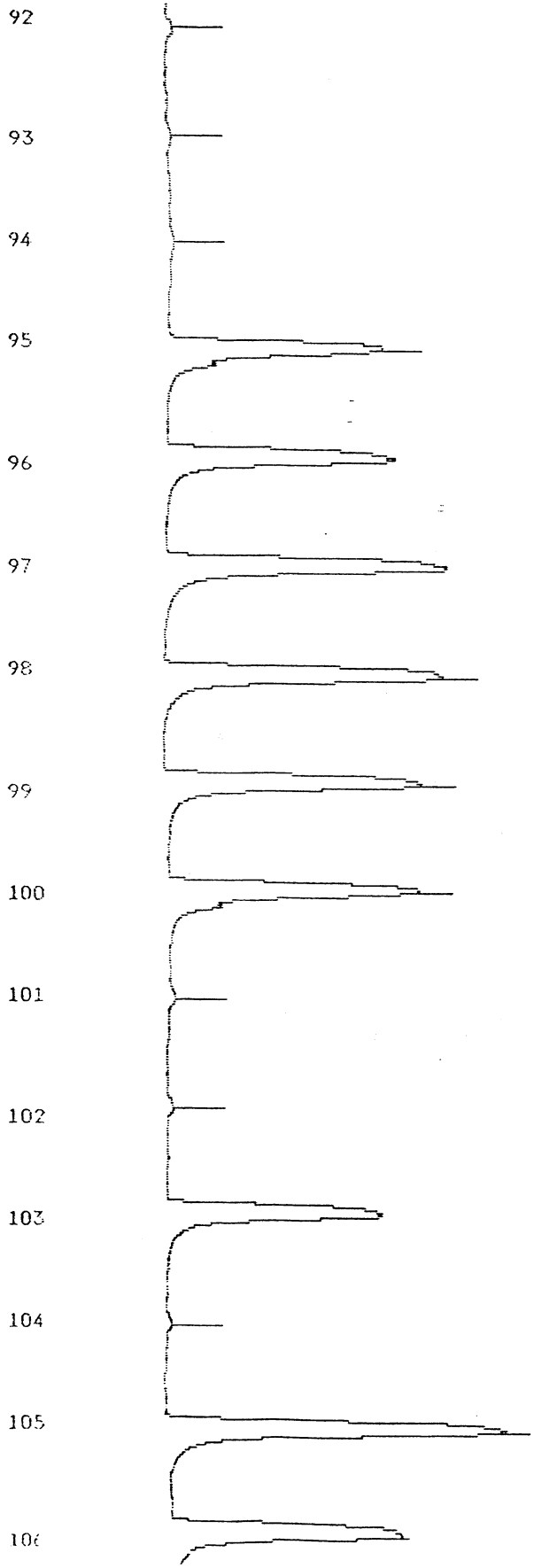
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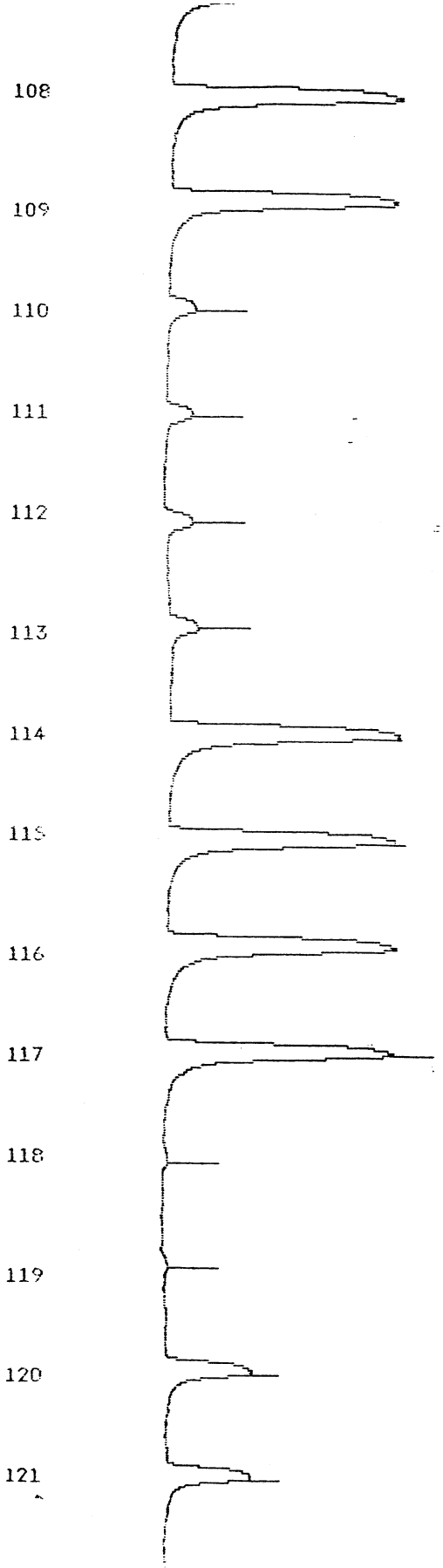
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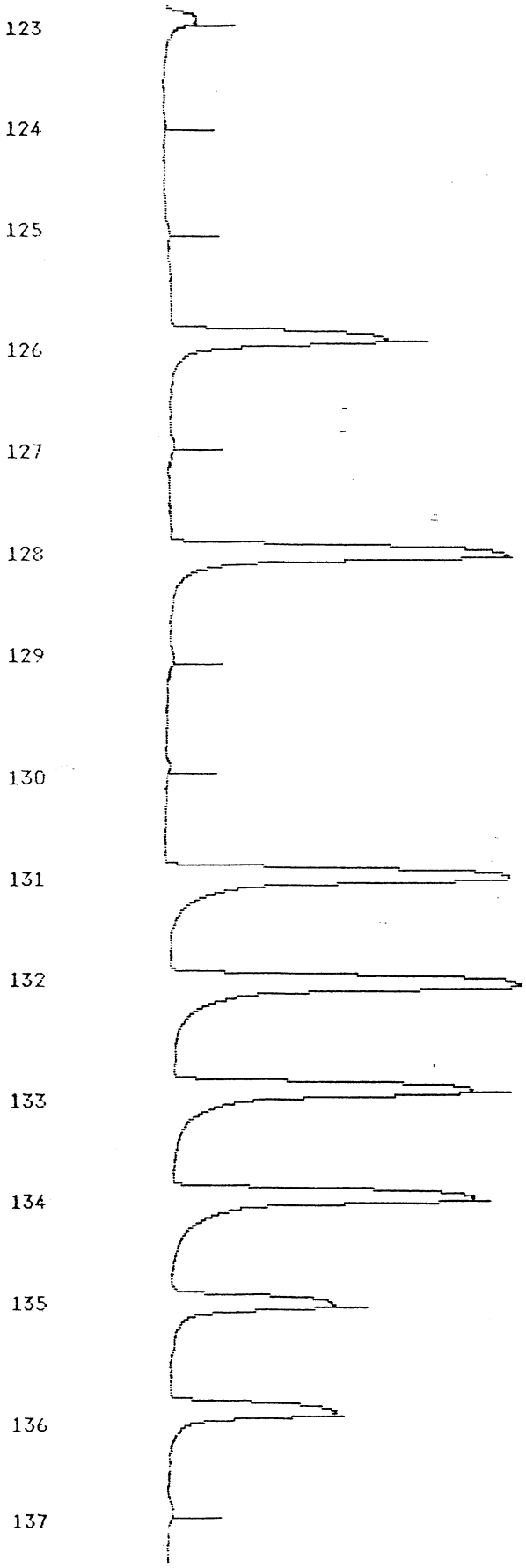
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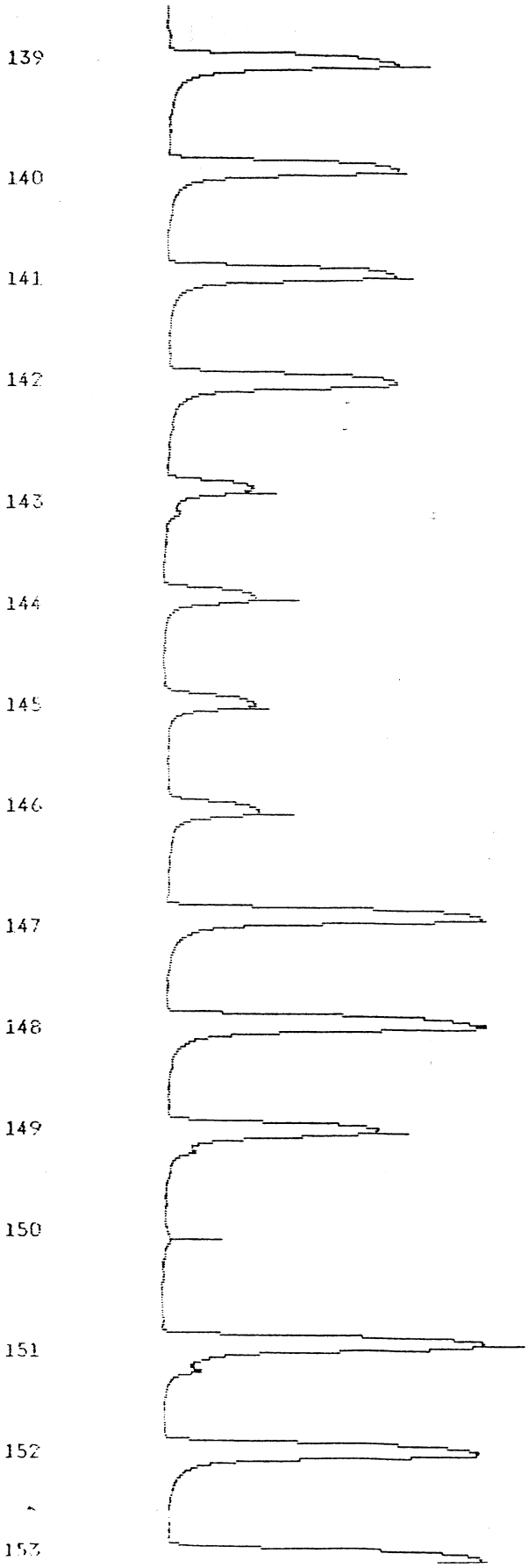
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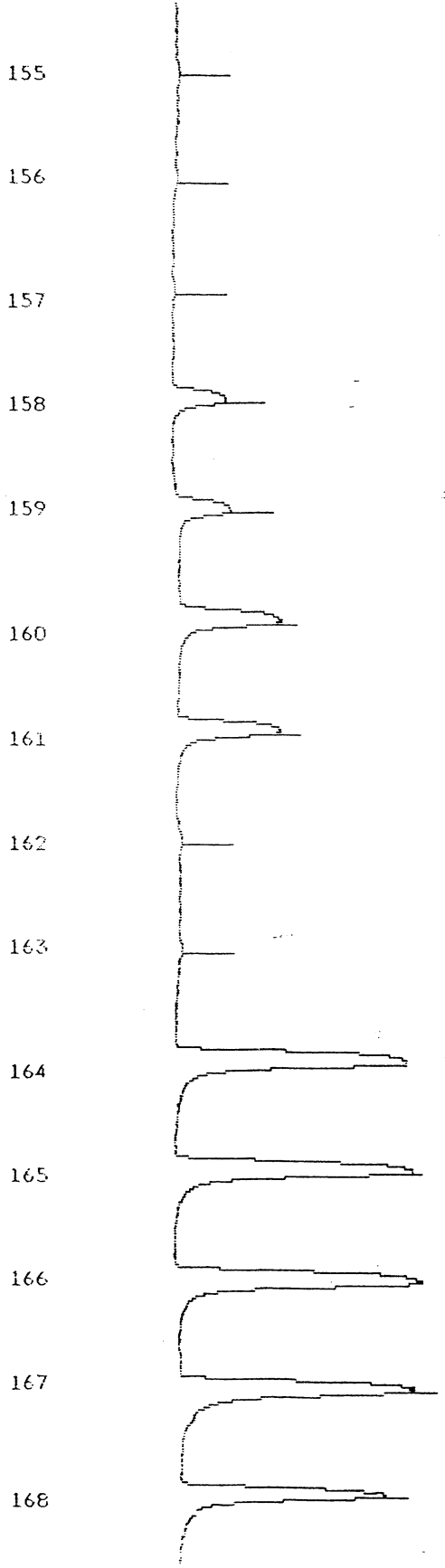
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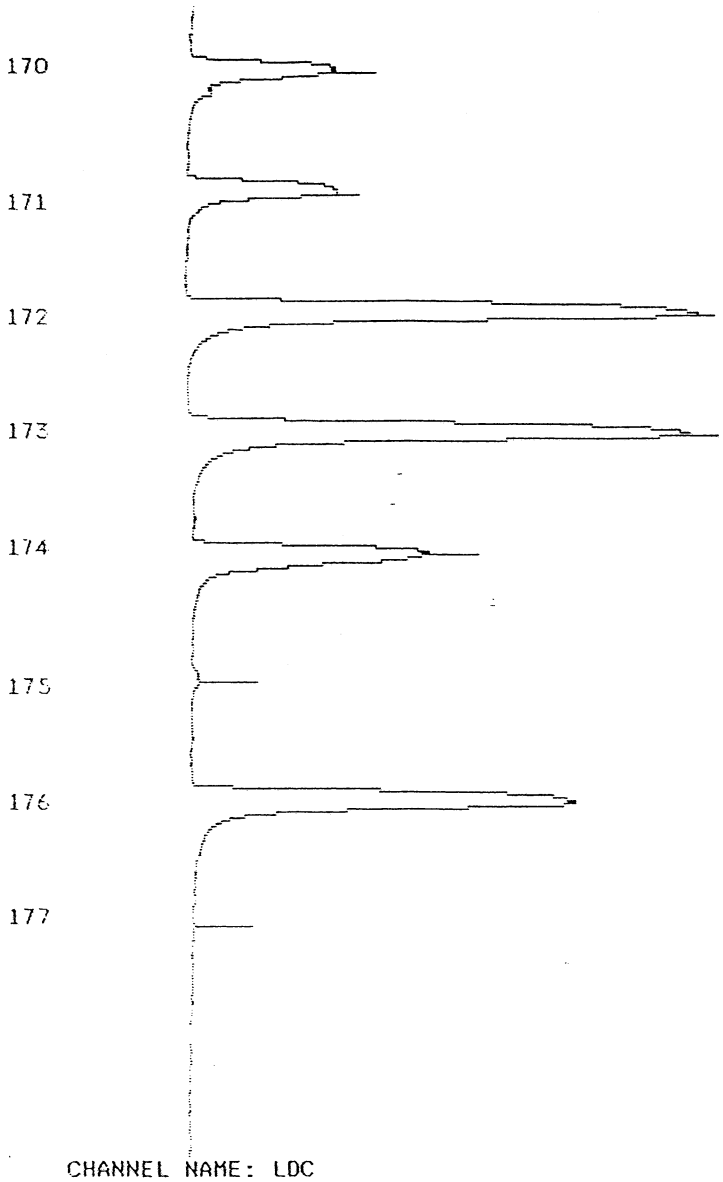

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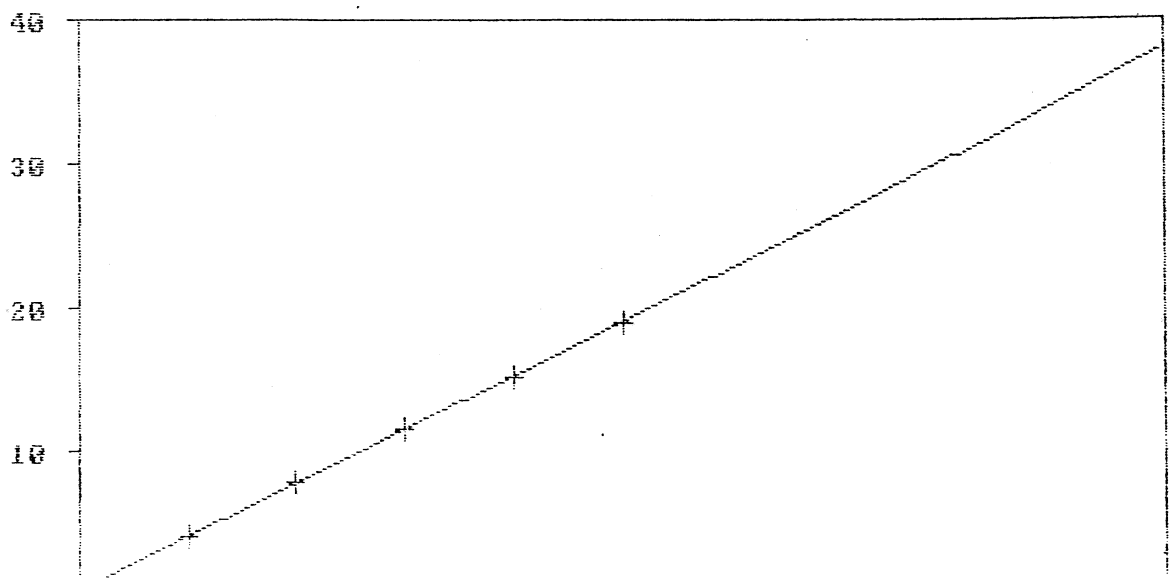
RUN NAME: 000107WA



DATA TYPE: FIA CALIBRATION ORDER: 1

INTERCEPT = 0.19 SLOPE = 7.539500 00068

CORRELATION: .9999012

CHANNEL NAME: LOC
RUN DATE: 01-07-2000
SAMPLE TABLE NAME: 000107WA
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	Total µg	CONCENTRATION (ppb)		EF
1	PRIMER	1	1	10.8		1.406		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	4.0		0.502		
5	S3: 1	1	1	7.9		1.017		
6	S4: 1.5	1	1	11.6		1.510		
7	S5: 2	1	1	15.1		1.983		
8	S6: 2.5	1	1	19.0		2.501		
9	ICV	1	1	10.9		1.425	95%	
10	B	1	1	0.0		-0.026		b
11	D4	1	1	11.6		1.510		d
12	WS 378	1	1	15.1		1.976	99%	
13	ORG REF	1	1	15.0		1.963	98%	
14	BL0107-4N1B 69884	1	1	0.1	<0.03	-0.016		I
15	BL0107-4N1B	1	1	0.1		-0.016		I
16	BL0107S	1	1	7.7	0.302	0.998	109%	
17	BL0107S	1	1	7.8		1.014		
18	BL0107DS	1	1	7.8	0.304	1.014	101%	
19	BL0107DS	1	1	7.8		1.011		
20	69886	2	1	9.0	0.721	2.346		M
21	69886	2	1	9.5		2.462		
22	69886D	2	1	9.4	0.744	2.430		
23	69886D	2	1	9.7		2.527		
24	69886S	2	1	16.5	1.295	4.315	93%	
25	69886S	2	1	16.5		4.315		
26	69886DS	2	1	17.3	1.362	4.529	105%	
27	69886DS	2	1	17.3		4.548		
28	69885	1	1	39.4		5.202		R RERUN @ END MS
29	69885	1	1	39.6		5.221		R
30	69887	2	1	8.9	0.706	2.307		
31	69887	2	1	9.2		2.397		s
32	69888	4	1	11.8	1.858	6.142		
33	69888	4	1	12.0		6.246		
34	CCV	1	1	7.2		0.930	93%	
35	B	1	1	0.0		-0.026		b
36	D4	1	1	11.6		1.510		d
37	70235	1	1	4.1	MS 0.155 ~~0.155~~	0.519		
38	70235	1	1	4.1		0.515		
39	70236	4	1	9.3	1.423	4.821		
40	70236	4	1	9.0		4.665		
41	70237	1	1	8.4	0.323	1.089		
42	70237	1	1	8.2		1.066		
43	70238	5	1	11.8	2.289	7.726		
44	70238	5	1	11.6		7.532		M
45	BL0107-5NKC	1	1	0.0	<0.03	-0.026		I
46	BL0107-5NKC	1	1	0.0		-0.022		s
47	BL0107S	1	1	7.6	0.295	0.978	99%	
48	BL0107S	1	1	7.7		0.991		
49	BL0107DS	1	1	8.1	0.317	1.053	105%	

55	65836S	4	1	9.8	5.035	5.065	107%	
56	65836S	4	1	9.5		4.963		
57	CCV	1	1	7.4		0.949	95%	
58	B	1	1	0.0		-0.026		b
59	D4	1	1	11.6		1.510		d
60	65836DS	4	1	9.7	5.067	5.067	110%	
61	65836DS	4	1	0.0		-0.102	CUP MISSED RERUN ON 0109	
62	65835	1	1	0.3	<0.100	0.010		I
63	65835	1	1	0.3		0.020		I
64	65837	1	1	4.8	0.627	0.612		
65	65837	1	1	5.0		0.642		
66	65838	1	1	7.2	0.925	0.930		
67	65838	1	1	7.1		0.920		
68	BL0107-1NKC 73483	1	1	0.0	<0.03	-0.019		I
69	BL0107-1NKC	1	1	0.0		-0.022		I
70	BL0107S	1	1	7.9	0.311	1.021	103%	
71	BL0107S	1	1	8.1		1.050		
72	BL0107DS	1	1	8.0	0.308	1.040	103%	
73	BL0107DS	1	1	7.8		1.014		
74	73486	1	1	0.5	<0.100	0.039		
75	73486	1	1	0.6		0.049		
76	73486D	1	1	0.6	<0.100	0.059		s
77	73486D	1	1	0.6		0.049		
78	73486S	1	1	8.6	1.116	1.111	107%	
79	73486S	1	1	8.6		1.121		
80	CCV	1	1	7.4		0.959	96%	
81	B	1	1	0.0		-0.026		b
82	D4	1	1	11.6		1.510		d
83	73486DS	1	1	8.6	1.125	1.118	107%	
84	73486DS	1	1	8.7		1.131		
85	73484	1	1	0.0	<0.100	-0.026		I
86	73484	1	1	0.0		-0.026		I
87	73485	1	1	0.1	<0.100	-0.013		I
88	73485	1	1	0.1		-0.006		I
89	73487	1	1	0.2	<0.100	0.004		I
90	73487	1	1	0.3		0.010		I
91	73488	1	1	0.1	<0.100	-0.009		s
92	73488	1	1	0.1		-0.013		I
93	73489	1	1	0.0	<0.100	-0.026		I
94	73489	1	1	0.0		-0.026		I
95	73490	10	1	7.5	9.931	9.720		
96	73490	10	1	7.8		10.141		
97	73491	10	1	9.8	12.635	12.765		
98	73491	10	1	9.6		12.505		
99	73492	10	1	8.8	11.323	11.469		
100	73492	10	1	8.6		11.177		
101	BL0107-2NKC	1	1	0.1	<0.03	-0.016		I
102	BL0107-2NKC	1	1	0.0		-0.019		I
103	CCV	1	1	7.4		0.953	95%	
104	B	1	1	0.0		-0.026		b
105	D4	1	1	11.6		1.510		d
106	BL0107S	1	1	7.8	0.305	1.014	101%	
107	BL0107S	1	1	7.9		1.017		
108	BL0107DS	1	1	8.0	0.309	1.037	103%	
109	BL0107DS	1	1	7.9		1.021		
110	73508	1	1	0.8	<0.100	0.081		
111	73508	1	1	0.7		0.072		
112	73508D	1	1	0.7	<0.100	0.065		
113	73508D	1	1	0.8		0.075		
114	73508S	1	1	8.0	1.028	1.034	95%	
115	73508S	1	1	7.9		1.021		

120	73509	1	1	2.8	0.340	0.340		
121	73509	1	1	2.8		0.340	s	
122	73510	1	1	0.9	<0.100	0.097		
123	73510	1	1	0.9		0.097		
124	73511	1	1	0.0	<0.100	-0.026	I	
125	73511	1	1	0.0		-0.026	I	
126	CCV	1	1	7.5		0.969		97%
127	B	1	1	0.0		-0.026	b	
128	D4	1	1	11.6		1.510	d	
129	73512	1	1	0.0	<0.100	-0.026	I	
130	73512	1	1	0.0		-0.026	I	
131	73513	1	1	11.8	1.557	1.539		
132	73513	1	1	12.1		1.574		
133	73514	1	1	10.2	1.338	1.328		
134	73514	1	1	10.4		1.348		
135	73515	10	1	5.7	7.372	7.355		
136	73515	10	1	5.8		7.388	s	
137	BL0107-3NKC 74131	1	1	0.0	<0.03	-0.026	I	
138	BL0107-3NKC	1	1	0.0		-0.026	I	
139	BL0107S	1	1	8.1	0.315	1.046		105%
140	BL0107S	1	1	8.1		1.053		
141	BL0107DS	1	1	8.0	0.313	1.040		104%
142	BL0107DS	1	1	8.1		1.046		
143	74134	1	1	2.9	0.370	0.357		
144	74134	1	1	3.1		0.383		
145	74134D	1	1	3.1	0.383	0.379		
146	74134D	1	1	3.1		0.386		
147	74134S	1	1	11.3	1.492	1.477		111%
148	74134S	1	1	11.6		1.506		
149	CCV	1	1	7.6		0.978		98%
150	B	1	1	0.0		-0.026	b	
151	D4	1	1	11.6		1.510	M	
152	74134DS	1	1	11.3	1.466	1.471		109%
153	74134DS	1	1	11.2		1.461		
154	74132	1	1	0.0	<0.100	-0.026	I	
155	74132	1	1	0.0		-0.026	I	
156	74133	1	1	0.0	<0.100	-0.026	I	
157	74133	1	1	0.0		-0.026	I	
158	74135	1	1	1.6	0.200	0.191		
159	74135	1	1	1.8		0.208		
160	74136	1	1	3.5	0.434	0.434		
161	74136	1	1	3.5		0.434		
162	74137	1	1	0.0	<0.100	-0.026	I	
163	74137	1	1	0.0		-0.026	I	
164	74138	10	1	7.9	10.335	10.238		
165	74138	10	1	8.1		10.432		
166	74139	10	1	8.3	10.465	10.789	s	
167	74139	10	1	7.8		10.141		
168	74140	10	1	6.9	8.846	8.943		
169	74140	10	1	6.8		8.748		
170	73485	10	1	4.2	1.629 ~~5.429~~	5.315		1.629 mg
171	73485	10	1	4.4		5.542		
172	WS 378	1	1	15.6		2.041		102%
173	ORG REF	1	1	15.1		1.983		99%
174	CCV	1	1	7.1		0.910		91%
175	B	1	1	0.0		-0.026	b	
176	D4	1	1	11.6		1.510	d	

INTERCEPT: 0.19 LINEAR COEF: 7.539508
CORRELATION COEF: .9999012

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
[redacted]																	
073489	PHIL-PAR	126 GEG ESP Stack-T	Mercury -	PV	-0.100						00/01/09	1NMN	00/01/09	MG01	53.	33.	
073490	PHIL-PAR	GEG ESP Stack-R1	Mercury -	PV	4.387						00/01/09	1NMN	00/01/09	MG01	53.	33.	
073492	PHIL-PAR	GEG ESP Stack-R3	Mercury -	PV	4.265						00/01/09	1NMN	00/01/09	MG01	53.	33.	
[redacted]																	
073511	PHIL-PAR	GEG ESP Inlet-SB	Mercury -	PV	-0.100						00/01/09	2NMN	00/01/09	MG01	53.	33.	
073512	PHIL-PAR	GEG ESP Inlet-BT	Mercury -	PV	-0.100						00/01/09	2NMN	00/01/09	MG01	53.	33.	
073513	PHIL-PAR	GEG ESP Inlet-R1	Mercury -	PV	4.514						00/01/09	2NMN	00/01/09	MG01	53.	33.	
073515	PHIL-PAR	GEG ESP Inlet-R3	Mercury -	PV	5.005						00/01/09	2NMN	00/01/09	MG01	53.	33.	
BL0109	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.304	101.	0.304	101.	00/01/09	2NMN	00/01/09	MG01	$$$	$$$	
074131	PHIL-PAR	MB R456	Mercury -	PV	-0.030	-99999.0	0.300	100.	0.300	100.	00/01/09	3NMN	00/01/09	MG01	38.	32.	
[redacted]																	
BL0109	INTERNAL		Mercury -	PV	-0.030	-99999.0	0.300	100.	0.300	100.	00/01/09	3NMN	00/01/09	MG01	$$$	$$$	

23 Tests for OHMN4 with an MDL of 0.030 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.01.09 Run Code: MG01 Matrix: IMP

Analyst: MG Units: µg (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL0109	INMN		
13			"			
14			BL0109 S			
15			"			
16			BL0109 DS			
17			"			
18			73486			
19			"			
20			73486 D			
21			"			
22			73486 S			
23			"			
24			73486 DS			
25			"			
26			73484			
27			"			
28			73485			
29			"			
30			73487			
31			"			
32			CCV			
33			B			
34			D4			
35			73488			
36			"			
37			73487			
38			"			
39		1/2	73490			
40		↓	"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41		1/2	73491			
42			"			
43			73492			
44		↓	"			
45			BL0109	2NMN		
46			"			
47			BL0109 S			
48			"			
49			BL0109 DS			
50			"			
51			73508			
52			"			
53			73508 D			
54			"			
55			CCV			
56			B			
57			D4			
58			73508 S			
59			"			
60			73508 DS			
61			"			
62			73507			
63			"			
64			73509			
65			"			
66			73510			
67			"			
68			73511			
69			"			
70			73512			
71			"			
72		1/2	73513			
73		↓	"			
74			73514			
75			"			
76			73515			
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.

1.0 ug/kg for solid samples.

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.01.09 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						
13						
14						
15						
16						
17						
18						
19						
20						
21			BL0109	3NHN		
22			"			
23			BL0109 S			
24			"			
25			BL0109 DS			
26			"			
27		1/4	74134			
28			"			
29			74134 D			
30			"			
31			74134 S			
32			"			
33			74134 DS			
34			"			
35			74132			
36			"			
37			74133			
38			"			
39		1/2	74135			
40			"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			CCV			
42			B			
43			D4			
44			74136			
45			"			
46			74137			
47			"			
48		1/2	74138			
49			"			
50			74139			
51			"			
52			74140			
53			"			
54			BL0109 S			
55			"			
56			73486 DS			
57			"			
58		1/4	73491			
59			"			
60						
61						
62						
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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.

[illegible] = 1.0 mg/kg for solid samples.

RUN DATE: 01-09-2000 CHART DATE: 01-10-2000
CHART SPEED: 30
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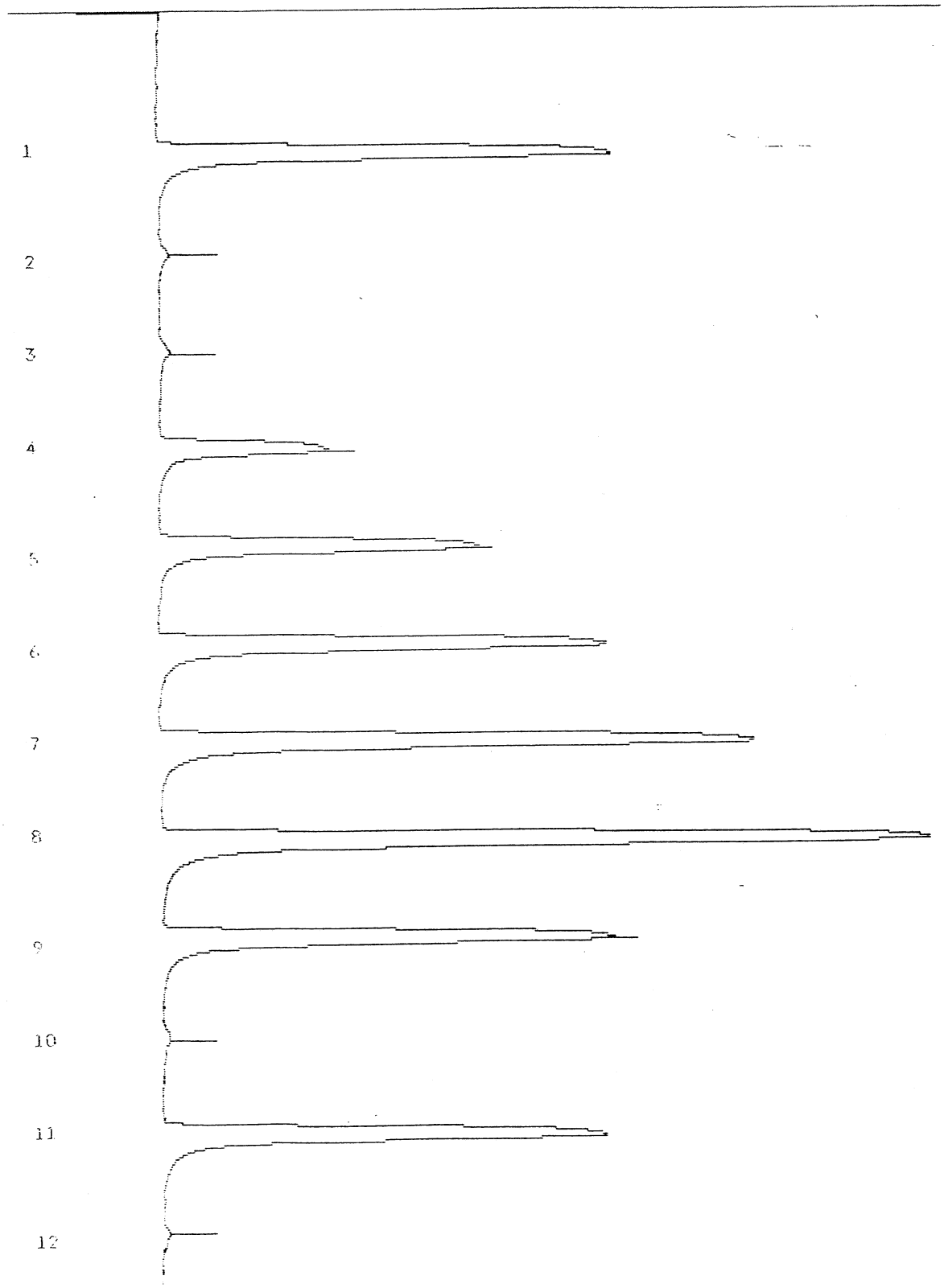

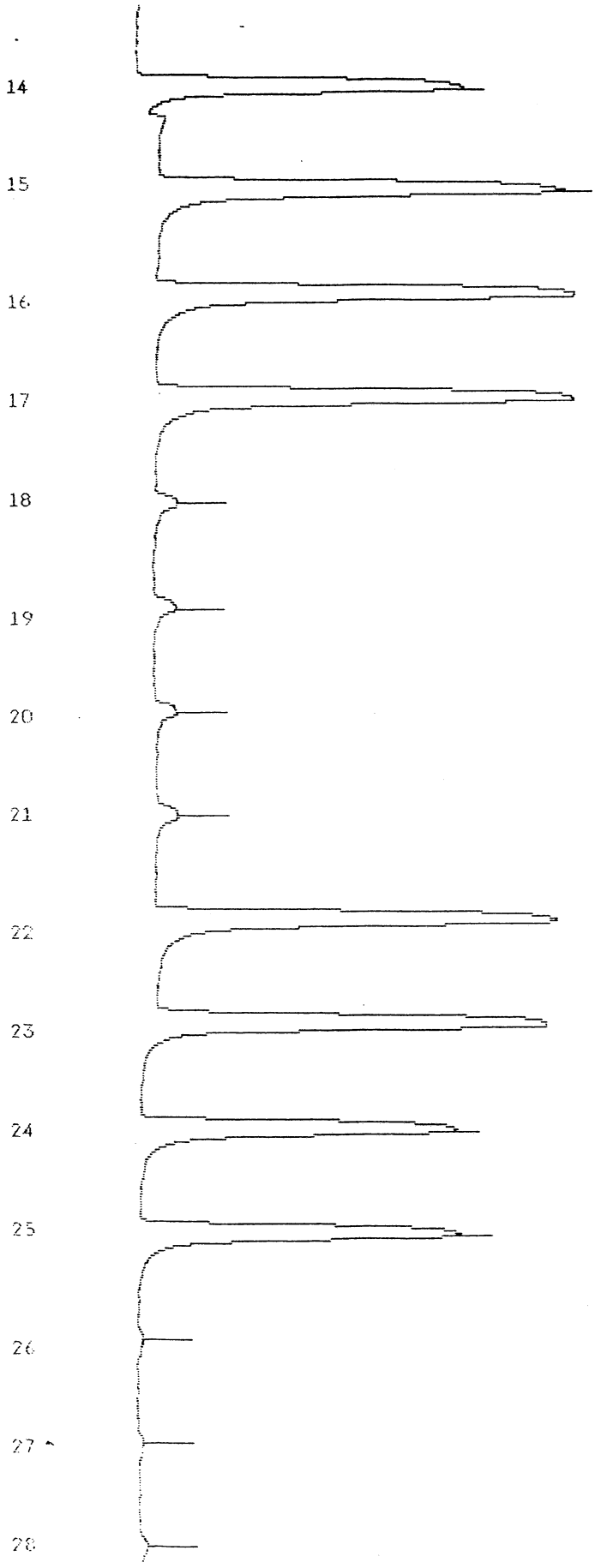
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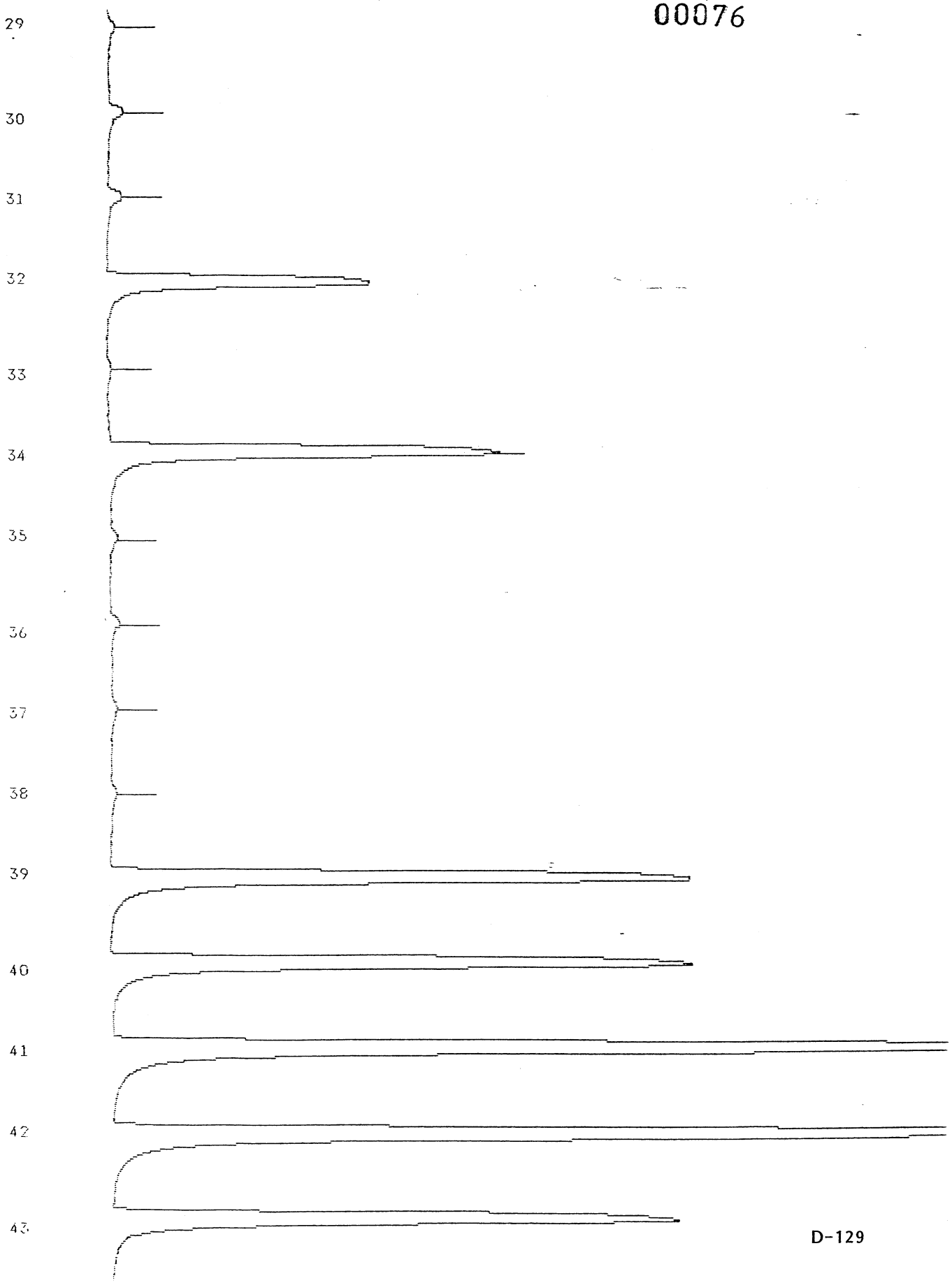
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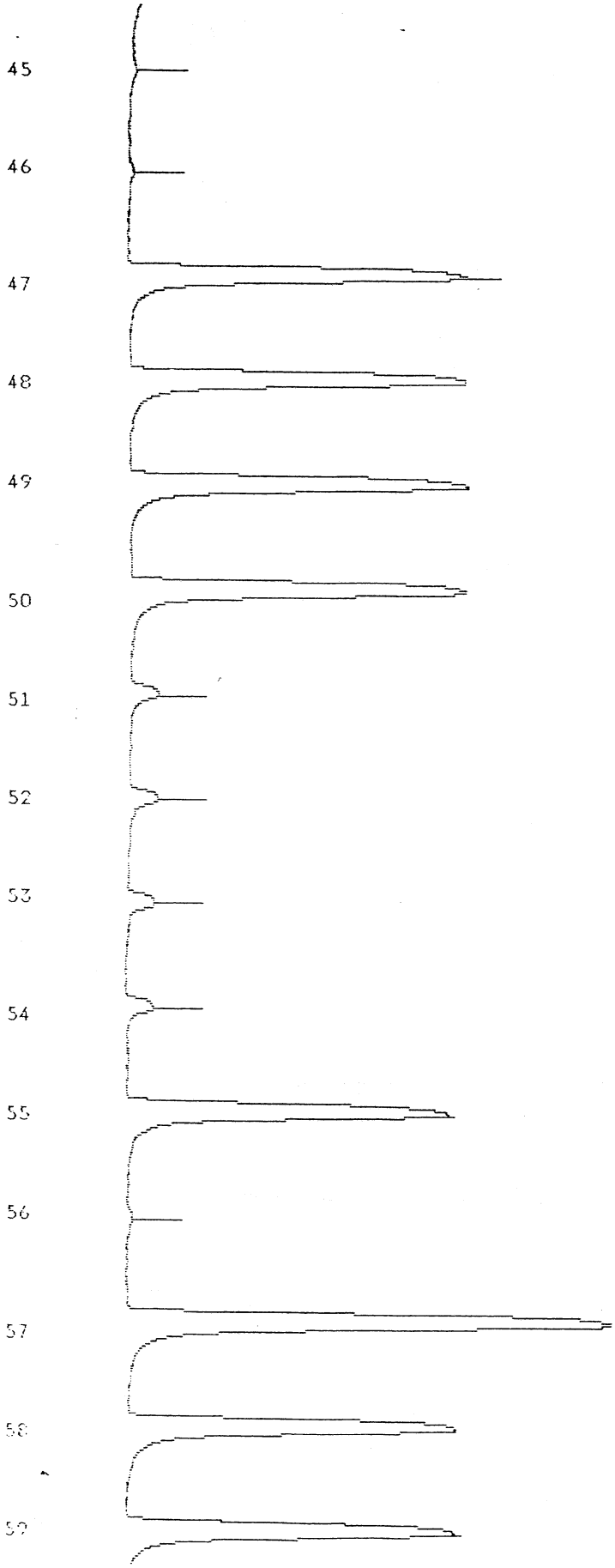
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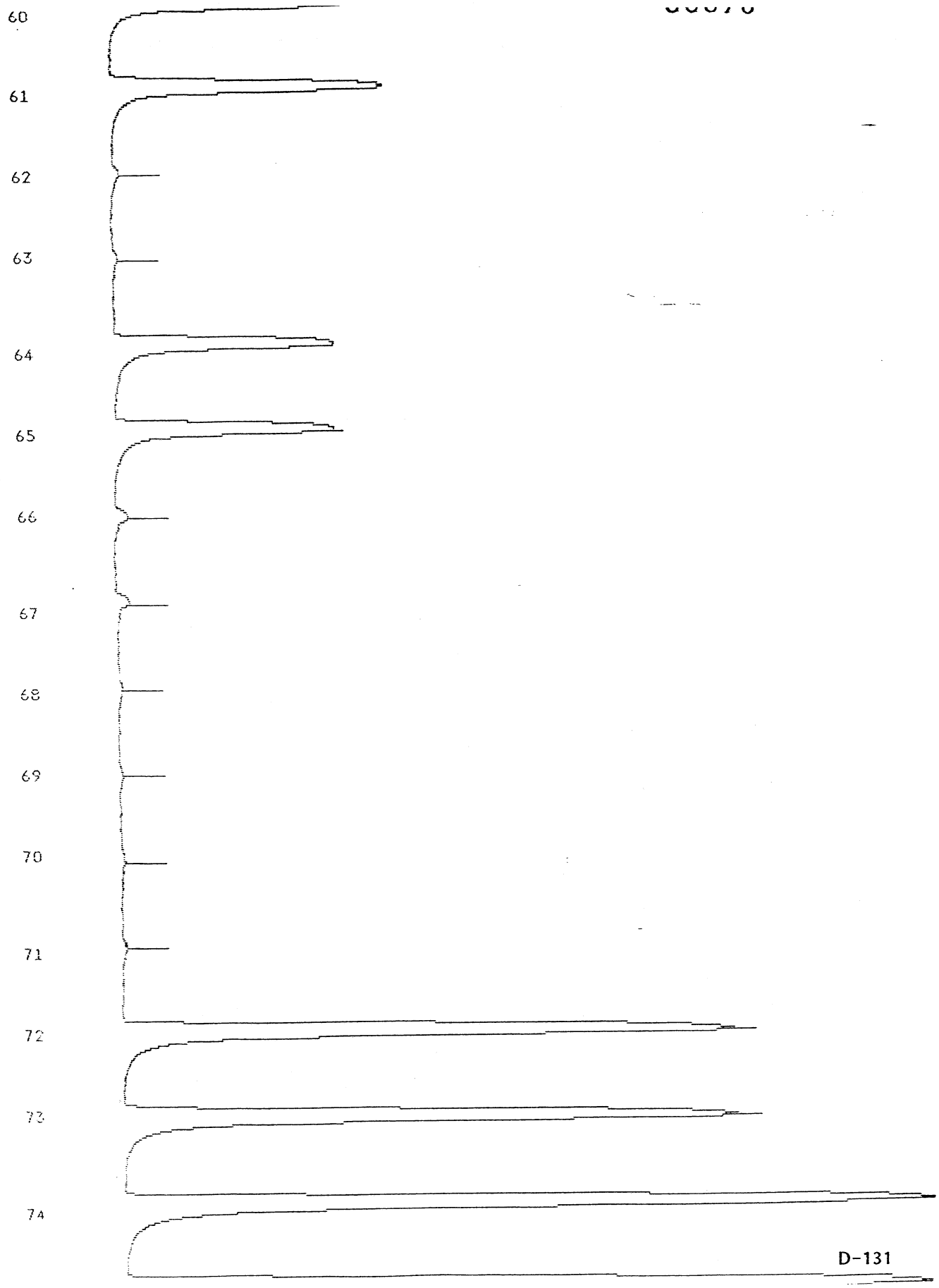
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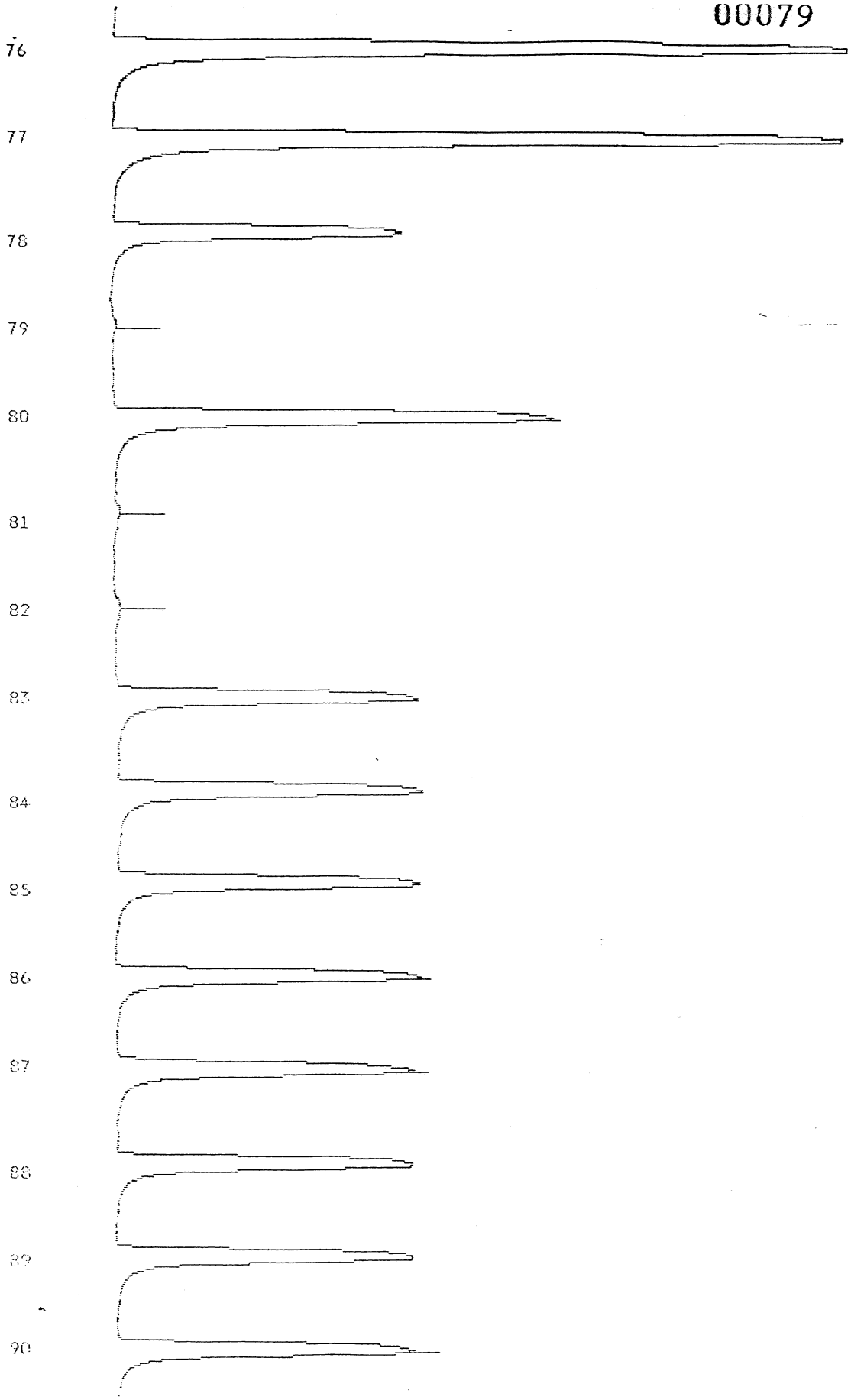
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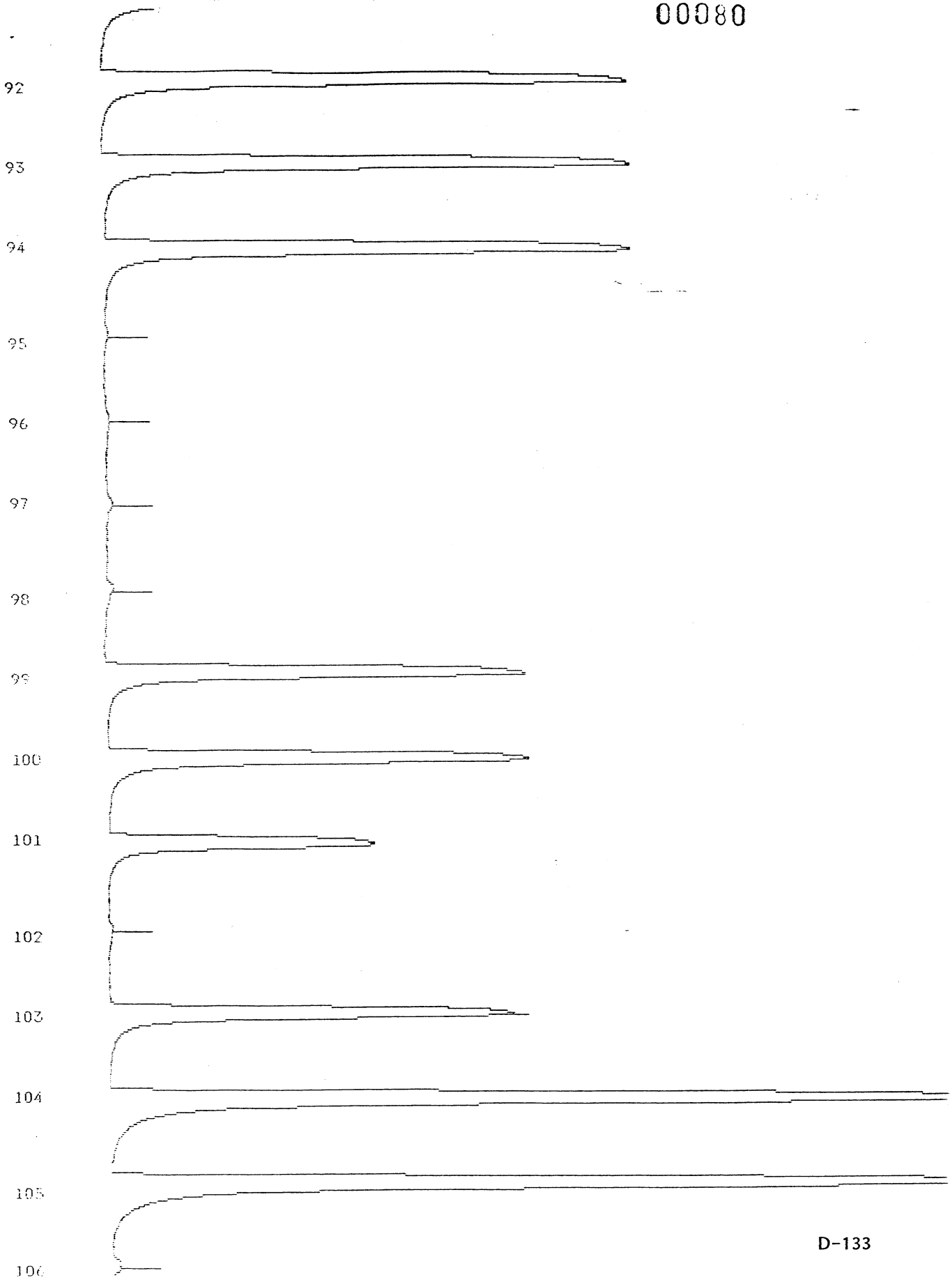
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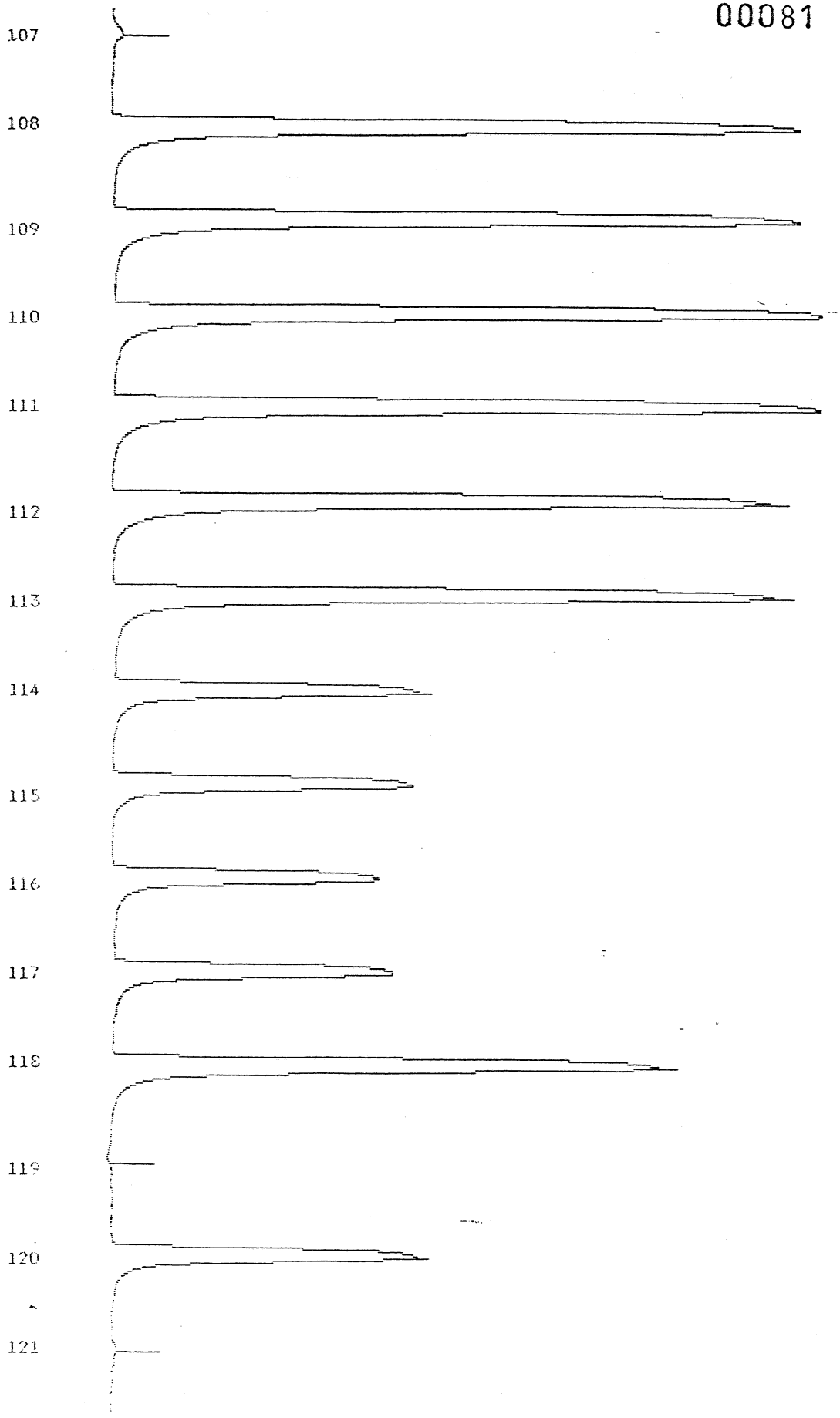
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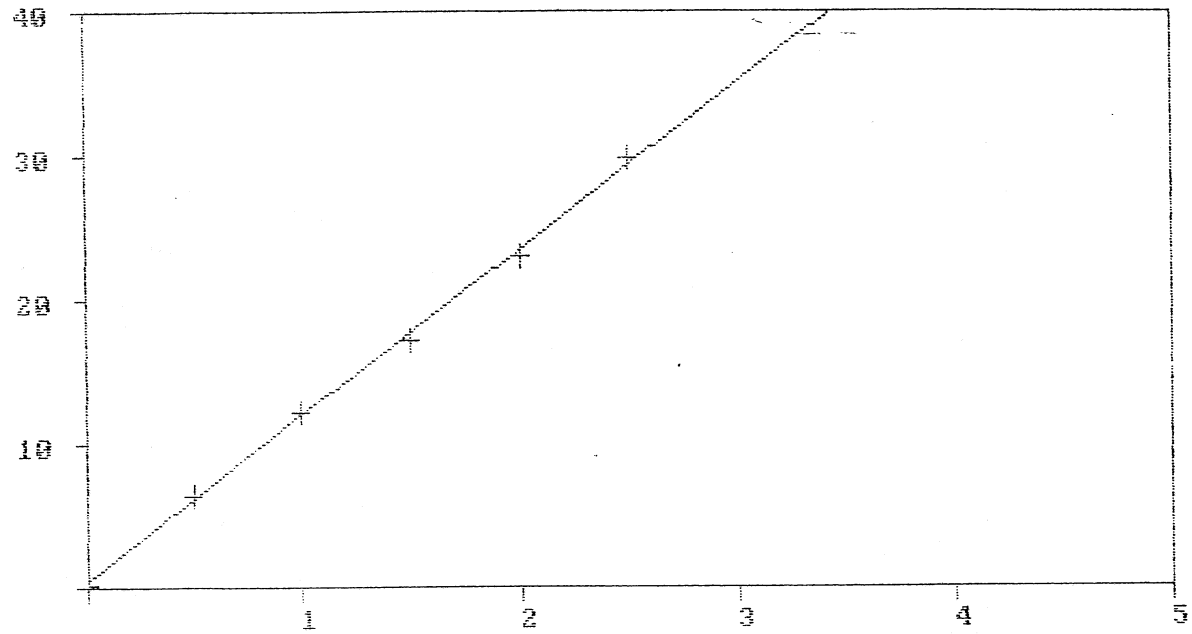
CHANNEL NAME: LDC
RUN NAME: 000109W



DATA TYPE: FIA
INTERCEPT = 0.44

CALIBRATION ORDER: 1
SLOPE = 11.51788

CORRELATION: .9991786

CHANNEL NAME: LDC
RUN DATE: 01-09-2000
SAMPLE TABLE NAME: 000109W
METHOD NAME: HG-W-20

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	CONCENTRATION (ppb)	EF
1	PRIMER	1	1	17.6	1.496	s
2	DUMMY	1	1	0.3	-0.012	I
3	S1: 0	1	1	0.3	-0.017	I
4	S2: .5	1	1	6.5	0.525	
5	S3: 1	1	1	12.3	1.031	
6	S4: 1.5	1	1	17.3	1.468	
7	S5: 2	1	1	22.9	1.954	
8	S6: 2.5	1	1	29.5	2.539	
9	ICV	1	1	17.3	1.466 98%	
10	8	1	1	0.0	Total µg -0.042	b
11	STD4	1	1	17.0	1.442	
12	BL0109-1NMN VOID MB	1	1	0.0	<0.03 -0.042	I
13	BL0109-1NMN	1	1	0.0	-0.042	I
14	BL0109S	1	1	11.4	0.956	

17	BL0109DS	1	1	14.9		0.0085		RERWN ON 0110. MB
18	73486	1	1	0.5		0.001		
19	73486	1	1	0.5		0.005	I	
20	73486D	1	1	0.4		-0.004	I	
21	73486D	1	1	0.5		0.001		
22	73486S	1	1	14.4		1.212		
23	73486S	1	1	14.2		1.199		
24	73486DS	1	1	11.3		0.945		
25	73486DS	1	1	11.5		0.965		
26	73484	1	1	0.0		-0.042	I	
27	73484	1	1	0.0		-0.042	I	
28	73485	1	1	0.1		-0.036	I	
29	73485	1	1	0.1		-0.031	I	
30	73487	1	1	0.4		-0.008	I	
31	73487	1	1	0.4		-0.006	s	
32	CCV	1	1	11.6		0.969	97%	
33	B	1	1	0.0		-0.042	b	
34	STD4	1	1	17.1		1.453		
35	73488	1	1	0.2	<0.100	-0.027	I	
36	73488	1	1	0.2		-0.025	I	
37	73489	1	1	0.1	<0.100	-0.034	I	
38	73489	1	1	0.0		-0.040	I	
39	73490	2	1	25.6	4.387	4.395		
40	73490	2	1	25.5		4.378		
41	73491	2	1	41.3		7.125	R	OFF SCALE RERUN
42	73491	2	1	41.4		7.155	R	
43	73492	2	1	24.9	4.265	4.271		
44	73492	2	1	24.9		4.258		
45	BL0109-2NMN	1	1	0.0	<0.03	-0.042	I	
46	BL0109-2NMN	1	1	0.0		-0.042	s	
47	BL0109S	1	1	12.1	0.304	1.011	101%	
48	BL0109S	1	1	12.1		1.014		
49	BL0109DS	1	1	12.1	0.304	1.018	101%	
50	BL0109DS	1	1	12.0		1.005		
51	73508	1	1	0.7	<0.100	0.020		
52	73508	1	1	0.8		0.024		
53	73508D	1	1	0.6	<0.100	0.013		
54	73508D	1	1	0.7		0.018		
55	CCV	1	1	11.4		0.954	95%	
56	B	1	1	0.0		-0.042	b	
57	D4	1	1	17.3		1.468	d	
58	73508S	1	1	11.7	0.981	0.984	96%	
59	73508S	1	1	11.7		0.977		
60	73508DS	1	1	11.6	0.974	0.973	96%	
61	73508DS	1	1	11.6		0.975	s	
62	73507	1	1	0.1	<0.100	-0.036	I	
63	73507	1	1	0.0		-0.042	I	
64	73509	1	1	9.4	0.779	0.779		
65	73509	1	1	9.4		0.779		
66	73510	1	1	0.4	<0.100	-0.010	I	
67	73510	1	1	0.4		-0.010	I	
68	73511	1	1	0.0	<0.100	-0.042	I	
69	73511	1	1	0.0		-0.042	I	
70	73512	1	1	0.0	<0.100	-0.042	I	
71	73512	1	1	0.0		-0.040	I	
72	73513	2	1	26.3	4.514	4.510		
73	73513	2	1	26.3		4.518		
74	73514	2	1	34.9		6.007	R	OFF SCALE RERUN
75	73514	2	1	34.6		5.960	R	
76	73515	2	1	29.3	5.005	5.026	s	
77	73515	2	1	29.0		4.983		
78	CCV	1	1	11.4		0.954	95%	
79	B	1	1	0.0		-0.042	b	
80	D4	1	1	17.3		1.468	d	

00084

83	BL0109S	1	1	11.9	0.300	0.994	100%	
84	BL0109S	1	1	12.0		1.005		
85	BL0109DS	1	1	11.9	0.300	0.999	100%	
86	BL0109DS	1	1	12.0		1.005		
87	74134	4	1	11.6	3.923	3.901		
88	74134	4	1	11.8		3.944		
89	74134D	4	1	11.7	3.914	3.909		
90	74134D	4	1	11.7		3.918		
91	74134S	4	1	22.8	7.770	7.791	98%	
92	74134S	4	1	22.7		7.749		
93	74134DS	4	1	22.7	7.762	7.749	96%	
94	74134DS	4	1	22.7		7.774		
95	74132	1	1	0.0	<0.100	-0.042	I	
96	74132	1	1	0.0		-0.042	I	
97	74133	1	1	0.1	<0.100	-0.036	I	
98	74133	1	1	0.1		-0.031	I	
99	74135	2	1	18.0	3.056	3.060		
100	74135	2	1	17.9		3.051		
101	CCV	1	1	11.3		0.945	95%	
102	B	1	1	0.0		-0.042	b	
103	D4	1	1	17.3		1.468	d	
104	74136	1	1	37.8		3.262	R	OFF SCALE RERUN
105	74136	1	1	38.0		3.274	R	
106	74137	1	1	0.2	<0.100	-0.027	s	
107	74137	1	1	0.2		-0.025	I	
108	74138	2	1	26.7	4.568	4.574		
109	74138	2	1	26.6		4.561		
110	74139	2	1	27.5	4.727	4.727		
111	74139	2	1	27.5		4.727		
112	74140	2	1	25.6	4.390	4.390		
113	74140	2	1	25.6		4.390		
114	BL0109S	1	1	11.8		0.988		
115	BL0109S	1	1	11.6		0.969		
116	73486DS	1	1	10.2		0.849		
117	73486DS	1	1	10.7		0.894		
118	73491	4	1	21.1		7.203		
119	73491	4	1	0.0		-0.169	I	
120	CCV	1	1	11.7		0.977	98%	
121	B	1	1	0.0		-0.042	b	
122	D4	1	1	17.3		1.468	d	

INTERCEPT: 0.48 LINEAR COEF: 11.4495

CORRELATION COEF: .9992617

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
073483	PHIL-PAR	~~CD-R~~ Method Blank	Mercury -	PV	-0.030	-99999.0	0.291	97.	0.291	97.	00/01/09	1NMN	00/01/10	MG01	53.	33.	
[redacted]																	
073491	PHIL-PAR	GEG ESP Stack-R2	Mercury -	PV	7.086						00/01/09	1NMN	00/01/10	MG01	53.	33.	
BL0109	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.291	97.	0.291	97.	00/01/09	1NMN	00/01/10	MG01	$$$	$$$	
073514	PHIL-PAR	GEG ESP Inlet-R2	Mercury -	PV	6.015						00/01/09	2NMN	00/01/10	MG01	53.	33.	
[redacted]																	

9 Tests for OHMN4 with an MDL of 0.030 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00085

LDC AUTOSAMPLER RUN LOG (MERCURY)

Date: 00.01.10W Run Code: MG01 Matrix: IMP

Analyst: MG Units: µg (see comments) MDL: 0.03

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
1			Primer (ICV)			
2			Dummy (Blk)			
3			Std 1 (S1)	0.0		
4			Std 2 (S2)	0.5		
5			Std 3 (S3)	1.0		
6			Std 4 (S4)	1.5		
7			Std 5 (S5)	2.0		
8			Std 6 (S6)	2.5		
9			ICV			
10			B (Std 1)			
11			D4 (Std 4)			
12			BL0109	INKAN		
13			"			
14			BL0109 S			
15			"			
16			BL0109 D			
17			"			
18			73486			
19			"			
20			73486 D			
21			"			
22			73486 S			
23			"			
24			73486 DS			
25			"			
26			73484			
27			"			
28			73485			
29			"			
30			73487			
31			"			
32			CCV			
33			B			
34			D4			
35		1/4	73491			
36			"			
37			73514			
38			"			
39		1/2	74136			
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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69						
70						
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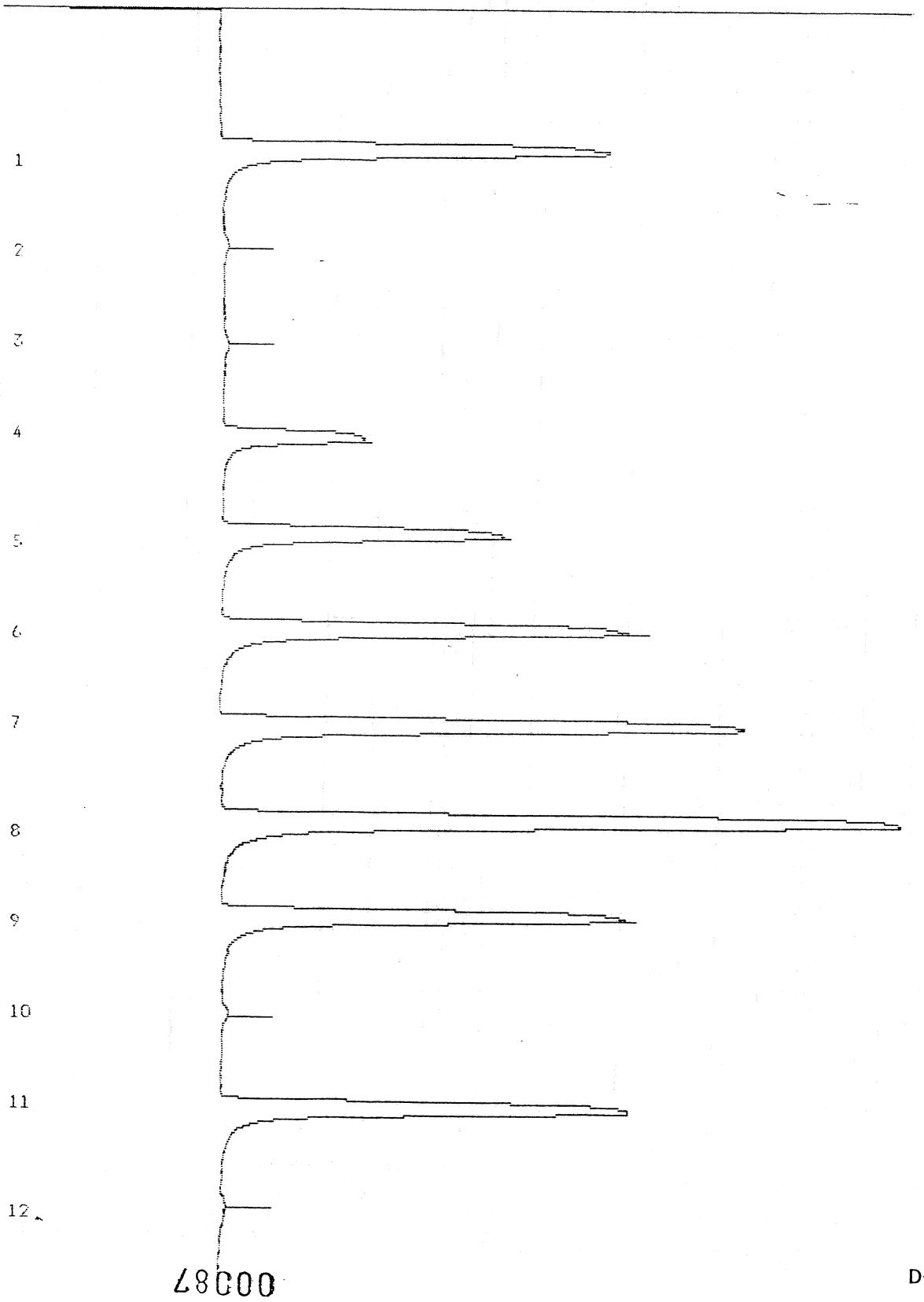
72						
73						
74						
75						
76						
77						
78						
79						
80						

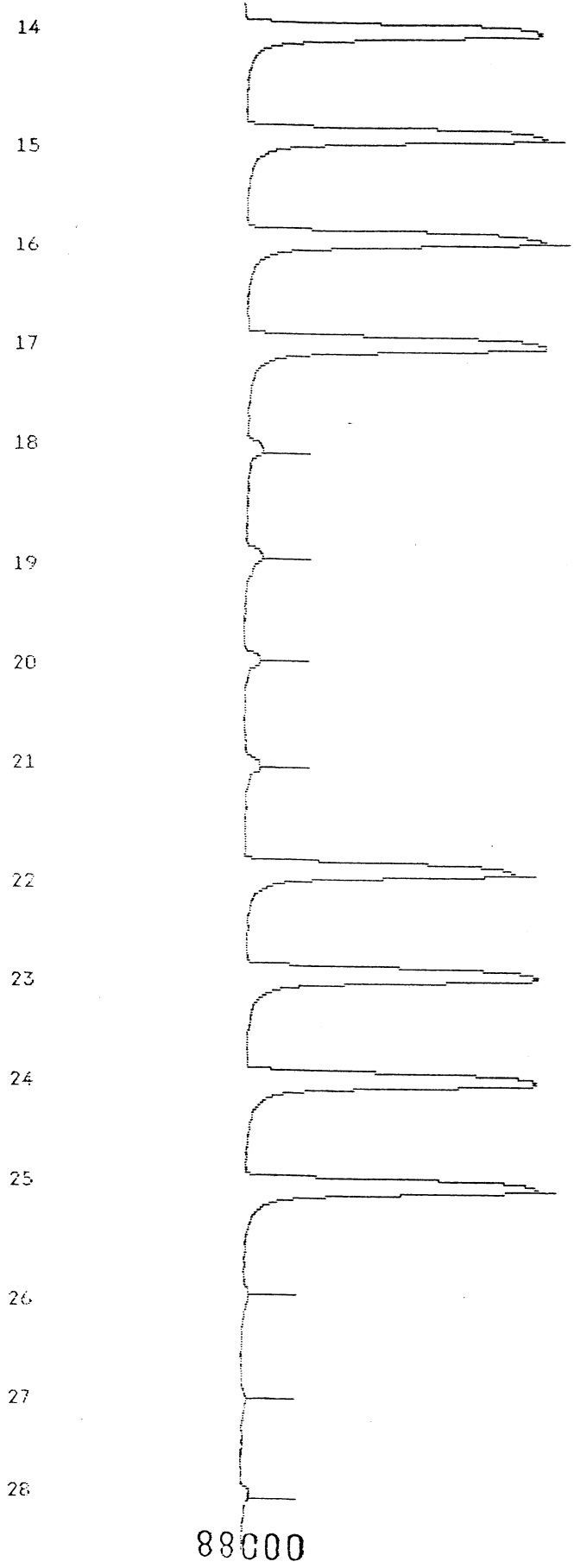
Comments: *** "HG-347" and "MISA12" units are expressed in mg/L not ug/L

ICV = 1.5 ug/L, CCV = 1.0 ug/L, Blank Spike = 1.0 ug/L for liquid samples.

98000 CCV = 1.0 mg/kg, Blank Spike = 1.0 mg/kg for solid samples.

RUN DATE: 01-10-2000 CHART DATE: 01-10-2000
CHART SPEED: 30
DATA FILE NAME: C:\DP4\DATA\000110W.DAT

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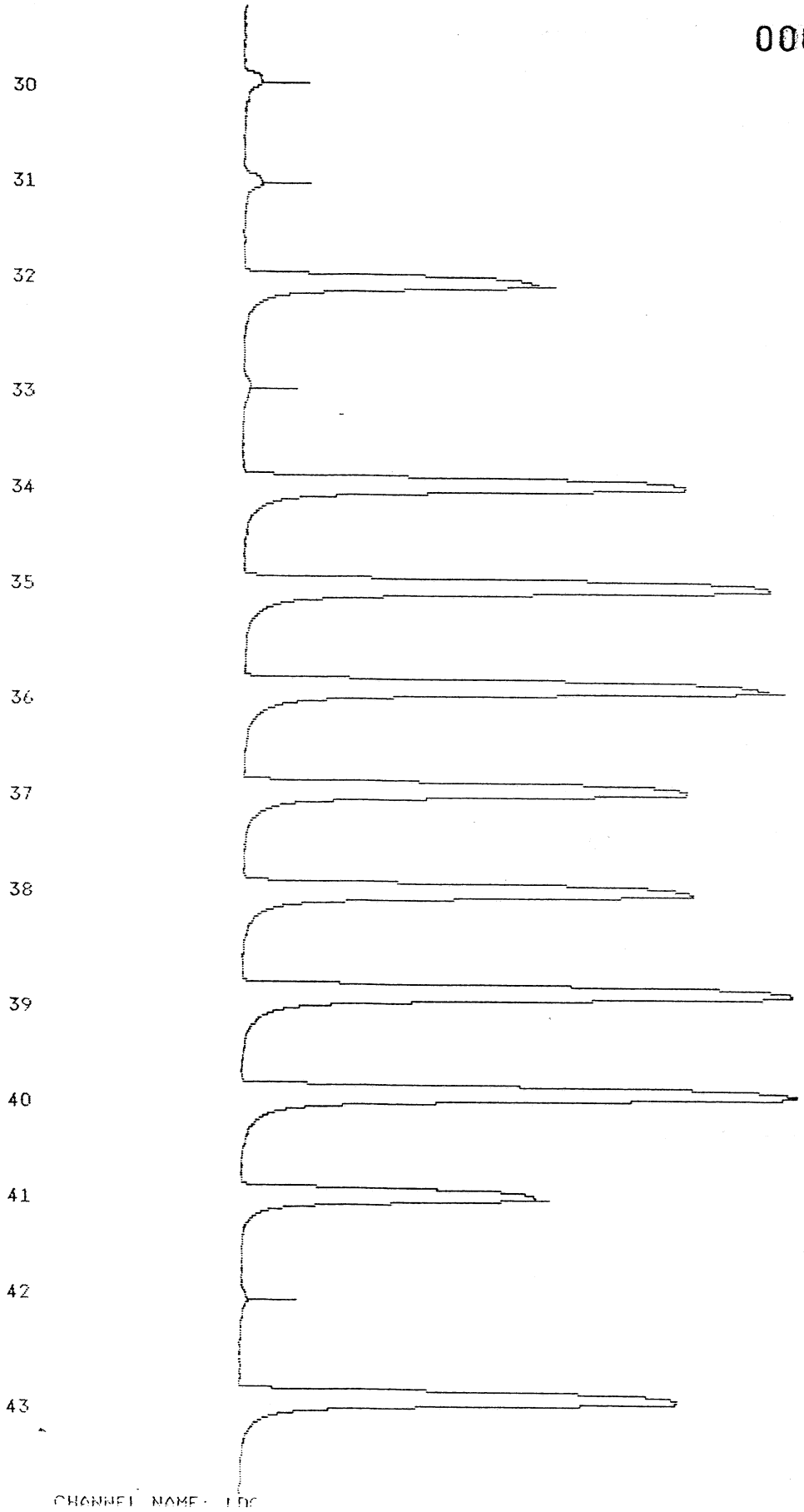
88000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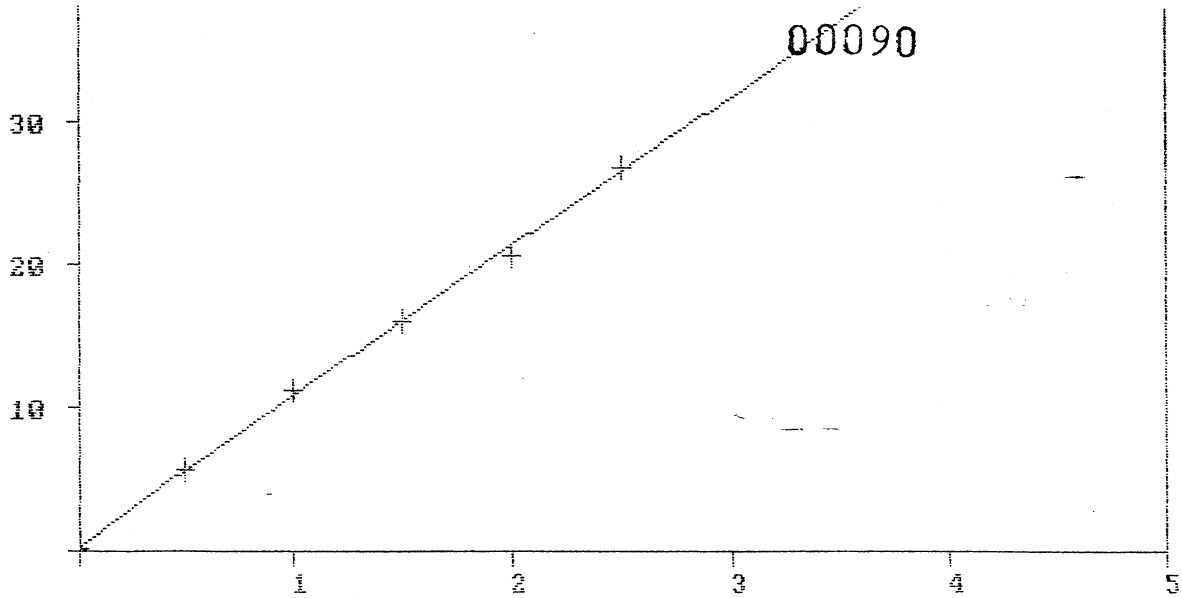
43
CHANNEL NAME: LDC



DATA TYPE: FIA CALIBRATION ORDER: 1
INTERCEPT = 0.29 SLOPE = 10.49084

CORRELATION: .9992992

CHANNEL NAME: LDC
RUN DATE: 01-10-2000
SAMPLE TABLE NAME: 000110W
METHOD NAME: HG-W-20

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	TUG	CONCENTRATION (PPb)		EF
1	PRIMER	1	1	15.5		1.448		s
2	DUMMY	1	1	0.1		-0.016		I
3	S1: 0	1	1	0.1		-0.016		I
4	S2: .5	1	1	5.7		0.514		
5	S3: 1	1	1	11.1		1.031		
6	S4: 1.5	1	1	16.0		1.494		
7	S5: 2	1	1	20.7		1.941		
8	S6: 2.5	1	1	26.9		2.535		
9	ICV	1	1	15.8		1.473	98%	
10	B	1	1	0.0		-0.028		b
11	D4	1	1	16.0		1.494		d
12	BL0109-1NMN 73483	1	1	0.0	<0.300	-0.028		I
13	BL0109-1NMN	1	1	0.0		-0.028		I
14	BL0109S	1	1	10.5	0.291	0.971	97%	
15	BL0109S	1	1	10.5		0.971		
16	BL0109DS	1	1	10.4	0.291	0.966	97%	
17	BL0109DS	1	1	10.5		0.971		
18	73486	1	1	0.3	<0.100	0.005		I
19	73486	1	1	0.4		0.012		I
20	73486D	1	1	0.2	<0.100	-0.005		I
21	73486D	1	1	0.3		0.000		I
22	73486S	1	1	9.3	0.894	0.857	89%	
23	73486S	1	1	10.1		0.931		
24	73486DS	1	1	9.9	0.919	0.915	92%	
25	73486DS	1	1	10.0		0.922		
26	73484	1	1	0.0	<0.100	-0.028		I
27	73484	1	1	0.0		-0.028		I
28	73485	1	1	0.0		-0.028		I

32	CCV	1	1	10.5		0.973	97%
33	B	1	1	0.0		-0.028	b
34	D4	1	1	16.0		1.494	d
35	73491	4	1	18.9	7.086	7.104	
36	73491	4	1	18.8		7.067	
37	73514	4	1	15.9	6.015	5.968	
38	73514	4	1	16.2		6.061	
39	74136	2	1	19.7	3.725	3.701	
40	74136	2	1	20.0		3.748	
41	CCV	1	1	10.6		0.980	98%
42	B	1	1	0.0		-0.028	b
43	D4	1	1	16.0		1.494	d

00091

INTERCEPT: 0.29 LINEAR COEF: 10.49084

CORRELATION COEF: .9992992

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
073483	PHIL-PAR	~~CD-R~~ Method Blank	Mercury -	PV	-0.030	-99999.0	0.291	97.	0.291	97.	00/01/09	1NMN	00/01/10	MG01	53.	33.	
073484	PHIL-PAR	RM BH Outlet-SB	Mercury -	PV	-0.100						00/01/09	1NMN	00/01/10	MG01	53.	33.	
073485	PHIL-PAR	RM BH Outlet-BT	Mercury -	PV	-0.100						00/01/09	1NMN	00/01/10	MG01	53.	33.	
073486	PHIL-PAR	RM BH Outlet-R1	Mercury -	PV	-0.100	-0.100	0.894	89.	0.919	92.	00/01/09	1NMN	00/01/10	MG01	53.	33.	
073487	PHIL-PAR	RM BH Outlet-R2	Mercury -	PV	-0.100						00/01/09	1NMN	00/01/10	MG01	53.	33.	
073491	PHIL-PAR	GEG ESP Stack-R2	Mercury -	PV	7.086						00/01/09	1NMN	00/01/10	MG01	$$$	$$$	
BL0109	INTERNAL		Mercury -	PV	-0.010	-99999.0	0.291	97.	0.291	97.	00/01/09	1NMN	00/01/10	MG01			
073514	PHIL-PAR	GEG ESP Inlet-R2	Mercury -	PV	6.015						00/01/09	2NMN	00/01/10	MG01	53.	33.	
074136	PHIL-PAR	Unit 3 Stack-R3	Mercury -	PV	3.725						00/01/09	3NMN	00/01/10	MG01	39.	32.	

9 Tests for OHMN4 with an MDL of 0.030 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

Original

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
073483	PHIL-PAR	CD R	Mercury -	PV	-0.0100	-99999.0	0.1000	100.	0.1000	100.	00/01/07	1GPO	00/01/07	MG01	51.	31.	*BLKIMP*
[redacted]																	
073489	PHIL-PAR	120 GEG ESP Stack-R1	Mercury -	PV	-0.2500						00/01/07	1GPO	00/01/07	MG01	51.	31.	*DDL*
073490	PHIL-PAR	GEG ESP Stack-R1	Mercury -	PV	0.5230						00/01/07	1GPO	00/01/07	MG01	51.	31.	
073491	PHIL-PAR	GEG ESP Stack-R2	Mercury -	PV	0.7010						00/01/07	1GPO	00/01/07	MG01	51.	31.	
073492	PHIL-PAR	GEG ESP Stack-R3	Mercury -	PV	0.4270						00/01/07	1GPO	00/01/07	MG01	51.	31.	
BL0107	INTERNAL		Mercury -	PV	-0.0100	-99999.0	0.1000	100.	0.1000	100.	00/01/07	1GPO	00/01/07	MG01	$$$	$$$	*BLKIMP*
[redacted]																	
073511	PHIL-PAR	GEG ESP Inlet-SB	Mercury -	PV	-0.2500						00/01/07	2GPO	00/01/07	MG01	51.	31.	*DDL*
073512	PHIL-PAR	GEG ESP Inlet-BT	Mercury -	PV	-0.2500						00/01/07	2GPO	00/01/07	MG01	51.	31.	*DDL*
073513	PHIL-PAR	GEG ESP Inlet-R1	Mercury -	PV	0.4440						00/01/07	2GPO	00/01/07	MG01	51.	31.	
073514	PHIL-PAR	GEG ESP Inlet-R2	Mercury -	PV	0.5140						00/01/07	2GPO	00/01/07	MG01	51.	31.	
073515	PHIL-PAR	GEG ESP Inlet-R3	Mercury -	PV	0.3200						00/01/07	2GPO	00/01/07	MG01	51.	31.	
BL0107	INTERNAL		Mercury -	PV	-0.0100	-99999.0	0.1020	102.	0.1010	101.	00/01/07	2GPO	00/01/07	MG01	$$$	$$$	*BLKIMP*
074131	PHIL-PAR	MB R456	Mercury -	PV	-0.0100	-99999.0	0.1000	100.	0.1010	101.	00/01/07	3GPO	00/01/07	MG01	36.	30.	*BLKIMP*
[redacted]																	
BL0107	INTERNAL		Mercury -	PV	-0.0100	-99999.0	0.1000	100.	0.1010	101.	00/01/07	3GPO	00/01/07	MG01	$$$	$$$	*BLKIMP*

32 Tests for OHPOX with an MDL of 0.010 ug Validated By CMB Control Chart Updated N/A IO Requirements met N/A

00093

ITOSAMPLER RUN LOG (MERCURY)

20.01.07 Run Code: MG01 Matrix: IMP.

BT/MG Units: µg (see comments) MDL: 0.01

Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
	Primer (ICV)			
	Dummy (Blk)			
	Std 1 (S1)	0.0		
	Std 2 (S2)	0.5		
	Std 3 (S3)	1.0		
	Std 4 (S4)	1.5		
	Std 5 (S5)	2.0		
	Std 6 (S6)	2.5		
	ICV			
	B (Std 1)			
	D4 (Std 4)			
	BL0107	16PO		
	"			
	BL0107 S			
	"			
	BL0107 DS			
	"			
10X	073486			
	"			
	073486D			
	"			
	0734865			
	"			
	073486DS			
	"			
	073484			
	"			
	073485			
	"			
	073487			
	"			
	CCV			
	B			
	D4			
10x	073488			
	"			
	073489			
	"			
	073490			
	"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41		10x	073491			
42			"			
43			073492			
44			"			
45	5x		0734865			
46			"			
47			BL0107	26PO		
48			"			
49			BL0107S			
50			"			
51			BL0107DS			
52			"			
53		10x	073508			
54			"			
55			CCV			
56			B			
57			D4			
58		10x	073508D			
59			"			
60			073508S			
61			"			
62			073508DS			
63			"			
64			073507			
65			"			
66			073509			
67			"			
68			073510			
69			"			
70			073511			
71			"			
72			073512			
73			"			
74			073513			
75			"			
76			073514			
77			"			
78			CCV			
79			B			
80			D4			

ments: *** "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: 00.01.07 Run Code: MG01 Matrix: IMP

Analyst: MG/BT 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		10X	073515			
22			"			
23			BL0107	36PO		
24			"			
25			BL0107S			
26			"			
27			BL0107DS			
28		10X	"			
29			074134			
30			"			
31			074134D			
32			"			
33			074134S			
34			"			
35			074134DS			
36			"			
37			074132			
38			"			
39			074133			
40		V	"			

Cup	Dig. F.	Dil. F.	Zenon ID	Init. Conc.	F. Conc.	% R
41			CCV			
42			B			
43			D4			
44		10X	074135			
45			"			
46			074136			
47			"			
48			074137			
49			"			
50			074138			
51			"			
52			074139			
53			"			
54			074140			
55		V	"			
56			CCV			
57			B			
58			D4			
59						
60						
61						
62						
63						
64			~~CCV~~ MA			
65			~~B~~			
66			D4.			
67						
68						
69						
70						
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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.

EPA 7470 WATER PREPARATION LOG - MERCURY

00096

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.)	1GPO	20 ml	30 ml	1 X	1.5 ppb = 600 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	10	BL 0107	"	"	"	"	(Processed Blank)
	11	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	12	73486	"	1ml	15ml	10X	Final Volume = 250 ul
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	73484	"				
3	17	85	"				
4	18	87	"				
5	19	88	"				
6	20	89	"				
7	21	90	"				
8	22	91	"				
9	23	92	"				
10	24		"	"	"	"	
	25	CCV (Cont. Calib. Verif.)	2GPO	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	26	BL 0107	"	"	"	"	(Processed Blank) ~~250 ml~~
	27	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	28	73508	"	1ml	15ml	10X	250 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	73507	"				
3	33	09	"				
4	34	10	"				
5	35	11	"				
6	36	12	"				
7	37	13	"				
8	38	14	"				
9	39	15	"				
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. 114091 | H2SO4 Lot. No. 517020 | Bath Temps. 195 °C

Prepared By: 00-01-07 MA Date: 00/01/01 Checked by: CMP

	#	Sample I.D.	B.Code	Init.Vol.	F. Vol.	Dil	Comment
	41	CCV (Cont. Calib. Verif.)	36PC	20 ml	30 ml	1 X	1.0 ppb = 400 ul. of 0.05 ppm HP MESS-ZENO 30/QCA Std.
	42	BL 0107	"	"	"	"	(Processed Blank) 74131
	43	BL 0107 S	"	"	"	"	1 ppb = 400 ul. of 0.05 ppm Inorganic Ventures Std Interm.
1	44	74134	"	1ml	15ml	10x	F.V. = 250 ml
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	74132	"				
3	49	33	"				
4	50	34	"				
5	51	36	"				
6	52	37	"				
7	53	38	"				
8	54	39	"				
9	55	40	"				
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: 01-07-2000 CHART DATE: 01-07-2000 00098
CHART SPEED: 30
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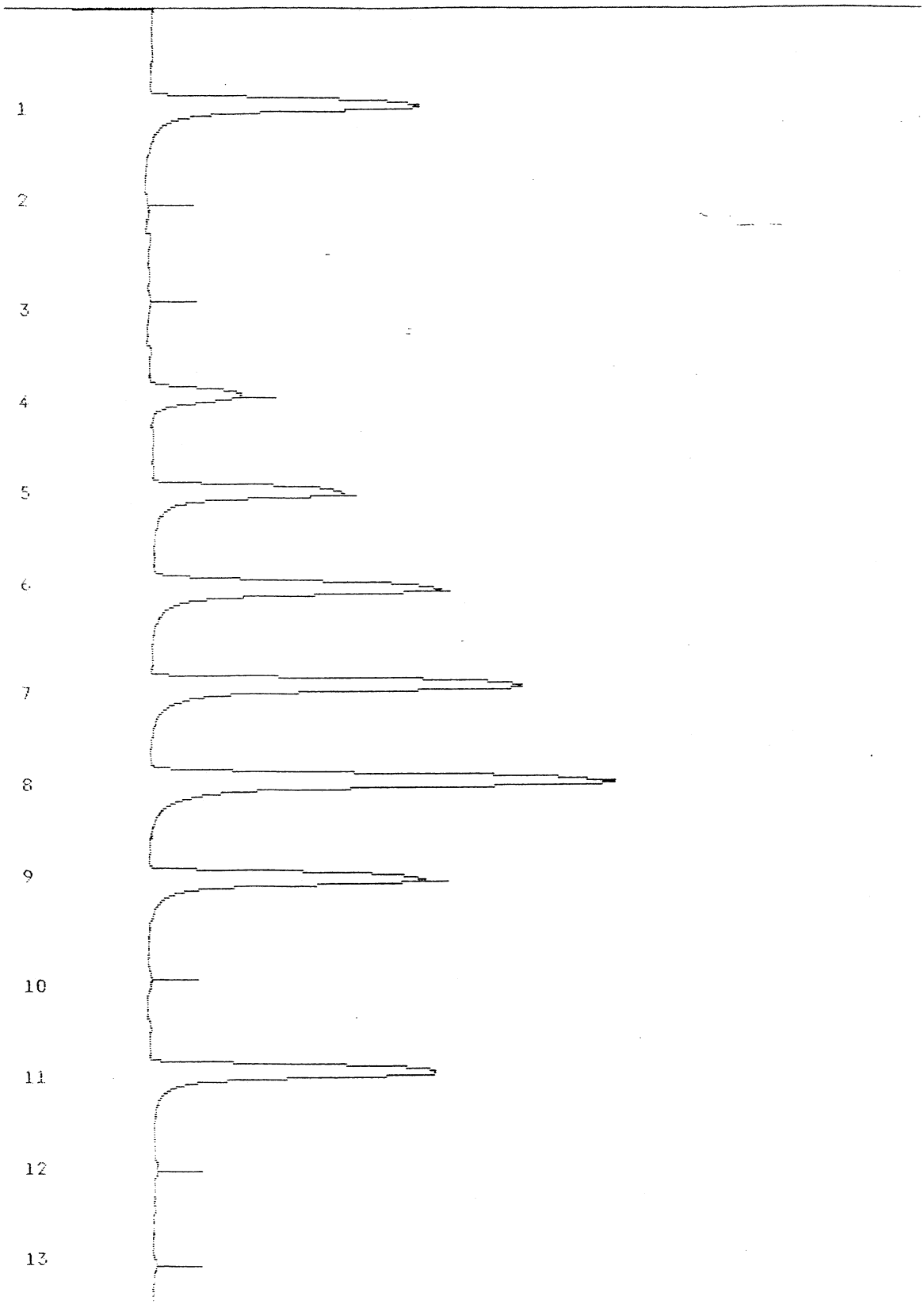

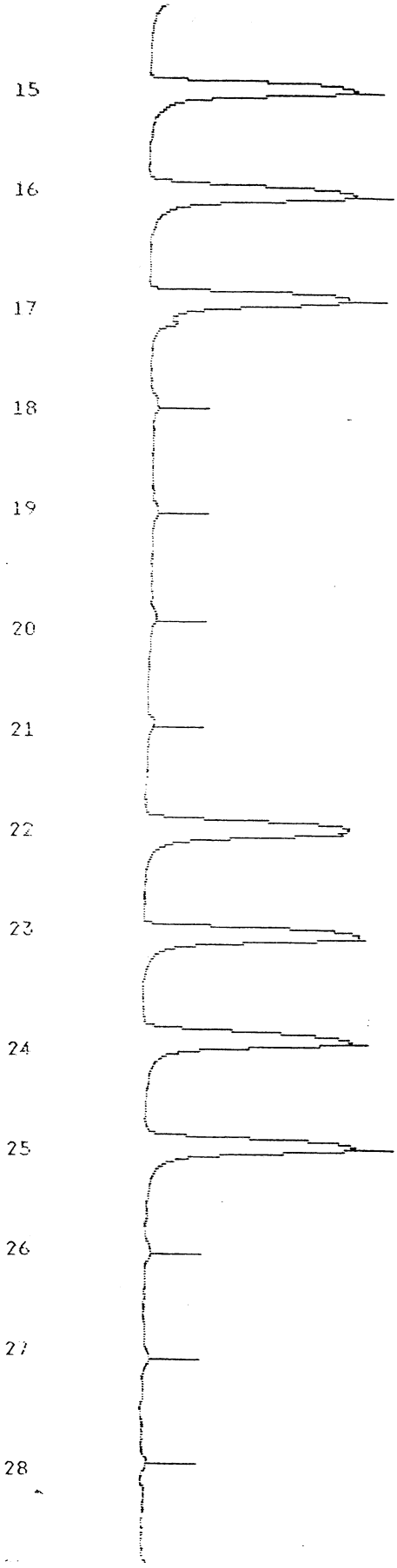
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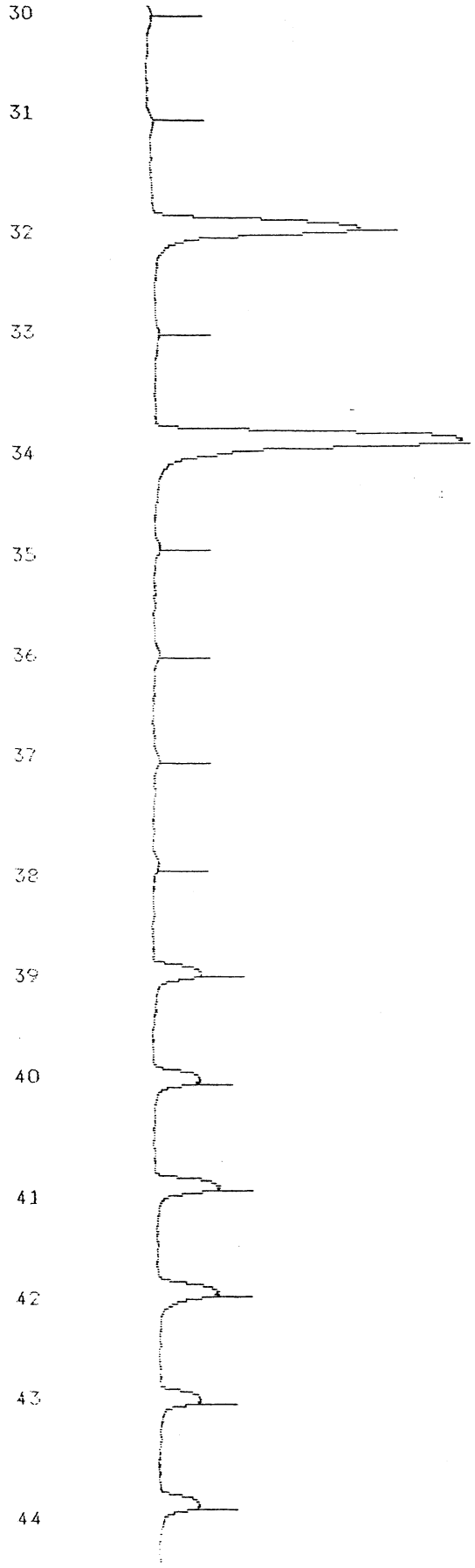
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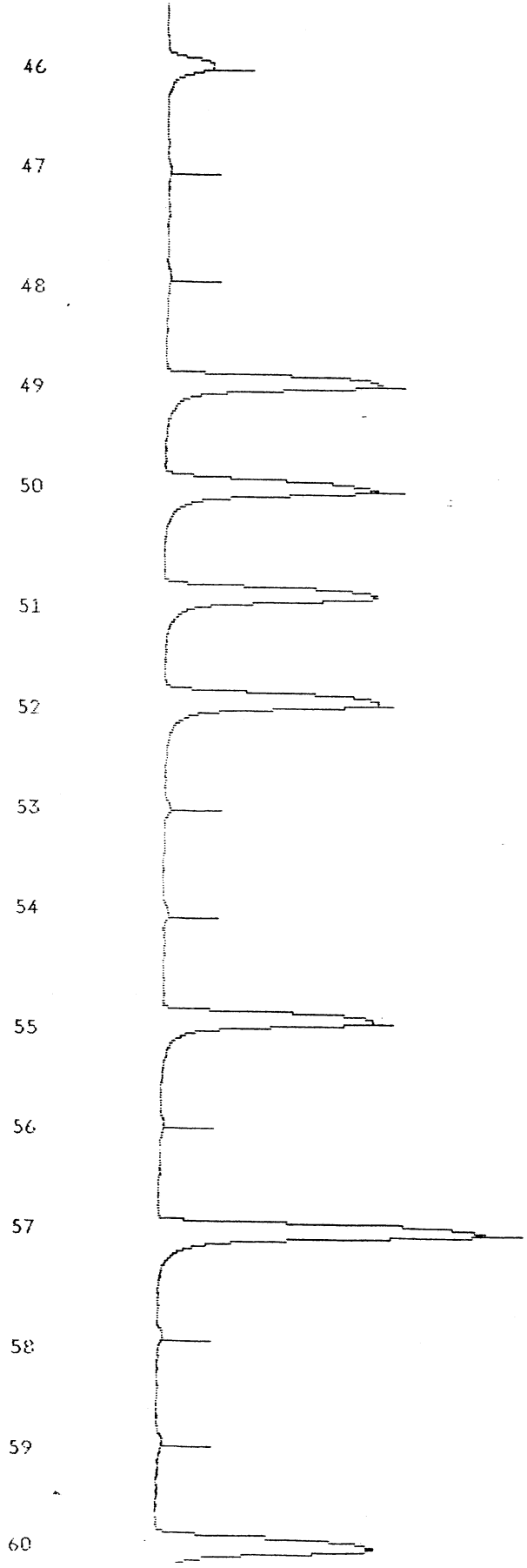
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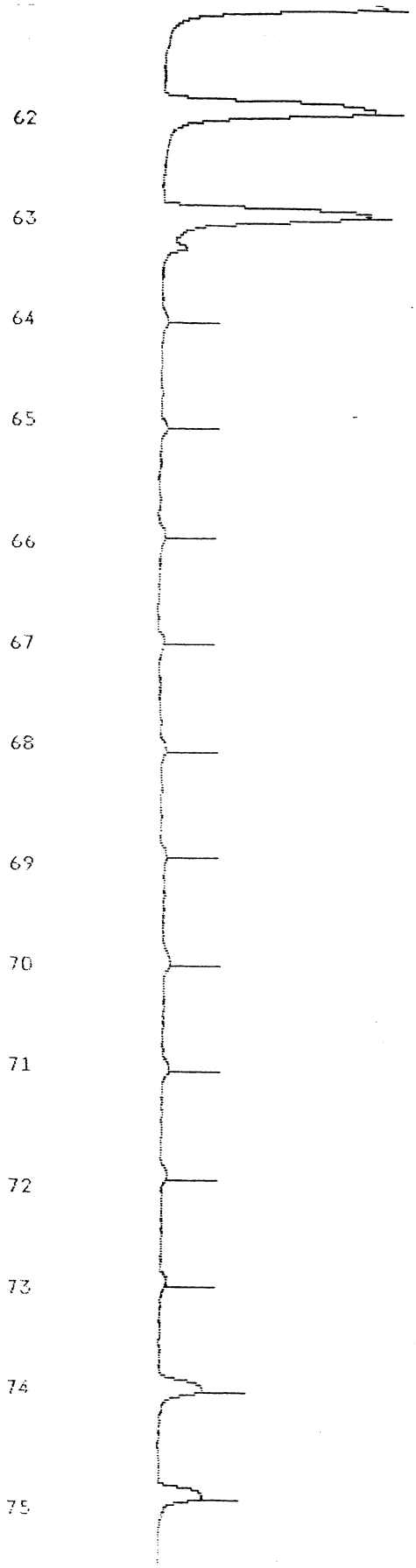
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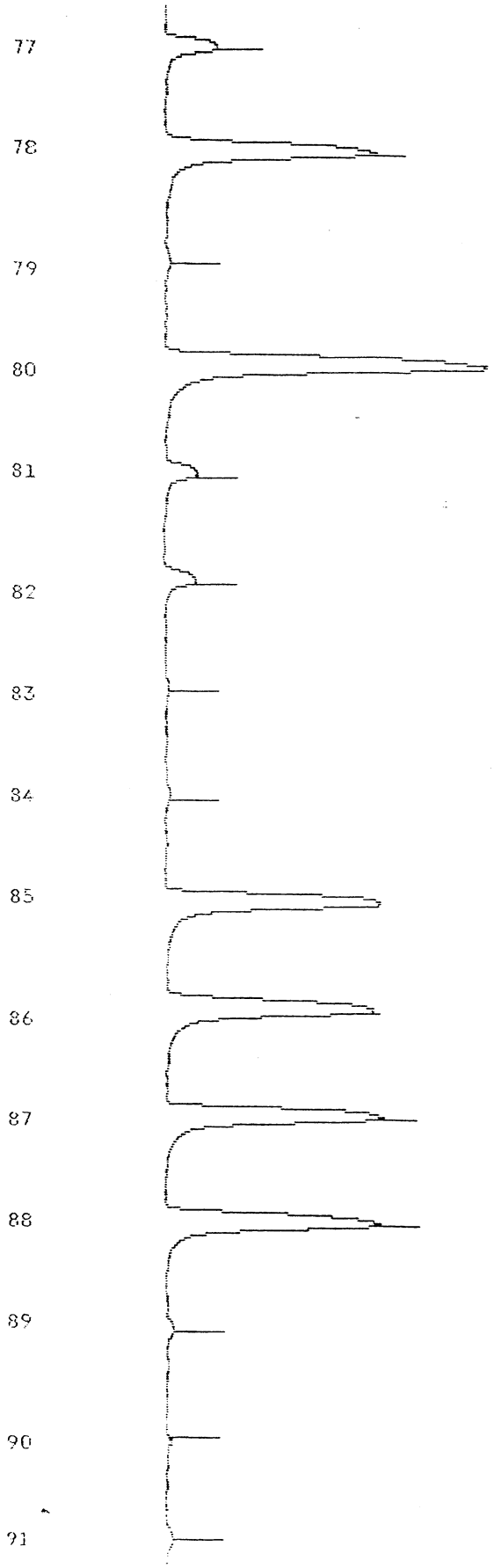
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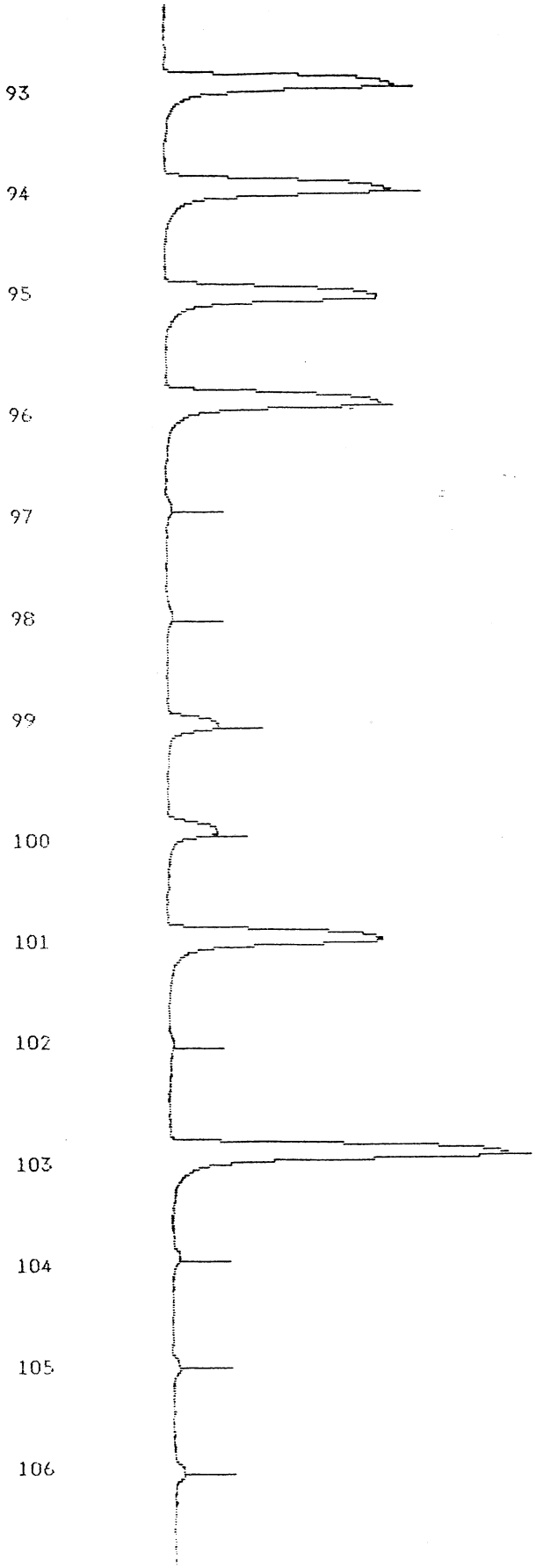
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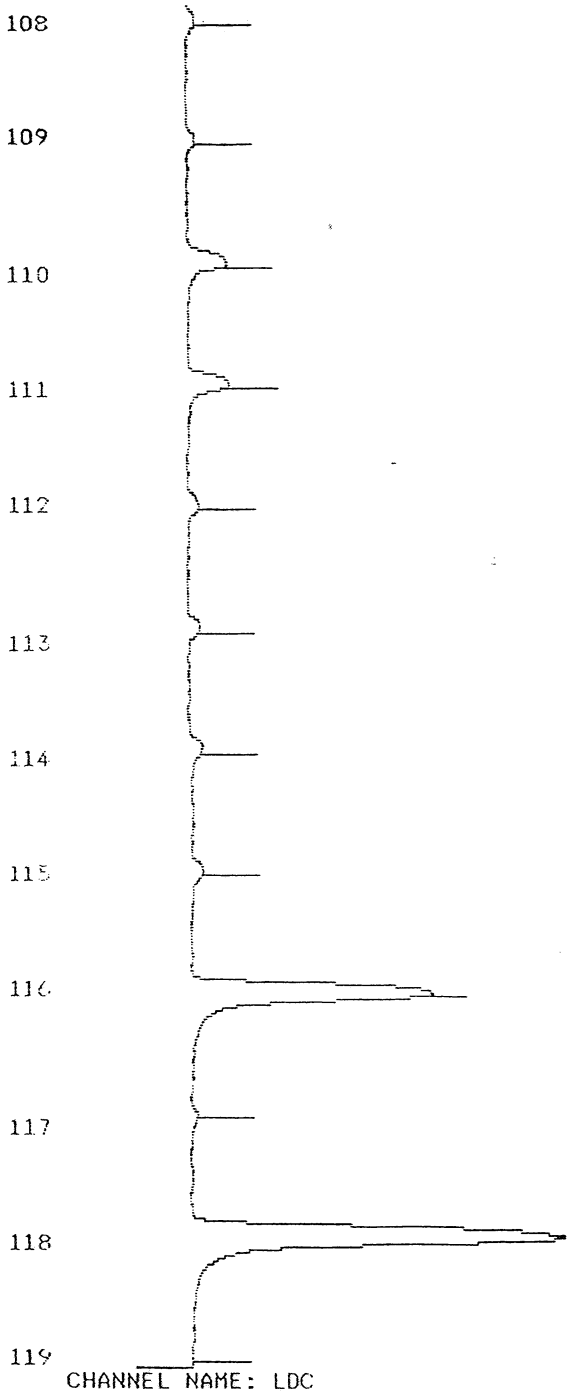
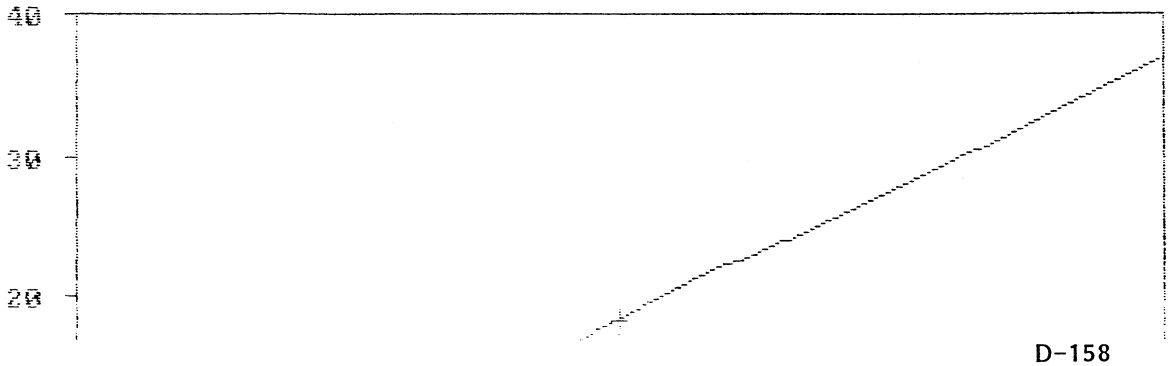
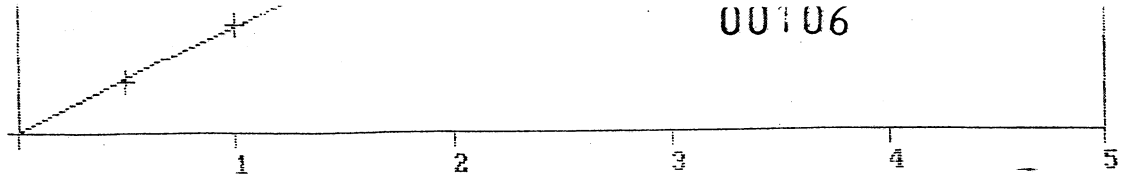


CHANNEL NAME: LDC
RUN NAME: 000107W





DATA TYPE: FIA
INTERCEPT = -6.05

CALIBRATION ORDER: 1
SLOPE = 7.362288

CORRELATION: .9997364

CHANNEL NAME: LDC
RUN DATE: 01-07-2000
SAMPLE TABLE NAME: 000107W
METHOD NAME: HGWATER

CUP#	SAMPLE ID	DIL	WGT	HEIGHT/AREA	Total µg	CONCENTRATION (ppb)		EF
1	PRIMER	1	1	10.8		1.455		s
2	DUMMY	1	1	0.1		0.012		I
3	S1: 0	1	1	0.0		-0.002		I
4	S2: .5	1	1	3.6		0.476		
5	S3: 1	1	1	7.6		1.020		
6	S4: 1.5	1	1	11.3		1.531		
7	S5: 2	1	1	14.7		1.982		
8	S6: 2.5	1	1	18.4		2.493		
9	ICV	1	1	11.0		1.484	99%	
10	B	1	1	0.0		-0.008		b
11	D4	1	1	11.3		1.531		d
12	BL0107-1GPO 73483	1	1	0.0	<0.01	-0.008		I
13	BL0107-1GPO	1	1	0.0		-0.008		I
14	BL0107S	1	1	7.3	0.100	0.980	100%	
15	BL0107S	1	1	7.5		1.017		
16	BL0107DS	1	1	7.6	0.100	1.027	100%	
17	BL0107DS	1	1	7.3		0.980		
18	73486	10	1	0.0	<0.2500	-0.016		I
19	73486	10	1	0.0		-0.016		I
20	73486D	10	1	0.0	<0.2500	-0.016		I
21	73486D	10	1	0.1		0.017		I
22	73486S	10	1	7.5	2.612	10.101	105%	
23	73486S	10	1	8.0		10.797		
24	73486DS	10	1	7.7	2.604	10.366	104%	
25	73486DS	10	1	7.8		10.466		
26	73484	10	1	0.1	<0.2500	0.017		I
27	73484	10	1	0.1		0.051		I
28	73485	10	1	0.1	<0.250	0.017		I
29	73485	10	1	0.0		-0.016		I
30	73487	10	1	0.1	<0.250	0.084		I
31	73487	10	1	0.1		0.017		s
32	CCV	1	1	7.7		1.033	103%	
33	B	1	1	0.0		-0.008		b
34	D4	1	1	11.3		1.531		d
35	73488	10	1	0.1	<0.250	0.017		I
36	73488	10	1	0.1		0.051		I
37	73489	10	1	0.1	<0.250	0.051		I
38	73489	10	1	0.1		0.017		I
39	73490	10	1	1.6	0.523	2.107		
40	73490	10	1	1.6		2.074		
41	73491	10	1	2.2	0.701	2.903		

46	73486S	50	1	1.5		10.038	s	
47	BL0107-2GPO	1	1	0.0	<0.01	0.008	I	00:07
48	BL0107-2GPO	1	1	0.0		-0.008	I	
49	BL0107S	1	1	7.6	0.102	1.027		102%
50	BL0107S	1	1	7.5		1.010		
51	BL0107DS	1	1	7.5	0.101	1.010		101%
52	BL0107DS	1	1	7.5		1.010		
53	73508	10	1	0.1	<0.250	0.017	I	
54	73508	10	1	0.1		0.051	I	
55	CCV	1	1	7.4		0.990		99%
56	B	1	1	0.0		-0.008	b	
57	D4	1	1	11.3		1.531	d	
58	73508D	10	1	0.1	<0.250	0.017	I	
59	73508D	10	1	0.0		-0.016	I	
60	73508S	10	1	7.5	2.554	10.068		102%
61	73508S	10	1	7.7		10.366	s	
62	73408DS	10	1	7.3	2.430	9.802		97%
63	73408DS	10	1	7.2		9.636		
64	73407	10	1	0.1	<0.250	0.051	I	
65	73407	10	1	0.1		0.051	I	
66	73509	10	1	0.1	<0.250	0.017	I	
67	73509	10	1	0.1		0.017	I	
68	73410	10	1	0.0	<0.250	-0.016	I	
69	73410	10	1	0.0		-0.016	I	
70	73411	10	1	0.1	<0.250	0.084	I	
71	73411	10	1	0.1		0.084	I	
72	73412	10	1	0.1	<0.250	0.017	I	
73	73412	10	1	0.1		0.017	I	
74	73413	10	1	1.3	0.444	1.742		
75	73413	10	1	1.4		1.809		
76	73414	10	1	1.6	0.514	2.074	s	
77	73414	10	1	1.6		2.041		
78	CCV	1	1	7.4		0.990		99%
79	B	1	1	0.0		-0.008	b	
80	D4	1	1	11.3		1.531	d	
81	73415	10	1	1.0	0.320	1.311		
82	73415	10	1	1.0		1.245		
83	BL0107-3GPO 74131	1	1	0.0	<0.700	-0.008	I	
84	BL0107-3GPO	1	1	0.0		-0.008	I	
85	BL0107S	1	1	7.6	0.100	1.020		100%
86	BL0107S	1	1	7.2		0.970		
87	BL0107DS	1	1	7.5	0.101	1.017		101%
88	BL0107DS	1	1	7.4		1.000		
89	74134	10	1	0.1	<0.250	0.051	I	
90	74134	10	1	0.0		-0.016	I	
91	74134D	10	1	0.1	<0.250	0.051	s	
92	74134D	10	1	0.1		0.017	I	
93	74034S	10	1	7.8	2.612	10.565		105%
94	74034S	10	1	7.7		10.333		
95	74134DS	10	1	7.3	2.446	9.769		98%
96	74134DS	10	1	7.3		9.802		
97	74132	10	1	0.1	<0.250	0.017	I	
98	74132	10	1	0.0		-0.049	I	
99	74133	10	1	1.6	0.502	2.041		
100	74133	10	1	1.5		1.974		
101	CCV	1	1	7.2		0.974		97%
102	B	1	1	0.0		-0.008	b	
103	D4	1	1	11.3		1.531	d	
104	74135	10	1	0.1	<0.250	0.051	I	
105	74135	10	1	0.1		0.084	I	
106	74136	10	1	0.2	<0.250	0.183	s	
107	74136	10	1	0.2		0.250	I	

112	74139	10	1	0.2	<0.2[illegible]	[illegible]	I
113	74139	10	1	0.2		0.183	I
114	74140	10	1	0.2	<0.250	0.216	I
115	74140	10	1	0.2		0.150	I
116	CCV	1	1	7.2		0.970	97%
117	B	1	1	0.0		-0.008	b
118	D4	1	1	11.3		1.531	d

INTERCEPT: 0.06 LINEAR COEF: 7.362288

CORRELATION COEF: .9997364

5.0 SHIPPING/RECEIVING DOCUMENTS

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

_____

_____

_____

_____

_____

_____

ANALYTICAL SERVICES

4418 Pottsville Pike Reading, PA 19605
phone: (610) 921-8833 fax: (610) 921-9667

Bottle Type (G P IH)											
# of Containers											
Preserved? (Y/N)											

Report Results To:
PO # 5002 – 188322 Job ID Weston, Inc.
Name Pam Peters
Company PAS / Reading
Mailing Address see above
City State ZIP
Telephone # Fax #

Sub: PAS/Burlington

Send Invoice To:
Name Telephone #
Company SAIC Pept.
Mailing Address
City State ZIP
Credit Card # Exp. Date

Analysis Requested: Mercury by Ontario Hydro Method

Prj # 188322 + 188323

Page 2 of 9

PAS Quote#

Sampled by: Alabama Power

	SAMPLE DESCRIPTION	~~Air Vol (L or min)~~	Matrix Type	Date Sampled	Time Sampled				Comments/Hazards/ Location Details
1	1384100 – 188322	11/18/99	liquid	FHHNO3		X	Gaston Electric Generator - SB		Rsits due 12/6/99 (or ASAP)
2	-102-			BHKCl		X	73489 ESP - Stack	BT	1LAG×2, 250AG.
3	-103-			BHHNO3 Inlet		X		73490 R1	1LAG×2 250AG, 500AG.
4	-104-			BHKMNO4 3		X		73491 R2	1LAG×2, ~~250AG~~, 500AG×2
5	-105-			Thimbles		X		73492 R3	# W26, W-27 1LAG×7, 500AG×2
6	-106-	11/17/99		FHHNO3		X	ESP Inlet - SB	73511	500AG×9
7	-108-			BHKCl		X		BT 73512	500AG×3, 1LAG×2
8	-109-			BHHNO3 Inlet "BT"		X		R1 73513	500AG×3, 250AG, 1LAG×2
9	-110-			BHKMNO4		X		R2 73514.	500AG×5 1LAG×2
10	-111-			Thimble		X		R3 - 73515.	500AG×4, 1LAG×2.

Special Instructions (including Data Deliverables and Turn Around Time): Include all Raw Data and "01" Summary Form.

Samples relinquished to shipper or courier by: N Greenawalt	Date 12/6/99	Time PM
Samples received by:	Date	Time

Samples Relinquished by:	Samples Relinquished to:	Date	Time
Samples Relinquished by:	Samples Relinquished to Laboratory: PASC	12/7/99	12:00

Method of Shipment/Delivery: UPS FED-EX PAS Courier Client drop off Other _____

Samples Rec'd. on Ice? (Y N n/a) Temp. Blank _____ Sample Temp. _____
Samples rec'd intact?(Y N) Custody seals intact?(Y N n/a) ID on samples match COC?(Y N)
VOC Samples have zero headspace?(Y N n/a) Samples properly preserved? (Y N n/a)

Notes:

ANALYTICAL SERVICES

4418 Pottsville Pike Reading, PA 19605
phone: (610) 921-8833 fax: (610) 921-9667

Report Results To:	
PO # 5002 – 188322	Job ID Weston, Inc.
Name	Pam Peters
Company	PAS/Reading
Mailing Address	See above
City	State ZIP
Telephone #	Fax #

Sub: PAS/Burlington

Send Invoice To:	
Name	Telephone #
Company	SAIC Dept.
Mailing Address	
City	State ZIP
Credit Card #	Exp. Date

Proj # 188322 + 188323

Page 3 of 9

PAS Quote#

Sampled by:

Analysis Requested

	SAMPLE DESCRIPTION	Air Vol. (L or min)	Matrix Type	Date Sampled	Time Sampled	Bottle Type (G P IH) / # of Containers / Preserved? (Y/N)	Mercury by Ontario Hydro Method	Comments/Hazards/ Location Details
1	1384112 – 188322	FHHNO3	liquid	11/17/99			X	Rslts due 12/6/99 (or ASAP)
2	– 114 –	BHKCl			OUT 1		X	
3	– 115 –	BHHNO3					X	
4	– 116 –	BHKMNO4					X	
5	– 117 –	FHHNO3					X	
6	– 119 –	BHKCl			OUT 2		X	
7	– 120 –	BHHNO3					X	
8	– 121 –	BHKMNO4					X	
9	– 122 –	FHHNO3		11/18/99	OUT 3		X	
10	– 124 –	BHKCl					X	

Special Instructions (including Data Deliverables and Turn Around Time): Include all Raw Data and "01" Summary Form.

Samples relinquished to shipper or courier by: N Greenawalt	Date 12/6/99	Time PM	
Samples received by:	Date	Time	

Samples Relinquished by:	Samples Relinquished to:	Date	Time
Samples Relinquished by:	Samples Relinquished to Laboratory: PASL	9912/07	Time 12:00

Method of Shipment/Delivery: UPS (FED-EX) PAS Courier Client drop off Other _____

Samples Rec'd. on Ice? (Y N n/a) Temp. Blank _____ Sample Temp. _____
Samples rec'd intact?(Y N) Custody seals intact?(Y N n/a) ID on samples match COC?(Y N)
VOC Samples have zero headspace?(Y N n/a) Samples properly preserved? (Y N n/a)

Notes :

ANALYTICAL SERVICES

4418 Pottsville Pike Reading, PA 19605
phone: (610) 921-8833 fax: (610) 921-9667

Bottle Type (G P IH)												
# of Containers												
Preserved? (Y/N)												

Report Results To:
PO # 5002 – 188322 Job ID Weston, Inc.
Name Pam Peters
Company PAS/Reading
Mailing Address See above
City State ZIP
Telephone # Fax #

Sub: PAS/Burlington

Send Invoice To:
Name Telephone #
Company SMM Dept.
Mailing Address
City State ZIP
Credit Card # Exp. Date

Analysis Requested: Mercury by Ontario Hydro Method

Prj # 188322 + 188323

Page 4 of 9

PAS Quote#

Sampled by:

	SAMPLE DESCRIPTION	Air Vol. (L or min)	Matrix Type	Date Sampled	Time Sampled		Comments/Hazards/ Location Details
1	1384125-188322	BH HNO3	liquid	11/18/99	OUT 3	X	Rslts due 12/6/99 (or ASAP)
2	-126-	BHKMNO4				X	
3	-127-	KCL		11/17/99	OUT-SB	X	
4	-129-	KMNO4				X	
5	-130-	HNO3/H2O2				X	
6	-131-	02 N HNO3				X	
7	-132-	FH HNO3			OUT-BT	X	
8	-134-	BH KCl				X	
9	-135-	BH HNO3				X	
10	-136-	BHKMNO4				X	

Special Instructions (including Data Deliverables and Turn Around Time): Include all Raw Data and "01" Summary Form.

Samples relinquished to shipper or courier by: N Greenawald	Date 12/6/99	Time PM
Samples received by:	Date	Time

Samples Relinquished by:	Samples Relinquished to:	Date	Time
Samples Relinquished by:	Samples Relinquished to Laboratory:	99/12/07	12:00pm

Method of Shipment/Delivery: UPS FED-EX PAS Courier Client drop off Other _____

Samples Rec'd. on Ice? (Y N n/a) Temp. Blank _____ Sample Temp. _____
Samples rec'd intact?(Y N) Custody seals intact?(Y N n/a) ID on samples match COC?(Y N)
VOC Samples have zero headspace?(Y N n/a) Samples properly preserved? (Y N n/a)

Notes :

Page ___ of ___

US SAMPLE LOG IN SHEET

PHILIP

Lab Name: Philip Analytical Services Corporation, Burlington Laboratory

Received By (Print Name): K. Caraway READING

Received By (Signature):

Client Project ID:

REMARKS:		Condition of S
Custody Seal(s)	Present ___ Absent ✓	
Chain of Custody Records	Present ✓ Absent ___	
Airbill	Present ✓ Absent ___	

Airbill No

This portion can be removed for Recipient's records. 12/6/99 FedEx Tracking Number 816978711065 14°

This portion can be removed for Recipient's records. 12/6/99 FedEx Tracking Number 816978711113 14°

This portion can be removed for Recipient's records. 12/6/99 FedEx Tracking Number 816978711087

This portion can be removed for Recipient's records. 12/6/99 FedEx Tracking Number 816978711098

This portion can be removed for Recipient's records. 12/6/99 FedEx Tracking Number 816978711124

Company's SA Phone 610 921-8833

Address 4418 PHILIP ANALYTICAL SERVICES

READING State PA ZIP 19605

Internal Billing Reference M29-HG

Does Int

Records a

Date Received at Lab 12 06 99

Time Received 12:00

Temperature of Coolers

Cooler ID:	Temperature
2 coolers	14°, 14°

This portion can be removed for Recipient's records. 12/6/99 FedEx Tracking Number 816978711076 Phone 610 921-8833 Company's PHILIP ANALYTICAL SERVICES Address 4418 PHILIPSVILLE PIKE Dept/Floor/Suite/Room READING State PA ZIP 19605 Internal Billing Reference M29-HG

This portion can be removed for Recipient's records. 12/6/99 FedEx Tracking Number 816978711102 Phone 610 921-8833 Company's PHILIP ANALYTICAL SERVICES Address 4418 PHILIPSVILLE PIKE Dept/Floor/Suite/Room READING State PA ZIP 19605 Internal Billing Reference M29-HG

Relinquished By: [signature]

Date: 12-07-99

Logbook No:

Logbook Page No.

COAL SAMPLE ANALYTICAL REPORT

PHILIP
ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

• EPA/NVLAP 101262-0
• AIHA ACCREDITATION NO. 100439
• NY DOH 10903
• PA DER 06-353
• NJ DEP 77678

December 10, 1999

Jeff O'Neill
Roy F. Weston, Inc.
One Weston Way
Bldg. 5-1
West Chester PA 19380

Laboratory Project: 188325
Client Reference: Alabama Power, Gaston Electric Gen Stn
WO#12251-001-001 Coal Samples

Dear Mr. O'Neill:

The samples which were logged in on 24-NOV-99 have been analyzed as requested. The analytical results are enclosed in the attached report.

Please note that any unused portion of the samples will be disposed after 05-JAN-00, unless you have requested otherwise.

Thank you for the opportunity to provide these services to you. If you have any questions concerning this report, please contact a Client Services representative at 610/921-8833.

Sincerely,

Fred Usbeck, CIH
Director, Laboratory Services

4418 POTTSVILLE PIKE, READING, PENNSYLVANIA 19605 610-921-8833 FAX 610-921-9667

PHILIP ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

• EPA/NVLAP 101262-0 • NY DOH 10903 • NJ DEP 77678
• AIHA ACCREDITATION NO. 100439 • PA DER 06-353

ANALYTICAL REPORT

Client: Roy F. Weston, Inc.

Report to: Jeff O'Neill
Roy F. Weston, Inc.
One Weston Way
Bldg. 5-1
West Chester PA 19380

Project: 188325
Received: 22-NOV-99
Reported: 10-DEC-99

PURCHASE ORDER: 0008214

Project Description: Alabama Power, Gaston Electric Gen Stn
WO#12251-001-001 Coal Samples

	AS RECEIVED BASIS	DRY BASIS	UNITS	METHOD	DATE	ANALYST
Alabama Power-COAL-Run 1						
Lab Sample: 1384189						
sampled: 10-NOV-99						
Moisture, Total	6.97		%	D 3302	30-NOV-99	GLB
SHORT PROX - COAL						
Ash	12.3	13.2	%	D 3174	06-DEC-99	VJO
Sulfur	0.74	0.80	%	D 4239	06-DEC-99	VJO
Heating Value	12610	13560	BTU/lb	D 3286	01-DEC-99	VJO
Mercury, Total	< 0.1	< 0.1	mg/kg	7471	02-DEC-99	SMW
Chlorine, Total	0.03	0.03	%	E776/300.0	07-DEC-99	DRK
Alabama Power-COAL-Run 2						
Lab Sample: 1384190						
sampled: 11-NOV-99						
Moisture, Total	6.58		%	D 3302	30-NOV-99	GLB
SHORT PROX - COAL						
Ash	13.8	14.8	%	D 3174	06-DEC-99	VJO
Sulfur	0.96	1.03	%	D 4239	06-DEC-99	VJO
Heating Value	12420	13300	BTU/lb	D 3286	01-DEC-99	VJO
Mercury, Total	0.3	0.3	mg/kg	7471	02-DEC-99	SMW
Chlorine, Total	0.03	0.03	%	E776/300.0	07-DEC-99	DRK
Alabama Power-COAL-Run 3						
Lab Sample: 1384191						
sampled: 11-NOV-99						
Moisture, Total	7.33		%	D 3302	30-NOV-99	GLB
SHORT PROX - COAL						
Ash	12.1	13.1	%	D 3174	06-DEC-99	VJO

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PHILIP ANALYTICAL SERVICES

INDUSTRIAL HYGIENE ENVIRONMENTAL TESTING

• EPA/NVLAP 101262-0
• AIHA ACCREDITATION NO. 100439
• NY DOH 10903
• PA DER 06-353
• NJ DEP 77678

Client: Roy F. Weston, Inc.
Project: 188325

Alabama Power-COAL-Run 3

Lab Sample: 1384191 - continued

	AS RECEIVED BASIS	DRY BASIS	UNITS	METHOD	DATE	ANALYST
Sulfur	0.77	0.83	%	D 4239	06-DEC-99	VJO
Heating Value	12640	13640	BTU/lb.	D 3286	01-DEC-99	VJO
Mercury, Total	< 0.1	< 0.1	mg/kg	7471	02-DEC-99	SMW
Chlorine, Total	0.04	0.04	%	E776/300.0	07-DEC-99	DRK

< Indicates less than the limit of quantitation.

4418 POTTSVILLE PIKE, READING, PENNSYLVANIA 19605 610-921-8833 FAX 610-921-9667

Philip Analytical Services
Quality Assurance Protocol

PAS Sample#: 1384189,1384190,1384181

Client Name: Roy F. Weston

PAS Project #: 188325

Job ID :

Units: %,BTU/lb

O1 SUMMARY FORM

Sample # & Parameter	Matrix Spike				Matrix Spike Duplicate				Laboratory Control Sample		
	Sample Conc.	Spike Conc.	Matrix Spike Conc.	Matrix Spike Recovery	Matrix Spike Dup Conc.	Matrix Spike Dup Recovery	Precision RPD	Method Blank	Spikes Conc.	Found Conc.	Recovery

Sample # & Parameter	Matrix Spike				Duplicate			Laboratory Control Sample			Method Blank	Detection Limits
	Sample Conc.	Spike Conc.	Matrix Spike Conc.	Matrix Spike Recovery	Sample Conc.	Sample Duplicate Conc.	Precision RPD	Spikes Conc.	Found Conc.	Recovery		
1384189-Heating Value					13530	13550	0.15	13350	13410	100	N/A	50
1384191-Ash					13.1	12.9	1.5	11.8	11.7	99	N/A	0.01
1384191-Sulfur					1.02	1.00	2.0	1.78	1.81	102	N/A	0

Matrix Spike	75 - 125
Laboratory Control Sample	80 - 120
Duplicate	0 - 20

PN 188324, 188325

PHILIP ANALYTICAL SERVICES

Client: Roy F. Weston		Test(s): Chloride
Date: 12/7/99	Initials: DRK	Reviewed By:

Standard 1 Concentration: _____ Reading: _____
Standard 2 Concentration: _____ Reading: _____
Standard 3 Concentration: _____ Reading: _____
Standard 4 Concentration: _____ Reading: _____
Spike 1 Spike Amount: _____ Recv'd _____ Recv'y: _____
Spike 2 Spike Amount: _____ Recv'd _____ Recv'y: _____

CL2 CONT 1:50 3.97 mg/L

PAGE _____ of _____
❑ Call Results
❑ FAX Results
❑ Results Entered

Sample			Chloride mg/L			mg/Kg		%	
1384186			15.998			1,485		0.15	
1384186	DUP		18.460			1,533		0.15	
1384187			22.732			1,714		0.17	
1384188			18.881			1,810		0.18	
1384189			2.419			259		0.03	
1384189	DUP		4.603			337		0.03	
1384190			3.013			282		0.03	
1384191			5.336			372		0.04	
CALCULATIONS:			(x mg/L)(0.050 L) / WEIGHT (Kg) =			mg/Kg			
			mg/Kg	x 0.0001 =		%			

Comments For Report:

❑ Analysis performed for PHILIP Analytical by our AIHA accredited reference laboratory ❑ Sample results are blank-corrected

Analytical Method:	LLD
EPA 300.0	10.0 mg/Kg

N/A = not applicable ND = none detected L/A = sample lost to lab accident QNS = quantity not sufficient to test N/R = sample not received by chemist

Philip Analytical Services

Quality Assurance Protocol

PAS Sample #: 1384186

Client Name: Roy F. Weston

PAS Project #:

Job ID:

Units: mg/kg

01 SUMMARY FORM

Sample Number & Parameter	Sample Conc.	Matrix Spike			Matrix Spike Duplicate			Method Blank	Laboratory Control Sample		
		Spiked Conc.	Matrix Spike Conc.	Matrix Spike % Recovery	Matrix Spike Duplicate Conc.	Matrix Spike Duplicate % Recovery	Precision RPD (%)		Spiked Conc.	Found Conc.	% Recovery
Chloride	1,485	928	2,373	96	2,385	97	1	2.26	100	97.7	98

	Matrix Spike				Duplicate			Laboratory Control Sample			Method Blank	Detection Limits
	Sample Conc.	Spiked Conc.	Matrix Conc.	Matrix % Recovery	Sample Conc.	Sample Duplicate Conc.	Precision RPD (%)	Spiked Conc.	Found Conc.	% Recovery		
Chloride	1,485	928	2,373	96	1,485	1,533	3	100	97.7	98	2.26	10.00
Chlorine Control								2.00	1.76	88		.01

Criteria Limits

Laboratory Control Sample	80 – 120 %
Matrix Spike	75 - 125 %
Duplicate	0 – 20 %

PeakNet AS3500DX - 12079901.AS3

al s	Inj. Vol.	Inj/ Vial	Sample	Method (.MET)	Data	Dil.	Int. Std.	Template (.PRP)
0	50	1	WATER	ACIDSCAN	120799	1	1	
1	50	1	AUTOCAL1	ACIDSCAN	120799	1	1	
2	50	1	AUTOCAL2	ACIDSCAN	120799	1	1	
3	50	1	AUTOCAL3	ACIDSCAN	120799	1	1	
4	50	1	AUTOCAL4	ACIDSCAN	120799	1	1	
5	50	1	AUTOCAL5	ACIDSCAN	120799	1	1	
6	50	1	AUTOCAL6	ACIDSCAN	120799	1	1	
1	50	1	METH BLK	ACIDSCAN	120799	1	1	
2	50	1	IPC	ACIDSCAN	120799	1	1	
3	50	1	QCS	ACIDSCAN	120799	1	1	
4	50	1	LCS	ACIDSCAN	120799	1	1	
5	50	1	WEEKLY LFB	ACIDSCAN	120799	1	1	
1	50	1	METH BLK	ACIDSCAN	120799	1	1	
6	50	1	1384256 F	ACIDSCAN	120799	1	1	
7	50	1	1384256 F MS	ACIDSCAN	120799	1	1	
8	50	1	1384256 B	ACIDSCAN	120799	1	1	
9	50	1	1384256 B MS	ACIDSCAN	120799	1	1	
0	50	1	1384259 F	ACIDSCAN	120799	1	1	
1	50	1	1384259 B	ACIDSCAN	120799	1	1	
2	50	1	1384745	ACIDSCAN	120799	1	1	
3	50	1	1384745 MS	ACIDSCAN	120799	1	1	
4	50	1	1384746	ACIDSCAN	120799	1	1	
5	50	1	1385333 FILT	ACIDSCAN	120799	1	1	
6	50	1	1385333 FILT MS	ACIDSCAN	120799	1	1	
7	50	1	1385333 PAD	ACIDSCAN	120799	1	1	
8	50	1	1385333 PAD MS	ACIDSCAN	120799	1	1	
9	50	1	1385334 FILT	ACIDSCAN	120799	1	1	
0	50	1	1385334 PAD	ACIDSCAN	120799	1	1	
1	50	1	1385335 FILT	ACIDSCAN	120799	1	1	
2	50	1	1385335 PAD	ACIDSCAN	120799	1	1	
3	50	1	1383211 1:100	ACIDSCAN	120799	1	1	
4	50	1	1383211 1:100 DUP	ACIDSCAN	120799	1	1	
5	50	1	1383211 1:100 MS	ACIDSCAN	120799	1	1	
6	50	1	1383211 1:100 MSD	ACIDSCAN	120799	1	1	
1	50	1	METH BLK	ACIDSCAN	120799	1	1	
2	50	1	IPC	ACIDSCAN	120799	1	1	
7	50	1	1383977	ACIDSCAN	120799	1	1	
8	50	1	1383978	ACIDSCAN	120799	1	1	
9	50	1	1383979	ACIDSCAN	120799	1	1	
0	50	1	1383831	ACIDSCAN	120799	1	1	
1	50	1	1383832	ACIDSCAN	120799	1	1	
2	50	1	1383833	ACIDSCAN	120799	1	1	
3	50	1	1383833 DUP	ACIDSCAN	120799	1	1	
4	50	1	1383833 MS	ACIDSCAN	120799	1	1	
5	50	1	1383833 MSD	ACIDSCAN	120799	1	1	
1	50	1	METH BLK	ACIDSCAN	120799	1	1	
2	50	1	IPC	ACIDSCAN	120799	1	1	
8	50	1	CL2 CONT 1:50	ACIDSCAN	120799	1	1	
7	50	1	1384186	ACIDSCAN	120799	1	1	
8	50	1	1384186 DUP	ACIDSCAN	120799	1	1	
9	50	1	1384186 MS	ACIDSCAN	120799	1	1	
	50	1	1384186 MSD	ACIDSCAN	120799	1	1	
1	50	1	1384187	ACIDSCAN	120799	1	1	
2	50	1	1384188	ACIDSCAN	120799	1	1	
3	50	1	1384189	ACIDSCAN	120799	1	1	
	50	1	1384189 DUP	ACIDSCAN	120799	1	1	
	50	1	1384189	ACIDSCAN	120799	1	1	

ial os	Inj. Vol.	Inj/ Vial	Sample	Method (.MET)	Data	Dil.	Int. Std.	Template (.PRP)
2	50	1	IPC	ACIDSCAN	120799	1	1	
7	50	1	1384286	ACIDSCAN	120799	1	1	
8	50	1	1384286 DUP	ACIDSCAN	120799	1	1	
9	50	1	1384286 MS	ACIDSCAN	120799	1	1	
0	50	1	1384286 MSD	ACIDSCAN	120799	1	1	
1	50	1	1384287	ACIDSCAN	120799	1	1	
2	50	1	1384288	ACIDSCAN	120799	1	1	
3	50	1	1384289	ACIDSCAN	120799	1	1	
4	50	1	1384290	ACIDSCAN	120799	1	1	
5	50	1	1384291	ACIDSCAN	120799	1	1	
6	50	1	1384292	ACIDSCAN	120799	1	1	
7	50	1	1384293	ACIDSCAN	120799	1	1	
1	50	1	METH BLK	ACIDSCAN	120799	1	1	
2	50	1	IPC	ACIDSCAN	120799	1	1	
3	50	1	1384294	ACIDSCAN	120799	1	1	
9	50	1	1384294 DUP	ACIDSCAN	120799	1	1	
0	50	1	1384294 MS	ACIDSCAN	120799	1	1	
1	50	1	1384294 MSD	ACIDSCAN	120799	1	1	
2	50	1	1384295	ACIDSCAN	120799	1	1	
3	50	1	1384296	ACIDSCAN	120799	1	1	
4	50	1	1384297	ACIDSCAN	120799	1	1	
1	50	1	METH BLK	ACIDSCAN	120799	1	1	
2	50	1	IPC	ACIDSCAN	120799	1	1	
0	50	1	WATER	STOP	120799	1	1	

More Run Parameters

ial os	Oven Ctl	Oven Set	Cool Ctl	Cool Set	Cycle Time	Flush Vol	Visc Factor	Prep Visc	Inj Type	Needle Height
40	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
01	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
02	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
03	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
04	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
05	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
06	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
01	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
02	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
03	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
04	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
05	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
01	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
06	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
07	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
08	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
09	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
10	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
11	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
12	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
13	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
14	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
15	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
16	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
17	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0
18	Off	18	Off	0	0.00	400	Normal	Normal	Push	2.0

Ion Chromatography
12/7/99

WEEKLY LFB

	CLEAN AIR PROJ # 188340	(AIR)	Hydrofluoric Acid	NIOSH 7903
	PHILIP ANALYT PROJ # 188415	(AIR)	CHLORINE	NIOSH 6011
	HOFMAN SAFETY PROJ # 188544	(AIR)	SULFUR DIOXIDE (SO_4)	NIOSH 6004
	LUCENT TECH PROJ # 188111	SG (WSE)	SULFATE	EPA 300.0
04	PAS LAB PROJ # 188305	SUNK (WSE)	CHLORIDE	EPA 300.0

```
==============================================================================
 File  : C:\PEAKNET\DATA\12079001.DXD   Report Date: 12/7/99 9:28:10 AM
le Name: WATER  - C40                   Collected  : 12/7/99 9:16:04 AM
ct #   : 1                             Vial #     : C40
od File: c:\peaknet\method\acidscan.met Calibrated : 11/24/99 3:49:37 PM
em Name: ANIONS                         Detector   : CD20
mn Type:                                Operator   : DK
 Points: 3600                           Rate       : 5.00  Hz
le Name: S/N 96020568        ID:24 Of 15 Moduleware : 1.17
==============================================================================
```

ration	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

r type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
0.00	FLUORIDE	0.000	0	0	0	0.00
0.00	CHLORIDE	0.000	0	0	0	0.00
0.00	NITRITE	0.000	0	0	0	0.00
0.00	BROMIDE	0.000	0	0	0	0.00
0.00	NITRATE	0.000	0	0	0	0.00
0.00	PHOSPHATE	0.000	0	0	0	0.00
8.65	SULFATE	0.140	476	7909	1	1.17
	Totals	0.140	476	7909		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
8.65	SULFATE	0.140	476	7909	1	1.17
	Totals	0.140	476	7909		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
IDE	2.08	0
IDE	2.98	0
TE	3.57	0
DE	4.50	0
TE	5.27	0
HATE	7.10	0

********** Peak Report: All Peaks **********

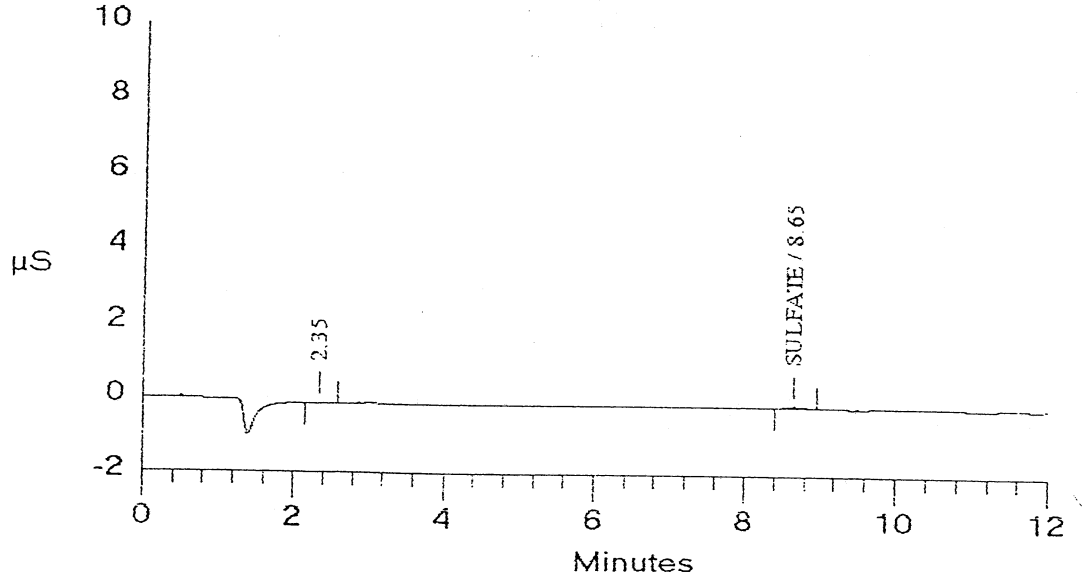
Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

2.35		0.000	184	3234	1	
8.65	SULFATE	0.140	476	7909	1	1.17
	Totals	0.140	660	11143		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.35		0.000	184	3234	1	
	Totals	0.000	184	3234		

File: 12079001.DXD Sample WATER - C40



********** AUTOMATIC CALIBRATION UPDATE **********

File :	C:\PEAKNET\DATA\12079002.DXD	Report Date:	12/7/99 9:41:45 AM
le Name:	AUTOCAL1R - A01	Collected :	12/7/99 9:29:38 AM
ct # :	2	Vial # :	A01
od File:	c:\peaknet\method\acidscan.met	Last Update:	11/24/99 3:49:37 PM
em Name:	ANIONS	Detector :	CD20
Level :	1	Analyst :	

********** COMPONENTS FOUND IN THIS RUN **********

COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
LUORIDE	2.08	2.10	2.10	1.161e+005	1.555e+005	1.555e+005
HLORIDE	2.98	3.00	3.00	1.000e+005	1.203e+005	1.203e+005
ITRITE	3.57	3.63	3.63	6.052e+004	7.745e+004	7.745e+004
ROMIDE	4.50	4.63	4.63	3.828e+004	4.974e+004	4.974e+004
ITRATE	5.27	5.45	5.45	5.345e+004	6.588e+004	6.588e+004
HOSPHATE	7.10	7.17	7.17	1.932e+004	2.682e+004	2.682e+004
ULFATE	8.55	8.65	8.65	8.136e+004	9.263e+004	9.263e+004

File :	C:\PEAKNET\DATA\12079002.DXD	Report Date:	12/7/99 9:41:45 AM
le Name:	AUTOCAL1R - A01	Collected :	12/7/99 9:29:38 AM
ct # :	2	Vial # :	A01
od File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 9:41:45 AM
em Name:	ANIONS	Detector :	CD20
mn Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
le Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

ration	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

r type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	1.000	17916	155479	1	0.80
3.00	CHLORIDE	1.000	14194	120311	2	0.56
3.63	NITRITE	1.000	7209	77455	2	1.87
4.63	BROMIDE	1.000	4084	49740	1	2.96
5.45	NITRATE	1.000	4657	65876	1	3.48
7.17	PHOSPHATE	1.000	1345	26816	1	0.94
8.65	SULFATE	1.000	4132	92631	1	1.17
	Totals	7.000	53536	588309		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

l: peaknet\schedule\12079901.sch

2.10	FLUORIDE	1.000	17916	155479	1	0.80
3.00	CHLORIDE	1.000	14194	120311	2	0.56
3.63	NITRITE	1.000	7209	77455	2	1.87
4.63	BROMIDE	1.000	4084	49740	1	2.96
5.45	NITRATE	1.000	4657	65876	1	3.48
7.17	PHOSPHATE	1.000	1345	26816	1	0.94
8.65	SULFATE	1.000	4132	92631	1	1.17
	Totals	7.000	53536	588309		

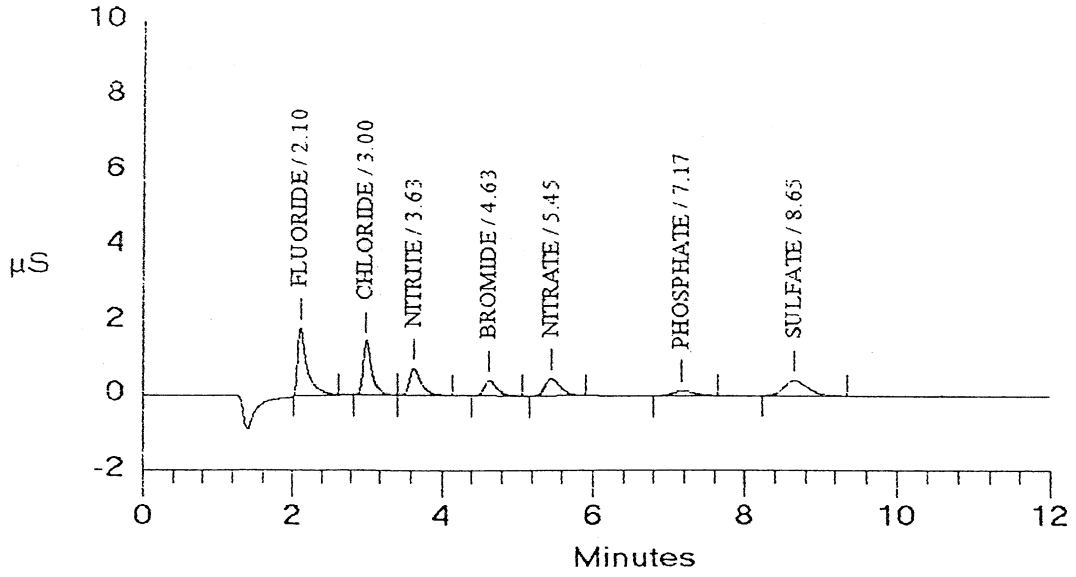
********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	1.000	17916	155479	1	0.80
3.00	CHLORIDE	1.000	14194	120311	2	0.56
3.63	NITRITE	1.000	7209	77455	2	1.87
4.63	BROMIDE	1.000	4084	49740	1	2.96
5.45	NITRATE	1.000	4657	65876	1	3.48
7.17	PHOSPHATE	1.000	1345	26816	1	0.94
8.65	SULFATE	1.000	4132	92631	1	1.17
	Totals	7.000	53536	588309		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		

File: 12079002.DXD Sample AUTOCAL1R - A01



********** AUTOMATIC CALIBRATION UPDATE **********

File :	C:\PEAKNET\DATA\12079003.DXD	Report Date:	12/7/99 9:55:21 AM
le Name:	AUTOCAL2R - A02	Collected :	12/7/99 9:43:14 AM
ct # :	3	Vial # :	A02
od File:	c:\peaknet\method\acidscan.met	Last Update:	12/7/99 9:41:45 AM
em Name:	ANIONS	Detector :	CD20
Level :	2	Analyst :	

********** COMPONENTS FOUND IN THIS RUN **********

COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
LUORIDE	2.10	2.12	2.12	2.410e+005	2.770e+005	2.770e+005
HLORIDE	3.00	3.02	3.02	2.027e+005	2.215e+005	2.215e+005
ITRITE	3.63	3.65	3.65	1.243e+005	1.366e+005	1.366e+005
ROMIDE	4.63	4.63	4.63	8.723e+004	9.262e+004	9.262e+004
ITRATE	5.45	5.47	5.47	1.129e+005	1.288e+005	1.288e+005
HOSPHATE	7.17	7.18	7.18	3.993e+004	5.265e+004	5.265e+004
ULFATE	8.65	8.65	8.65	1.459e+005	1.639e+005	1.639e+005

File :	C:\PEAKNET\DATA\12079003.DXD	Report Date:	12/7/99 9:55:21 AM
le Name:	AUTOCAL2R - A02	Collected :	12/7/99 9:43:14 AM
ct # :	3	Vial # :	A02
od File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 9:55:21 AM
em Name:	ANIONS	Detector :	CD20
mn Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
le Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

ration	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

r type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.12	FLUORIDE	2.000	33257	276991	1	0.79
3.02	CHLORIDE	2.000	25616	221509	2	0.56
3.65	NITRITE	2.000	12537	136565	2	0.46
4.63	BROMIDE	2.000	7676	92616	2	0.00
5.47	NITRATE	2.000	8650	128822	2	0.31
7.18	PHOSPHATE	2.000	2586	52647	1	0.23
8.65	SULFATE	2.000	7443	163894	1	0.00
	Totals	14.000	97765	1073043		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

3.02	CHLORIDE	2.000	25616	221509	2	0.56
3.65	NITRITE	2.000	12537	136565	2	0.46
4.63	BROMIDE	2.000	7676	92616	2	0.00
5.47	NITRATE	2.000	8650	128822	2	0.31
7.18	PHOSPHATE	2.000	2586	52647	1	0.23
8.65	SULFATE	2.000	7443	163894	1	0.00
	Totals	14.000	97765	1073043		

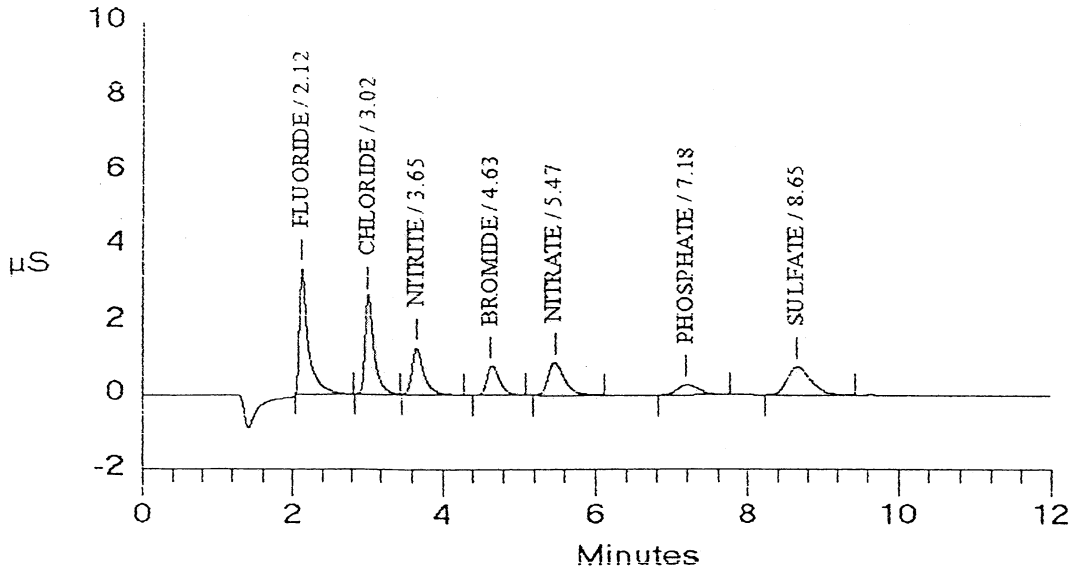
********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.12	FLUORIDE	2.000	33257	276991	1	0.79
3.02	CHLORIDE	2.000	25616	221509	2	0.56
3.65	NITRITE	2.000	12537	136565	2	0.46
4.63	BROMIDE	2.000	7676	92616	2	0.00
5.47	NITRATE	2.000	8650	128822	2	0.31
7.18	PHOSPHATE	2.000	2586	52647	1	0.23
8.65	SULFATE	2.000	7443	163894	1	0.00
	Totals	14.000	97765	1073043		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		

File: 12079003.DXD Sample AUTOCAL2R - A02



File : C:\PEAKNET\DATA\12079004.DXD
e Name: AUTOCAL3R - A03
t # : 4
d File: c:\peaknet\method\acidscan.met
m Name: ANIONS
Level : 3

Report Date: 12/7/99 10:08:57 AM
Collected : 12/7/99 9:56:50 AM
Vial # : A03
Last Update: 12/7/99 9:55:21 AM
Detector : CD20
Analyst :

COMPONENTS FOUND IN THIS RUN

COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
LUORIDE	2.12	2.12	2.12	7.016e+005	7.205e+005	7.205e+005
HLORIDE	3.02	3.02	3.02	5.373e+005	5.450e+005	5.450e+005
TRITE	3.65	3.65	3.65	3.226e+005	3.329e+005	3.329e+005
ROMIDE	4.63	4.63	4.63	2.272e+005	2.274e+005	2.274e+005
TRATE	5.47	5.43	5.43	2.901e+005	2.951e+005	2.951e+005
HOSPHATE	7.18	7.18	7.18	1.257e+005	1.332e+005	1.332e+005
ULFATE	8.65	8.65	8.65	4.117e+005	3.919e+005	3.919e+005

File : C:\PEAKNET\DATA\12079004.DXD
e Name: AUTOCAL3R - A03
t # : 4
d File: c:\peaknet\method\acidscan.met
m Name: ANIONS
n Type:
Points: 3600
e Name: S/N 96020568 ID:24 Of 15

Report Date: 12/7/99 10:08:57 AM
Collected : 12/7/99 9:56:50 AM
Vial # : A03
Calibrated : 12/7/99 10:08:57 AM
Detector : CD20
Operator : DK
Rate : 5.00 Hz
Moduleware : 1.17

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
al	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

Component Report: All Components

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.12	FLUORIDE	5.000	93109	720514	1	0.00
3.02	CHLORIDE	5.000	65895	544963	2	0.00
3.65	NITRITE	5.000	31609	332877	2	0.00
4.63	BROMIDE	5.000	19224	227403	2	0.00
5.43	NITRATE	5.000	20370	295056	2	-0.61
7.18	PHOSPHATE	5.000	6676	133180	1	0.00
8.65	SULFATE	5.000	18004	391850	1	0.00
	Totals	35.000	254887	2645842		

Component Report: Components Found

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

2.12 FLUORIDE 5.000 93109 720514 1 0.00

4.63	BROMIDE	5.000	19224	227403	2	0.00
5.43	NITRATE	5.000	20370	295056	2	-0.61
7.18	PHOSPHATE	5.000	6676	133180	1	0.00
8.65	SULFATE	5.000	18004	391850	1	0.00
	Totals	35.000	254887	2645842		

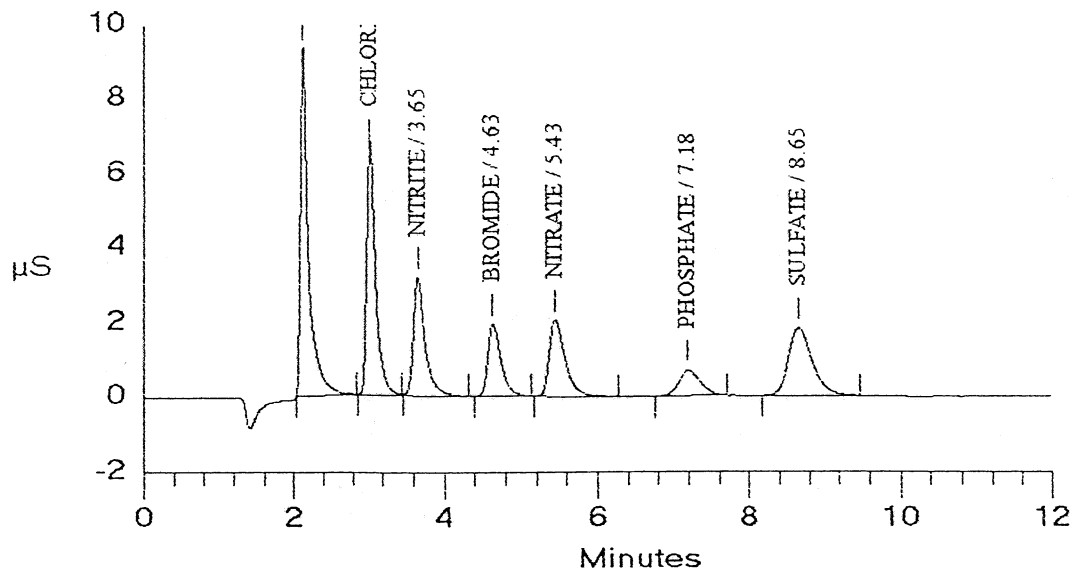
********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.12	FLUORIDE	5.000	93109	720514	1	0.00
3.02	CHLORIDE	5.000	65895	544963	2	0.00
3.65	NITRITE	5.000	31609	332877	2	0.00
4.63	BROMIDE	5.000	19224	227403	2	0.00
5.43	NITRATE	5.000	20370	295056	2	-0.61
7.18	PHOSPHATE	5.000	6676	133180	1	0.00
8.65	SULFATE	5.000	18004	391850	1	0.00
	Totals	35.000	254887	2645842		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		

File: 12079004.DXD Sample AUTOCAL3R - A03



********** AUTOMATIC CALIBRATION UPDATE **********

File :	C:\PEAKNET\DATA\12079005.DXD	Report Date:	12/7/99 10:22:40 AM
e Name:	AUTOCAL4R - A04	Collected :	12/7/99 10:10:32 AM
t # :	5	Vial # :	A04
d File:	c:\peaknet\method\acidscan.met	Last Update:	12/7/99 10:08:57 AM
m Name:	ANIONS	Detector :	CD20
Level :	4	Analyst :	

********** COMPONENTS FOUND IN THIS RUN **********

COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
UORIDE	2.12	2.13	2.13	1.522e+006	1.572e+006	1.572e+006
LORIDE	3.02	3.03	3.03	1.150e+006	1.195e+006	1.195e+006
TRITE	3.65	3.65	3.65	6.713e+005	6.717e+005	6.717e+005
OMIDE	4.63	4.62	4.62	4.625e+005	4.606e+005	4.606e+005
TRATE	5.43	5.42	5.42	6.142e+005	6.126e+005	6.126e+005
OSPHATE	7.18	7.18	7.18	2.695e+005	2.898e+005	2.898e+005
LFATE	8.65	8.63	8.63	8.073e+005	8.111e+005	8.111e+005

File :	C:\PEAKNET\DATA\12079005.DXD	Report Date:	12/7/99 10:22:40 AM
e Name:	AUTOCAL4R - A04	Collected :	12/7/99 10:10:32 AM
t # :	5	Vial # :	A04
d File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:22:40 AM
m Name:	ANIONS	Detector :	CD20
m Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
e Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
al	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.13	FLUORIDE	10.000	212248	1571884	1	0.79
3.03	CHLORIDE	10.000	153048	1194619	2	0.55
3.65	NITRITE	10.000	64260	671671	2	0.00
4.62	BROMIDE	10.000	39062	460634	2	-0.36
5.42	NITRATE	10.000	42933	612578	2	-0.31
7.18	PHOSPHATE	10.000	14233	289753	2	0.00
8.63	SULFATE	10.000	37136	811061	2	-0.19
	Totals	70.000	562920	5612200		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

le: \peaknet\schedule\12079901.sch
4.30 Page 1 of 2 12/7/99 10:22:40 AM

2.13	FLUORIDE	10.000	212248	1571884	1	0.79
3.03	CHLORIDE	10.000	153048	1194619	2	0.55
3.65	NITRITE	10.000	64260	671671	2	0.00

7.18	PHOSPHATE	10.000	14233	289753	2	0.00
8.63	SULFATE	10.000	37136	811061	2	-0.19
	Totals	70.000	562920	5612200		

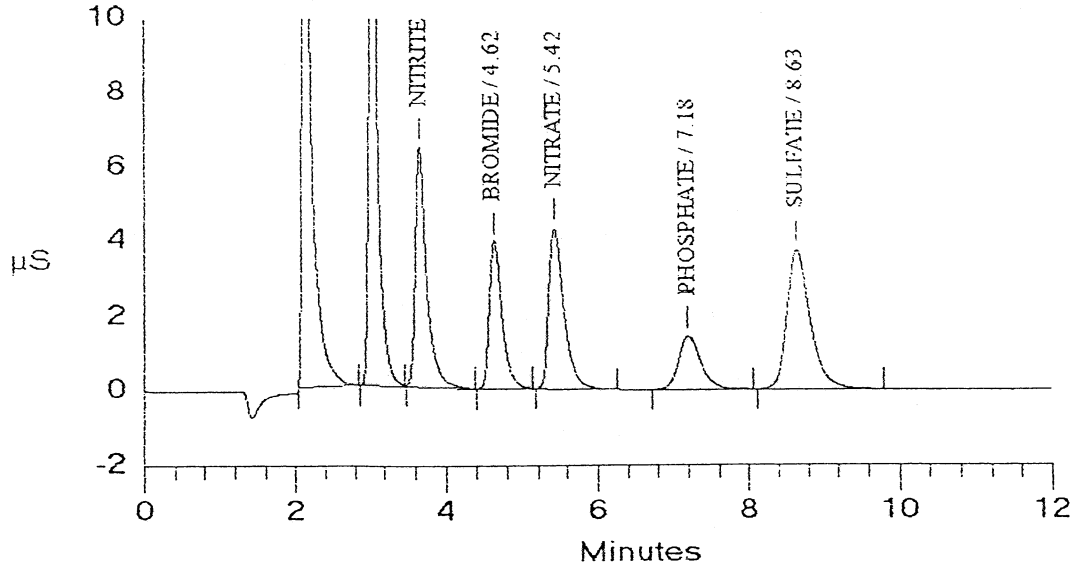
********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.13	FLUORIDE	10.000	212248	1571884	1	0.79
3.03	CHLORIDE	10.000	153048	1194619	2	0.55
3.65	NITRITE	10.000	64260	671671	2	0.00
4.62	BROMIDE	10.000	39062	460634	2	-0.36
5.42	NITRATE	10.000	42933	612578	2	-0.31
7.18	PHOSPHATE	10.000	14233	289753	2	0.00
8.63	SULFATE	10.000	37136	811061	2	-0.19
	Totals	70.000	562920	5612200		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		

File: 12079005.DXD Sample AUTOCAL4R - A04



********** AUTOMATIC CALIBRATION UPDATE **********

ct # : 6
od File: c:\peaknet\method\acidscan.met
em Name: ANIONS
Level : 5

Collected : 12/7/99 10:24:08 AM
Vial # : A05
Last Update: 12/7/99 10:22:40 AM
Detector : CD20
Analyst :

********** COMPONENTS FOUND IN THIS RUN **********

COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
LUORIDE	2.13	2.10	2.10	2.428e+006	2.516e+006	2.516e+006
HLORIDE	3.03	3.02	3.02	1.831e+006	1.857e+006	1.857e+006
ITRITE	3.65	3.62	3.62	1.033e+006	1.049e+006	1.049e+006
ROMIDE	4.62	4.58	4.58	7.156e+005	7.150e+005	7.150e+005
ITRATE	5.42	5.37	5.37	9.270e+005	9.384e+005	9.384e+005
HOSPHATE	7.18	7.15	7.15	4.307e+005	4.504e+005	4.504e+005
ULFATE	8.63	8.60	8.60	1.222e+006	1.250e+006	1.250e+006

File : C:\PEAKNET\DATA\12079006.DXD
le Name: AUTOCAL5R - A05
ct # : 6
od File: c:\peaknet\method\acidscan.met
em Name: ANIONS
mn Type:
Points: 3600
le Name: S/N 96020568 ID:24 Of 15

Report Date: 12/7/99 10:36:16 AM
Collected : 12/7/99 10:24:08 AM
Vial # : A05
Calibrated : 12/7/99 10:36:15 AM
Detector : CD20
Operator : DK
Rate : 5.00 Hz
Moduleware : 1.17

ration	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

r type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	15.000	313818	2516075	1	-1.56
3.02	CHLORIDE	15.000	245022	1856987	2	-0.55
3.62	NITRITE	15.000	101786	1048676	2	-0.91
4.58	BROMIDE	15.000	62651	715001	2	-0.72
5.37	NITRATE	15.000	66396	938356	2	-0.92
7.15	PHOSPHATE	15.000	22518	450367	2	-0.46
8.60	SULFATE	15.000	58441	1249812	2	-0.39
	Totals	105.000	870632	8775273		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

le: \peaknet\schedule\12079901.sch
4.30 Page 1 of 2 12/7/99 10:36:16 AM

2.10	FLUORIDE	15.000	313818	2516075	1	-1.56
3.02	CHLORIDE	15.000	245022	1856987	2	-0.55
3.62	NITRITE	15.000	101786	1048676	2	-0.91
4.58	BROMIDE	15.000	62651	715001	2	-0.72

8.60	SULFATE	15.000	58441	1249812	2	-0.39
	Totals	105.000	870632	8775273		

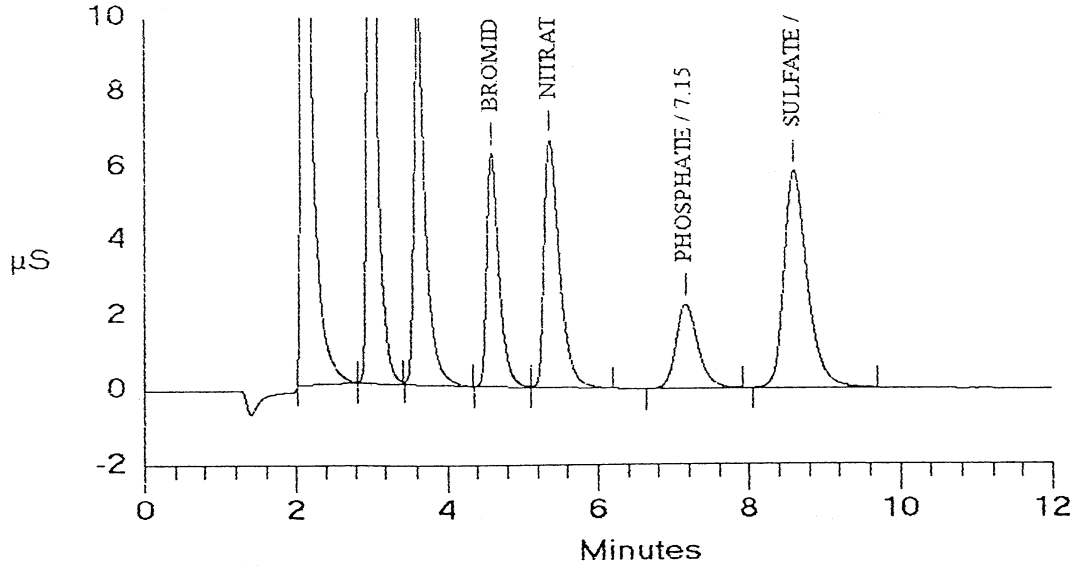
********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	15.000	313818	2516075	1	-1.56
3.02	CHLORIDE	15.000	245022	1856987	2	-0.55
3.62	NITRITE	15.000	101786	1048676	2	-0.91
4.58	BROMIDE	15.000	62651	715001	2	-0.72
5.37	NITRATE	15.000	66396	938356	2	-0.92
7.15	PHOSPHATE	15.000	22518	450367	2	-0.46
8.60	SULFATE	15.000	58441	1249812	2	-0.39
	Totals	105.000	870632	8775273		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		

File: 12079006.DXD Sample AUTOCAL5R - A05



********** AUTOMATIC CALIBRATION UPDATE **********

File : C:\PEAKNET\DATA\12079007.DXD Report Date: 12/7/99 10:49:52 AM

od File: c:\peaknet\method\acidscan.met Last Update: 12/7/99 10:36:15 AM
em Name: ANIONS Detector : CD20
Level : 6 Analyst :

********** COMPONENTS FOUND IN THIS RUN **********

COMPONENT NAME	OLD RET.TIME	MEASURED RET.TIME	NEW RET.TIME	OLD RESPONSE	MEASURED RESPONSE	NEW RESPONSE
LUORIDE	2.10	2.12	2.12	3.304e+006	3.429e+006	3.429e+006
HLORIDE	3.02	3.02	3.02	2.523e+006	2.577e+006	2.577e+006
ITRITE	3.62	3.62	3.62	1.397e+006	1.428e+006	1.428e+006
ROMIDE	4.58	4.57	4.57	9.631e+005	9.825e+005	9.825e+005
ITRATE	5.37	5.33	5.33	1.266e+006	1.288e+006	1.288e+006
HOSPHATE	7.15	7.13	7.13	5.849e+005	6.162e+005	6.162e+005
JLFATE	8.60	8.57	8.57	1.652e+006	1.701e+006	1.701e+006

File : C:\PEAKNET\DATA\12079007.DXD Report Date: 12/7/99 10:49:52 AM
e Name: AUTOCAL6R - A06 Collected : 12/7/99 10:37:44 AM
t # : 7 Vial # : A06
d File: c:\peaknet\method\acidscan.met Calibrated : 12/7/99 10:49:52 AM
m Name: ANIONS Detector : CD20
n Type: Operator : DK
Points: 3600 Rate : 5.00 Hz
e Name: S/N 96020568 ID:24 Of 15 Moduleware : 1.17

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
al	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.12	FLUORIDE	20.000	459921	3428963	1	0.79
3.02	CHLORIDE	20.000	342825	2577248	2	0.00
3.62	NITRITE	20.000	141512	1428101	2	0.00
4.57	BROMIDE	20.000	86657	982542	2	-0.36
5.33	NITRATE	20.000	91247	1288053	2	-0.62
7.13	PHOSPHATE	20.000	31032	616247	2	-0.23
8.57	SULFATE	20.000	79815	1701489	2	-0.39
	Totals	140.000	1233008	12022644		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

le: \peaknet\schedule\12079901.sch
e 4.30 Page 1 of 2 12/7/99 10:49:52 AM

2.12	FLUORIDE	20.000	459921	3428963	1	0.79
3.02	CHLORIDE	20.000	342825	2577248	2	0.00
3.62	NITRITE	20.000	141512	1428101	2	0.00
4.57	BROMIDE	20.000	86657	982542	2	-0.36
5.33	NITRATE	20.000	91247	1288053	2	-0.62
7.13	PHOSPHATE	20.000	31032	616247	2	-0.23

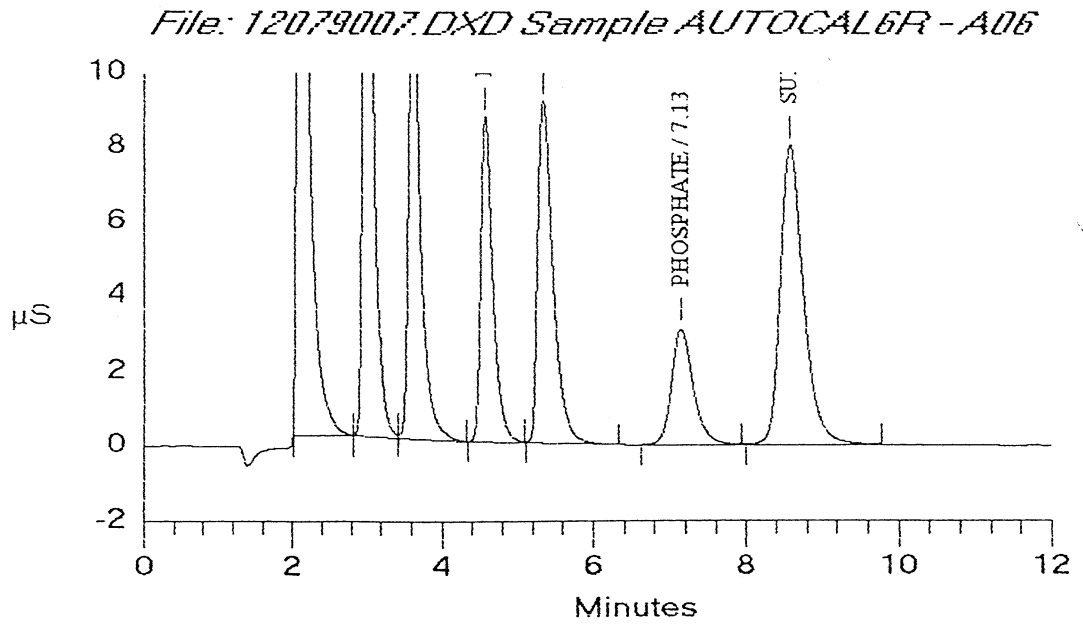
Totals	140.000	1233008	12022644

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.12	FLUORIDE	20.000	459921	3428963	1	0.79
3.02	CHLORIDE	20.000	342825	2577248	2	0.00
3.62	NITRITE	20.000	141512	1428101	2	0.00
4.57	BROMIDE	20.000	86657	982542	2	-0.36
5.33	NITRATE	20.000	91247	1288053	2	-0.62
7.13	PHOSPHATE	20.000	31032	616247	2	-0.23
8.57	SULFATE	20.000	79815	1701489	2	-0.39
	Totals	140.000	1233008	12022644		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		



File :	C:\PEAKNET\DATA\12079008.DXD	Report Date:	12/7/99 11:03:27 AM
le Name:	METH BLK - B01	Collected :	12/7/99 10:51:20 AM
# :	8	Vial # :	B01
File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM

D-189

Points: 3600 Rate : 5.00 Hz
e Name: S/N 96020568 ID:24 Of 15 Moduleware : 1.17

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
al	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
0.00	FLUORIDE	0.000	0	0	0	0.00
3.03	CHLORIDE	0.243	2441	23021	1	0.55
0.00	NITRITE	0.000	0	0	0	0.00
0.00	BROMIDE	0.000	0	0	0	0.00
0.00	NITRATE	0.000	0	0	0	0.00
0.00	PHOSPHATE	0.000	0	0	0	0.00
8.68	SULFATE	0.170	1185	23736	1	1.36
	Totals	0.413	3626	46757		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
3.03	CHLORIDE	0.243	2441	23021	1	0.55
8.68	SULFATE	0.170	1185	23736	1	1.36
	Totals	0.413	3626	46757		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
DE	2.12	0
E	3.62	0
E	4.57	0
E	5.33	0
ATE	7.13	0

********** Peak Report: All Peaks **********

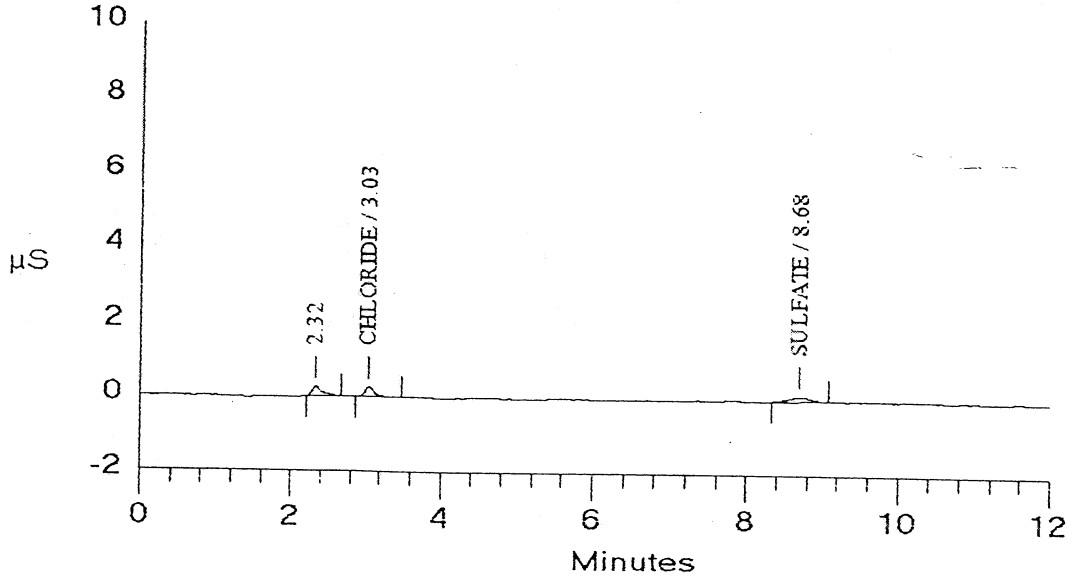
Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

le: \peaknet\schedule\12079901.sch
e 4.30 Page 1 of 2 12/7/99 11:03:27 AM

2.32		0.000	2420	23756	1	
3.03	CHLORIDE	0.243	2441	23021	1	0.55
8.68	SULFATE	0.170	1185	23736	1	1.36
	Totals	0.413	6046	70513		

Time	Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.32		0.000	2420	23756	1	
	Totals	0.000	2420	23756		

File: 12079008.DXD Sample METH BLK - B01



File	: C:\PEAKNET\DATA\12079009.DXD	Report Date:	12/7/99 11:17:03 AM
e Name:	IPC - B02	Collected :	12/7/99 11:04:55 AM
#	: 9	Vial # :	B02
d File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
m Name:	ANIONS	Detector :	CD20
Type:		Operator :	DK

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
al	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	4.812	92195	723501	1	-0.79
3.00	CHLORIDE	4.791	65291	545063	2	-0.55
3.63	NITRITE	4.952	31304	331216	2	0.46
4.60	BROMIDE	5.013	18842	227977	2	0.73
5.42	NITRATE	4.941	20589	297912	2	1.56
7.17	PHOSPHATE	4.918	6767	136132	1	0.47
8.63	SULFATE	5.031	18167	402948	1	0.78
	Totals	34.457	253155	2664749		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	4.812	92195	723501	1	-0.79
3.00	CHLORIDE	4.791	65291	545063	2	-0.55
3.63	NITRITE	4.952	31304	331216	2	0.46
4.60	BROMIDE	5.013	18842	227977	2	0.73
5.42	NITRATE	4.941	20589	297912	2	1.56
7.17	PHOSPHATE	4.918	6767	136132	1	0.47
8.63	SULFATE	5.031	18167	402948	1	0.78
	Totals	34.457	253155	2664749		

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	4.812	92195	723501	1	-0.79
3.00	CHLORIDE	4.791	65291	545063	2	-0.55
3.63	NITRITE	4.952	31304	331216	2	0.46
4.60	BROMIDE	5.013	18842	227977	2	0.73
5.42	NITRATE	4.941	20589	297912	2	1.56
7.17	PHOSPHATE	4.918	6767	136132	1	0.47

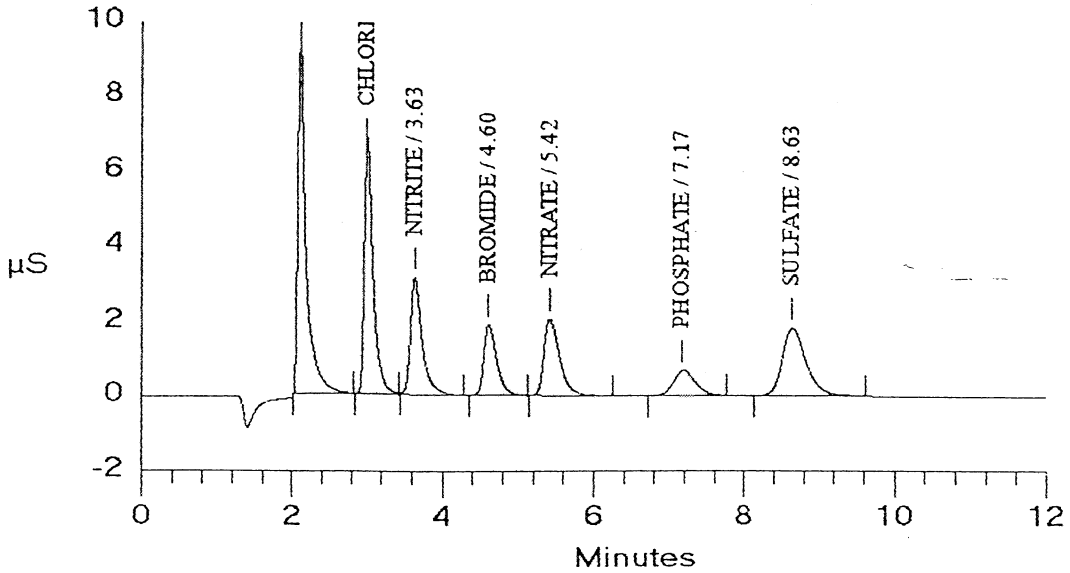
8.63	SULFATE	5.031	18167	402948	1	0.78
	Totals	34.457	253155	2664749		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

Totals	0.000	0	0

File: 12079009.DXD Sample IPC - B02



ule: \peaknet\schedule\12079901.sch
se 4.30 Page 2 of 2 12/7/99 11:17:03 AM

File :	C:\PEAKNET\DATA\12079010.DXD	Report Date:	12/7/99 11:30:45 AM
le Name:	QCS - B03	Collected :	12/7/99 11:18:38 AM
t # :	10	Vial # :	B03
d File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
m Name:	ANIONS	Detector :	CD20
m. Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz

D-193

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
al	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.12	FLUORIDE	9.999	200982	1581578	1	0.00
3.03	CHLORIDE	9.907	151044	1172536	2	0.55
3.65	NITRITE	10.034	65292	678944	2	0.92
4.62	BROMIDE	10.141	40182	469006	2	1.09
5.40	NITRATE	10.040	42344	612451	2	1.25
7.18	PHOSPHATE	9.694	14170	279077	1	0.70
8.63	SULFATE	10.004	37323	810593	1	0.78
	Totals	69.818	551336	5604185		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.12	FLUORIDE	9.999	200982	1581578	1	0.00
3.03	CHLORIDE	9.907	151044	1172536	2	0.55
3.65	NITRITE	10.034	65292	678944	2	0.92
4.62	BROMIDE	10.141	40182	469006	2	1.09
5.40	NITRATE	10.040	42344	612451	2	1.25
7.18	PHOSPHATE	9.694	14170	279077	1	0.70
8.63	SULFATE	10.004	37323	810593	1	0.78
	Totals	69.818	551336	5604185		

********** Peak Report: All Peaks **********

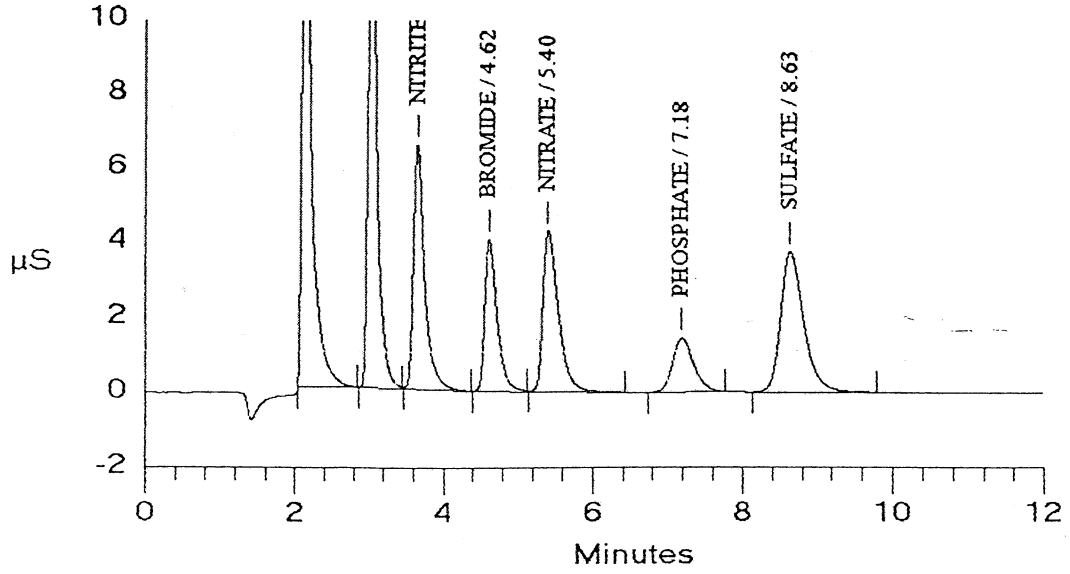
Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.12	FLUORIDE	9.999	200982	1581578	1	0.00
3.03	CHLORIDE	9.907	151044	1172536	2	0.55
3.65	NITRITE	10.034	65292	678944	2	0.92
4.62	BROMIDE	10.141	40182	469006	2	1.09
5.40	NITRATE	10.040	42344	612451	2	1.25
7.18	PHOSPHATE	9.694	14170	279077	1	0.70

8.63	SULFATE	10.004	37323	810593	1	0.78
	Totals	69.818	551336	5604185		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

File: 12079010.DXD Sample QCS - B03



File :	C:\PEAKNET\DATA\12079011.DXD	Report Date:	12/7/99 11:44:26 AM
e Name:	LCS - B04	Collected :	12/7/99 11:32:19 AM
# :	11	Vial # :	B04
File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
m Name:	ANIONS	Detector :	CD20
m Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

nal 50 1 0.00 12.00 10 10.00 0.94

r type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	9.893	211369	1563400	1	-0.79
3.00	CHLORIDE	9.772	149640	1155309	2	-0.55
3.60	NITRITE	9.957	62908	673482	2	-0.46
4.57	BROMIDE	9.948	39085	459664	2	0.00
5.37	NITRATE	9.873	42299	601874	2	0.63
7.15	PHOSPHATE	10.021	14267	289149	1	0.23
8.60	SULFATE	9.878	37045	800015	1	0.39
	Totals	69.341	556612	5542893		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	9.893	211369	1563400	1	-0.79
3.00	CHLORIDE	9.772	149640	1155309	2	-0.55
3.60	NITRITE	9.957	62908	673482	2	-0.46
4.57	BROMIDE	9.948	39085	459664	2	0.00
5.37	NITRATE	9.873	42299	601874	2	0.63
7.15	PHOSPHATE	10.021	14267	289149	1	0.23
8.60	SULFATE	9.878	37045	800015	1	0.39
	Totals	69.341	556612	5542893		

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	9.893	211369	1563400	1	-0.79
3.00	CHLORIDE	9.772	149640	1155309	2	-0.55
3.60	NITRITE	9.957	62908	673482	2	-0.46
4.57	BROMIDE	9.948	39085	459664	2	0.00
5.37	NITRATE	9.873	42299	601874	2	0.63
7.15	PHOSPHATE	10.021	14267	289149	1	0.23

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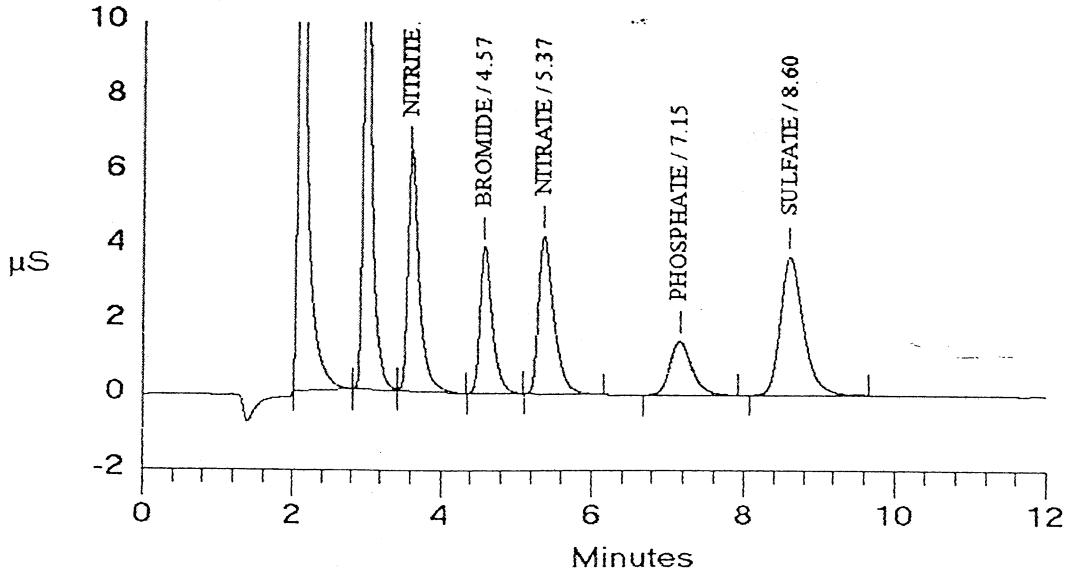
se 4.30 Page 1 of 2 12/7/99 11:44:27 AM

8.60	SULFATE	9.878	37045	800015	1	0.39
	Totals	69.341	556612	5542893		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		

File: 12079011.DXD Sample LCS - B04



File	: C:\PEAKNET\DATA\12079012.DXD	Report Date:	12/7/99 11:58:09 AM
le Name:	WEEKLY LFB - B05	Collected :	12/7/99 11:46:01 AM
t #	: 12	Vial # :	B05
d File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
m Name:	ANIONS	Detector :	CD20
nn Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
le Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

ial	30	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	1.147	17041	151336	1	-0.79
3.00	CHLORIDE	1.139	14098	123553	2	-0.55
3.63	NITRITE	1.102	7408	80640	2	0.46
4.62	BROMIDE	0.952	4046	47059	1	1.09
5.43	NITRATE	0.975	4647	65125	1	1.88
7.18	PHOSPHATE	1.091	1336	26734	1	0.70
8.67	SULFATE	1.004	4120	87568	1	1.17
	Totals	7.411	52696	582016		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	1.147	17041	151336	1	-0.79
3.00	CHLORIDE	1.139	14098	123553	2	-0.55
3.63	NITRITE	1.102	7408	80640	2	0.46
4.62	BROMIDE	0.952	4046	47059	1	1.09
5.43	NITRATE	0.975	4647	65125	1	1.88
7.18	PHOSPHATE	1.091	1336	26734	1	0.70
8.67	SULFATE	1.004	4120	87568	1	1.17
	Totals	7.411	52696	582016		

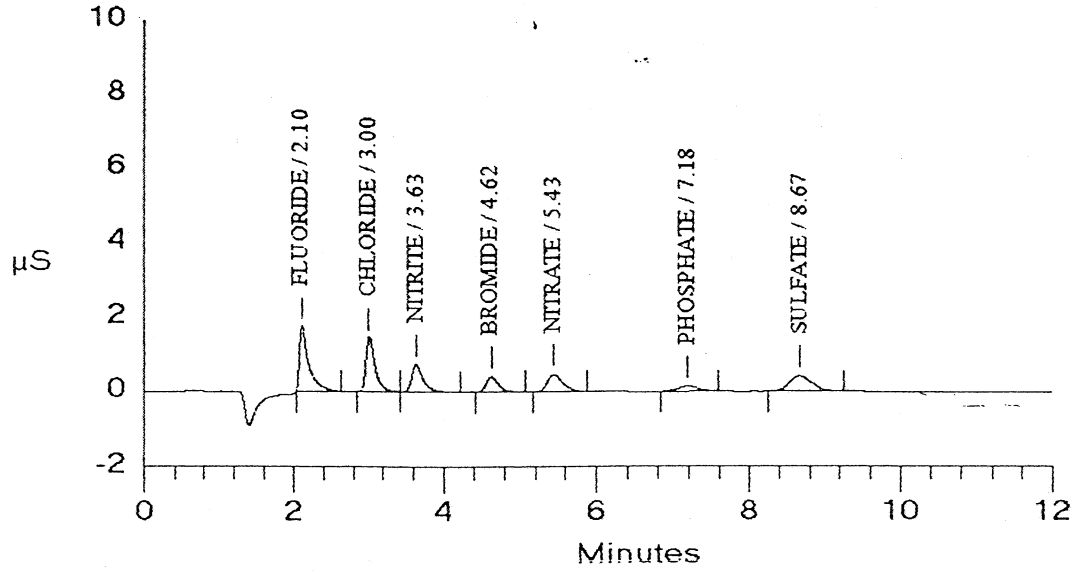
********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	1.147	17041	151336	1	-0.79
3.00	CHLORIDE	1.139	14098	123553	2	-0.55
3.63	NITRITE	1.102	7408	80640	2	0.46
4.62	BROMIDE	0.952	4046	47059	1	1.09
5.43	NITRATE	0.975	4647	65125	1	1.88
7.18	PHOSPHATE	1.091	1336	26734	1	0.70

8.67	SULFATE	1.004	4120	87568	1	1.17
	Totals	7.411	52696	582016		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		



File :	C:\PEAKNET\DATA\12079013.DXD	Report Date:	12/7/99 12:11:50 PM
e Name:	METH BLK - B01	Collected :	12/7/99 11:59:43 AM
t # :	13	Vial # :	B01
d File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
m Name:	ANIONS	Detector :	CD20
m Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
e Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

D-199

	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.30	FLUORIDE	0.331	2547	27336	1	8.66
3.00	CHLORIDE	0.226	2425	21191	1	-0.55
0.00	NITRITE	0.000	0	0	0	0.00
0.00	BROMIDE	0.000	0	0	0	0.00
0.00	NITRATE	0.000	0	0	0	0.00
0.00	PHOSPHATE	0.000	0	0	0	0.00
8.65	SULFATE	0.169	1138	23672	1	0.97
	Totals	0.726	6110	72199		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.30	FLUORIDE	0.331	2547	27336	1	8.66
3.00	CHLORIDE	0.226	2425	21191	1	-0.55
8.65	SULFATE	0.169	1138	23672	1	0.97
	Totals	0.726	6110	72199		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
E	3.62	0
E	4.57	0
E	5.33	0
ATE	7.13	0

********** Peak Report: All Peaks **********

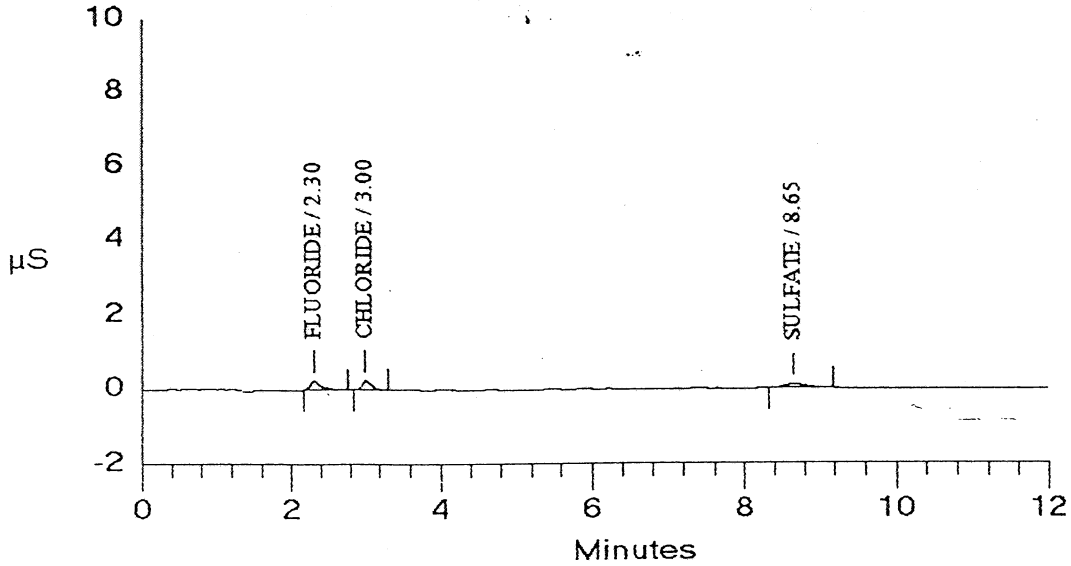
Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

le: \peaknet\schedule\12079901.sch
e 4.30 Page 1 of 2 12/7/99 12:11:50 PM

2.30	FLUORIDE	0.331	2547	27336	1	8.66
3.00	CHLORIDE	0.226	2425	21191	1	-0.55
8.65	SULFATE	0.169	1138	23672	1	0.97
	Totals	0.726	6110	72199		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		



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se 4.30 Page 2 of 2 12/7/99 12:11:50 PM

File :	C:\PEAKNET\DATA\12079014.DXD	Report Date:	12/7/99 12:25:25 PM
le Name:	1384256 F - B06	Collected :	12/7/99 12:13:18 PM
ot # :	14	Vial # :	B06
od File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
em Name:	ANIONS	Detector :	CD20
mn Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
t Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

D-201

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od File: c:\peaknet\method\acidscan.met Calibrated : 12/7/99 10:49:52 AM
em Name: ANIONS                         Detector   : CD20
n Type:                                 Operator   : DK
Points: 3600                            Rate       : 5.00  Hz
e Name: S/N 96020568        ID:24 Of 15 Moduleware : 1.17
```

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.18	FLUORIDE	0.220	1588	10544	1	3.15
3.10	CHLORIDE	15.998	210521	1990441	2	2.76
3.73	NITRITE	3.864	14186	259366	3	3.23
4.72	BROMIDE	0.384	1382	22361	4	3.28
5.17	NITRATE	-5789.213	4295284	68244796	3	-3.13
7.25	PHOSPHATE	1.353	1130	34079	4	1.64
8.52	SULFATE	-2.545	788662	16933116	2	-0.58
	Totals	-5769.940	5312754	87494704		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.18	FLUORIDE	0.220	1588	10544	1	3.15
3.10	CHLORIDE	15.998	210521	1990441	2	2.76
3.73	NITRITE	3.864	14186	259366	3	3.23
4.72	BROMIDE	0.384	1382	22361	4	3.28
5.17	NITRATE	-5789.213	4295284	68244796	3	-3.13
7.25	PHOSPHATE	1.353	1130	34079	4	1.64
8.52	SULFATE	-2.545	788662	16933116	2	-0.58
	Totals	-5769.940	5312754	87494704		

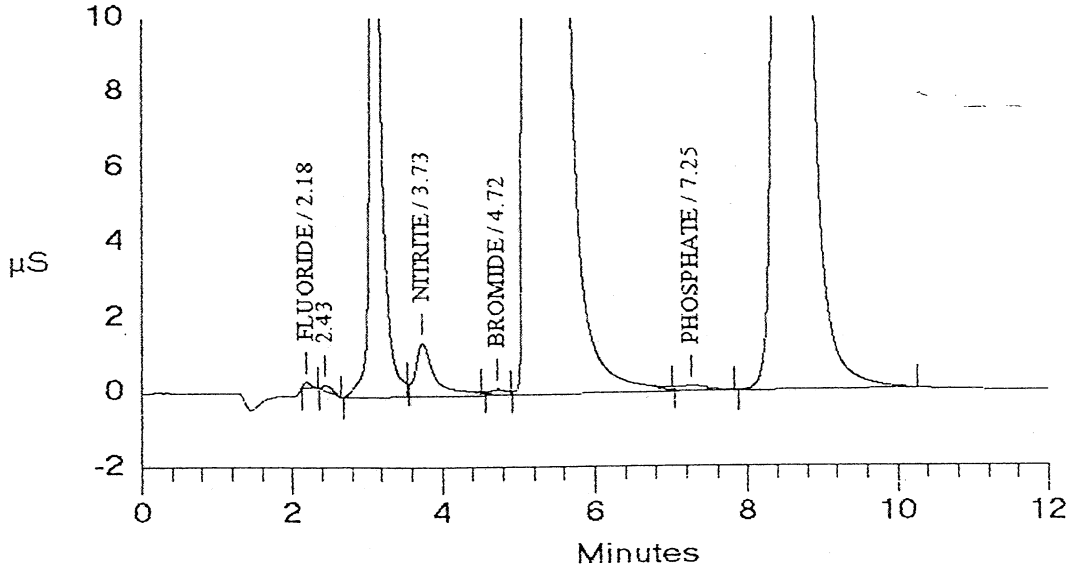
********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.18	FLUORIDE	0.220	1588	10544	1	3.15
2.43		0.000	1313	13416	1	
3.10	CHLORIDE	15.998	210521	1990441	2	2.76
3.73	NITRITE	3.864	14186	259366	3	3.23
4.72	BROMIDE	0.384	1382	22361	4	3.28
5.17	NITRATE	-5789.213	4295284	68244796	3	-3.13

7.15	PHOSPHATE	1.353	1130	34079	4	1.64
8.52	SULFATE	-2.545	788662	16933116	2	-0.58
	Totals	-5788.940	5314087	87508119		

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.43		0.000	1313	13416	1	
	Totals	0.000	1313	13416		

File: 12079049.DXD Sample 1384186 - B37



CHLORIDE $\frac{15.998\ mg/L \times 0.050\ L}{0.0005386} = 1,485\ mg/kg \times 0.0001 = 0.15\%$

File :	C:\PEAKNET\DATA\12079050.DXD	Report Date:	12/7/99 8:35:49 PM
File Name:	1384186 DUP - B38	Collected :	12/7/99 8:23:42 PM
# :	50	Vial # :	B38

m Name: ANIONS
m Type:
Points: 3600
e Name: S/N 96020568 ID:24 Of 15

Detector : CD20
Operator : DK
Rate : 5.00 Hz
Moduleware : 1.17

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
al	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
0.00	FLUORIDE	0.000	0	0	0	0.00
3.12	CHLORIDE	18.460	246755	2348490	2	3.31
3.75	NITRITE	3.857	14327	258895	3	3.69
4.75	BROMIDE	0.199	1043	14352	4	4.01
5.18	NITRATE	-7831.054	5003194	78334227	2	-2.81
0.00	PHOSPHATE	0.000	0	0	0	0.00
8.52	SULFATE	-26.466	854796	18558882	1	-0.58
	Totals	-7835.005	6120115	99514846		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
3.12	CHLORIDE	18.460	246755	2348490	2	3.31
3.75	NITRITE	3.857	14327	258895	3	3.69
4.75	BROMIDE	0.199	1043	14352	4	4.01
5.18	NITRATE	-7831.054	5003194	78334227	2	-2.81
8.52	SULFATE	-26.466	854796	18558882	1	-0.58
	Totals	-7835.005	6120115	99514846		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
IDE	2.12	0
ATE	7.13	0

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

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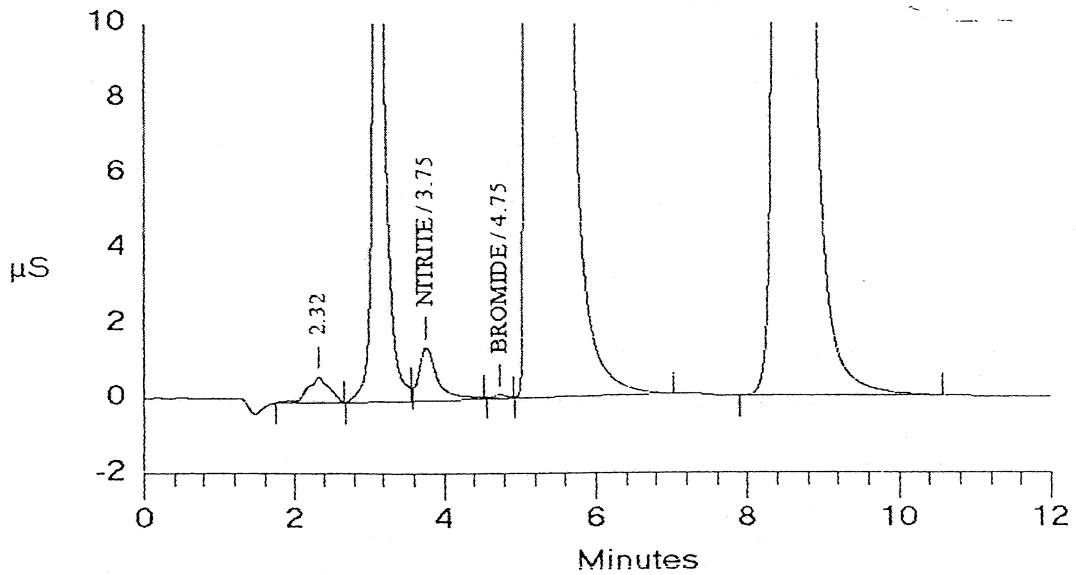
e 4.30 Page 1 of 2 12/7/99 8:35:49 PM

0.00		0.000	7004	143946	1	
3.12	CHLORIDE	18.460	246755	2348490	2	3.31
3.75	NITRITE	3.857	14327	258895	3	3.69
4.75	BROMIDE	0.199	1043	14352	4	4.01
5.18	NITRATE	-7831.054	5003194	78334227	2	-2.81
8.52	SULFATE	-26.466	854796	18558882	1	-0.58

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.32		0.000	7004	143946	1	
	Totals	0.000	7004	143946		

File: 12079050.DXD Sample 1384186 DUP - B38



CHLORIDE $\frac{18.460\ mg/L \times 0.050\ L}{0.0006021} = 1,533\ mg/kg \times 0.0001 = 0.15\%$

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e 4.30 Page 2 of 2 12/7/99 8:35:50 PM

File :	C:\PEAKNET\DATA\12079051.DXD	Report Date:	12/7/99 8:49:25 PM
e Name:	1384186 MS - B39	Collected :	12/7/99 8:37:18 PM
# :	51	Vial # :	B39
d File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
		Detector :	CD20

Points: 3600 Rate : 5.00 Hz
e Name: S/N 96020568 ID:24 Of 15 Moduleware : 1.17

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
al	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.18	FLUORIDE	0.220	1541	10570	1	3.15
3.12	CHLORIDE	25.560	390965	3505981	2	3.31
3.73	NITRITE	3.969	14066	266302	3	3.23
4.73	BROMIDE	0.397	1450	22962	4	3.65
5.17	NITRATE	-5651.585	4218734	67505355	3	-3.13
7.30	PHOSPHATE	1.568	1272	40131	4	2.34
8.53	SULFATE	-1.207	784373	16832986	2	-0.39
	Totals	-5621.077	5412401	88184288		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.18	FLUORIDE	0.220	1541	10570	1	3.15
3.12	CHLORIDE	25.560	390965	3505981	2	3.31
3.73	NITRITE	3.969	14066	266302	3	3.23
4.73	BROMIDE	0.397	1450	22962	4	3.65
5.17	NITRATE	-5651.585	4218734	67505355	3	-3.13
7.30	PHOSPHATE	1.568	1272	40131	4	2.34
8.53	SULFATE	-1.207	784373	16832986	2	-0.39
	Totals	-5621.077	5412401	88184288		

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.18	FLUORIDE	0.220	1541	10570	1	3.15
2.45		0.000	1330	12285	1	
3.12	CHLORIDE	25.560	390965	3505981	2	3.31
3.73	NITRITE	3.969	14066	266302	3	3.23
4.73	BROMIDE	0.397	1450	22962	4	3.65
5.17	NITRATE	-5651.585	4218734	67505355	3	-3.13

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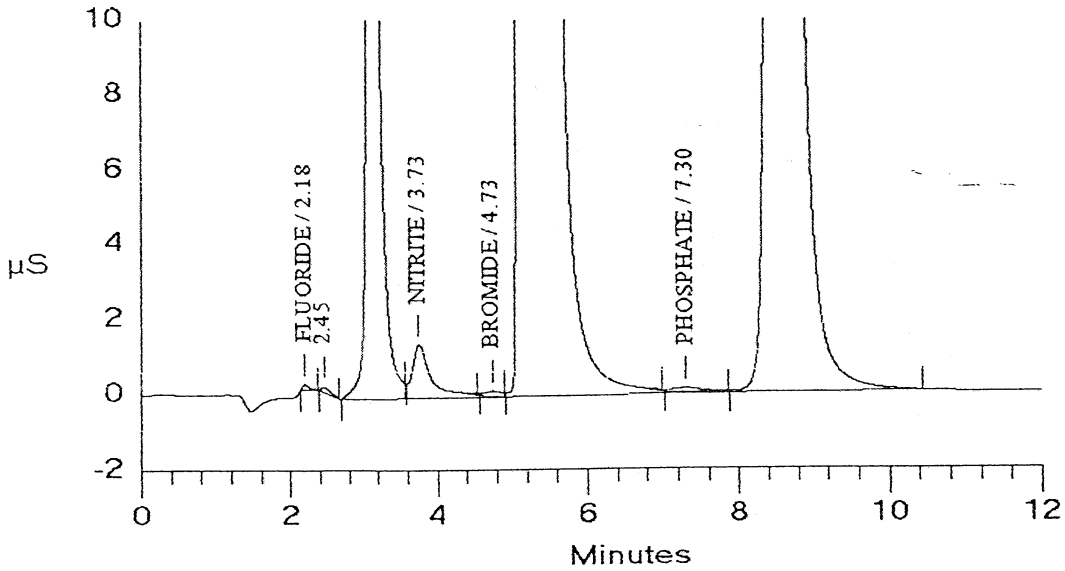
7.30	PHOSPHATE	1.568	1272	40131	4	2.34
8.53	SULFATE	-1.207	784373	16832986	2	-0.39
	Totals	-5621.077	5413731	88196573		

********** Peak Report: Unknown Peaks **********

Time	Name	mg/L			
2.45		0.000	1330	12285	1
	Totals	0.000	1330	12285	

File: 12079051.DXD Sample 1384186 MS - B39



T.V. SPIKE = 928 mg/kg

CHLORIDE $\frac{25.560\ mg/L \times 0.050\ L}{0.0005386} = 2{,}373\ mg/kg$

$\frac{2{,}373\ mg/kg - 1{,}485\ mg/kg}{928\ mg/kg} \times 100 = 96\%$ RECOVERY

File :	C:\PEAKNET\DATA\12079052.DXD	Report Date:	12/7/99 9:03:01 PM
e Name:	1384186 MSD - B40	Collected :	12/7/99 8:50:54 PM
# :	52	Vial # :	B40
File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
Name:	ANIONS	Detector :	CD20
Time:		Operator :	DK

ration	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.18	FLUORIDE	0.223	1628	11009	1	3.15
3.12	CHLORIDE	25.689	400356	3529163	2	3.31
3.73	NITRITE	2.963	13227	200504	2	3.23
4.73	BROMIDE	0.006	626	6030	1	3.65
5.17	NITRATE	-5656.295	4244297	67530810	3	-3.13
7.28	PHOSPHATE	0.933	929	22282	4	2.10
8.53	SULFATE	-1.196	784393	16832092	1	-0.39
	Totals	-5627.677	5445457	88131890		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.18	FLUORIDE	0.223	1628	11009	1	3.15
3.12	CHLORIDE	25.689	400356	3529163	2	3.31
3.73	NITRITE	2.963	13227	200504	2	3.23
4.73	BROMIDE	0.006	626	6030	1	3.65
5.17	NITRATE	-5656.295	4244297	67530810	3	-3.13
7.28	PHOSPHATE	0.933	929	22282	4	2.10
8.53	SULFATE	-1.196	784393	16832092	1	-0.39
	Totals	-5627.677	5445457	88131890		

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.18	FLUORIDE	0.223	1628	11009	1	3.15
2.43		0.000	1339	13769	1	
3.12	CHLORIDE	25.689	400356	3529163	2	3.31
3.73	NITRITE	2.963	13227	200504	2	3.23
4.73	BROMIDE	0.006	626	6030	1	3.65
5.17	NITRATE	-5656.295	4244297	67530810	3	-3.13

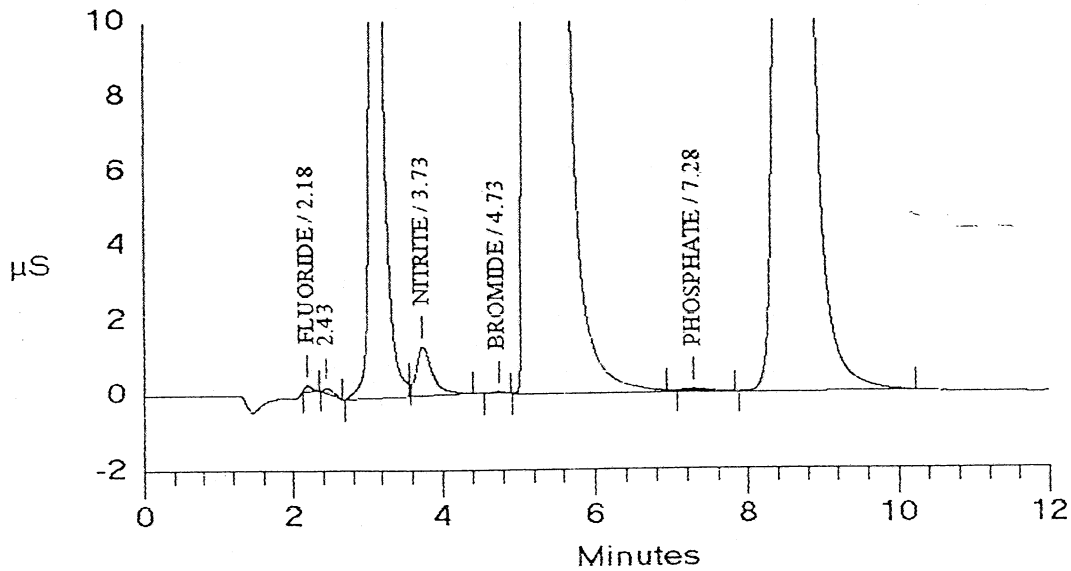
7.28	PHOSPHATE	0.933	929	22282	4	2.10
8.53	SULFATE	-1.196	784393	16832092	1	-0.39
	Totals	-5627.677	5446796	88145659		

********** Peak Report: Unknown Peaks **********

Ret	Component	Concentration	Height	Area	Bl.	%Delta

2.43	0.000	1339	13769	1
Totals	0.000	1339	13769	

File: 12079052.DXD Sample 1384186 MSD - B40



T.V. SPIKE = 928 mg/kg

CHLORIDE $\frac{25.689 \text{ mg/L} \times 0.050 \text{ L}}{0.0005386} = 2,385 \text{ mg/kg}$

$\frac{2,385 \text{ mg/kg} - 1,485 \text{ mg/kg}}{928 \text{ mg/kg}} \times 100 = 97\%$ RECOVERY

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se 4.30 Page 2 of 2 12/7/99 9:08:02 PM

File :	C:\PEAKNET\DATA\12079053.DXD	Report Date:	12/7/99 9:16:44 PM
Name:	1384187 - C01	Collected :	12/7/99 9:04:36 PM
# :	53	Vial # :	C01
File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
Name:	ANIONS	Detector :	CD20
Date:		Operator :	DK
Time:	3600	Rate :	5.00 Hz
		Modulewave :	1.17

D-209

·ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
ıal	50	1	0.00	12.00	10	10.00	0.94

· type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

·********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
0.00	FLUORIDE	0.000	0	0	0	0.00
3.12	CHLORIDE	22.732	321040	3018986	2	3.31
3.75	NITRITE	3.876	13865	260162	3	3.69
4.73	BROMIDE	0.255	1213	16805	4	3.65
5.17	NITRATE	-8146.554	5016416	79770476	2	-3.13
0.00	PHOSPHATE	0.000	0	0	0	0.00
8.50	SULFATE	-40.821	890752	19420191	1	-0.78
	Totals	-8160.511	6243286	102486620		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
3.12	CHLORIDE	22.732	321040	3018986	2	3.31
3.75	NITRITE	3.876	13865	260162	3	3.69
4.73	BROMIDE	0.255	1213	16805	4	3.65
5.17	NITRATE	-8146.554	5016416	79770476	2	-3.13
8.50	SULFATE	-40.821	890752	19420191	1	-0.78
	Totals	-8160.511	6243286	102486620		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
IDE	2.12	0
HATE	7.13	0

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

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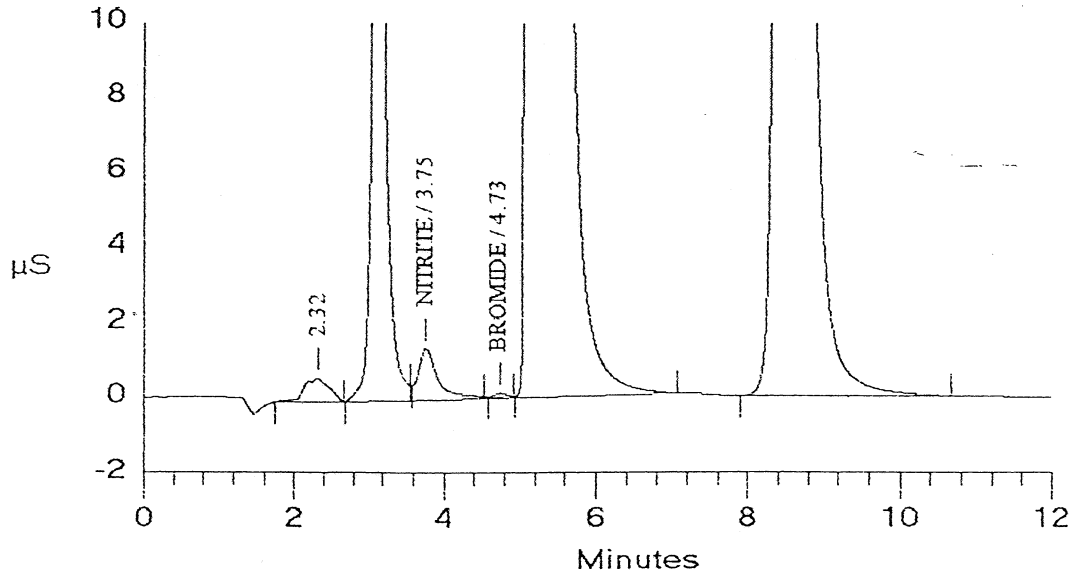
se 4.30 Page 1 of 2 12/7/99 9:16:44 PM

2.32		0.000	6310	147544	1	
3.12	CHLORIDE	22.732	321040	3018986	2	3.31
3.75	NITRITE	3.876	13865	260162	3	3.69
4.73	BROMIDE	0.255	1213	16805	4	3.65
5.17	NITRATE	-8146.554	5016416	79770476	2	-3.13
8.50	SULFATE	-40.821	890752	19420191	1	-0.78
	Totals	-8160.511	6249596	102634165		

********** Peak Report: Unknown Peaks **********

Time	Name	MG/L			Code
2.32		0.000	6310	147544	1
	Totals	0.000	6310	147544	

File: 12079053.DXD Sample 1384187 - C01



CHLORIDE $\frac{22.732\ mg/L \times 0.050L}{0.0006630} = 1,714\ mg/kg \times 0.0001 = 0.17\%$

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se 4.30 Page 2 of 2 12/7/99 9:16:44 PM

File :	C:\PEAKNET\DATA\12079054.DXD	Report Date:	12/7/99 9:30:26 PM
Name:	1384188 - C02	Collected :	12/7/99 9:18:19 PM
# :	54	Vial # :	C02
File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
Name:	ANIONS	Detector :	CD20
Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
Name:	S/N 98020568 ID:24 of 15	Moduleware :	1.17

D-211

al	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
0.00	FLUORIDE	0.000	0	0	0	0.00
3.10	CHLORIDE	18.881	258957	2411686	2	2.76
3.73	NITRITE	2.935	11382	198668	3	3.23
4.73	BROMIDE	0.148	908	12167	4	3.65
5.17	NITRATE	-5101.318	4036567	64455757	2	-3.13
0.00	PHOSPHATE	0.000	0	0	0	0.00
8.53	SULFATE	19.840	708726	15062839	1	-0.39
	Totals	-5059.515	5016540	82141118		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
3.10	CHLORIDE	18.881	258957	2411686	2	2.76
3.73	NITRITE	2.935	11382	198668	3	3.23
4.73	BROMIDE	0.148	908	12167	4	3.65
5.17	NITRATE	-5101.318	4036567	64455757	2	-3.13
8.53	SULFATE	19.840	708726	15062839	1	-0.39
	Totals	-5059.515	5016540	82141118		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
IDE	2.12	0
HATE	7.13	0

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

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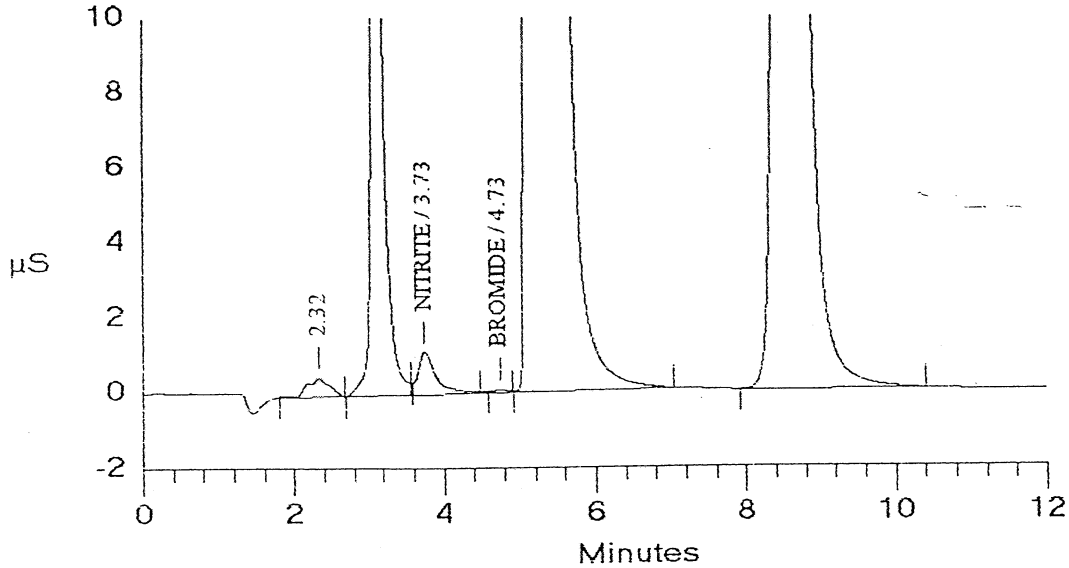
2.32		0.000	5078	105351	1	
3.10	CHLORIDE	18.881	258957	2411686	2	2.76
3.73	NITRITE	2.935	11382	198668	3	3.23
4.73	BROMIDE	0.148	908	12167	4	3.65
5.17	NITRATE	-5101.318	4036567	64455757	2	-3.13
8.53	SULFATE	19.840	708726	15062839	1	-0.39
	Totals	-5059.515	5021618	82246469		

********** Peak Report: Unknown Peaks **********

2.32	0.000	5078	105351	1
Totals	0.000	5078	105351	

File: 12079054.DXD Sample 1384188 - C02



CHLORIDE $\frac{18.881\ mg/L \times 0.050L}{0.0005215} = 1{,}810\ mg/kg \times 0.0001 = 0.18$

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e 4.30 Page 2 of 2 12/7/99 9:30:26 PM

File :	C:\PEAKNET\DATA\12079055.DXD	Report Date:	12/7/99 9:44:08 PM
e Name:	1384189 - C03	Collected :	12/7/99 9:32:01 PM
# :	55	Vial # :	C03
File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
m Name:	ANIONS	Detector :	CD20
Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
e Name:	S/N 98020568 ID:24 Of 15	Moduleware :	1.17

D-213

	Volume	Dilution	Start	Stop	Area	Reject	Pk. Width	Threshold

r type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.17	FLUORIDE	1.017	9391	131575	2	2.36
3.08	CHLORIDE	2.419	18561	268935	2	2.21
3.72	NITRITE	2.765	14296	187647	2	2.76
0.00	BROMIDE	0.000	0	0	0	0.00
5.17	NITRATE	-2668.507	2946794	48431076	2	-3.13
7.28	PHOSPHATE	1.656	1675	42613	2	2.10
8.52	SULFATE	26.198	678419	14427105	1	-0.58
	Totals	-2634.452	3669136	63488951		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.17	FLUORIDE	1.017	9391	131575	2	2.36
3.08	CHLORIDE	2.419	18561	268935	2	2.21
3.72	NITRITE	2.765	14296	187647	2	2.76
5.17	NITRATE	-2668.507	2946794	48431076	2	-3.13
7.28	PHOSPHATE	1.656	1675	42613	2	2.10
8.52	SULFATE	26.198	678419	14427105	1	-0.58
	Totals	-2634.452	3669136	63488951		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
DE	4.57	0

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

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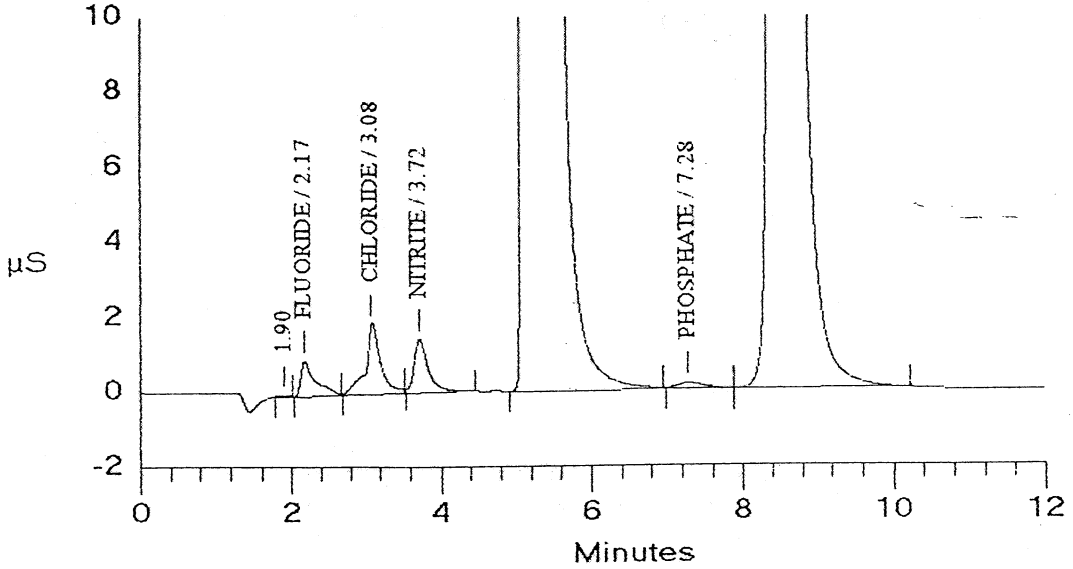
1.90		0.000	289	2405	1	
2.17	FLUORIDE	1.017	9391	131575	2	2.36
3.08	CHLORIDE	2.419	18561	268935	2	2.21
3.72	NITRITE	2.765	14296	187647	2	2.76
5.17	NITRATE	-2668.507	2946794	48431076	2	-3.13
7.28	PHOSPHATE	1.656	1675	42613	2	2.10
8.52	SULFATE	26.198	678419	14427105	1	-0.58
	Totals	-2634.452	3669425	63491356		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration	Height	Area	Bl.	%Delta

1.90	0.000	289	2405	1
Totals	0.000	289	2405	

File: 12079055.DXD Sample 1384189 - C03



CHLORIDE $\frac{2.419\ mg/L \times 0.050L}{0.0004678} = 259\ mg/kg \times 0.0001 = 0.03\%$

ule: \peaknet\schedule\12079901.sch
se 4.30 Page 2 of 2 12/7/99 9:44:08 PM

File :	C:\PEAKNET\DATA\12079056.DXD	Report Date:	12/7/99 9:57:51 PM
le Name:	1384189 DUP - C04	Collected :	12/7/99 9:45:43 PM
ot # :	56	Vial # :	C04
od File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
em Name:	ANIONS	Detector :	CD20
mn Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
e Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

D-215

ration	Volume	Dilution	Start	Stop	Area	Reject	Pk. Width	Threshold

[illegible] points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.22	FLUORIDE	1.426	10308	194034	2	4.72
3.12	CHLORIDE	4.603	39526	522847	2	3.31
3.75	NITRITE	3.930	14869	263700	3	3.69
4.75	BROMIDE	0.403	1467	23216	4	4.01
5.18	NITRATE	-7575.798	4880881	77151055	3	-2.81
7.30	PHOSPHATE	3.949	3551	108030	4	2.34
8.50	SULFATE	-154.082	1096979	24692499	2	-0.78
	Totals	-7715.568	6047581	102955379		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.22	FLUORIDE	1.426	10308	194034	2	4.72
3.12	CHLORIDE	4.603	39526	522847	2	3.31
3.75	NITRITE	3.930	14869	263700	3	3.69
4.75	BROMIDE	0.403	1467	23216	4	4.01
5.18	NITRATE	-7575.798	4880881	77151055	3	-2.81
7.30	PHOSPHATE	3.949	3551	108030	4	2.34
8.50	SULFATE	-154.082	1096979	24692499	2	-0.78
	Totals	-7715.568	6047581	102955379		

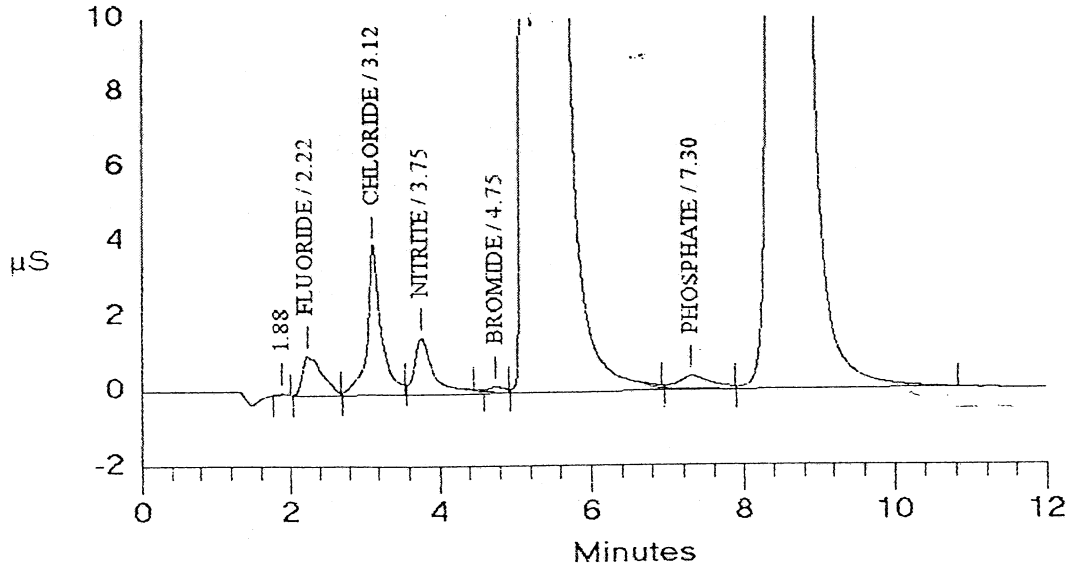
********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
1.88		0.000	327	2731	1	
2.22	FLUORIDE	1.426	10308	194034	2	4.72
3.12	CHLORIDE	4.603	39526	522847	2	3.31
3.75	NITRITE	3.930	14869	263700	3	3.69
4.75	BROMIDE	0.403	1467	23216	4	4.01
5.18	NITRATE	-7575.798	4880881	77151055	3	-2.81

7.30	PHOSPHATE	3.949	3551	108030	4	2.34
8.50	SULFATE	-154.082	1096979	24692499	2	-0.78
	Totals	-7715.568	6047908	102958110		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
1.88		0.000	327	2731	1	
	Totals	0.000	327	2731		



CHLORIDE $\frac{4.603\ mg/L \times 0.050L}{0.0006803} = 337\ mg/kg \times 0.0001 = 0.03\%$

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File :	C:\PEAKNET\DATA\12079057.DXD	Report Date:	12/7/99 10:11:33 PM
le Name:	1384190 - C05	Collected :	12/7/99 9:59:26 PM
pt # :	57	Vial # :	C05
od File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
em Name:	ANIONS	Detector :	CD20
mn Type:		Operator :	DK
Points:	9600	Rate :	5.00 Hz
e Name:	S/N 98020568 ID:24 Of 15	Moduleware :	1.17

ation	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
	50	1	0.00	12.00	10	10.00	0.94

********** Component Report: All Components **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.17	FLUORIDE	1.274	11937	170817	2	2.36
3.10	CHLORIDE	3.013	25371	337314	2	2.76
3.72	NITRITE	2.959	14501	200260	2	2.76
0.00	BROMIDE	0.000	0	0	0	0.00
5.18	NITRATE	-3245.533	3225597	52730142	2	-2.81
7.27	PHOSPHATE	2.273	2227	60060	2	1.87
8.48	SULFATE	-61.450	937948	20551730	2	-0.97
	Totals	-3297.464	4217580	74050322		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.17	FLUORIDE	1.274	11937	170817	2	2.36
3.10	CHLORIDE	3.013	25371	337314	2	2.76
3.72	NITRITE	2.959	14501	200260	2	2.76
5.18	NITRATE	-3245.533	3225597	52730142	2	-2.81
7.27	PHOSPHATE	2.273	2227	60060	2	1.87
8.48	SULFATE	-61.450	937948	20551730	2	-0.97
	Totals	-3297.464	4217580	74050322		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
DE	4.57	0

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

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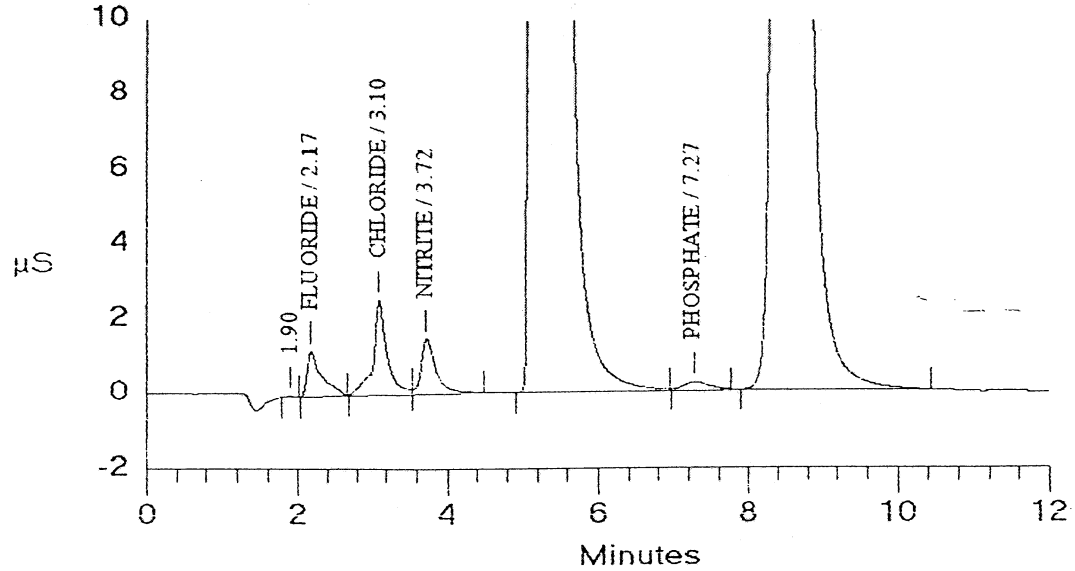
1.90		0.000	262	2158	1	
2.17	FLUORIDE	1.274	11937	170817	2	2.36
3.10	CHLORIDE	3.013	25371	337314	2	2.76
3.72	NITRITE	2.959	14501	200260	2	2.76
5.18	NITRATE	-3245.533	3225597	52730142	2	-2.81
7.27	PHOSPHATE	2.273	2227	60060	2	1.87
8.48	SULFATE	-61.450	937948	20551730	2	-0.97
	Totals	-3297.464	4217843	74052480		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
1.90		0.000	262	2158	1	

File: 12079057.DXD Sample 1384190 - C05



CHLORIDE $\frac{3.013\ mg/L \times 0.050L}{0.0005348} = 282\ mg/kg \times 0.0001 = 0.03\%$

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File :	C:\PEAKNET\DATA\12079058.DXD	Report Date:	12/7/99 10:25:09 PM
le Name:	1384191 - C06	Collected :	12/7/99 10:13:02 PM
ct # :	58	Vial # :	C06
od File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
em Name:	ANIONS	Detector :	CD20
mn Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
le Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

ration	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

D-219

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.20	FLUORIDE	1.377	11735	186450	2	3.94
3.12	CHLORIDE	5.336	52903	609744	2	3.31
3.75	NITRITE	3.095	14317	209093	2	3.69
0.00	BROMIDE	0.000	0	0	0	0.00
5.18	NITRATE	-6135.042	4409944	70065276	2	-2.81
7.30	PHOSPHATE	3.134	3238	84605	2	2.34
8.48	SULFATE	-136.604	1071232	23995457	2	-0.97
	Totals	-6258.704	5563369	95150624		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.20	FLUORIDE	1.377	11735	186450	2	3.94
3.12	CHLORIDE	5.336	52903	609744	2	3.31
3.75	NITRITE	3.095	14317	209093	2	3.69
5.18	NITRATE	-6135.042	4409944	70065276	2	-2.81
7.30	PHOSPHATE	3.134	3238	84605	2	2.34
8.48	SULFATE	-136.604	1071232	23995457	2	-0.97
	Totals	-6258.704	5563369	95150624		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
DE	4.57	0

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

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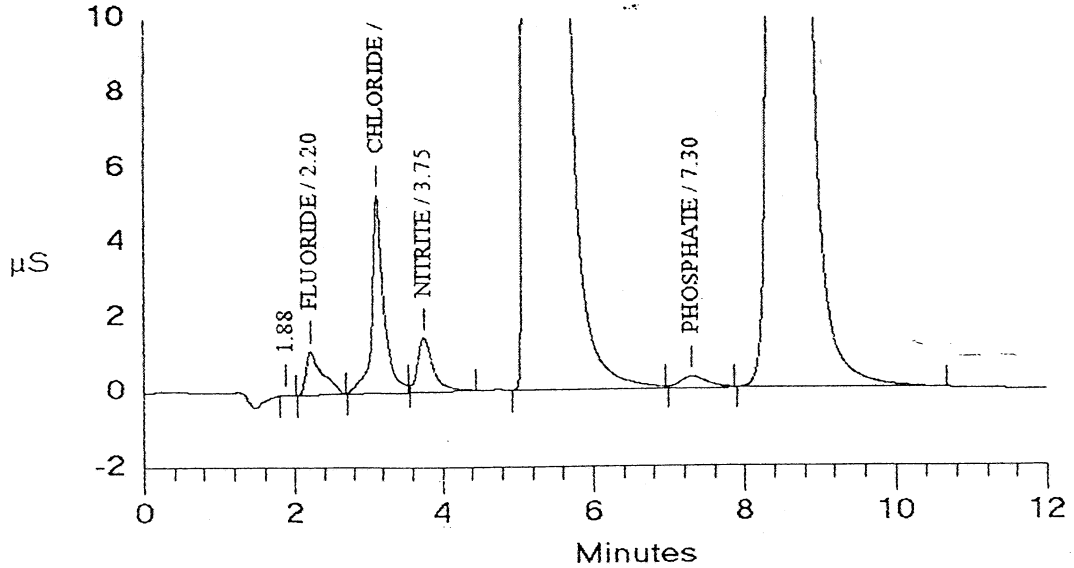
1.88		0.000	218	1638	1	
2.20	FLUORIDE	1.377	11735	186450	2	3.94
3.12	CHLORIDE	5.336	52903	609744	2	3.31
3.75	NITRITE	3.095	14317	209093	2	3.69
5.18	NITRATE	-6135.042	4409944	70065276	2	-2.81
7.30	PHOSPHATE	3.134	3238	84605	2	2.34
8.48	SULFATE	-136.604	1071232	23995457	2	-0.97
	Totals	-6258.704	5563586	95152262		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
1.88		0.000	218	1638	1	
	Totals	[illegible]	[illegible]	[illegible]		

File: 12079058.DXD Sample 1384191 - C06



CHLORIDE $\frac{5.336\ mg/L \times 0.050L}{0.0007169} = 372\ mg/kg \times 0.0001 = 0.04\%$

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==============================================================================
 File   : C:\PEAKNET\DATA\12079059.DXD   Report Date: 12/7/99 10:38:45 PM
le Name: METH BLK  - B01                Collected  : 12/7/99 10:26:38 PM
ct #    : 59                            Vial #     : B01
od File: c:\peaknet\method\acidscan.met Calibrated : 12/7/99 10:49:52 AM
em Name: ANIONS                         Detector   : CD20
mn Type:                                Operator   : DK
 Points: 3600                           Rate       : 5.00  Hz
le Name: S/N 96020568        ID:24 Of 15 Moduleware : 1.17
==============================================================================

ration  Volume   Dilution  Start   Stop Area Reject Pk. Width Threshold
------------------------------------------------------------------------
mal        50          1   0.00  12.00          10      10.00      0.94
```

D-221

```
 type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

****************** Component Report: All Components ********************
```

Time	Name	MG/L			Code	
2.30	FLUORIDE	0.293	2291	21696	1	8.66
3.03	CHLORIDE	0.216	2412	20035	1	0.55
0.00	NITRITE	0.000	0	0	0	0.00
0.00	BROMIDE	0.000	0	0	0	0.00
5.53	NITRATE	-0.019	664	8216	1	3.75
0.00	PHOSPHATE	0.000	0	0	0	0.00
8.63	SULFATE	0.695	2956	63900	1	0.78
	Totals	1.186	8323	113846		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.30	FLUORIDE	0.293	2291	21696	1	8.66
3.03	CHLORIDE	0.216	2412	20035	1	0.55
5.53	NITRATE	-0.019	664	8216	1	3.75
8.63	SULFATE	0.695	2956	63900	1	0.78
	Totals	1.186	8323	113846		

********** Components Not Found In This Run **********

	Adjusted Ret Time	Reference Peak
E	3.62	0
E	4.57	0
ATE	7.13	0

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

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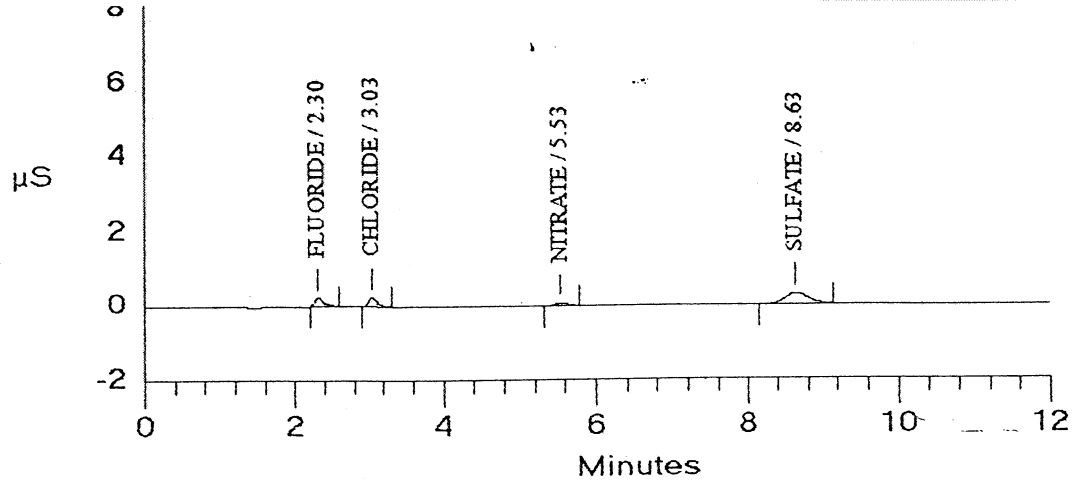
2.30	FLUORIDE	0.293	2291	21696	1	8.66
3.03	CHLORIDE	0.216	2412	20035	1	0.55
5.53	NITRATE	-0.019	664	8216	1	3.75
8.63	SULFATE	0.695	2956	63900	1	0.78
	Totals	1.186	8323	113846		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		

File: 12079059.DXD Sample METH BLK - B01



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File :	C:\PEAKNET\DATA\12079060.DXD	Report Date:	12/7/99 10:52:20 PM
le Name:	IPC - B02	Collected :	12/7/99 10:40:13 PM
st # :	60	Vial # :	B02
od File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
em Name:	ANIONS	Detector :	CD20
nn Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
le Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

ration	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

D-223

********** Component Report: All Components **********

Ret	Component	Concentration	Height	Area	Bl.	%Delta

2.10	FLUORIDE	4.782	84931	718673	1	-0.79
3.02	CHLORIDE	4.821	65730	548543	2	0.00
3.65	NITRITE	4.995	30410	334093	2	0.92
4.65	BROMIDE	5.023	18843	228424	2	1.82
5.47	NITRATE	4.972	20334	299782	2	2.50
7.20	PHOSPHATE	4.912	6311	135969	1	0.93
8.60	SULFATE	4.966	18154	397755	1	0.39
	Totals	34.470	244713	2663240		

********** Component Report: Components Found **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	4.782	84931	718673	1	-0.79
3.02	CHLORIDE	4.821	65730	548543	2	0.00
3.65	NITRITE	4.995	30410	334093	2	0.92
4.65	BROMIDE	5.023	18843	228424	2	1.82
5.47	NITRATE	4.972	20334	299782	2	2.50
7.20	PHOSPHATE	4.912	6311	135969	1	0.93
8.60	SULFATE	4.966	18154	397755	1	0.39
	Totals	34.470	244713	2663240		

********** Peak Report: All Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
2.10	FLUORIDE	4.782	84931	718673	1	-0.79
3.02	CHLORIDE	4.821	65730	548543	2	0.00
3.65	NITRITE	4.995	30410	334093	2	0.92
4.65	BROMIDE	5.023	18843	228424	2	1.82
5.47	NITRATE	4.972	20334	299782	2	2.50
7.20	PHOSPHATE	4.912	6311	135969	1	0.93

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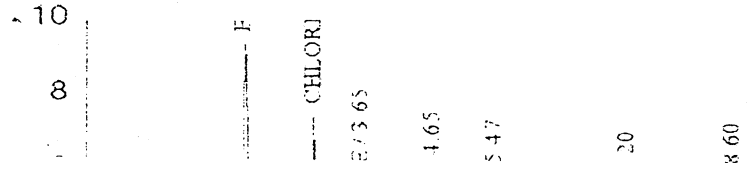
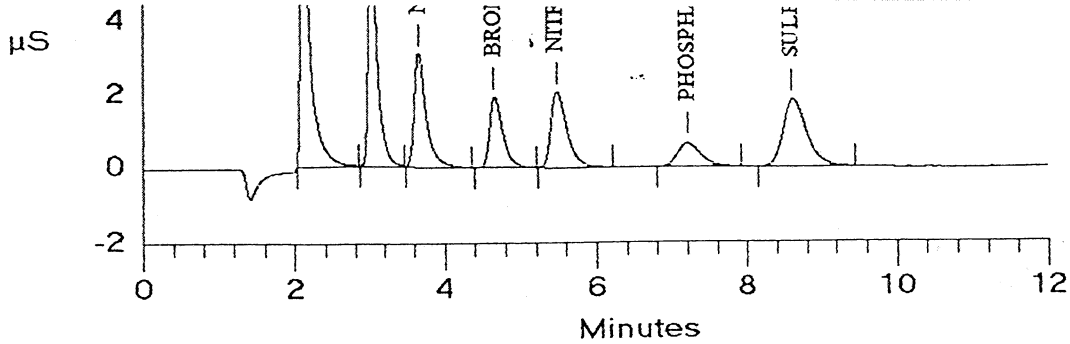
8.60	SULFATE	4.966	18154	397755	1	0.39
	Totals	34.470	244713	2663240		

********** Peak Report: Unknown Peaks **********

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta
	Totals	0.000	0	0		

File: 12079060.DXD Sample IPC - B02





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File :	C:\PEAKNET\DATA\12079061.DXD	Report Date:	12/7/99 11:06:02 PM
le Name:	1384286 - C07	Collected :	12/7/99 10:53:55 PM
ct # :	61	Vial # :	C07
od File:	c:\peaknet\method\acidscan.met	Calibrated :	12/7/99 10:49:52 AM
em Name:	ANIONS	Detector :	CD20
mn Type:		Operator :	DK
Points:	3600	Rate :	5.00 Hz
le Name:	S/N 96020568 ID:24 Of 15	Moduleware :	1.17

ration	Volume	Dilution	Start	Stop	Area Reject	Pk. Width	Threshold
nal	50	1	0.00	12.00	10	10.00	0.94

r type: Savitsky-Golay Size:5 points (1.0 sec) 1 iteration(s)

********** Component Report: All Components **********

D-225

Ret Time	Component Name	Concentration MG/L	Height	Area	Bl. Code	%Delta

APPENDIX E
SAMPLE CALCULATIONS

SAMPLE CALCULATIONS
Unit No. 1 – ESP Inlet
Run No. 1

Meter Pressure (Pm), in. Hg

$$Pm = Pb + \frac{\Delta H}{13.6\ in.\ H_2O/in.\ Hg}$$

where, Pb = barometric pressure, in. Hg
ΔH = Pressure differential of orifice in. H_2O

$$Pm = 29.80\ in.\ Hg + \frac{0.852\ in.\ H_2O}{13.6\ in.\ H_2O/in.\ Hg} = 29.86\ in.\ Hg$$

Absolute Stack Gas Pressure (Ps), in. Hg

$$Ps = Pb + \frac{Pg}{13.6\ in.\ H_2O/in.\ Hg}$$

where, Pb = barometric pressure, in. Hg
Pg = Static Pressure, in. H_2O

$$Ps = 29.80\ in.\ Hg + \frac{6.1\ in.\ H_2O}{13.6\ in.\ H_2O/in.\ Hg} = 29.35\ in.\ Hg$$

Standard Meter Volume (Vmstd), dscf

$$Vmstd = \frac{17.647\ °R/in.\ Hg\ \ x\ \ Y\ \ x\ \ Vm\ \ x\ \ Pm}{Tm}$$

where, Y = meter correction factor
Vm = meter volume, dscf
Pm = meter pressure, in. Hg
Tm = meter temperature, °R

$$Vmstd = \frac{17.647\ °R/in.\ Hg\ \ x\ \ 1.009\ \ x\ \ 74.794\ dscf\ \ x\ \ 29.86\ in.\ Hg}{(101+460)\ °R} = 70.86\ dscf$$

Standard Wet Volume (Vwstd), scf

$$Vwstd = 0.04707\ ft^3/mL\ \ x\ \ Vlc$$

where, Vlc = volume of H_2O collected, mL from impingers and silica gel

$$Vwstd = 0.04707\ ft^3/mL\ \ x\ \ 129.3\ mL = 6.1\ scf$$

Moisture Fraction (Measured), (Bws)

$$Bws = \frac{Vwstd}{(Vwstd + Vmstd)} = \frac{6.1\,scf}{6.1\,scf + 70.86\,dscf} = 0.079$$

where, Vwstd = standard wet volume, scf
Vmstd = standard meter volume, dscf

Moisture %, (Bws %)

$$Bws = Bws \times 100 = 0.079 \times 100 = 7.9$$

Molecular Weight (DRY) (Md), lb/lb-mole

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

$$Md = (0.44 \times 14.3) + (0.32 \times 4.2) + (0.28(100 - 14.3 - 4.2)) = 29.47\,lb/lb\text{-}mole$$

Molecular Weight (WET) (Ms), lb/lb-mole

$$Ms = Md\,(1 - Bws) + 18(Bws)$$

where, Md = molecular weight (DRY), lb/lb-mole
Bws = moisture fraction, dimensionless

$$Ms = 29.47\,lb/lb\text{-}mole\,(1 - 0.079) + 18(0.079) = 28.56\,lb/lb\text{-}mole$$

Average Velocity (Vs), ft/sec

$$Vs = 85.49\,\frac{ft}{sec}\sqrt{\frac{(lb/lb\text{-}mole)(in.\,Hg)}{(°R)(in.\,H_2O)}} \times Cp \times \sqrt{Delta\,P\ avg.} \times \sqrt{\frac{Ts}{Ps \times Ms}}$$

where, Cp = pitot tube coefficient
Delta P = velocity head of stack gas, in. H_2O
Ts = absolute stack temperature, °R
Ps = absolute stack gas pressure, in. Hg
Ms = molecular weight of stack gas, lb/lb-mole

$$Vs = 85.49\,\frac{ft}{sec}\sqrt{\frac{(lb/lb\text{-}mole)(in.\,Hg)}{(°R)(in.\,H_2O)}} \times 0.84 \times 0.61\,in.\,H_2O \times \sqrt{\frac{(637 + 460)°R}{29.35\,in.\,Hg \times 28.56\,lb/lb\text{-}mole}}$$

$$Vs = 49.3\,ft/sec$$

Average Stack Gas Flow at Stack Conditions (Qa), acfm

$$Qa = 60\,sec/min \times Vs \times As$$

where, Vs = stack gas velocity, ft/sec
As = cross-sectional area of stack, ft^2

$$Qa = 60\,sec/min \times 49.3\,ft/sec \times 418.4\,ft^2 = 1.24\,E + 06\,acfm$$

Average Stack Gas Flow at Standard Conditions (Qs), dscfm

$$Qs = 17.647 \frac{°R}{in.Hg} \ x \ Qa \ x \ (1 - Bws) \ x \ \frac{Ps}{Ts}$$

where, Qa = average stack gas flow at stack conditions, ft^3/min
Bws = moisture content (dimensionless)
Ps = absolute stack gas pressure, in. Hg
Ts = absolute stack temperature, °R

$$Qs = 17.647 \frac{°R}{in.Hg} \ x \ 1.24E+06 \frac{acf}{min} \ x \ (1 - 0.079) \ x \ \frac{29.35 \ in.Hg}{1097 \ °R} = 5.38E+05 \ dscfm$$

Percent Isokinetic Sampling Rate (%I)

$$\%I = \frac{0.0945(in.Hg)(min)/(°R)(sec) \ x \ Ts \ x \ Vmstd}{Ps \ x \ Vs \ x \ An \ x \ \Theta \ x \ (1 - Bws)}$$

where, Ts = avg. stack temperature, °R
Vmstd = standard meter volume, dscf
Ps = absolute stack gas pressure, in. Hg
Vs = stack gas velocity, ft/sec
An = cross-sectional area of nozzle, ft^2
Θ = total sampling time, min
Bws = moisture content (dimensionless)

$$\%I = \frac{0.0945(in.Hg)(min)/(°R)(sec) \ x \ 1097 \ °R \ x \ 70.863 \ dscf}{28.53 \ in.Hg \ x \ 49.3 \ ft/sec \ x \ 3.41E-0.4 \ ft^2 \ x \ 150 \ min \ x \ (1 - 0.079)}$$

$$\%I = 107.7$$

Total Mercury Concentration, lb/dscf

$$C_1 = \frac{W \ x \ 2.2046 \ x \ 1.0E-9}{Vm_{(std)}}$$

$$C_1 = \frac{14.54 \ x \ 2.2046 \ x \ 1.0E-9}{70.863}$$

$$C_1 = 4.52E-9$$

where, C_1 = total mercury concentration, lb/dscf
W = weight of total mercury collected in sample in µg
2.2045×10^{-9} = conversion factor from µg to pounds

Total Mercury Mass Emission Rate, lbs/hr

$$MR1 = C_1 \times Qs(std) \times 60$$

$$MR1 = 4.52\,E-9 \times 538355 \times 60$$

$$MR1 = 1.46\,E-02$$

where, MR1 = total mercury mass emission rate, lbs/hr
60 = conversion factor from minutes to hours

Total Mercury Concentration, μg/M³

$$C_2 = \frac{W}{Vm_{(std)} \times 0.02832}$$

$$C_2 = \frac{14.54}{70.863 \times 0.02832}$$

$$C_2 = 7.25$$

where, C_2 = total mercury concentration, μg/M³
W = total mercury catch, μg
0.02832 = conversion factor from cubic feet to cubic meters

Total Mercury Concentration, μg/Nm³

$$C_3 = \frac{W}{Vm_{(std)} \times 0.02832 \times (16.44/17.64)}$$

$$C_3 = \frac{14.54}{70.863 \times 0.02832 \times (16.44/17.64)}$$

$$C_3 = 7.77$$

where, C_3 = total mercury concentration, μg/Nm³
W = total mercury catch, μg
0.02832 = Conversion factor from cubic feet to cubic meters
16.44/17.64 = Ratio of conversion factors for standard temperature and pressure and normal temperature

Total Mercury Mass Emission Rate, lbs/1.0E+12 Btu

$$MR2 = MR1/Heat\ Input$$

$$MR2 = 1.46\,E-02 / 2456$$

$$MR2 = 5.95$$

where, MR2 = total mercury mass emission rate, lbs/10E+12 Btu
Heat Input = 2058 x 10E+6 Btu/hr

Mercury Emissions from Coal Feed, lb/hr

$$Hg\ (lb/hr) = < 0.10 \frac{mg}{Kg} x \frac{Kg}{2.2046\ lb} x\ 194{,}741 \frac{lb}{hr} x \frac{g}{1000\ mg} x \frac{lb}{454\ g}$$

$$Hg\ (lb/hr) = < 0.019\ \ lbHg/hr$$

where, <0.10 mg/Kg = coal analysis analytical result
194,741 lb/hr = coal feed rate

APPENDIX F
EQUIPMENT CALIBRATION RECORDS

POST-TEST EQUIPMENT CALIBRATIONS

Client Alabama Power Work Order No. 12251-001-001 Due Date _____

Test Team Leader R J Mills Test Dates 10 Nov 99

Probe No. P169 Avg. Stack Temp. 636

Probe No. P167 Avg. Stack Temp. 262

Probe No. _____ Avg. Stack Temp. _____

Probe No. _____ Avg. Stack Temp. _____

Pitot Tube No. P169

Pitot Tube No. P167

Pitot Tube No. _____

Pitot Tube No. _____

Meter Box No. WC12	Highest Vacuum 9.5	Avg. ΔH 0.85
Meter Box No. 15	Highest Vacuum 7	Avg. ΔH 1.22
Meter Box No. _____	Highest Vacuum _____	Avg. ΔH _____
Meter Box No. _____	Highest Vacuum _____	Avg. ΔH _____

Singer DGM No. _____ Flow Rate _____

Singer DGM No. _____ Flow Rate _____

Singer DGM No. _____ Flow Rate _____

Singer DGM No. _____ Flow Rate _____

VOST Box No. _____ Flow Rate _____

VOST Box No. _____ Flow Rate _____

VOST Box No. _____ Flow Rate _____

VOST Box No. _____ Flow Rate _____

HH Thermocouple No. _____ Avg. Temp. _____

HH Thermocouple No. _____ Avg. Temp. _____

HH Thermocouple No. _____ Avg. Temp. _____

HH Thermocouple No. _____ Avg. Temp. _____

Rotameter No. _____

Rotameter No. _____

Rotameter No. _____

Rotameter No. _____

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WESTON MANAGERS DESIGNERS/CONSULTANTS

WESTON

LONG/PRE DRY GAS METER CALIBRATION DATA FORM

Calibrator P. Mack

Date 2/25/99 Meter Box Number 12 Plant

Barometric pressure, P_b = 29.72 in. Hg Dry Gas Meter Number 6898070 Comments

Setting	Gas volume		Temperatures						
Orifice manometer	Wet test meter	Dry gas meter	Wet test meter	Dry gas meter					
(ΔH) in. H_2O	(V_w) ft^3	(V_d) ft^3	(t_w) °F	Inlet (td_i) °F	Outlet (td_o) °F	Avg (t_d) °F	Time (θ), min	Y_i	ΔH@$_i$ in. H_2O
0.5	5	728.659 723.650	66	69, 75	69, 72	71	12.6	1.006	1.7646
1.0	5	733.685 728.659	66	75, 77	72, 73	74	9.2	1.007	1.8710
1.5	10	743.761 733.685	66	79, 84	73, 76	78	15.4	1.011	1.9513
2.0	10	753.860 743.761	67	83, 86	76, 77	80.5	13.5	1.010	1.9977
3.0	10	763.977 753.860	67	87, 90	78, 79	83.5	10.9	1.012	1.9427
							Avg	Y 1.009	ΔH@ 1.9055

If there is only one thermometer on the dry gas meter, record the temperature under td_o.

(ΔH) in. H_2O	$\frac{\Delta H}{13.6}$	$Y_i = \frac{V_w P_b (t_d + 460)}{V_d \left(P_b + \frac{\Delta H}{13.6}\right)(t_w + 460)}$	$\Delta H@i = \frac{0.0317 \Delta H}{P_b (t_d + 460)} \left[\frac{(t_w + 460)\Theta}{V_w}\right]^2$
0.5	0.0368	$\frac{(5)(29.72)(71+460)}{(5.009)(29.72+.0368)(66+460)}$	$\frac{(.0317)(.5)}{(29.72)(71+460)}\left[\frac{(66+460)(12.6)}{5}\right]^2$
1.0	0.0735	$\frac{(5)(29.72)(74+460)}{(5.026)(29.72+.0735)(66+460)}$	$\frac{(.0317)(1.0)}{(29.72)(74+460)}\left[\frac{(66+460)(9.2)}{5}\right]^2$
1.5	0.110	$\frac{(10)(29.72)(78+460)}{(10.076)(29.72+.110)(66+460)}$	$\frac{(.0317)(1.5)}{(29.72)(78+460)}\left[\frac{(66+460)(15.4)}{10}\right]^2$
2.0	0.147	$\frac{(10)(29.72)(80.5+460)}{(10.099)(29.72+.147)(67+460)}$	$\frac{(.0317)(2.0)}{(29.72)(80.5+460)}\left[\frac{(67+460)(13.5)}{10}\right]^2$
3.0	0.221	$\frac{(10)(29.72)(83.5+460)}{(10.117)(29.72+.221)(67+460)}$	$\frac{(.0317)(3.0)}{(29.72)(83.5+460)}\left[\frac{(67+460)(10.9)}{10}\right]^2$

WESTON

STACK TEMPERATURE SENSOR CALIBRATION DATA FORM

DATE 23 FEB 99
AMBIENT TEMPERATURE [illegible] 72
CALIBRATION GP

POTENTIOMETER NUMBER NUTECH L' 12
BAROMETRIC PRESSURE 29.94
REFERENCE: THERMOCOUPLE SIMULATOR (ACCURACY ± 1°F)

REFERENCE TEMPERATURE °C	°F	TEMPERATURE READING FROM THERMOCOUPLE CHANNEL INPUT NUMBER 1	2	3	4	5	AVERAGE TEMPERATURE READING ①	TEMPERATURE DIFFERENCE ② (%)
0	32	32	32	32	32	32	32	0° - 0%
100	212	213	213	213	213	213	213	1° - .15%
500	932	933	933	933	933	933	933	1° - .07%
1000	1832	1830	1830	1831	1831	1832	1830.8	1.2° - .05%

COMMENTS

① AVERAGE TEMPERATURE READING = MEAN OF THE TEMPERATURE READINGS FOR THE THERMOCOUPLE CHANNELS

② THE CHANNEL READINGS MUST AGREE WITHIN ± 5°F OR 3°C

ACCEPTABLE TEMPERATURE DIFFERNCE ≤ 1.5 = $\left(\frac{(\text{REF TEMP}^{\circ}\text{F} + 460) - (\text{TEST TEMP}^{\circ}\text{F} + 460)}{(\text{REF TEMP}^{\circ}\text{F} + 460)}\right) \times 100$

WESTON

LONG/PRE DRY GAS METER CALIBRATION DATA FORM

Calibrator P. Mack

Date 9/27/99 Meter Box Number 15 Plant

Barometric pressure, P_b = 29.63 in. Hg Dry Gas Meter Number ~~[illegible]~~ 1348735 Comments

Setting	Gas volume		Temperatures						
Orifice manometer	Wet test meter	Dry gas meter	Wet test meter	Dry gas meter					
(Δ H) in. H_2O	(V_w) ft³	(V_d) ft³	(t_w) °F	Inlet (td_i) °F	Outlet (td_o) °F	Avg (t_d) °F	Time (θ), min	Y_i	ΔH @$_i$ in. H_2O
0.5	5	302.253 297.222	71.5	78,79,79	76,76,77	77.5	13.0	1.004	1.8914
1.0	5	307.329 302.253	71.5	79,80,81	76,77,77	78.5	9.4	.9955	1.9836
1.5	10	317.504 307.329	71.5	81,83,84	78,78,79	80.5	15.8	.9957	2.0938
2.0	10	327.721 317.504	71.5	83,84,86	79,79,80	82	13.8	.9932	2.1238
3.0	10	337.990 327.721	71.5	86,91,92	80,81,82	85.5	11.2	.9921	2.0849
							Avg	Y .9961	ΔH @ 2.0355

If there is only one thermometer on the dry gas meter, record the temperature under td_o.

(ΔH) in. H_2O	$\frac{\Delta H}{13.6}$	$Y_i = \frac{V_w P_b (t_d + 460)}{V_d \left(P_b + \frac{\Delta H}{13.6}\right)(t_w + 460)}$	$\Delta H@i = \frac{0.0317 \Delta H}{P_b (t_d + 460)} \left[\frac{(t_w + 460)\Theta}{V_w}\right]^2$
0.5	0.0368	$\frac{(5)(29.63)(77.5+460)}{(5.031)(29.63+.0368)(71.5+460)}$	$\frac{(.0317)(.5)}{(29.63)(77.5+460)}\left[\frac{(71.5+460)(13.0)}{5}\right]^2$
1.0	0.0735	$\frac{(5)(29.63)(78.5+460)}{(5.076)(29.63+.0735)(71.5+460)}$	$\frac{(.0317)(1.0)}{(29.63)(78.5+460)}\left[\frac{(71.5+460)(9.4)}{5}\right]^2$
1.5	0.110	$\frac{(10)(29.63)(80.5+460)}{(10.175)(29.63+.110)(71.5+460)}$	$\frac{(.0317)(1.5)}{(29.63)(80.5+460)}\left[\frac{(71.5+460)(15.8)}{10}\right]^2$
2.0	0.147	$\frac{(10)(29.63)(82+460)}{(10.217)(29.63+.147)(71.5+460)}$	$\frac{(.0317)(2.0)}{(29.63)(82+460)}\left[\frac{(71.5+460)(13.8)}{10}\right]^2$
3.0	0.221	$\frac{(10)(29.63)(85.5+460)}{(10.269)(29.63+.221)(71.5+460)}$	$\frac{(.0317)(3.0)}{(29.63)(85.5+460)}\left[\frac{(71.5+460)(11.2)}{10}\right]^2$

WESTON

STACK TEMPERATURE SENSOR CALIBRATION DATA FORM

DATE 7/24/99
AMBIENT TEMPERATURE 22
CALIBRATION Ok, [illegible]

POTENTIOMETER NUMBER 2010 #15
BAROMETRIC PRESSURE 29.27
REFERENCE: THERMOCOUPLE SIMULATOR
(ACCURACY = 1°F)

REFERENCE TEMPERATURE °C	REFERENCE TEMPERATURE °F	TEMPERATURE READING FROM THERMOCOUPLE CHANNEL INPUT NUMBER 1	2	3	4	5	AVERAGE TEMPERATURE READING ②	TEMPERATURE DIFFERENCE ③ (%)
0	32	31	31	31	31	31	31	1° - .20%
100	212	212	212	212	212	212	212	0° - 0%
500	932	933	933	933	933	933	933	1° - ~~[illegible]~~ .07%
1000	1832	1830	1830	1830	1830	1830	1830	2° - .09%

COMMENTS

② AVERAGE TEMPERATURE READING = MEAN OF THE TEMPERATURE READINGS FOR THE THERMOCOUPLE CHANNELS

③ THE CHANNEL READINGS MUST AGREE WITHIN ±5°F OR 3°C

ACCEPTABLE TEMPERATURE DIFFERNCE ≤ 1.5 = $\left(\frac{(\text{REF TEMP}^{\circ}\text{F} + 460) - (\text{TEST TEMP}^{\circ}\text{F} + 460)}{(\text{REF TEMP}^{\circ}\text{F} + 460)}\right) \times 100$

01/31/00 11:24 TX/RX NO.3306 P.007

WESTON

PITOT TUBE IDENTIFICATION NUMBER: P167

TYPE S PITOT TUBE INSPECTION DATA FORM

PITOT TUBE ASSEMBLY LEVEL? ✓ (YES) _____ (NO)

PITOT TUBE OPENINGS DAMAGED? _____ (YES-EXPLAIN BELOW) _____ (NO)

α_1 = 0° (<10) α_2 = 0° (<10)

β_1 = 0° (<5) β_2 = 0° (<5)

γ = 1° θ = _____ A = .95 in.

z = A sin γ = .01 in.; (< 1/8 in.),

w = A sin θ = 0 in.; (< 1/32 in.),

P_a = .475 in. P_b = .475 in.

D_t = .38 in. $P_a = P_b$? ✓ (YES) _____ (NO)

COMMENTS _____

CALIBRATION REQUIRED? _____ (YES) ✓ (NO)

INSPECTOR [illegible] DATE 11/15/99

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WESTON

PITOT TUBE IDENTIFICATION NUMBER: P169

TYPE S PITOT TUBE INSPECTION DATA FORM

PITOT TUBE ASSEMBLY LEVEL? ✓ (YES) ____ (NO)

PITOT TUBE OPENINGS DAMAGED? ____ (YES-EXPLAIN BELOW) ✓ (NO)

α_1 = 0° (<10) α_2 = 0° (<10)

β_1 = 0° (<5) β_2 = 0° (<5)

γ = 1° θ = 0° A = .95 in.

z = A sin γ = .01 in.; (<1/8 in.),

w = A sin θ = 0 in.; (<1/32 in.),

P_a = .475 in. P_b = .475 in.

D_t = .375 in. $P_a = P_b$? ✓ (YES) ____ (NO)

COMMENTS ____

CALIBRATION REQUIRED? ____ (YES) ✓ (NO)

INSPECTOR [signature] DATE 12/22/98

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NOZZLE CALIBRATION DATA FORM

Date 11/10/99 Calibrated by Mills

Nozzle Identification Number	Nozzle Diameter, Inches[1]			ΔD,[2]	D_{avg}[3]
	D_1	D_2	D_3		
Inlet 25A	.250	.249	.250	.001	.250
Outlet	.274	.275	.275	.001	.275

Where:

[1] $D_{1,2,3}$ = Three different nozzle diameters, inches; each diameter must be measured to nearest 0.001 in.

[2] ΔD = Maximum difference between any two diameters, inches. ΔD must be $\leq$0.004 in.

[3] D_{avg} = Nozzle diameter = average of D_1, D_2, and D_3.

nozzle.frm

APPENDIX G
TECHNICAL SYSTEM AUDIT

PROCEDURAL CHECKLIST
FOR EPA METHODS 1, 2, 3 AND 4

METHOD 1 DETERMINATIONS

Date 11/9/99 Time _____ Operator Allmendinger Briggs Observer Mills
ALABAMA Power

Stack diameter properly determined? yes
Distance to nearest upstream disturbance properly determined? yes

Number of stack diameters? Sample ports are in transition

Distance of nearest downstream disturbance properly determined? yes

Number of sampling points properly selected? yes
Points properly marked on pitot tube? yes
Verification of cyclonic flow acceptable? yes

METHOD 2 SAMPLING

Date 11/9/99 Time _____ Operator Allmendinger Briggs Observer Mills

Equipment identity matches pretest calibration list? yes

Pitot tube, lines, and manometer assembled correctly? yes

Pitot tube and components mounted interference-free manner? yes
Differential pressure gauge has correct sensitivity? yes

Differential pressure gauge leveled and zeroed? yes

Pretest leak check? yes Cyclonic flow checked? yes
Orientation of pitot tube correct during traverse? yes
Sampling port adequately sealed around pitot tube? yes
Process operating at correct conditions? yes
Stable reading taken at each traverse point? yes
Static pressure measured? yes Method used? M2
Moisture content determined? yes Method used? M4
Orsat samples taken? yes If not, explain why: _____

Post-test leak-check performed? yes Leak check results: Good
Data recorded properly? yes Calculations correct? yes

PROCEDURAL CHECKLIST
FOR EPA METHODS 1, 2, 3 AND 4

METHOD 3 SAMPLING

Date 11/10 + 11/11/99 Time _____ Operator Allen Briggs Observer Mills

Method: Single-point grab _____ Single-point integrated _____
Multi-point integrated yes
Is a filter used to remove particulate matter? NO
Sampling train leak checked? yes
Sampling train purged with stack gas prior to collecting the sample? yes

Sampling port properly sealed? yes

Sampling rate held constant? yes

METHOD 3 ANALYSIS

Molecular weight determination by Orsat: yes

Reagents at the proper level? yes Analyzer level? yes
Analyzer leak checked? yes Analyzed within 8 hours? yes
Sample line purged? yes Complete absorption of gases? yes
The analysis repeated until following analysis criteria met? _____

CO_2 - Any three analyses differ by:

a. $\leq$ 0.3% when CO_2 $\geq$ 4.0% yes

b. $\leq$ 0.2% when CO_2 $\leq$ 4.0% _____

O_2 - Any three analyses differ by:

a. $\leq$ 0.2% when O_2 $\geq$ 15.0% _____

b. $\leq$ 0.3% when O_2 $\leq$ 14.0% yes

All readings averaged and reported to nearest 0.1% yes

TECHNICAL SYSTEM AUDIT CHECKLIST
TRACE METALS SAMPLING

ONTARIO Hydro Method

Date 11/10+11/11/89 Time _____ Operator Allmediber Observer Mills

ALABAMA Power Bridges

Equipment Setup

Equipment identity matches pretest calibration list? yes

Probe nozzle: _____ Glass yes

Button-hook yes Elbow _____ Size _____

Cleaned according to sampling protocol? yes

Probe Liner: Borosilicate yes Quartz _____ Other _____

Cleaned according to sampling protocol? yes

Probe heating system: yes ~250 °F

Checked? ✓ Temperature ~250 °F Stable? yes

Pitot Tube: Type S yes Other _____

Properly attached to probe (no interference to nozzle)? yes

Modifications: _____

Pitot tube coefficient 0.84

Differential Pressure Gauge: Inclined manometers yes 0-10"

Magnehelics no Ranges _____

Cylone (inlet only): Borosilicate Glass no Other _____

Cleaned according to sampling protocol? _____

Thimble + Filter Holder: Borosilicate Glass yes Other _____

Frit material: Borosilicate Glass _____ Stainless _____

Teflon yes Other _____

Gasket Material: Silicone _____ Other VITON

Cleaned according to sampling protocol? yes

Filter Type(s): Thimble + Filters one Quartz fiber

Impinger train: Number of impingers 8

Cleaned according to sampling protocol? yes

Contents: 1st-3rd 100 ml 1N KCl 4TH 100 ml 5% HNO_3 10% H_2O_2

5TH - 7TH 100 ml 4% $KMnO_4$ + 10% H_2SO_4 LAST - Silica Gel

Impinger Weights recorded? yes

Cooling System Ice BATH

Proper connections? yes

Modifications none

Silica Gel: Type Indicating New? no Used? yes

Barometer: Mercury _____ Aneroid _____ Other Electronic

Gas Density Determination: Temperature sensor yes

Pressure gauge yes

Temperature sensor properly attached to probe? yes

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TECHNICAL SYSTEM AUDIT CHECKLIST
TRACE METALS SAMPLING
ONTARIO HYDRO METHOD

Date 11/10 + 11/11/99 Time _____ Operator Allmon, Pinger, Ribbs Observer Mills
ALABAMA POWER

Test Procedures

Recent Calibrations: Pitot tubes yes
Meter Box yes Thermocouples/thermometers _____
thimble + Filters checked visually for irregularities? yes
Filters properly centered? yes Labeled? _____
Nozzle size properly selected? yes
All openings of sampling train plugged (pre-test and post-test) yes
Impingers properly assembled? yes
Pitot lines checked for leaks and plugging? yes
Meter box leveled? yes Manometers zeroed? yes
Delta H from most recent calibration yes
calculator ~~Nomograph~~ setup correctly? yes K factor IN ~2 OUT -4.5
Pretest leak check conducted? _____ Leakage rate? _____
Care taken to avoid scraping port or stack wall? yes
Effective seal around probe when in-stack? yes
Probe moved to traverse points at proper time? yes
Leak check conducted during port change? Before yes After? yes
Nozzle and pitot tubes kept parallel to stack at all times? yes
Filter(s) changed during run? Thimbles - yes Filters - no
Any particulate lost during filter change? no
Data forms completed and data recorded properly? yes
calculator ~~Nomograph~~ setting changed with significant change in the stack temperature? yes
Velocity pressure and orifice pressure recorded accurately? yes
Post-test leak check conducted? yes Leakage rate <.02 cfm
at inches of mercury _____
Orsat analysis? yes Stack yes Integrated yes
Approximate stack temperature IN - 650 OUT - 360 Gas sample volume ~ 2 m3
Percent isokinetic calculated yes all between 90 + 110

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TECHNICAL SYSTEM AUDIT CHECKLIST
TRACE METALS SAMPLING
Ontario Hydro Method

Date 11/10 + 11/11/92 Time _____ Operator Mills Observer Mills
Alabama Power

Sample Recovery

Brushes: Nylon bristle _____ Other Teflon
Cleaned according to sampling protocol? _____
Wash Bottles: Glass _____ Polyethylene _____ Other Teflon
Cleaned according to sampling protocol? _____
Storage containers: Borosilicate glass yes Other _____
Cleaned according to sampling protocol? yes
Cap material Teflon Leak free? yes
Petri dishes: Borosilicate glass yes Other _____
Cleaned according to sampling protocol? yes
Graduated cylinder: Borosilicate glass yes Other _____
Subdivisions of graduated cylinder ≤ 2 ml? yes
Cleaned according to sampling protocol? yes
Balance type Electronic Calibrated? yes
Probe allowed to cool sufficiently? yes
Probe and sample train openings covered? yes
Clean-up area(s) used TRAILER
Silica gel: Color? Indicating Condition? _____
Probe handling: Acetone rinse no 0.1 N Nitric rinse yes
Particulate recovery: Probe nozzle yes Probe fitting yes
Probe liner yes Front half of filter holder yes
Blanks collected: Reagent(s) all as per Ontario Hydro Method
0.1 N Nitric yes Acetone no
Impinger rinses: 0.1 N Nitric _____ Other rinses _____
Recovery efficiency samples collected from this train? no
Sample numbers: _____
Samples labeled and stored properly? yes
Liquid levels marked? yes
Filter handling: tweezers used? yes Surgical gloves? yes
Any particulate lost? no

~~NOTE: The above TSA would also be applied to the EPA Method 12 test train.~~

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SAMPLE RECOVERY FIELD DATA

Method Ontario Hydro Mercury Method

Client Alabama Power W.O. # 12251.001.001

Location/Plant EC Gaston Source & Location Outlet + Inlet

Run No. OT BT outlet Sample Date 11/10/99 Recovery Date 11/10/99

Sample I.D. ~~Outlet~~ AP6-EPO-SIL-BT-OHM-9Nov99 Analyst Filter Number NA

	Impinger 1	2	3	4	5	6	~~Imp.Total~~ 7	Total Hg 7	Silica ~~Total~~
Contents									
Final	730.6	736.7	723.4	667.9	611.0	693.7	626.3		300.0
Initial	730.2	736.5	723.0	667.7	610.9	693.7	625.9		300.0
Gain									

Impinger Color 1-4 Clear colorless Labeled? ✓

Silica Gel Condition 100% Blue Sealed? ✓

Run No. IN Sample Date 11/11/99 Recovery Date 11/11/99

Sample I.D. AP6-EP-IN-BT-OHM-9NOV1999 Analyst Filter Number NA

	Impinger 1	2	3	4	5	6	Imp.Total	7	Total
Contents									
Final	734.6	737.8	727.2	673.0	614.5	682.5	638.9		300.0
Initial	734.6	737.6	727.1	673.0	614.3	682.3	638.8		300.0
Gain									

Impinger Color 1-4 Clear colorless Labeled? ✓

Silica Gel Condition Blue Sealed? ✓

Run No. ____ Sample Date ____ Recovery Date ____

Sample I.D. ____ Analyst ____ Filter Number ____

	Impinger 1	2	3	4	5	6	Imp.Total	7	Total
Contents									
Final									
Initial									
Gain									

Impinger Color ____ Labeled? ____

Silica Gel Condition ____ Sealed? ____

Check COC for Sample IDs of Media Blanks

WESTON MANAGERS DESIGNERS/CONSULTANTS

Determination of Moisture Content in Stack Gases - Method 4

Client: AL Power
Location/Plant: Chickasaw
Source: Inlet
W.O. Number:
Operator: KA
Meter Box ID: 12
Temperature °C or °F: °F
Date: 11-20-99
Meter Box Y: 1.009
Sample Volume, ft³ or L: ft³

Run Number		Sample Time (min)	Meter Volume, Vm	Meter Temp (or ambient temp for rotometer) Inlet	Outlet	Meter Press, Delta H (in H_2O)	Impinger Volume, ml	Silica Gel Weight, g	Corrected Volume, Vm(std)	Leak Rate Check
1										Initial ✓
	End Test	0832	1004.991 ~~1003~~	72 / 67	63 / 59	1.5	230	308.6		Final ✓
Baro Press., Pb (in Hg)	Start Test	0800	984.031	59 / 54	55 / 53	1.5	200	300	Moisture Volume, Vw(std)	Percent Moisture (%), BWS
29.80	Avg. or Total	32	20.96	60.25		1.5	30	8.6		7.8%

Run Number		Sample Time (min)	Meter Volume, Vm	Meter Temp (or ambient temp for rotometer) Inlet	Outlet	Meter Press, Delta H (in H_2O)	Impinger Volume, ml	Silica Gel Weight, g	Corrected Volume, Vm(std)	Leak Rate Check
										Initial
	End Test									Final
Baro Press., Pb (in Hg)	Start Test								Moisture Volume, Vw(std)	Percent Moisture (%), BWS
	Avg. or Total									

Run Number		Sample Time (min)	Meter Volume, Vm	Meter Temp (or ambient temp for rotometer) Inlet	Outlet	Meter Press, Delta H (in H_2O)	Impinger Volume, ml	Silica Gel Weight, g	Corrected Volume, Vm(std)	Leak Rate Check
										Initial
	End Test									Final
Baro Press., Pb (in Hg)	Start Test								Moisture Volume, Vw(std)	Percent Moisture (%), BWS
	Avg. or Total									

$$Vm(std) = \frac{17.64 * Y * Vm * (Pb + (deltaH / 13.6))}{(Tm + 460)}$$

if Tm is C° than $Tm = (Tmc * 1.8) + 32$

if Vm is liters than $Vm = Vml * 28.32$

$$Vw(std) = (0.04707 * Vwc) + (0.04715 * Wwsg)$$

$$BWS = \left(\frac{Vw(std)}{Vw(std) + Vm(std)}\right) * 100$$

WHERE:
Vm(std)= Sample volume corrected to standard temp and pressure, scf or L
Vm= Actual sample volume, calculated, scf
Vml= Actual sample volume, calculated, Liters
Y= Dry gas meter calibration factor.
Pb= Barometric pressure, in. Hg
delta H= Meter pressure, in H2O
Tm= Average temperature of meter (DGM is used) or rotomter, degrees °I
Tmc= Average temperature of meter (DGM is used) or rotomter, degrees °
Vw(std)= Volume of water vapor at standard conditions, scf or L
Vwc= Volume of water condensed, mL
Wwsg= Weight of Silica Gel, g
Bws= Water vapor in gas stream, percer

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Use either ft³ or liters in calculations. DO NOT MIX CUBIC FEET AND LITERS IN ANY CALCULATION.

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Fig 6.0

Determination of Moisture Content in Stack Gases - Method 4

Client: ALABAMA POWER
Location/Plant: WATSONVILLE, AL
Source: OUTLET
W.O. Number: _____
Operator: TB
Meter Box ID: 15
Temperature °C or °F: °F
Date: 11-10-99
Meter Box Y: 1.9961
Sample Volume, ft³ or L: FT³

Run Number		Sample Time (min)	Meter Volume, Vm	Meter Temp (or ambient temp for rotometer) Inlet	Outlet	Meter Press, Delta H (in H_2O)	Impinger Volume, ml	Silica Gel Weight, g	Corrected Volume, Vm(std)	Leak Rate Check
PRELIM.										Initial .005 @ 15"
	End Test	0944	976.175	81	69	1.7	230	313.8		Final .003 @ 7"
Baro Press., Pb (in Hg)	Start Test	0914	955.650	63	61	1.7	200	308.6	Moisture Volume, Vw(std)	Percent Moisture (%), BWS
29.80	Avg. or Total	30	20.525	68.5		1.7	30	5.2		7.5

Run Number		Sample Time (min)	Meter Volume, Vm	Meter Temp (or ambient temp for rotometer) Inlet	Outlet	Meter Press, Delta H (in H_2O)	Impinger Volume, ml	Silica Gel Weight, g	Corrected Volume, Vm(std)	Leak Rate Check
										Initial _____
	End Test									Final _____
Baro Press., Pb (in Hg)	Start Test								Moisture Volume, Vw(std)	Percent Moisture (%), BWS
	Avg. or Total									

Run Number		Sample Time (min)	Meter Volume, Vm	Meter Temp (or ambient temp for rotometer) Inlet	Outlet	Meter Press, Delta H (in H_2O)	Impinger Volume, ml	Silica Gel Weight, g	Corrected Volume, Vm(std)	Leak Rate Check
										Initial _____
	End Test									Final _____
Baro Press., Pb (in Hg)	Start Test								Moisture Volume, Vw(std)	Percent Moisture (%), BWS
	Avg. or Total									

$$Vm(std) = \frac{17.64 * Y * Vm * (Pb + (deltaH / 13.6))}{(Tm + 460)}$$

if Tm is C° than $Tm = (Tmc * 1.8) + 32$

if Vm is liters than $Vm = Vml * 28.32$

$$Vw(std) = (0.04707 * Vwc) + (0.04715 * Wwsg)$$

$$BWS = \left(\frac{Vw(std)}{Vw(std) + Vm(std)}\right) * 100$$

WHERE:
Vm(std)= Sample volume corrected to standard temp and pressure, scf or L
Vm= Actual sample volume, calculated, scf
Vml= Actual sample volume, calculated, Liters
Y= Dry gas meter calibration factor.
Pb= Barometric pressure, in. Hg
delta H= Meter pressure, in H2O
Tm= Average temperature of meter (DGM is used) or rotomter, degrees °I
Tmc= Average temperature of meter (DGM is used) or rotomter, degrees °
Vw(std)= Volume of water vapor at standard conditions, scf or L
Vwc= Volume of water condensed, mL
Wwsg= Weight of Silica Gel, g
Bws= Water vapor in gas stream, percer

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Use either ft³ or liters in calculations. DO NOT MIX CUBIC FEET AND LITERS IN ANY CALCULATION.

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Determination of Stack Gas Velocity - Method 2

Client: ALABAMA POWER
Location/Plant: WILSONVILLE, AL
Source: OUTLET

Operator: TB
Date: 11-10-99
W.O. Number: _____

Pitot Coeff (Cp): .84
Stack Area, ft² (As): _____
Pitot Tube/Thermo ID: _____

Run Number	PRELIM.		
Time	0820-0945		
Barometric Press, in Hg (Pb)	29.80		
Static Press, in H_2O (Pstatic)	-10.5		
Source Moisture, % (BWS)	7.5		
O_2, %	10		
CO_2, %	12		

Cyclonic Flow Determination		Traverse Location		Leak Check good ? (Y) N		Leak Check good ? Y / N		Leak Check good ? Y / N	
Delta P at 0°	Angle yeilding zero Delta P	Port	Point	Delta P	Source Temp, F° (Ts)	Delta P	Source Temp, F° (Ts)	Delta P	Source Temp, F° (Ts)
~~.03~~	5	A	1	.05	221	F .26	257	K .15	258
.02	5		2	.06	221	0.0 5° .32	256	0.0 0° .17	256
			3	.08	221	.37	261	.21	257
.03	5		4	.14	221	0.03 5° .45	266	.03 5° .38	260
			5	.19	221	.49	268	.46	264
		B	1	.10	234	G .32	215	L .20	250
.06	35		2	.13	233	.03 5° .32	217	.04 10° .23	254
			3	.23	234	.40	224	.30	255
.06	30		4	.28	237	0.1 0° .49	226	.05 10° .36	258
			5	.26	235	.50	226	.43	263
		C	1	.27	244	H .27	244		
.04	5		2	.26	245	.03 5° .30	248		
			3	.31	247	.44	251		
.02	5		4	.37	247	0.6 6° .44	253		
			5	.41	249	.42	252		
		D	1	.34	255	I .22	253		
.05	10		2	.30	259	.03 5° .22	253		
			3	.28	258	.27	254		
.05	15		4	.35	258	.07 10° .40	255		
			5	.35	257	.41	257		
		E	1	.22	261	J .41	258		
.02	5		2	.25	262	0.8 8° .38	261		
			3	.24	262	.39	264		
0.0	0		4	.27	264	.03 5° .43	266		
			5	.30	263	.40	270		
Avg Angle		Avg Delta P & Temp		.3042	249.0				
		avg √DeltaP		0.5402					
Average gas stream velocity, ft/sec.									
Vol. flow rate @ actual conditions, wacf/min									
Vol. flow rate at standard conditions, dscf/min									

$$MWd = (0.32 * O_2) + (0.44 * CO_2) + (0.28 * (100 - (CO_2 + O_2)))$$

$$MWs = (MWd * (1 - (BWS/100))) + (18 * (BWS/100))$$

$$Tsa = Ts + 460$$

$$Ps = Pb + (Pstatic/13.6)$$

$$Vs = 85.49 * Cp * avg\sqrt{DeltaP} * \sqrt{Tsa/(Ps * MWs)}$$

$$Qs(act) = 60 * Vs * As$$

$$Qs(std) = 17.64 * (1 - (BWS/100)) * (Ps/Tsa) * Qs(act)$$

where:
MWd = Dry molecular weight source gas, lb/lb-mole
MWs = Wet molecular weight source gas, lb/lb-mole.
Tsa = Source Temperature, absolute(oR)
Ps = Absolute stack static pressure, inches Hg.
Vs = Average gas stream velocity, ft/sec.
Qs(act) = Volumetric flow rate of wet stack gas at actual,
Qs(std) = Volumetric flow rate of dry stack gas at standard conditions, dscf/min

Comments _____

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