

Physical Modelling of Contaminant
Concentrations at Control Room--
Grand Gulf Nuclear Station,
Mississippi Power & Light Company

APPENDICES

by

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prepared for

Mississippi Power & Light Company

Fluid Mechanics and Wind Engineering Program
Fluid Dynamics and Diffusion Laboratory
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APPENDIX A

CONCENTRATION DATA FOR GGNS

LEGEND:

Source 1 - Methane Tracer
Source 2 - Ethane Tracer
Source 3 - Propane Tracer

Wall - Calculation of Average Concentration from Values
Measured at Locations 7 through 26 on Control
Building Wall

Roof - Calculation of Average Concentration from Value
Measured at Locations 27 through 42 on Control
Building Roof

Max - Highest Single Concentration Measured at Control
Building Wall or Roof

RUN NO. 1C FILE NAME GC01C

TUBE NO.	CONCENTRATIONS (1/M**2)	
	SOURCE 1	SOURCE 2 SOURCE 3
1	.000E+00	.000E+00
2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.000E+00
8	.000E+00	.000E+00
9	.000E+00	.000E+00
10	.000E+00	.000E+00
11	.000E+00	.000E+00
12	.000E+00	.494E-05
13	.000E+00	.480E-05
14	.000E+00	.515E-05
15	.000E+00	.000E+00
16	.000E+00	.000E+00
17	.000E+00	.778E-05
18	.000E+00	.762E-05
19	.000E+00	.000E+00
20	.000E+00	.000E+00
21	.000E+00	.000E+00
22	.000E+00	.113E-04
23	.000E+00	.167E-04
24	.000E+00	.108E-04
25	.000E+00	.110E-04
26	.000E+00	.792E-05
27	.000E+00	.324E-03
28	.000E+00	.323E-03
29	.000E+00	.314E-03
30	.000E+00	.257E-03
31	.000E+00	.323E-03
32	.000E+00	.340E-03
33	.000E+00	.326E-03
34	.000E+00	.329E-03
35	.000E+00	.352E-03
36	.000E+00	.382E-03
37	.000E+00	.384E-03
38	.000E+00	.344E-03
39	.000E+00	.376E-03
40	.000E+00	.398E-03
41	.000E+00	.422E-03
42	.000E+00	
WALL	.000E+00	.440E-05
ROOF	.000E+00	.346E-03
MAX	.000E+00	.422E-03

RUN NO. 1CA

FILE NAME GG01CA

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.447E-05
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.833E-05
23	.000E+00		.152E-04
24	.000E+00		.890E-05
25	.000E+00		.946E-05
26	.000E+00		.622E-05
27	.000E+00		.327E-03
28	.000E+00		.335E-03
29	.000E+00		.307E-03
30	.000E+00		.268E-03
31	.000E+00		.338E-03
32	.000E+00		.342E-03
33	.000E+00		.319E-03
34	.000E+00		.300E-03
35	.000E+00		.347E-03
36	.000E+00		.369E-03
37	.000E+00		.389E-03
38	.000E+00		.397E-03
39	.000E+00		.360E-03
40	.000E+00		.390E-03
41	.000E+00		.410E-03
42	.000E+00		.442E-03
WALL	.000E+00		.277E-05
ROOF	.000E+00		.353E-03
MAX	.000E+00		.442E-03

RUN NO. 2C

FILE NAME CG02C

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.263E-04
2	.000E+00			.310E-04
3	.000E+00			.333E-04
4	.000E+00			.339E-04
5	.000E+00			.376E-04
6	.000E+00			.344E-04
7	.000E+00			.454E-04
8	.000E+00			.559E-04
9	.000E+00			.494E-04
10	.000E+00			.767E-04
11	.000E+00			.816E-04
12	.000E+00			.757E-04
13	.000E+00			.725E-04
14	.000E+00			.492E-04
15	.000E+00			.671E-04
16	.000E+00			.717E-04
17	.000E+00			.108E-03
18	.000E+00			.931E-04
19	.000E+00			.835E-04
20	.000E+00			.996E-04
21	.000E+00			.889E-04
22	.000E+00			.157E-03
23	.000E+00			.188E-03
24	.000E+00			.139E-03
25	.000E+00			.127E-03
26	.000E+00			.818E-04
27	.000E+00			.458E-03
28	.000E+00			.520E-03
29	.000E+00			.564E-03
30	.000E+00			.571E-03
31	.000E+00			.431E-03
32	.000E+00			.560E-03
33	.000E+00			.583E-03
34	.000E+00			.592E-03
35	.000E+00			.388E-03
36	.000E+00			.384E-03
37	.000E+00			.417E-03
38	.000E+00			.408E-03
39	.000E+00			.346E-03
40	.000E+00			.388E-03
41	.000E+00			.433E-03
42	.000E+00			.474E-03
WALL	.000E+00			.905E-04
ROOF	.000E+00			.470E-03
MAX	.000E+00			.592E-03

RUN NO. 2CF FILE NAME GG02CF

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			101E-03
2	.000E+00			158E-03
3	.000E+00			157E-03
4	.000E+00			157E-03
5	.000E+00			167E-03
6	.000E+00			159E-03
7	.000E+00			215E-03
8	.000E+00			233E-03
9	.000E+00			217E-03
10	.000E+00			291E-03
11	.000E+00			309E-03
12	.000E+00			264E-03
13	.000E+00			235E-03
14	.000E+00			146E-03
15	.000E+00			268E-03
16	.000E+00			277E-03
17	.000E+00			325E-03
18	.000E+00			290E-03
19	.000E+00			304E-03
20	.000E+00			328E-03
21	.000E+00			301E-03
22	.000E+00			470E-03
23	.000E+00			534E-03
24	.000E+00			393E-03
25	.000E+00			372E-03
26	.000E+00			260E-03
27	.000E+00			723E-03
28	.000E+00			833E-03
29	.000E+00			872E-03
30	.000E+00			787E-03
31	.000E+00			697E-03
32	.000E+00			834E-03
33	.000E+00			894E-03
34	.000E+00			928E-03
35	.000E+00			668E-03
36	.000E+00			680E-03
37	.000E+00			732E-03
38	.000E+00			796E-03
39	.000E+00			631E-03
40	.000E+00			683E-03
41	.000E+00			771E-03
42	.000E+00			858E-03
WALL	.000E+00			303E-03
ROOF	.000E+00			774E-03
MAX	.000E+00			928E-03

RUN NO. 3C

FILE NAME GG03C

TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00		.135E-03
2	.000E+00		.175E-03
3	.000E+00		.200E-03
4	.000E+00		.198E-03
5	.000E+00		.124E-03
6	.000E+00		.101E-03
7	.000E+00		.202E-03
8	.000E+00		.223E-03
9	.000E+00		.213E-03
10	.000E+00		.213E-03
11	.000E+00		.178E-03
12	.000E+00		.129E-03
13	.000E+00		.117E-03
14	.000E+00		.706E-04
15	.000E+00		.215E-03
16	.000E+00		.222E-03
17	.000E+00		.115E-03
18	.000E+00		.944E-04
19	.000E+00		.209E-03
20	.000E+00		.226E-03
21	.000E+00		.210E-03
22	.000E+00		.214E-03
23	.000E+00		.174E-03
24	.000E+00		.980E-04
25	.000E+00		.869E-04
26	.000E+00		.705E-04
27	.000E+00		.687E-04
28	.000E+00		.665E-04
29	.000E+00		.607E-04
30	.000E+00		.587E-04
31	.000E+00		.520E-04
32	.000E+00		.651E-04
33	.000E+00		.641E-04
34	.000E+00		.619E-04
35	.000E+00		.421E-04
36	.000E+00		.291E-04
37	.000E+00		.293E-04
38	.000E+00		.286E-04
39	.000E+00		.325E-04
40	.000E+00		.317E-04
41	.000E+00		.320E-04
WALL	.000E+00		.164E-03
ROOF	.000E+00		.482E-04
MAX	.000E+00		.226E-03

RUN NO. 3CF

FILE NAME GG03CF

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.304E-04
2	.000E+00			.261E-04
3	.000E+00			.302E-04
4	.000E+00			.191E-04
5	.000E+00			.106E-04
6	.000E+00			.753E-05
7	.000E+00			.394E-04
8	.000E+00			.462E-04
9	.000E+00			.438E-04
10	.000E+00			.521E-04
11	.000E+00			.434E-04
12	.000E+00			.124E-04
13	.000E+00			.993E-05
14	.000E+00			.773E-05
15	.000E+00			.450E-04
16	.000E+00			.493E-04
17	.000E+00			.124E-04
18	.000E+00			.103E-04
19	.000E+00			.422E-04
20	.000E+00			.569E-04
21	.000E+00			.485E-04
22	.000E+00			.627E-04
23	.000E+00			.606E-04
24	.000E+00			.133E-04
25	.000E+00			.115E-04
26	.000E+00			.893E-05
27	.000E+00			.122E-04
28	.000E+00			.129E-04
29	.000E+00			.134E-04
30	.000E+00			.141E-04
31	.000E+00			.108E-04
32	.000E+00			.147E-04
33	.000E+00			.149E-04
34	.000E+00			.164E-04
35	.000E+00			.907E-05
36	.000E+00			.940E-05
37	.000E+00			.105E-04
38	.000E+00			.122E-04
39	.000E+00			.809E-05
40	.000E+00			.978E-05
41	.000E+00			.111E-04
42	.000E+00			.125E-04
WALL	=	.000E+00		.338E-04
ROOF	=	.000E+00		.120E-04
MAX	=	.000E+00		.627E-04

RUN NO. 4C

FILE NAME GG04C

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.110E-04
2	.000E+00			.925E-05
3	.000E+00			.669E-05
4	.000E+00			.000E+00
5	.000E+00			.000E+00
6	.000E+00			.000E+00
7	.000E+00			.169E-04
8	.000E+00			.188E-04
9	.000E+00			.280E-04
10	.000E+00			.281E-04
11	.000E+00			.191E-04
12	.000E+00			.000E+00
13	.000E+00			.000E+00
14	.000E+00			.000E+00
15	.000E+00			.209E-04
16	.000E+00			.281E-04
17	.000E+00			.000E+00
18	.000E+00			.000E+00
19	.000E+00			.260E-04
20	.000E+00			.239E-04
21	.000E+00			.253E-04
22	.000E+00			.350E-04
23	.000E+00			.276E-04
24	.000E+00			.000E+00
25	.000E+00			.000E+00
26	.000E+00			.000E+00
27	.000E+00			.432E-05
28	.000E+00			.000E+00
29	.000E+00			.431E-05
30	.000E+00			.429E-05
31	.000E+00			.000E+00
32	.000E+00			.482E-05
33	.000E+00			.482E-05
34	.000E+00			.456E-05
35	.000E+00			.000E+00
36	.000E+00			.000E+00
37	.000E+00			.498E-05
38	.000E+00			.545E-05
39	.000E+00			.515E-05
40	.000E+00			.586E-05
41	.000E+00			.532E-05
42	.000E+00			.559E-05
WALL	=	.000E+00		.146E-04
ROOF	=	.000E+00		.372E-05
MAX	=	.000E+00		.350E-04

RUN NO. 5C

FILE NAME GG05C

TUBE NO.	CONCENTRATIONS (1/H**2)		SOURCE 3
	SOURCE 1	SOURCE 2	
1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.468E-05
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.000E+00		.000E+00
28	.000E+00		.000E+00
29	.000E+00		.000E+00
30	.000E+00		.000E+00
31	.000E+00		.000E+00
32	.000E+00		.000E+00
33	.000E+00		.000E+00
34	.000E+00		.000E+00
35	.000E+00		.000E+00
36	.000E+00		.000E+00
37	.000E+00		.000E+00
38	.000E+00		.000E+00
39	.000E+00		.000E+00
40	.000E+00		.000E+00
41	.000E+00		.000E+00
42	.000E+00		.000E+00
WALL =	.000E+00		.234E-06
ROOF =	.000E+00		.000E+00
MAX =	.000E+00		.468E-05

RUN NO. 6C

FILE NAME GG06C

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.000E+00
2	.000E+00			.000E+00
3	.000E+00			.000E+00
4	.000E+00			.000E+00
5	.000E+00			.000E+00
6	.000E+00			.000E+00
7	.000E+00			.595E-05
8	.000E+00			.503E-05
9	.000E+00			.000E+00
10	.000E+00			.000E+00
11	.000E+00			.000E+00
12	.000E+00			.000E+00
13	.000E+00			.000E+00
14	.000E+00			.000E+00
15	.000E+00			.000E+00
16	.000E+00			.536E-05
17	.000E+00			.000E+00
18	.000E+00			.000E+00
19	.000E+00			.485E-05
20	.000E+00			.438E-05
21	.000E+00			.000E+00
22	.000E+00			.000E+00
23	.000E+00			.000E+00
24	.000E+00			.000E+00
25	.000E+00			.000E+00
26	.000E+00			.000E+00
27	.000E+00			.000E+00
28	.000E+00			.000E+00
29	.000E+00			.000E+00
30	.000E+00			.000E+00
31	.000E+00			.000E+00
32	.000E+00			.000E+00
33	.000E+00			.000E+00
34	.000E+00			.000E+00
35	.000E+00			.000E+00
36	.000E+00			.000E+00
37	.000E+00			.000E+00
38	.000E+00			.000E+00
39	.000E+00			.000E+00
40	.000E+00			.000E+00
41	.000E+00			.000E+00
42	.000E+00			.000E+00
WALL	=	.000E+00		.128E-05
ROOF	=	.000E+00		.000E+00
MAX	=	.000E+00		.595E-05

RUN NO. 7C

FILE NAME GG07C

TUBE NO.	CONCENTRATIONS (1/M**2)		SOURCE 3
	SOURCE 1	SOURCE 2	
1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.000E+00		.000E+00
28	.000E+00		.000E+00
29	.000E+00		.000E+00
30	.000E+00		.000E+00
31	.000E+00		.000E+00
32	.000E+00		.000E+00
33	.000E+00		.000E+00
34	.000E+00		.000E+00
35	.000E+00		.000E+00
36	.000E+00		.000E+00
37	.000E+00		.000E+00
38	.000E+00		.000E+00
39	.000E+00		.000E+00
40	.000E+00		.000E+00
41	.000E+00		.000E+00
42	.000E+00		.000E+00
WALL	.000E+00		.000E+00
ROOF	.000E+00		.000E+00
MAX	.000E+00		.000E+00

RUN NO. 8C

FILE NAME GG08C

TUBE NO.	CONCENTRATIONS (1/M**2)		SOURCE 3
	SOURCE 1	SOURCE 2	
1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.000E+00		.000E+00
28	.000E+00		.000E+00
29	.000E+00		.000E+00
30	.000E+00		.000E+00
31	.000E+00		.000E+00
32	.000E+00		.000E+00
33	.000E+00		.000E+00
34	.000E+00		.000E+00
35	.000E+00		.000E+00
36	.000E+00		.000E+00
37	.000E+00		.000E+00
38	.000E+00		.000E+00
39	.000E+00		.000E+00
40	.000E+00		.000E+00
41	.000E+00		.000E+00
42	.000E+00		.000E+00
WALL	.000E+00		.000E+00
ROOF	.000E+00		.000E+00
MAX	.000E+00		.000E+00

RUN NO. 9C

FILE NAME GG09C

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.000E+00
2	.000E+00			.000E+00
3	.000E+00			.000E+00
4	.000E+00			.000E+00
5	.000E+00			.000E+00
6	.000E+00			.000E+00
7	.000E+00			.000E+00
8	.000E+00			.000E+00
9	.000E+00			.000E+00
10	.000E+00			.000E+00
11	.000E+00			.000E+00
12	.000E+00			.000E+00
13	.000E+00			.000E+00
14	.000E+00			.000E+00
15	.000E+00			.000E+00
16	.000E+00			.000E+00
17	.000E+00			.000E+00
18	.000E+00			.000E+00
19	.000E+00			.000E+00
20	.000E+00			.000E+00
21	.000E+00			.000E+00
22	.000E+00			.000E+00
23	.000E+00			.000E+00
24	.000E+00			.000E+00
25	.000E+00			.000E+00
26	.000E+00			.000E+00
27	.000E+00			.000E+00
28	.000E+00			.000E+00
29	.000E+00			.000E+00
30	.000E+00			.000E+00
31	.000E+00			.000E+00
32	.000E+00			.000E+00
33	.000E+00			.000E+00
34	.000E+00			.000E+00
35	.000E+00			.000E+00
36	.000E+00			.000E+00
37	.000E+00			.000E+00
38	.000E+00			.000E+00
39	.000E+00			.000E+00
40	.000E+00			.446E-05
41	.000E+00			.000E+00
42	.000E+00			.000E+00
HALL	"	.000E+00		.000E+00
ROOF	"	.000E+00		.279E-06
MAX	"	.000E+00		.446E-05

RUN NO. 9CF FILE NAME GG09CF

TUBE NO.	CONCENTRATIONS (1/M**2)		SOURCE 3
	SOURCE 1	SOURCE 2	
1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.000E+00		.000E+00
28	.000E+00		.000E+00
29	.000E+00		.000E+00
30	.000E+00		.000E+00
31	.000E+00		.000E+00
32	.000E+00		.000E+00
33	.000E+00		.000E+00
34	.000E+00		.000E+00
35	.000E+00		.000E+00
36	.000E+00		.000E+00
37	.000E+00		.000E+00
38	.000E+00		.000E+00
39	.000E+00		.000E+00
40	.000E+00		.000E+00
41	.000E+00		.000E+00
42	.000E+00		.000E+00
WALL	.000E+00		.000E+00
ROOF	.000E+00		.000E+00
MAX	.000E+00		.000E+00

RUN NO. 10C FILE NAME GG10C

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.111E-03			.000E+00
2	.108E-03			.000E+00
3	.104E-03			.000E+00
4	.124E-03			.000E+00
6	.118E-03			.000E+00
7	.130E-03			.000E+00
8	.146E-03			.000E+00
9	.128E-03			.000E+00
10	.135E-03			.000E+00
11	.142E-03			.000E+00
12	.125E-03			.000E+00
13	.134E-03			.000E+00
14	.123E-03			.000E+00
15	.131E-03			.000E+00
16	.140E-03			.000E+00
17	.129E-03			.000E+00
18	.124E-03			.000E+00
19	.114E-03			.000E+00
20	.139E-03			.000E+00
21	.127E-03			.000E+00
22	.136E-03			.000E+00
23	.136E-03			.000E+00
24	.131E-03			.000E+00
25	.131E-03			.000E+00
26	.133E-03			.000E+00
27	.527E-04			.000E+00
28	.389E-04			.000E+00
29	.315E-04			.000E+00
30	.333E-04			.000E+00
31	.406E-04			.000E+00
32	.402E-04			.000E+00
33	.335E-04			.000E+00
34	.318E-04			.000E+00
35	.306E-04			.000E+00
36	.000E+00			.000E+00
37	.000E+00			.000E+00
38	.000E+00			.000E+00
39	.000E+00			.000E+00
40	.000E+00			.000E+00
41	.000E+00			.000E+00
42	.000E+00			.000E+00
WALL	"	.132E-03		.000E+00
ROOF	"	.208E-04		.000E+00
MAX	"	.146E-03		.000E+00

RUN NO. 10CA FILE NAME GG10CA

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.117E-03
2	.126E-03
3	.125E-03
4	.140E-03
5	.642E-04
6	.140E-03
7	.166E-03
8	.184E-03
9	.171E-03
10	.166E-03
11	.170E-03
12	.155E-03
13	.156E-03
14	.134E-03
15	.148E-03
16	.180E-03
17	.154E-03
18	.156E-03
19	.127E-03
20	.157E-03
21	.167E-03
22	.162E-03
23	.154E-03
24	.157E-03
25	.165E-03
26	.165E-03
27	.509E-04
28	.372E-04
29	.292E-04
30	.000E+00
WALL =	.160E-03
ROOF =	.293E-04
MAX =	.184E-03

RUN NO. 11C FILE NAME GG11C

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.000E+00
2	.000E+00			.000E+00
3	.000E+00			.000E+00
4	.000E+00			.000E+00
5	.000E+00			.000E+00
6	.000E+00			.000E+00
7	.000E+00			.000E+00
8	.000E+00			.000E+00
9	.000E+00			.000E+00
10	.000E+00			.000E+00
11	.000E+00			.000E+00
12	.000E+00			.000E+00
13	.000E+00			.000E+00
14	.000E+00			.000E+00
15	.000E+00			.000E+00
16	.000E+00			.000E+00
17	.000E+00			.000E+00
18	.000E+00			.000E+00
19	.000E+00			.000E+00
20	.000E+00			.000E+00
21	.000E+00			.000E+00
22	.000E+00			.000E+00
23	.000E+00			.000E+00
24	.000E+00			.000E+00
25	.000E+00			.000E+00
26	.000E+00			.000E+00
27	.823E-04			.000E+00
28	.651E-04			.000E+00
29	.498E-04			.000E+00
30	.390E-04			.000E+00
31	.802E-04			.000E+00
32	.743E-04			.000E+00
33	.603E-04			.000E+00
34	.456E-04			.000E+00
35	.771E-04			.000E+00
36	.561E-04			.000E+00
37	.438E-04			.000E+00
38	.330E-04			.000E+00
39	.681E-04			.000E+00
40	.563E-04			.000E+00
41	.468E-04			.000E+00
42	.331E-04			.000E+00
WALL	"	.000E+00		.000E+00
ROOF	"	.570E-04		.000E+00
MAX	"	.823E-04		.000E+00

RUN NO. 11CF FILE NAME GG11CF

TUBE NO.	CONCENTRATIONS (1/M**2)	
	SOURCE 1	SOURCE 2 SOURCE 3
1	.368E-04	.000E+00
2	.361E-04	.000E+00
3	.354E-04	.000E+00
4	.447E-04	.000E+00
5	.450E-04	.000E+00
6	.441E-04	.000E+00
7	.689E-04	.000E+00
8	.722E-04	.000E+00
9	.674E-04	.000E+00
10	.626E-04	.000E+00
11	.587E-04	.000E+00
12	.446E-04	.000E+00
13	.503E-04	.000E+00
14	.511E-04	.000E+00
15	.892E-04	.000E+00
16	.897E-04	.000E+00
17	.516E-04	.000E+00
18	.512E-04	.000E+00
19	.116E-03	.000E+00
20	.116E-03	.000E+00
21	.965E-04	.000E+00
22	.849E-04	.000E+00
23	.823E-04	.000E+00
24	.532E-04	.000E+00
25	.524E-04	.000E+00
26	.523E-04	.000E+00
27	.364E-03	.000E+00
28	.298E-03	.000E+00
29	.243E-03	.000E+00
30	.174E-03	.000E+00
31	.354E-03	.000E+00
32	.318E-03	.000E+00
33	.286E-03	.000E+00
34	.247E-03	.000E+00
35	.340E-03	.000E+00
36	.229E-03	.000E+00
37	.192E-03	.000E+00
38	.149E-03	.000E+00
39	.285E-03	.000E+00
40	.247E-03	.000E+00
41	.209E-03	.000E+00
42	.154E-03	.000E+00
WALL	.706E-04	.000E+00
ROOF	.256E-03	.000E+00
MAX	.364E-03	.000E+00

RUN NO. 12C FILE NAME GG12C

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.000E+00
2	.000E+00			.000E+00
3	.000E+00			.000E+00
4	.000E+00			.000E+00
5	.000E+00			.000E+00
6	.000E+00			.000E+00
7	.000E+00			.000E+00
8	.000E+00			.000E+00
9	.000E+00			.000E+00
10	.000E+00			.000E+00
11	.000E+00			.000E+00
12	.000E+00			.000E+00
13	.000E+00			.000E+00
14	.000E+00			.000E+00
15	.000E+00			.000E+00
16	.000E+00			.000E+00
17	.000E+00			.000E+00
18	.000E+00			.000E+00
19	.000E+00			.000E+00
20	.000E+00			.000E+00
21	.000E+00			.000E+00
22	.000E+00			.000E+00
23	.000E+00			.000E+00
24	.000E+00			.000E+00
25	.000E+00			.000E+00
26	.000E+00			.000E+00
27	.359E-04			.000E+00
28	.338E-04			.000E+00
29	.292E-04			.000E+00
30	.312E-04			.000E+00
31	.391E-04			.000E+00
32	.315E-04			.000E+00
33	.302E-04			.000E+00
34	.332E-04			.000E+00
35	.332E-04			.000E+00
36	.312E-04			.000E+00
37	.294E-04			.000E+00
38	.256E-04			.000E+00
39	.374E-04			.000E+00
40	.347E-04			.000E+00
41	.296E-04			.000E+00
42	.268E-04			.000E+00
WALL	.000E+00			.000E+00
ROOF	.320E-04			.000E+00
MAX	.391E-04			.000E+00

RUN NO. 12CA FILE NAME GG12CA

TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.000E+00		.000E+00
28	.259E-04		.000E+00
29	.000E+00		.000E+00
31	.000E+00		.000E+00
32	.000E+00		.000E+00
33	.000E+00		.000E+00
34	.000E+00		.000E+00
35	.000E+00		.000E+00
36	.259E-04		.000E+00
37	.000E+00		.000E+00
38	.000E+00		.000E+00
39	.296E-04		.000E+00
40	.000E+00		.000E+00
41	.000E+00		.000E+00
42	.000E+00		.000E+00
WALL	.000E+00		.000E+00
ROOF	.543E-05		.000E+00
MAX	.296E-04		.000E+00

RUN NO. 12CC FILE NAME GG12CC

TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.000E+00		.000E+00
28	.000E+00		.000E+00
29	.000E+00		.000E+00
30	.000E+00		.000E+00
31	.000E+00		.000E+00
32	.000E+00		.000E+00
33	.000E+00		.000E+00
34	.000E+00		.000E+00
35	.000E+00		.000E+00
36	.000E+00		.000E+00
37	.000E+00		.000E+00
38	.000E+00		.000E+00
39	.000E+00		.000E+00
40	.000E+00		.000E+00
41	.000E+00		.000E+00
42	.000E+00		.000E+00
WALL	.000E+00		.000E+00
ROOF	.000E+00		.000E+00
MAX	.000E+00		.000E+00

RUN NO. 12CF FILE NAME GG12CF

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2 SOURCE 3

1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.250E-04		.000E+00
28	.258E-04		.000E+00
29	.000E+00		.000E+00
30	.000E+00		.000E+00
31	.302E-04		.000E+00
32	.000E+00		.000E+00
33	.252E-04		.000E+00
34	.000E+00		.000E+00
35	.311E-04		.000E+00
36	.287E-04		.000E+00
37	.251E-04		.000E+00
38	.000E+00		.000E+00
39	.322E-04		.000E+00
40	.287E-04		.000E+00
41	.253E-04		.000E+00
42	.000E+00		.000E+00
WALL	.000E+00		.000E+00
ROOF	.176E-04		.000E+00
MAX	.322E-04		.000E+00

RUN NO. 13C FILE NAME GG13C

TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.168E-03		.000E+00
28	.172E-03		.000E+00
29	.183E-03		.000E+00
30	.194E-03		.000E+00
31	.146E-03		.000E+00
32	.177E-03		.000E+00
33	.182E-03		.000E+00
34	.183E-03		.000E+00
35	.129E-03		.000E+00
36	.120E-03		.000E+00
37	.118E-03		.000E+00
38	.118E-03		.000E+00
39	.113E-03		.000E+00
40	.111E-03		.000E+00
41	.111E-03		.000E+00
42	.113E-03		.000E+00
WALL	.000E+00		.000E+00
ROOF	.146E-03		.000E+00
MAX	.194E-03		.000E+00

RUN NO. 14C FILE NAME GG14C

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.000E+00
2	.000E+00			.000E+00
3	.000E+00			.000E+00
4	.000E+00			.000E+00
5	.000E+00			.000E+00
6	.000E+00			.000E+00
7	.000E+00			.000E+00
8	.000E+00			.000E+00
9	.000E+00			.000E+00
10	.000E+00			.000E+00
11	.000E+00			.000E+00
12	.000E+00			.000E+00
13	.000E+00			.000E+00
14	.000E+00			.000E+00
15	.000E+00			.000E+00
16	.000E+00			.000E+00
17	.000E+00			.000E+00
18	.000E+00			.000E+00
19	.000E+00			.000E+00
20	.000E+00			.000E+00
21	.000E+00			.000E+00
22	.000E+00			.000E+00
23	.000E+00			.000E+00
24	.000E+00			.000E+00
25	.000E+00			.000E+00
26	.000E+00			.000E+00
27	.113E-03			.000E+00
28	.110E-03			.000E+00
29	.106E-03			.000E+00
30	.106E-03			.000E+00
31	.127E-03			.000E+00
32	.108E-03			.000E+00
33	.104E-03			.000E+00
34	.103E-03			.000E+00
35	.138E-03			.000E+00
36	.146E-03			.000E+00
37	.141E-03			.000E+00
38	.141E-03			.000E+00
39	.144E-03			.000E+00
40	.144E-03			.000E+00
41	.142E-03			.000E+00
42	.142E-03			.000E+00
WALL	=	.000E+00		.000E+00
ROOF	=	.126E-03		.000E+00
MAX	=	.146E-03		.000E+00

RUN NO. 150

FILE NAME GG150

TUBE NO	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.000E+00
2	.000E+00			.000E+00
3	.000E+00			.000E+00
4	.000E+00			.000E+00
5	.000E+00			.000E+00
6	.000E+00			.000E+00
7	.000E+00			.000E+00
8	.000E+00			.000E+00
9	.000E+00			.000E+00
10	.000E+00			.000E+00
11	.000E+00			.000E+00
12	.000E+00			.000E+00
13	.000E+00			.000E+00
14	.000E+00			.000E+00
15	.000E+00			.000E+00
16	.000E+00			.000E+00
17	.000E+00			.000E+00
18	.000E+00			.000E+00
19	.000E+00			.000E+00
20	.000E+00			.000E+00
21	.000E+00			.000E+00
22	.000E+00			.000E+00
23	.000E+00			.000E+00
24	.000E+00			.000E+00
25	.000E+00			.000E+00
26	.000E+00			.000E+00
27	.000E+00			.103E-04
28	.254E-04			.105E-04
29	.344E-04			.836E-05
30	.487E-04			.659E-05
31	.000E+00			.133E-04
32	.259E-04			.892E-05
33	.364E-04			.699E-05
34	.514E-04			.530E-05
35	.000E+00			.151E-04
36	.000E+00			.161E-04
37	.000E+00			.146E-04
38	.000E+00			.117E-04
39	.000E+00			.189E-04
40	.000E+00			.167E-04
41	.000E+00			.157E-04
42	.000E+00			.117E-04
WALL	==	.000E+00		.000E+00
ROOF		.139E-04		.119E-04
MAX	==	.514E-04		.189E-04

RUN NO. 15CA FILE NAME GG15CA

TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.434E-04		.137E-04
28	.647E-04		.141E-04
29	.863E-04		.116E-04
30	.968E-04		.734E-05
31	.000E+00		.186E-04
32	.657E-04		.127E-04
33	.958E-04		.105E-04
34	.114E-03		.806E-05
35	.000E+00		.221E-04
36	.000E+00		.238E-04
37	.393E-04		.187E-04
38	.589E-04		.158E-04
39	.000E+00		.269E-04
40	.000E+00		.236E-04
41	.328E-04		.192E-04
42	.519E-04		.164E-04
WALL	=	.000E+00	.000E+00
ROOF	=	.468E-04	.164E-04
MAX	=	.114E-03	.269E-04

RUN NO. 16C

FILE NAME GG16C

TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00			.000E+00
2	.000E+00			.000E+00
3	.000E+00			.000E+00
4	.000E+00			.000E+00
5	.000E+00			.000E+00
6	.000E+00			.000E+00
7	.000E+00			.000E+00
8	.000E+00			.000E+00
9	.000E+00			.000E+00
10	.000E+00			.000E+00
11	.000E+00			.000E+00
12	.000E+00			.000E+00
13	.000E+00			.000E+00
14	.000E+00			.000E+00
15	.000E+00			.000E+00
16	.000E+00			.000E+00
17	.000E+00			.000E+00
18	.000E+00			.000E+00
19	.000E+00			.000E+00
20	.000E+00			.000E+00
21	.000E+00			.000E+00
22	.000E+00			.000E+00
23	.000E+00			.000E+00
24	.000E+00			.000E+00
25	.000E+00			.000E+00
26	.000E+00			.000E+00
27	.000E+00			.000E+00
28	.000E+00			.269E-04
29	.000E+00			.400E-04
30	.000E+00			.488E-04
31	.000E+00			.483E-04
32	.000E+00			.403E-04
33	.000E+00			.386E-04
34	.000E+00			.466E-04
35	.000E+00			.468E-04
36	.000E+00			.425E-04
37	.000E+00			.517E-04
38	.000E+00			.602E-04
39	.000E+00			.659E-04
40	.000E+00			.459E-04
41	.000E+00			.579E-04
42	.000E+00			.677E-04
				.721E-04
WALL	.000E+00			.000E+00
ROOF	.000E+00			.500E-04
MAX	.000E+00			.721E-04

RUN NO. 17C FILE NAME GG17C

TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	SOURCE 3
1	.000E+00		.000E+00
2	.000E+00		.000E+00
3	.000E+00		.000E+00
4	.000E+00		.000E+00
5	.000E+00		.000E+00
6	.000E+00		.000E+00
7	.000E+00		.000E+00
8	.000E+00		.000E+00
9	.000E+00		.000E+00
10	.000E+00		.000E+00
11	.000E+00		.000E+00
12	.000E+00		.000E+00
13	.000E+00		.000E+00
14	.000E+00		.000E+00
15	.000E+00		.000E+00
16	.000E+00		.000E+00
17	.000E+00		.000E+00
18	.000E+00		.000E+00
19	.000E+00		.000E+00
20	.000E+00		.000E+00
21	.000E+00		.000E+00
22	.000E+00		.000E+00
23	.000E+00		.000E+00
24	.000E+00		.000E+00
25	.000E+00		.000E+00
26	.000E+00		.000E+00
27	.000E+00		.000E+00
28	.000E+00		.000E+00
29	.000E+00		.000E+00
30	.000E+00		.000E+00
31	.000E+00		.000E+00
32	.000E+00		.000E+00
33	.000E+00		.000E+00
34	.000E+00		.000E+00
35	.000E+00		.000E+00
36	.000E+00		.000E+00
37	.000E+00		.000E+00
38	.000E+00		.000E+00
39	.000E+00		.000E+00
40	.000E+00		.000E+00
41	.000E+00		.000E+00
42	.000E+00		.000E+00
WALL	.000E+00		.000E+00
ROOF	.000E+00		.000E+00
MAX	.000E+00		.000E+00

RUN NO. 17CA FILE NAME GG17CA

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.127E-03
28	.140E-03
29	.147E-03
30	.180E-03
31	.110E-03
32	.136E-03
33	.144E-03
34	.155E-03
35	.926E-04
36	.832E-04
37	.829E-04
38	.860E-04
39	.788E-04
40	.775E-04
41	.783E-04
42	.836E-04
WALL	= .000E+00
ROOF	= .113E-03
MAX	= .180E-03

RUN NO. 17CB FILE NAME GG17CB

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE
1	0000E+00
2	0000E+00
3	0000E+00
4	0000E+00
6	0000E+00
7	0000E+00
8	0000E+00
9	0000E+00
10	0000E+00
11	0000E+00
12	0000E+00
13	0000E+00
14	0000E+00
15	0000E+00
16	0000E+00
17	0000E+00
18	0000E+00
19	0000E+00
20	0000E+00
21	0000E+00
22	0000E+00
23	0000E+00
24	0000E+00
25	0000E+00
26	0000E+00
27	0000E+00
28	0000E+00
29	0000E+00
30	0000E+00

```
WALL  = 000E+00
ROOF  = 000E+00
MAX   = 000E+00
```

RUN NO. 18C FILE NAME GG18C
 TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.131E-03
28	.136E-03
29	.138E-03
30	.142E-03
31	.119E-03
32	.136E-03
33	.135E-03
34	.130E-03
35	.115E-03
36	.965E-04
37	.843E-04
38	.774E-04
39	.106E-03
40	.947E-04
41	.861E-04
42	.791E-04
HALL	.000E+00
ROOF	.113E-03
MAX	.142E-03

RUN NO. 19C FILE NAME GG19C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.947E-04
28	.930E-04
29	.982E-04
30	.102E-03
31	.843E-04
32	.947E-04
33	.947E-04
34	.930E-04
35	.826E-04
36	.791E-04
37	.774E-04
38	.739E-04
39	.843E-04
40	.791E-04
41	.757E-04
42	.739E-04
WALL	= .000E+00
ROOF	= .863E-04
MAX	= .102E-03

RUN NO. 200		FILE NAME GG20C
TUBE NO.	CONCENTRATIONS (1/M**2)	
	SOURCE 1	
1	.000E+00	
2	.000E+00	
3	.000E+00	
4	.000E+00	
5	.000E+00	
6	.000E+00	
7	.000E+00	
8	.000E+00	
9	.000E+00	
10	.000E+00	
11	.000E+00	
12	.000E+00	
13	.000E+00	
14	.000E+00	
15	.000E+00	
16	.000E+00	
17	.000E+00	
18	.000E+00	
19	.000E+00	
20	.000E+00	
21	.000E+00	
22	.000E+00	
23	.000E+00	
24	.000E+00	
25	.000E+00	
26	.000E+00	
27	.185E-03	
28	.198E-03	
29	.209E-03	
30	.232E-03	
31	.157E-03	
32	.200E-03	
33	.213E-03	
34	.227E-03	
35	.122E-03	
36	.142E-03	
37	.111E-03	
38	.110E-03	
39	.116E-03	
40	.110E-03	
41		
42		
WALL		.000E+00
ROOF		.167E-03
MAX		.232E-03

RUN NO. 21C FILE NAME GG21C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.157E-03
28	.177E-03
29	.181E-03
30	.198E-03
31	.130E-03
32	.171E-03
33	.182E-03
34	.187E-03
35	.112E-03
36	.103E-03
37	.104E-03
38	.108E-03
39	.960E-04
40	.934E-04
41	.102E-03
42	.977E-04
WALL	= .000E+00
ROOF	= .137E-03
MAX	= .198E-03

RUN NO. 220

FILE NAME GG220

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.181E-03
28	.197E-03
29	.210E-03
30	.224E-03
31	.151E-03
32	.196E-03
33	.209E-03
34	.210E-03
35	.125E-03
36	.117E-03
37	.116E-03
38	.118E-03
39	.106E-03
40	.103E-03
41	.107E-03
42	.111E-03
WALL	.000E+00
ROOF	.155E-03
MAX	.224E-03

RUN NO. 23C

FILE NAME GG23C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.152E-03
28	.153E-03
29	.173E-03
30	.180E-03
31	.124E-03
32	.165E-03
33	.173E-03
34	.181E-03
35	.105E-03
36	.101E-03
37	.962E-04
38	.997E-04
39	.901E-04
40	.910E-04
41	.884E-04
42	.884E-04
WALL	.000E+00
ROOF	.129E-03
MAX	.181E-03

RUN NO. 240

FILE NAME GG240

TUBE NO CONCENTRATIONS (1/M**2)

SOURCE 1

SOURCE 2

1	.000E+00	.000E+00
2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.263E-05
6	.000E+00	.296E-05
7	.000E+00	.359E-05
8	.000E+00	.366E-05
9	.000E+00	.309E-05
10	.000E+00	.397E-05
11	.000E+00	.392E-05
12	.000E+00	.796E-05
13	.000E+00	.844E-05
14	.000E+00	.766E-05
15	.000E+00	.540E-05
16	.000E+00	.490E-05
17	.000E+00	.124E-04
18	.000E+00	.108E-04
19	.000E+00	.693E-05
20	.000E+00	.831E-05
21	.000E+00	.678E-05
22	.000E+00	.198E-04
23	.000E+00	.265E-04
24	.000E+00	.167E-04
25	.000E+00	.166E-04
26	.000E+00	.111E-04
27	.000E+00	.515E-03
28	.000E+00	.538E-03
29	.000E+00	.492E-03
30	.000E+00	.362E-03
31	.000E+00	.507E-03
32	.000E+00	.544E-03
33	.000E+00	.506E-03
34	.000E+00	.450E-03
35	.000E+00	.510E-03
36	.000E+00	.544E-03
37	.000E+00	.577E-03
38	.000E+00	.592E-03
39	.000E+00	.519E-03
40	.000E+00	.566E-03
41	.000E+00	.613E-03
42	.000E+00	.622E-03
WALL	.000E+00	.943E-05
ROOF	.000E+00	.529E-03
MAX	.000E+00	.622E-03

RUN NO. 25C FILE NAME GG25C

TUBE NO.	CONCENTRATIONS (1/M**2)	
	SOURCE 1	SOURCE 2
1	.000E+00	.242E-04
2	.000E+00	.394E-04
3	.000E+00	.349E-04
4	.000E+00	.355E-04
5	.000E+00	.450E-04
6	.000E+00	.531E-04
7	.000E+00	.614E-04
8	.000E+00	.722E-04
9	.000E+00	.678E-04
10	.000E+00	.981E-04
11	.000E+00	.108E-03
12	.000E+00	.100E-03
13	.000E+00	.892E-04
14	.000E+00	.591E-04
15	.000E+00	.990E-04
16	.000E+00	.907E-04
17	.000E+00	.132E-03
18	.000E+00	.113E-03
19	.000E+00	.121E-03
20	.000E+00	.133E-03
21	.000E+00	.111E-03
22	.000E+00	.230E-03
23	.000E+00	.269E-03
24	.000E+00	.177E-03
25	.000E+00	.180E-03
26	.000E+00	.102E-03
27	.000E+00	.680E-03
28	.000E+00	.790E-03
29	.000E+00	.833E-03
30	.000E+00	.702E-03
31	.000E+00	.646E-03
32	.000E+00	.822E-03
33	.000E+00	.868E-03
34	.000E+00	.850E-03
35	.000E+00	.587E-03
36	.000E+00	.575E-03
37	.000E+00	.619E-03
38	.000E+00	.658E-03
39	.000E+00	.515E-03
40	.000E+00	.573E-03
41	.000E+00	.638E-03
42	.000E+00	.700E-03
WALL	.000E+00	.121E-03
ROOF	.000E+00	.691E-03
MAX	.000E+00	.868E-03

RUN NO. 25F FILE NAME GG25CF

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

1	.000E+00	.108E-03
2	.000E+00	.194E-03
3	.000E+00	.182E-03
4	.000E+00	.192E-03
5	.000E+00	.210E-03
6	.000E+00	.206E-03
7	.000E+00	.255E-03
8	.000E+00	.288E-03
9	.000E+00	.284E-03
10	.000E+00	.349E-03
11	.000E+00	.373E-03
12	.000E+00	.337E-03
13	.000E+00	.321E-03
14	.000E+00	.167E-03
15	.000E+00	.306E-03
16	.000E+00	.353E-03
17	.000E+00	.434E-03
18	.000E+00	.384E-03
19	.000E+00	.354E-03
20	.000E+00	.406E-03
21	.000E+00	.370E-03
22	.000E+00	.553E-03
23	.000E+00	.625E-03
24	.000E+00	.522E-03
25	.000E+00	.473E-03
26	.000E+00	.316E-03
27	.000E+00	.908E-03
28	.000E+00	.102E-02
29	.000E+00	.107E-02
30	.000E+00	.944E-03
31	.000E+00	.886E-03
32	.000E+00	.104E-02
33	.000E+00	.110E-02
34	.000E+00	.111E-02
35	.000E+00	.837E-03
36	.000E+00	.851E-03
37	.000E+00	.901E-03
38	.000E+00	.963E-03
39	.000E+00	.797E-03
40	.000E+00	.859E-03
41	.000E+00	.924E-03
42	.000E+00	.103E-02
WALL	==	.373E-03
ROOF	==	.952E-03
MAX	==	.111E-02

RUN NO. 26C		FILE NAME GC26C	
TUBE NO.	CONCENTRATIONS (1/M**2)	SOURCE 1	SOURCE 2
1	.000E+00	.139E-03	
2	.000E+00	.179E-03	
3	.000E+00	.216E-03	
4	.000E+00	.207E-03	
5	.000E+00	.164E-03	
6	.000E+00	.123E-03	
7	.000E+00	.240E-03	
8	.000E+00	.248E-03	
9	.000E+00	.244E-03	
10	.000E+00	.243E-03	
11	.000E+00	.198E-03	
12	.000E+00	.146E-03	
13	.000E+00	.130E-03	
14	.000E+00	.838E-04	
15	.000E+00	.244E-03	
16	.000E+00	.251E-03	
17	.000E+00	.131E-03	
18	.000E+00	.105E-03	
19	.000E+00	.246E-03	
20	.000E+00	.246E-03	
21	.000E+00	.250E-03	
22	.000E+00	.259E-03	
23	.000E+00	.213E-03	
24	.000E+00	.115E-03	
25	.000E+00	.111E-03	
26	.000E+00	.814E-04	
27	.000E+00	.112E-03	
28	.000E+00	.958E-04	
29	.000E+00	.105E-03	
30	.000E+00	.788E-04	
31	.000E+00	.803E-04	
32	.000E+00	.996E-04	
33	.000E+00	.918E-04	
34	.000E+00	.906E-04	
35	.000E+00	.745E-04	
36	.000E+00	.398E-04	
37	.000E+00	.428E-04	
38	.000E+00	.439E-04	
39	.000E+00	.424E-04	
40	.000E+00	.442E-04	
41	.000E+00	.450E-04	
42	.000E+00	.462E-04	
WALL	=	.189E-03	
ROOF	=	.708E-04	
MAX	=	.259E-03	

RUN NO. 26CF FILE NAME GG26CF

TUBE NO.	CONCENTRATIONS (1/M**2)	
	SOURCE 1	SOURCE 2
1	.000E+00	.336E-04
2	.000E+00	.309E-04
3	.000E+00	.327E-04
4	.000E+00	.345E-04
5	.000E+00	.153E-04
6	.000E+00	.922E-05
7	.000E+00	.555E-04
8	.000E+00	.559E-04
9	.000E+00	.600E-04
10	.000E+00	.698E-04
11	.000E+00	.510E-04
12	.000E+00	.203E-04
13	.000E+00	.116E-04
14	.000E+00	.891E-05
15	.000E+00	.530E-04
16	.000E+00	.643E-04
17	.000E+00	.154E-04
18	.000E+00	.129E-04
19	.000E+00	.485E-04
20	.000E+00	.553E-04
21	.000E+00	.631E-04
22	.000E+00	.715E-04
23	.000E+00	.668E-04
24	.000E+00	.143E-04
25	.000E+00	.105E-04
26	.000E+00	.970E-05
27	.000E+00	.429E-05
28	.000E+00	.423E-05
29	.000E+00	.396E-05
30	.000E+00	.973E-05
31	.000E+00	.336E-05
32	.000E+00	.458E-05
33	.000E+00	.100E-04
34	.000E+00	.555E-05
35	.000E+00	.292E-05
36	.000E+00	.261E-05
37	.000E+00	.752E-05
38	.000E+00	.945E-05
39	.000E+00	.000E+00
40	.000E+00	.286E-05
41	.000E+00	.274E-05
42	.000E+00	.303E-05
WALL	.000E+00	.409E-04
ROOF	.000E+00	.480E-05
MAX	.000E+00	.715E-04

RUN NO. 27C FILE NAME GG27C

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

1	.000E+00	.642E-05
2	.000E+00	.476E-05
3	.000E+00	.289E-05
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.124E-04
8	.000E+00	.144E-04
9	.000E+00	.165E-04
10	.000E+00	.171E-04
11	.000E+00	.122E-04
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.121E-04
16	.000E+00	.179E-04
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.109E-04
20	.000E+00	.148E-04
21	.000E+00	.164E-04
22	.000E+00	.211E-04
23	.000E+00	.162E-04
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.000E+00	.000E+00
28	.000E+00	.000E+00
29	.000E+00	.000E+00
30	.000E+00	.000E+00
31	.000E+00	.000E+00
32	.000E+00	.000E+00
33	.000E+00	.000E+00
34	.000E+00	.000E+00
35	.000E+00	.000E+00
36	.000E+00	.000E+00
37	.000E+00	.000E+00
38	.000E+00	.000E+00
39	.000E+00	.000E+00
40	.000E+00	.000E+00
41	.000E+00	.000E+00
42	.000E+00	.000E+00
WALL	.000E+00	.910E-05
ROOF	.000E+00	.000E+00
MAX	.000E+00	.211E-04

RUN NO. 27CF FILE NAME GG27CF

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

2	.000E+00	.619E-05
3	.000E+00	.368E-05
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.120E-04
8	.000E+00	.107E-04
9	.000E+00	.160E-04
10	.000E+00	.172E-04
11	.000E+00	.165E-04
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.132E-04
16	.000E+00	.152E-04
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.112E-04
20	.000E+00	.158E-04
21	.000E+00	.134E-04
22	.000E+00	.224E-04
23	.000E+00	.160E-04
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.000E+00	.000E+00
28	.000E+00	.000E+00
29	.000E+00	.000E+00
30	.000E+00	.000E+00
31	.000E+00	.000E+00
32	.000E+00	.000E+00
33	.000E+00	.000E+00
34	.000E+00	.000E+00
35	.000E+00	.000E+00
36	.000E+00	.000E+00
37	.000E+00	.000E+00
38	.000E+00	.000E+00
39	.000E+00	.000E+00
40	.000E+00	.000E+00
41	.000E+00	.000E+00
42	.000E+00	.000E+00
WALL	= .000E+00	.908E-05
ROOF	= .000E+00	.000E+00
MAX	= .000E+00	.224E-04

RUN NO. 28C FILE NAME GG28C

TUBE NO.	CONCENTRATIONS (1/M ²)	
	SOURCE 1	SOURCE 2
1	.000E+00	.000E+00
2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.249E-05
8	.000E+00	.000E+00
9	.000E+00	.000E+00
10	.000E+00	.000E+00
11	.000E+00	.000E+00
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.244E-05
16	.000E+00	.000E+00
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.272E-05
20	.000E+00	.243E-05
21	.000E+00	.000E+00
22	.000E+00	.000E+00
23	.000E+00	.000E+00
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.000E+00	.000E+00
28	.000E+00	.000E+00
29	.000E+00	.000E+00
30	.000E+00	.000E+00
31	.000E+00	.000E+00
32	.000E+00	.000E+00
33	.000E+00	.000E+00
34	.000E+00	.000E+00
35	.000E+00	.000E+00
36	.000E+00	.000E+00
37	.000E+00	.000E+00
38	.000E+00	.000E+00
39	.000E+00	.000E+00
40	.000E+00	.000E+00
41	.000E+00	.000E+00
42	.000E+00	.000E+00
WALL =	.000E+00	.504E-06
ROOF =	.000E+00	.000E+00
MAX =	.000E+00	.272E-05

RUN NO. 29C		FILE NAME GG29C	
TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	
1	.000E+00	.268E-05	
2	.000E+00	.000E+00	
3	.000E+00	.000E+00	
4	.000E+00	.000E+00	
5	.000E+00	.000E+00	
6	.000E+00	.000E+00	
7	.000E+00	.489E-05	
8	.000E+00	.396E-05	
9	.000E+00	.304E-05	
10	.000E+00	.000E+00	
11	.000E+00	.000E+00	
12	.000E+00	.000E+00	
13	.000E+00	.000E+00	
14	.000E+00	.000E+00	
15	.000E+00	.478E-05	
16	.000E+00	.383E-05	
17	.000E+00	.000E+00	
18	.000E+00	.000E+00	
19	.000E+00	.370E-05	
20	.000E+00	.406E-05	
21	.000E+00	.349E-05	
22	.000E+00	.000E+00	
23	.000E+00	.000E+00	
24	.000E+00	.000E+00	
25	.000E+00	.000E+00	
26	.000E+00	.000E+00	
27	.000E+00	.000E+00	
28	.000E+00	.000E+00	
29	.000E+00	.000E+00	
30	.000E+00	.000E+00	
31	.000E+00	.000E+00	
32	.000E+00	.000E+00	
33	.000E+00	.000E+00	
34	.000E+00	.000E+00	
35	.000E+00	.000E+00	
36	.000E+00	.000E+00	
37	.000E+00	.000E+00	
38	.000E+00	.000E+00	
39	.000E+00	.000E+00	
40	.000E+00	.000E+00	
41	.000E+00	.000E+00	
42	.000E+00	.000E+00	
WALL	=	.000E+00	
ROOF	=	.000E+00	
MAX	=	.489E-05	

RUN NO. 30C		FILE NAME GG30C	
TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	
1	.000E+00	.000E+00	
2	.000E+00	.000E+00	
3	.000E+00	.000E+00	
4	.000E+00	.000E+00	
5	.000E+00	.000E+00	
6	.000E+00	.000E+00	
7	.000E+00	.000E+00	
8	.000E+00	.000E+00	
9	.000E+00	.000E+00	
10	.000E+00	.000E+00	
11	.000E+00	.000E+00	
12	.000E+00	.000E+00	
13	.000E+00	.000E+00	
14	.000E+00	.000E+00	
15	.000E+00	.000E+00	
16	.000E+00	.000E+00	
17	.000E+00	.000E+00	
18	.000E+00	.000E+00	
19	.000E+00	.000E+00	
20	.000E+00	.000E+00	
21	.000E+00	.000E+00	
22	.000E+00	.000E+00	
23	.000E+00	.000E+00	
24	.000E+00	.000E+00	
25	.000E+00	.000E+00	
26	.000E+00	.000E+00	
27	.000E+00	.000E+00	
28	.000E+00	.000E+00	
29	.000E+00	.000E+00	
30	.000E+00	.000E+00	
31	.000E+00	.000E+00	
32	.000E+00	.000E+00	
33	.000E+00	.000E+00	
34	.000E+00	.000E+00	
35	.000E+00	.000E+00	
36	.000E+00	.000E+00	
37	.000E+00	.000E+00	
38	.000E+00	.000E+00	
39	.000E+00	.000E+00	
40	.000E+00	.000E+00	
41	.000E+00	.000E+00	
42	.000E+00	.000E+00	
WALL	.000E+00	.000E+00	
ROUT	.000E+00	.000E+00	
MAX	.000E+00	.000E+00	

RUN NO. 31C FILE NAME GG31C

TUBE NO.	CONCENTRATIONS (1/M**2)	
	SOURCE 1	SOURCE 2
1	.000E+00	.000E+00
2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.000E+00
8	.000E+00	.000E+00
9	.000E+00	.000E+00
10	.000E+00	.000E+00
11	.000E+00	.000E+00
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.000E+00
16	.000E+00	.000E+00
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.000E+00
20	.000E+00	.000E+00
21	.000E+00	.000E+00
22	.000E+00	.000E+00
23	.000E+00	.000E+00
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.000E+00	.000E+00
28	.000E+00	.000E+00
29	.000E+00	.000E+00
30	.000E+00	.000E+00
31	.000E+00	.000E+00
32	.000E+00	.000E+00
33	.000E+00	.000E+00
34	.000E+00	.000E+00
35	.000E+00	.000E+00
36	.000E+00	.000E+00
37	.000E+00	.000E+00
38	.000E+00	.000E+00
39	.000E+00	.000E+00
40	.000E+00	.000E+00
41	.000E+00	.000E+00
42	.000E+00	.000E+00
WALL	.000E+00	.000E+00
ROOF	.000E+00	.000E+00
MAX	.000E+00	.000E+00

RUN NO. 32C FILE NAME GG32C

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

1	.000E+00	.000E+00
2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.000E+00
8	.000E+00	.000E+00
9	.000E+00	.000E+00
10	.000E+00	.000E+00
11	.000E+00	.000E+00
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.000E+00
16	.000E+00	.000E+00
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.000E+00
20	.000E+00	.000E+00
21	.000E+00	.000E+00
22	.000E+00	.000E+00
23	.000E+00	.000E+00
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.000E+00	.000E+00
28	.000E+00	.000E+00
29	.000E+00	.000E+00
30	.000E+00	.000E+00
31	.000E+00	.000E+00
32	.000E+00	.000E+00
33	.000E+00	.000E+00
34	.000E+00	.000E+00
35	.000E+00	.000E+00
36	.000E+00	.000E+00
37	.000E+00	.000E+00
38	.000E+00	.000E+00
39	.000E+00	.000E+00
40	.000E+00	.000E+00
41	.000E+00	.000E+00
42	.000E+00	.000E+00
WALL	.000E+00	.000E+00
ROOF	.000E+00	.000E+00
MAX	.000E+00	.000E+00

RUN NO. 33C

FILE NAME GG33C

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

1	.114E-03	.143E-04
2	.105E-03	.142E-04
3	.109E-03	.153E-04
4	.135E-03	.187E-04
5	.136E-03	.235E-04
6	.142E-03	.200E-04
7	.147E-03	.240E-04
8	.163E-03	.244E-04
9	.148E-03	.230E-04
10	.148E-03	.227E-04
11	.160E-03	.230E-04
12	.150E-03	.228E-04
13	.156E-03	.210E-04
14	.142E-03	.223E-04
15	.147E-03	.265E-04
16	.158E-03	.243E-04
17	.150E-03	.228E-04
18	.148E-03	.225E-04
19	.116E-03	.190E-04
20	.147E-03	.222E-04
21	.140E-03	.204E-04
22	.154E-03	.261E-04
23	.161E-03	.272E-04
24	.151E-03	.240E-04
25	.158E-03	.215E-04
26	.160E-03	.212E-04
27	.496E-04	.139E-04
28	.417E-04	.933E-05
29	.328E-04	.706E-05
30	.256E-04	.360E-05
31	.357E-04	.870E-05
32	.403E-04	.938E-05
33	.338E-04	.674E-05
34	.292E-04	.483E-05
35	.284E-04	.664E-05
36	.000E+00	.257E-05
37	.000E+00	.000E+00
38	.000E+00	.000E+00
39	.207E-04	.387E-05
40	.000E+00	.292E-05
41	.000E+00	.257E-05
42	.000E+00	.000E+00
WALL	.150E-03	.230E-04
ROOF	.211E-04	.513E-05
MAX	.153E-03	.272E-04

RUN NO. 33CF FILE NAME GG33CF

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.000E+00
8	.000E+00	.000E+00
9	.000E+00	.000E+00
10	.000E+00	.000E+00
11	.000E+00	.000E+00
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.000E+00
16	.000E+00	.000E+00
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.000E+00
20	.000E+00	.000E+00
21	.000E+00	.000E+00
22	.000E+00	.000E+00
23	.000E+00	.000E+00
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.000E+00	.000E+00
28	.000E+00	.000E+00
29	.000E+00	.000E+00
30	.000E+00	.000E+00
31	.000E+00	.000E+00
32	.000E+00	.000E+00
33	.000E+00	.000E+00
34	.000E+00	.000E+00
35	.000E+00	.000E+00
36	.000E+00	.000E+00
37	.000E+00	.000E+00
38	.000E+00	.000E+00
39	.000E+00	.000E+00
40	.000E+00	.000E+00
41	.000E+00	.000E+00
42	.000E+00	.000E+00
WALL	=	.000E+00
ROOF	=	.000E+00
MAX	=	.000E+00

RUN NO. 34C FILE NAME GG34C

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

1	.000E+00	.000E+00
2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.000E+00
8	.000E+00	.000E+00
9	.000E+00	.000E+00
10	.000E+00	.000E+00
11	.000E+00	.000E+00
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.000E+00
16	.000E+00	.000E+00
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.000E+00
20	.243E-04	.000E+00
21	.000E+00	.000E+00
22	.000E+00	.000E+00
23	.000E+00	.000E+00
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.146E-03	.268E-05
28	.113E-03	.000E+00
29	.925E-04	.000E+00
30	.559E-04	.000E+00
31	.148E-03	.321E-05
32	.130E-03	.234E-05
33	.110E-03	.000E+00
34	.791E-04	.000E+00
35	.140E-03	.286E-05
37	.689E-04	.000E+00
38	.513E-04	.000E+00
39	.116E-03	.000E+00
40	.955E-04	.000E+00
41	.725E-04	.000E+00
42	.545E-04	.000E+00
WALL	= .122E-05	.000E+00
ROOF	= .983E-04	.740E-06
MAX	= .146E-03	.321E-05

RUN NO. 34CF FILE NAME GG34CF

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

1	.289E-04	.000E+00
2	.357E-04	.000E+00
3	.288E-04	.000E+00
4	.404E-04	.000E+00
5	.388E-04	.000E+00
6	.370E-04	.000E+00
7	.643E-04	.000E+00
8	.630E-04	.000E+00
9	.614E-04	.000E+00
10	.557E-04	.000E+00
11	.502E-04	.000E+00
12	.401E-04	.000E+00
13	.439E-04	.000E+00
14	.432E-04	.000E+00
15	.801E-04	.000E+00
16	.789E-04	.000E+00
17	.465E-04	.000E+00
18	.456E-04	.000E+00
19	.983E-04	.370E-05
20	.970E-04	.260E-05
21	.825E-04	.000E+00
22	.777E-04	.000E+00
23	.690E-04	.000E+00
24	.474E-04	.000E+00
25	.471E-04	.000E+00
26	.466E-04	.000E+00
27	.341E-03	.190E-04
28	.277E-03	.150E-04
29	.222E-03	.979E-05
30	.156E-03	.725E-05
31	.339E-03	.183E-04
32	.303E-03	.161E-04
33	.272E-03	.132E-04
34	.222E-03	.105E-04
35	.327E-03	.187E-04
36	.209E-03	.114E-04
37	.168E-03	.848E-05
38	.130E-03	.651E-05
39	.279E-03	.166E-04
40	.233E-03	.130E-04
41	.186E-03	.950E-05
42	.141E-03	.694E-05
WALL	.619E-04	.315E-06
ROOF	.238E-03	.125E-04
MAX	.341E-03	.190E-04

RUN NO. 35C FILE NAME CG35C

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

1	.000E+00	.000E+00
2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.000E+00
8	.000E+00	.000E+00
9	.000E+00	.000E+00
10	.000E+00	.000E+00
11	.000E+00	.000E+00
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.000E+00
16	.000E+00	.000E+00
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.000E+00
20	.000E+00	.000E+00
21	.000E+00	.000E+00
22	.000E+00	.000E+00
23	.000E+00	.000E+00
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.610E-04	.000E+00
28	.621E-04	.000E+00
29	.632E-04	.000E+00
30	.469E-04	.000E+00
31	.580E-04	.000E+00
32	.622E-04	.000E+00
33	.619E-04	.000E+00
34	.586E-04	.000E+00
35	.558E-04	.000E+00
36	.518E-04	.000E+00
37	.504E-04	.000E+00
38	.476E-04	.000E+00
39	.551E-04	.000E+00
40	.518E-04	.000E+00
41	.461E-04	.000E+00
42	.462E-04	.000E+00
WALL	.000E+00	.000E+00
ROOF	.549E-04	.000E+00
MAX	.632E-04	.000E+00

RUN NO. 36C		FILE NAME GG36C	
TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	
1	.000E+00	.000E+00	
2	.000E+00	.000E+00	
3	.000E+00	.000E+00	
4	.000E+00	.000E+00	
5	.000E+00	.000E+00	
6	.000E+00	.000E+00	
7	.000E+00	.000E+00	
8	.000E+00	.000E+00	
9	.000E+00	.000E+00	
10	.000E+00	.000E+00	
11	.000E+00	.000E+00	
12	.000E+00	.000E+00	
13	.000E+00	.000E+00	
14	.000E+00	.000E+00	
15	.000E+00	.000E+00	
16	.000E+00	.000E+00	
17	.000E+00	.000E+00	
18	.000E+00	.000E+00	
19	.000E+00	.000E+00	
20	.000E+00	.000E+00	
21	.000E+00	.000E+00	
22	.000E+00	.000E+00	
23	.000E+00	.000E+00	
24	.000E+00	.000E+00	
25	.000E+00	.000E+00	
26	.000E+00	.000E+00	
27	.372E-03	.000E+00	
28	.389E-03	.000E+00	
29	.410E-03	.000E+00	
30	.365E-03	.000E+00	
31	.324E-03	.000E+00	
32	.378E-03	.000E+00	
33	.406E-03	.000E+00	
34	.421E-03	.000E+00	
35	.288E-03	.000E+00	
36	.269E-03	.000E+00	
37	.268E-03	.000E+00	
38	.267E-03	.000E+00	
39	.253E-03	.000E+00	
40	.248E-03	.000E+00	
41	.256E-03	.000E+00	
42	.250E-03	.000E+00	
WALL	.000E+00	.000E+00	
ROOF	.323E-03	.000E+00	
MAX	.421E-03	.000E+00	

RUN NO. 37C FILE NAME GG37C

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

1	.000E+00	.000E+00
2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.000E+00
8	.000E+00	.000E+00
9	.000E+00	.000E+00
10	.000E+00	.000E+00
11	.000E+00	.000E+00
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.000E+00
16	.000E+00	.000E+00
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.000E+00
20	.000E+00	.000E+00
21	.000E+00	.000E+00
22	.000E+00	.000E+00
23	.000E+00	.000E+00
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.150E-03	.000E+00
28	.144E-03	.000E+00
29	.140E-03	.000E+00
30	.113E-03	.000E+00
31	.168E-03	.000E+00
32	.141E-03	.000E+00
33	.139E-03	.000E+00
34	.134E-03	.000E+00
35	.188E-03	.000E+00
36	.203E-03	.000E+00
37	.202E-03	.000E+00
38	.194E-03	.000E+00
39	.203E-03	.000E+00
40	.203E-03	.000E+00
41	.203E-03	.000E+00
42	.202E-03	.000E+00
WALL	.000E+00	.000E+00
ROOF	.170E-03	.000E+00
MAX	.203E-03	.000E+00

RUN NO. 38C		FILE NAME GG38C	
TUBE NO.	CONCENTRATIONS (1/M**2)		
	SOURCE 1	SOURCE 2	
1	.000E+00	.000E+00	
2	.000E+00	.000E+00	
3	.000E+00	.000E+00	
4	.000E+00	.000E+00	
5	.000E+00	.000E+00	
6	.000E+00	.000E+00	
7	.000E+00	.000E+00	
8	.000E+00	.000E+00	
9	.000E+00	.000E+00	
10	.000E+00	.000E+00	
11	.000E+00	.000E+00	
12	.000E+00	.000E+00	
13	.000E+00	.000E+00	
14	.000E+00	.000E+00	
15	.000E+00	.000E+00	
16	.000E+00	.000E+00	
17	.000E+00	.000E+00	
18	.000E+00	.000E+00	
19	.000E+00	.000E+00	
20	.000E+00	.000E+00	
21	.000E+00	.000E+00	
22	.000E+00	.000E+00	
23	.000E+00	.000E+00	
24	.000E+00	.000E+00	
25	.000E+00	.000E+00	
26	.000E+00	.000E+00	
27	.000E+00	.121E-04	
28	.292E-04	.110E-04	
29	.424E-04	.832E-05	
30	.491E-04	.536E-05	
31	.000E+00	.160E-04	
32	.338E-04	.991E-05	
33	.488E-04	.692E-05	
34	.587E-04	.541E-05	
35	.000E+00	.186E-04	
36	.000E+00	.191E-04	
37	.000E+00	.151E-04	
38	.304E-04	.107E-04	
39	.000E+00	.218E-04	
40	.000E+00	.207E-04	
41	.000E+00	.142E-04	
42	.296E-04	.109E-04	
WALL	=	.000E+00	
ROOF	=	.201E-04	
MAX	=	.587E-04	
		.218E-04	

RUN NO. 39C FILE NAME GG39C

TUBE NO. CONCENTRATIONS (1/M**2)
 SOURCE 1 SOURCE 2

1	.000E+00	.000E+00
2	.000E+00	.000E+00
3	.000E+00	.000E+00
4	.000E+00	.000E+00
5	.000E+00	.000E+00
6	.000E+00	.000E+00
7	.000E+00	.000E+00
8	.000E+00	.000E+00
9	.000E+00	.000E+00
10	.000E+00	.000E+00
11	.000E+00	.000E+00
12	.000E+00	.000E+00
13	.000E+00	.000E+00
14	.000E+00	.000E+00
15	.000E+00	.000E+00
16	.000E+00	.000E+00
17	.000E+00	.000E+00
18	.000E+00	.000E+00
19	.000E+00	.000E+00
20	.000E+00	.000E+00
21	.000E+00	.000E+00
22	.000E+00	.000E+00
23	.000E+00	.000E+00
24	.000E+00	.000E+00
25	.000E+00	.000E+00
26	.000E+00	.000E+00
27	.000E+00	.179E-04
28	.000E+00	.288E-04
29	.000E+00	.345E-04
30	.000E+00	.311E-04
31	.000E+00	.278E-04
32	.000E+00	.282E-04
33	.000E+00	.327E-04
34	.000E+00	.346E-04
35	.000E+00	.298E-04
36	.000E+00	.390E-04
37	.000E+00	.463E-04
38	.000E+00	.513E-04
39	.000E+00	.336E-04
40	.000E+00	.439E-04
41	.000E+00	.511E-04
42	.000E+00	.544E-04
WALL =	.000E+00	.000E+00
ROOF =	.000E+00	.366E-04
MAX =	.000E+00	.544E-04

RUN NO. 56C FILE NAME GG56C

TUBE NO. CONCENTRATIONS (1/M**2)

TUBE NO.	SOURCE 1
1	.380E-04
2	.925E-04
3	.988E-04
4	.112E-03
5	.117E-03
6	.115E-03
7	.913E-04
8	.969E-04
9	.982E-04
10	.120E-03
11	.123E-03
12	.105E-03
13	.114E-03
14	.997E-04
15	.721E-04
16	.909E-04
17	.110E-03
18	.114E-03
19	.482E-04
20	.681E-04
21	.821E-04
22	.111E-03
23	.104E-03
24	.103E-03
25	.111E-03
26	.105E-03
27	.000E+00
28	.000E+00
29	.000E+00
30	.000E+00
31	.000E+00
32	.000E+00
33	.000E+00
34	.000E+00
35	.000E+00
36	.000E+00
37	.000E+00
38	.000E+00
39	.000E+00
40	.000E+00
41	.000E+00
42	.000E+00

WALL	=	.983E-04
ROOF	=	.000E+00
MAX	=	.123E-03

RUN NO 57C FILE NAME GG57C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.135E-03
2	.180E-03
3	.174E-03
4	.213E-03
5	.219E-03
6	.208E-03
7	.226E-03
8	.232E-03
9	.228E-03
10	.237E-03
11	.240E-03
12	.234E-03
13	.194E-03
14	.227E-03
15	.225E-03
16	.236E-03
17	.239E-03
18	.237E-03
19	.211E-03
20	.227E-03
21	.232E-03
22	.240E-03
23	.235E-03
24	.242E-03
25	.236E-03
26	.234E-03
27	.153E-04
28	.120E-04
29	.101E-04
30	.848E-05
31	.977E-05
32	.114E-04
33	.107E-04
34	.989E-05
35	.662E-05
36	.000E+00
37	.000E+00
38	.000E+00
39	.000E+00
40	.000E+00
41	.000E+00
42	.000E+00
WALL	.231E-03
ROOF	.590E-05
MAX	.242E-03

RUN NO. 57CF FILE NAME GG57CF

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.137E-03
2	.233E-03
3	.235E-03
4	.264E-03
5	.274E-03
6	.277E-03
7	.242E-03
8	.273E-03
9	.275E-03
10	.300E-03
11	.308E-03
12	.287E-03
13	.297E-03
14	.275E-03
15	.228E-03
16	.273E-03
17	.298E-03
18	.302E-03
19	.160E-03
20	.204E-03
21	.250E-03
22	.294E-03
23	.302E-03
24	.294E-03
25	.302E-03
26	.297E-03
27	.130E-04
28	.000E+00
29	.000E+00
30	.000E+00
31	.000E+00
32	.000E+00
33	.000E+00
34	.000E+00
35	.000E+00
36	.000E+00
37	.000E+00
38	.000E+00
39	.000E+00
40	.000E+00
41	.000E+00
42	.000E+00
WALL	.273E-03
ROOF	.811E-06
MAX	.308E-03

RUN NO. 58C

FILE NAME GG58C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.245E-04
2	.300E-04
3	.247E-04
4	.330E-04
5	.335E-04
6	.327E-04
7	.487E-04
8	.495E-04
9	.449E-04
10	.419E-04
11	.415E-04
12	.363E-04
13	.382E-04
14	.377E-04
15	.621E-04
16	.589E-04
17	.404E-04
18	.797E-04
19	.842E-04
20	.787E-04
21	.611E-04
22	.917E-04
23	.491E-04
24	.431E-04
25	.417E-04
26	.407E-04
27	.878E-04
28	.648E-04
29	.492E-04
30	.313E-04
31	.588E-04
32	.682E-04
33	.347E-04
34	.384E-04
35	.643E-04
36	.448E-04
37	.348E-04
38	.274E-04
39	.616E-04
40	.470E-04
41	.320E-04
42	.257E-04
MEAN	.495E-04
STDEV	.501E-04
MAX	.879E-04

RUN NO. 58CF FILE NAME GG58CF

TUBE NO. CONCENTRATIONS (1/M**2)

TUBE NO.	SOURCE 1	CONCENTRATIONS (1/M**2)
1	.412E-04	
2	.450E-04	
3	.396E-04	
4	.507E-04	
5	.493E-04	
6	.479E-04	
7	.697E-04	
8	.691E-04	
9	.618E-04	
10	.593E-04	
11	.614E-04	
12	.578E-04	
13	.598E-04	
14	.586E-04	
15	.803E-04	
16	.743E-04	
17	.620E-04	
18	.609E-04	
19	.101E-03	
20	.981E-04	
21	.763E-04	
22	.692E-04	
23	.693E-04	
24	.644E-04	
25	.633E-04	
26	.625E-04	
27	.589E-04	
28	.398E-04	
29	.297E-04	
30	.200E-04	
31	.410E-04	
32	.406E-04	
33	.312E-04	
34	.253E-04	
35	.374E-04	
36	.248E-04	
37	.214E-04	
38	.167E-04	
39	.387E-04	
40	.282E-04	
41	.217E-04	
42	.141E-04	
WALL	"	.689E-04
ROOF	"	.306E-04
MAX	"	.101E-03

RUN NO. 59C FILE NAME GG59C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.504E-05
2	.113E-04
3	.805E-05
4	.101E-04
5	.775E-05
6	.915E-05
7	.105E-04
8	.168E-04
9	.161E-04
10	.140E-04
11	.138E-04
12	.100E-04
13	.110E-04
14	.105E-04
15	.193E-04
16	.217E-04
17	.113E-04
18	.111E-04
19	.293E-04
20	.329E-04
21	.276E-04
22	.228E-04
23	.199E-04
24	.121E-04
25	.131E-04
26	.129E-04
27	.987E-04
28	.795E-04
29	.652E-04
30	.451E-04
31	.104E-03
32	.817E-04
33	.714E-04
34	.549E-04
35	.101E-03
36	.850E-04
37	.672E-04
38	.504E-04
39	.986E-04
40	.813E-04
41	.648E-04
42	.511E-04
WALL	.168E-04
ROOF	.750E-04
MAX	.104E-03

RUN NO. 60C FILE NAME GG60C

TUBE NO. CONCENTRATIONS (1/M**2)

TUBE NO.	CONCENTRATIONS (1/M**2)
1	SOURCE 1
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.152E-03
28	.164E-03
29	.166E-03
30	.153E-03
31	.146E-03
32	.159E-03
33	.174E-03
34	.174E-03
35	.138E-03
36	.139E-03
37	.137E-03
38	.125E-03
39	.128E-03
40	.135E-03
41	.134E-03
42	.132E-03
WALL	.000E+00
ROOF	.148E-03
MAX	.174E-03

RUN NO. 61C FILE NAME GG61C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.350E-04
28	.469E-04
29	.622E-04
30	.720E-04
31	.214E-04
32	.485E-04
33	.641E-04
34	.784E-04
35	.186E-04
36	.350E-04
37	.514E-04
38	.647E-04
39	.179E-04
40	.292E-04
41	.459E-04
42	.600E-04
WALL	.000E+00
ROOF	.470E-04
MAX	.784E-04

RUN NO. 62C FILE NAME GG62C

TUBE NO. CONCENTRATIONS (1/M**2)

TUBE NO.	CONCENTRATIONS (1/M**2)
	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.000E+00
28	.000E+00
29	.000E+00
30	.000E+00
31	.000E+00
32	.000E+00
33	.000E+00
34	.000E+00
35	.000E+00
36	.000E+00
37	.000E+00
38	.000E+00
39	.000E+00
40	.000E+00
41	.000E+00
42	.000E+00

WALL	=	.000E+00
ROOF	=	.000E+00
MAX	=	.000E+00

RUN NO. 63C FILE NAME GG63C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.578E-04
2	.106E-03
3	.115E-03
4	.131E-03
5	.133E-03
6	.129E-03
7	.111E-03
8	.113E-03
10	.138E-03
11	.138E-03
12	.116E-03
13	.127E-03
14	.107E-03
15	.896E-04
16	.111E-03
17	.124E-03
18	.129E-03
19	.575E-04
20	.851E-04
21	.103E-03
22	.130E-03
23	.116E-03
24	.120E-03
25	.114E-03
26	.117E-03
27	.000E+00
28	.000E+00
29	.000E+00
30	.000E+00
31	.000E+00
32	.000E+00
33	.000E+00
34	.000E+00
35	.000E+00
36	.000E+00
37	.000E+00
38	.000E+00
39	.000E+00
40	.000E+00
41	.000E+00
42	.000E+00
WALL	= .113E-03
ROOF	= .000E+00
MAX	= .138E-03

RUN NO. 64C FILE NAME GG64C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.146E-03
2	.183E-03
3	.176E-03
4	.217E-03
5	.214E-03
6	.206E-03
7	.229E-03
8	.237E-03
9	.232E-03
10	.241E-03
11	.242E-03
12	.226E-03
13	.230E-03
14	.223E-03
15	.233E-03
16	.240E-03
17	.233E-03
18	.230E-03
19	.228E-03
20	.234E-03
21	.236E-03
22	.245E-03
23	.245E-03
24	.233E-03
25	.234E-03
26	.229E-03
27	.153E-04
28	.129E-04
29	.110E-04
30	.934E-05
31	.998E-05
32	.133E-04
33	.117E-04
34	.106E-04
35	.706E-05
36	.000E+00
37	.000E+00
38	.000E+00
39	.000E+00
40	.000E+00
41	.000E+00
42	.000E+00
WALL	.234E-03
ROOF	.633E-05
MAX	.245E-03

RUN NO. 64CF FILE NAME GG64CF

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.144E-03
2	.239E-03
3	.241E-03
4	.276E-03
5	.291E-03
6	.282E-03
7	.253E-03
8	.282E-03
9	.282E-03
10	.309E-03
11	.319E-03
12	.298E-03
13	.306E-03
14	.289E-03
15	.227E-03
16	.275E-03
17	.305E-03
18	.301E-03
19	.147E-03
20	.215E-03
21	.252E-03
22	.302E-03
23	.309E-03
24	.307E-03
25	.310E-03
26	.302E-03
27	.000E+00
28	.000E+00
29	.000E+00
30	.000E+00
31	.000E+00
32	.000E+00
33	.000E+00
34	.000E+00
35	.000E+00
36	.000E+00
37	.000E+00
38	.000E+00
39	.000E+00
40	.000E+00
41	.000E+00
WALL =	.279E-03
ROOF =	.000E+00
MAX =	.319E-03

RUN NO. 65C FILE NAME GG65C

TUBE NO. CONCENTRATIONS (1/M**2)

TUBE NO.	CONCENTRATIONS (1/M**2)
	SOURCE 1
1	.277E-04
2	.319E-04
3	.265E-04
4	.372E-04
5	.379E-04
6	.349E-04
7	.551E-04
8	.554E-04
9	.486E-04
10	.479E-04
11	.471E-04
12	.416E-04
13	.424E-04
14	.443E-04
15	.667E-04
16	.634E-04
17	.458E-04
18	.453E-04
19	.914E-04
20	.852E-04
21	.643E-04
22	.569E-04
23	.546E-04
24	.479E-04
25	.470E-04
26	.448E-04
27	.655E-04
28	.622E-04
29	.468E-04
30	.333E-04
31	.697E-04
32	.636E-04
33	.518E-04
34	.417E-04
35	.652E-04
36	.472E-04
37	.353E-04
38	.252E-04
39	.650E-04
40	.464E-04
41	.353E-04
42	.237E-04
WALL	= .548E-04
ROOF	= .499E-04
MAX	= .914E-04

RUN NO. 55CF FILE NAME GG65CF

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.476E-04
3	.472E-04
4	.660E-04
5	.652E-04
6	.680E-04
7	.676E-04
8	.853E-04
9	.773E-04
10	.778E-04
11	.806E-04
12	.758E-04
13	.745E-04
14	.740E-04
15	.701E-04
16	.915E-04
17	.814E-04
18	.808E-04
19	.111E-03
20	.107E-03
21	.922E-04
22	.851E-04
23	.882E-04
24	.827E-04
25	.786E-04
26	.766E-04
27	.589E-04
28	.461E-04
29	.349E-04
30	.278E-04
31	.462E-04
32	.445E-04
33	.364E-04
34	.305E-04
35	.421E-04
36	.284E-04
37	.207E-04
38	.148E-04
39	.407E-04
40	.288E-04
41	.222E-04
42	.141E-04
WALL	.839E-04
ROOF	.336E-04
MAX	.111E-03

RUN NO. 66C FILE NAME GG66C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.788E-03
3	.000E+00
4	.678E-05
5	.629E-05
6	.665E-05
8	.129E-04
9	.132E-04
10	.119E-04
11	.112E-04
12	.763E-05
13	.898E-05
14	.926E-05
15	.172E-04
16	.180E-04
17	.942E-05
18	.966E-05
19	.240E-04
20	.250E-04
21	.220E-04
22	.200E-04
23	.184E-04
24	.103E-04
25	.115E-04
26	.110E-04
27	.112E-03
28	.974E-04
29	.889E-04
30	.732E-04
31	.110E-03
32	.987E-04
33	.934E-04
34	.868E-04
35	.107E-03
36	.905E-04
37	.830E-04
38	.708E-04
39	.101E-03
40	.888E-04
41	.797E-04
42	.659E-04
WALL	= .143E-04
ROOF	= .904E-04
MAX	= .112E-03

RUN NO. 67C FILE NAME GG67C

TUBE NO. CONCENTRATIONS (1/M**2)

TUBE NO.	CONCENTRATIONS (1/M**2)
	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.293E-03
28	.315E-03
29	.333E-03
30	.302E-03
31	.253E-03
32	.304E-03
33	.326E-03
34	.347E-03
35	.235E-03
36	.227E-03
37	.229E-03
38	.232E-03
39	.212E-03
40	.217E-03
41	.220E-03
42	.223E-03
WALL	= .000E+00
ROOF	= .267E-03
MAX	= .347E-03

RUN NO. 68C FILE NAME GG68C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.413E-04
28	.536E-04
29	.704E-04
30	.770E-04
31	.229E-04
32	.555E-04
33	.717E-04
34	.859E-04
35	.210E-04
36	.367E-04
37	.568E-04
38	.715E-04
39	.201E-04
40	.313E-04
41	.493E-04
42	.646E-04
WALL	= .000E+00
ROOF	= .518E-04
MAX	= .859E-04

RUN NO. 69C FILE NAME GG69C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.000E+00
28	.000E+00
29	.000E+00
30	.000E+00
31	.000E+00
32	.000E+00
33	.000E+00
34	.000E+00
35	.000E+00
36	.000E+00
37	.000E+00
38	.000E+00
39	.000E+00
40	.000E+00
41	.000E+00
2	.000E+00
WALL	== .000E+00
ROOF	== .000E+00
MAX	== .000E+00

RUN NO. 700 FILE NAME GG70C
 TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.252E-04
28	.198E-04
29	.122E-04
30	.000E+00
31	.354E-04
32	.154E-04
33	.960E-05
34	.000E+00
35	.404E-04
36	.349E-04
37	.241E-04
38	.130E-04
39	.456E-04
40	.332E-04
41	.216E-04
42	.102E-04
WALL	.000E+00
ROOF	.213E-04
MAX	.456E-04

RUN NO. 71C FILE NAME GG71C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.770E-05
28	.950E-05
29	.893E-05
30	.575E-05
31	.108E-04
32	.812E-05
33	.763E-05
34	.507E-05
35	.114E-04
36	.107E-04
37	.974E-05
38	.790E-05
39	.119E-04
40	.106E-04
41	.855E-05
42	.675E-05
WALL	= .000E+00
ROOF	= .881E-05
MAX	= .119E-04

RUN NO. 72C FILE NAME GG72C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.624E-05
3	.629E-05
4	.725E-05
5	.107E-04
6	.984E-05
7	.861E-05
8	.796E-05
9	.864E-05
10	.104E-04
11	.109E-04
12	.123E-04
13	.133E-04
14	.132E-04
15	.892E-05
16	.994E-05
17	.166E-04
18	.170E-04
19	.907E-05
20	.109E-04
21	.118E-04
22	.176E-04
23	.167E-04
24	.174E-04
25	.181E-04
26	.170E-04
27	.691E-04
28	.903E-04
29	.992E-04
30	.886E-04
31	.784E-04
32	.872E-04
33	.108E-03
34	.111E-03
35	.785E-04
36	.969E-04
37	.943E-04
38	.103E-03
39	.771E-04
40	.896E-04
41	.865E-04
42	.106E-03
WALL =	.128E-04
ROOF =	.915E-04
MAX =	.111E-03

RUN NO. 730 FILE NAME GG730

TUBE NO. CONCENTRATIONS (1/M**2)

TUBE NO.	CONCENTRATIONS (1/M**2)
	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.493E-05
5	.594E-05
6	.620E-05
7	.000E+00
8	.000E+00
9	.000E+00
10	.611E-05
11	.612E-05
12	.834E-05
13	.859E-05
14	.913E-05
15	.000E+00
16	.000E+00
17	.101E-04
18	.111E-04
19	.479E-05
20	.549E-05
21	.494E-05
22	.940E-05
23	.120E-04
24	.114E-04
25	.122E-04
26	.115E-04
27	.545E-04
28	.726E-04
29	.797E-04
30	.764E-04
31	.615E-04
32	.763E-04
33	.877E-04
34	.923E-04
35	.611E-04
36	.722E-04
37	.783E-04
38	.868E-04
39	.642E-04
40	.731E-04
41	.808E-04
42	.936E-04

WALL	=	.656E-05
ROOF	=	.757E-04
MAX	=	.936E-04

RUN NO. 73CF FILE NAME GG73CF

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.195E-04
2	.299E-04
3	.229E-04
4	.302E-04
5	.337E-04
6	.337E-04
7	.329E-04
8	.353E-04
9	.326E-04
10	.380E-04
11	.426E-04
12	.456E-04
13	.457E-04
14	.422E-04
15	.335E-04
16	.361E-04
17	.561E-04
18	.568E-04
19	.326E-04
20	.386E-04
21	.364E-04
22	.517E-04
23	.603E-04
24	.598E-04
25	.599E-04
26	.568E-04
27	.125E-03
28	.148E-03
29	.160E-03
30	.142E-03
31	.113E-03
32	.156E-03
33	.170E-03
34	.171E-03
35	.111E-03
36	.113E-03
37	.131E-03
38	.143E-03
39	.109E-03
40	.120E-03
41	.131E-03
42	.147E-03
WALL	.447E-04
ROOF	.137E-03
MAX	.171E-03

RUN NO. 74C FILE NAME GG74C

TUBE NO. CONCENTRATIONS (1/M**2)

TUBE NO.	CONCENTRATIONS (1/M**2)
1	SOURCE 1
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.893E-05
28	.826E-05
29	.696E-05
30	.000E+00
31	.118E-04
32	.735E-05
33	.521E-05
34	.000E+00
35	.125E-04
36	.139E-04
37	.111E-04
38	.743E-05
39	.145E-04
40	.135E-04
41	.100E-04
42	.708E-05

WALL	=	.000E+00
ROOF	=	.866E-05
MAX	=	.145E-04

RUN NO. 75C FILE NAME GG75C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.000E+00
13	.000E+00
14	.000E+00
15	.000E+00
16	.000E+00
17	.000E+00
18	.000E+00
19	.000E+00
20	.000E+00
21	.000E+00
22	.000E+00
23	.000E+00
24	.000E+00
25	.000E+00
26	.000E+00
27	.111E-04
28	.125E-04
29	.117E-04
30	.000E+00
31	.150E-04
32	.107E-04
33	.104E-04
34	.000E+00
35	.136E-04
36	.149E-04
37	.141E-04
38	.114E-04
39	.168E-04
40	.140E-04
41	.127E-04
42	.984E-05
WALL	.000E+00
ROOF	.113E-04
MAX	.168E-04

RUN NO. 76C FILE NAME GG76C

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	.000E+00
2	.000E+00
3	.000E+00
4	.000E+00
5	.000E+00
6	.000E+00
7	.000E+00
8	.000E+00
9	.000E+00
10	.000E+00
11	.000E+00
12	.533E-05
13	.644E-05
14	.763E-05
15	.000E+00
16	.000E+00
17	.703E-05
18	.806E-05
19	.000E+00
20	.000E+00
21	.000E+00
22	.756E-05
23	.822E-05
24	.802E-05
25	.822E-05
26	.884E-05
27	.543E-04
28	.683E-04
29	.759E-04
30	.682E-04
31	.562E-04
32	.699E-04
33	.779E-04
34	.869E-04
35	.557E-04
36	.661E-04
37	.758E-04
38	.801E-04
39	.605E-04
40	.701E-04
41	.783E-04
42	.902E-04
GALL	.377E-05
ROOF	.703E-04
MAX	.869E-04

RUN NO. 77C FILE NAME GG77C

TUBE NO CONCENTRATIONS (1/M**2)

TUBE NO	CONCENTRATIONS (1/M**2)
	SOURCE 1
1	109E-03
2	171E-03
3	185E-03
4	202E-03
5	201E-03
6	193E-03
7	212E-03
8	214E-03
9	209E-03
10	213E-03
11	208E-03
12	194E-03
13	197E-03
14	152E-03
15	218E-03
16	217E-03
17	196E-03
18	189E-03
19	221E-03
20	220E-03
21	229E-03
22	219E-03
23	196E-03
24	191E-03
25	176E-03
26	111E-03
27	108E-03
28	104E-03
29	901E-04
30	107E-03
31	107E-03
32	104E-03
33	102E-03
34	997E-04
35	851E-04
36	812E-04
37	763E-04
38	906E-04
39	865E-04
40	845E-04
41	785E-04
42	
WALL	203E-03
ROOF	947E-04
MAX	229E-03

RUN NO. 77CF FILE NAME GG77CF

TUBE NO. CONCENTRATIONS (1/M**2)

	SOURCE 1
1	828E-04
2	128E-03
3	143E-03
4	154E-03
5	139E-03
6	139E-03
7	167E-03
8	172E-03
9	171E-03
10	173E-03
11	157E-03
12	132E-03
13	139E-03
14	112E-03
15	173E-03
16	176E-03
17	134E-03
18	136E-03
19	174E-03
20	180E-03
21	172E-03
22	177E-03
23	158E-03
24	123E-03
25	131E-03
26	121E-03
27	591E-04
28	507E-04
29	486E-04
30	389E-04
31	494E-04
32	492E-04
33	456E-04
34	427E-04
35	413E-04
36	280E-04
37	277E-04
38	258E-04
39	346E-04
40	301E-04
41	287E-04
42	255E-04
WALL =	154E-03
ROOF =	391E-04
MAX =	180E-03

APPENDIX B

PRESSURE COEFFICIENT DATA FOR GGNS

LEGEND:

Configuration A - Unit 1 and Unit 2 in Place with Cooling Towers
Operating

Configuration B - Unit 1 in Place with Cooling Tower ON

$$\text{Mean} = \frac{(p - p_r)_{\text{mean}}}{0.5 \rho u_r^2}$$

$$\text{rms} = \frac{((p - p_r) - (p - p_r)_{\text{mean}})_{\text{rms}}}{0.5 \rho u_r^2}$$

$$\text{max} = \frac{(p - p_r)_{\text{max}}}{0.5 \rho u_r^2}$$

$$\text{min} = \frac{(p - p_r)_{\text{min}}}{0.5 \rho u_r^2}$$

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR N TUBING NO 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.183	100	3.497	2.804	36	-338	213	369	-1.337	129	-446	213	193	-1.208
1	386	256	1.278	-396	37	-349	207	464	-1.111	130	-442	225	349	-1.226
2	391	254	1.441	-437	38	-377	230	402	-1.296	131	-667	254	071	-1.706
3	367	292	1.581	-653	39	-335	217	430	-1.223	132	-504	241	268	-1.510
4	404	313	1.639	-711	40	-355	217	397	-1.190	133	-095	323	089	-2.401
5	446	273	1.616	-548	41	-335	220	380	-1.156	134	-407	194	216	-1.049
6	438	269	1.487	-437	42	-373	235	447	-1.290	135	-416	149	122	-1.917
7	360	263	1.394	-495	101	-495	210	263	-1.289	136	-391	184	194	-1.136
8	351	275	1.464	-490	102	-308	234	496	-1.114	137	-385	209	375	-1.010
9	050	226	1.898	-665	103	-487	229	426	-1.265	138	-395	219	309	-1.257
10	395	325	1.703	-542	104	001	237	898	-1.746	139	-430	266	761	-1.230
11	483	304	1.557	-455	105	-107	235	799	-1.980	140	-410	206	221	-1.103
12	464	292	1.617	-520	106	-047	249	893	-1.985	141	-393	203	320	-1.199
13	303	251	1.235	-543	107	-683	233	094	-1.563	142	-415	212	309	-1.103
14	378	281	1.518	-670	108	-186	262	184	-1.665	143	-436	214	254	-1.241
15	047	228	1.835	-870	109	-036	272	417	-1.968	144	-399	213	331	-1.356
16	267	232	1.130	-520	110	-505	282	624	-1.487	145	-390	210	282	-1.109
17	465	287	1.524	-479	111	-088	253	893	-1.026	146	-370	216	303	-1.153
18	298	276	1.611	-658	112	-299	322	534	-1.793	147	-420	215	342	-1.329
19	274	238	1.235	-408	113	-393	218	327	-1.184	148	-068	312	996	-1.307
20	221	238	1.026	-525	114	-433	220	315	-1.201	149	-115	243	888	-1.653
21	035	215	1.824	-635	115	-404	215	315	-1.195	150	-482	225	285	-1.340
22	301	318	1.397	-647	116	-405	214	327	-1.114	151	-019	410	089	-1.731
23	402	309	1.491	-565	117	-467	206	256	-1.191	152	-007	229	849	-1.022
24	606	331	1.771	-510	118	-475	219	297	-1.220	153	-446	213	274	-1.301
25	329	299	1.524	-763	119	-406	211	424	-1.127	154	-411	230	307	-1.597
26	262	277	1.304	-697	120	-431	206	308	-1.336	155	-086	259	698	-1.011
27	434	213	1.353	-208	121	-434	208	308	-1.064	156	-075	210	631	-1.804
28	464	246	1.540	-466	122	-454	216	401	-1.301	157	-111	227	654	-1.910
29	475	243	1.490	-345	123	-491	215	169	-1.249	158	-884	244	078	-1.899
30	514	262	1.265	-543	124	-503	208	175	-1.226	159	-243	202	369	-1.156
31	407	217	1.325	-268	125	-501	206	332	-1.226	160	-349	241	603	-1.508
32	425	229	1.424	-285	126	-520	214	262	-1.220	161	-073	719	335	-4.413
33	380	241	1.654	-184	127	-949	310	071	-2.309	162	-005	269	201	-2.290
34	376	278	1.693	-307	128	-439	208	187	-1.353	163	-779	339	352	-2.469
35	361	213	1.391	-117										

PRESC : W02 TAP 161 TROUBLE= 719

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. NNE TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.156	109	3.475	2.854	36	-280	217	511	-1.091	129	-425	226	413	-1.344
1	107	226	869	-672	37	-282	203	418	-966	130	-425	236	338	-1.614
2	046	222	852	-741	38	-275	215	413	-939	131	-811	403	229	-1.119
3	133	241	098	-672	39	-279	220	418	-922	132	-524	294	447	-1.959
4	188	267	093	-604	40	-279	204	690	-1.031	133	-549	431	878	-1.754
5	164	241	127	-718	41	-270	209	527	-944	134	-303	189	406	-1.994
6	102	235	064	-690	42	-275	213	391	-1.102	135	-325	136	156	-1.796
7	053	224	841	-672	101	-327	199	308	-1.079	136	-316	187	349	-1.919
8	024	225	783	-879	102	-212	215	629	-953	137	-317	191	370	-1.989
9	098	209	697	-741	103	-330	201	382	-1.114	138	-327	199	242	-1.096
10	009	259	921	-890	104	-054	221	732	-810	139	-336	194	354	-1.994
11	034	244	993	-747	105	-001	229	818	-781	140	-337	205	349	-1.005
12	155	244	079	-672	106	-008	263	972	-879	141	-284	208	333	-1.176
13	021	226	844	-672	107	-411	238	606	-1.480	142	-316	207	445	-1.042
14	094	224	987	-810	108	-036	217	795	-667	143	-354	193	327	-1.962
15	125	218	637	-874	109	-252	303	402	-701	144	-285	200	450	-1.957
16	014	214	643	-776	110	-115	375	356	-1.377	145	-293	206	440	-1.069
17	118	252	257	-655	111	-027	308	620	-884	146	-323	201	306	-1.893
18	037	225	763	-851	112	-440	402	290	-884	147	-365	217	365	-1.197
19	011	213	712	-776	113	-325	209	353	-1.036	148	-339	237	135	-1.102
20	046	213	700	-713	114	-360	204	336	-1.022	149	-364	187	718	-1.764
21	116	213	603	-983	115	-353	204	462	-1.091	150	-369	215	440	-1.140
22	028	236	074	-983	116	-341	203	325	-1.159	151	-433	360	870	-1.930
23	053	255	007	-769	117	-336	196	298	-1.063	152	-074	202	669	-1.797
24	211	274	462	-716	118	-327	206	453	-1.029	153	-344	200	336	-1.086
25	059	240	001	-679	119	-345	194	292	-1.017	154	-181	222	543	-1.939
26	048	243	841	-737	120	-364	205	384	-1.000	155	-017	211	789	-1.748
27	326	213	338	-1.090	121	-420	217	367	-1.505	156	-111	223	712	-1.841
28	319	216	386	-957	122	-382	211	327	-1.172	157	-143	241	123	-1.004
29	333	227	450	-1.037	123	-380	214	333	-1.287	158	-331	255	472	-1.238
30	344	215	696	-1.037	124	-456	220	327	-1.511	159	-189	202	620	-1.802
31	298	212	547	-1.010	125	-409	224	264	-1.149	160	-239	240	750	-1.418
32	317	219	413	-1.080	126	-360	228	327	-1.093	161	-897	462	178	-1.204
33	330	219	418	-1.151	127	-503	234	344	-1.489	162	-583	332	609	-1.903
34	322	221	538	-1.271	128	-397	215	296	-1.350	163	-369	299	852	-1.631
35	304	194	483	-1.031										

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. NE TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.220	105	3.525	2.892	36	-328	235	572	-1.137	129	-488	292	233	-2.551
1	290	219	391	-1.038	37	-289	239	656	-1.199	130	-379	251	477	-1.316
2	325	195	385	-1.050	38	-269	243	482	-2.056	131	-605	434	744	-3.720
3	348	213	450	-1.208	39	-354	234	337	-1.680	132	-072	336	539	-1.085
4	352	232	332	-1.214	40	-346	229	382	-1.428	133	092	384	545	-1.437
5	299	212	367	-1.097	41	-305	232	852	-1.395	134	-231	186	364	-1.932
6	291	212	391	-1.038	42	-312	251	785	-1.938	135	-490	251	145	-1.646
7	311	216	379	-1.120	101	054	274	091	-1.832	136	-299	199	326	-1.981
8	356	228	409	-1.161	102	134	346	738	-1.879	137	-297	210	397	-1.113
9	373	210	403	-1.050	103	-085	316	250	-1.167	138	-338	218	298	-1.591
10	410	227	438	-1.261	104	041	327	344	-1.926	139	-434	248	271	-1.487
11	428	231	515	-1.279	105	114	322	291	-1.985	140	-315	224	375	-1.179
12	314	229	411	-1.120	106	200	345	902	-1.673	141	-303	205	364	-1.998
13	353	201	376	-1.103	107	011	363	732	-1.261	142	-317	205	337	-1.954
14	352	215	512	-1.186	108	005	296	332	-1.850	143	-422	248	392	-1.690
15	371	221	275	-1.197	109	-167	300	997	-1.009	144	-314	211	403	-1.267
16	354	208	376	-1.132	110	-122	453	461	-1.879	145	-268	199	375	-1.025
17	334	222	340	-1.192	111	-140	349	550	-1.391	146	-293	219	513	-1.119
18	338	229	435	-1.221	112	-175	373	391	-1.356	147	-365	274	551	-1.520
19	346	223	417	-1.073	113	-312	211	515	-1.038	148	-485	320	754	-1.893
20	339	207	411	-1.037	114	-522	262	291	-1.820	149	-274	235	617	-1.221
21	359	212	411	-1.150	115	-388	254	332	-1.314	150	-354	211	376	-1.075
22	392	215	382	-1.091	116	-187	270	750	-1.379	151	-605	318	426	-2.269
23	395	240	590	-1.223	117	030	293	177	-1.954	152	-349	265	522	-1.417
24	277	210	491	-1.042	118	055	309	498	-1.859	153	-308	223	471	-1.115
25	311	226	491	-1.086	119	-560	274	245	-2.189	154	-131	223	594	-1.868
26	312	232	546	-1.080	120	-529	264	263	-1.625	155	-107	232	578	-1.823
27	371	227	496	-1.179	121	-501	246	269	-1.471	156	-180	276	819	-1.501
28	338	232	452	-1.388	122	-401	224	316	-1.322	157	-450	375	566	-2.980
29	300	236	458	-1.190	123	-167	236	643	-1.025	158	-221	240	645	-1.748
30	270	232	886	-1.492	124	-403	347	732	-1.957	159	-284	280	634	-1.608
31	350	225	507	-1.223	125	-126	346	242	-1.316	160	-769	434	589	-4.527
32	354	231	419	-1.360	126	104	348	575	-1.913	161	-599	368	617	-2.969
33	310	231	488	-1.568	127	078	336	438	-1.103	162	-718	395	550	-2.633
34	299	244	477	-1.921	128	-433	255	405	-1.625	163	-973	504	426	-3.916
35	380	219	387	-1.434										

PRESC : W02 TAP 163 TROUBLE= .504

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. ENE TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.030	105	3.303	2.660	36	-1.155	231	.699	-1.007	129	-1.106	531	130	-3.003
1	-432	209	300	-1.130	37	-0.97	247	.656	-1.879	130	-445	237	275	-1.437
2	-459	224	172	-1.236	38	-0.67	237	.800	-1.959	131	-336	330	756	-1.487
3	-465	227	295	-1.264	39	-3.01	218	.571	-1.081	132	-291	267	601	-1.575
4	-398	250	484	-1.537	40	-2.23	223	.512	-1.124	133	-404	268	582	-1.491
5	-306	229	490	-1.075	41	-1.71	221	.619	-1.911	134	-309	200	546	-1.943
6	-312	252	662	-1.086	42	-1.63	229	.630	-1.135	135	-624	245	054	-1.643
7	-498	216	239	-1.136	101	449	250	1.286	-1.368	136	-446	200	304	-1.159
8	-512	210	161	-1.259	102	.556	284	1.837	-1.318	137	-447	219	404	-1.117
9	-530	212	206	-1.270	103	.318	282	1.241	-1.574	138	-463	229	320	-1.169
10	-526	224	178	-1.342	104	.580	275	1.559	-1.262	139	-551	264	335	-1.401
11	-571	243	317	-1.487	105	.510	278	1.414	-1.351	140	-557	218	256	-1.259
12	-345	223	421	-1.308	106	.588	299	1.664	-1.351	141	-489	224	372	-1.301
13	-458	234	309	-1.269	107	.239	303	1.197	-1.835	142	-453	248	330	-1.311
14	-539	230	191	-1.308	108	.388	258	1.503	-1.384	143	-474	240	514	-1.453
15	-522	210	258	-1.286	109	-1.77	226	.673	-1.852	144	-414	214	304	-1.069
16	-531	225	286	-1.353	110	-1.36	316	1.013	-1.364	145	-368	223	351	-1.201
17	-360	240	426	-1.476	111	-1.38	226	.712	-1.874	146	-371	225	498	-1.154
18	-489	239	298	-1.733	112	-3.29	207	.551	-1.092	147	-457	243	425	-1.343
19	-488	204	186	-1.207	113	-3.85	227	.456	-1.197	148	-644	216	056	-1.532
20	-526	209	292	-1.347	114	-6.21	322	.206	-2.283	149	-556	215	123	-1.300
21	-523	221	174	-1.319	115	-4.36	242	.328	-1.298	150	-644	247	150	-1.646
22	-562	219	286	-1.319	116	-2.92	319	.696	-1.596	151	-564	225	129	-1.215
23	-548	231	251	-1.411	117	-1.95	263	1.282	-1.692	152	-589	228	209	-1.444
24	-321	247	435	-1.680	118	-4.54	255	1.411	-1.335	153	-594	244	193	-1.529
25	-370	258	498	-1.301	119	-6.61	264	.342	-1.694	154	-180	218	624	-1.895
26	-443	239	467	-1.311	120	-7.60	334	.141	-1.918	155	-155	219	720	-1.905
27	-429	247	372	-1.296	121	-7.15	340	.393	-2.125	156	-263	241	560	-1.236
28	-340	241	683	-1.211	122	-5.59	288	.337	-1.733	157	-918	301	049	-2.158
29	-255	243	872	-1.254	123	-2.09	230	.521	-1.989	158	-212	235	571	-1.039
30	-151	241	735	-1.975	124	-4.61	292	.421	-1.739	159	-280	242	587	-1.193
31	-392	221	335	-1.369	125	-0.31	258	.835	-1.056	160	-1.189	293	319	-2.371
32	-362	236	341	-1.227	126	.514	267	1.472	-1.508	161	-704	286	113	-2.531
33	-289	222	507	-1.076	127	-4.72	281	1.422	-1.536	162	-996	268	101	-2.025
34	-210	219	539	-1.948	128	-4.63	248	.342	-1.465	163	-1.170	294	266	-2.243
35	-391	245	464	-1.449										

PRESC : W02 TAP 129 TROUBLE= 531

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. E

TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.216	0.99	3.528	2.890	36	-.226	.239	.621	-.988	129	-1.702	.511	-.348	-3.629
1	-.502	.220	.200	-1.534	37	-.223	.231	.660	-.999	130	-.488	.283	.547	-1.500
2	-.516	.232	.252	-1.284	38	-.240	.241	.026	-1.094	131	-.198	.371	1.367	-1.360
3	-.532	.223	.194	-1.313	39	-.279	.220	.493	-1.155	132	-.348	.397	1.519	-1.145
4	-.522	.224	.450	-1.575	40	-.285	.234	.476	-1.027	133	-.031	.277	.979	-1.022
5	-.399	.227	.386	-1.092	41	-.298	.232	.815	-1.077	134	-.305	.222	.444	-1.174
6	-.408	.264	1.445	-1.365	42	-.306	.230	.587	-1.010	135	-.806	.237	-.233	-1.948
7	-.516	.212	.270	-1.604	101	.116	.264	.043	-.993	136	-.590	.209	.189	-1.466
8	-.550	.220	.171	-1.295	102	.167	.263	.381	-.661	137	-.598	.222	.173	-1.358
9	-.545	.220	.229	-1.237	103	-.092	.302	.194	-1.528	138	-.711	.249	.179	-1.704
10	-.564	.218	.200	-1.354	104	.103	.271	.509	-.929	139	-.719	.225	-.070	-1.488
11	-.562	.234	.275	-1.383	105	.172	.291	.421	-.754	140	-.572	.232	.168	-1.347
12	-.459	.223	.326	-1.465	106	.251	.300	.503	-.725	141	-.611	.269	.233	-1.856
13	-.534	.232	.286	-1.302	107	-.409	.346	.677	-2.028	142	-.637	.239	.184	-1.477
14	-.578	.227	.169	-1.453	108	.007	.252	.909	-.807	143	-.596	.218	.168	-1.396
15	-.562	.212	.245	-1.366	109	-.313	.260	.630	-1.400	144	-.594	.268	.260	-1.942
16	-.521	.221	.303	-1.360	110	-.798	.380	.438	-2.296	145	-.625	.258	.189	-1.536
17	-.478	.237	.501	-1.424	111	-.280	.221	.601	-.946	146	-.606	.252	.346	-1.774
18	-.544	.226	.443	-1.581	112	-.373	.222	.392	-1.150	147	-.586	.233	.168	-1.520
19	-.552	.216	.222	-1.290	113	-.527	.239	.380	-1.354	148	-.577	.225	.065	-1.407
20	-.550	.214	.216	-1.221	114	-.844	.373	.118	-2.255	149	-.487	.210	.238	-1.249
21	-.572	.213	.227	-1.314	115	-.435	.257	.595	-1.423	150	-.538	.224	.288	-1.354
22	-.575	.226	.239	-1.436	116	-.158	.295	.834	-1.237	151	-.475	.227	.249	-1.371
23	-.554	.229	.173	-1.563	117	.050	.289	.292	-.843	152	-.472	.212	.321	-1.260
24	-.424	.245	.363	-1.298	118	.126	.262	.286	-.633	153	-.558	.222	.205	-1.349
25	-.456	.239	.319	-1.288	119	-.613	.239	.094	-1.424	154	-.226	.230	.560	-1.066
26	-.499	.244	.368	-1.369	120	-.639	.267	.204	-1.744	155	-.346	.226	.332	-1.121
27	-.393	.226	.363	-1.255	121	-.213	.322	.249	-2.355	156	-.483	.276	.404	-1.854
28	-.314	.238	.579	-1.104	122	-.711	.274	.431	-1.727	157	-1.037	.378	-.012	-2.525
29	-.263	.230	.638	-1.201	123	-.186	.302	.960	-1.157	158	-.216	.241	.565	-1.094
30	-.244	.238	.519	-1.006	124	-.159	.354	.873	-1.279	159	-.344	.222	.399	-1.138
31	-.364	.220	.335	-1.071	125	-.076	.357	.431	-1.331	160	-1.382	.342	-.250	-2.869
32	-.371	.216	.476	-1.033	126	-.067	.316	.600	-.959	161	-.506	.248	.371	-1.704
33	-.316	.224	.449	-1.443	127	-.062	.271	.873	-1.064	162	-.829	.308	.077	-2.181
34	-.275	.234	.521	-1.199	128	-.519	.231	.245	-1.349	163	-1.335	.348	-.078	-2.913
35	-.350	.233	.388	-1.105										

PRESO : W02 TAP 129 TROUBLE=

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DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. ESE TUSING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.049	111	3.338	2.562	36	- .347	220	473	-1.105	129	- .778	435	594	-2.081
1	- .520	208	170	-1.220	37	- .352	201	360	-1.051	130	- .056	303	865	-1.304
2	- .536	205	125	-1.294	38	- .337	233	505	-1.073	131	- .156	359	377	- .954
3	- .541	199	119	-1.232	39	- .386	208	306	-1.213	132	- .079	392	175	-1.484
4	- .549	211	198	-1.248	40	- .402	212	241	-1.170	133	- .415	235	725	-1.157
5	- .507	193	193	-1.243	41	- .418	204	349	-1.170	134	- .193	236	741	- .822
6	- .468	217	323	-1.164	42	- .402	220	376	-1.304	135	-1.063	299	311	-2.199
7	- .557	200	063	-1.316	101	- .137	252	679	-1.113	136	- .534	251	438	-1.402
8	- .557	202	114	-1.175	102	- .075	305	1.662	- .757	137	- .606	235	316	-1.471
9	- .559	197	204	-1.243	103	- .459	308	396	-1.695	138	- .944	294	114	-2.120
10	- .557	201	142	-1.333	104	- .149	286	1.244	-1.378	139	- .945	249	163	-1.811
11	- .598	204	051	-1.384	105	- .035	283	1.182	- .870	140	- .613	236	183	-1.455
12	- .549	210	217	-1.298	106	- .078	295	1.295	- .830	141	- .758	236	003	-1.503
13	- .584	209	082	-1.332	107	- .789	258	080	-1.712	142	- .842	250	167	-1.753
14	- .576	204	183	-1.321	108	- .310	237	441	-1.141	143	- .800	222	014	-1.577
15	- .542	207	217	-1.180	109	- .352	230	458	-1.226	144	- .677	281	146	-1.838
16	- .536	189	155	-1.247	110	- .951	280	- .084	-2.317	145	- .722	270	178	-1.662
17	- .583	209	088	-1.394	111	- .411	236	447	-1.548	146	- .803	241	024	-1.832
18	- .612	205	009	-1.394	112	- .437	207	272	-1.073	147	- .789	242	087	-1.769
19	- .564	201	139	-1.208	113	- .503	223	311	-1.412	148	- .570	213	204	-1.269
20	- .570	193	166	-1.270	114	- .475	350	775	-1.740	149	- .521	202	139	-1.272
21	- .551	198	150	-1.270	115	- .188	257	860	- .904	150	- .572	208	117	-1.407
22	- .595	195	031	-1.287	116	- .045	259	1.057	- .745	151	- .517	211	225	-1.509
23	- .600	219	098	-1.434	117	- .007	273	1.068	- .870	152	- .496	190	252	-1.137
24	- .576	219	103	-1.338	118	- .028	264	1.220	- .757	153	- .599	223	096	-1.417
25	- .568	209	119	-1.317	119	- .711	212	048	-1.411	154	- .259	228	484	-1.175
26	- .583	219	183	-1.269	120	- .418	218	335	-1.377	155	- .426	216	322	-1.617
27	- .588	196	279	-1.109	121	- .898	346	313	-1.968	156	- .794	277	096	-1.983
28	- .559	217	380	-1.242	122	- .376	266	538	-1.315	157	-1.201	352	120	-2.688
29	- .563	209	444	-1.056	123	- .087	313	1.445	- .819	158	- .189	230	640	- .965
30	- .558	216	460	-1.162	124	- .024	315	1.315	- .954	159	- .400	246	441	-1.482
31	- .577	194	364	-1.114	125	- .151	350	1.107	-1.366	160	-1.337	332	222	-2.979
32	- .574	206	305	-1.146	126	- .059	264	854	- .853	161	- .354	230	489	-1.261
33	- .574	207	424	-1.046	127	- .371	257	594	-1.428	162	- .496	246	284	-1.854
34	- .567	206	284	-1.083	128	- .534	209	189	-1.326	163	- .923	309	015	-2.069
35	- .573	210	424	-1.073										

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. SE TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.133	100	3.460	2.831	36	3.313	227	4.13	-1.152	129	.052	430	1.242	-1.710
1	3.550	223	2.03	-1.285	37	3.305	242	6.86	-1.256	130	.326	381	1.645	-1.238
2	3.517	229	2.26	-1.343	38	3.333	248	6.75	-1.114	131	.002	317	1.162	-1.968
3	3.499	223	2.32	-1.222	39	3.46	221	5.55	-1.075	132	.773	429	.483	-2.418
4	3.485	224	2.95	-1.297	40	3.63	229	5.55	-1.141	133	.459	215	.326	-1.124
5	3.511	230	2.43	-1.366	41	3.72	219	4.73	-1.015	134	.046	269	1.018	-1.845
6	3.458	236	3.65	-1.239	42	3.83	216	3.74	-1.081	135	.674	264	.082	-1.956
7	3.477	218	2.95	-1.320	101	2.42	251	7.24	-1.123	136	.078	269	.949	-1.904
8	3.532	227	2.66	-1.361	102	1.24	307	1.592	-1.869	137	.219	276	.933	-1.317
9	3.538	221	3.01	-1.320	103	5.06	255	4.63	-1.662	138	.527	328	.594	-1.774
10	3.535	210	2.26	-1.251	104	3.68	297	1.071	-1.610	139	.753	277	1.06	-2.069
11	3.560	218	2.14	-1.471	105	1.92	302	8.63	-1.199	140	.426	257	.637	-1.382
12	3.550	215	2.01	-1.388	106	1.95	289	8.68	-1.117	141	.324	255	.562	-1.430
13	3.532	229	2.01	-1.336	107	7.12	219	0.52	-1.488	142	.544	297	.487	-1.559
14	3.538	218	2.35	-1.307	108	6.49	244	2.03	-1.476	143	.914	283	1.31	-2.150
15	3.516	217	2.01	-1.204	109	4.51	224	5.33	-1.216	144	.454	212	1.86	-1.430
16	3.535	226	2.47	-1.278	110	7.05	229	0.41	-1.795	145	.386	241	.358	-1.489
17	3.540	224	2.18	-1.267	111	5.79	255	3.71	-1.505	146	.537	273	.342	-1.586
18	3.553	219	3.33	-1.342	112	4.69	229	2.66	-1.696	147	1.103	324	1.174	-2.569
19	3.553	221	2.24	-1.359	113	1.63	286	7.76	-1.181	148	.536	215	1.70	-1.269
20	3.572	216	2.47	-1.313	114	0.82	299	1.083	-1.019	149	.472	204	.276	-1.218
21	3.517	207	2.87	-1.255	115	1.18	259	1.129	-1.614	150	.608	245	.249	-1.491
22	3.559	212	1.89	-1.422	116	0.04	263	1.071	-1.909	151	.494	206	.139	-1.425
23	3.573	230	2.08	-1.366	117	2.13	300	7.59	-1.405	152	.480	199	.183	-1.212
24	3.533	233	2.99	-1.446	118	0.71	241	6.78	-1.864	153	.494	216	.188	-1.250
25	3.532	230	2.56	-1.280	119	4.60	224	3.50	-1.403	154	.282	232	.588	-1.179
26	3.525	227	2.40	-1.371	120	0.47	269	2.02	-1.922	155	.480	275	.249	-1.814
27	3.445	220	4.33	-1.231	121	0.93	366	2.08	-1.624	156	.043	322	.063	-2.580
28	3.339	223	4.33	-1.156	122	1.72	332	1.50	-1.783	157	.291	336	.151	-2.635
29	3.433	226	4.92	-1.119	123	2.08	300	3.46	-1.599	158	.146	230	.632	-1.939
30	3.449	236	4.63	-1.172	124	1.37	310	0.46	-1.152	159	.374	252	.560	-1.283
31	3.336	206	5.35	-1.022	125	6.25	373	6.32	-2.101	160	.171	346	.178	-2.924
32	3.503	202	3.05	-1.017	126	2.64	229	5.63	-1.273	161	.224	232	.522	-1.146
33	3.882	216	3.36	-1.234	127	5.14	241	2.47	-1.376	162	.388	229	.391	-1.305
34	3.47	227	3.47	-1.212	128	4.22	242	5.46	-1.267	163	.788	275	.156	-2.427
35	3.49	221	6.64	-1.097										

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. SSE TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.226	117	3.528	2.780	36	- .193	280	857	- .982	129	.545	326	1.822	- .782
1	- .505	243	319	-1.414	37	- .340	244	615	-1.218	130	.281	296	1.293	-1.228
2	- .480	236	272	-1.308	38	- .474	224	317	-1.336	131	- .443	245	.382	-1.358
3	- .473	240	442	-1.267	39	- .182	252	610	-1.269	132	-1.471	355	- .300	-3.156
4	- .487	238	459	-1.168	40	- .264	257	812	-1.179	133	- .523	205	.125	-1.271
5	- .514	229	559	-1.419	41	- .410	244	458	-1.505	134	- .419	273	1.426	- .506
6	- .515	238	225	-1.267	42	- .470	243	385	-1.392	135	- .020	266	.890	-1.288
7	- .520	234	307	-1.443	101	- .377	243	617	-1.466	136	- .406	285	1.504	- .506
8	- .500	241	260	-1.314	102	- .310	331	1.782	- .805	137	.350	287	1.442	- .618
9	- .493	246	342	-1.443	103	- .557	285	506	-1.566	138	- .208	282	1.169	- .769
10	- .519	244	395	-1.285	104	- .450	249	488	-1.332	139	- .151	303	.973	-1.305
11	- .523	233	354	-1.343	105	- .545	250	506	-1.390	140	- .303	268	.616	-1.171
12	- .526	233	253	-1.481	106	- .509	222	512	-1.291	141	- .183	265	1.169	- .735
13	- .509	233	223	-1.316	107	- .640	243	266	-1.460	142	- .135	278	.977	- .802
14	- .502	236	353	-1.328	108	- .631	222	090	-1.431	143	- .416	353	.806	-1.612
15	- .547	240	435	-1.322	109	- .562	210	325	-1.261	144	- .408	219	.387	-1.187
16	- .551	233	500	-1.434	110	- .586	228	161	-1.466	145	- .269	240	.638	-1.226
17	- .552	232	171	-1.269	111	- .611	232	208	-1.523	146	- .303	229	.566	-1.053
18	- .516	230	253	-1.399	112	- .541	213	336	-1.343	147	- .804	345	.398	-2.081
19	- .502	241	288	-1.269	113	- .415	300	1.788	- .594	148	- .553	220	.147	-1.282
20	- .505	243	329	-1.405	114	- .520	297	1.782	- .413	149	- .535	207	.115	-1.196
21	- .506	244	365	-1.258	115	- .229	286	1.284	- .945	150	- .713	255	.120	-1.735
22	- .543	235	347	-1.434	116	- .222	252	594	-1.203	151	- .563	266	.452	-1.527
23	- .547	250	382	-1.435	117	- .760	342	188	-2.086	152	- .544	218	.396	-1.291
24	- .506	246	242	-1.439	118	- .149	231	647	- .958	153	- .569	228	.171	-1.325
25	- .519	249	343	-1.444	119	- .130	306	1.223	-1.181	154	- .614	247	.154	-1.673
26	- .530	245	354	-1.221	120	- .476	291	1.458	- .494	155	-1.045	332	.250	-2.202
27	- .338	242	566	-1.288	121	- .511	290	1.493	- .405	156	-1.170	341	.105	-3.400
28	- .399	253	343	-1.377	122	- .438	314	1.757	- .641	157	-1.355	300	.386	-2.584
29	- .469	241	320	-1.478	123	- .241	270	1.134	- .693	158	- .181	239	.643	-1.077
30	- .449	239	376	-1.333	124	- .470	260	.711	-1.346	159	- .369	268	.621	-1.409
31	- .309	241	538	-1.115	125	-1.184	304	- .035	-2.310	160	-1.055	306	.053	-2.939
32	- .424	240	432	-1.310	126	- .491	282	.406	-1.651	161	- .198	244	.767	-1.027
33	- .459	229	424	-1.269	127	- .527	233	.235	-1.316	162	- .316	237	.475	-1.010
34	- .462	226	250	-1.291	128	- .045	287	1.029	- .976	163	- .573	284	.486	-1.561
35	- .267	253	553	-1.156										

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. S

TUSING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.055	088	3.377	2.793	36	269	209	592	-905	129	087	321	1.320	-1.033
1	413	247	802	-1.383	37	353	224	921	-1.025	130	679	395	627	-2.692
2	375	238	494	-1.416	38	374	218	535	-1.322	131	587	255	228	-1.879
3	340	248	692	-1.174	39	228	248	822	-1.983	132	154	394	099	-3.479
4	381	227	445	-1.174	40	337	226	415	-1.291	133	541	258	213	-1.566
5	435	239	385	-1.234	41	375	218	420	-1.181	134	546	344	1.901	-3.42
6	396	226	352	-1.251	42	421	229	331	-1.148	135	468	285	1.244	-5.77
7	403	242	423	-1.191	101	368	237	467	-1.267	136	554	346	1.187	-5.16
8	445	237	308	-1.284	102	143	270	1.75	-1.735	137	499	307	1.703	-5.36
9	411	224	686	-1.245	103	515	224	275	-1.262	138	495	320	1.998	-5.72
10	475	250	500	-1.481	104	363	225	472	-1.174	139	517	384	039	-8.93
11	449	236	390	-1.386	105	478	214	346	-1.245	140	303	286	805	-1.372
12	454	225	261	-1.386	106	489	228	308	-1.289	141	779	316	1.779	-5.00
13	422	228	419	-1.426	107	545	253	374	-1.531	142	440	315	1.126	-6.43
14	356	237	496	-1.246	108	492	227	242	-1.366	143	523	370	1.794	-1.107
15	401	218	337	-1.153	109	480	215	357	-1.185	144	416	268	565	-2.403
16	428	239	436	-1.317	110	545	265	313	-1.679	145	229	277	397	-1.286
17	411	222	354	-1.251	111	476	226	220	-1.284	146	166	262	743	-1.112
18	390	239	496	-1.158	112	468	230	302	-1.273	147	030	366	503	-1.480
19	421	234	305	-1.273	113	420	361	586	-1.773	148	611	292	162	-2.474
20	417	215	334	-1.257	114	043	281	449	-1.026	149	586	245	748	-1.593
21	390	238	490	-1.295	115	379	381	802	-1.909	150	734	284	128	-1.937
22	448	231	441	-1.289	116	464	241	258	-1.432	151	644	314	138	-2.475
23	474	238	305	-1.388	117	766	309	212	-1.853	152	618	263	248	-1.901
24	421	230	438	-1.464	118	195	214	610	-1.853	153	673	279	206	-2.031
25	413	241	509	-1.439	119	576	385	981	-1.224	154	926	354	144	-2.887
26	381	223	423	-1.128	120	427	292	462	-1.634	155	121	365	253	-3.074
27	337	243	468	-1.189	121	130	270	894	-1.071	156	219	409	081	-3.883
28	325	228	361	-1.597	122	615	407	687	-2.152	157	138	391	013	-3.184
29	346	224	489	-1.143	123	105	254	654	-1.382	158	444	314	415	-1.776
30	399	224	479	-1.199	124	612	261	212	-1.633	159	478	314	618	-1.640
31	307	213	606	-1.036	125	949	334	234	-2.321	160	856	353	488	-3.377
32	342	235	453	-1.250	126	709	327	348	-1.950	161	226	240	754	-1.009
33	378	226	331	-1.265	127	505	241	266	-1.399	162	189	220	702	-8.58
34	382	218	290	-1.452	128	352	332	713	-1.552	163	286	263	571	-1.437
35	301	241	712	-1.400										

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. SSW TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.054	092	3.340	2.749	36	-199	223	598	-885	129	-608	314	1.484	-1.750
1	-115	227	999	-865	37	-260	230	541	-978	130	-1186	381	-095	-3.614
2	-159	219	656	-957	38	-285	237	592	-1.445	131	-590	348	406	-2.536
3	-194	212	570	-946	39	-213	227	629	-968	132	-579	321	252	-2.729
4	-232	213	488	-1.071	40	-245	230	572	-1.465	133	-437	254	286	-1.655
5	-240	219	483	-1.050	41	-276	239	670	-1.346	134	-599	306	1.887	-3.318
6	-218	207	504	-854	42	-302	246	769	-1.217	135	-139	283	977	-872
7	-201	235	591	-974	101	-280	215	401	-1.968	136	-690	335	2.054	-537
8	-214	233	646	-1.077	102	-079	229	863	-897	137	-571	314	1.983	-628
9	-181	250	602	-1.115	103	-371	224	200	-1.289	138	-619	345	1.196	-410
10	-255	225	488	-1.071	104	-285	185	379	-1.033	139	-231	362	1.744	-1.086
11	-266	218	439	-1.147	105	-306	192	428	-979	140	-230	359	1.292	-1.726
12	-234	208	554	-909	106	-317	211	542	-1.066	141	-708	373	450	-517
13	-246	205	536	-1.008	107	-422	215	260	-1.294	142	-652	363	2.63	-445
14	-191	206	626	-925	108	-300	196	417	-919	143	-214	349	1.648	-1.004
15	-211	224	532	-1.134	109	-327	220	390	-1.115	144	-116	343	1.023	-1.457
16	-240	241	785	-1.101	110	-404	238	564	-1.544	145	-008	328	1.358	-1.009
17	-257	205	477	-887	111	-292	224	488	-1.397	146	-018	329	1.973	-1.248
18	-227	213	494	-931	112	-355	242	461	-1.251	147	-105	396	537	-1.766
19	-282	252	703	-1.305	113	-357	482	1.586	-2.441	148	-331	248	606	-1.253
20	-246	237	598	-1.239	114	-549	275	602	-1.533	149	-667	315	406	-2.165
21	-222	232	780	-958	115	-845	360	135	-3.076	150	-834	394	328	-2.632
22	-301	225	417	-1.189	116	-521	290	298	-2.370	151	-377	311	603	-1.896
23	-221	217	637	-954	117	-562	275	246	-1.651	152	-774	362	432	-2.684
24	-223	208	540	-954	118	-214	216	692	-986	153	-1.008	379	121	-2.818
25	-193	212	733	-903	119	-319	597	171	-2.646	154	-1.060	465	024	-4.026
26	-165	215	591	-943	120	-037	316	1.335	-1.272	155	-238	330	066	-3.648
27	-192	234	677	-994	121	-608	290	318	-1.728	156	-1.000	365	056	-2.512
28	-223	229	637	-1.111	122	-940	372	045	-3.471	157	-971	426	572	-4.384
29	-247	231	652	-1.248	123	-759	393	499	-2.262	158	-780	402	406	-4.228
30	-284	229	494	-1.248	124	-667	350	477	-2.443	159	-697	348	484	-1.994
31	-217	235	550	-1.177	125	-614	290	323	-1.959	160	-516	359	489	-4.104
32	-217	233	591	-999	126	-559	259	378	-1.750	161	-305	322	903	-2.098
33	-246	222	883	-1.061	127	-449	232	345	-1.294	162	-254	282	624	-1.507
34	-309	224	572	-1.206	128	-408	547	1.511	-2.064	163	-299	302	634	-1.538
35	-218	228	821	-1.180										

PRESC : W02 TAP 119 TROUBLE= 597
 PRESC : W02 TAP 128 TROUBLE= 547

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. SW TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.050	154	3.506	2.640	36	-223	211	531	-962	129	-393	214	298	-1.111
1	412	263	1.441	-504	37	-244	200	421	-1.020	130	-525	237	243	-1.556
2	408	241	1.276	-317	38	-261	205	510	-921	131	-452	271	364	-1.688
3	079	223	941	-751	39	-225	203	552	-905	132	-424	239	452	-1.369
4	-144	221	584	-1.070	40	-222	196	416	-895	133	-417	224	310	-1.220
5	-118	193	474	-966	41	-259	207	431	-968	134	-497	252	500	-1.314
6	076	207	853	-603	42	-305	210	494	-1.093	135	-086	206	609	-1.726
7	459	268	1.523	-350	101	-221	202	392	-960	136	596	277	1.438	-1.288
8	459	243	1.298	-317	102	-114	199	474	-883	137	430	248	1.361	-1.360
9	460	259	1.479	-411	103	-269	186	474	-878	138	482	264	1.469	-1.406
10	145	265	1.018	-900	104	-202	184	468	-801	139	179	253	578	-1.999
11	-187	248	633	-1.114	105	-196	191	413	-768	140	168	296	1.263	-1.752
12	-117	210	611	-836	106	-169	195	545	-883	141	645	297	1.649	-1.381
13	-159	189	633	-874	107	-296	190	441	-883	142	555	282	1.551	-1.329
14	190	218	947	-522	108	-192	189	392	-911	143	-089	297	995	-1.061
15	420	241	1.272	-368	109	-170	191	419	-872	144	255	260	1.232	-1.705
16	446	252	1.459	-324	110	-254	200	320	-1.553	145	071	251	974	-1.772
17	121	195	529	-759	111	-096	210	655	-905	146	101	246	938	-1.855
18	018	212	699	-869	112	-140	201	507	-900	147	-200	246	737	-1.122
19	553	267	1.662	-241	113	-561	379	375	-1.927	148	-109	187	557	-1.715
20	448	255	1.327	-434	114	-340	197	337	-1.064	149	-050	224	640	-1.801
21	426	246	1.161	-307	115	-456	205	122	-1.163	150	-640	321	677	-1.657
22	-045	275	870	-1.182	116	-431	197	413	-1.163	151	-092	191	562	-1.764
23	-181	255	732	-1.231	117	-379	195	210	-1.105	152	-148	230	703	-1.719
24	-079	193	650	-736	118	-144	209	650	-891	153	-820	331	275	-2.095
25	-107	208	753	-824	119	-786	334	457	-1.798	154	-078	321	038	-2.372
26	-175	227	1.010	-566	120	-176	260	760	-1.716	155	-867	263	197	-1.813
27	-243	200	392	-1.128	121	-367	199	248	-1.188	156	-701	270	123	-1.735
28	-245	201	490	-875	122	-458	202	342	-1.226	157	-581	323	426	-2.074
29	-281	197	469	-901	123	-450	202	232	-1.397	158	-525	278	452	-1.725
30	-288	198	418	-942	124	-440	213	353	-1.314	159	-513	274	416	-1.427
31	-236	207	464	-1.009	125	-415	201	265	-1.232	160	-245	253	661	-1.333
32	-283	197	428	-958	126	-391	182	204	-995	161	-182	245	818	-1.364
33	-301	206	384	-1.030	127	-373	201	397	-1.028	162	-054	214	745	-1.665
34	-308	184	421	-968	128	-849	370	419	-2.646	163	-034	233	729	-1.884
35	-245	205	437	-1.020										

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. WSW TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.043	.094	3.342	2.782	36	-.366	.211	.486	-1.071	129	-.572	.255	.437	-1.701
1	.429	.240	1.397	-.321	37	-.397	.196	.275	-1.071	130	-.725	.334	.147	-2.227
2	.472	.236	1.321	-.261	38	-.412	.209	.342	-1.019	131	-.703	.302	.222	-1.792
3	.245	.237	1.064	-.504	39	-.370	.209	.337	-1.163	132	-.532	.213	.265	-1.631
4	.048	.240	.894	-.915	40	-.385	.213	.645	-1.086	133	-.300	.253	.542	-1.259
5	.152	.231	1.078	-.618	41	-.417	.220	.322	-1.291	134	-.125	.190	.834	-.505
6	.250	.228	1.181	-.520	42	-.459	.221	.363	-1.256	135	-.562	.178	-.052	-1.103
7	.454	.266	1.494	-.542	101	-.342	.193	.349	-1.174	136	-.275	.228	1.020	-.409
8	.421	.245	1.559	-.402	102	-.270	.190	.360	-.904	137	-.080	.222	.965	-.620
9	.477	.259	1.591	-.310	103	-.419	.193	.187	-1.179	138	-.158	.227	1.106	-.741
10	.283	.283	1.354	-.618	104	-.258	.195	.614	-.866	139	-.586	.226	.155	-1.330
11	.106	.306	1.456	-1.158	105	-.351	.183	.338	-.920	140	-.400	.317	1.574	-.781
12	.003	.212	.882	-.632	106	-.311	.197	.306	-1.141	141	-.478	.244	1.302	-.394
13	.267	.251	1.221	-.503	107	-.340	.210	.381	-1.147	142	-.251	.234	1.106	-.560
14	.301	.235	1.119	-.466	108	-.329	.194	.268	-1.012	143	-.576	.214	.190	-1.259
15	.424	.253	1.420	-.380	109	-.331	.181	.279	-.974	144	-.085	.253	1.096	-.671
16	.457	.268	1.930	-.364	110	-.051	.240	.722	-1.066	145	-.190	.215	.497	-1.018
17	.077	.233	.872	-.702	111	-.213	.195	.668	-.855	146	-.168	.207	.567	-.852
18	.278	.230	1.065	-.401	112	-.247	.207	.506	-.888	147	-.547	.218	.225	-1.415
19	.436	.252	1.500	-.476	113	-1.133	.310	-.288	-2.195	148	-.138	.184	.572	-.867
20	.460	.259	1.382	-.326	114	-.516	.195	.155	-1.444	149	-.255	.213	.928	-.459
21	.423	.272	1.457	-.492	115	-.599	.201	.106	-1.293	150	-.223	.325	1.431	-.988
22	.259	.312	1.296	-1.040	116	-.545	.197	.079	-1.271	151	-.013	.209	.712	-.742
23	.124	.294	1.166	-1.471	117	-.541	.198	.141	-1.250	152	-.154	.220	1.005	-.557
24	.067	.217	.794	-.676	118	-.300	.199	.388	-.933	153	-.127	.250	.753	-1.250
25	.245	.254	1.257	-.525	119	-1.230	.263	-.256	-2.039	154	-.817	.527	.419	-3.403
26	.304	.253	1.166	-.515	120	-.729	.327	.292	-1.932	155	-1.177	.298	-.192	-2.350
27	-.386	.208	.396	-1.068	121	-.600	.207	.109	-1.416	156	-.675	.230	.142	-1.533
28	-.390	.200	.280	-1.113	122	-.695	.215	-.004	-1.384	157	-.380	.232	.465	-1.625
29	-.426	.199	.311	-1.124	123	-.654	.214	.028	-1.357	158	-.671	.229	.101	-1.410
30	-.452	.202	.351	-1.159	124	-.558	.210	.098	-1.432	159	-.165	.178	.388	-.783
31	-.368	.238	.492	-1.370	125	-.667	.204	-.041	-1.454	160	-.016	.198	.758	-.608
32	-.406	.219	.401	-1.264	126	-.540	.212	.340	-1.309	161	-.342	.250	.517	-1.579
33	-.427	.206	.327	-1.117	127	-.644	.226	.045	-1.556	162	-.103	.216	.573	-.860
34	-.447	.205	.316	-1.142	128	-1.380	.363	-.090	-2.754	163	-.135	.213	.830	-.593
35	-.392	.216	.476	-1.214										

PRESC : W02 TAP 154 TROUBLE= .527

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. W TUBING NO. 1

P	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.080	136	3.494	2.623	36	-533	219	249	-1.250	129	-706	293	447	-1.742
1	3.328	242	1.250	-541	37	-540	210	174	-1.298	130	-746	297	165	-2.108
2	3.340	223	1.030	-439	38	-541	221	168	-1.556	131	-810	322	080	-2.266
3	3.01	253	1.261	-592	39	-568	220	163	-1.277	132	-586	268	215	-1.984
4	2.18	261	1.137	-688	40	-567	220	211	-1.277	133	-320	212	322	-1.047
5	3.02	256	1.346	-513	41	-543	236	437	-1.411	134	-241	181	348	-1.031
6	3.27	239	1.239	-490	42	-567	221	249	-1.352	135	-870	158	326	-1.315
7	3.28	255	1.182	-422	101	-421	202	267	-1.032	136	-177	201	443	-1.857
8	3.64	247	1.374	-383	102	-376	198	273	-1.145	137	-259	194	348	-1.021
9	3.38	261	1.301	-654	103	-489	226	284	-1.298	138	-086	203	691	-1.799
10	3.32	265	1.510	-637	104	-347	200	363	-1.027	139	-797	236	006	-1.726
11	3.67	300	1.504	-993	105	-568	196	030	-1.337	140	-491	321	417	-2.031
12	3.31	264	1.197	-942	106	-561	188	250	-1.179	141	-016	221	733	-1.857
13	3.18	238	1.197	-664	107	-442	217	408	-1.270	142	-143	211	727	-1.773
14	3.58	251	1.214	-518	108	-564	237	182	-1.394	143	-895	256	015	-1.779
15	3.23	238	1.112	-614	109	-561	205	052	-1.479	144	-788	387	448	-1.868
16	3.49	246	1.332	-399	110	-223	220	628	-1.089	145	-352	220	517	-1.173
17	3.46	270	1.191	-546	111	-348	257	572	-1.733	146	-350	221	617	-1.142
18	3.49	255	1.197	-585	112	-569	280	205	-1.778	147	-813	227	048	-1.631
19	3.57	268	1.705	-456	113	-409	357	411	-2.688	148	-354	219	533	-1.131
20	3.78	256	1.355	-450	114	-670	240	047	-1.524	149	-124	288	1.022	-1.890
21	3.03	242	1.270	-428	115	-761	232	030	-1.631	150	-235	276	1.157	-1.826
22	3.41	288	1.377	-760	116	-639	229	137	-1.462	151	-128	360	942	-1.234
23	2.66	304	1.322	-831	117	-600	212	097	-1.302	152	-331	318	1.425	-1.304
24	2.22	269	1.217	-694	118	-421	204	244	-1.285	153	-031	228	942	-1.713
25	3.79	270	1.322	-462	119	-191	255	416	-1.973	154	-1.432	340	407	-3.066
26	2.81	244	1.117	-573	120	-134	309	247	-2.345	155	-1.123	327	004	-2.319
27	6.33	235	1.206	-452	121	-778	250	001	-1.798	156	-751	226	168	-1.744
28	6.23	237	1.148	-1.679	122	-789	243	080	-1.652	157	-145	216	652	-1.917
29	6.01	232	1.543	-1.368	123	-709	240	125	-1.680	158	-901	322	066	-2.518
30	6.02	218	1.180	-1.326	124	-666	236	261	-1.465	159	-278	242	555	-1.261
31	6.32	242	1.254	-1.642	125	-688	240	199	-1.488	160	-118	224	619	-1.912
32	6.09	236	1.138	-1.563	126	-622	230	176	-1.544	161	-710	366	464	-2.459
33	6.25	230	1.383	-1.540	127	-775	273	074	-1.815	162	-302	269	722	-1.470
34	6.23	225	1.120	-1.567	128	-555	353	602	-2.819	163	-139	227	700	-1.938
35	6.63	255	1.200	-1.895										

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. WNW TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	2.990	.088	3.303	2.656	36	-.522	.193	.154	-1.112	129	-.586	.214	.216	-1.290
1	.289	.221	1.134	-.518	37	-.541	.206	.112	-1.248	130	-.575	.212	.101	-1.650
2	.280	.216	.990	-.407	38	-.519	.215	.170	-1.300	131	-.643	.231	.118	-1.797
3	.260	.209	.895	-.629	39	-.541	.199	.170	-1.300	132	-.510	.196	.183	-1.126
4	.165	.233	.990	-.568	40	-.544	.207	.201	-1.284	133	-.491	.195	.234	-1.282
5	.233	.254	1.211	-.535	41	-.539	.205	.248	-1.206	134	-.568	.187	.066	-1.236
6	.230	.232	1.089	-.557	42	-.569	.203	.212	-1.394	135	-.820	.153	-.281	-1.256
7	.265	.229	1.117	-.468	101	-.439	.198	.324	-1.067	136	-.571	.202	.040	-1.379
8	.274	.223	.962	-.435	102	-.409	.191	.219	-1.089	137	-.507	.224	.275	-1.205
9	.244	.228	1.195	-.490	103	-.428	.202	.380	-1.117	138	-.422	.214	.413	-1.113
10	.308	.231	1.272	-.424	104	-.308	.204	.374	-1.067	139	-.700	.209	.025	-1.639
11	.224	.265	1.256	-.795	105	-.478	.198	.203	-1.161	140	-.788	.298	.030	-2.104
12	.158	.238	1.089	-.641	106	-.494	.189	.136	-1.216	141	-.539	.241	.433	-1.792
13	.233	.215	.985	-.450	107	-.522	.200	.214	-1.150	142	-.497	.225	.193	-1.731
14	.252	.209	1.072	-.559	108	-.423	.227	.275	-1.272	143	-.687	.211	.188	-1.461
15	.286	.225	1.121	-.433	109	-.518	.220	.363	-2.009	144	-.021	.305	.306	-2.145
16	.315	.229	1.187	-.499	110	-.455	.184	.108	-1.122	145	-.635	.286	.239	-2.681
17	.251	.245	1.241	-.592	111	-.397	.217	.275	-1.172	146	-.499	.252	.275	-1.721
18	.250	.222	1.067	-.477	112	-1.048	.338	-.030	-2.341	147	-.654	.226	.101	-1.634
19	.223	.229	1.029	-.537	113	-1.024	.287	-.158	-2.131	148	-.245	.239	.571	-1.027
20	.289	.226	1.285	-.537	114	-.630	.215	.014	-1.488	149	-.282	.260	1.025	-1.071
21	.296	.243	1.220	-.493	115	-.706	.218	-.003	-1.726	150	-.522	.255	.571	-1.274
22	.227	.238	1.143	-.619	116	-.571	.188	.180	-1.161	151	-.266	.382	1.489	-.946
23	.263	.265	1.291	-.603	117	-.564	.189	.096	-1.175	152	-.028	.460	1.327	-1.175
24	.208	.256	1.132	-.567	118	-.408	.187	.194	-1.023	153	-.532	.234	.394	-1.404
25	.282	.225	1.173	-.613	119	-.932	.240	-.079	-1.819	154	-1.146	.309	-.132	-2.369
26	.210	.218	.984	-.491	120	-.650	.217	.014	-1.546	155	-.533	.239	.243	-1.446
27	-.570	.202	.132	-1.210	121	-.649	.196	.036	-1.350	156	-.427	.218	.264	-1.279
28	-.572	.210	.137	-1.348	122	-.684	.206	.036	-1.470	157	-.334	.215	.425	-1.107
29	-.597	.214	.209	-1.471	123	-.617	.194	.156	-1.252	158	-1.080	.284	-.174	-2.317
30	-.600	.214	.066	-1.542	124	-.586	.193	.058	-1.443	159	-.455	.213	.305	-1.326
31	-.559	.199	.260	-1.246	125	-.580	.195	.036	-1.323	160	-.249	.210	.514	-1.019
32	-.596	.200	.101	-1.277	126	-.547	.186	.150	-1.383	161	-1.181	.353	-.033	-2.728
33	-.603	.210	.118	-1.305	127	-.702	.223	.014	-1.552	162	-.526	.257	.477	-1.529
34	-.620	.208	.055	-1.410	128	-.846	.268	.085	-1.846	163	-.383	.209	.316	-1.180
35	-.608	.204	.024	-1.571										

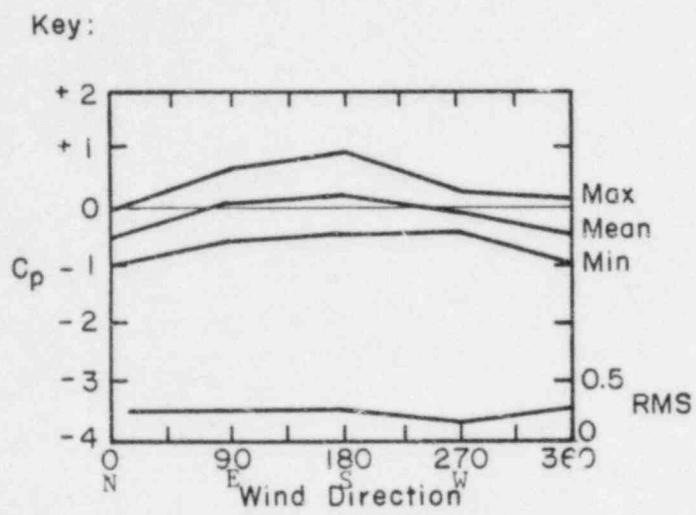
DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. NW TUBING NO. 1

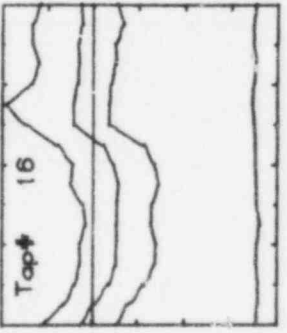
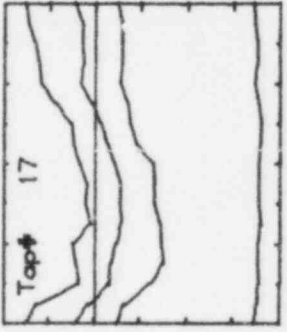
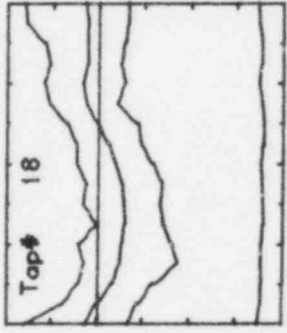
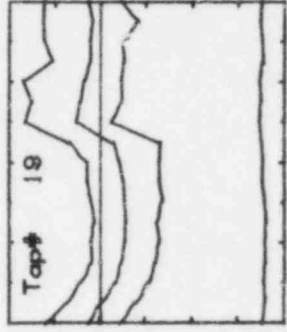
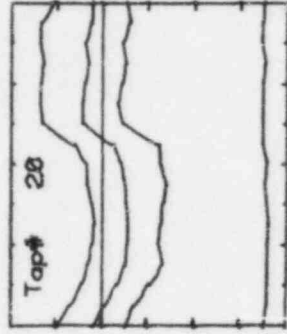
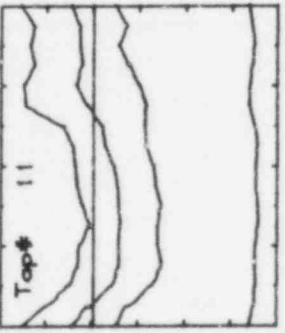
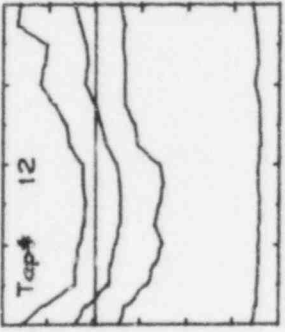
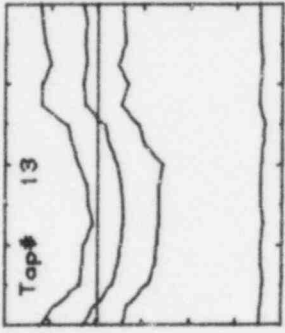
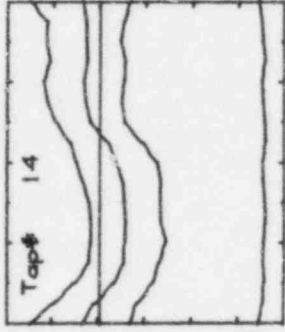
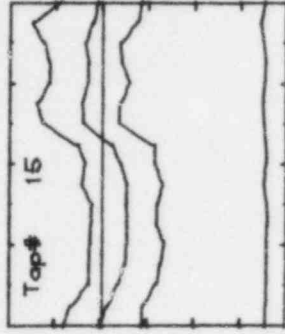
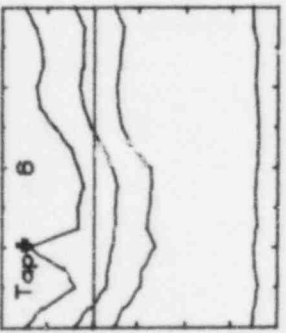
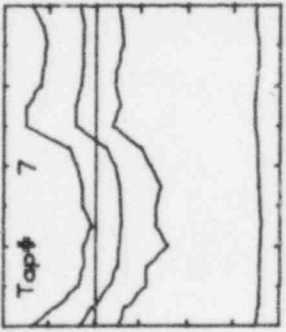
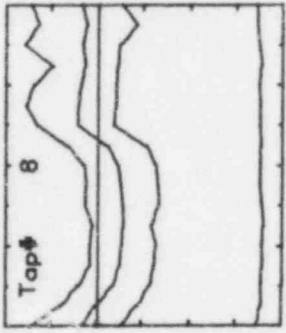
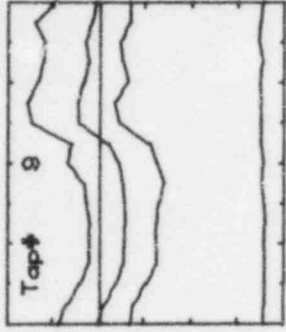
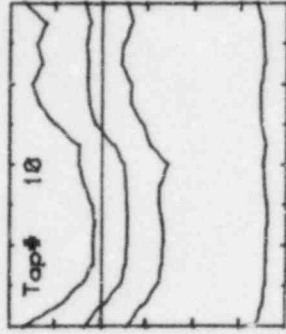
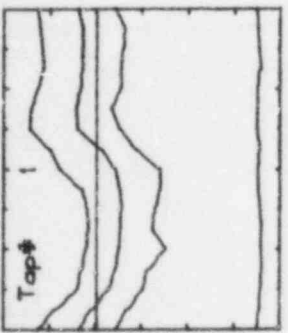
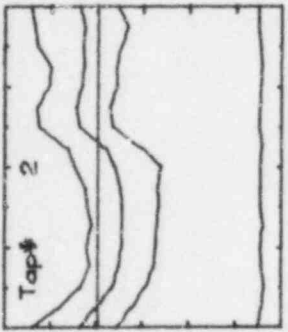
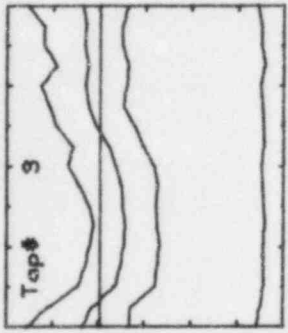
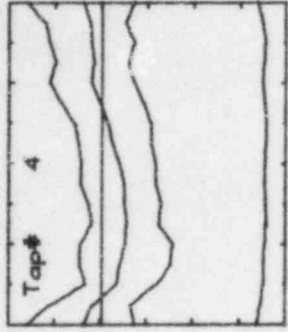
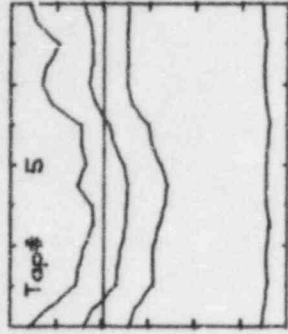
TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.117	101	3.440	2.771	36	-489	191	182	-1.129	129	-433	194	119	-1.146
1	297	237	1.166	-575	37	-473	199	230	-1.177	130	-415	204	298	-1.260
2	303	238	1.299	-525	38	-494	204	150	-1.357	131	-444	205	141	-1.311
3	330	247	1.205	-480	39	-499	191	240	-1.214	132	-398	186	259	-1.070
4	218	224	1.121	-714	40	-510	189	124	-1.139	133	-585	219	200	-1.464
5	238	231	1.915	-503	41	-524	200	134	-1.155	134	-620	177	033	-1.203
6	243	222	1.143	-603	42	-505	206	283	-1.283	135	-673	161	022	-1.266
7	280	234	1.060	-597	101	-433	204	359	-1.203	136	-664	190	082	-1.459
8	338	248	1.594	-480	102	-369	200	409	-1.148	137	-680	208	127	-1.370
9	326	269	1.182	-447	103	-356	213	498	-1.198	138	-665	206	028	-1.581
10	342	255	1.416	-475	104	-170	201	504	-1.920	139	-634	222	148	-1.412
11	276	245	1.360	-547	105	-364	205	281	-1.020	140	-631	190	040	-1.402
12	196	241	1.027	-593	106	-349	204	676	-1.081	141	-666	221	148	-1.454
13	258	229	1.128	-604	107	-504	219	198	-1.354	142	-664	219	090	-1.532
14	299	234	1.145	-442	108	-221	199	582	-1.942	143	-628	219	075	-1.381
15	364	245	1.240	-386	109	-331	264	459	-1.481	144	-702	244	121	-1.798
16	330	238	1.336	-464	110	-466	196	198	-1.126	145	-711	284	069	-2.017
17	301	240	1.319	-599	111	-366	191	237	-1.131	146	-654	291	294	-2.742
18	258	226	1.173	-599	112	-632	417	192	-2.371	147	-629	296	252	-2.533
19	249	241	1.246	-470	113	-593	192	020	-1.220	148	-320	393	837	-1.021
20	386	272	1.375	-436	114	-547	200	237	-1.515	149	-208	283	291	-1.145
21	328	268	1.431	-509	115	-506	184	170	-1.120	150	-636	231	261	-1.537
22	277	265	1.711	-565	116	-455	176	226	-1.059	151	-480	322	673	-1.842
23	197	250	1.191	-656	117	-445	198	265	-1.188	152	-105	411	349	-1.299
24	222	234	1.483	-786	118	-446	192	332	-1.210	153	-647	239	145	-1.553
25	297	253	1.316	-536	119	-578	213	270	-1.423	154	-1094	334	036	-2.827
26	198	218	1.951	-504	120	-513	196	136	-1.131	155	-604	252	219	-1.665
27	553	215	241	-1.516	121	-523	205	136	-1.260	156	-427	235	612	-1.442
28	575	213	148	-1.694	122	-514	202	147	-1.204	157	-208	230	686	-1.991
29	583	209	101	-1.386	123	-453	194	141	-1.260	158	-113	332	147	-2.928
30	587	214	054	-1.459	124	-460	183	281	-1.260	159	-406	220	410	-1.240
31	610	207	121	-1.396	125	-472	207	281	-1.260	160	-143	217	638	-1.789
32	601	213	148	-1.506	126	-488	212	197	-1.423	161	-551	340	572	-3.140
33	591	200	124	-1.341	127	-649	244	164	-1.720	162	-917	285	110	-1.903
34	564	212	129	-1.272	128	-571	261	388	-1.776	163	-478	200	150	-1.514
35	565	205	267	-1.373										

DATA FOR PROJECT 5710 CONFIGURATION A WIND DIR. NNW TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.218	089	3.535	2.915	36	-452	213	286	-1.203	129	-518	204	214	-1.275
1	295	250	1.212	-638	37	-478	214	258	-1.137	130	-538	204	214	-1.261
2	265	255	1.347	-662	38	-488	226	380	-1.585	131	-550	209	208	-1.275
3	277	251	1.189	-492	39	-455	217	236	-1.231	132	-517	216	161	-1.129
4	261	261	1.218	-504	40	-500	239	219	-1.375	133	-798	242	039	-2.100
5	292	266	1.441	-533	41	-494	218	175	-1.220	134	-576	179	021	-1.202
6	225	265	1.253	-662	42	-508	221	142	-1.408	135	-637	131	223	-1.078
7	258	263	1.130	-574	101	-535	220	123	-1.376	136	-541	194	161	-1.164
8	238	269	1.242	-884	102	-354	226	498	-1.125	137	-577	205	151	-1.326
9	164	259	1.400	-674	103	-483	259	346	-1.593	138	-555	214	167	-1.267
10	240	259	1.171	-679	104	-193	242	633	-1.054	139	-532	234	243	-1.316
11	294	276	1.242	-732	105	-420	227	305	-1.300	140	-523	221	291	-1.316
12	332	268	1.685	-627	106	-289	244	638	-1.095	141	-554	217	183	-1.554
13	237	244	1.195	-563	107	-687	247	082	-1.652	142	-574	218	145	-1.294
14	283	249	1.107	-522	108	-263	240	791	-949	143	-567	233	151	-1.483
15	178	279	1.527	-779	109	-442	271	457	-1.423	144	-571	251	383	-1.624
16	229	256	1.352	-691	110	-576	214	264	-1.312	145	-623	287	329	-2.041
17	267	273	1.481	-592	111	-357	224	351	-1.163	146	-619	291	324	-2.208
18	234	253	1.574	-645	112	-541	479	726	-2.255	147	-609	276	248	-1.884
19	177	264	1.265	-855	113	-610	207	023	-1.289	148	-518	365	1.736	-796
20	230	253	1.340	-621	114	-563	205	146	-1.277	149	-138	261	1.127	-832
21	162	265	1.159	-709	115	-568	197	111	-1.259	150	-614	219	1.175	-1.524
22	234	287	1.230	-662	116	-555	210	094	-1.218	151	-548	301	1.520	-605
23	266	295	1.406	-742	117	-536	209	120	-1.281	152	-198	291	1.443	-821
24	285	277	1.270	-683	118	-557	214	132	-1.351	153	-622	241	214	-1.707
25	288	263	1.168	-547	119	-516	212	173	-1.263	154	-772	338	159	-2.449
26	209	255	1.227	-704	120	-491	217	196	-1.304	155	-505	275	419	-1.818
27	-597	233	232	-1.462	121	-514	206	173	-1.281	156	-286	262	541	-1.629
28	-575	231	199	-1.532	122	-507	211	307	-1.304	157	-146	225	696	-860
29	-574	238	178	-1.375	123	-514	216	138	-1.205	158	-1033	258	157	-2.050
30	-619	254	183	-1.813	124	-557	225	313	-1.293	159	-317	214	446	-1.292
31	-586	222	140	-1.386	125	-531	217	202	-1.293	160	-236	236	546	-1.115
32	-612	233	129	-1.494	126	-581	226	295	-1.374	161	-2297	512	247	-4.065
33	-583	238	236	-1.563	127	-962	278	072	-1.923	162	-1373	273	279	-2.382
34	-598	241	264	-1.563	128	-555	240	330	-1.526	163	-717	212	059	-1.497
35	-547	218	159	-1.308										

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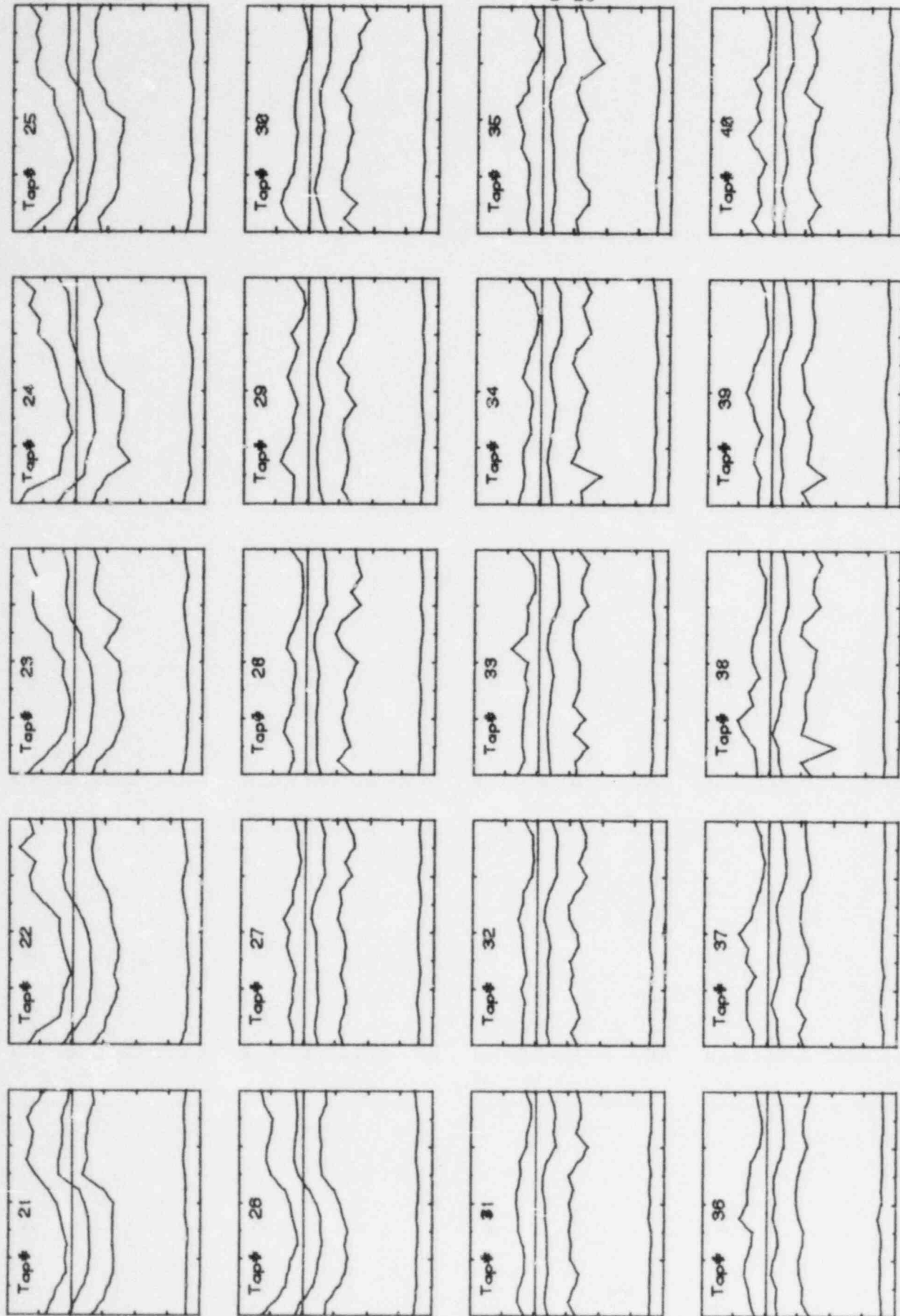




CONFIG. A

W.D.
0-360

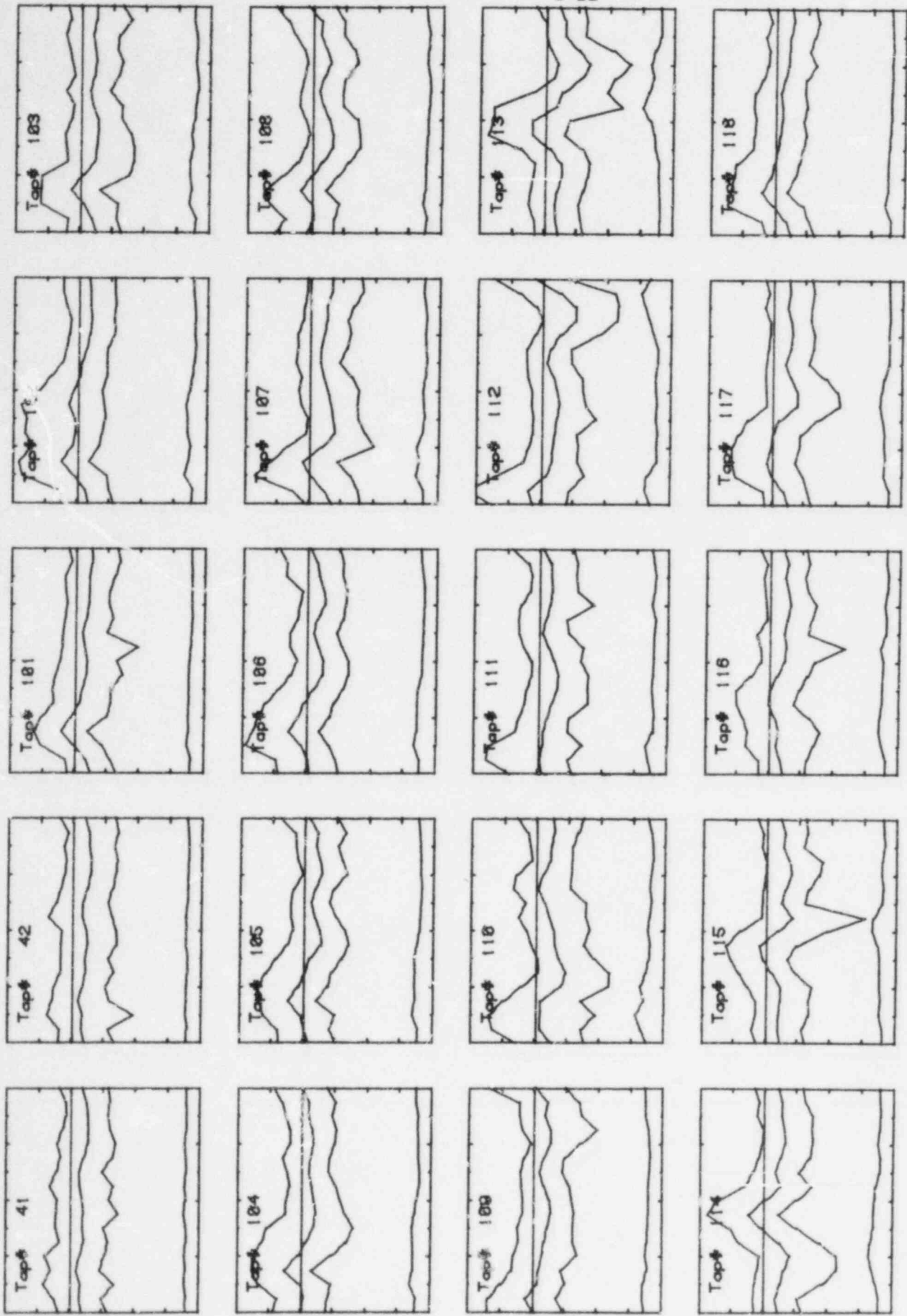
PROJECT 5710



W.D.
0-360

PROJECT 5710

CONFIG. A

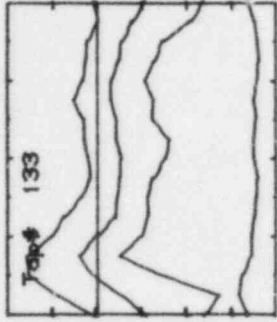
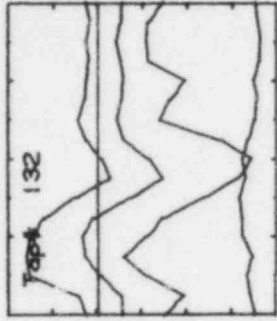
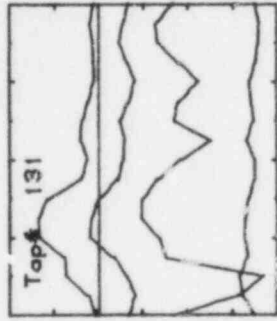
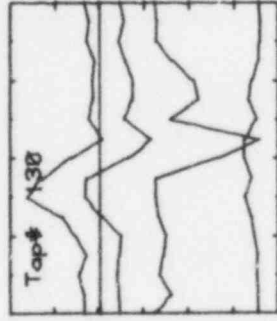
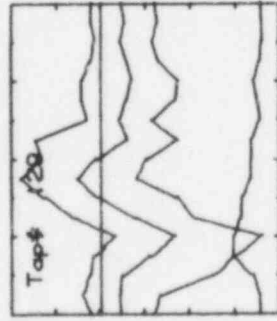
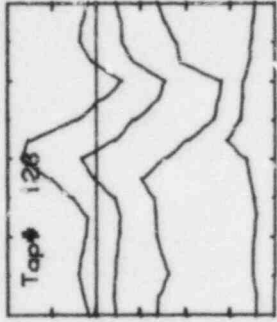
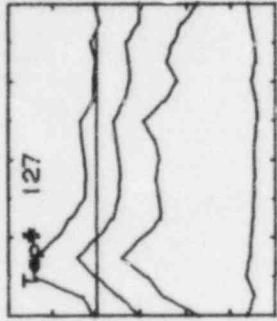
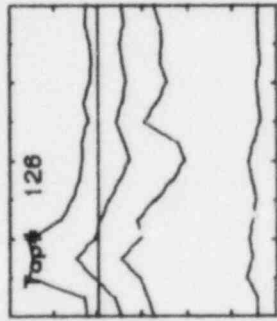
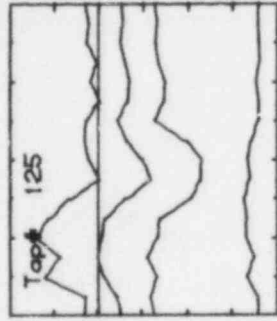
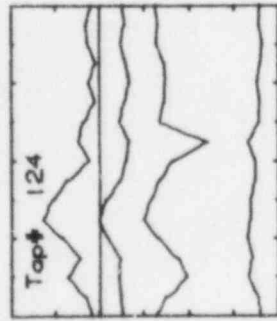
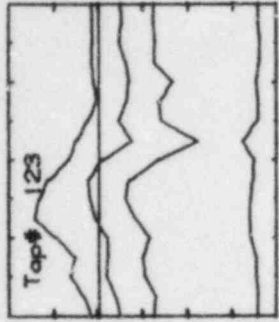
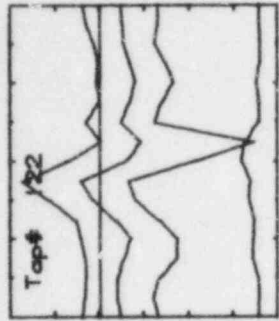
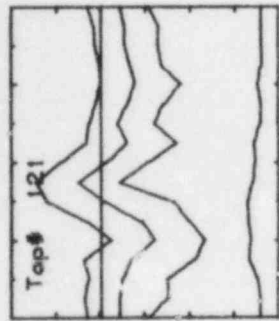
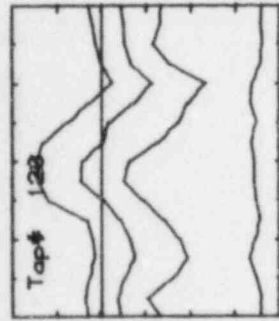
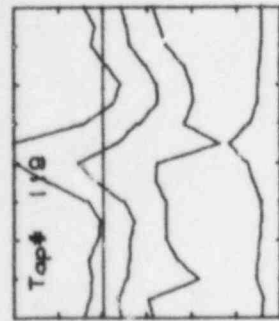


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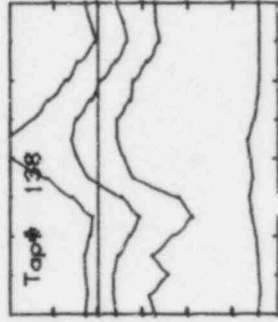
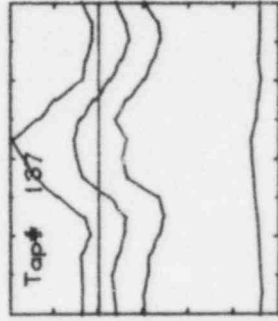
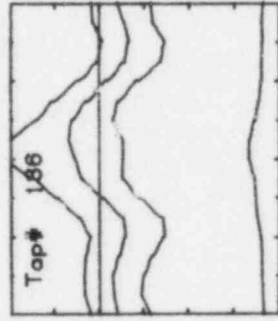
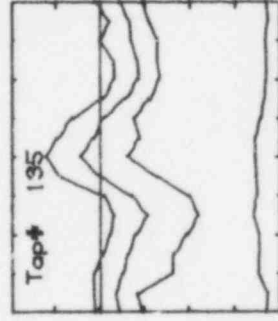
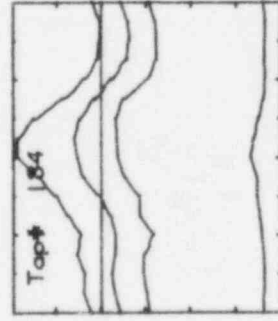
PROJECT 5710

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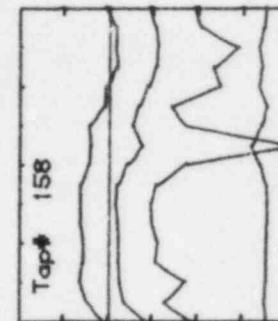
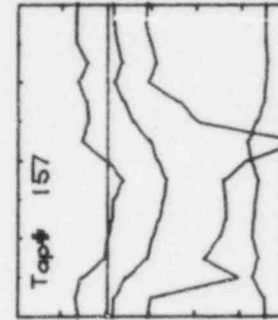
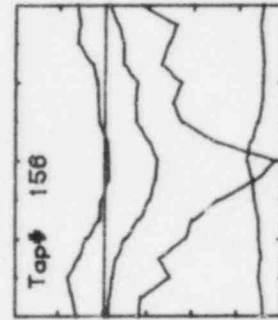
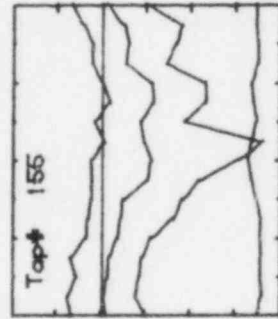
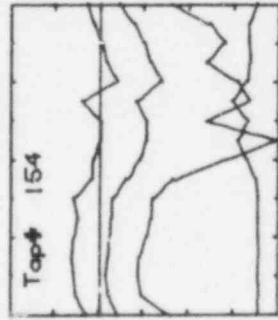
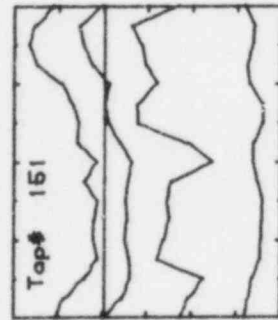
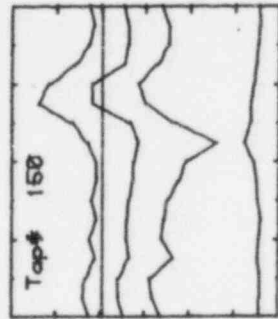
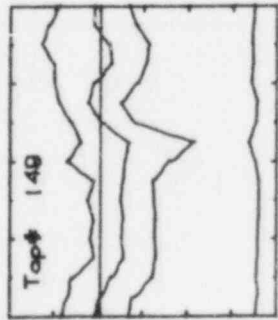
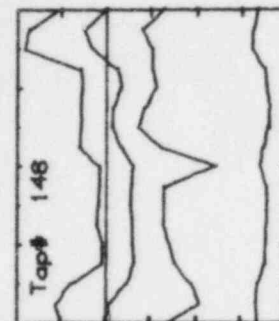
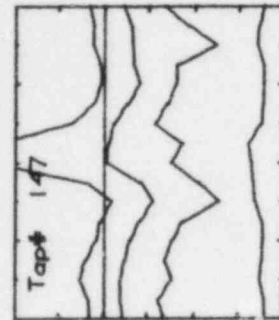
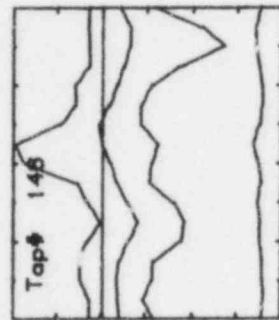
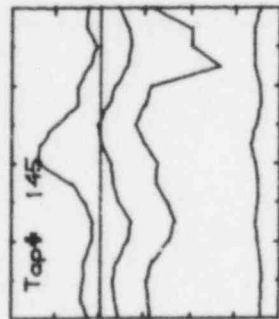
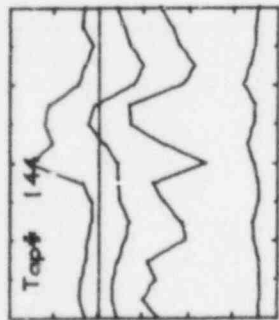
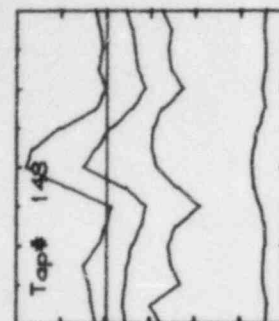
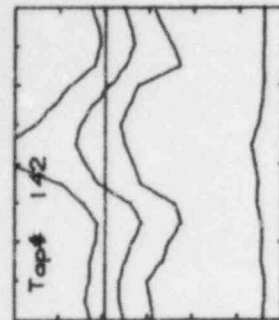
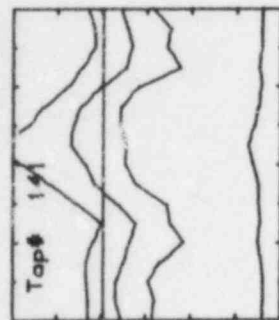
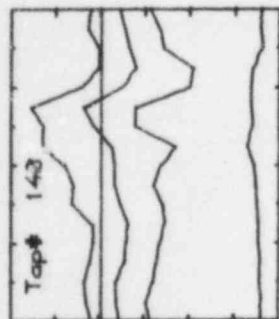
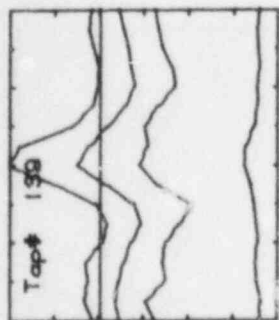
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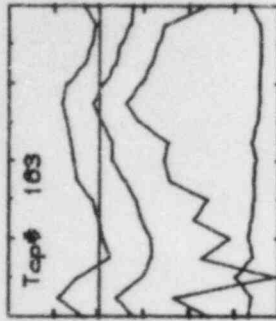
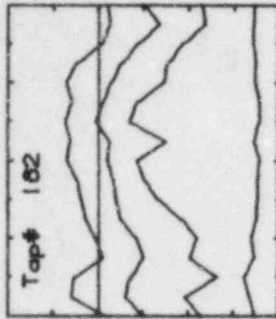
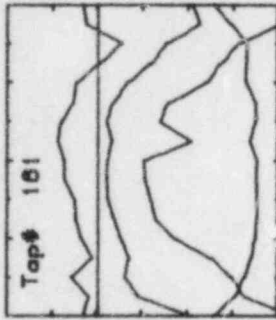
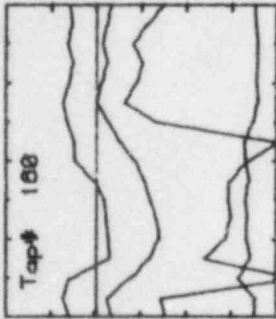
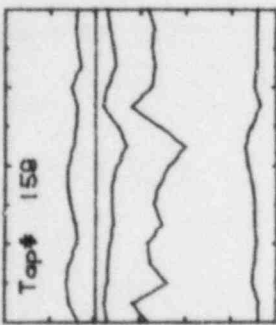


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W.D.
0-360

CONFIG. A



PROJECT 5710

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CONFIG. A

DATA FOR PROJECT 5710 CONFIGURATION B WIND DIR. S TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.128	.080	3.350	2.855	36	- .338	.211	.488	- .991	129	-.028	.348	1.208	-1.340
1	- .316	.234	.348	-1.170	37	- .377	.216	.296	-1.230	130	- .768	.423	.415	-3.196
2	- .297	.208	.437	- .964	38	- .424	.240	.323	-1.193	131	- .540	.231	.235	-1.402
3	- .309	.214	.365	- .975	39	- .291	.235	.669	-1.172	132	- .916	.311	-.007	-2.060
4	- .315	.210	.493	- .975	40	- .359	.233	.429	-1.289	133	- .470	.250	.373	-1.400
5	- .303	.213	.471	-1.103	41	- .403	.215	.355	-1.119	134	.597	.314	.063	- .221
6	- .305	.226	.370	-1.103	42	- .419	.223	.270	-1.299	135	.423	.330	.546	- .545
7	- .301	.233	.526	-1.243	101	- .307	.219	.415	- .975	136	.558	.349	.052	- .341
8	- .346	.253	.398	-1.271	102	- .178	.269	1.559	- .618	137	.528	.333	.823	- .420
9	- .316	.226	.426	-1.137	103	- .495	.224	.175	-1.539	138	.482	.337	.724	- .607
10	- .291	.218	.515	-1.070	104	- .318	.219	.638	-1.187	139	.484	.337	.640	- .571
11	- .303	.221	.415	-1.209	105	- .422	.218	.298	-1.165	140	- .298	.265	.769	-1.431
12	- .303	.222	.387	-1.115	106	- .421	.225	.281	-1.240	141	- .368	.330	.744	- .665
13	- .291	.203	.415	- .997	107	- .478	.268	.376	-1.511	142	.461	.321	.433	- .472
14	- .310	.211	.387	-1.036	108	- .440	.211	.292	-1.198	143	.554	.375	.287	- .576
15	- .326	.225	.618	-1.132	109	- .455	.227	.236	-1.260	144	- .383	.299	.952	-1.483
16	- .341	.234	.483	-1.261	110	- .457	.247	.309	-1.321	145	- .211	.284	.868	-1.285
17	- .300	.224	.364	-1.076	111	- .417	.202	.264	-1.248	146	- .129	.294	.692	-1.452
18	- .286	.224	.483	- .986	112	- .408	.245	.337	-1.589	147	- .023	.319	.473	-1.395
19	- .447	.288	.460	-1.768	113	- .382	.389	1.894	-1.371	148	- .637	.302	.342	-2.005
20	- .311	.230	.393	-1.104	114	- .082	.286	1.085	-1.075	149	- .548	.236	.100	-1.321
21	- .306	.223	.505	-1.070	115	- .413	.319	.766	-2.041	150	- .674	.271	.366	-1.778
22	- .304	.221	.426	-1.149	116	- .486	.227	.175	-1.282	151	- .687	.380	.227	-3.523
23	- .315	.237	.430	-1.139	117	- .767	.293	.072	-2.122	152	- .618	.280	.270	-2.417
24	- .278	.207	.399	- .925	118	- .183	.216	.539	- .946	153	- .663	.298	.419	-2.347
25	- .287	.213	.373	- .941	119	.511	.407	2.108	-1.273	154	- .883	.373	.110	-3.257
26	- .285	.213	.519	- .936	120	.472	.314	1.748	- .446	155	-1.000	.371	.110	-2.715
27	- .328	.222	.337	-1.421	121	- .169	.283	.843	-1.453	156	-1.161	.367	.031	-2.613
28	- .356	.236	.368	-1.243	122	- .579	.378	.893	-2.201	157	-1.099	.409	.142	-2.832
29	- .365	.235	.509	-1.071	123	- .127	.247	.573	-1.306	158	- .456	.302	.531	-1.714
30	- .413	.244	.399	-1.395	124	- .610	.253	.145	-1.751	159	- .502	.316	.467	-2.087
31	- .344	.218	.389	-1.056	125	- .885	.356	.033	-2.347	160	- .830	.339	.126	-2.470
32	- .335	.220	.337	-1.718	126	- .733	.310	.128	-2.066	161	- .219	.258	.717	-1.204
33	- .386	.228	.233	-1.257	127	- .562	.245	.359	-1.481	162	- .161	.241	.600	-1.385
34	- .420	.212	.328	-1.071	128	.314	.381	2.361	-1.138	163	- .247	.255	.695	-1.358
35	- .357	.227	.312	-1.464										

DATA FOR PROJECT 3710 CONFIGURATION B WIND DIR. SSW TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.301	100	3.617	2.946	36	-264	247	447	-1.166	129	-653	360	1.633	-1.825
1	-112	253	1.021	-905	37	-280	253	519	-1.178	130	-1.277	450	0.79	-3.538
2	-160	249	732	-937	38	-305	249	471	-1.094	131	-604	351	506	-2.710
3	-241	228	581	-981	39	-266	249	495	-1.375	132	-632	330	436	-2.385
4	-317	227	398	-1.151	40	-289	229	495	-1.136	133	-516	285	380	-1.726
5	-279	235	511	-1.057	41	-292	250	507	-1.190	134	-679	366	321	-1.673
6	-254	226	455	-956	42	-344	258	549	-1.142	135	-181	331	1.156	-1.985
7	-102	260	858	-950	101	-326	239	417	-1.730	136	-701	383	2.562	-1.673
8	-152	233	600	-950	102	-094	271	1.147	-1.126	137	-654	356	2.056	-1.550
9	-121	263	845	-968	103	-466	228	222	-1.315	138	-628	390	2.256	-1.379
10	-231	245	1.040	-1.208	104	-309	216	461	-1.189	139	-195	439	2.209	-1.026
11	-307	251	492	-1.403	105	-357	221	398	-1.044	140	-292	482	1.262	-2.085
12	-309	212	538	-1.150	106	-345	228	392	-1.120	141	-714	425	2.756	-1.514
13	-263	227	449	-1.029	107	-452	224	266	-1.252	142	-743	421	3.44	-1.832
14	-232	225	614	-959	108	-355	209	417	-1.195	143	-259	447	1.915	-1.373
15	-153	242	557	-1.010	109	-363	232	379	-1.164	144	-098	358	1.068	-1.391
16	-135	255	792	-1.003	110	-449	271	455	-1.516	145	-022	358	1.732	-1.438
17	-278	225	442	-965	111	-357	235	354	-1.327	146	-015	375	1.397	-1.567
18	-265	231	461	-1.029	112	-397	270	379	-1.453	147	-098	398	1.709	-2.097
19	-162	252	640	-1.003	113	-354	568	1.670	-2.505	148	-375	280	5.15	-1.455
20	-127	260	831	-984	114	-636	304	524	-1.636	149	-744	336	489	-2.161
21	-140	256	1.022	-1.010	115	-921	398	373	-2.883	150	-887	414	507	-2.556
22	-294	240	716	-1.214	116	-632	329	285	-2.461	151	-480	360	638	-2.496
23	-310	222	491	-1.144	117	-646	321	162	-2.436	152	-819	390	591	-2.616
24	-252	226	474	-1.050	118	-266	257	907	-1.220	153	-1.100	400	081	-3.371
25	-229	228	615	-979	119	-298	631	1.830	-2.481	154	-1.077	468	1.35	-3.209
26	-222	226	491	-1.061	120	-028	350	1.385	-1.392	155	-1.062	387	0.03	-2.934
27	-262	247	480	-1.191	121	-671	299	550	-1.659	156	-1.153	477	0.33	-4.246
28	-275	240	556	-1.208	122	-033	413	289	-2.589	157	-1.071	453	531	-4.336
29	-311	259	533	-1.108	123	-868	410	569	-2.500	158	-804	441	531	-2.820
30	-346	238	438	-1.232	124	-713	361	353	-2.513	159	-703	404	674	-2.796
31	-274	248	609	-1.279	125	-683	316	410	-2.220	160	-549	423	0.04	-3.749
32	-209	251	674	-1.173	126	-604	294	328	-1.755	161	-278	360	1.232	-2.628
33	-326	233	525	-1.232	127	-533	248	251	-1.443	162	-292	333	884	-1.969
34	-348	249	489	-1.315	128	-560	576	1.735	-2.627	163	-317	330	644	-2.143
35	-298	247	615	-1.202										

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DATA FOR PROJECT 5710 CONFIGURATION B WIND DIR. SW TUSING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	000	107	356	2718	36	226	212	552	-1.002	129	443	197	171	-1.143
1	257	255	1118	454	37	252	211	410	-1.013	130	618	227	071	-1.569
2	220	234	024	593	38	259	217	457	-1.045	131	550	270	342	-1.679
3	164	214	600	972	39	225	205	531	-0.834	132	481	236	292	-1.304
4	341	203	327	139	40	253	216	542	-1.250	133	512	226	247	-1.543
5	273	193	522	860	41	277	221	447	-0.997	134	470	247	277	-1.299
6	244	185	349	860	42	314	219	326	-1.008	135	129	217	564	-1.121
7	254	254	341	442	101	355	208	316	-1.323	136	575	274	465	-1.388
8	148	224	124	576	102	176	191	410	-0.799	137	413	265	324	-1.341
9	173	226	001	604	103	358	183	243	-0.966	138	486	258	506	-1.367
10	100	236	606	095	104	281	192	288	-1.011	139	145	289	033	-1.913
11	394	272	488	373	105	294	206	349	-1.050	140	138	306	272	-1.773
12	283	191	447	867	106	278	173	249	-0.816	141	763	309	735	-1.278
13	296	184	386	094	107	376	188	316	-1.056	142	580	299	569	-1.232
14	187	194	535	928	108	313	186	355	-0.955	143	143	284	009	-1.163
15	097	217	833	564	109	268	196	427	-0.961	144	213	282	241	-1.913
16	180	217	999	531	110	386	192	349	-1.050	145	007	245	059	-1.851
17	266	184	303	912	111	222	109	332	-0.989	146	079	253	897	-1.866
18	251	188	386	851	112	220	210	416	-0.927	147	204	245	481	-1.147
19	249	242	275	619	113	622	399	633	-1.986	148	160	196	544	-1.970
20	171	222	632	602	114	452	203	243	-1.122	149	090	230	594	-1.055
21	143	214	877	525	115	584	218	148	-1.652	150	644	028	037	-2.104
22	289	251	452	331	116	499	217	132	-1.485	151	159	191	431	-1.976
23	376	232	424	335	117	482	205	154	-1.662	152	174	265	758	-1.408
24	275	187	346	028	118	192	209	579	-0.900	153	875	365	310	-2.009
25	250	200	403	898	119	797	357	452	-1.927	154	175	298	338	-2.341
26	181	198	523	944	120	194	261	717	-1.403	155	918	266	004	-1.961
27	267	198	471	017	121	431	217	281	-1.215	156	776	270	012	-1.982
28	274	198	356	965	122	544	195	077	-1.331	157	729	340	384	-2.019
29	323	202	336	944	123	534	209	137	-1.491	158	590	274	452	-1.640
30	369	209	377	028	124	545	211	160	-1.315	159	549	257	273	-1.434
31	367	203	476	866	125	549	214	220	-1.320	160	312	250	573	-1.197
32	303	196	356	049	126	451	106	176	-1.088	161	228	227	563	-1.340
33	303	207	405	990	127	388	179	204	-1.050	162	000	219	652	-1.765
34	370	193	284	034	128	884	38	436	-2.336	163	123	238	753	-1.060
35	257	207	452	929										

DATA FOR PROJECT 5710 CONFIGURATION B WIND DIR. WSW TUSING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3	189	133	3	557	2	766	36	-	321	214	529	-1	098
1	3	289	265	1	110	-	601	37	-	332	224	455	-	991
2	3	389	288	1	210	-	446	38	-	345	201	371	-1	081
3	3	489	388	1	306	-	624	39	-	316	213	450	-1	042
4	3	589	487	1	404	-	934	40	-	329	216	489	-1	144
5	3	689	587	1	504	-	970	41	-	366	219	365	-1	104
6	3	789	687	1	604	-	750	42	-	382	213	246	-1	115
7	3	889	787	1	704	-	505	101	-	361	210	335	-1	024
8	3	989	887	1	804	-	541	102	-	312	206	341	-1	018
9	3	1089	987	1	904	-	618	103	-	421	195	204	-1	095
10	3	1189	1087	1	1004	-	686	104	-	310	193	395	-1	054
11	3	1289	1187	1	1104	-	757	105	-	350	205	431	-1	149
12	3	1389	1287	1	1204	-	828	106	-	306	202	329	-1	000
13	3	1489	1387	1	1304	-	904	107	-	467	201	252	-1	203
14	3	1589	1487	1	1404	-	970	108	-	377	208	232	-1	042
15	3	1689	1587	1	1504	-	1040	109	-	307	200	371	-1	006
16	3	1789	1687	1	1604	-	1110	110	-	431	279	443	-1	906
17	3	1889	1787	1	1704	-	1204	111	-	247	231	478	-1	340
18	3	1989	1887	1	1804	-	1304	112	-	250	235	645	-1	274
19	3	2089	1987	1	1904	-	1406	113	-1	254	235	285	-2	634
20	3	2189	2087	1	2004	-	1508	114	-	562	202	127	-1	280
21	3	2289	2187	1	2104	-	1608	115	-	602	220	186	-1	364
22	3	2389	2287	1	2204	-	1708	116	-	618	218	157	-1	280
23	3	2489	2387	1	2304	-	1808	117	-	545	210	128	-1	212
24	3	2589	2487	1	2404	-	1909	118	-	312	216	359	-1	081
25	3	2689	2587	1	2504	-	2009	119	-1	217	282	323	-2	374
26	3	2789	2687	1	2604	-	2109	120	-	743	355	235	-2	000
27	3	2889	2787	1	2704	-	2209	121	-	601	233	205	-1	467
28	3	2989	2887	1	2804	-	2309	122	-	707	226	003	-1	615
29	3	3089	2987	1	2904	-	2409	123	-	643	218	128	-1	378
30	3	3189	3087	1	3004	-	2509	124	-	568	214	110	-1	348
31	3	3289	3187	1	3104	-	2609	125	-	560	205	187	-1	212
32	3	3389	3287	1	3204	-	2709	126	-	540	205	122	-1	425
33	3	3489	3387	1	3304	-	2809	127	-	606	218	158	-1	532
34	3	3589	3487	1	3404	-	2909	128	-1	509	271	477	-2	955
35	3	3689	3587	1	3504	-	3009							
36	3	3789	3687	1	3604	-	3109							
37	3	3889	3787	1	3704	-	3209							
38	3	3989	3887	1	3804	-	3309							
39	3	4089	3987	1	3904	-	3409							
40	3	4189	4087	1	4004	-	3509							
41	3	4289	4187	1	4104	-	3609							
42	3	4389	4287	1	4204	-	3709							
43	3	4489	4387	1	4304	-	3809							
44	3	4589	4487	1	4404	-	3909							
45	3	4689	4587	1	4504	-	4009							
46	3	4789	4687	1	4604	-	4109							
47	3	4889	4787	1	4704	-	4209							
48	3	4989	4887	1	4804	-	4309							
49	3	5089	4987	1	4904	-	4409							
50	3	5189	5087	1	5104	-	4509							
51	3	5289	5187	1	5204	-	4609							
52	3	5389	5287	1	5304	-	4709							
53	3	5489	5387	1	5404	-	4809							
54	3	5589	5487	1	5504	-	4909							
55	3	5689	5587	1	5604	-	5009							
56	3	5789	5687	1	5704	-	5109							
57	3	5889	5787	1	5804	-	5209							
58	3	5989	5887	1	5904	-	5309							
59	3	6089	5987	1	6004	-	5409							
60	3	6189	6087	1	6104	-	5509							
61	3	6289	6187	1	6204	-	5609							
62	3	6389	6287	1	6304	-	5709							
63	3	6489	6387	1	6404	-	5809							
64	3	6589	6487	1	6504	-	5909							
65	3	6689	6587	1	6604	-	6009							
66	3	6789	6687	1	6704	-	6109							
67	3	6889	6787	1	6804	-	6209							
68	3	6989	6887	1	6904	-	6309							
69	3	7089	6987	1	7004	-	6409							
70	3	7189	7087	1	7104	-	6509							
71	3	7289	7187	1	7204	-	6609							
72	3	7389	7287	1	7304	-	6709							
73	3	7489	7387	1	7404	-	6809							
74	3	7589	7487	1	7504	-	6909							
75	3	7689	7587	1	7604	-	7009							
76	3	7789	7687	1	7704	-	7109							
77	3	7889	7787	1	7804	-	7209							
78	3	7989	7887	1	7904	-	7309							
79	3	8089	7987	1	8004	-	7409							
80	3	8189	8087	1	8104	-	7509							
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83	3	8489	8387	1	8404	-	7809							
84	3	8589	8487	1	8504	-	7909							
85	3	8689	8587	1	8604	-	8009							
86	3	8789	8687	1	8704	-	8109							
87	3	8889	8787	1	8804	-	8209							
88	3	8989	8887	1	8904	-	8309							
89	3	9089	8987	1	9004	-	8409							
90	3	9189	9087	1	9104	-	8509							
91	3	9289	9187	1	9204	-	8609							
92	3	9389	9287	1	9304	-	8709							
93	3	9489	9387	1	9404	-	8809							
94	3	9589	9487	1	9504	-	8909							
95	3	9689	9587	1	9604	-	9009							
96	3	9789	9687	1	9704	-	9109							
97	3	9889	9787	1	9804	-	9209							
98	3	9989	9887	1	9904	-	9309							
99	3	10089	9987	1	10004	-	9409							
100	3	10189	10087	1	10104	-	9509							
101	3	10289	10187	1	10204	-	9609							
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107	3	10889	10787	1	10804	-	10209							
108	3	10989	10887	1	10904	-	10309							
109	3	11089	10987	1	11004	-	10409							
110	3	11189	11087	1	11104	-	10509							
111	3	11289	11187	1	11204	-	10609							
112	3	11389	11287	1	11304	-	10709							
113	3	11489	11387	1	11404	-	10809							
114	3	11589	11487	1	11504	-	10909							
115	3	11689	11587	1	11604	-	11009							
116	3	11789	11687	1	11704	-	11109							
117	3	11889	11787	1	11804	-	11209							
118	3	11989	11887	1	11904	-	11309							
119	3	12089	11987	1	12004	-	11409							
120	3	12189	12087	1	12104	-	11509							
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DATA FOR PROJECT 5710 CONFIGURATION B WIND DIR. W TUBING NO. 1

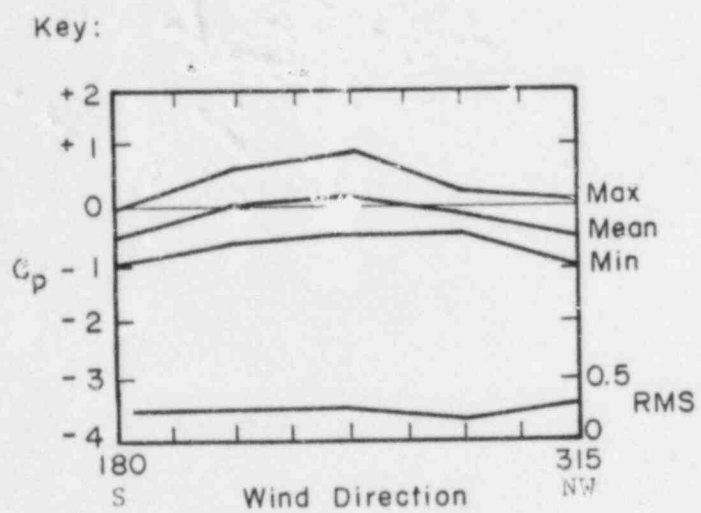
TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.067	099	3.426	2.736	36	-350	211	412	-1.123	129	-663	261	171	-1.684
1	353	234	1.058	-595	37	-363	208	307	-1.327	130	-651	252	218	-1.521
2	378	248	1.203	-409	38	-379	207	246	-1.145	131	-683	262	160	-2.188
3	337	242	1.232	-496	39	-347	217	550	-1.024	132	-600	251	218	-1.538
4	230	232	1.034	-677	40	-360	209	483	-1.112	133	-311	211	391	-1.131
5	267	229	1.145	-409	41	-394	223	395	-1.118	134	-191	187	429	-1.794
6	265	225	1.023	-450	42	-422	222	395	-1.222	135	-779	186	180	-1.348
7	244	236	1.023	-595	101	-311	194	412	-1.014	136	-143	200	510	-1.935
8	378	257	1.354	-426	102	-268	200	365	-0.886	137	-202	195	494	-1.881
9	351	272	1.523	-549	103	-398	201	214	-1.043	138	-061	215	603	-1.783
10	426	284	1.494	-386	104	-269	197	470	-1.979	139	-702	212	032	-1.495
11	362	275	1.401	-700	105	-453	194	260	-1.305	140	-307	297	472	-2.250
12	096	262	1.336	-900	106	-481	198	196	-1.264	141	-009	219	804	-1.772
13	339	233	1.096	-420	107	-361	207	336	-1.032	142	-099	216	651	-1.913
14	292	225	1.137	-397	108	-420	215	255	-1.264	143	-799	249	108	-1.614
15	409	279	1.278	-420	109	-450	195	132	-1.154	144	-659	375	472	-1.766
16	296	233	1.284	-437	110	-170	214	656	-1.043	145	-323	206	467	-1.087
17	283	249	1.155	-613	111	-257	262	650	-1.293	146	-292	197	363	-1.870
18	271	231	1.049	-566	112	-404	275	377	-1.835	147	-728	213	011	-1.419
19	139	233	1.991	-590	113	-304	311	275	-2.748	148	-254	217	505	-1.913
20	410	274	1.623	-408	114	-558	211	231	-1.200	149	-166	280	1.223	-1.659
21	382	283	1.559	-432	115	-643	220	196	-1.363	150	-232	278	1.245	-1.593
22	439	291	1.582	-467	116	-592	229	167	-1.672	151	-072	334	1.196	-1.134
23	338	296	1.407	-968	117	-556	207	206	-1.357	152	-359	314	1.637	-1.537
24	108	236	1.923	-826	118	-301	206	382	-1.964	153	-088	231	1.008	-1.764
25	351	247	1.445	-435	119	-096	258	344	-2.059	154	-1.249	341	306	-2.796
26	305	235	1.048	-522	120	-022	299	043	-2.042	155	-1.054	287	174	-2.167
27	456	235	1.325	-304	121	-693	250	376	-1.643	156	-629	232	252	-1.499
28	435	218	1.282	-343	122	-755	246	078	-1.807	157	-108	209	622	-1.781
29	429	219	1.380	-141	123	-624	216	072	-1.433	158	-793	324	417	-2.829
30	447	206	1.271	-103	124	-521	216	277	-1.327	159	-216	237	638	-1.184
31	456	258	1.391	-299	125	-558	203	125	-1.269	160	-112	225	599	-1.002
32	471	228	1.217	-337	126	-531	213	171	-1.362	161	-600	364	748	-1.167
33	454	212	1.180	-256	127	-615	235	271	-1.632	162	-186	258	804	-1.206
34	465	217	1.207	-178	128	-346	331	437	-2.486	163	-089	261	732	-1.886
35	442	243	1.495	-532										

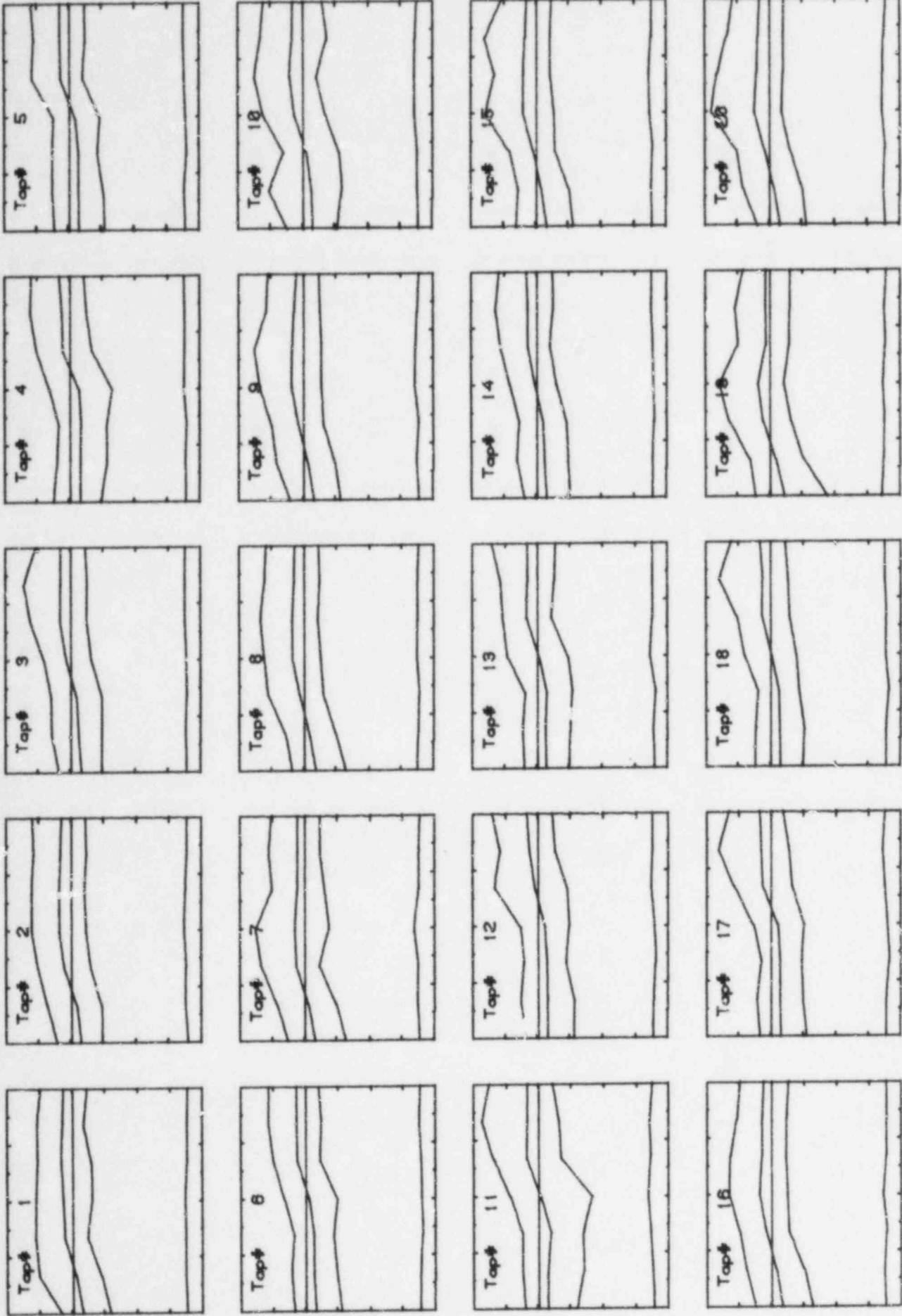
DATA FOR PROJECT 3710 CONFIGURATION B WIND DIR. WNW TUSING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3	104	3	672	36	353	218	387	-1	065	129	-	474	239
1	3	231	1	099	37	344	215	352	-1	077	130	-	467	228
2	3	236	1	149	38	348	226	376	-1	201	131	-	577	240
3	3	244	1	442	39	351	225	464	-1	065	132	-	410	231
4	3	234	1	205	40	370	218	364	-1	195	133	-	331	217
5	3	240	1	086	41	363	228	441	-1	255	134	-	481	214
6	3	253	1	155	42	357	227	530	-1	344	135	-	724	185
7	3	244	1	124	101	221	215	543	-1	005	136	-	481	206
8	3	244	1	136	102	173	211	507	-1	874	137	-	409	227
9	3	244	1	149	103	257	231	474	-1	061	138	-	329	241
10	3	244	1	168	104	204	210	562	-1	918	139	-	602	240
11	3	244	1	174	105	368	204	468	-1	068	140	-	676	325
12	3	244	1	188	106	362	215	412	-1	192	141	-	442	264
13	3	244	1	199	107	303	218	462	-1	049	142	-	392	245
14	3	244	1	206	108	342	237	699	-1	224	143	-	580	237
15	3	244	1	210	109	408	239	412	-1	342	144	-	899	329
16	3	244	1	206	110	295	229	537	-1	136	145	-	539	290
17	3	244	1	206	111	264	273	837	-1	180	146	-	407	265
18	3	244	1	206	112	866	267	549	-2	129	147	-	561	245
19	3	244	1	206	113	847	277	094	-1	854	148	-	175	265
20	3	244	1	305	114	510	223	225	-1	317	149	-	222	273
21	3	244	1	242	115	618	245	181	-1	486	150	-	445	276
22	3	244	1	398	116	432	223	318	-1	111	151	-	277	372
23	3	244	1	502	117	427	213	259	-1	221	152	-	139	493
24	3	244	1	415	118	185	211	552	-	879	153	-	454	242
25	3	244	1	438	119	785	255	035	-1	713	154	-1	098	318
26	3	244	1	241	120	570	223	085	-1	495	155	-	474	251
27	3	244	1	206	121	537	200	353	-1	259	156	-	368	240
28	3	244	1	206	122	594	233	135	-1	545	157	-	249	233
29	3	244	1	206	123	533	218	334	-1	226	158	-	942	308
30	3	244	1	206	124	494	213	210	-1	246	159	-	391	247
31	3	244	1	206	125	489	207	160	-1	209	160	-	164	239
32	3	244	1	206	126	448	215	284	-1	221	161	-1	042	344
33	3	244	1	206	127	482	247	477	-1	340	162	-	398	280
34	3	244	1	206	128	691	268	179	-1	819	163	-	256	253

DATA FOR PROJECT 5710 CONFIGURATION B WIND DIR. NW TUBING NO. 1

TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN	TAP	MEAN	RMS	MAX	MIN
0	3.180	.090	3.455	2.910	36	-.394	.210	303	-1.124	129	-.385	.209	.283	-1.073
1	.267	.224	.962	-.461	37	-.387	.215	359	-1.186	130	-.374	.202	.306	-1.220
2	.292	.227	1.185	-.432	38	-.397	.201	.280	-1.040	131	-.383	.208	.371	-1.220
3	.310	.228	1.044	-.450	39	-.392	.233	.370	-1.237	132	-.292	.202	.570	-1.097
4	.331	.245	1.168	-.438	40	-.378	.227	.460	-1.164	133	-.477	.209	.204	-1.144
5	.286	.242	1.168	-.473	41	-.406	.218	.443	-1.287	134	-.448	.173	.133	-1.002
6	.310	.234	1.126	-.397	42	-.411	.211	.309	-1.300	135	-.530	.164	.128	-1.062
7	.243	.225	1.038	-.455	101	-.337	.201	.309	-1.061	136	-.510	.195	.106	-1.187
8	.299	.232	1.174	-.444	102	-.247	.203	.427	-.885	137	-.512	.197	.073	-1.275
9	.222	.209	1.074	-.461	103	-.286	.230	.615	-1.049	138	-.501	.208	.335	-1.318
10	.325	.237	1.197	-.579	104	-.122	.215	.621	-.908	139	-.482	.210	.341	-1.307
11	.358	.250	1.503	-.432	105	-.259	.198	.421	-.855	140	-.515	.225	.264	-1.395
12	.342	.250	1.415	-.451	106	-.264	.203	.580	-1.120	141	-.507	.215	.221	-1.302
13	.301	.231	1.421	-.563	107	-.432	.213	.315	-1.243	142	-.500	.211	.281	-1.209
14	.333	.236	1.139	-.481	108	-.146	.217	.644	-.844	143	-.520	.231	.341	-1.389
15	.292	.226	1.034	-.486	109	-.214	.261	.615	-1.055	144	-.584	.246	.259	-1.684
16	.230	.224	.957	-.516	110	-.386	.194	.391	-.949	145	-.571	.263	.281	-1.788
17	.367	.244	1.292	-.357	111	-.285	.202	.433	-1.096	146	-.543	.275	.368	-2.219
18	.328	.248	1.192	-.445	112	-.930	.364	.291	-2.631	147	-.549	.319	.363	-2.028
19	.119	.213	.817	-.621	113	-.481	.205	.180	-1.167	148	-.332	.361	.618	-.974
20	.296	.215	1.116	-.451	114	-.483	.207	.174	-1.196	149	-.143	.262	.825	-.916
21	.216	.231	1.239	-.545	115	-.439	.199	.227	-1.455	150	-.515	.219	.252	-1.287
22	.346	.237	1.357	-.363	116	-.380	.197	.438	-1.049	151	-.476	.304	.573	-.810
23	.359	.263	1.274	-.380	117	-.339	.190	.312	-.997	152	-.116	.447	.500	-1.461
24	.382	.281	1.853	-.532	118	-.347	.190	.376	-.962	153	-.529	.228	.202	-1.332
25	.348	.247	1.198	-.396	119	-.483	.215	.312	-1.202	154	-.855	.326	.146	-2.366
26	.308	.236	1.121	-.418	120	-.433	.202	.224	-1.185	155	-.497	.253	.595	-1.585
27	.441	.218	.510	-1.226	121	-.421	.196	.283	-1.050	156	-.360	.247	.662	-1.478
28	.471	.204	.659	-1.242	122	-.408	.197	.283	-1.314	157	-.157	.224	.640	-.894
29	.504	.216	.226	-1.242	123	-.335	.194	.294	-.985	158	-.958	.314	.275	-2.636
30	.496	.217	.237	-1.302	124	-.355	.202	.406	-1.155	159	-.354	.221	.331	-1.220
31	.441	.219	.521	-1.209	125	-.357	.201	.306	-1.032	160	-.059	.210	.730	-.737
32	.459	.216	.401	-1.269	126	-.366	.200	.394	-1.120	161	-1.384	.353	.119	-2.613
33	.484	.221	.370	-1.270	127	-.631	.246	.106	-1.613	162	-.756	.283	.067	-1.804
34	.486	.214	.151	-1.298	128	-.472	.248	.388	-1.666	163	-.414	.211	.196	-1.383
35	.406	.222	.516	-1.253										

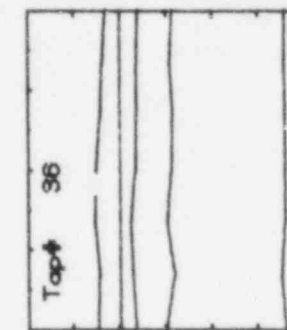
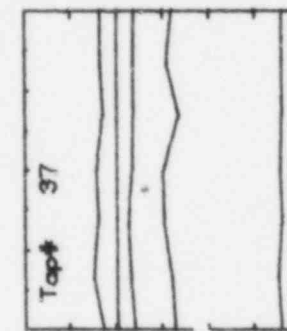
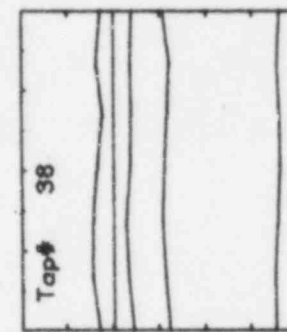
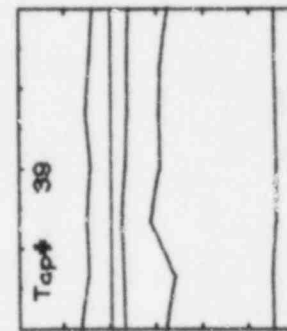
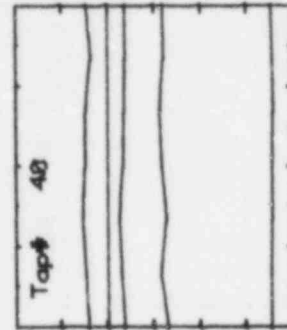
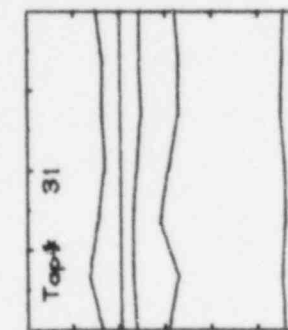
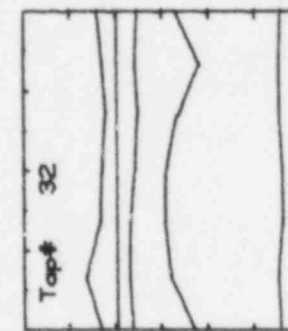
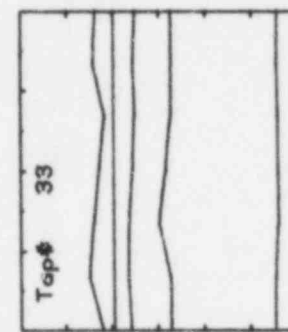
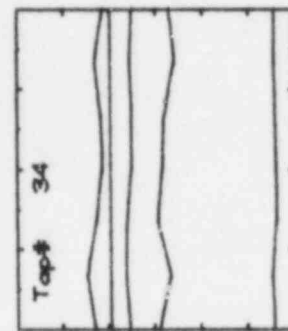
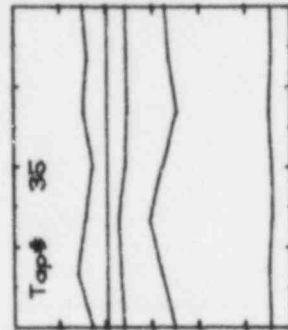
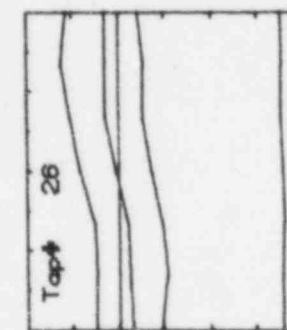
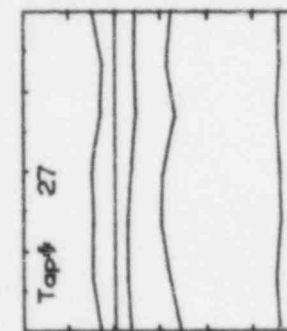
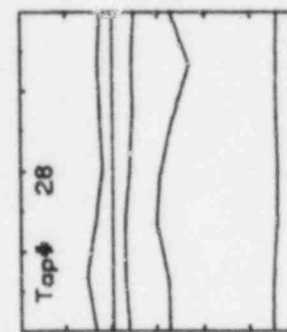
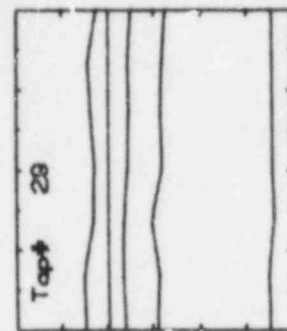
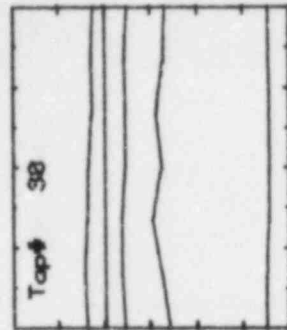
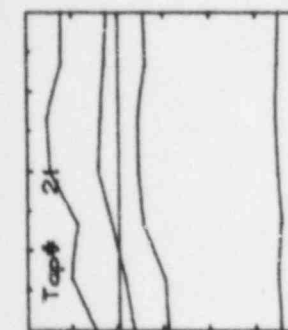
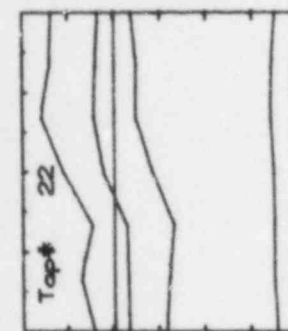
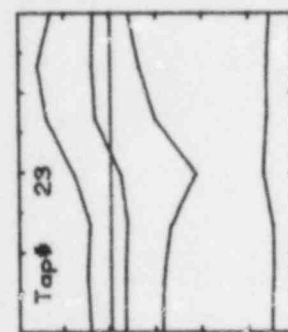
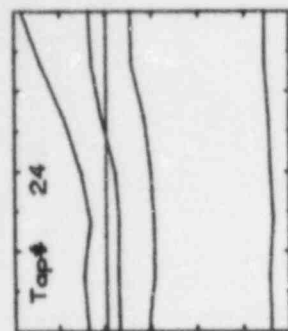
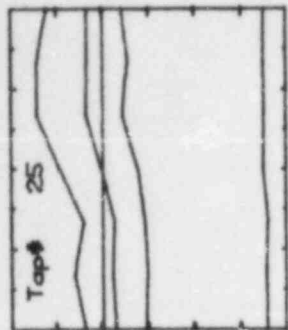




W.D.
180-315

PROJECT 5710

CONFIG. B

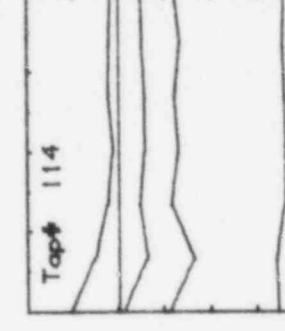
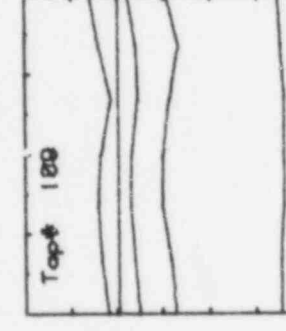
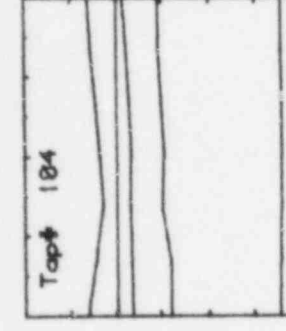
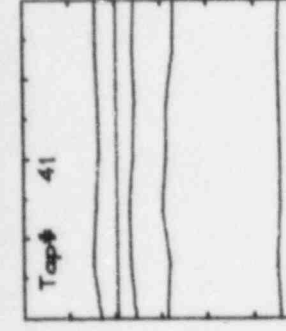
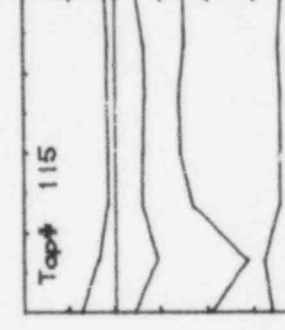
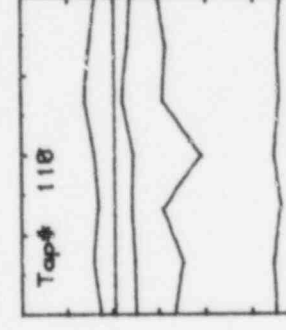
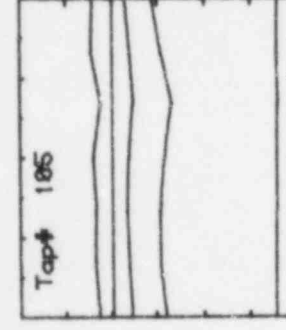
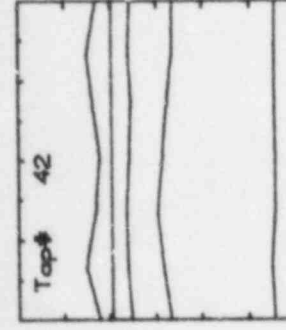
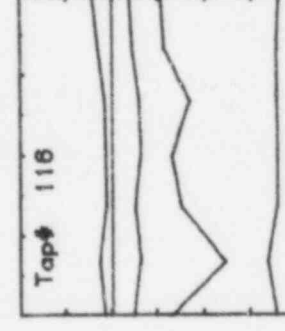
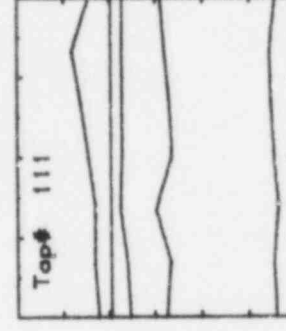
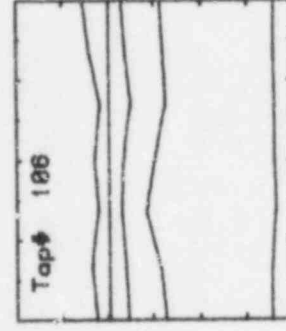
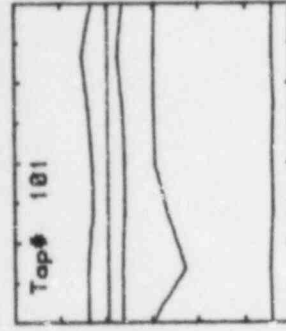
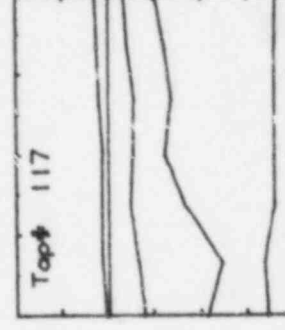
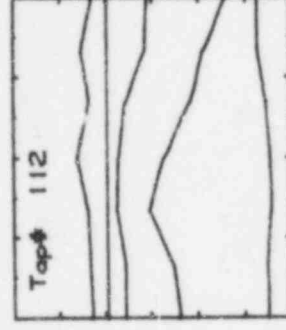
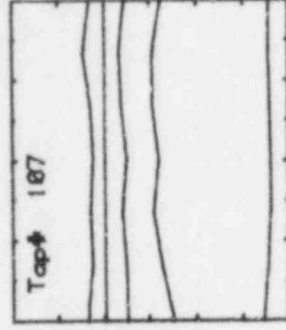
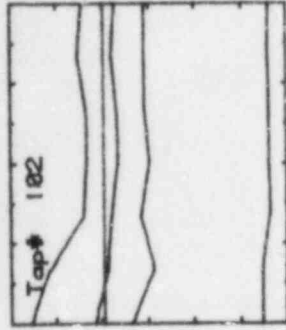
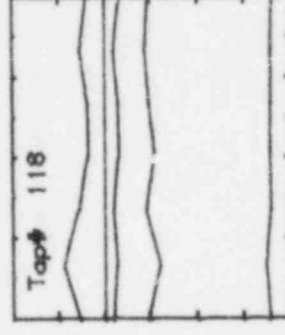
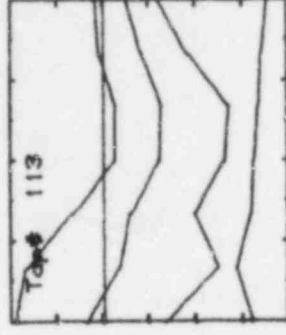
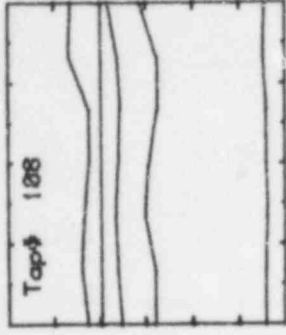
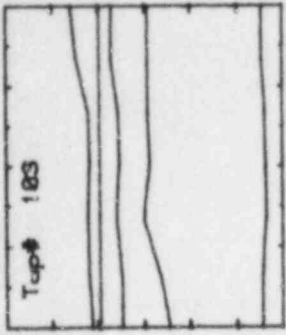


B-34

W.D.
180-315

CONFIG. B

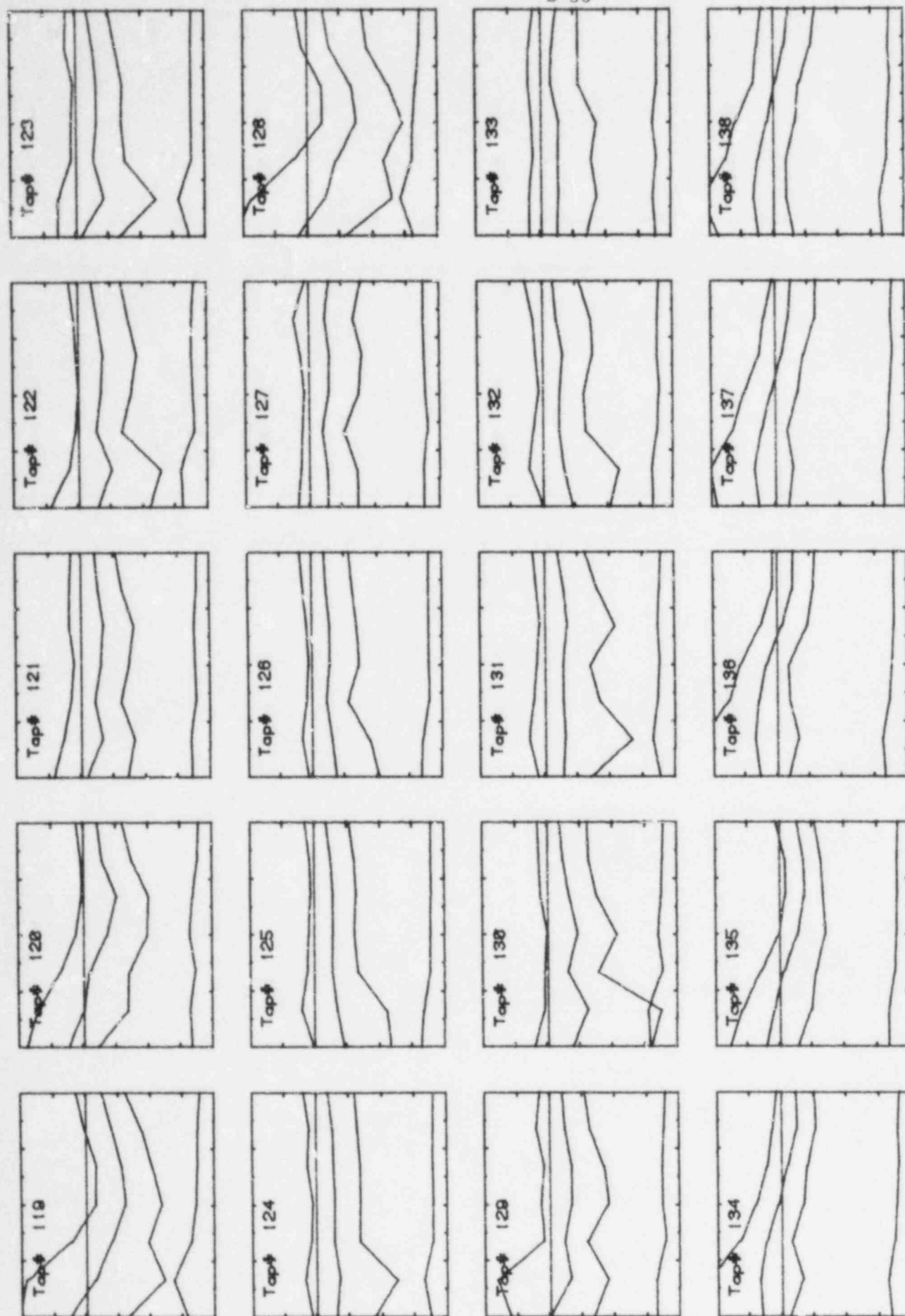
PROJECT 5710



CONFIG. B

W.D.
180-315

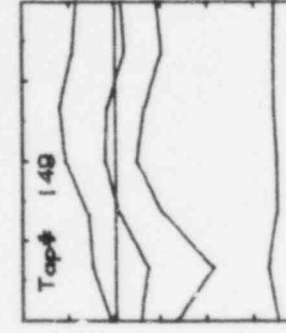
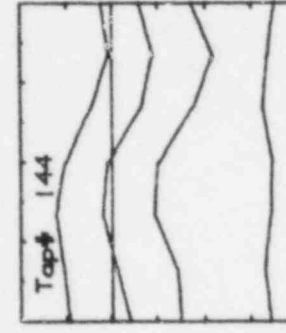
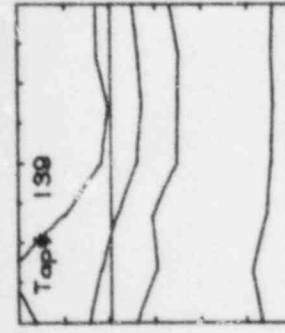
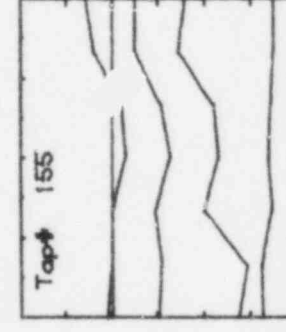
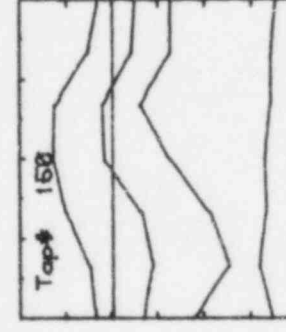
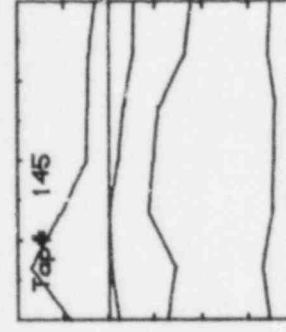
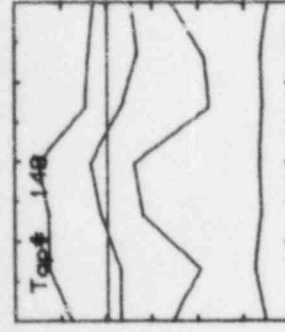
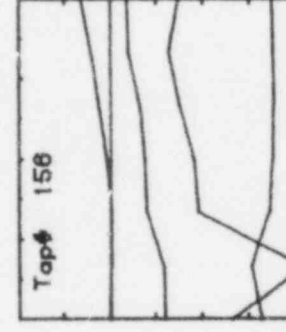
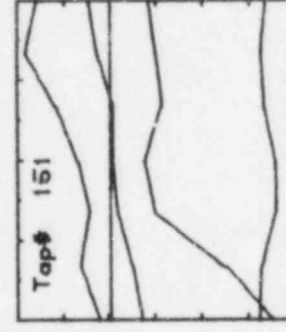
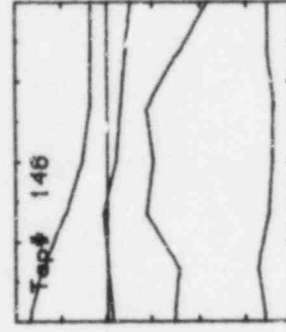
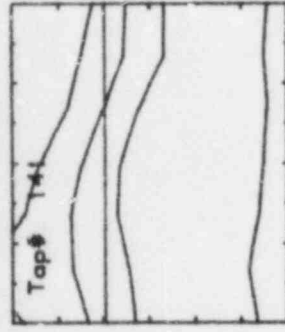
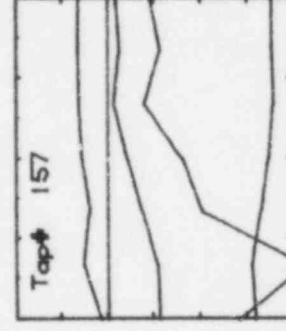
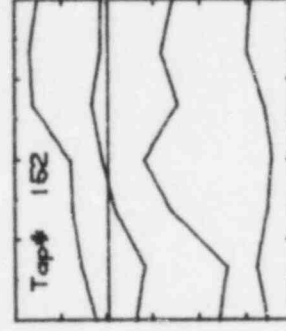
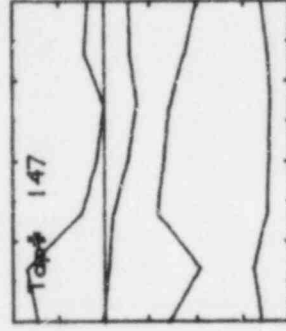
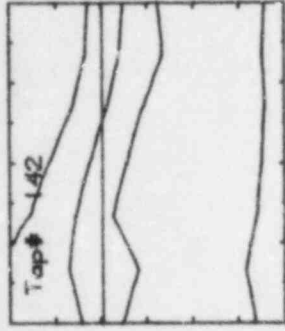
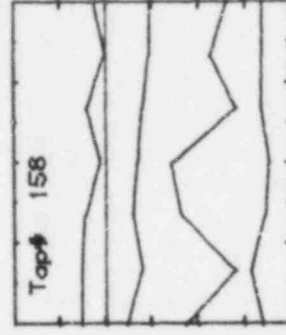
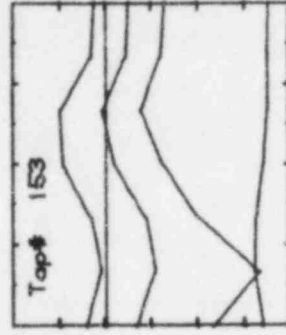
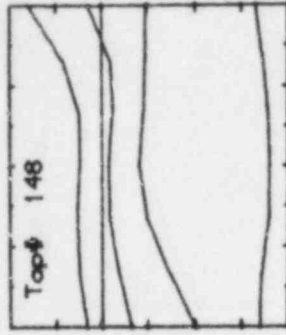
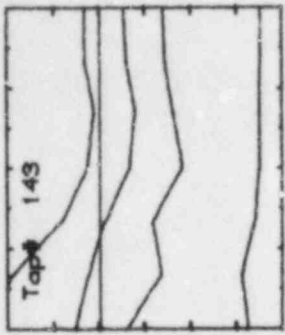
PROJECT 5710



CONFIG. B

W.D.
180-315

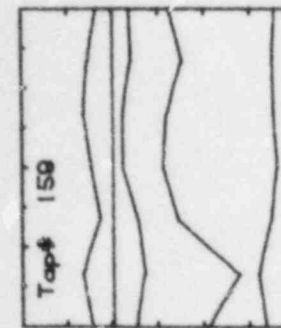
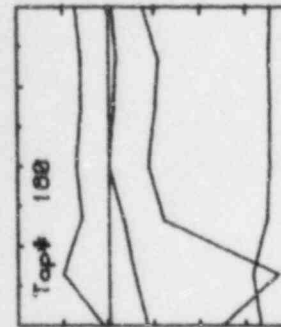
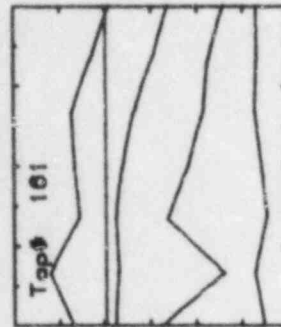
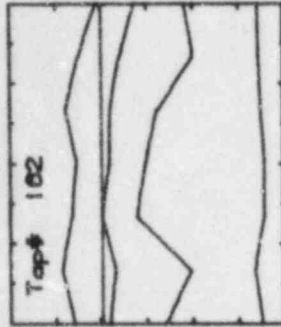
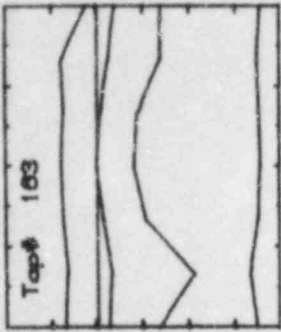
PROJECT 5710



CONFIG. B

W.D.
180-315

PROJECT 5710



CONFIG. B

W.D.
180-315

PROJECT 5710

APPENDIX C

QUALITY ASSURANCE DATA

CALIBRATIONS

CERTIFICATIONS

DAILY RECORDS

Table C-1. EWT Roof Adjustment Completed at 1300 MDT on 26 October 1983

Ref. transducer (approx.) at roof motor #5 position
 #1 transducer (approx.) at roof motor #7 position
 #2 transducer (approx.) at roof motor #9 position
 #3 transducer (approx.) at turntable center.

All transducers on tunnel centerline at $Z = 45''$.

	#1		#2		#3	
Z	-0.0026	0.0037	-0.0002	0.0010	-0.0263	0.0024
Z	-0.0036	0.0041	-0.0001	0.0009	-0.0260	0.0023
1	0.0016	0.0063	0.0007	0.0098	0.0011	0.0061
2	0.0037	0.0053	0.0027	0.0084	0.0010	0.0051
3	0.0028	0.0046	0.0011	0.0071	0.0005	0.0037
4	0.0016	0.0053	0.0002	0.0078	0.0009	0.0040
5	0.0009	0.0060	0.0002	0.0088	0.0017	0.0047

CALIBRATIONS
for
VELOCITY SENSORS

Table C-2a. Hot-film calibration data preceding velocity profiles.

Measured Velocity (fps)	Voltage	Calculated Velocity (fps)	Error (%)
1.694	2.446	1.749	3.20
2.005	2.475	2.036	1.56
2.513	2.508	2.409	-4.13
3.078	2.565	3.148	2.29
3.826	2.614	3.876	1.29
4.546	2.654	4.526	-.45
5.139	2.684	5.081	-1.12
6.271	2.738	6.151	-1.91
7.577	2.798	7.481	-1.27
9.093	2.857	8.974	-1.31
11.136	2.934	11.183	.42
12.904	2.990	12.983	.62
14.868	3.046	14.966	.66
16.601	3.089	16.659	.35
20.190	3.176	20.341	.75
23.962	3.251	23.926	-.15
28.402	3.333	28.356	-.16
31.471	3.391	31.748	.88
37.121	3.474	37.149	.08
43.529	3.559	43.190	-.78

Calibration is: $A = .25845$
 $B = .08704$
 $C = .4793$

10/31/83 9:30 - 10:00 am

$P_{\text{atm}} = 24.76'' \text{ Hg}$

$t_{\text{cal air}} = 21.1^{\circ}\text{C}$

$R_c = 5.99\Omega$

$R_H = 8.00\Omega$

Table C-2b. Hot-film calibration data following velocity profiles.

Measured Velocity (fps)	Voltage	Calculated Velocity (fps)	Error (%)
1.782	2.423	1.806	1.36
2.402	2.478	2.382	-.85
3.397	2.560	3.433	1.06
4.297	2.616	4.302	.11
5.153	2.664	5.130	-.43
6.513	2.730	6.455	-.88
8.111	2.797	8.000	-1.37
10.050	2.876	10.086	.36
12.012	2.941	12.068	.46
14.613	3.016	14.657	.30
16.817	3.072	16.798	-.11
20.596	3.159	20.557	-.19
25.818	3.264	25.799	-.08
31.323	3.366	31.679	1.14
38.550	3.469	38.514	-.10
43.971	3.540	43.741	-.52

Calibration is: A = .24330
 B = .09259
 C = .4647

10/31/83 1520 - 1550 pm

$P_{\text{atm}} = 24.86'' \text{ Hg}$

$t_{\text{cal air}} = 20.3^{\circ}\text{C}$

$R_c = 5.99\Omega$ (input to WRCAL, to match cal #6, not measured)

$R_H = 8.00\Omega$

Table C-3. Calibration of Pitot Tube at $z = 47''$ with Hot-film located at $z = 9.6''$

MKS Scale	Hot-film $z = 9.6''$ (fps)	Average Volts	ΔP (meter)
.03	4.256	.0435	.0133
.03	5.088	.0576	.0178
.03	5.822	.0778	.0242
.1	7.212	.0398	.0382
.1	8.350	.0529	.0514
.1	10.632	.085	.0829
.3	10.83	.0277	.0834
.3	12.815	.0394	.1164
.3	15.477	.0576	.1782
.3	18.787	.0817	.2508
1.0	21.643	.0357	.340
.1	5.14	.0220	
.3	10.09	.026	
.3	15.02	.057	
.3	20.09	.102	

The preceding conversion was used for monitoring reference velocity, u_r , at $z = 9.6$ inches when using the pitot tube mounted at $z = 47$ inches.

Table C-4. Calibration of Datametrics Probe at $z = 47''$ with Hot-film located at $z = 9.6''$

Hot-film ft/sec	Datametrics Voltage
3.23	2.4266
3.97	2.9902
5.87	4.4533
8.07	6.1002
10.34	7.6983
12.68	9.3308

$$\text{D.M. voltage} = .73212 u + 0.1115$$

$$\begin{aligned} 5 \text{ fps} &\rightarrow 3.7721 \text{ v} \\ 10 \text{ fps} &\rightarrow 7.4327 \text{ v} \end{aligned}$$

The preceding conversion was used for monitoring reference velocity, u_r , at $z = 9.6''$ when using the datametrics probe mounted at $z = 47$ inches.

CALIBRATIONS

for

FLOW METERS

Table C-5a. Calibration Data for Flowmeters with Recon. Air

Flowmeter F-4 with Air
 10 psi b.p. on Gauge #3
 Calib. with Wet Test Meter (2.01)

27 October 1983
 1500-1700 MDT
 24.573" Hg @ 23.3°C

Flowmeter Setting	Volume (cc)	Time (sec)	Rate (cc/min)
1.95	500	27.9	1,075
3.05	1,000	31.4	1,911
5.90	2,000	28.1	4,270
8.95	3,000	26.8	6,716
12.10	5,000	32.4	9,259
15.00	6,000	30.7	11,726

Table C-5b. Calibration Data for Flowmeters with 8.97% Methane

Flowmeter F-7 with Methane
 10 psi b.p. on Gauge #1
 Calib. with Wet Test Meter (1.98)

6 November 1983
 1000-1200 MST
 24.834" Hg @ 20.5°C

Flowmeter Setting	Volume (cc)	Time (sec)	Rate (cc/min)
0.60	1,000	58.2	1,031
0.80	1,000	43.3	1,386
1.40	2,000	50.6	2,372
2.00	3,000	53.5	3,364
3.00	3,000	36.5	4,932
4.00	6,000	55.8	6,452
5.00	6,000	45.5	7,912
6.00	6,000	38.1	9,449
6.85	6,000	33.8	10,651

Flowmeter F-8 with Methane
 10 psi b.p. on Gauge #2
 Calib. with Soap-Bubble Flowrator

7 November 1983
 1600-1635 MST
 24.560" Hg @ 21.8°C

Flowmeter Setting	Volume (cc)	Time (sec)	Rate (cc/min)
1.70	20	34.0	35.3
1.95	20	28.5	42.1
4.30	40	26.3	91.3
4.60	50	30.2	99.3
6.20	50	23.7	126.6
8.35	60	20.5	175.6
9.35	60	18.4	195.6
11.25	80	20.7	231.9

Table C-5c. Calibration Data for Flowmeters with 9.98% Ethane

Flowmeter F-4 with Ethane
 10 psi b.p. on Gauge #3
 Calib. with Wet Test Meter (1.94)

6 November 1983
 1430-1530 MST
 24.749" Hg @ 22°C

Flowmeter Setting	Volume (cc)	Time (sec)	Rate (cc/min)
1.55	1,000	74.9	801
3.00	1,000	30.1	1,993
5.00	3,000	49.6	3,629
7.00	3,000	34.2	5,263
9.00	6,000	52.0	6,923
11.00	6,000	42.0	8,571
13.00	6,000	35.2	10,227

Flowmeter F-6 with Ethane
 10 psi b.p. on Gauge #4
 Calib. with Soap-Bubble Flowrator

7 November 1983
 1430-1530 MST
 24.560" Hg @ 21.8°C

Flowmeter Setting	Volume (cc)	Time (sec)	Rate (cc/min)
5.75	20	42.1	28.5
10.50	20	30.5	39.3
26.50	40	31.1	77.2
44.00	40	20.5	117.0
63.00	40	14.8	162.2
75.20	60	18.3	196.7

Table C-5d. Calibration Data for Flowmeters with 5.62% Propane

Flowmeter F-13 with Propane
 10 psi b.p. on Gauge #4
 Calib. with Wet Test Meter (1.93)

7 November 1983
 0930-1030 MST
 24.634" Hg @ 20.6°C

Flowmeter Setting	Volume (cc)	Time (sec)	Rate (cc/min)
5.0	1,000	79.3	757
10.0	1,000	36.15	1,660
15.0	3,000	70.9	2,538
20.0	3,000	53.8	3,346
25.0	3,000	42.6	4,225
35.0	3,000	30.1	5,980
45.0	6,000	46.7	7,709
55.0	6,000	37.9	9,499
71.5	9,000	43.85	12,315

Flowmeter F-8 with Propane
 10 psi b.p. on Gauge #2
 Calib. with Soap-Bubble Flowrator

7 November 1983
 1635-1730 MST
 24.560" Hg @ 21.8°C

Flowmeter Setting	Volume (cc)	Time (sec)	Rate (cc/min)
1.45	20	37.05	32.4
2.40	30	35.05	51.4
4.20	30	20.05	89.8
6.00	40	18.95	126.6
7.95	60	21.30	169.0
9.10	60	18.50	194.6

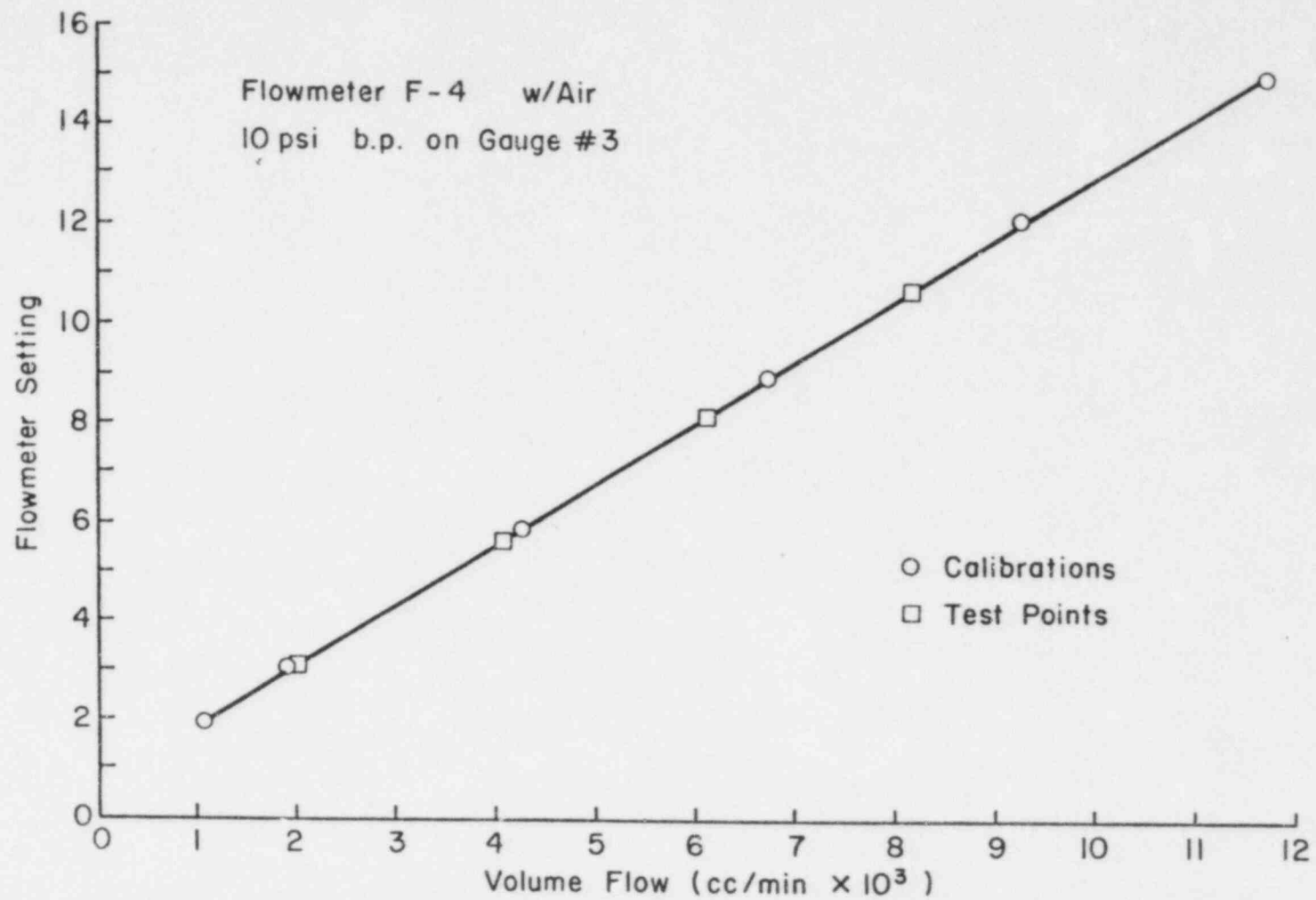


Figure C-1a. Graph of Flowmeter Calibration with Reconstituted Air.

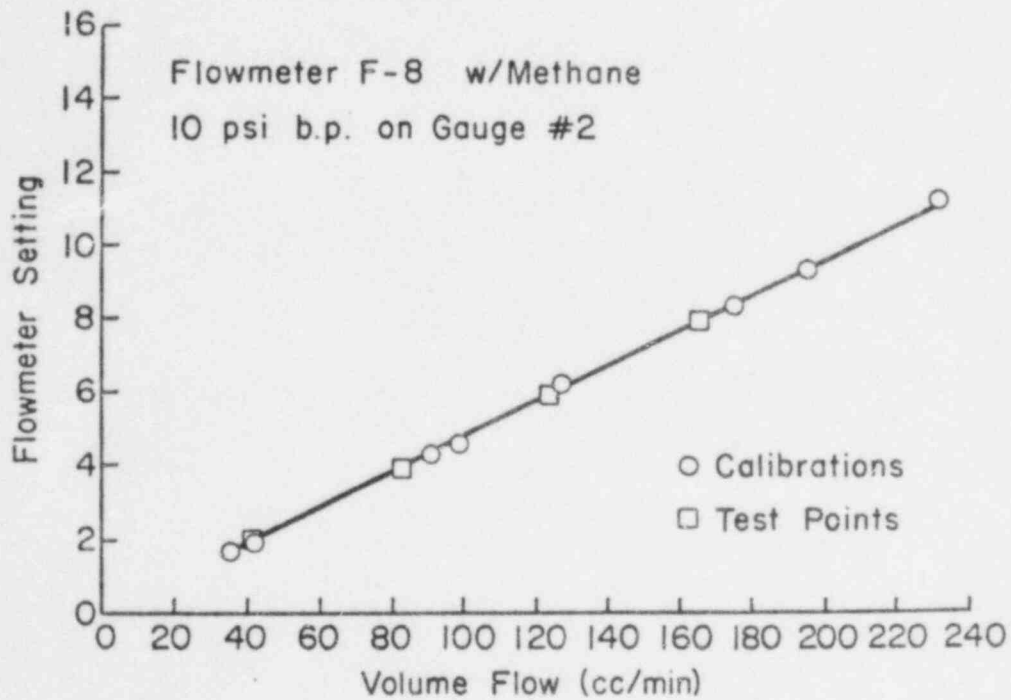
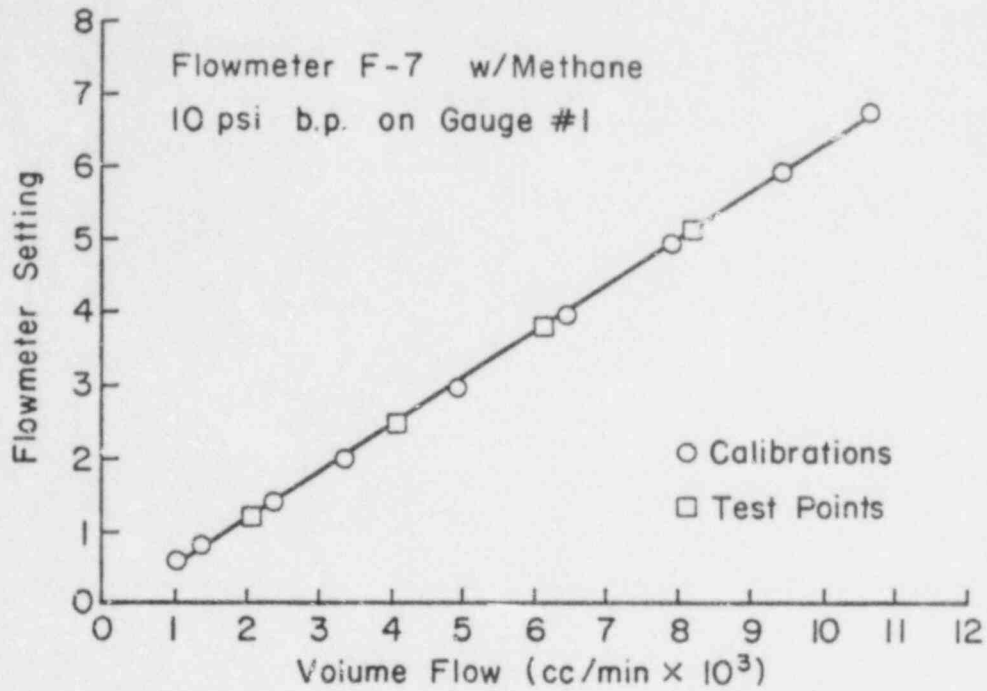


Figure C-1b. Graphs of Flowmeter Calibrations with Methane Tracer

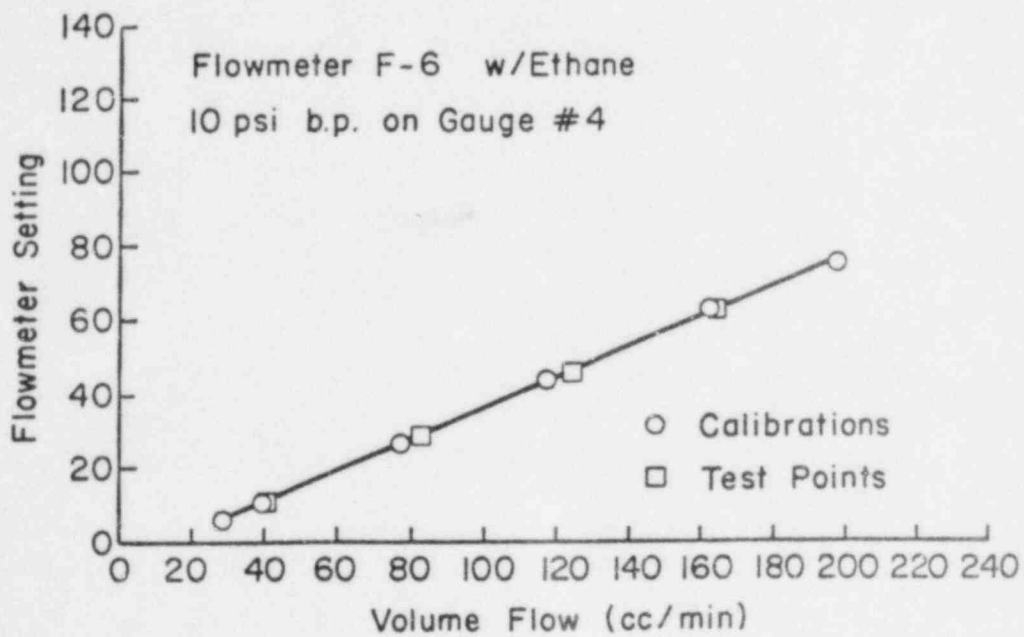
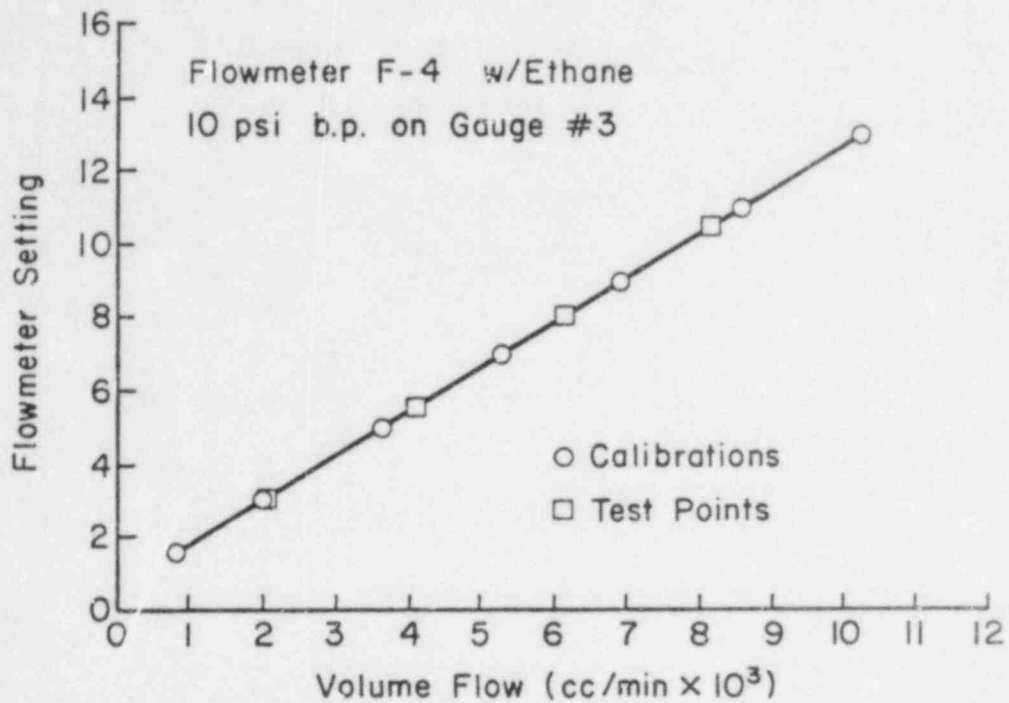


Figure C-1c. Graphs of Flowmeter Calibrations with Ethane Tracer.

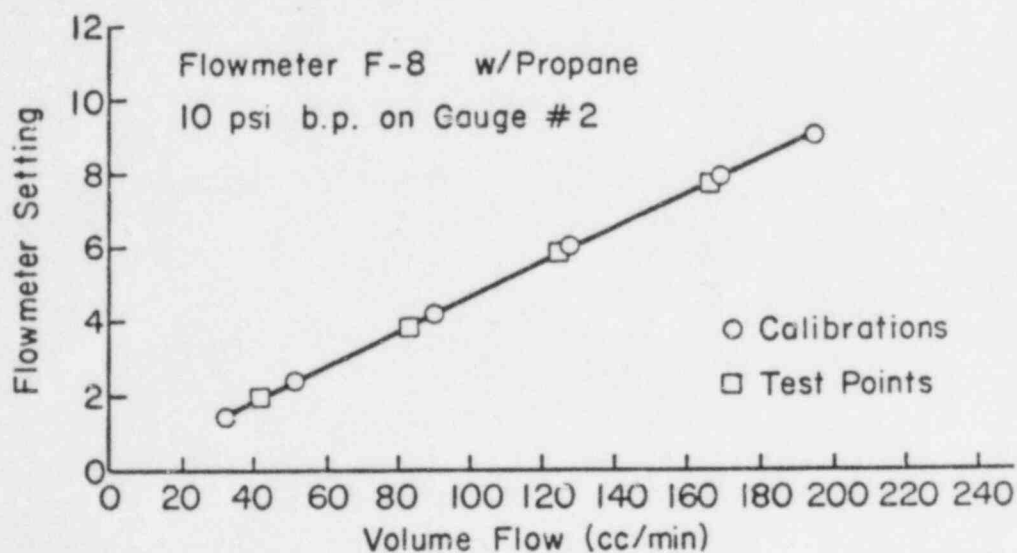
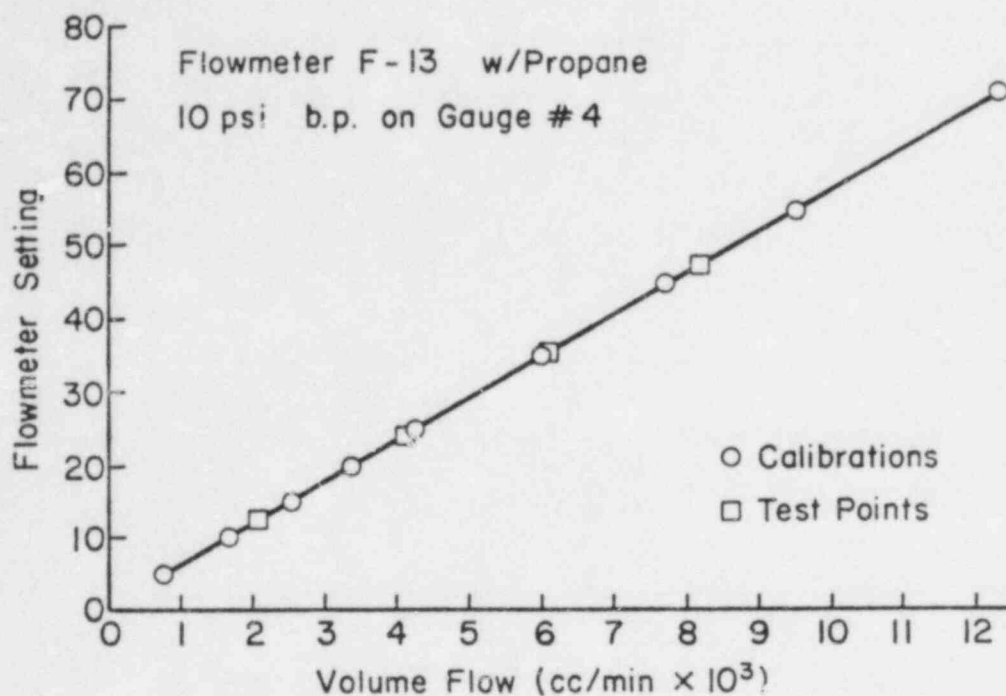


Figure C-1d. Graphs of Flowmeter Calibrations with Propane Tracer.

CALIBRATIONS
for
MKS BARATRON PRESSURE METER

MKS/TRAN-SONICS PRESSURE METER DATA SHEETS

LSN# 60713 CALIBRATION DATE: ^{C-18} 11/2/83 DUE DATE: May 2, 84
 PROJECT: 8-50337 JOB NUMBER: 076-34-08 DEPT: CE
 NAME: Jim Dutton PHONE: _____
 INST: MKS PRESS. MTR. MOD: 77 SLR: 3105 TECH: Cary

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM

RANGE mm Hg	SCALE @ 25°C 9/21/73	METER READING	DIAL READING	DC MV READING	AC V READING
0.010	0.005	0.0033			
		0.0014	.0051	.005	52.20
	0.006	0.0040			
		0.0016	.006	.006	61.25
	0.008	0.0053			
		0.0022	.008	.008	80.87
	0.010	0.0066			
		0.0027	.0098	.0099	98.50
0.030	0.010	0.0066			
		0.0027	.0095	.0099	30.49
	0.020	0.0132			
		0.0054	.0197	.0197	61.95
	0.030	0.0198			
		0.0080	.030	.0285	95.16
	0.100	0.0132			
		0.0054	.020	.0185	20.74
	0.040	0.0265			
		0.0107	.0340	.0335	40.35
	0.060	0.0397			
		0.0161	.0595	.0530	60.40
	0.080	0.0529			
		0.0214	.080	.0780	80.70
	0.100	0.0662			
		0.0267	.100	.100	100.26
0.300	0.100	0.0662			
		0.0267	.100	.100	31.96
	0.200	0.1323			
		0.0535	.200	.200	63.67
	0.300	0.1985			
		0.0802	.3025	.3025	95.71
	1.000	0.1323			
		0.0535	.197	.200	20.45
	0.400	0.2646			
		0.1069	.397	.396	40.52
	0.600	0.3970			
		0.1604	.597	.574	60.53
	0.800	0.5293			
		0.2138	.798	.774	80.77
	1.000	0.6616			
		0.2672	1.025	.992	100.68
3.000	1.000	0.6616			
		0.2672	1.000	.992	32.12
	2.000	0.7939			
		0.5344	2.010	1.9935	64.18
	2.500	0.8590			
		0.6680	2.510	2.494	78.92
	3.000	0.9262			
		0.8017	3.025	3.002	95.79

MKS/TRAN-SONICS PRESSURE METER DATA SHEETS

C-19

CSU# 70876 CALIBRATION DATE: 11/25/83 DUE DATE: May 25, 84
 PROJECT: 2-10310 JOB NUMBER: 2208-08 DEPT: C.E.
 NAME: 2208-08 PHONE: _____
 INST: MKS PRESS. MTR MOD: 7 SER: 4003 TECH: Gray

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM

RANGE mm Hg	SCALE @ 25°C 9/21/73	METER READING	DIAL READING	DC MV READING	AC V READING
0.010	0.005	0.0033 0.0014	.0054	.0055	54.45
	0.006	0.0040 0.0016	.0063	.0065	63.04
	0.008	0.0053 0.0022	.0085	.009	85.04
	0.010	0.0066 0.0027	.0105	.010	100.56
0.030	0.010	0.0066 0.0027	.0102	.010	32.27
	0.020	0.0132 0.0054	.023	.020	61.94
	0.030	0.0198 0.0080	.034	.0305	101.53
0.100	0.020	0.0132 0.0054	.0205	.020	20.55
	0.040	0.0265 0.0107	.041	.040	41.44
	0.060	0.0397 0.0161	.062	.059	62.13
	0.080	0.0529 0.0214	.083	.078	83.07
	0.100	0.0662 0.0267	.104	.103	104.05
0.300	0.100	0.0662 0.0267	.100	.103	33.34
	0.200	0.1323 0.0535	.212	.206	66.93
	0.300	0.1985 0.0802	.315	.309	100.73
1.000	0.200	0.1323 0.0535	.210	.206	21.52
	0.400	0.2646 0.1069	.420	.412	42.55
	0.600	0.3970 0.1604	.615	.600	61.57
	0.800	0.5293 0.2138	.840	.822	84.20
	1.000	0.6616 0.2672	1.06	1.026	105.65
3.000	1.000	0.6616 0.2672	1.06	1.026	33.58
	2.000	0.7939 0.5344	2.12	2.055	66.83
	2.500	0.8590 0.6680	2.63	2.565	83.77
	3.000	0.9262 0.8017	3.17	3.080	100.65

C-20

E.R.C. CALIBRATION METROLOGY

MKS/TRAN-SONICS PRESSURE METER DATA SHEETS

CSU# _____ CALIBRATION DATE: 7/22/83 DUE DATE: _____PROJECT: _____ JOB NUMBER 226-54-095 DEPT: _____

NAME: _____ PHONE: _____

INST: _____ MOD: _____ SER: 4003 TECH: _____

PRESSURE DATA SHEETS

TEXAS INSTRUMENTS SYSTEM

RANGE mm Hg	SCALE @ 25°C 4-20-77		METER READING	DIAL READING	D.C. M.V. READING	A.C. V. READING
3.00	1.0	0.398	1.080	1.052	34.40	
	1.5	0.594	1.600	1.556	51.15	
	2.0	0.803	2.180	2.090	68.94	
	2.5	0.992	2.680	2.589	85.35	
	3.0	1.191	3.220	3.116	102.20	
10.00	2.0	0.803	2.150	2.103	21.62	
	4.0	1.588	4.250	4.156	42.78	
	6.0	2.379	6.400	6.227	63.91	
	8.0	3.156	8.420	8.257	84.55	
	10.0	3.945	10.30	10.320	105.54	
30.00	10.0	3.945	10.08	10.320	33.94	
	15.0	5.924	16.00	15.485	50.70	
	20.0	7.898	21.20	20.647	67.45	
	25.0	9.863	26.30	25.780	84.04	
	30.0	11.835	31.70	30.910	100.60	

COMMENTS

CALIBRATIONS
for
SAMPLING SYSTEM

RUN NUMBER 000AL

FILE NAME GG00CA BY CARON ON DAY 342 OF YEAR 1983

WIND SPEED 304.80 CM/S AT 24.4 CM
 AIR TEMP. 20.5 C AT 24.4 CM
 SOURCE DESIGNATION 1
 SOURCE FLOW RATE (CCS) 68.0
 SOURCE GAS TEMPERATURE (C) 52.0
 TRACER TYPE CH4
 TRACER CONCENTRATION (PPM) 89700.00
 BACKGROUND CONCENTRATION (PPM) 8517.90

TUBE NO.	X (CM)	Y (CM)	Z (CM)	CONCENTRATIONS (PPM)	
1	0.00	0.00	0.00	452.1	8554.6
2	0.00	0.00	0.00	0.0	8517.9
3	0.00	0.00	0.00	0.0	8517.9
4	0.00	0.00	0.00	0.0	8517.9
5	0.00	0.00	0.00	40.4	8521.2
6	0.00	0.00	0.00	55.4	8522.4
7	0.00	0.00	0.00	0.0	8517.9
8	0.00	0.00	0.00	0.0	8517.9
9	0.00	0.00	0.00	0.0	8517.9
10	0.00	0.00	0.00	0.0	8517.9
11	0.00	0.00	0.00	45.6	8521.6
12	0.00	0.00	0.00	17.2	8519.3
13	0.00	0.00	0.00	0.0	8517.9
14	0.00	0.00	0.00	0.0	8517.9
15	0.00	0.00	0.00	0.0	8517.9
16	0.00	0.00	0.00	0.0	8517.9
17	0.00	0.00	0.00	0.0	8517.9
18	0.00	0.00	0.00	0.0	8517.9
19	0.00	0.00	0.00	0.0	8517.9
20	0.00	0.00	0.00	0.0	8517.9
21	0.00	0.00	0.00	0.0	8517.9
22	0.00	0.00	0.00	0.0	8517.9
23	0.00	0.00	0.00	0.0	8517.9
24	0.00	0.00	0.00	0.0	8517.9
25	0.00	0.00	0.00	0.0	8517.9
26	0.00	0.00	0.00	0.0	8517.9
27	0.00	0.00	0.00	0.0	8517.9
28	0.00	0.00	0.00	0.0	8517.9
29	0.00	0.00	0.00	0.0	8517.9
30	0.00	0.00	0.00	0.0	8517.9
31	0.00	0.00	0.00	0.0	8517.9
32	0.00	0.00	0.00	0.0	8517.9
33	0.00	0.00	0.00	0.0	8517.9
34	0.00	0.00	0.00	0.0	8517.9
35	0.00	0.00	0.00	0.0	8517.9
36	0.00	0.00	0.00	0.0	8517.9
37	0.00	0.00	0.00	0.0	8517.9
38	0.00	0.00	0.00	0.0	8517.9
39	0.00	0.00	0.00	0.0	8517.9
40	0.00	0.00	0.00	0.0	8517.9
41	0.00	0.00	0.00	0.0	8517.9
42	0.00	0.00	0.00	0.0	8517.9

RUN NUMBER 0 FILE NAME DHO BY MAXTON ON DAY 311 OF YEAR 1983
 WIND SPEED 10.00 CM/S AT 9.6 CM
 AIR TEMP. 21.0 C AT 15.5 CM
 SOURCE DESIGNATION 1
 SOURCE FLOW RATE (CCS) 2978.0
 SOURCE GAS TEMPERATURE (C) 52.0
 TRACER TYPE CH4
 TRACER CONCENTRATION (PPM) 9315.00
 BACKGROUND CONCENTRATION (PPM) 0.00

TUBE NO.	X (CM)	Y (CM)	Z (CM)	CONCENTRATIONS (PPM)
1	43.00	-7.60	0.00	8856.17
2	43.00	0.00	0.00	92552.49
3	43.00	0.00	10.00	92591.14
4	43.00	0.00	20.00	92555.55
5	43.00	7.60	0.00	92555.55
6	32.50	-55.60	1.10	92550.34
7	46.00	-55.60	1.10	92688.59
8	46.00	-47.00	1.10	92688.44
9	76.50	-10.60	3.50	92688.80
10	101.00	0.00	1.10	92550.66
11	64.90	0.00	0.00	92450.99
12	71.90	0.00	6.30	91997.77
13	85.50	0.00	11.30	92799.99
14	66.90	9.90	3.00	92326.76
15	128.00	66.00	0.00	92326.76
16	128.00	46.80	0.00	92619.94
17	128.00	31.00	0.00	92626.40
18	128.00	15.70	0.00	92552.22
19	128.00	0.00	0.00	91980.99
20	128.00	0.00	10.00	92420.11
21	128.00	0.00	20.00	92566.89
22	128.00	0.00	30.00	92188.95
23	128.00	0.00	40.00	92499.89
24	128.00	0.00	50.00	92341.19
25	128.00	0.00	60.00	92533.99
26	128.00	0.00	70.00	92155.56
27	128.00	0.00	80.00	92699.55
28	128.00	-15.70	0.00	92335.21
29	128.00	-31.00	0.00	92200.28
30	128.00	-46.80	0.00	92322.06
31	128.00	-66.00	0.00	92112.11
32	211.00	-15.70	0.00	92366.39
33	211.00	0.00	0.00	92622.68
34	211.00	15.70	0.00	92386.99
35	321.00	46.80	0.00	92686.55
36	321.00	22.90	0.00	92386.99
37	321.00	0.00	0.00	92370.03
38	321.00	0.00	15.00	91509.40
39	321.00	0.00	30.00	17107.89
40	321.00	0.00	45.00	92219.00
41	321.00	-22.90	0.00	92343.55
42	321.00	-46.80	0.00	91909.62

CALIBRATIONS
for
PRESSURE TRANSDUCERS

TECH: Cary CALIBRATION DATE: 1/24/83 DUE DATE: March 26/84ACCOUNT NUMBER: 2-75530 JOB NUMBER: 020-84-064 DEPT: CENAME: Strega PHONE: 352INST: Jeta T.D. Model #: 237 SERIAL #: 17920ZERO OFFSET AT START: +0.000 MIDPOINT: -0.001-0.001 END: -0.002

HONEYWELL SETTINGS: EXCITATION: _____ GAIN: _____

HONEYWELL OFFSETS: +1: _____ -1: _____

+2: _____ -2: _____

CAL FACTOR = _____

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM

FLUKE SETTINGS VDC - 100 RANGE

RANGE mm Hg	LOAD SETTINGS mm Hg @ 25°C		+DC V READINGS	-DC V READINGS
.030	.03	.0080	.014	-.016
.100	.06	.0161	.028	-.031
	.10	.0267	.0475	-.050
.300	.20	.0535	.0965	-.0995
1.000	.40	.1069	.195	-.197
	.60	.1604	.293	-.295
	.80	.2138	.389	-.392
	1.00	.2672	.487	-.490
3.000	1.50	.4008	.731	-.734
	2.00	.5344	.975	-.979
	3.00	.8017	1.4625	-1.467
10.000	4.00	1.0689	1.950	-1.956
	4.50 5.00	1.2025 1.3362	2.193	-2.199

R. CALIBRATION METROLOGY

SETRA/STATHAM DATA SHEETS

TECH: Cery CALIBRATION DATE: 9/27/83 DUE DATE: March 27/84
 ACCOUNT NUMBER: 2-95530 JOB NUMBER: 06-84-064 DEPT: C.E.
 NAME: Polage PHONE: 352
 INST: Setra TD Model #: 237 SERIAL #: 30075
 ZERO OFFSET AT START: +1.000 MIDPOINT: +1.000, -.000 END: -.002
 HONEYWELL SETTINGS: EXCITATION: _____ GAIN: _____
 HONEYWELL OFFSETS: +1: _____ -1: _____
 +2: _____ -2: _____
 CAL FACTOR = _____

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM

FLUKE SETTINGS VDC - 100 RANGE

RANGE min Hg	LOAD SETTINGS min Hg @ 25°C		+DC V READINGS	-DC V READINGS
.030	.03	.0080	.014	-.015
.100	.06	.0161	.029	-.031
	.10	.0267	.048	-.051
.300	.20	.0535	.098	-.101
1.000	.40	.1069	.198	-.201
	.60	.1604	.298	-.301
	.80	.2138	.398	-.401
	1.00	.2672	.498	-.501
3.000	1.50	.4008	.748	-.750
	2.00	.5344	.998	-1.000
	3.00	.8017	1.498	-1.499
10.000	4.00	1.0689	1.999	-1.999
	4.50 5.00	1.2025 1.3362	2.249	-2.248

C-27

FEC CALIBRATION METROLOGY

SETRA/STATHAM DATA SHEETS

TECH: Citty CALIBRATION DATE: 9/30/83 DUE DATE: March 30/84ACCOUNT NUMBER: 2-95530 JOB NUMBER: 226-84-04 DEPT: CFNAME: Delago PHONE: 352INST: Setra T.O. Model #: 237 SERIAL #: 30074ZERO OFFSET AT START: $\pm .000$ MIDPOINT: $+ .002, + .002$ END: $- .002$

HONEYWELL SETTINGS: EXCITATION: _____ GAIN: _____

HONEYWELL OFFSETS: +1: _____ -1: _____

+2: _____ -2: _____

CAL FACTOR = _____

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM

FLUKE SETTINGS VDC - 100 RANGE

RANGE mm Hg	LOAD SETTINGS mm Hg @ 25°C		+DC V READINGS	-DC V READINGS
.030	.03	.0080	.014	-.012
.100	.06	.0161	.028	-.026
	.10	.0267	.047	-.045
.300	.20	.0535	.094	-.092
1.000	.40	.1069	.188	-.187
	.60	.1654	.282	-.282
	.80	.2138	.376	-.376
	1.00	.2672	.470	-.470
3.000	1.50	.4008	.706	-.705
	2.00	.5344	.944	-.943
	3.00	.8017	1.415	-1.413
10.000	4.00	1.0689	1.890	-1.885
	4.50	1.2025	2.126	-2.123
	5.00	1.3362		

FRC CALIBRATION METROLOGY

SETRA/STATHAM DATA SHEETS

TECH: Cary CALIBRATION DATE: 9/27/83 DUE DATE: March 27/84
 ACCOUNT NUMBER: 2-93330 JOB NUMBER: 02684-064 DEPT: CE
 NAME: Boyle PHONE: 352
 INST: Setra 70 Model #: 232 SERIAL #: 30072
 ZERO OFFSET AT START: +0.000 MIDPOINT: +0.001, -0.000 END: -0.009
 HONEYWELL SETTINGS: EXCITATION: _____ GAIN: _____
 HONEYWELL OFFSETS: +1: _____ -1: _____
 +2: _____ -2: _____
 CAL FACTOR = _____

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM

FLUKE SETTINGS VDC - 100 RANGE

RANGE mm Hg	LOAD SETTINGS mm Hg @ 25°C		+DC V READINGS	-DC V READINGS
.030	.03	.0080	.014	-.014
.100	.06	.0161	.028	-.028
	.10	.0267	.046	-.047
.300	.20	.0535	.093	-.094
1.000	.40	.1069	.187	-.188
	.60	.1604	.282	-.283
	.80	.2138	.376	-.377
	1.00	.2672	.470	-.471
3.000	1.50	.4008	.706	-.707
	2.00	.5344	.944	-.944
	3.00	.8017	1.420	-1.417
10.000	4.00	1.0689	1.901	-1.889
	4.50	1.3035	2.142	-2.125
	5.00	1.3362		

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ERC CALIBRATION METROLOGY
SETRA/STATHAM DATA SHEETS

TECH: Cary CALIBRATION DATE: 2/16/83 DUE DATE: June 16/84
 ACCOUNT NUMBER: 2-95710 JOB NUMBER: 02684-105 DEPT: CE
 NAME: Max Poling PHONE: _____
 INST: Setra T.D. Model #: 237 SERIAL #: 17920
 ZERO OFFSET AT START: -0.000 MIDPOINT: -0.000, -0.000 END: -0.000
 HONEYWELL SETTINGS: EXCITATION: _____ GAIN: _____
 HONEYWELL OFFSETS: +1: _____ -1: _____
 +2: _____ -2: _____
 CAL FACTOR = _____

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM
FLUKE SETTINGS VDC - 100 RANGE

RANGE mm Hg	LOAD SETTINGS mm Hg @ 25°C		+DC V READINGS	-DC V READINGS
.030	.03	.0080	—	
.100	.06	.0161	.029	-.029
	.10	.0267	—	—
.300	.20	.0535	—	
1.000	.40	.1069	.194	-.195
	.60	.1604		
	.80	.2138		
	1.00	.2672	.489	-.489
3.000	1.50	.4008		
	2.00	.5344	.978	-.978
	3.00	.8017	1.466	-1.467
10.000	4.00	1.0689		
	4.50	1.2025		

C-30
FRC CALIBRATION METROLOGY
SETRA/STATHAM DATA SHEETS

TECH: Cassidy CALIBRATION DATE: 12/16/83 DUE DATE: June 16/84
 ACCOUNT NUMBER: 295710 JOB NUMBER: 29684-105 DEPT: CE
 NAME: Mr. C. Stange PHONE: _____
 INST: Sitra T.O. Model #: 237 SERIAL #: 30075
 ZERO OFFSET AT START: ±0.000 MIDPOINT: -0.001, -0.002 END: -0.003
 HONEYWELL SETTINGS: EXCITATION: _____ GAIN: _____
 HONEYWELL OFFSETS: +1: _____ -1: _____
 +2: _____ -2: _____
 CAL FACTOR = _____

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM
FLUKE SETTINGS VDC - 100 RANGE

RANGE mm Hg	LOAD SETTINGS mm Hg @ 25°C		+DC V READINGS	-DC V READINGS
.030	.03	.0080	—	—
.100	.06	.0161	.029	-.032
	.10	.0267	—	—
.300	.20	.0535	—	—
1.000	.40	.1069	.198	-.200
	.60	.1604	—	—
	.80	.2138	—	—
	1.00	.2672	.495	-.498
3.000	1.50	.4008	—	—
	2.00	.5344	.992	-.995
	3.00	.8017	1.490	-1.491
10.000	4.00	1.0689	—	—
	4.50 -5.00	1.0035 -1.3362	—	—

C-31
ERC CALIBRATION METROLOGY
SETRA/STATHAM DATA SHEETS

TECH: Cary CALIBRATION DATE: 12/16/83 DUE DATE: June 16/84
 ACCOUNT NUMBER: 2-9570 JOB NUMBER: 056-84-105 DEPT: CE
 NAME: Mr. Pelage PHONE: _____
 INST: Setra T.D. Model #: 237 SERIAL #: 30074
 ZERO OFFSET AT START: +0.000 MIDPOINT: +0.000, -0.000 END: -0.005
 HONEYWELL SETTINGS: EXCITATION: _____ GAIN: _____
 HONEYWELL OFFSETS: +1: _____ -1: _____
 +2: _____ -2: _____
 CAL FACTOR = _____

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM
FLUKE SETTINGS VDC - 100 RANGE

RANGE mm Hg	LOAD SETTINGS mm Hg @ 25°C		+DC V READINGS	-DC V READINGS
.030	.03	.0080	—	—
.100	.06	.0161	.027	-.028
	.10	.0267	—	—
.300	.20	.0535	—	—
1.000	.40	.1069	.185	-.187
	.60	.1604	—	—
	.80	.2138	—	—
	1.00	.2672	.468	-.470
3.000	1.50	.4008	—	—
	2.00	.5344	.935	-.938
	3.00	.8017	1.404	-1.405
10.000	4.00	1.0689	—	—
	4.50	1.2025	—	—

C-32

FRC CALIBRATION METROLOGY

SETRA/STATHAM DATA SHEETS

TECH: Cary CALIBRATION DATE: 12/16/83 DUE DATE: June 16/84ACCOUNT NUMBER: 12-95710 JOB NUMBER: CRG-84-105 DEPT: CENAME: Max E. G. G. PHONE: _____INST: Setra TD Model #: 237 SERIAL #: 30072ZERO OFFSET AT START: 0.000 MIDPOINT: 0.002, 0.002 END: -0.003

HONEYWELL SETTINGS: EXCITATION: _____ GAIN: _____

HONEYWELL OFFSETS: +1: _____ -1: _____

+2: _____ -2: _____

CAL FACTOR = _____

MICROMANOMETER SYSTEM/MICROTECTOR SYSTEM

FLUX SETTINGS VDC - 100 RANGE

RANGE mm Hg	LOAD SETTINGS mm Hg @ 25°C		+DC V READINGS	-DC V READINGS
.030	.03	.0080	—	—
.100	.06	.0161	.027	-.026
	.10	.0267	—	—
.300	.20	.0535	—	—
1.000	.40	.1069	.186	-.185
	.60	.1604	—	—
	.80	.2138	—	—
	1.00	.2672	.469	-.468
3.000	1.50	.4008	—	—
	2.00	.5344	.944	-.939
	3.00	.8017	1.425	-.1410
10.000	4.00	1.1689	—	—

CERTIFICATIONS

for

TRACER GASES

**SCIENTIFIC GAS PRODUCTS INC.**

2330 HAMILTON BLVD., SOUTH PLAINFIELD, NJ 07080

(201) 754-7700

3325 WESTSIDE DRIVE, PASADENA, TX 77504

(713) 947-2222

LAKESIDE OFFICE BLDG., NORTH AVE., WAKEFIELD, MA 01880

(617) 245-8707

500 WEAVER PARK RD., LONGMONT, CO 80501

(303) 442-4700

3395 DE LA CRUZ BLVD., SANTA CLARA, CA 95050

(408) 988-3600

GENERAL AIR SERVICE
ATTN: BILL
1105 ZUNI
DENVER, CO 80204

Date 10-11-83

Cust. P.O. 5007

Inv. No. 409049

Q.C. No.

<u>CYLINDER NO</u>	<u>COMPONENT</u>	<u>REQUESTED</u>	<u>ACTUAL</u>
1A-14085	METHANE	9%	8.97%
	CARBON DIOXIDE	12.75%	12.73%
	NITROGEN	BALANCE	BALANCE
1A-3345	ETHANE	200 PPM	201 PPM
	NITROGEN	BALANCE	BALANCE
1A5392	ETHANE	10%	10.0%
	CARBON DIOXIDE	4.5%	4.50%
	NITROGEN	BALANCE	BALANCE

All values reported in Mole percent unless otherwise noted.

Accuracy tolerance on all values greater than 100 ppm within $\pm 2\%$ unless otherwise stated.


RIC SCHMELTEKOPF

ANALYST

DON FRED

SUPERVISOR

**SCIENTIFIC GAS PRODUCTS INC.**

2330 HAMILTON BLVD., SOUTH PLAINFIELD, NJ 07080

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(408) 988-3600

GENERAL AIR SERVICE
1105 ZUNI
DENVER, CO 80204

Date 10-11-83

Cust. P.O. 5007

Inv. No. 409049

Q.C. No.

<u>CYLINDER NO</u>	<u>COMPONENT</u>	<u>REQUESTED</u>	<u>ACTUAL</u>
1A-5392	ETHANE	10%	10.0%
	CARBON DIOXIDE	4.5%	4.50%
	NITROGEN	BALANCE	BALANCE
1A-14085	METHANE	9%	8.97%
	CARBON DIOXIDE	12.75%	12.73%
	NITROGEN	BALANCE	BALANCE
1A-3345	ETHANE	200 PPM	201 PPM
	NITROGEN	BALANCE	BALANCE
1A-7637	METHANE	100 PPM	106 PPM
	NITROGEN	BALANCE	BALANCE
W-132286	METHANE	500 PPM	538 PPM
	ETHANE	500 PPM	550 PPM
	NITROGEN	BALANCE	BALANCE

All values reported in Mole percent unless otherwise noted.

Accuracy tolerance on all values greater than 100 ppm within $\pm 2\%$ unless otherwise stated.

RIC SCHMELTEKOPF

ANALYST

DON FRED

SUPERVISOR

C-36

DAILY RECORDS

Grand Gulf Project

2-95710

C-37

DATE 10/26/23

Time : By / Time : By / etc.

Supervisor

Item No.	Description				Supervisor
1	Temp. (°C)	20 1600: 2m	20 1725: 2m		ASH
2	Atm. Press. (in Hg)	25.093 0900: 2m	25.019 1320: 2m	24.919 1725: 2m	ASH
3	MKS baratron				
4	Pressure Transducers				
5	Hot Wire				
6	Flow Rate (enter source also) (ccs)				
7	Sampler (enter test also)				
8	G.C.				

- 1) M.K.S. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~ 30 runs
- 4) G.C. must be calibrate every 6 hours; ~~at~~ before & after run

Grand Gult. Project

0-8 0347

2-95710

C-38

DATE 10/21/83

Item No.	Description	Time : By /		Time : By / etc.		Supervisor
1	Temp. (°C)	19.5	19.7			JN
		0820: JCM	1032: JCM			
2	Atm. Press.	24.869	24.760	24.769		JN
	(in Hg)	0836: JCM	1515: JCM	1700: JCM		
3	MKS baratron					
4	Pressure Transducers					
5	Hot Wire					
6	Flow Rate (enter source also) (ccs)					
7	Sampler (enter test also)					
8	G.C.					

- 1) M.K.S. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours ; ~~at~~ before & after runs

* 1 is mercury & glass thermometer 9.5-10" high

Grand Gulf. Project

8-8 0397

2-95710

C-39

DATE 10/31/83

Item No.	Description	Time: By / Time: By / etc.			Supervisor
1	Temp. (°C)	19.8	20.2	20.8	JN
		0920: Jm	1330: Jm	1455: Jm	
2	Atm. Press.	24.858	24.799	24.800	JN
	(in Hg)	0920: Jm	1330: Jm	1530: Jm	
3	MKS baratron				
4	Pressure Transducers				
5	Hot Wire	Cal #6	#7		JN
		0950: Jm	1530: Jcm		
6	Flow Rate (enter source also) (ccs)				
7	Sampler (enter test also)				
8	G.C.				

Profiles MS2E, F, G, H, I taken between Cal #6 & Cal #7. Ck, 3'4" ahead of turntable's leading edge. 1/2" roughness. Jcm

- 1) MKS. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours; ~~at~~ before & after run

Grand Gulf. Project

8-8 0397
2-95710
C-40

DATE 11/1/83

		Time : By / Time : By / etc.		Supervisor
Item No.	Description			
1	Temp. (°C) 20.7 1415:2m			X 21
2	Atm. Press. 24.823 (in Hg) 1415:3m			8 21
3	MKS baratron			
4	Pressure Transducers			
5	Hot Wire			
6	Flow Rate (enter source also) (ccs)			
7	Sampler (enter test also)			
8	G.C.			

- 1) MKS. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours ; ~~at~~ before & after runs

Supervisor

- 1) M.K.S. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~ 30 runs
- 4) G.C. must be calibrate every 6 hours; ~~at~~ before & after runs

Grand Gulf Project

8-8 0397
2-9 5710

C-42

DATE _____

Time : By / Time : By / etc.

Supervisor

Item No.	Description	Supervisor
1	Temp. (°C)	60
2	Atm. Press. (in Hg)	29
3	MKS baratron	
4	Pressure Transducers	
5	Hot Wire	
6	Flow Rate (enter source ab) (ccs)	
7	Sampler (enter test also)	60
8	G.C.	

- 1) M.K.S. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~ 30 runs
- 4) G.C. must be calibrate every 6 hours; ~~at~~ before & after run.

Grand Gult. Project

0-8 0347
2-95710

DATE _____

C-43

Item No.	Description	Time : By / Time : By / etc.				Supervisor
1	Temp. (°C)	16.9				JN
2	Atm. Press. (in Hg)	1522:8m				JN
3	MKS baratron					
4	Pressure Transducers					
5	Hot Wire					
6	Flow Rate (enter source abv) (ccs)					
7	Sampler (enter test also)					
8	G.C.					

- 1) M.K.S. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours ; ~~at~~ before & after runs

Item No.	Description	Time : By /			Time : By / etc.			Supervisor
1	Temp. (°C)	15.1	17.0	17.7				JY
		1024 gm	1825 gm	2210 gm				
2	Atm. Press.	24.974	24.942	24.926				JY
	(in Hg)	1024 gm	1815 gm	2210 gm				
3	MKS baratron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (CCS)							
7	Sampler (enter test also)							
8	G.C.	#7	#8	#9				JY
		1013 gm	1845 gm	2148 gm				

- 1) M.K.S. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours ; ~~at~~ before & after runs

Item No.	Description	Time : By / Time : By / etc.				Supervisor
1	Temp. (°C) 19.2 1102:gm					AM
2	Atm. Press. 24.917 24800 (in Hg) 1100:gm 2351 gm					AM
3	MKS baratron					
4	Pressure Transducers					
5	Hot Wire					
6	Flow Rate (enter source also) (CCS)					
7	Sampler (enter test also)					
8	G.C. #10 0921:gm #11 1334:gm #12 17:00					AM

- 1) M.K.S. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours ; ~~at~~ before & after runs

Grand Gulf. Project

8-8 0397

2-95710

DATE _____

C-46

Time: By / Time: By / etc.

Supervisor

Item No.	Description	Time: By / Time: By / etc.				Supervisor
1	Temp. (°C)	21.5	22.7	24.1	25.2	AM
		0015:gm	1150:gm	1420:gm	2112:gm	
2	Atm. Press. (in Hg)	24.597	24.597			AM
		1140:gm				
3	MKS creaton					
4	Pressure Transducers					
5	Hot Wire					
6	Flow Rate (enter source ab) (ccs)					
7	Sampler (enter test ab)					
8	G.C.	#15	#16	#17		AM
		1209:gm	1420:gm	2112:gm		

- 1) M.K.S. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours ; ~~at~~ before & after runs

Item No.	Description	Time : By / Time : By / etc.						Supervisor
1	Temp. (°C)	24.0	26.3	26.8	27.0	27.1	24.2	AN
		1205: Jm	1426: Jm	1647: Jm	215: Jm	2305: Jm		
2	Atm. Press. (in Hg)	24.640	24.658	24.727				Jm
		1200: Jm	1613: Jm	2305: Jm				
3	MKS baratron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	# 18	# 19	Check				Jm
		1241: Jm	2009: Jm	0025 (11/13/83): Jm				

- 1) MKS must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours ; ~~at~~ before & after runs

Grand Gult. Project

8-8 0397
2-95710

DATE 11/13/85

C-48

Time: By / Time: By / etc.

Supervisor

Item No.	Description						Supervisor
1	Temp. (°C)	25.0 1200:gm	26.0 1517:gm	26.5 1630:gm	25.3 1906:gm	23.3 2025:gm	JN
2	Atm. Press. (in Hg)	24.545 1150:gm	24.517 1630:gm	24.524 2017:gm			JN
3	MKS baratron						
4	Pressure Transducers						
5	Hot Wire						
6	Flow Rate (enter source ab) (ccs)						
7	Sampler (enter test ab)						
8	G.C.	Check OK 0025:gm	Check OK 1902:gm	Check OK 2250:gm			JN

- 1) MKS. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~50 runs
- 4) G.C. must be calibrate every 6 hours; ~~at~~ before & after run.

Time: By / Time: By / etc.

Supervisor

Item No.	Description				
1	Temp. (°C)	23.0			JN
		1622: Jm			
2	Atm. Press.	24.719			JN
	(in Hg)	1618: Jm			
3	MKS				
	baratron				
4	Pressure Transducers				
5	Hot Wire				
6	Flow Rate (enter source abn) (CCS)				
7	Sampler (enter test abn)	tubing error found	tube no. actual 1 → 3 3 → 1 31 → 33 32 → 31 33 → 32	sample reported no. correction performed	JN
8	G.C.	Cal # 21 1446: Jm			

tube # 5 investigated

- 1) MKS. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours; ~~at~~ before & after runs

Item No.	Description	Time: By /		Time: By / etc.		Supervisor
1	Temp. (°C)	21.0	21.8			DR
		1125: gm	1350: gm			
2	Atm. Press. (in Hg)	24.963				
		1047: gm				
3	MKS vacatron					
4	Pressure Transducers					
5	Hot Wire					
6	Flow Rate (enter source also) (ccs)					
7	Sampler (enter test also)					
8	G.C.	# 22				
		1145: gm				

- 1) MKS. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours; ~~at~~ before & after runs

Grand Gult. Project

0-8 0397
2-95710

DATE 11/16/83

C-51

Time: By / Time: By / etc.

Supervisor

Item No.	Description					
1	Temp. (°C)	21.0	21.4	21.6	21.9	21.7
		1228:3m	1340:3m	1435:3m	1600:3m	2009:3m
2	Atm. Press.	24.750	24.518			
	(in Hg)	1105:3m	1515:3m			
3	MKS	Zero/c.s.				
	baratron	1130:3m				
4	Pressure Transducers					
5	Hot Wire					
6	Flow Rate (enter source ab.) (ccs)					
7	Sampler (enter test also)					
8	G.C.		Check OK			
			2005:3m			

- 1) MKS. must be calibrated once a week at ref. setting
- 2) Hot Wire must be calibrated before & after usage
- 3) Sampler must be tested between ~30 runs
- 4) G.C. must be calibrate every 6 hours; ~~at~~ before & after runs

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-52

DATE: 11/17/83

Item #	Description	TIME	BY	ITEM TIME	TIME BY	BY TIME		Supervisor
1	Temp. (°C)	21.1 21.3 22.1 23.0	1124 1218 1415 1835	JCM JCM JCM JCM				
2	Atm. Press. (in Hg)	24.566 24.505 24.488 24.487	1128 1413 1627 2034	JCM JCM JCM JCM	24.469	2240	JCM	
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C. Cal # 24 check OK Cal # 25	1211 1841 1852	JCM JCM JCM					

- 1) M.K.S must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage.
- 3) Sampler must be tested between N30 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs

DN:al 11/16/83

GRAND GULF Project #8-8 0397
 (Mississippi Power) #2-9 5710

C-53

DATE: 11 / 18 / 83

Item #	Description	TIME	BY	TIME	BY	TIME	BY	Supervisor
1	Temp. (°C) 23.1 23.1 23.1	0102 0300 1417	jcm jcm jcm					
2	Atm. Press. (in Hg) 24.459	1417	jcm					
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C. Cal #26 Cal #27	0056 1436 1814	jcm jcm jcm					

- 1) M.K.S must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage,
- 3) Sampler must be tested between N30 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs

DN:al 11/16/83

GRAND GULF Project #8-8 0397
 (Mississippi Power) #2-9 5710

C-54

DATE: 11/21/83

Item #	Description	TIME	BY	TIME	BY	TIME	BY	Supervisor
1	Temp. (°C) 21.5 22.1	1226 1419	JCM JCM					
2	Atm. Press. 24.432 (in Hg) 24.454	1232 1600	JCM JCM					
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also (ccs))							
7	Sampler (enter test also)							
8	G.C. #28 Check OK	1205 1800	JCM JCM					

- 1) M.K.S. must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage.
- 3) Sampler must be tested between N30 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs

DN:al 11/16/83

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-55

DATE: 11/22/83

Item #	Description	TIME	BY	TIME	BY	TIME	BY	Supervisor
1	Temp. (°C)	22.0 22.1 22.1 22.1	1116 1200 1350 1627	JCM JCM JCM JCM				
2	Atm. Press. (in Hg)	24.626 24.619	1100 1647	JCM JCM				
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	Cal#29	1146	JCM				

- 1) M.K.S must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage.
- 3) Sampler must be tested between N30 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs

DN:al 11/16/83

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-56

DATE: 11/23/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Supervi
1	Temp. (°C)	19.2 19.9 20.4	1131 1200 1357	JCM JCM JCM				
2	Atm. Press. (in Hg)	24.538 24.542	1128 1352	JCM JCM				
3	MKS Basotron							
4	Pressure Tranducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	Cal #30 Check OK	1157 1545	JCM JCM				

- 1) M.K.S must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage.
- 3) Sampler must be tested between 1130 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs

DN:al 11/16/83

GRAND GULF Project
(Mississippi Power)

#2-8 0397
#2-9 5710 C-57

DATE: 11/28/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Supervi
1	Temp. (°C)	19.7 21.0	1351 1625	gcm/mc gcm				
2	Atm. Press. (in Hg)	24.598 24.603	1353 1721	gmc gcm				
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	Cal #31 Check OK	1425 1753	gcm gmc				

- 1) M.K.S must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage.
- 3) Sampler must be tested between N30 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-58

DATE: 11/29/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Supervi
1	Temp.(°C)	20.0 20.9 21.0 20.5	0936 1300 1900 2130	JCM JCM M.C. M.C.				
2	Atm.Press. (in Hg)	24.66 24.78 24.80	0930 1900 2130	JCM M.C. M.C.				
3	MKS Basotron							
4	Pressure Tranducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	Cal #32 Cal #32 Cal Ch.	0954 1746 2150	JCM JCM M.C.				

1) M.K.S must be calibrated once a week at ref. setting.

2) Hot Wire must be calibrated before and after usage.

3) Sampler must be tested between N30 runs.

4) G.C. must be calibrated every 6 hours; before and after runs

DN:al 11/16/83

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-59

DATE: 11/30/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Supervi
1	Temp. (°C)	19.2 19.8 20.1	1000 1242 1348	JCM JCM JCM				
2	Atm. Press. (in Hg)	24.97 24.94 24.84	1010 1210 1630	JCM JCM JCM				
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also (ccs) -							
7	Sampler (enter test also)							
8	G.C.	Cal #34 Cal #35 Cal. Ca	1108 1745 2200	JCM JCM JCM				

1) M.K.S must be calibrated once a week at ref. setting.

2) Hot Wire must be calibrated before and after usage.

3) Sampler must be tested between N30 runs.

4) G.C. must be calibrated every 6 hours; before and after runs

DN:al 11/16/83

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-60

DATE: 12/1/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Supervi
1	Temp. (°C)	18.0 19.6 20.0 21.0	0948 1348 1700 1830	JCM JCM m.c. m.c.				
2	Atm. Press. (in. Hg)	24.66 24.62 24.63	0946 1600 1830	JCM m.c. m.c.				
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	30 35 Cal. Ch	1000 1000 2205	JCM JCM m.c.				

- 1) M.K.S must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage.
- 3) Sampler must be tested between N30 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-61

DATE: 12/3/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Supervi
1	Temp. (°C)	19.2 20.9 20.2 20.8	1234 1544 1937 2122	JCM JCM JCM JCM	20.8	2258	JCM	
2	Atm. Press. (in Hg)	24.541 24.444 24.34	1237 1932 2225	JCM JCM JCM				
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	12.54 1944	12.54 1944	JCM JCM				

- 1) M.K.S. must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage.
- 3) Sampler must be tested between N30 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-62

DATE: 12/4/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Supervi
1	Temp. (°C)	21.0	0006	JCM	21.5	2307	JCM	
		20.2	1647	JCM				
		21.3	2007	JCM				
		21.6	2117	JCM				
2	Atm. Press. (in Hg)	24.296	0127	JCM				
		24.425	1638	JCM				
		24.556	2005	JCM				
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	Check OK	0122	JCM				
		Check OK	1705	JCM				
		Check OK	2421	JCM				

1) M.K.S must be calibrated once a week at ref. setting.

2) Hot Wire must be calibrated before and after usage.

3) Sampler must be tested between N30 runs.

4) G.C. must be calibrated every 6 hours; before and after runs.

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-63

DATE: 12/5/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Supervi
1	Temp.(°C)	19.8 20.2 21.0	0830 1100 1311	m.c. m.c. m.c.				
2	Atm.Press. (in Hg)	24.78 24.77 24.76	0830 1311 1430	m.c. m.c. m.c.				
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	Cal #41 Cal #42 Cal Ca.	0845 1415 1700	m.c. m.c. m.c.				

1) M.K.S must be calibrated once a week at ref. setting.

2) Hot Wire must be calibrated before and after usage.

3) Sampler must be tested between N30 runs.

4) G.C. must be calibrated every 6 hours; before and after runs

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-64

DATE: 12/6/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Superv
1	Temp. (°C)	19.0 18.5 19.0 19.2	0815 0945 1145 1600	m.c. m.c. m.c. m.c.	20.0	1700	m.c.	
2	Atm. Press. (in Hg)	24.77 24.73 24.73	0815 1145 1635	m.c. m.c. m.c.				
3	MKS Basotron							
4	Pressure Transducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	Cal #43 Cal Ch. Cal Ch. Cal Ch.	0845 1145 1700 1915	m.c. m.c. m.c. m.c.				

- 1) M.K.S must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage.
- 3) Sampler must be tested between N30 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs

GRAND GULF Project
(Mississippi Power)

#8-8 0397
#2-9 5710

C-65

DATE: 12/7/83

Item #	Description	ITEM	TIME	BY	ITEM	TIME	BY	Supervi
1	Temp. (°C)	19.5	0830	gm.c.	20.5	1900	gm.c.	
		20.5	1000	gm.c.	20.5	2115	gm.c.	
		20.5	1300	gm.c.				
		20.6	1600	gm.c.				
2	Atm. Press. (in Hg)	24.77	0830	gm.c.				
		24.79	1300	gm.c.				
		24.79	1600	gm.c.				
		24.78	1900	gm.c.				
3	MKS Basotron							
4	Pressure Tranducers							
5	Hot Wire							
6	Flow Rate (enter source also) (ccs)							
7	Sampler (enter test also)							
8	G.C.	Cal #44	0945	gm.c.				
		Cal Ch	2115	gm.c.				

- 1) M.K.S must be calibrated once a week at ref. setting.
- 2) Hot Wire must be calibrated before and after usage.
- 3) Sampler must be tested between N30 runs.
- 4) G.C. must be calibrated every 6 hours; before and after runs.

DN:a1 11/16/83

APPENDIX D

FDDL COMPUTER PROGRAMS

FDDL
COMPUTER PROGRAMS
FOR
VELOCITY MEASUREMENTS

WRC00
APRFL

&WRC00 T=00004 IS ON CR00014 USING 00069 BLKS R=0588

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0001 FTN4,L
0002 PROGRAM WRC00(3,94),J.DURGIN - APRIL 1979
0003 C
0004 C PROGRAM TO TAKE DATA FROM ONE A/D CHANNEL, READ PRESSURES
0005 C (OR VELOCITIES) FROM USER, AND COMPUTE THE RESULTING HOT
0006 C WIRE CALIBRATION BY CURVE FITTING THE EQUATION
0007 C
0008 C  $E**2/(RH(RH-RC)) = A + B*U**C$ 
0009 C
0010 C PROGRAM USES LEAST SQUARES AND SECANT METHOD OF CURVE FITTING.
0011 C
0012 C COMMON /DFILE/ ICHAN,SRATE,STIME,RESH,RESC,ATEMP,
0013 C + APRESS,IUNITS,CI,IRATE,NSAM,NREC,STOT,IDUM(107)
0014 C COMMON /A2D/ IDCBC(144),NAMP(3),IIBF(5),IPAR(5),IBUF(128)
0015 C COMMON /PLOT/ N,E(40),U(40),ITIME(5),IYEAR
0016 C DIMENSION PR(40),ISIZE(2),UNITC(4),IBUFX(167)
0017 C EQUIVALENCE (IBUFX(1),N)
0018 C DATA UNITC /30.48,.3048,1.0,.6818/
0019 C
0020 C RETRIEVE LU# TO DETERMINE SCHEDULING TERMINAL
0021 C
0022 C CALL RMPAR(IPAR)
0023 C LU=IPAR(1)
0024 C IF (LU.LT.1) LU=1
0025 C CALL LIBER(LU)
0026 C LUC=KCVT(LU)
0027 C IF (LU.LT.10) LUC=LUC + 10000B
0028 C IF (LU.NE.1.AND.LU.NE.26) CALL NAMIT(LU,NAMP)
0029 C IIBF(3)=LUC
0030 C
0031 C GET INFORMATION FOR COMMON BLOCK DFILE OUT OF DISK
0032 C FILE FOR THIS LU. EDIT THE DATA SO IT IS CORRECT.
0033 C
0034 C CALL INIT(LU,LUC,UNITS)
0035 C
0036 C CREATE A FILE FOR DATA TAKING
0037 C THEN DO A CALL OPEN, SO THE FILE IS OPEN NON-EXCLUSIVELY
0038 C
0039 C ISIZE(1)=NREC
0040 C CALL PURGE(IDCBC,IERR,IIBF,IIBF(4),IIBF(5))
0041 C CALL CREAT(IDCBC,IERR,IIBF,ISIZE,1,IIBF(4),IIBF(5))
0042 C IF (IERR.LT.0) GO TO 180
0043 C CALL OPEN(IDCBC,IERR,IIBF,1,IIBF(4),IIBF(5))
0044 C IF (IERR.LT.0) GO TO 180
0045 C
0046 C INPUT THE HOT-WIRE DATA
0047 C
0048 C N=0
0049 C 100 CALL GETD(LU,E,PR,N)
0050 C
0051 C ALLOW USER TO EDIT DATA USING DELETES OR ADDS
0052 C
0053 C 105 CALL EDIT(LU,E,PR,N)
0054 C
0055 C ASK IF MORE DATA TAKING IS NEEDED.
0056 C
0057 C 110 WRITE(LU,115)
0058 C 115 FORMAT("NEED TO TAKE ANY MORE DATA ? -")
0059 C IF (NOYES(LU)) 120,110,100

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0060 C
0061 C CONVERT PRESSURES TO VELOCITYS
0062 C
0063 120 IF (IUNITS.GT.4) GO TO 130
0064 T1=1714.88*(1.8*ATEMP + 492.0)
0065 T2=APRESS*70.727/T1
0066 T3=SQRT(5.56899/T2)*UNITC(IUNITS)
0067 DO 125 I=1,N
0068 U(I)=T3*SQRT(PR(I))
0069 125 CONTINUE
0070 GO TO 140
0071 130 DO 135 I=1,N
0072 U(I)=PR(I)
0073 135 CONTINUE
0074 C
0075 C CALCULATE THE COEFFICIENTS OF CALIBRATION: A,B, AND C
0076 C
0077 140 IF (N.LE.3) GO TO 200
0078 CALL CRVFT(N,E,U,A,B,C,IERR)
0079 IF (IERR.LT.0) GO TO 190
0080 C
0081 C PRINT OUT RESULTS
0082 C
0083 WRITE(LU,145) UNITS,UNITS
0084 145 FORMAT(/,3X,"MEASURED",12X,"CALCULATED",/,3X,"VELOCITY",
0085 + " VOLTAGE VELOCITY %ERROR",/,5X,A4,17X,A4,/)
0086 DO 155 I=1,N
0087 E2R=E(I)*E(I)/(RESH*(RESH-RESC))
0088 T1=(E2R-A)/B
0089 CVEL=EXP(ALOG(T1)/C)
0090 PERR=100.0*(CVEL-U(I))/U(I)
0091 WRITE(LU,150) U(I),E(I),CVEL,PERR
0092 150 FORMAT(2F10.3,F11.3,F11.2)
0093 155 CONTINUE
0094 WRITE(LU,160) A,B,C
0095 160 FORMAT(/,"CALIBRATION IS: A =",F11.5,/,
0096 + " 20X,"B =",F11.5,/,20X,"C =",F10.4,/)
0097 C
0098 C ASK IF OK
0099 C
0100 165 WRITE(LU,170)
0101 170 FORMAT("ACCEPTABLE ? ")
0102 IF (NOYES(LU)) 105,165,175
0103 C
0104 C CLOSE THE DATA FILE AND STOP
0105 C
0106 175 CALL CLOSE(IDCIB)
0107 CALL PURGE(IDCIB,IERR,IIBF,IIBF(4),IIBF(5))
0108 IIBF(1)=2HIM
0109 ISIZE(1)=2
0110 CALL CREAT(IDCIB,IERR,IIBF,ISIZE,1,0,15)
0111 CALL CLOSE(IDCIB)
0112 CALL OPEN(IDCIB,IERR,IIBF,0,0,15)
0113 RH=RESH
0114 RC=RESC
0115 CALL EXEC(11,ITIME,IYEAR)
0116 CALL WRITF(IDCIB,IERR,IBUFX,167)
0117 CALL CLOSE(IDCIB)
0118 STOP 0000
0119 180 WRITE(LU,185) IERR
0120 185 FORMAT("FILE MANAGER ERROR",I4)

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0121

GO TO 210

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0122 190 WRITE(LU,195)
0123 195 FORMAT("AFTER 20 ITERATIONS SOLUTION DOES NOT CONVERGE !!!")
0124 GO TO 210
0125 200 WRITE(LU,205)
0126 205 FORMAT("MUST HAVE MORE THAN 3 VALUES TO GET CALIBRATION !")
0127 210 CALL CLOSE(IDCIB)
0128 CALL PURGE(IDCIB,IERR,IIBF,IIBF(4),IIBF(5))
0129 STOP 7777
0130 END
0131 BLOCK DATA
0132 COMMON /DFILE/ ICHAN,SRATE,STIME,RESH,RESC,ATEMP,
0133 + APRESS,IUNITS,CI,IRATE,NSAM,NREC,STOT,IDUM(107)
0134 COMMON /A2D/ IDCIB(144),NAMP(3),IIBF(5),IPAR(5),IBUF(128)
0135 COMMON /PLOT/ N,E(40),U(40),ITIME(5),IYEAR
0136 DATA NAMP /2HDA,2HTA,2H /
0137 DATA IIBF /2H$W,2HRC,2H00,0,15/
0138 DATA ICHAN,IUNITS /1,3/
0139 DATA SRATE,STIME,RESH,RESC /260.4,20.6,1.0,0.0/
0140 DATA ATEMP,APRESS,CI /22.0,24.5,6/
0141 DATA IRATE,NSAM,STOT,NREC /260,5376,5376,0,42/
0142 END
0143 SUBROUTINE INIT(LU,LUC,UNIT),J.D. 4-79
0144 DIMENSION IDCIB(144),IBUF(128),NAME(3),ISIZ(2),UNITS(5)
0145 COMMON /DFILE/ ICHAN,SRATE,STIME,RESH,RESC,ATEMP,
0146 + APRESS,IUNITS,CI,IRATE,NSAM,NREC,STOT,IDUM(107)
0147 EQUIVALENCE (IBUF(1),ICHAN)
0148 DATA NAME /2H$W,2HRC,2H00/
0149 DATA ISIZ /1,128/
0150 DATA UNITS /4HCM/S ,4HM/S ,4HFPS ,4HMPH ,4HOWN /
0151 C
0152 C GET THE CORRECT INPUT DATA FROM THE FILE THAT GOES WITH THIS LU
0153 C
0154 NAME(3)=LUC
0155 CALL OPEN(IDCIB,IERR,NAME,0,0,15)
0156 IF (IERR.EQ.-6) GO TO 235
0157 IF (IERR.LT.0) GO TO 225
0158 CALL READF(IDCIB,IERR,IBUF,128)
0159 IF (IERR.LT.0) GO TO 225
0160 C
0161 C ASK IF IT'S OK
0162 C
0163 100 WRITE(LU,105)
0164 105 FORMAT("SEE/CHANGE INPUT DATA ? -")
0165 IF (NOYES(LU)) 220,100,110
0166 110 WRITE(LU,115) RESH,RESC
0167 115 FORMAT(/,"1. HOT RESISTANCE, COLD RESISTANCE =",2F7.2,/)
0168 WRITE(LU,120) ATEMP,APRESS
0169 120 FORMAT("2. ATMOSPHERIC TEMP (DEG C), PRESSURE (IN.HG) =",
0170 + F5.1,F7.2,/)
0171 WRITE(LU,125) ICHAN,SRATE,STIME
0172 125 FORMAT("3. A/D CHANNEL, SAMPLE RATE, SAMPLE TIME =",I3,2F8.1,/)
0173 WRITE(LU,130) UNITS(IUNITS)
0174 130 FORMAT("4. UNITS OF VELOCITY DESIRED: ",A4,/)
0175 WRITE(LU,135) CI
0176 135 FORMAT("5. STARTING GUESS FOR EXPONENT C =",F8.4,/)
0177 IDISP=1
0178 C
0179 C ASK FOR CHANGES
0180 C
0181 140 WRITE(LU,145)
0182 145 FORMAT("CHANGE LINE ? -")

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0183      CALL KEYIN(ICHAR,LU)
0184      LINE=ICHAR/256 - 48
0185      IF (LINE.EQ.0.AND.IDISP.EQ.1) GO TO 220
0186      IF (LINE.LT.0) GO TO 140
0187      IF (LINE.GT.5) GO TO 140
0188      IF (LINE.NE.0) GO TO 160
0189      150 WRITE(LU,155)
0190      155 FORMAT("REVIEW ? _")
0191      IF (NOYES(LU)) 220,150,110
0192
0193  C MAKE APROPRIATE CHANGES
0194  C
0195      160 IDISP=0
0196      GO TO (165,175,185,195,210),LINE
0197      165 WRITE(LU,170)
0198      170 FORMAT("HOT RESISTANCE, COLD RESISTANCE (OR 1,0) ? _")
0199      READ(LU,*) RESH,RESC
0200      GO TO 140
0201      175 WRITE(LU,180)
0202      180 FORMAT("ATMOSPHERIC TEMPERATURE, AND PRESSURE (DEG F",
0203      + " OR C, AND IN.HG) ? ")
0204      READ(LU,*) ATEMP,APRESS
0205      IF (ATEMP.GT.40.0) ATEMP=(ATEMP-32.0)*(5.0/9.0)
0206      GO TO 140
0207      185 WRITE(LU,190)
0208      190 FORMAT("A/D CHANNEL, SAMPLE RATE (HZ), SAMPLE TIME (SEC) ? _")
0209      READ(LU,*) ICHAN,SRATE,STIME
0210      IF (ICHAN.LT.0.OR.ICHAN.GT.15) GO TO 185
0211      IRATE=SRATE
0212      SRATE=3125.0/FLOAT(3125/IRATE)
0213      STOT=SRATE*STIME
0214      STOT=AINT((STOT+127.0)/128.0)*128.0
0215      IF (STOT.GT.32767.0) GO TO 185
0216      STIME=STOT/SRATE
0217      NREC=IFIX(STOT/128.0)
0218      NSAM=NREC*128
0219      GO TO 140
0220      195 WRITE(LU,200)
0221      200 FORMAT("CM/S=1, M/S=2, FPS=3, MPH=4, OWN=5)",/,
0222      + "UNITS OF VELOCITY DESIRED (1,2,3,4 OR 5) ? _")
0223      READ(LU,*) IUNITS
0224      IF (IUNITS.LT.1.OR.IUNITS.GT.5) GO TO 195
0225      IF (IUNITS.NE.5) GO TO 140
0226      WRITE(LU,205)
0227      205 FORMAT("WHEN USING YOUR OWN UNITS, YOU MUST ENTER ACTUAL",
0228      + " VELOCITY",/,"WHEN ASKED FOR PRESSURE BY THIS PROGRAM.",
0229      + " NO CONVERSION",/,"WILL BE MADE !!!",/)
0230      GO TO 140
0231      210 WRITE(LU,215)
0232      215 FORMAT("INITIAL GUESS FOR EXPONENT C ? _")
0233      READ(LU,*) CI
0234      IF (CI.LE.0.0.OR.CI.GE.1.0) GO TO 210
0235      GO TO 140
0236
0237  C ALL CHANGES (IF ANY) COMPLETE, WRITE COMMON BLOCK BACK TO FILE
0238  C CLOSE FILE, AND RETURN TO MAIN PROGRAM.
0239  C
0240      220 CALL WRITE(IDCBI,ERR,IBUF,128,1)
0241      IF (IERR.LT.0) GO TO 225
0242      CALL CLOSE(IDCBI)
0243      UNIT=UNITS(IUNITS)

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0244      RETURN
0245      225 WRITE(LU,230) IERR
0246      230 FORMAT("FILE MANAGER ERROR",I4)
0247      CALL CLOSE(IDC8)
0248      STOP 7777
0249      235 CALL CREAT(IDC8,IERR,NAME,ISIZ,1,0,15)
0250      IF (IERR.LT.0) GO TO 225
0251      GO TO 110
0252      240 END
0253      FUNCTION NOYES(LU)
0254      C
0255      C FUNCTION NOYES RETURNS A +1 IF IANS IS YES
0256      C                               -1 IF IANS IS NO
0257      C                               0 IF IANS IS NEITHER
0258      C
0259      CALL KEYIN(IANS,LU)
0260      IF (IANS.EQ.1HY) GO TO 100
0261      IF (IANS.EQ.1HW) GO TO 105
0262      NOYES=0
0263      RETURN
0264      100 NOYES=+1
0265      RETURN
0266      105 NOYES=-1
0267      RETURN
0268      END
0269      SUBROUTINE GETD(LU,E,PR,N)
0270      C
0271      C INPUTS THE VOLTAGE VALUES BY TAKING DATA FROM THE A/D
0272      C USER MAY KEEP PREVIOUS SAMPLE ONLY IF DESIRED.
0273      C
0274      C   DIMENSION E(40),PR(40),NP(40)
0275      C
0276      C N IS THE NUMBER OF VALUES SO FAR.
0277      C
0278      C   IF (N.LT.1) GO TO 105
0279      C   DO 100 I=1,N
0280      C   NP(I)=1
0281      C 100 CONTINUE
0282      C
0283      C INTRODUCE USER TO THIS SECTION OF PROGRAM
0284      C
0285      105 WRITE(LU,110)
0286      110 FORMAT(/,"ENTER PRESSURE IN MMHG (NEG. TO STOP)",//,
0287      + "WHEN ASKED: (R,S, OR D)",//,
0288      + 4X,"R = DELETE ANY PREVIOUS VOLTAGES FOR THIS PRESSURE",//,
0289      + 8X,"AND REPLACE WITH THE LATEST VOLTAGE",//,
0290      + 4X,"S = SAVE THE CURRENT VOLTAGE FOR THIS PRESSURE, AND",//,
0291      + 8X,"AVERAGE IT WITH PREVIOUS VOLTAGES",//,
0292      + 4X,"D = DON'T SAVE THIS VOLTAGE.",//)
0293      C
0294      C BEGIN BY ASKING FOR PRESSURE
0295      C
0296      115 WRITE(LU,120)
0297      120 FORMAT(5X,"PRESSURE ? _")
0298      READ(LU,*) P
0299      IF (P.LT.0.0) GO TO 160
0300      C
0301      C IF PRESSURE IS NOT NEGATIVE, GO AHEAD AND TAKE DATA FROM THE A/D.
0302      C
0303      CALL SAMPL(LU,VOLTG)
0304      C
0305      C PRINT OUT THE RESULTS, AND ASK WHAT TO DO WITH THEM
0306      C (R=REPLACE, S=SAVE, D=DON'T SAVE)

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0307 C
0308 WRITE(LU,125) P,VOLTG
0309 125 FORMAT(F7.3,F8.3,5X,"(R,S, OR D) ? _")
0310 130 CALL R1IN(ICAR,LU)
0311 IF (ICAR.EQ.60) GO TO 115
0312 IF (ICAR.EQ.82) GO TO 140
0313 IF (ICAR.EQ.83) GO TO 140
0314 C
0315 C UNRECOGNIZED ANSWER
0316 C
0317 WRITE(LU,135)
0318 135 FORMAT(" WHAT ? _")
0319 GO TO 130
0320 C
0321 C ANSWER IS REPLACE, OR SAVE. IN EITHER CASE MUST SEARCH LIST
0322 C TO SEE IF THAT PRESSURE IS ALREADY IN LIST.
0323 C
0324 140 IF (N.LT.1) GO TO 155
0325 DO 145 I=1,N
0326 IF (PR(I).EQ.P) GO TO 150
0327 145 CONTINUE
0328 C
0329 C PRESSURE NOT FOUND IN LIST.
0330 C GO TO SECTION THAT PUTS A NEW PRESSURE AND VOLTAGE INTO LIST
0331 C
0332 GO TO 155
0333 150 IF (ICAR.EQ.82) NP(I)=0
0334 C
0335 C IF COMMAND WAS SAVE, MUST AVERAGE IT IN WITH THE OTHER VOLTAGES
0336 C NP(I) IS THE NUMBER OF VOLTAGES ALREADY AVERAGED INTO E(I).
0337 C
0338 E(I)=(E(I)*FLOAT(NP(I)) + VOLTG)/FLOAT(NP(I)+1)
0339 NP(I)=NP(I)+1
0340 GO TO 115
0341 C
0342 C ADD A NEW ENTRY TO LIST
0343 C
0344 155 IF (N.EQ.40) GO TO 165
0345 N=N + 1
0346 PR(N)=P
0347 E(N)=VOLTG
0348 NP(N)=1
0349 GO TO 115
0350 160 RETURN
0351 165 WRITE(LU,170)
0352 170 FORMAT("MAXIMUM NUMBER OF DATA POINTS IS 40, NO MORE",/,
0353 + "CAN BE ADDED!",/)
0354 GO TO 115
0355 175 END
0356 SUBROUTINE EDIT(LU,E,PR,N)
0357 C
0358 C SUBROUTINE TO ALLOW EDITING OF DATA BEFORE ACTUAL CURVE FITTING
0359 C TAKES PLACE.
0360 C
0361 DIMENSION E(40),PR(40)
0362 C
0363 C FIRST SORT THE LIST INTO INCREASING PRESSURES
0364 C THIS STEP IS NOT ABSOLUTELY NECESSARY, BUT ITS NICE!
0365 C
0366 100 CALL SORT(E,PR,N)

```



```

0367 C
0368 C PRINT OUT THE LIST OF PRESSURES AND VOLTAGES
0369 C
0370 105 WRITE(LU,110)
0371 110 FORMAT(/," LINE PRESS. VOLTS",/)
0372 IF (N.LT.1) GO TO 125
0373 DO 120 I=1,N
0374 WRITE(LU,115) I,PR(I),E(I)
0375 115 FORMAT(I3," ",F9.4,F9.3)
0376 120 CONTINUE
0377 C
0378 C ASK WHAT KIND OF EDIT TO DO
0379 C
0380 125 WRITE(LU,130)
0381 130 FORMAT(/,"ADD, DELETE, OR NEITHER (A,D, OR N) ? _")
0382 CALL KEYIN(ICHAR,LU)
0383 IF (ICHAR.EQ.1HN) GO TO 180
0384 IF (ICHAR.EQ.1HD) GO TO 150
0385 IF (ICHAR.NE.1HA) GO TO 125
0386 C
0387 C COMMAND IS TO ADD POINTS TO LIST.
0388 C PROGRAM KEEPS ASKING FOR NEW POINTS UNTIL USER
0389 C TYPES A NEGATIVE PRESSURE
0390 C
0391 135 WRITE(LU,140)
0392 140 FORMAT("ENTER PRESSURE, VOLTAGE (NEG. TO STOP)")
0393 145 READ(LU,*) P,V
0394 IF (P.LT.0.0) GO TO 160
0395 IF (N.EQ.40) GO TO 185
0396 N=N+1
0397 PR(N)=P
0398 E(N)=V
0399 GO TO 145
0400 C
0401 C COMMAND IS TO DELETE POINTS FROM LIST.
0402 C PROGRAM KEEPS ASKING FOR LINE NUMBERS (CORRESPONDING TO
0403 C SUBSCRIPTS) UNTIL A NEGATIVE LINE NUMBER IS ENTERED.
0404 C
0405 150 WRITE(LU,155)
0406 155 FORMAT("TYPE LINE NUMBER TO DELETE: (NEG. TO STOP)")
0407 160 WRITE(LU,165)
0408 165 FORMAT("LINE ? _")
0409 READ(LU,*) LINE
0410 IF (LINE.LT.0) GO TO 170
0411 IF (LINE.LT.1.OR.LINE.GT.N) GO TO 160
0412 PR(LINE)=-1.0
0413 GO TO 160
0414 C
0415 C WITH ALL DELETES FINISHED, MUST PACK LIST DOWN, AND COUNT
0416 C VALID ENTRIES.
0417 C
0418 170 K=0
0419 DO 175 I=1,N
0420 IF (PR(I).LT.0.0) GO TO 175
0421 K=K+1
0422 IF (I.EQ.K) GO TO 175
0423 PR(K)=PR(I)
0424 E(K)=E(I)
0425 175 CONTINUE
0426 N=K
0427 GO TO 105

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0428      187 RETURN
0429      185 WRITE(LU,190)
0430      190 FORMAT("MAXIMUM NUMBER OF DATA POINTS IS 40, NO MORE",/,
0431      + "CAN BE ADDED!",/)
0432      GO TO 145
0433      195 END
0434      SUBROUTINE SORT(E,PR,N)
0435  C
0436  C SUBROUTINE TO DO A QUICK-AND-DIRTY SORT OF THE ENTRIES
0437  C ACCORDING TO INCREASING PRESSURE.
0438  C
0439      DIMENSION E(40),PR(40)
0440      IF (N.LT.2) GO TO 105
0441      NM1=N-1
0442      DO 100 J=1,NM1
0443      K=J+1
0444      DO 100 I=K,N
0445      IF (PR(J).LE.PR(I)) GO TO 100
0446      T=PR(J)
0447      PR(J)=PR(I)
0448      PR(I)=T
0449      T=E(J)
0450      E(J)=E(I)
0451      E(I)=T
0452      100 CONTINUE
0453      105 RETURN
0454      END
0455      SUBROUTINE SAMPL(LU,VOLTG)
0456  C
0457  C TAKES DATA FROM THE A/D FOR ONE SAMPLE
0458  C
0459      COMMON /DFILE/ ICHAN,SRATE,STIME,RESH,RESC,ATEMP,
0460      + APRESS,IUNITS,CI,IRATE,NSAM,NREC,STOT,IDUM(107)
0461      COMMON /A20/ IDC8(144),NAMP(3),IIBF(5),IPAR(5),IBUF(128)
0462      DOUBLE PRECISION SUM
0463  C
0464  C SCHEDULE THE DATA TAKING PROGRAM
0465  C
0466      100 CALL EXEC(23,NAMP,ICHAN,ICHAN,IRATE,NSAM,0,IIBF,5)
0467      CALL RMPAR(IPAR)
0468      IF (IPAR(1).LT.0) GO TO 120
0469  C
0470  C PROCESS DATA
0471  C
0472      CALL RWNDF(IDC8,IERR)
0473      IF (IERR.LT.0) GO TO 110
0474      SUM=0.000
0475      DO 105 I=1,NREC
0476      CALL READF(IDC8,IERR,IBUF,128)
0477      IF (IERR.LT.0) GO TO 110
0478      DO 105 J=1,128
0479      E=FLOAT(IBUF(J))/3275.2
0480      SUM=SUM+DBLE(E)
0481      105 CONTINUE
0482  C
0483  C COMPUTE MEAN VOLTAGE
0484  C
0485      VOLTG=SHGL(SUM/DBLE(STOT))
0486      RETURN
0487  C
0488  C ERROR PROCESSING *****

```

0489 C

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0490      110 WRITE(LU,115) IERR
0491      115 FORMAT("FMGR ERROR",I4," WHILE ACCESSING RAW DATA FILE.")
0492      GO TO 130
0493      120 WRITE(LU,125) IPAR(1),IPAR(2)
0494      125 FORMAT("PRGRM DATA ERROR",I4," POSSIBLY FMGR ERROR",I4)
0495      130 WRITE(LU,135)
0496      135 FORMAT("    CALWR : CALWR/ABORTED")
0497      CALL CLOSE(IDC8)
0498      CALL PURGE(IDC8,IERR,IIBF,IIBF(4),IIBF(5))
0499      STOP 7777
0500      END
0501      SUBROUTINE CRYFT(N,E,PR,A,B,C,IERR)
0502  C
0503  C SUBROUTINE TO USE LEAST SQUARES/SECANT METHOD TO DO CURVE FITTING
0504  C
0505      COMMON /DFILE/ ICHAN,SRATE,STIME,RESH,RESC,ATEMP,
0506      +    APRESS,IUNITS,CI,IRATE,NSAM,NREC,STOT,IDUM(107)
0507      DIMENSION E(40),PR(40),E2R(40)
0508      DOUBLE PRECISION DA,DB,ZERO,FN,X,Y,SX,SY
0509      DOUBLE PRECISION SX2,SKY,SXLX,SLOG,SXLXY,SX2LX,DSUM
0510      DATA ZERO,EPS,P05 /0.000,0.0002,0.05/
0511  C
0512  C CHECK FOR ENOUGH POINTS
0513  C
0514      IF (N.GT.3) GO TO 100
0515      IERR=-1
0516      RETURN
0517      100 FN=DBLE(FLOAT(N))
0518      DELT=P05
0519      C=CI
0520  C
0521  C CONVERT THE VOLTAGES TO E2R. DIVIDE BY RH(RH-RC) ETC.
0522  C
0523      DO 105 I=1,N
0524      E2R(I)=E(I)*E(I)/(RESH*(RESH-RESC))
0525      105 CONTINUE
0526  C
0527  C BEGIN ITERATION TO FIND CONVERGENCE
0528  C
0529      DO 120 I=1,20
0530      SX= ZERO
0531      SY= ZERO
0532      SX2= ZERO
0533      SKY= ZERO
0534      SXLX= ZERO
0535      SX2LX= ZERO
0536      SXLXY= ZERO
0537  C
0538  C COMPUTE SUMS FOR LEAST SQUARES FIT
0539  C
0540      DO 110 J=1,N
0541      X=DBLE(PR(J)**C)
0542      Y=DBLE(E2R(J))
0543      SX=SX + X
0544      SY=SY + Y
0545      SX2=SX2 + X*X
0546      SKY=SKY + X*Y
0547      SLOG=X*SLOG(DBLE(PR(J)))
0548      SXLX=SXLX + SLOG
0549      SX2LX=SX2LX + X*SLOG

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0550      SXLXY=SXLXY + Y*SLOG
0551      110 CONTINUE
0552      C
0553      C FIND A AND B FOR ASSUMED VALUE OF C
0554      C
0555      DB=(FN*SXY - SX*SY)/(FN*SX2 - SX*SX)
0556      DA=(SY - DB*SX)/FN
0557      C
0558      C COMPUTE THE CHANGE IN C BY THE SECANT METHOD
0559      C
0560      DSUM=SXLXY - DA*SXLX - DB*SX2LX
0561      SSUM=SNGL(DSUM)
0562      IF (I.EQ.1) GO TO 115
0563      DELT=-SSUM*DELT/(SSUM-DSUM)
0564      PDLT=ABS(DELT)
0565      C
0566      C CHECK FOR CONVERGENCE
0567      C
0568      IF (PDLT.LT.EPS) GO TO 125
0569      IF (PDLT.GT.P05) DELT=P05*DELT/PDLT
0570      C
0571      C SAVE SSUM, COMPUTE NEW ESTIMATE FOR C
0572      C
0573      115 OSUM=SSUM
0574      C=C+DELT
0575      120 CONTINUE
0576      C
0577      C NO CONVERGENCE
0578      C
0579      IERR=-1
0580      RETURN
0581      C
0582      C CONVERGENCE, RETURN A,B, AND C
0583      C
0584      125 A=SNGL(DA)
0585      B=SNGL(DB)
0586      RETURN
0587      END
0588      $

```

&APRFL T=00004 IS ON CR00014 USING 00084 BLKS R=0653

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0001  FTM4,L
0002      BLOCK DATA
0003      COMMON /PR1/ ICHAN,IRATE,NSAM,IPOT,IDIR,IONOFF,IPROJ,ICR,
0004      1 A,B,C,HRES,VPI,VTOL,HIGHT(36),VPSU,VPSD,OFFSET,IUNITH,
0005      2 IUNITY(2),DELAYT,IDUMMY(25)
0006      COMMON /PR2/ IDCBI(144),IIBF(5),NAMD(3),NAME1(3),NREC,TOT
0007      COMMON /PR3/ CRES,PVOLTG
0008      COMMON /PR4/ IDCBI(144),LU,NM3
0009      COMMON /PR5/ HEIGHT,UNEAN,URMS,XTRA1,XTRA2
0010      COMMON /PR6/ IEUC(128),IPAR(5)
0011      COMMON /PR7/ INEG,IPOS
0012      DATA INEG,IPOS /2H0,2H0/
0013      DATA NAMD /2HDA,2HTA,2H /
0014      DATA NAME1 /2HAP,2H#,2H /
0015      END
0016      PROGRAM APRFL(3,90),JOHN DURGIN
0017      COMMON /PR4/ IDCBI(144),LU,NM3
0018      DIMENSION NAME(3)
0019      DATA NAME /2HAP,2H#,2H /
0020      CALL RMPAR(IDCBI)
0021      LU=IDCB(1)
0022      IF (LU.LT.1) LU=1
0023      CALL LIBER(LU)
0024      CALL EXEC(8,NAME,LU)
0025      END
0026      SUBROUTINE ERR(LOC,IERR,ISUB)
0027      COMMON /PR1/ ICHAN,IRATE,NSAM,IPOT,IDIR,IONOFF,IPROJ,ICR,
0028      1 A,B,C,HRES,VPI,VTOL,HIGHT(36),VPSU,VPSD,OFFSET,IUNITH,
0029      2 IUNITY(2),DELAYT,IDUMMY(25)
0030      COMMON /PR2/ IDCBI(144),IIBF(5),NAMD(3),NAME1(3),NREC,TOT
0031      COMMON /PR4/ IDCBI(144),LU,NM3
0032      C
0033      C CLOSE THE SCRATCH FILE, AND THE DATA FILE.
0034      C PURGE THE DATA FILE USING THE TRUNCATE PARAMETER WHEN CALLING
0035      C CLOSE. THE SCRATCH FILE MUST BE CLOSED USING A CALL PURGE,
0036      C SINCE IT IS NOT OPEN TO THIS PROGRAM EXCLUSIVELY.
0037      C
0038      CALL CLOSE(IDCBI)
0039      CALL PURGE(IDCBI,IERR,NAME1,0,15)
0040      CALL CLOSE(IDCBI,IERR,3)
0041      K=ISUB
0042      GO TO (100,200,300,400,500,600,700),K
0043      100 WRITE(LU,105) IERR,LOC
0044      105 FORMAT("ERROR IN SEGMENT APRF1.")
0045      GO TO 900
0046      200 WRITE(LU,205)
0047      205 FORMAT("ERROR IN SUBROUTINE TRVRS.")
0048      GO TO 900
0049      300 WRITE(LU,305)
0050      305 FORMAT("ERROR IN SUBROUTINE SAMPL.")
0051      GO TO 900
0052      400 WRITE(LU,405)
0053      405 FORMAT("ERROR IN SEGMENT APRF2.")
0054      GO TO 900
0055      500 WRITE(LU,505)
0056      505 FORMAT("ERROR IN SUBROUTINE POT.")
0057      GO TO 900
0058      600 WRITE(LU,605) LOC
0059      605 FORMAT("ERROR #",I2," IN SUBROUTINE TRAVE.")

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0060      GO TO 999
0061 700    WRITE(LU,705)
0062 705    FORMAT("HOT WIRE NEEDS RE-CALIBRATION ... ERROR DETECTED",/,
0063        1 "IN FUNCTION KNGLW.")
0064      GO TO 999
0065 900    WRITE(LU,905) IERR,LOC
0066 905    FORMAT("FILE MANAGER ERROR",I4," AT LOCATION",I3)
0067 999    STOP 7777
0068      END
0069      PROGRAM APRF1(5),SATELLITE OF APRFL
0070      COMMON /PR1/ ICHAN,IRATE,NSAM,IPOT,IDIR,IONOFF,IPOJ,ICR,
0071        1 A,B,C,HRES,VPI,VTOL,HIGHT(36),VPSU,VPSD,OFFSET,IUNITH,
0072        2 IUNITV(2),DELAYT,IDUMMY(25)
0073      COMMON /PR4/ IDCBC(144),LU,NM3
0074      COMMON /PR7/ INEG,IPDS
0075  C
0076  C      IT IS THE JOB OF PROGRAM INPUT TO INITIALIZE ALL THE CONSTANTS
0077  C      IN COMMON BLOCK PR1.
0078  C
0079      DIMENSION NAMS(3),NAME(3),ISIZE(2),IBUF(128)
0080      EQUIVALENCE (IBUF(1),ICHAN)
0081      DATA NAME,ISEC /2HPR,2HFL,2H ,0/
0082      DATA NAMS /2HAP,2HRF,2H2 /
0083      DATA ISIZE,ITYPE,IOPTN /1,0,1,0/
0084      IDISP=0
0085  C
0086  C      NM3 CONTAINS THE LU NUMBER CODED IN ASCII.
0087  C
0088      NM3=KCVT(LU)
0089      IF (LU.LT.10) NM3=NM3+10000B
0090      NAME(3)=NM3
0091  C
0092  C      TRY TO CREATE THE INPUT FILE.
0093  C
0094      CALL CREAT(IDCBC,IERR,NAME,ISIZE,ITYPE,0,15)
0095      IF (IERR.EQ.-2) GO TO 100
0096  C **** ERROR #1
0097      IF (IERR.LT.0) CALL ERR(1,IERR,1)
0098  C
0099  C      INPUT FILE CREATED, PRINT MESSAGE.
0100  C
0101      WRITE(LU,805)
0102 805    FORMAT("INPUT FILE IS BEING CREATED.",/,"ALL VALUES ARE",
0103        1 " INITIALIZED TO ZERO.")
0104      GO TO 125
0105  C
0106  C      INPUT FILE ALREADY CREATED, OPEN IT.
0107  C
0108      CALL OPEN(IDCBC,IERR,NAME,IOPTN,0,15)
0109  C **** ERROR #2
0110      IF (IERR.LT.0) CALL ERR(2,IERR,1)
0111  C
0112  C      READ IT IN.
0113  C
0114      CALL READF(IDCBC,IERR,IBUF,128)
0115  C **** ERROR #3
0116      IF (IERR.LT.0) CALL ERR(3,IERR,1)
0117      WRITE(LU,812)
0118      812    FORMAT("DO YOU WISH TO SEE/CHANGE CONSTANTS ? _")
0119      READ(LU,815) IANS
0120      815    FORMAT(A2)

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0121  C
0122  C  IF THE USER DOESN'T WANT TO SEE IT, ASSSSUME HE DOESN'T

0123  C  WANT TO CHANGE IT. !!!
0124  C
0125      IF (IANS.EQ.INEG) GO TO 300
0126      IF (IANS.NE.IPOS) GO TO 110
0127  C
0128  C  THE USER WANTS TO SEE THE INPUT FILE
0129  C
0130 125  WRITE(LU,821) ICHAN,IRATE,NSAM
0131 821  FORMAT(" 1.  A/D CHANNEL, SAMPLE RATE, NUMBER SAMPLES=",3I6,/)
0132  WRITE(LU,822) IPOT,IDIR,IONOFF
0133 822  FORMAT(" 2.  POTENTIOMETER A/D CHANNEL, DIRECTION",
0134      1 " CHANNEL, ON/OFF CHANNEL=",/,5X,3I6,/)
0135  WRITE(LU,823) IPROJ,ICR
0136 823  FORMAT(" 3.  PROJECT #, DATA CARTRIDGE =",2I6,/)
0137  WRITE(LU,824) A,B,C,HRES
0138 824  FORMAT(" 4.  HOT WIRE CALIBRATION DATA: A,B,C,HOT.RES.=",
0139      1 /,5X,2F15.8,F7.4,F6.2,/)
0140  WRITE(LU,825) VPI,VTOL
0141 825  FORMAT(" 5.  TRAVERSE CAL. VOLTS/UNIT HEIGHT, ",
0142      1 "TOLERANCE (VOLTS) =",2F8.4,/)
0143  WRITE(LU,826) (HIGHT(I),I=1,36)
0144 826  FORMAT(" 6.  STOPPING HEIGHTS=",/,6(6F7.2,/)
0145  WRITE(LU,827) VPSU,VPSD,DELAYT
0146 827  FORMAT(" 7.  VOLTS/SEC UP, VOLTS/SEC DOWN, DELAY TIME=",
0147      1 3F8.4,/)
0148  WRITE(LU,828) IUNITH,IUNITV
0149 828  FORMAT(" 8.  UNITS OF HEIGHT = ",A2,/,5X,"UNITS OF VELO",
0150      1 "CITY = ",2A2,/)
0151  C
0152  C  ASK IF CHANGES TO BE MADE
0153  C
0154      IDISP=1
0155 150  WRITE(LU,830)
0156 830  FORMAT("WHICH LINE TO CHANGE (OR 0) ? _")
0157      READ(LU,*) IGRP
0158      IF (IDISP.EQ.1.AND.IGRP.EQ.0) GO TO 300
0159      IF (IGRP.EQ.0) GO TO 110
0160      IF (IGRP.GT.8) GO TO 150
0161      IDISP=0
0162  C
0163  C  THE USER WANTS TO CHANGE IT.
0164  C
0165      GO TO (201,202,203,204,205,206,207,208),IGRP
0166 201  WRITE(LU,841)
0167 841  FORMAT("ENTER ICHAN,IRATE,NSAM : _")
0168      READ(LU,*) ICHAN,IRATE,NSAM
0169      NSAM=((NSAM+127)/128) * 128
0170      GO TO 150
0171 202  WRITE(LU,842)
0172 842  FORMAT("ENTER POT.CH,DIP.CH,ON/OFF.CH : _")
0173      READ(LU,*) IPOT,IDIR,IONOFF
0174      GO TO 150
0175 203  WRITE(LU,843)
0176 843  FORMAT("ENTER PROJ.#,DATA CR : _")
0177      READ(LU,*) IPROJ,ICR
0178      GO TO 150
0179 204  WRITE(LU,844)
0180 844  FORMAT("ENTER H-WIRE DATA A,B,C,HOT RES. (OR 1 0) !")
0181      READ(LU,*) A,B,C,HRES
0182      GO TO 150

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0183 205 WRITE(LU,845)
0184 845 FORMAT("ENTER TRAVERSE CAL. (VOLTS/UNIT HEIGHT), TOLERANCE (VOLT",
0185 1 "S) :")
0186 READ(LU,*) VPI,VTOL
0187 GO TO 150
0188 206 WRITE(LU,846)
0189 846 FORMAT("ENTER HEIGHTS; 6 ROWS OF 6 HEIGHTS/ROW:",
0190 1 /,"UNITS MUST BE CONSISTENT WITH TRAVERSE CALIBRATION.")
0191 DO 210 I=1,6
0192 J=(I-1)*6 + 1
0193 K=J+5
0194 READ(LU,*) (HIGHT(L),L=J,K)
0195 210 CONTINUE
0196 C
0197 C ALWAYS SORT THE HEIGHTS BEFORE STORING THEM.
0198 C
0199 DO 230 I=1,35
0200 K=I+1
0201 DO 220 J=K,36
0202 IF (HIGHT(I).LE.HIGHT(J)) GO TO 220
0203 T=HIGHT(I)
0204 HIGHT(I)=HIGHT(J)
0205 HIGHT(J)=T
0206 220 CONTINUE
0207 230 CONTINUE
0208 GO TO 150
0209 207 WRITE(LU,847)
0210 847 FORMAT("TRAVERSE CALIB. : V/S UP, V/S DOWN, DELAY TIME ?")
0211 READ(LU,*) VPSU,VPSD,DELAYT
0212 GO TO 150
0213 208 WRITE(LU,848)
0214 848 FORMAT("UNITS FOR HEIGHT MEASUREMENT (2 CHAR.S) : _")
0215 READ(LU,815) IUNITH
0216 WRITE(LU,858)
0217 858 FORMAT("UNITS FOR VELOCITY MEASUREMENT (4 CHAR.S) : _")
0218 READ(LU,816) IUNITY
0219 816 FORMAT(2A2)
0220 GO TO 150
0221 C
0222 C USER FINISHED WITH INPUT FILE, WRITE IT BACK.
0223 C
0224 300 CALL WRITF(IDC8,IERR,IBUF,128,1)
0225 C *** ERROR #4
0226 IF (IERR.LT.0) CALL ERR(4,IERR,1)
0227 CALL CLOSE(IDC8)
0228 C
0229 C MAKE SURE THE TRAVERSE IS TURNED OFF.
0230 C
0231 CALL EXEC(3,131B,IONOFF)
0232 CALL EXEC(8,NAMS,LU)
0233 CALL APRFL
0234 END
0235 PROGRAM APRF2(5),SATELLITE OF APRFL
0236 COMMON /PR1/ ICHAN,IRATE,NSAM,IPOT,IDIR,IONOFF,IPROJ,ICR,
0237 1 A,B,C,HRES,VPI,VTOL,HIGHT(36),VPSU,VPSD,OFFSET,IUNITH,
0238 2 IUNITY(2),DELAYT,IDUMMY(25)
0239 COMMON /PR2/ IDC81(144),IIBF(5),NAMD(3),NAME1(3),NREC,TOT
0240 COMMON /PR3/ CRES,PVOLTG
0241 COMMON /PR4/ IDC82(144),LU,NM3
0242 COMMON /PR5/ HEIGHT,UMEAN,URMS,TI,XTRA2
0243 COMMON /PR6/ IBUF(128),IPAR(5)

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0244      COMMON /PR7/ INEG,IPDS
0245      DIMENSION NAME2(3),ISIZ1(2),ISIZ2(2),IBUF2(10)
0246      EQUIVALENCE (IBUF2(1),HREF,HEIGHT),(PREF,UMEAN)
0247      DATA ISIZ2 /3,10/
0248      DATA ISIZ1 /1,128/
0249      IF (LU.GT.9) CALL NAMIT(LU,NAMD)
0250  C
0251  C      INITIALIZE COMMON BLOCK PR2
0252  C
0253      NAME1(3)=NM3
0254      TOT=FLOAT(NSAM)
0255      NREC=NSAM/128
0256      ISIZ1(1)=NREC
0257      ISIZ1(2)=128
0258      CALL PURGE(IDCBI,IERR,NAME1,0,15)
0259  C
0260  C      CREATE A SCRATCH FILE FOR USE BY PROGRAM DATA.
0261  C
0262      CALL CREAT(IDCBI,IERR,NAME1,ISIZ1,1,0,15)
0263  C      **** ERROR #1
0264      IF (IERR.LT.0) CALL ERR(1,IERR,4)
0265      CALL CLOSE(IDCBI)
0266  C
0267  C      RE-OPEN THE SCRATCH FILE NON-EXCLUSIVELY
0268  C      IN THAT WAY, BOTH DATA AND THIS PROGRAM MAY USE IT.
0269  C
0270      CALL OPEN(IDCBI,IERR,NAME1,1,0,15)
0271  C      **** ERROR #2
0272      IF (IERR.LT.0) CALL ERR(2,IERR,4)
0273  C
0274  C      GET USER INPUT: HSTRT,HSTOP,CRES, AND FILE NAME.
0275  C
0276      WRITE(LU,800)
0277  800  FORMAT("ENTER STARTING HEIGHT,STOPPING HEIGHT, AND COLD",
0278      1 " RES. (OR ZERO):")
0279      READ(LU,*) HSTRT,HSTOP,CRES
0280  50  WRITE(LU,805)
0281  805  FORMAT("FILE NAME FOR THIS PROFILE ? _")
0282      READ(LU,810) NAME2
0283  810  FORMAT(3A2)
0284  C
0285  C      CHECK IF USER WANTS TO GO AHEAD
0286  C
0287  75  WRITE(LU,820)
0288  820  FORMAT("READY TO GO AHEAD ? _")
0289      READ(LU,811) IANS
0290  811  FORMAT(A2)
0291      IF (IANS.EQ.INEG) GO TO 700
0292      IF (IANS.NE.IPOS) GO TO 75
0293  C
0294  C      CREATE THE FILE FOR THE PROFILE DATA
0295  C
0296      CALL CREAT(IDCBI,IERR,NAME2,ISIZ2,2,IPROJ,ICR)
0297  C      **** ERROR #3
0298      IF (IERR.LT.0) CALL ERR(3,IERR,4)
0299  C
0300  C      WRITE THE FIRST (HEADER) RECORD TO THE FILE
0301  C
0302      CALL WRITE(IDCBI,IERR,IBUF2,10)
0303  C      **** ERROR #4
0304      IF (IERR.LT.0) CALL ERR(4,IERR,4)

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0305 C

0306 C DETERMINE STARTING VOLTAGE BY TAKING A BRIEF DATA RECORD.
0307 C
0308 IIBF(1)=NAME1(1)
0309 IIBF(2)=NAME1(2)
0310 IIBF(3)=NAME1(3)
0311 IIBF(4)=0
0312 IIBF(5)=15
0313 CALL POT(PVOLTG)
0314 VSTRT=PVOLTG
0315 C
0316 C SAVE THE INITIAL POSITION OF THE TRAVERSE IN VSTRT
0317 C
0318 C WRITE A HEADER PAGE TO THE TERMINAL (LU)
0319 C
0320 N=3125/IRATE
0321 RATE=3125.0/FLOAT(N)
0322 WRITE(LU,815) RATE,PVOLTG,IUNITH,IUNITV,IUNITV
0323 815 FORMAT(//,"ACTUAL SAMPLE RATE=",F7.1,10X,"STARTING VOLTAGE=",
0324 1 F6.2,//," REC# HEIGHT UMEAN URMS TURB",9X,"#TRY5",//,
0325 2 9X,A2,5X,2A2,3X,2A2,/)
0326 C
0327 C BEGIN TAKING THE PROFILE
0328 C
0329 IREC=0
0330 C
0331 C CHECK TO SEE IF PROFILE IS GOING UP, OR DOWN.
0332 C
0333 IF (HSTOP.GE.HSTRT) GO TO 150
0334 C
0335 C TAKE PROFILE GOING DOWN.
0336 C HIGHT(K) IS USED IN THE REVERSE ORDER.
0337 C
0338 DO 100 J=1,36
0339 K=37-J
0340 C
0341 C CHECK TO MAKE SURE THAT HIGHT(K) IS BETWEEN THE
0342 C STARTING HEIGHT, AND THE STOPPING HEIGHT.
0343 C
0344 IF (HIGHT(K).GT.HSTRT) GO TO 100
0345 IF (HIGHT(K).LT.HSTOP) GO TO 100
0346 C
0347 C CALCULATE THE DESIRED VOLTAGE
0348 C
0349 VOLTS=VSTRT-(HSTRT-HIGHT(K))*VPI
0350 C
0351 C SEND THE TRAVERSE TO THE DESIRED VOLTAGE
0352 C TRVRS RETURNS THE ACTUAL VOLTAGE IN VOLTS.
0353 C
0354 CALL TRVRS(VOLTS,KOUNT)
0355 C
0356 C CALCULATE THE ACTUAL HEIGHT IN INCHES.
0357 C
0358 HEIGHT=HSTRT - (VSTRT-VOLTS)/VPI
0359 C
0360 C SAMPLE FROM THE A/D AT THAT HEIGHT
0361 C
0362 IREC=IREC+1
0363 80 CALL SAMPL(UMEAN,URMS,TI)
0364 WRITE(LU,825) IREC,HEIGHT,UMEAN,URMS,TI,KOUNT
0365 IF (TI.LT.100.0) GO TO 95
0366 85 WRITE(LU,90)

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```

0367 90    FORMAT(5X"RETAKE POINT ? -")
0368      IF (NOYES(LU)) 95,85,80
0369 C
0370 C    WRITE THE DATA TO THE PROFILE DATA FILE.
0371 C
0372 95    CALL WRITEF(IDCB2,IERR,IBUF2,10)
0373 C **** ERROR #5
0374      IF (IERR.LT.0) CALL ERR(5,IERR,4)
0375 825    FORMAT(16,4F7.2,10X,12)
0376 100    CONTINUE
0377      GO TO 200
0378 C
0379 C    TAKE A PROFILE GOING UP.
0380 C    THE FOLLOWING SECTION IS IDENTICAL TO THE ABOVE, EXCEPT
0381 C    THAT HIGHT(K) IS USED IN THE FORWARD ORDER.
0382 C
0383 150    DO 175 K=1,36
0384      IF (HIGHT(K).LT.HSTRT) GO TO 175
0385      IF (HIGHT(K).GT.HSTOP) GO TO 175
0386      VOLTS=VSTRT + (HIGHT(K)-HSTRT)*VPI
0387      CALL TRVRS(VOLTS,KOUNT)
0388      HEIGHT=HSTRT + (VOLTS-VSTRT)/VPI
0389      IREC=IREC+1
0390 155    CALL SAMPL(UMEAN,URMS,TI)
0391      WRITE(LU,825) IREC,HEIGHT,UMEAN,URMS,TI,KOUNT
0392      IF (TI.LT.100.0) GO TO 170
0393 160    WRITE(LU,165)
0394 165    FORMAT(5X"RETAKE POINT ? -")
0395      IF (NOYES(LU)) 170,160,155
0396 170    CALL WRITEF(IDCB2,IERR,IBUF2,10)
0397 C **** ERROR #6
0398      IF (IERR.LT.0) CALL ERR(6,IERR,4)
0399 175    CONTINUE
0400 C
0401 C    WRITE THE FIRST RECORD AGAIN, NOW IREC (THE FIFTH WORD)
0402 C    CONTAINS THE ACTUAL NUMBER OF DATA POINTS.
0403 C    THE SECOND AND THIRD WORDS CONTAIN THE REFERENCE PRESSURE.
0404 C
0405 200    WRITE(LU,835)
0406 835    FORMAT(/,"ENTER REFERENCE HEIGHT, AND PRESSURE FOR THIS RUN: -")
0407      READ(LU,*) HREF,PREF
0408      CALL EXEC(11,IPAR,IYEAR)
0409      IBUF2(5)=IREC
0410      IBUF2(6)=IUNITH
0411      IBUF2(7)=IUNITV(1)
0412      IBUF2(8)=IUNITV(2)
0413      IBUF2(9)=IPAR(5)
0414      IBUF2(10)=IYEAR
0415      CALL WRITEF(IDCB2,IERR,IBUF2,10,1)
0416 C **** ERROR #7
0417      IF (IERR.LT.0) CALL ERR(7,IERR,4)
0418 C
0419 C    CLOSE THE PROFILE DATA FILE
0420 C
0421      CALL CLOSE(IDCB2)
0422      WRITE(LU,830) NAME2
0423 830    FORMAT("  APRFL : RUN COMPLETE ON ",3A2)
0424 C
0425 C    CLOSE THE SCRATCH FILE. PURGE THE SCRATCH FILE.
0426 C
0427 700    CALL CLOSE(IDCB1)

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0428      CALL PURGE(IDCBI,IERR,NAME1,0,15)
0429      STOP
0430 999    CALL APRFL
0431      END
0432      SUBROUTINE TRVRS(VOLTS,KOUNT)
0433  C
0434  C      SUBROUTINE TRVRS SETS THE TRAVERSE AT THE INPUT VOLTAGE
0435  C      VOLTS. THE MOST RECENTLY KNOWN TRAVERSE VOLTAGE IS STORED
0436  C      IN COMMON BLOCK PR3 ALONG WITH THE COLD RESISTANCE.
0437  C      TRVRS RETURNS THE ACTUAL VOLTAGE IN VOLTS, AND THE
0438  C      NUMBER OF TRIES IT TOOK TO GET THERE IN KOUNT.
0439  C      TRVRS ASSUMES NOTHING ABOUT TRAVEL DIRECTION ON THE TRAVERSE.
0440  C
0441      COMMON /PR1/ ICHAN,IRATE,NSAM,IPOT,IDIR,IONOFF,IPROJ,ICP:
0442      1 A,B,C,HRES,VPI,VTOL,HIGHT(36),VPSU,VPSD,OFFSET,IUNITH,
0443      2 IUNITV(2),DELAYT,IDUMMY(25)
0444      COMMON /PR3/ CRES,PVOLTG
0445      COMMON /PR4/ IDCB(144),LU,NM3
0446      COMMON /PR6/ IBUF(128),IPAR(5)
0447      COMMON /PR7/ INEG,IPOS
0448      KOUNT=0
0449  C
0450  C      CHECK TO SEE IF AT DESIRED POSITION
0451  C
0452 100      IF (ABS(VOLTS-PVOLTG).LT.VTOL) GO TO 300
0453          IF (KOUNT.GT.5) GO TO 200
0454  C
0455  C      CHECK TO SEE IF UP OR DOWN REQUIRED.
0456  C
0457 110      IF (VOLTS-PVOLTG) 120,300,140
0458  C
0459  C      DOWN
0460  C
0461 120      IUPDN=-1
0462          GO TO 150
0463  C
0464  C      UP
0465  C
0466 140      IUPDN=+1
0467  C
0468 150      CALL TRAVE(IUPDN,VOLTS)
0469  C
0470  C      CHECK THE BREAK FLAG (USER MAY SET IT TO ABORT PROGRAM)
0471  C
0472  C      **** ERROR #99 . . . USER ABORT.
0473          IF (IFBRK(ID).LT.0) CALL ERR(99,0,2)
0474          KOUNT=KOUNT+1
0475          GO TO 100
0476  C
0477  C      AFTER 6 TRYS, GIVE USER OPTION OF ACCEPTING CURRENT
0478  C      POSITION.
0479  C
0480 200      WRITE(LU,800)
0481 800      FORMAT("HAVING TROUBLE. . 6 TRYS!!      6 MORE ?_")
0482          READ(LU,805) IANS
0483 805      FORMAT(A2)
0484          IF (IANS.EQ.INEG) GO TO 300
0485          IF (IANS.NE.IPOS) GO TO 200
0486          KOUNT=0
0487          GO TO 100
0488  C

```

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0489 C PASS BACK THE ACTUAL POSITION IN VOLTS.

0490 C SAVE THE ACTUAL POSITION IN PVOLTG, SINCE IT IS THE CURRENT
0491 C POSITION.
0492 C
0493 300 VOLTS=PVOLTG
0494 RETURN
0495 END
0496 SUBROUTINE SAMPL(UMEAN,URMS,TI)
0497 REAL KNGLW
0498 C
0499 C SUBROUTINE SAMPL SAMPLES FROM THE A/D, AND RETURNS THE MEAN
0500 C VELOCITY (AS DETERMINED BY FUNCTION KNGLW), THE RMS VELOCITY
0501 C AND THE TURBULENCE INTENSITY IN PERCENT.
0502 C
0503 COMMON /PR1/ ICHAN,IRATE,NSAM,IPOT,IDIR,IONOFF,IPROJ,ICR,
0504 1 A,B,C,HRES,VPI,VTOL,HIGHT(36),VPSU,VPSD,OFFSET,IUNITH,
0505 2 IUNITY(2),DELAYT,IDUMMY(25)
0506 COMMON /PR2/ IDCB1(144),IIBF(5),NAMD(3),NAME1(3),NREC,TOT
0507 COMMON /PR3/ CRES,PVOLTG
0508 COMMON /PR4/ LDCB(144),LU,NM3
0509 COMMON /PR6/ IBUF(128),IPAR(5)
0510 C
0511 C SCHEDULE THE DATA PROGRAM
0512 C
0513 10 CALL EXEC(23,NAMD,ICHAN,ICHAN,IRATE,NSAM,IP,IIBF,5)
0514 CALL RMPAR(IPAR)
0515 C **** ERROR NEGATIVE...SEE WRITE-UP OF PROGRAM DATA.
0516 IF (IPAR(1).LT.0) CALL ERR(IPAR(1),IPAR(2),3)
0517 CALL POSNT(IDCB1,IERR,1,1)
0518 C **** ERROR #2
0519 IF (IERR.LT.0) CALL ERR(2,IERR,3)
0520 C
0521 C READ IN THE DATA, CONVERT IT TO VELOCITY, AVERAGE, ETC.
0522 C
0523 EMEAN=0.0
0524 ERMS=0.0
0525 DO 50 I=1,NREC
0526 CALL READF(IDCB1,IERR,IBUF,128)
0527 C **** ERROR #3
0528 IF (IERR.LT.0) CALL ERR(3,IERR,3)
0529 DO 25 J=1,128
0530 E=FLOAT(IBUF(J))
0531 EMEAN=EMEAN+E
0532 CONTINUE
0533 25 CONTINUE
0534 EMEAN=EMEAN/TOT
0535 CALL POSNT(IDCB1,IERR,1,1)
0536 IF (IERR.LT.0) CALL ERR(223,IERR,3)
0537 DO 150 I=1,NREC
0538 CALL READF(IDCB1,IERR,IBUF,128)
0539 IF (IERR.LT.0) CALL ERR(23,IERR,3)
0540 DO 125 J=1,128
0541 E=FLOAT(IBUF(J))
0542 ERMS=ERMS+(E-EMEAN)**2
0543 125 CONTINUE
0544 150 CONTINUE
0545 EMEAN=EMEAN/3275.2
0546 ERMS=ERMS/(3275.2*3275.2)
0547 ERMS=SQRT(ABS(ERMS)/(TOT-1.0))
0548 UMEAN=KNGLW(EMEAN,A,B,C,HRES,LU)
0549 IF(UMEAN.EQ.-1.0) GO TO 200
0550 TI=200.0*EMEAN*ERMS/(HRES*(HRES-CRES)*B*C*EXP(ALOG(UMEAN)*C))

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0551      URMS=TI*UMEAN/100.0
0552      RETURN
0553 200    WRITE(LU,210)
0554 210    FORMAT(" BAD DATA POINT! RETAKE ?  -")
0555      IF (NOYES(LU)) 900,200,10
0556 900    CALL ERR(1,0,7)
0557      END
0558      FUNCTION KNGLW(E,A,B,C,HRES,LU)
0559      REAL KNGLW
0560      COMMON /PR3/ CRES,PVOLTG
0561  C
0562  C      USE KINGS LAW TO RETURN VELOCITY
0563  C      TEMPERATURE CORRECTED.
0564  C
0565      T0=E**2/(HRES*(HRES-CRES))
0566      T1=(T0 - A)/B
0567  C      IF (T1.LE.0.0) EMIN = SQRT (HRES * (HRES - CRES) * A)
0568  C      IF (T1.LE.0.0) WRITE (LU, 10) A, B, C, HRES, CRES, EMIN, E
0569  C10    FORMAT (//, 5X, "A = ", F10.3,
0570  C        //, 5X, "B = ", F10.3,
0571  C        //, 5X, "C = ", F10.3,
0572  C        //, 5X, "HOT RESISTANCE = ", F10.3,
0573  C        //, 5X, "COLD RESISTANCE = ", F10.3,
0574  C        //, 5X, "GIVEN THE ABOVE CONSTANTS, ",
0575  C        //, 5X, "THE VOLTAGE MUST BE AT LEAST ", F10.3,
0576  C        //, 5X, "THE MEASURED VOLTAGE = ", F10.3,
0577  C        //, 5X, "PERHAPS")
0578  C      IF (T1.LE.0.0) CALL ERR(1,0,7)
0579      KNGLW =-1.0
0580      IF (T1.GT.0.0) KNGLW=EXP(ALOG(T1)/C)
0581      RETURN
0582      END
0583      SUBROUTINE TRAVE(IDIREC,VOLTS)
0584      INTEGER UNLOCK
0585      COMMON /PR1/ ICHAN,IRATE,NSAM,IPOT,IDIR,IONOFF,IPROJ,ICR,
0586 1 A,B,C,HRES,VPI,VTOL,HIGHT(36),VPSU,VPSD,OFFSET,IUNITH,
0587 2 IUKITY(2),DELAYT,IDUMMY(25)
0588      COMMON /PR3/ CRES,PVOLTG
0589      DATA ION,IOF /231B,131B/
0590      DATA ICODE,LOCK,UNLOCK /22,1,0/
0591  C
0592  C      TRAVE ATTEMPTS TO SET THE TRAVERSE TO THE DESIRED VOLTAGE.
0593  C      (DESIRED VOLTAGE IS 'VOLTS')
0594  C      (ACTUAL RESULTING VOLTAGE IS RETURNED IN PVOLTG)
0595  C
0596  C      THE CURRENT POSITION, IS STORED IN PVOLTG.
0597  C
0598      IUPDN=131B
0599  C
0600  C      CHECK FOR DIRECTION. UP-DOWN?
0601  C
0602      IF (IDIREC.LT.0) GO TO 50
0603  C
0604  C      ESTIMATE WAIT TIME REQUIRED TO MOVE TRAVERSE TO THE
0605  C      DESIRED VOLTAGE.
0606  C
0607      TIME=(VOLTS-PVOLTG)/VPSU - DELAYT
0608      GO TO 100
0609 50      IUPDN=231B
0610      TIME=(PVOLTG-VOLTS)/VPSD - DELAYT
0611  C ***** ERROR #1 ... SLOW DOWN TRAVERSE, OR INCREASE TOLERANCE.

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0612 100 IF (TIME.LT.0.0) CALL ERR(1,0,6)
0613 C **** ERROR #2 . . . SPEED UP TRAVERSE. (MOVE WILL TAKE MORE THAN 5 MINS!
0614 IF (TIME.GT.327.6) CALL ERR(2,0,6)
0615 C
0616 C WAIT TIME IS TENS OF MILLISECONDS (BASIC INCREMENTS OF THE
0617 C SYSTEM CLOCK)
0618 C
0619 150 TIME=TIME*100.0
0620 MULT=IFIX(TIME+.5)
0621 C
0622 C TURN THE TRAVERSE ON, WAIT THE REQUIRED AMOUNT OF TIME,
0623 C THEN TURN IT OFF. THE PROGRAM IS LOCKED INTO ITS PARTITION
0624 C DURING THIS PROCESS.
0625 C
0626 400 CALL EXEC(ICODE,LOCK)
0627 CALL EXEC(3,IUPDN,IDIR)
0628 CALL EXEC(3,ION,IONOFF)
0629 CALL WAIT(MULT,0,IERR)
0630 CALL EXEC(3,IOF,IONOFF)
0631 C
0632 C RELEASE THE PARTITION.
0633 C
0634 CALL EXEC(ICODE,UNLOCK)
0635 C
0636 C ALLOW TRAVERSE 2 SECONDS TO SETTLE DOWN BEFORE MEASURING
0637 C ANYTHING.
0638 C
0639 CALL WAIT(2,2,IERR)
0640 CALL POT(PVOLTG)
0641 RETURN
0642 END
0643 SUBROUTINE POT(VLTG)
0644 COMMON /PR1/ ICHAN,IRATE,NSAM,IPOT,IDIR,IONOFF,IPROJ,ICR,
0645 1 A,B,C,HRES,VPI,VTOL,HIGHT(36),VPSU,VPSD,OFFSET,IUNITH,
0646 2 IUNITY(2),DELAYT,IDUMMY(25)
0647 COMMON /PR2/ IDCB1(144),IIBF(5),NAMD(3),NAME1(3),NREC,TOT
0648 COMMON /PR6/ IBUF(128),IPAR(5)
0649 C
0650 C SUBROUTINE POT TAKES A 1 SECOND AVERAGE OF THE TRAVERSE
0651 C VOLTAGE.
0652 C
0653 CALL EXEC(23,NAMD,IPOT,IPOT,130,128,0,IIBF,5)
0654 CALL RMPAR(IPAR)
0655 C **** ERROR NEGATIVE. . . SEE WRITE-UP OF PROGRAM DATA.
0656 IF (IPAR(1).LT.0) CALL ERR(IPAR(1),IPAR(2),5)
0657 V=0.0
0658 CALL READF(IDCB1,IERR,IBUF,128,LEN,1)
0659 C **** ERROR #2
0660 IF (IERR.LT.0) CALL ERR(2,IERR,5)
0661 DO 100 I=1,128
0662 V=V+FLOAT(IBUF(I))/3275.2
0663 100 CONTINUE
0664 VLTG=V/128.0
0665 RETURN
0666 END
0667 $

```

FDDL
COMPUTER PROGRAMS
FOR
CONCENTRATION MEASUREMENTS
GC
GGRP

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0001 FTH4,L
0002 C*****
0003 PROGRAM GC(3,90)
0004 C
0005 C**WRITTEN BY DAVE NEFF, SEP.20 1983 TO REDUCE CONC. DATA TAKEN BY
    AUTOMATED GC
0006 C**AND STORE DATA INTO A DISK FILE.
0007 C
0008 COMMON /AA/SCON(3),BAKGR(3),NGAS,ICHAN(5),ICC,NSYRG,L6,IAUTO
0009 COMMON /CC/ NAMP(3),ISECP,ICRP
0010 DIMENSION IDC9(144),IPAR(5),ITUBE(50),ISYRG(50),PPM(3),
0011 + X(50),Y(50),Z(50),CON(3)
0012 CALL RMPAR(IPAR)
0013 LU=IPAR(1)
0014 IF(LU.LT.1)LU=1
0015 CALL LIBER(LU)
0016 CALL FEDIT(LU,IDCB)
0017 CALL POS(LU,ITUBE,ISYRG,X,Y,Z,NAMP,ISECP,ICRP)
0018 IF(IAUTO.NE.1HY)GO TO 40
0019 41 WRITE(LU,7)
0020 IF(NYES(LU))150,41,23
0021 23 CONTINUE
0022 DO 8 I=1,4
0023 CALL EXEC(3,89,ICHAN(I))
0024 8 CONTINUE
0025 ISAM=1
0026 CALL BACKG(LU,BAKGR,ICHAN,ICC,NGAS)
0027 40 CONTINUE
0028 CALL HEADR(LU,IDCB)
0029 IF(IAUTO.NE.1HY)WRITE(LU,1)
0030 WRITE(LU,2)
0031 120 CONTINUE
0032 ISYRG1=ISAM
0033 IF(IAUTO.NE.1HY)READ(LU,*)ISYRG1,PPM(1),PPM(2),PPM(3)
0034 IF(ISAM.EQ.NSYRG+1)ISYRG1=-1
0035 CALL TEST(LU,IDCB,ISYRG1,ISYRG,IK,IFLAG)
0036 IF(IFLAG)150,130,120
0037 130 CONTINUE
0038 IF(IAUTO.EQ.1HY)CALL DATIN(LU,PPM,ICHAN,ICC,NGAS)
0039 DO 140 I=1,NGAS
0040 CON(I)=(PPM(I)-BAKGR(I))*100./(SCON(I)-BAKGR(I))
0041 CON(I)=CON(I)*10000
0042 IF(CON(I).LT.0.0)CON(I)=0.0
0043 140 CONTINUE
0044 CALL REPR(LU,IDCB,ITUBE,ISYRG,X,Y,Z,IK,PPM,CON,NGAS)
0045 IF(IAUTO.EQ.1HY)ISAM=ISAM+1
0046 IF(IFBRK(DM).GE.0)GO TO 120
0047 10 WRITE(LU,4)
0048 IF(NYES(LU))120,10,150
0049 150 CONTINUE
0050 C**OPTION TO WRITE SORTED DATA AT LU 6
0051 IF(L6.EQ.1)CALL OUT6(LU,IDCB)
0052 CALL CLOSE(IDCB)
0053 WRITE(LU,5)
0054 1 FORMAT("ENTER SYRINGE NO., PPM /"(NEG. SYRINGE TO EXIT)")
0055 2 FORMAT("/8X"UBE"5X"X"8X"Y"8X"Z"7X"PPM"4X"CONC")

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```
0056 4    FORMAT("TERMINATE PROGRAM-? (NO TO CONTINUE)  -")
0057 5    FORMAT("RUN COMPLETE")
0058 7    FORMAT("READY TO START-?  -")
0059      END
```

FIN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 01017 COMMON = 00000

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```
0060 C *****
0061      BLOCK DATA
0062      COMMON /AA/ I1(22)
0063      COMMON /BB/ I2(29)
0064      COMMON /CC/ I3(5)
0065      END
```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS **

```
BLOCK COMMON AA      SIZE = 00022
BLOCK COMMON BB      SIZE = 00029
BLOCK COMMON CC      SIZE = 00005
```

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0066 C*****
0067 SUBROUTINE FEDIT(LU, IDCB)
0068 DIMENSION IDCB(144), NUM(14), NAM(3), ISIZ(2)
0069 COMMON /AA/ SCON(3), BAKGR(3), NGAS, ICHAN(5), ICC, NSYRG, L6, IAUO
0070 COMMON /BB/ VEL, HVEL, TEMPA, HTEMP, Q(3), TEMPS(3), IGTYP(6), NAMOP(3)
0071 COMMON /CC/ NAMP(3), ISECP, ICRP
0072 DATA ISIZ, NAM, ISEC, ICR /1,56,2HGC,2HED,2H00,0,16/
0073 LUC=KCVT(LU)
0074 IF(LU.LT.10) LUC=LUC+10000B
0075 NAM(3)=LUC
0076 DO 50 I = 1,14
0077     NUM(I)=0
0078 50 CONTINUE
0079 CALL OPEN (IDCB, IERR, NAM, 0, ISEC, ICR)
0080 IF(IERR.GT.0) GO TO 19
0081 IF (IERR.EQ.-6) CALL CREAT (IDCB, IERR, NAM, ISIZ, 2, ISEC, ICR)
0082 IF(IERR.LT.0) CALL ERROR (50, IDCB, IERR, LU)
0083 DO 18 I=1,14
0084     NUM(I) = I
0085 18 CONTINUE
0086 GO TO 17
0087 19 CONTINUE
0088 CALL FREAD (LU, IDCB)
0089 20 WRITE(LU,99)
0090 IF (NOYES(LU)) 40,20,30
0091 30 CALL FLIST(LU)
0092 40 WRITE(LU,100)
0093 READ(LU,*) (NUM(I), I = 1,14)
0094 17 CONTINUE
0095 DO 70 I=1,14
0096     IF(NUM(I).EQ.0) GO TO 92
0097     GO TO (1,2,3,4,5,6,7,8,9,10,11,12,13,14), NUM(I)
0098 1 CONTINUE
0099     WRITE(LU,101)
0100     READ (LU,*) VEL, HVEL
0101     GOTO 70
0102 2 CONTINUE
0103     WRITE(LU,102)
0104     READ (LU,*) TEMPA, HTEMP
0105     GOTO 70
0106 3 CONTINUE
0107     WRITE (LU,103)
0108     READ (LU,*) NGAS
0109     GOTO 70
0110 4 CONTINUE
0111     WRITE (LU,104)
0112     READ(LU,*) (Q(J), J= 1,NGAS)
0113     GO TO 70
0114 5 CONTINUE
0115     WRITE (LU,105)
0116     READ (LU,*) (TEMPS(J), J=1,NGAS)
0117     GO TO 70
0118 6 CONTINUE
0119     DO 60 J=1,NGAS
0120         WRITE(LU,106)J

```


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```

0121          READ(LU,119) (IGTYPE(K), K=J*2-1,J*2)
0122 60      CONTINUE
0123          GO TO 70
0124 7      CONTINUE
0125          DO 61 J=1,NGAS
0126              WRITE (LU,107)J
0127              READ (LU,*)SCON(J)
0128 61      CONTINUE
0129          GO TO 70
0130 8      CONTINUE
0131          WRITE(LU,122)
0132          CALL KEYIN(IAUTO,LU)
0133          IF(IAUTO.NE.1HN.AND.1AUTO.NE.1HY)GO TO 8
0134          IF(IAUTO.EQ.1HY)GO TO 70
0135          DO 62 J=1,NGAS
0136              WRITE (LU,108)J
0137              READ (LU,*)BAKGR(J)
0138 62      CONTINUE
0139          GO TO 70
0140 9      CONTINUE
0141          WRITE(LU,109)
0142          L6=NOYES(LU)
0143          IF(L6.EQ.0) GO TO 9
0144          GO TO 70
0145 10     CONTINUE
0146          WRITE (LU,110)
0147          CALL GNAME (LU,NAMP,ISECP,ICRP,1)
0148          GO TO 70
0149 11     CONTINUE
0150          WRITE (LU,111)
0151          READ (LU,*) (ICHAN(J),J=1,4)
0152          GO TO 70
0153 12     CONTINUE
0154          WRITE (LU,112)
0155          READ (LU,*) ICHAN(5)
0156          GO TO 70
0157 13     CONTINUE
0158          WRITE (LU,113)
0159          READ (LU,*) ICC, NSYRG
0160          GO TO 70
0161 14     CONTINUE
0162          WRITE (LU,114)
0163          READ (LU,120) (NAMOP(J),J=1,3)
0164 70     CONTINUE
0165 92     CONTINUE
0166          DO 93 I=1,16
0167              NUM(I)=0
0168 93     CONTINUE
0169          CALL FLIST (LU)
0170          WRITE(LU,121)
0171          IF (NOYES(LU))40,75,80
0172 80     CONTINUE
0173          CALL FWRT(LU,IDCB)
0174          CALL CLOSE(IDCB)
0175          RETURN

```

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```

0176 99      FORMAT ("WISH TO SEE INPUT FILE -?                -")
0177 100     FORMAT ("ENTER LINE NUMBERS TO BE CHANGED -      -")
0178 101     FORMAT ("ENTER WIND SPEED, HEIGHT -              -")
0179 102     FORMAT ("ENTER AIR TEMP., HEIGHT -               -")
0180 103     FORMAT ("ENTER NUMBER OF TRACER GASES USED -      -")
0181 104     FORMAT ("ENTER SOURCE FLOW RATES FOR EACH TRACER - -")
0182 105     FORMAT ("ENTER SOURCE TEMP. FOR EACH TRACER -    -")
0183 106     FORMAT ("ENTER TRACER TYPE FOR SOURCE NO. "I4" -  -")
0184 107     FORMAT ("ENTER SOURCE GAS PPM FOR SOURCE NO. "I4" - -")
0185 108     FORMAT ("ENTER BACKGROUND PPM FOR SOURCE NO. "I4" - -")
0186 109     FORMAT ("LISTING LU 6 ? -                          -")
0187 110     FORMAT ("ENTER POSITION FILE NAME:SEC:CARTR -     -")
0188 111     FORMAT ("ENTER CHANNEL NUMBERS FOR START, SELECT, CCW, CW - -")
0189 112     FORMAT ("ENTER INTEGRATOR ASCII OUTPUT LU -      -")
0190 113     FORMAT ("ENTER CU, CMS USED, NO. OF SAMPLES TO BE ANALYZED - -")
0191 114     FORMAT ("OPERATOR NAME - ?                        -")
0192 119     FORMAT (2A2)
0193 120     FORMAT (3A2)
0194 121     FORMAT (/"ARE ALL ENTRIES CORRECT - ?           -")
0195 122     FORMAT ("WISH TO HAVE AUTOMATIC INPUT-          -")
0196        END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 01156 COMMON = 00000

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```

0197 C *****
0198 SUBROUTINE FREAD(LU, IDCB)
0199 DIMENSION IDC9(144), IB(56)
0200 COMMON /AA/ IB1(22)
0201 COMMON /BB/ IB2(29)
0202 COMMON /CC/ IB3(5)
0203 CALL POSHT(IDCB, IERR, 1, 1)
0204 IF(IERR.LT.0) CALL ERROR(53, IDCB, IERR, LU)
0205 CALL READF(IDCB, IERR, IB, 56)
0206 IF(IERR.LT.0) CALL ERROR(51, IDCB, IERR, LU)
0207 DO 5 I = 1, 22
0208     IB1(I) = IB(I)
0209 5 CONTINUE
0210 DO 10 I = 1, 29
0211     IB2(I) = IB(22+I)
0212 10 CONTINUE
0213 DO 20 I = 1, 5
0214     IB3(I) = IB(51+I)
0215 20 CONTINUE
0216 RETURN
0217 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00163 COMMON = 00000

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```

0218 C*****
0219 SUBROUTINE FWRT(LU, IDCB)
0220 DIMENSION IDCB(144), IB(56)
0221 COMMON /AA/ IB1(22)
0222 COMMON /BB/ IB2(29)
0223 COMMON /CC/ IB3(5)
0224 CALL POSNT(IDCB, IERR, 1, 1)
0225 IF(IERR.LT.0) CALL ERROR(54, IDCB, IERR, LU)
0226 DO 5 I=1, 22
0227     IB(I)=IB1(I)
0228 5 CONTINUE
0229 DO 10 I=1, 29
0230     IB(22+I)=IB2(I)
0231 10 CONTINUE
0232 DO 20 I=1, 5
0233     IB(51+I)=IB3(I)
0234 20 CONTINUE
0235 CALL WRTF(IDCB, IERR, IB, 56)
0236 IF(IERR.LT.0) CALL ERROR(52, IDCB, IERR, LU)
0237 RETURN
0238 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00164 COMMON = 00000

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```

0239 C *****
0240 SUBROUTINE FLIST(LU)
0241 COMMON /AA/SCON(3),BAKGR(3),NGAS,ICHAN(5),ICC,NSYRG,L6,IAUTO
0242 COMMON /BB/VEL,HVEL,TEMPA,HTEMP,Q(3),TEMPS(3),IGTYPE(6),NAMOP(3)
0243 COMMON /CC/ NAMP(3),ISECP,ICRP
0244 WRITE(LU,1) VEL, HVEL
0245 WRITE(LU,2) TEMPA, HTEMP
0246 WRITE(LU,3) NGAS
0247 WRITE(LU,4) (Q(I),I=1,NGAS)
0248 WRITE(LU,5) (TEMPS(I),I=1,NGAS)
0249 WRITE(LU,6) (IGTYPE(I),I=1,2*NGAS)
0250 WRITE(LU,7) (SCON(I),I=1,NGAS)
0251 IF(IAUTO.EQ.1HY)LAUTO=2HYE
0252 IF(IAUTO.EQ.1HN)LAUTO=2HNO
0253 WRITE(LU,8)LAUTO
0254 IF(IAUTO.EQ.1HN)WRITE(LU,10) (BAKGR(I), I=1,NGAS)
0255 IF(L6.GT.0) LL6=2HYE
0256 IF(L6.LT.0) LL6=2HNO
0257 WRITE(LU,9) LL6
0258 WRITE(LU,10) (NAMP(I),I=1,3),ISECP,ICRP
0259 WRITE(LU,11) (ICHAN(I),I=1,4)
0260 WRITE(LU,12) ICHAN(5)
0261 WRITE(LU,13) ICC,NSYRG
0262 WRITE(LU,14) (NAMOP(I),I=1,3)
0263 RETURN
0264 1 FORMAT(// " 1. WIND SPEED = "15X,F5.1" CM/S AT "F5.1" CM")
0265 2 FORMAT( " 2. AIR TEMP. = "15X,F5.1" C AT "F5.1" CM")
0266 3 FORMAT( " 3. NO. OF TRACER GASES = "15X,I2)
0267 4 FORMAT( " 4. SOURCE FLOW RATE (CCS) = "9X,F7.1)
0268 5 FORMAT( " 5. SOURCE TEMP. (C) = "10X,F6.1)
0269 6 FORMAT( " 6. TRACER TYPE = "10X,A2)
0270 7 FORMAT( " 7. TRACER STRENGTH (PPM) = "8X,F9.2)
0271 8 FORMAT( " 8. AUTOMATIC INPUT - ? "12X,A2)
0272 18 FORMAT( " 8. BACKGROUND PPM = "8X,F9.2)
0273 9 FORMAT( " 9. LISTING AT LU 6 - ? "12X,A2)
0274 10 FORMAT( " 10. POSITION FILE NAMR = "12X,A2:"15": "12)
0275 11 FORMAT( " 11. CHAN. NO. FOR START,SELECT,CCW,CW- "4(I2",")")
0276 12 FORMAT( " 12. INTEGRATOR ASCII OUTPUT LU = "12)
0277 13 FORMAT( " 13. CU. CMS EXPELLED = "12)
0278 + / " 13. NO. OF SAMPLES = "12)
0279 14 FORMAT( " 14. OPERATOR NAME = "3A2)
0280 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00666 COMMON = 00000

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```

0281 C *****
0282 SUBROUTINE HEADR(LU, IDCB)
0283 DIMENSION IDCB(144), IPAR(5), IRUN(3), NAMFL(3), IB(14), ISIZE(2)
0284 COMMON /AA/ SCON(3), BAKGR(3), NGAS, ICHAN(5), ICL, NSYRG, LG, IAUO
0285 COMMON /BB/ VEL, HVEL, TEMPA, HTEMP, Q(3), TEMPS(3), IGTYP(6), NAMOP(3)
0286 DATA ISIZE /7, 14/
0287 WRITE(LU, 1)
0288 READ(LU, 2) (IRUN(I), I=1, 3)
0289 CALL EXEC(11, IPAR, IYEAR)
0290 IDAY=IPAR(5)
0291 WRITE(LU, 5)
0292 CALL GNAME(LU, NAMFL, ISEC, ICR, 1)
0293 40 CONTINUE
0294 CALL CREAT(IDCB, IERR, NAMFL, ISIZE, 2, ISEC, ICR)
0295 IF(IERR.NE.-2) GO TO 50
0296 WRITE(LU, 6)
0297 CALL KEYIN(IANSW, LU)
0298 IF(IANSW.NE.1HY) CALL ERROR(0, IDCB, 0, LU)
0299 CALL PURGE(IDCB, IERR, NAMFL, ISEC, ICR)
0300 GO TO 40
0301 50 CONTINUE
0302 IF(IERR.LT.0) CALL ERROR(1, IDCB, IERR, LU)
0303 CALL WREC1(LU, IDCB, IRUN, NAMFL, NAMOP, IDAY, IYEAR, NGAS)
0304 CALL WREC2(LU, IDCB, VEL, HVEL, TEMPA, HTEMP, Q)
0305 CALL WREC3(LU, IDCB, TEMPS, IGTYP)
0306 CALL WREC4(LU, IDCB, SCON, BAKGR)
0307 RETURN
0308 1 FORMAT(/"RUN NO. ?" _)
0309 2 FORMAT(3A2)
0310 5 FORMAT("DATA FILE NAME: SEC: CART ?" _)
0311 6 FORMAT("FILE NAME ALREADY IN EXISTENCE, " _)
0312 + /"DO YOU WISH TO PURGE IT ?" _)
0313 7 FORMAT(A2)
0314 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00281 COMMON = 00000

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```

0315 C *****
0316 SUBROUTINE WREC1(LU, IDCB, IRUN, NAMFL, NAMOP, IDAY, IYEAR, NGAS)
0317 DIMENSION IDCB(144), NAMFL(3), NAMOP(3), IRUN(3), IB(14)
0318 IB(1)=IRUN(1)
0319 IB(2)=IRUN(2)
0320 IB(3)=IRUN(3)
0321 IB(4)=NAMFL(1)
0322 IB(5)=NAMFL(2)
0323 IB(6)=NAMFL(3)
0324 IB(7)=NAMOP(1)
0325 IB(8)=NAMOP(2)
0326 IB(9)=NAMOP(3)
0327 IB(10)=IDAY
0328 IB(11)=IYEAR
0329 IB(12)=NGAS
0330 CALL WRITEF(IDCB, IERR, IB, 14)
0331 IF(IERR.LT.0) CALL ERROR (60, IDCB, IERR, LU)
0332 RETURN
0333 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00151 COMMON = 00000

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```

0334 C *****
0335 SUBROUTINE WREC2(LU, IDCB, VEL, HVEL, TEMPA, HTEMP, Q)
0336 DIMENSION IDCB(144), IB(14), Q(3), Q1(3)
0337 EQUIVALENCE (IB(1), V1), (IB(3), HV1), (IB(5), T1), (IB(7), HT1),
0338 + (IB(9), Q1(1))
0339 V1 = VEL
0340 HV1 = HVEL
0341 T1 = TEMPA
0342 HT1 = HTEMP
0343 DO 10 I = 1, 3
0344 Q1(I) = Q(I)
0345 10 CONTINUE
0346 CALL WRITEF(IDCB, IERR, IB, 14)
0347 IF(IERR.LT.0) CALL ERROR(61, IDCB, IERR, LU)
0348 RETURN
0349 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00090 COMMON = 00000

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```

0350 C *****
0351 SUBROUTINE WREC3(LU, IDCB, TEMPS, IGTYP)
0352 DIMENSION IDCB(144), IB(14), TEMPS(3), IGTYP(6), T1(3), IG1(6)
0353 EQUIVALENCE (IB(1), T1(1)), (IB(7), IG1(1))
0354 DO 10 I = 1, 3
0355     T1(I) = TEMPS(I)
0356 10 CONTINUE
0357 DO 20 I = 1, 6
0358     IG1(I) = IGTYP(I)
0359 20 CONTINUE
0360 CALL WRITF(IDCB, IERR, IB, 14)
0361 IF(IERR.LT.0) CALL ERROR(62, IDCB, IERR, LU)
0362 RETURN
0363 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00091 COMMON = 00000

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```

0364 C *****
0365 SUBROUTINE WREC4(LU, IDCB, SCON, BAKGR)
0366 DIMENSION IDCB(144), IB(14), SCON(3), BAKGR(3), S1(3), B1(3)
0367 EQUIVALENCE (IB(1), S1(1)), (IB(7), B1(1))
0368 DO 10 I = 1, 3
0369     S1(I) = SCON(I)
0370     B1(I) = BAKGR(I)
0371 10 CONTINUE
0372 CALL WRITF(IDCB, IERR, IB, 14)
0373 IF(IERR.LT.0) CALL ERROR (63, IDCB, IERR, LU)
0374 RETURN
0375 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00084 COMMON = 00000

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```

0397 C*****
0398 SUBROUTINE BACKG(LU,BAKGR,ICHAN,ICC,NGAS)
0399 DIMENSION BAKGR(3),ICHAN(5),BAK1(3)
0400 CALL MOVE(0,1,ICHAN,ICC)
0401 CALL DATIN(LU,BAK1,ICHAN,ICC,NGAS)
0402 WRITE(LU,3)(BAK1(I),I=1,NGAS)
0403 CALL DATIN(LU,BAKGR,ICHAN,ICC,NGAS)
0404 WRITE(LU,3)(BAKGR(I),I=1,NGAS)
0405 WRITE(LU,1)
0406 READ(LU,*)J
0407 IF(J)20,30,40
0408 20 CONTINUE
0409 DO 25 I=1,3
0410     BAKGR(I)=AMAX1(BAK1(I),BAKGR(I))
0411 25 CONTINUE
0412 RETURN
0413 30 CONTINUE
0414 DO 35 I=1,3
0415     BAKGR(I)=(BAKGR(I)+BAK1(I))/2.0
0416 35 CONTINUE
0417 RETURN
0418 40 CONTINUE
0419 WRITE(LU,2)
0420 READ(LU,*)(BAKGR(I),I=1,3)
0421 RETURN
0422 1  FORMAT('ENTER -1 FOR MAX., 0 FOR AVERAGE, +1 FOR INPUT-  -')
0423 2  FORMAT('ENTER BACKGROUND CONCENTRATIONS-  -')
0424 3  FORMAT('BACKGROUND CONC. = '3(2X,F7.3))
0425 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00267 COMMON = 00000

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```

0426 C*****
0427 SUBROUTINE MOVE(JARM,JSYRG,ICHAN,ICC)
0428 DIMENSION IBUF(3),ICHAN(5)
0429 IF(JARM.EQ.0)GO TO 10
0430 CALL EXEC(3,89,ICHAN(2))
0431 CALL WAIT(1,2,IERR)
0432 IBUF(1)=ICHAN(3)
0433 IBUF(2)=5
0434 IBUF(3)=4
0435 CALL EXEC(2,89,IBUF,3)
0436 CALL WAIT(1,2,IERR)
0437 10 CONTINUE
0438 IF(JSYRG.EQ.0)RETURN
0439 CALL EXEC(3,153,ICHAN(2))
0440 CALL WAIT(1,2,IERR)
0441 IBUF(1)=ICHAN(4)
0442 IBUF(2)=2
0443 IBUF(3)=ICC*9+30
0444 CALL EXEC(2,89,IBUF,3)
0445 CALL WAIT(1,2,IERR)
0446 IBUF(1)=ICHAN(3)
0447 IBUF(2)=1
0448 CALL EXEC(2,89,IBUF,3)
0449 CALL WAIT(1,2,IERR)
0450 RETURN
0451 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00153 COMMON = 00000

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```

0452 C*****
0453 SUBROUTINE TEST(LU, IDCB, ISYRG1, ISYRG, IK, IFLAG)
0454 DIMENSION ISYRG(50), IDCB(144), IB(14)
0455 IFLAG=0
0456 IF(ISYRG1.GE.0)GO TO 1
0457 IFLAG=-1
0458 IB(2)=-1
0459 CALL WRITE(IDCB, IERR, IB, 14)
0460 IF(IERR.LT.0)CALL ERROR(7, IDCB, IERR, LU)
0461 RETURN
0462 1 CONTINUE
0463 DO 5 IK=1,50
0464 IF(ISYRG(IK).EQ.ISYRG1)RETURN
0465 5 CONTINUE
0466 WRITE(LU,20)ISYRG1
0467 IFLAG=1
0468 RETURN
0469 20 FORMAT("SYRINGE NO. "I5" NOT IN LISTING--ENTER SYRINGE NO., PPM")
0470 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00125 COMMON = 00000

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```

0471 C*****
0472 SUBROUTINE DATIN(LU,PPM,ICHAN,ICC,NGAS)
0473 DIMENSION IB(130),IBUF(3),ICHAN(5),PPM(3)
0474 NBUF=100
0475 IF(NGAS.EQ.3)NBUF=122
0476 DO 10 I=1,NBUF
0477     IB(I)=2H
0478 10 CONTINUE
0479     IBUF(1)=ICHAN(1)
0480     IBUF(2)=30
0481     IBUF(3)=1
0482 C**START INTEGRATOR, SWITCH SAMPLE LOOP, AND ADVANCE SCANNY VALUE
0483 C*****
0484     WRITE(LU,1)
0485 1     FORMAT ("#####")
0486     IF(NGAS.EQ.1)ISEC=3
0487     IF(NGAS.EQ.2)ISEC=5
0488     IF(NGAS.EQ.3)ISEC=7
0489     CALL WAIT(ISEC,2,IERR)
0490 C*****
0491     CALL EXEC(2,89,IBUF,3)
0492     CALL WAIT(2,2,IERR)
0493     CALL MOVE(1,1,ICHAN,ICC)
0494     CALL EXEC(1,133B,IB,NBUF)
0495     PPM(1)=0.0
0496     PPM(2)=0.0
0497     PPM(3)=0.0
0498     DO 80 I=1,NBUF
0499         ISHIF=(IB(I)*256)+(IB(I+1)/256)
0500         IF( (IB(I).NE.2H1R.AND.ISHIF.NE.2H1R) )GO TO 82
0501             CALL REDIT(IB,I,PPM(1))
0502 82     CONTINUE
0503         IF( (IB(I).NE.2H2R.AND.ISHIF.NE.2H2R) )GO TO 84
0504             CALL REDIT(IB,I,PPM(2))
0505 84     CONTINUE
0506         IF( (IB(I).NE.2H3R.AND.ISHIF.NE.2H3R) )GO TO 80
0507             CALL REDIT(IB,I,PPM(3))
0508 80     CONTINUE
0509     RETURN
0510     END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00412 COMMON = 00000

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```
0511 C*****
0512 SUBROUTINE RED11(IB,I,PPM)
0513 DIMENSION IB(130),IPPM(6)
0514 DO 10 J=1,6
0515     IPPM(J)=IB(I+1+J)
0516 10 CONTINUE
0517 CALL CODE
0518 READ(IPPM,*)PPM
0519 RETURN
0520 END
```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00049 COMMON = 00000

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```

0521 C*****
0522 SUBROUTINE REPT(LU,IDCB,ITUBE,ISYRG,X,Y,Z,IK,PPM,CONC,NGAS)
0523 DIMENSION ITUBE(50),ISYRG(50),IDCB(144),IB(14),
0524 + X(50),Y(50),Z(50),PPM(3),CONC(3)
0525 EQUIVALENCE (IB(1),ITUBE1),(IB(2),ISYRG1),(IB(3),X1),(IB(5),Y1),
0526 + (IB(7),Z1),(IB(9),CON1),(IB(11),CON2),(IB(13),CON3)
0527 ITUBE1=ITUBE(1K)
0528 ISYRG1=ISYRG(1K)
0529 X1=X(1K)
0530 Y1=Y(1K)
0531 Z1=Z(1K)
0532 CON1=CONC(1)
0533 CON2=CONC(2)
0534 CON3=CONC(3)
0535 CALL WRITE(IDCB,IERR,IB,14)
0536 IF(IERR.LT.0)CALL ERROR(9,IDCB,IERR,LU)
0537 DO 10 I=1,NGAS
0538 IF(I.EQ.1)WRITE(LU,1)ITUBE1,X1,Y1,Z1,PPM(I),CONC(I)
0539 IF(I.NE.1)WRITE(LU,2)PPM(I),CONC(I)
0540 10 CONTINUE
0541 RETURN
0542 1 FORMAT(6X,I5,3(1X,F8.2),1X,F9.1,1X,F10.2)
0543 2 FORMAT(39X,F9.1,1X,F10.2)
0544 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00212 COMMON = 00000

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```

0545 C*****
0546 SUBROUTINE OUT6(LU, IDCB)
0547 DIMENSION IDCB(144), IRUN(3), NAMFL(3), NAMOP(3), Q(3), TEMPS(3),
0548 + IGTYPE(2,3), SCON(3), BAKGR(3), ITUBE(60), X(60), Y(60),
0549 + Z(60), CON(3,60), IORDER(60), TF(3), PCON(3), PPM(3)
0550 CALL POSNT(IDCB, IERR, 1, 1)
0551 IF(IERR.LT.0) CALL ERROR(10, IDCB, IERR, LU)
0552 CALL RREC1(LU, IDCB, IRUN, NAMFL, NAMOP, IDAY, IYEAR, NGAS)
0553 CALL RREC2(LU, IDCB, VEL, HVEL, TEMPA, HTEMP, Q)
0554 CALL RREC3(LU, IDCB, TEMPS, IGTYPE)
0555 CALL RREC4(LU, IDCB, SCON, BAKGR)
0556 CALL RDATA(LU, IDCB, ITUBE, X, Y, Z, CON, LAST)
0557 CALL SORT(ITUBE, LAST, IORDER)
0558 DO 10 I=1, NGAS
0559 TF(I)=(TEMPA+273.)/(TEMPS(I)+273.)
0560 10 CONTINUE
0561 CALL LURQ(1,6,1)
0562 WRITE(6,1)(IRUN(I), I=1,3), (NAMFL(I), I=1,3), (NAMOP(I), I=1,3),
0563 + IDAY, IYEAR, VEL, HVEL, TEMPA, HTEMP, (I, I=1, NGAS)
0564 WRITE(6,2)(Q(I), I=1, NGAS)
0565 WRITE(6,3)(TEMPS(I), I=1, NGAS)
0566 WRITE(6,4)((IGTYPE(I,J), I=1,2), J=1, NGAS)
0567 WRITE(6,5)(SCON(I), I=1, NGAS)
0568 WRITE(6,6)(BAKGR(I), I=1, NGAS)
0569 WRITE(6,7)
0570 DO 30 I=1, LAST
0571 J=IORDER(I)
0572 DO 20 K=1, NGAS
0573 C=CON(K,J)/1000000.
0574 PCON(K)=1000000.*C/(C+(1-C)*TF(K))
0575 PPM(K)=(CON(K,J)*(SCON(K)-BAKGR(K))/1000000.)+BAKGR(K)
0576 20 CONTINUE
0577 WRITE(6,8)ITUBE(J), X(J), Y(J), Z(J), (CON(K,J), K=1, NGAS)
0578 + , (PPM(K), K=1, NGAS)
0579 30 CONTINUE
0580 WRITE(6,9)
0581 CALL LURQ(0,6,1)
0582 RETURN
0583 1 FORMAT(1H1"RUN NUMBER "3A2,9X,"FILE NAME "3A2" BY "3A2" ON DAY "
0584 + 13" OF YEAR "14/
0585 + " WIND SPEED "F6.2" CM/S AT "F6.1" CM"/
0586 + " AIR TEMP. "F5.1" C AT "F6.1" CM"/
0587 + " SOURCE DESIGNATION"19X, I1, 10X, I1, 10X, I1)
0588 2 FORMAT(" SOURCE FLOW RATE (CCS)"7X, 3(4X, F7.1))
0589 3 FORMAT(" SOURCE GAS TEMPERATURE (C)"3X, 3(5X, F6.1))
0590 4 FORMAT(" TRACER TYPE"16X, 3(7X, 2A2))
0591 5 FORMAT(" TRACER CONCENTRATION (PPM) "3(2X, F9.2))
0592 6 FORMAT(" BACKGROUND CONCENTRATION (PPM)"3(2X, F9.2))
0593 7 FORMAT("/" TUBE NO."5X"X"8X"Y"8X"Z"8X"CONCENTRATIONS"
0594 + "/12X"(CM)"5X"(CM)"5X"(CM)-12X"(PPM)")
0595 8 FORMAT(2X, 13, 2X, 3(2X, F7.2), 6(3X, F9.1))
0596 9 FORMAT(1H1)
0597 END

```

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FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 01696 COMMON = 00000

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```

0598 C *****
0599 SUBROUTINE RREC1(LU, IDCB, IRUN, NAMFL, NAMOP, IDAY, IYEAR, NGAS)
0600 DIMENSION IDCB(14), NAMFL(3), NAMOP(3), IRUN(3), IB(14)
0601 CALL READF(IDCB, IERR, IB, 4)
0602 IF(IERR.LT.0) CALL ERROR(60, IDCB, IERR, LU)
0603 IRUN(1)=IB(1)
0604 IRUN(2)=IB(2)
0605 IRUN(3)=IB(3)
0606 NAMFL(1)=IB(4)
0607 NAMFL(2)=IB(5)
0608 NAMFL(3)=IB(6)
0609 NAMOP(1)=IB(7)
0610 NAMOP(2)=IB(8)
0611 NAMOP(3)=IB(9)
0612 IDAY=IB(10)
0613 IYEAR=IB(11)
0614 NGAS=IB(12)
0615 RETURN
0616 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00148 COMMON = 00000

PAGE 0025 FTN. 2:21 PM WED., 4 JAN., 1984

```

0617 C *****
0618 SUBROUTINE RREC2(LU, IDCB, VEL, HVEL, TEMP, HTEMP, Q)
0619 DIMENSION IDCB(14), IB(14), Q(3), Q1(3)
0620 EQUIVALENCE (IB(1), V1), (IB(3), HV1), (IB(5), T1), (IB(7), HT1),
0621 + (IB(9), Q1(1))
0622 CALL READF(IDCB, IERR, IB, 14)
0623 IF(IERR.LT.0) CALL ERROR(61, IDCB, IERR, LU)
0624 VEL=V1
0625 HVEL=HV1
0626 TEMP=T1
0627 HTEMP=HT1
0628 DO 10 I=1,3
0629 Q(I)=Q1(I)
0630 10 CONTINUE
0631 RETURN
0632 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00090

COMMON = 00000

PAGE 0026 FTH. 2:21 PM WED., 4 JAN., 1984

```

0633 C *****
0634 SUBROUTINE RREC3(LU,IDCB,TEMPS,IGTYPE)
0635 DIMENSION IDCB(144),IB(14),TEMPS(3),IGTYPE(6),T1(3),IG1(6)
0636 EQUIVALENCE (IB(1),T1(1)),(IB(7),IG1(1))
0637 CALL READF(IDCB,IERR,IB,14)
0638 IF(IERR.LT.0) CALL ERROR(62,IDCB,IERR,LU)
0639 DO 10 I=1,3
0640     TEMPS(I)=T1(I)
0641 10 CONTINUE
0642 DO 20 I=1,6
0643     IGTYPE(I)=IG1(I)
0644 20 CONTINUE
0645 RETURN
0646 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00091 COMMON = 00000

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```

0647 C *****
0648     SUBROUTINE RREC4(LU,IDCB,SCON,BAKGR)
0649     DIMENSION IDCB(144),IB(14),SCON(3),BAKGR(3),S1(3),B1(3)
0650     EQUIVALENCE (IB(1),S1(1)),(IB(7),B1(1))
0651     CALL READF(IDCB,IERR,IB,14)
0652     IF(IERR.LT.0) CALL ERROR (63,IDCB,IERR,LU)
0653     DO 10 I=1,3
0654         SCON(I)=S1(I)
0655         BAKGR(I)=B1(I)
0656 10    CONTINUE
0657     RETURN
0658     END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00084 COMMON = 00000

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```

0659 C *****
0660 SUBROUTINE RDATA(LU, IDCB, ITUBE, X, Y, Z, CON, LAST)
0661 DIMENSION IDCB(144), ITUBE(60), X(60), Y(60), Z(60), CON(3,60), IB(14),
0662 + CONC(3)
0663 EQUIVALENCE (IB(1), ITUBE(1)), (IB(2), ISYRG1), (IB(3), X1), (IB(5), Y1),
0664 + (IB(7), Z1), (IB(9), CONC(1))
0665 I=0
0666 10 CONTINUE
0667 I=I+1
0668 CALL READF(IDCB, IERR, IB, 14, LEN)
0669 IF(ISYRG1.LT.0)GO TO 20
0670 IF(IERR.LT.0)CALL ERROR(13, IDCB, IERR, LU)
0671 ITUBE(I)=ITUBE1
0672 X(I)=X1
0673 Y(I)=Y1
0674 Z(I)=Z1
0675 DO 15 J=1,3
0676 CONC(J,I)=CONC(J)
0677 15 CONTINUE
0678 IF(I.NE.60)GO TO 10
0679 WRITE(LU,4)
0680 20 CONTINUE
0681 LAST=I-1
0682 RETURN
0683 4 FORMAT("MORE THAN 60 RECORDS--OUTPUT TRUNCATED")
0684 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00164 COMMON = 00000

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```

0685 C *****
0686 SUBROUTINE SORT(ITUBE, LAST, IORDER)
0687 DIMENSION ITUBE(60), IORDER(60)
0688 C**SORT DATA BY TUBE NO.
0689 K=1
0690 DO 200 J=1,100
0691 IFLAG=0
0692 DO 190 I=1, LAST
0693 IF(ITUBE(I) NE J)GO TO 190
0694 IORDER(K)=I
0695 IFLAG=1
0696 190 CONTINUE
0697 IF(IFLAG.NE.0)K=K+1
0698 200 CONTINUE
0699 LAST=K-1
0700 RETURN
0701 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00070 COMMON = 00000

PAGE 0030 FTH. 2:21 PM WED., 4 JAN., 1984

```
0702 C*****
0703      SUBROUTINE ERROR(LOC,IDCB,IERR,LU)
0704      DIMENSION IDCB(144)
0705      CALL CLOSE(IDCB)
0706      WRITE(LU,1)IERR,LOC
0707 1      FORMAT('FMGR ERROR "15" AT "15')
0708      STOP
0709      END
```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00037 COMMON = 00000

PAGE 0031 FTH. 2:21 PM WED., 4 JAN., 1984

```

0710 C *****
0711 C FUNCTION NOYES(LU)
0712 C
0713 C FUNCTION NOYES RETURNS A +1 IF IANS IS YES
0714 C -1 IF IANS IS NO
0715 C 0 IF IANS IS NEITHER
0716 C
0717 C CALL KEYIN(IANS,LU)
0718 C IF (IANS.EQ.1HY) GO TO 100
0719 C IF (IANS.EQ.1HN) GO TO 105
0720 C NOYES=0
0721 C RETURN
0722 100 NOYES=+1
0723 C RETURN
0724 105 NOYES=-1
0725 C RETURN
0726 C END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00039 COMMON = 00000

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0727 \$

PAGE 0001 FTH. 2:17 PM WED., 4 JAN., 1984

```

0001 FTH4,L
0002 C*****
0003 PROGRAM GGRP(3,90)
0004 C
0005 C**WRITTEN BY DAVE HEFF, DEC.16 1983 TO WRITE OUT CONC. DATA TAKEN BY &GC
0006 C
0007 DIMENSION IDCB(144),IPAR(5),NAME(3),IDCBD(144),NAMED(3)
0008 CALL RMPAR(IPAR)
0009 LU=IPAR(1)
0010 IF(LU.LT.1)LU=1
0011 CALL LTB(R(LU))
0012 WRITE(LU,1)
0013 CALL GNAME(LU,NAME,ISEC,ICR,1)
0014 CALL OPEN(IDCB,IERR,NAME,0,ISEC,ICR)
0015 IF(IERR.LT.0)CALL ERROR(1,IDCB,IERR,LU)
0016 CALL LURQ(1,6,1)
0017 10 CONTINUE
0018 CALL DATNR(IDCB,NAMED,ISEC,ICR)
0019 IF(NAMED(1).EQ.2H!!)GO TO 20
0020 CALL OPEN(IDCBD,IERR,NAMED,0,ISEC,ICR)
0021 IF(IERR.LT.0)CALL ERROR(2,IDCB,IERR,LU)
0022 CALL OUT6(LU,IDCBD)
0023 CALL CLOSE(IDCBD)
0024 GO TO 10
0025 20 CONTINUE
0026 CALL LURQ(0,6,1)
0027 WRITE(6,3)
0028 CALL CLOSE(IDCB)
0029 WRITE(LU,2)
0030 1 FORMAT("ENTER TRANSFER FILE NAME:SEC:ICR- _")
0031 2 FORMAT("RUN COMPLETE")
0032 3 FORMAT(1H1)
0033 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00465 COMMON = 00000

PAGE 0002 FTN. 2117 PM WED., 4 JAN., 1984

```

0034 C*****
0035 SUBROUTINE OUT6(LU,IDCB)
0036 DIMENSION IDC8(144),IRUN(3),NAMFL(3),NAMOP(3),Q(3),TEMPS(3),
0037 + IGTYPE(2,3),SCON(3),BAKGR(3),ITUBE(60),X(60),Y(60),
0038 + Z(60),CON(3,60),IORDER(60),PCON(3),PPM(3),S1(3),
0039 + S2(3),N1(3),N2(3),CM(3)
0040 CALL POSHT(IDCB,IERR,1,1)
0041 IF(IERR.LT.0)CALL ERROR(10,IDCB,IERR,LU)
0042 CALL RREC1(LU,IDCB,IRUN,NAMFL,NAMOP,IDAY,IYEAR,NGAS)
0043 CALL RREC2(LU,IDCB,VEL,HVEL,TEMPA,HTEMP,Q)
0044 CALL RREC3(LU,IDCB,TEMPS,IGTYPE)
0045 CALL RREC4(LU,IDCB,SCON,BAKGR)
0046 CALL RDATA(LU,IDCB,ITUBE,X,Y,Z,CON,LAST)
0047 CALL SORT(ITUBE,LAST,IORDER)
0048 DO 10 I=1,NGAS
0049 S1(I)=0.0
0050 S2(I)=0.0
0051 N1(I)=0
0052 N2(I)=0
0053 CM(I)=0.0
0054 10 CONTINUE
0055 WRITE(6,1)(IRUN(I),I=1,3),(NAMFL(I),I=1,3)
0056 IF(NGAS.EQ.2)WRITE(6,11)
0057 IF(NGAS.EQ.3)WRITE(6,7)
0058 DO 30 I=1,LAST
0059 J=IORDER(I)
0060 DO 20 K=1,NGAS
0061 C=CON(K,J)/1000000.
0062 PCON(K)=C*VEL*0.1736/Q(K)
0063 PPM(K)=(CON(K,J)*(SCON(K)-BAKGR(K))/1000000.)+BAKGR(K)
0064 C!!!!!!BACKGROUND CONCENTRATION TOLERANCE CALCULATION
0065 TOL=.3*BAKGR(K)+BAKGR(K)
0066 IF(PPM(K).LT.TOL)PCON(K)=0.0
0067 IF(BAKGR(K).GE.1.)GO TO 5
0068 TOL=.3+BAKGR(K)
0069 IF(PPM(K).LT.TOL)PCON(K)=0.0
0070 5 CONTINUE
0071 C!!!!!!
0072 IF(ITUBE(J).GT.6.AND.ITUBE(J).LE.26)N1(K)=N1(K)+1
0073 IF(ITUBE(J).GT.6.AND.ITUBE(J).LE.26)S1(K)=S1(K)+PCON(K)
0074 IF(ITUBE(J).GT.26)S2(K)=S2(K)+PCON(K)
0075 IF(ITUBE(J).GT.26)N2(K)=N2(K)+1
0076 CM(K)=AMAX1(CM(K),PCON(K))
0077 20 CONTINUE
0078 WRITE(6,8)ITUBE(J),(PCON(K),K=1,NGAS)
0079 30 CONTINUE
0080 DO 90 I=1,NGAS
0081 S1(I)=S1(I)/FLOAT(N1(I))
0082 S2(I)=S2(I)/FLOAT(N2(I))
0083 90 CONTINUE
0084 WRITE(6,12)(S1(I),I=1,NGAS)
0085 WRITE(6,13)(S2(I),I=1,NGAS)
0086 WRITE(6,14)(CM(I),I=1,NGAS)
0087 RETURN
0088 1 FORMAT(1H1"RUN NO. "3A2," FILE NAME "3A2)

```

PAGE 0003 OUT6 2:17 PM WED., 4 JAN., 1984

```
0089 7   FORMAT(/" TUBE NO."2X"CONCENTRATIONS (1/M**2)"
0090 +    /12X"SOURCE 1      SOURCE 2      SOURCE 3"/)
0091 8   FORMAT(2X,13,2X,3(2X,E10.3))
0092 11  FORMAT(/" TUBE NO."2X"CONCENTRATIONS (1/M**2)"
0093 +    /12X"SOURCE 1      SOURCE 2")
0094 12  FORMAT(/" WALL ="3(2X,E10.3))
0095 13  FORMAT(" ROOF ="3(2X,E10.3))
0096 14  FORMAT(" MAX  ="3(2X,E10.3))
0097    END
```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 01697 COMMON = 00000

PAGE 0004 FTH. 2:17 PM WED., 4 JAN., 1984

```

0098 C *****
0099 SUBROUTINE RREC1(LU, IDCB, IRUN, NAMFL, NAMOP, IDAY, IYEAR, NGAS)
0100 DIMENSION IDCB(144), NAMFL(3), NAMOP(3), IRUN(3), IB(14)
0101 CALL READP(IDCB, IERR, IB, 14)
0102 IF(IERR.LT.0) CALL ERROR (60, IDCB, IERR, LU)
0103 IRUN(1)=IB(1)
0104 IRUN(2)=IB(2)
0105 IRUN(3)=IB(3)
0106 NAMFL(1)=IB(4)
0107 NAMFL(2)=IB(5)
0108 NAMFL(3)=IB(6)
0109 NAMOP(1)=IB(7)
0110 NAMOP(2)=IB(8)
0111 NAMOP(3)=IB(9)
0112 IDAY=IB(10)
0113 IYEAR=IB(11)
0114 NGAS=IB(12)
0115 RETURN
0116 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00148 COMMON = 00000

PAGE 0005 FTH. 2:17 PM WED., 4 JAN., 1984

```

0117 C *****
0118 SUBROUTINE RREC2(LU, IDCB, VEL, HVEL, TEMPA, HTEMP, Q)
0119 DIMENSION IDCB(144), IB(14), Q(3), Q1(3)
0120 EQUIVALENCE (IB(1), V1), (IB(3), HV1), (IB(5), T1), (IB(7), HT1),
0121 + (IB(9), Q1(1))
0122 CALL READF(IDCB, IERR, IB, 14)
0123 IF(IERR.LT.0) CALL ERROR(61, IDCB, IERR, LU)
0124 VEL=V1
0125 HVEL=HV1
0126 TEMPA=T1
0127 HTEMP=HT1
0128 DO 10 I=1,3
0129 Q(I)=Q1(I)
0130 10 CONTINUE
0131 RETURN
0132 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00090 COMMON = 00000

PAGE 0006 FTH. 2:17 PM WED., 4 JAN., 1984

```

0133 C *****
0134      SUBROUTINE RREC3(LU,IDCB,TEMPS,IGTYPE)
0135      DIMENSION IDCB(144),IB(14),TEMPS(3),IGTYPE(6),T1(3),IG1(6)
0136      EQUIVALENCE (IB(1),T1(1)),(IB(7),IG1(1))
0137      CALL READF(IDCB,IERR,IS,14)
0138      IF(IERR.LT.0) CALL ERROR(62,IDCB,IERR,LU)
0139      DO 10 I=1,3
0140          TEMPS(I)=T1(I)
0141 10      CONTINUE
0142      DO 20 I=1,6
0143          IGTYPE(I)=IG1(I)
0144 20      CONTINUE
0145      RETURN
0146      END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00091 COMMON = 00000

PAGE 0007 FTN. 2:17 PM MED., 4 JAN., 1984

```

0147 C *****
0148      SUBROUTINE RREC4(LU,IDCB,SCON,BAKGR)
0149      DIMENSION IDCB(144),IB(14),SCON(3),BAKGR(3),S1(3),B1(3)
0150      EQUIVALENCE (IB(1),S1(1)),(IB(7),B1(1))
0151      CALL READF(IDCB,IERR,IB,14)
0152      IF(IERR.LT.0) CALL ERROR (63,IDCB,IERR,LU)
0153      DO 10 I=1,3
0154          SCON(I)=S1(I)
0155          BAKGR(I)=B1(I)
0156 10    CONTINUE
0157      RETURN
0158      END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00084 COMMON = 00000

PAGE 0008 FTH. 2:17 PM WED., 4 JAN., 1984

```

0159 C *****
0160 SUBROUTINE RDATA(LU, IDCB, ITUBE, X, Y, Z, CON, LAST)
0161 DIMENSION IDCB(144), ITUBE(60), X(60), Y(60), Z(60), CON(3,60), IB(14),
0162 + CONC(3)
0163 EQUIVALENCE (IB(1), ITUBE1), (IB(2), ISYRG1), (IB(3), X1), (IB(5), Y1),
0164 + (IB(7), Z1), (IB(9), CONC(1))
0165 I=0
0166 10 CONTINUE
0167 I=I+1
0168 CALL READF(IDCB, IERR, IB, 14, LEN)
0169 IF(ISYRG1.LT.0)GO TO 20
0170 IF(IERR.LT.0)CALL ERROR(13, IDCB, IERR, LU)
0171 ITUBE(I)=ITUBE1
0172 X(I)=X1
0173 Y(I)=Y1
0174 Z(I)=Z1
0175 DO 15 J=1,3
0176 CONC(J,I)=CONC(J)
0177 15 CONTINUE
0178 IF(I.NE.60)GO TO 10
0179 WRITE(LU,4)
0180 20 CONTINUE
0181 LAST=I-1
0182 RETURN
0183 4 FORMAT("MORE THAN 60 RECORDS--OUTPUT TRUNCATED")
0184 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00164 COMMON = 00000

PAGE 0009 FTM. 2117 PM WED., 4 JAN., 1984

```

0185 C *****
0186 SUBROUTINE SORT(ITUBE, LAST, IORDER)
0187 DIMENSION ITUBE(60), IORDER(60)
0188 C**SORT DATA BY TUBE NO.
0189 K=1
0190 DO 200 J=1,100
0191 IFLAG=0
0192 DO 190 I=1, LAST
0193 IF(ITUBE(I).NE.J)GO TO 190
0194 IORDER(K)=I
0195 IFLAG=1
0196 190 CONTINUE
0197 IF(IFLAG.NE.0)K=K+1
0198 200 CONTINUE
0199 LAST=K-1
0200 RETURN
0201 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00070 COMMON = 00000

PAGE 0010 FTH. 2:17 PM WED., 4 JAN., 1984

```
0202 C*****
0203     SUBROUTINE ERROR(LOC,IDCB,IERR,LU)
0204     DIMENSION IDCB(144)
0205     CALL CLOSE(IDCB)
0206     WRITE(LU,1)IERR,LOC
0207 1    FORMAT("FMGR ERROR "15" AT "15)
0208     STOP
0209     END
```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00037 COMMON = 00000

PAGE 0011 FTH. 2:17 PM WED., 4 JAN., 1984

```

0210 C*****
0211 SUBROUTINE DATNR(IDC8,NAME,ISEC,ICR)
0212 DIMENSION IDC8(144),NAME(3),IBUF(36),ITEN(10),ID(2)
0213 ISCR=1
0214 20 CALL READF(IDC8,IERR,IBUF,36,LEN2)
0215 IF (IERR.LT.0)CALL ERROR(3,IDCB,IERR,1)
0216 LEN=LEN2*2
0217 IF (IBUF(1).EQ.2H::) GO TO 50
0218 IF (LEN.LT.1) GO TO 50
0219 CALL NAMR(ITEN,IBUF,LEN,ISCR)
0220 30 IF (NAMR(ITEN,IBUF,LEN,ISCR)) 50,35
0221 35 IF (IP1(0,ITEN(4)).NE.3) GO TO 50
0222 NAME(1)=ITEN(1)
0223 NAME(2)=ITEN(2)
0224 NAME(3)=ITEN(3)
0225 ISEC=0
0226 IF (IP1(1,ITEN(4)).NE.0) ISEC=ITEN(5)
0227 ICR=0
0228 IF (IP1(2,ITEN(4)).EQ.1) ICR=ITEN(6)
0229 RETURN
0230 50 NAME(1)=2H::
0231 RETURN
0232 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00208 COMMON = 00000

PAGE 0012 FTH. 2:17 PM WED., 4 JAN., 1984

```
0233 C*****
0234 FUNCTION IP1(IPR,IWORD)
0235 JWORD=IWORD/(4*IPR)
0236 IP1=MOD(JWORD,4)
0237 RETURN
0238 END
```

FYN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00028 COMMON = 00000

PAGE 0013 FTN. 2:17 PM WED., 4 JAN., 1984

0239 \$

FDDL

COMPUTER PROGRAMS
FOR
PRESSURE MEASUREMENTS

PRE00

PRI00

PAGE 0001 FTH. 2:30 PM WED., 4 JAN., 1984

```

0001 FTH4,L
0002 PROGRAM PRE00(3,90),KEN MCMULLEN -- JUNE 81
0003 C
0004 C REVISION OF PRESC, WHERE THIS FATHER PROGRAM TAKES THE DATA
0005 C AND THE SON PROGRAM PRISSE REDUCES THE DATA.
0006 C MAY 1981 -- KEN MCMULLEN
0007 C UPDATED RVALV MAY 1982 -- KEN MCMULLEN
0008 C
0009 COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0010 + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
0011 + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,IBZ,LUC,IDCB1(144),IDCB2(144),
0012 + ITAP(192),JSIZE,IWIND,
0013 + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0014 + IIBF(5),NTAPS,NREV,NAM3(3),KLEFT,K1TAP,NAMS(3),VREF(4),ID(15)
0015 DIMENSION NSEG1(3)
0016 DATA NSEG1 /2HPR,2HBO,2H0 /
0017 CALL RMPAR(LU)
0018 IF(LU.NE.26) CALL NAMIT(LU,NSEG1)
0019 CALL EXEC(8,NSEG1)
0020 C
0021 C THIS WILL NEVER GET EXECUTED, ITS HERE TO FORCE-LOAD
0022 C SOME ENTRY-POINTS INTO THE MAIN PROGRAM.
0023 C
0024 X=SQRT(X)
0025 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00037 COMMON = 00000

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0026      BLOCK DATA
0027      COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0028      + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
0029      + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,IBZ,LUC,IDCB1(144),IDCB2(144),
0030      + ITAP(192),JSIZE,IWIND,
0031      + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0032      + IIBF(5),NTAPS,NREV,NAM3(3),KLEFT,KITAP,NAMS(3),VREF(4),ID(15)
0033      DATA NSAM,IRATE,NCHAN,ICONF,IFLIST /4096,230,4,1HA,1HY/
0034      DATA NAMP,ISIZ1,IIBF /2HDA,2HTA,1H ,7,10,2H$P,2HRA,2H00/
0035      DATA NAMS /2HPR,2H10,2H0 /
0036      END

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FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS **

BLOCK COMMON INDTA SIZE = 00579

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0037      PROGRAM PRB00(5),JRD - APR. 1980
0038
0039      C DATA INPUT AND PARAMETER SET-UP
0040      C THIS SEGMENT IS ONLY EXECUTED ONCE WHEN PRA00 IS FIRST RUN
0041      C
0042      COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0043      + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
0044      + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,IBZ,LUC,IDCB1(144),IDCB2(144),
0045      + ITAP(192),JSIZE,IWIND,
0046      + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0047      + IIBF(5),HTAPS,NREV,NAM3(3),KLEFT,KITAP,NAMS(3),VREF(4),ID(15)
0048      DIMENSION NAM4(3),NAM5(3),NSEG2(3),ISIZ5(2),ISIZ2(2),IDATE(4,3)
0049      DATA NAM4 /2HTU,2HBE,2H00/
0050      DATA NAM5 /2H0P,2HRE,2H00/
0051      DATA NSEG2 /2HPR,2HCO,2H0 /
0052      DATA ISIZ5 /1,128/
0053      C
0054      IF (LU.LT.1) LU=1
0055      LUC=KCVT(LU)
0056      IF (LU.LT.10) LUC=LUC+100000B
0057      CALL LIBER(LU)
0058      ICR=LU+6
0059      IF (ICR.GT.19) ICR=19
0060      IF (ICR.LT.17) ICR=17
0061      IF (LU.NE.26) CALL NAMIT(LU,NAMS)
0062      C
0063      C OPEN THE INPUT FILE AND READ IN THE INPUT DATA
0064      C
0065      NAM5(3)=LUC
0066      LIST=0
0067      CALL OPEN(IDCB1,IERR,NAM5,0,0,15)
0068      C
0069      C NOT FOUND ?
0070      C
0071      IF (IERR.EQ.-6) GO TO 100
0072      CALL ERR(IERR,10)
0073      GO TO 105
0074      C
0075      C CREATE AN INPUT FILE
0076      C
0077      100 CALL CREAT(IDCB1,IERR,NAM5,ISIZ5,1,0,15)
0078      CALL ERR(IERR,20)
0079      GO TO 120
0080      C
0081      C READ IN THE CONTENTS OF THE INPUT FILE
0082      C
0083      105 CALL READF(IDCB1,IERR,IPROJ,42)
0084      CALL ERR(IERR,30)
0085      C
0086      C DOES THE USER WANT TO SEE OR CHANGE THE INPUT PARAMETERS ?
0087      C
0088      110 WRITE(LU,115)
0089      115 FORMAT("SEE CHANGE THE INPUT PARAMETERS ? _")
0090      IF (NOYES(LU)) 295,110,120
0091      C

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0092 C PRINT THE CONTENTS OF THE INPUT FILE
0093 C
0094 120 LIST=1
0095 WRITE(LU,125) IPROJ,ICR
0096 125 FORMAT(/," 1. PROJECT, DATA CARTRIDGE: ",2I5)
0097 WRITE(LU,130) ITUBE
0098 130 FORMAT(" 2. TUBING: ",I5)
0099 WRITE(LU,135) IRATE,NSAM
0100 135 FORMAT(" 3. SAMPLE RATE, NUMBER OF SAMPLES : ",2I5)
0101 WRITE(LU,140) ICHAN,NCHAN
0102 140 FORMAT(" 4. FIRST A/D CHANNEL, NUMBER OF CHANNELS : ",2I5)
0103 WRITE(LU,145) ICONF
0104 145 FORMAT(" 5. CONFIGURATION: ",A1)
0105 IF(IGFCTR.LT.0.OR.IGFCTR.GT.100) IGFCTR=1
0106 WRITE(LU,147) IGFCTR
0107 147 FORMAT(" 6. GAIN FACTOR: "I3)
0108 CALL DUCER(IDUCER,CFAC,IDATE,IGFCTR,LU)
0109 WRITE(LU,150) (IDUCER(J),CFAC(J),(IDATE(J,I),I=1,3),J=1,NCHAN)
0110 150 FORMAT(" 7. TRANS. SERIAL # CAL. FACTOR CAL. DATE"
0111 + 4(79X," I5" " F10.6," "2(I2"/" )I2))
0112 C WRITE(LU,150) (CFAC(J),J=1,NCHAN)
0113 C 150 FORMAT(" 7. CALIBRATION FACTORS : ",4F9.6)
0114 IF(NZERO.GT.3.OR.NZERO.LT.1) NZERO=1
0115 WRITE(LU,153) NZERO
0116 153 FORMAT(" 8. A/D CHANNEL ZEROS : MODE "I1" BEING USED !!")
0117 IF(NZERO.EQ.1) WRITE(LU,155) (ADCZ(J),J=1,NCHAN)
0118 155 FORMAT(" : ",4F9.3)
0119 IF(NZERO.EQ.2.OR.NZERO.EQ.3) WRITE(LU,156) ZTOLR
0120 156 FORMAT(" : DRIFT TOLERANCE = "F6.3)
0121 IF(NZERO.EQ.3) WRITE(LU,157) ICHNL
0122 157 FORMAT(" : PULSE CHANNEL "I3)
0123 WRITE(LU,160) TEMP,PRES
0124 160 FORMAT(" 9. TEMPERATURE (DEG F), PRESSURE (IN HG): ",2F7.2)
0125 WRITE(LU,165) ICYCH,IDRCH
0126 165 FORMAT("10. CYCLE CHANNEL, DIRECTION CHANNEL : ",I4,I7)
0127 ANS=4H NO
0128 IF (IFLIST.EQ.1HY) ANS=4H YES
0129 WRITE(LU,170) ANS
0130 170 FORMAT("11. LIST TO LINE PRINTER : ",A4)
0131 WRITE(LU,171) IBZ
0132 171 FORMAT("12. SOUND THE BUZZER ON CONTROL OUTPUT # (0 IF NO) "I2)
0133 VANS=4H OLD
0134 IF (IVALVE.EQ.1HN) VANS= 4H NEW
0135 IF (IVALVE.NE.1HN) IVALVE=1H0
0136 WRITE(LU,172) VANS
0137 172 FORMAT("13. VALVE SYSTEM TO BE USED : ",A4,/)
0138 C
0139 C WHAT CHANGES (IF ANY) ARE TO BE MADE
0140 C
0141 175 WRITE(LU,180)
0142 180 FORMAT("CHANGE LINE ? _")
0143 READ(LU,*) LINE
0144 IF (LINE.GT.0.AND.LINE.LT.14) GO TO 185
0145 IF (LIST.EQ.1) GO TO 295
0146 GO TO 110

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0147 C
0148 C CHANGE A LINE
0149 C
0150 185 LIST=0
0151 GO TO (190,200,210,220,230,242,245,255,265,275,285,289,292),LINE
0152 190 WRITE(LU,195)
0153 195 FORMAT(" 1. PROJECT NUMBER ? _")
0154 READ(LU,*) IPROJ
0155 GO TO 175
0156 200 WRITE(LU,205)
0157 205 FORMAT(" 2. TUBING NUMBER ? _")
0158 READ(LU,*) ITUBE
0159 GO TO 175
0160 210 IF (LU.NE.1) GO TO 175
0161 WRITE(LU,215)
0162 215 FORMAT(" 3. SAMPLE RATE, NUMBER OF SAMPLES ? _")
0163 READ(LU,*) IRATE,NSAM
0164 GO TO 175
0165 220 WRITE(LU,225)
0166 225 FORMAT(" 4. FIRST A/D CHANNEL, NUMBER OF CHANNELS ? _")
0167 READ(LU,*) ICHAN,NCHAN
0168 IF (NCHAN.GT.4) GO TO 220
0169 GO TO 175
0170 230 WRITE(LU,235)
0171 235 FORMAT(" 5. CONFIGURATION ? _")
0172 READ(LU,240) ICONF
0173 240 FORMAT(A1)
0174 GO TO 175
0175 242 WRITE(LU,244)
0176 C 242 GO TO 175
0177 244 FORMAT(" 6. GAIN FACTOR ? _")
0178 READ(LU,*) IGFCTR
0179 CALL DUCER(IDUCER,CFAC,IDATE,IGFCTR,LU)
0180 GO TO 175
0181 245 WRITE(LU,250)
0182 C 250 FORMAT(" 7. CALIBRATION FACTORS ? _")
0183 250 FORMAT(" 7. TRANSDUCER SERIAL #'S ? _")
0184 C READ(LU,*) CFAC
0185 READ(LU,*) IDUCER
0186 GO TO 175
0187 255 WRITE(LU,260)
0188 260 FORMAT(" 8. A/D CHANNEL ZEROS ? "
0189 +      /"      MODE 1 - TYPE IN THE ZEROS"
0190 +      /"      MODE 2 - ZEROS ON FIRST VALVE POSITION,"
0191 +      /"      " VELOCITIES ON SECOND"
0192 +      /"      MODE 3 - ZEROS AND VELOCITIES ON FIRST VALVE"
0193 +      /"      " POSITION, "
0194 +      /"      USED WITH CONTROL SWITCH"
0195 +      /"      ENTER MODE (1,2,3) _")
0196 READ(LU,*) NZERO
0197 IF(NZERO.LT.1.OR.NZERO.GT.3) GO TO 255
0198 IF(NZERO.NE.1) GO TO 263
0199 WRITE(LU,261)
0200 261 FORMAT(" ENTER A/D CHANNEL ZEROS ? _")
0201 READ(LU,*) ADCZ

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0202      GO TO 175
0203      263 WRITE(LU,262)
0204      262 FORMAT(" ENTER TRANSDUCER ZERO DRIFT TOLERANCE * _")
0205      READ(LU,*) ZTOLR
0206      IF(NZERO.NE.3) GO TO 175
0207      WRITE(LU,264)
0208      264 FORMAT(" ENTER PULSE CHANNEL * _")
0209      READ(LU,*) ICHNL
0210      GO TO 175
0211      265 WRITE(LU,270)
0212      270 FORMAT(" 9. TEMPERATURE (F OR C), ATM. PRESS. (IN HG) ? _")
0213      READ(LU,*) TEMP,PRES
0214      IF (TEMP.LT.40.0) TEMP=1.8*TEMP + 32.0
0215      GO TO 175
0216      275 WRITE(LU,280)
0217      280 FORMAT("10. CYCLE CHANNEL, DIRECTION CHANNEL ? _")
0218      READ(LU,*) ICYCH,IDRCH
0219      GO TO 175
0220      285 WRITE(LU,287)
0221      287 FORMAT("11. LIST TO LINE PRINTER ? _")
0222      READ(LU,240) IFLIST
0223      GO TO 175
0224      289 WRITE(LU,291)
0225      291 FORMAT("12. ENTER CONTROL OUTPUT # FOR BUZZER (0 IF NO) * _")
0226      READ(LU,*) IBZ
0227      IF(IBZ.LT.0.OR.IBZ.GT.15) GO TO 289
0228      GO TO 175
0229      292 WRITE(LU,294)
0230      294 FORMAT("13. OLD OR NEW VALVE SYSTEM ? (O OR N) _")
0231      CALL KEYIN(IVALVE,LU)
0232      IF(IVALVE.EQ.1HO.OR.IVALVE.EQ.1HN) GO TO 175
0233      GO TO 292
0234      C
0235      C NO MORE CHANGES WRITE FILE BACK
0236      C
0237      295 CALL WRITE(IDCBI,IERR,IPROJ,128,1)
0238      D CALL ERR(IERR,40)
0239      CALL CLOSE(IDCBI)
0240      C
0241      C SET UP NECESSARY CONSTANTS
0242      C
0243      JSIZE=(NSAM+63)/32
0244      ISIZ2(1)=JSIZE
0245      LCHAN=ICHAN+NCHAN-1
0246      TOT=FLOAT(NSAM)
0247      IF (LU.NE.1) CALL NAMIT(LU,NAMP)
0248      DENS=PRES*70.027/(1714.88*(TEMP+459.69))
0249      VFACTR=SQRT(208.0/DENS)
0250      C
0251      C OPEN AND READ THE TUBING FILE
0252      C
0253      ITUBEC=KCVT(ITUBE)
0254      IF (ITUBE.LT.10) ITUBEC=ITUBEC+100000
0255      NAM4(3)=ITUBEC
0256      CALL OPEN(IDCBI,IERR,NAM4,1,0,ICR)

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0257       IF (IERR.GE.0) GO TO 305
0258       WRITE(LU,300)
0259       300  FORMAT("  PRES: TUBING LIST ACCESS FAILED")
0260       CALL ERR(IERR,50)
0261       305  CALL READF(IDCB1,IERR,NTAPS,1)
0262       D    CALL ERR(IERR,60)
0263       IF (IVALVE.EQ.1H0.AND.NTAPS.GT.76) CALL ERR(-18,-12)
0264       DO 310 I=1,NTAPS,10
0265       CALL READF(IDCB1,IERR,ITAP(I),10)
0266       310  CONTINUE
0267       D    CALL ERR(IERR,70)
0268       CALL CLOSE(IDCB1)
0269       C
0270       C SOME OTHERS THAT DEPEND ON NTAPS
0271       C
0272       NSTEP=(NTAPS+NCHAN-1)/NCHAN
0273       NREV=NSTEP+4
0274       IF(NZERO.EQ.2) NREV=NSTEP+5
0275       IF(IVALVE.EQ.1H0) GO TO 312
0276       NREV=48-(NSTEP+1)
0277       IF(NZERO.EQ.2) NREV=48-(NSTEP+2)
0278       312  ISIZ1(1)=(((NTAPS+1)*10)+127)/128
0279       C
0280       C CREATE TWO SCRATCH-FILES FOR RAW DATA
0281       C THE FIRST ONE IS BEING REDUCED BY THE SON PROGRAM WHILE PRA00
0282       C IS FILLING THE SECOND ONE WITH RAW DATA THEN THE ROLES ARE REVERSED
0283       C
0284       IIBF(3)=LUC
0285       CALL PURGE(IDCB2,IERR,IIBF,0,15)
0286       IIBF(1)=2H#P
0287       CALL PURGE(IDCB2,IERR,IIBF,0,15)
0288       IIBF(1)=2H#P
0289       CALL CREAT(IDCB2,IERR,IIBF,ISIZ2,1,0,15)
0290       CALL ERR(IERR,80)
0291       CALL CLOSE(IDCB2)
0292       IIBF(1)=2H#P
0293       CALL CREAT(IDCB2,IERR,IIBF,ISIZ2,1,0,15)
0294       CALL ERR(IERR,90)
0295       CALL CLOSE(IDCB2)
0296       IIBF(1)=2H#P
0297       C
0298       C FIGURE OUT WHAT THE LIST-FILE NAME IS
0299       C
0300       CALL CODE
0301       WRITE(NAM3,315) ICONF,IPROJ
0302       315  FORMAT(1HF,A1,I4)
0303       C
0304       C EVERYTHING SHOULD BE READY TO RUN !
0305       C SET THE STEPPING MOTOR CONTROLS
0306       C
0307       REG=EXEC(3,89,ICYCH)
0308       IF(IVALVE.EQ.1HN) GO TO 316
0309       REG=EXEC(3,281,IDRCH)
0310       IF (IB.EQ.0) REG=EXEC(3,153,IDRCH)
0311       316  CONTINUE

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```
0312 C
0313 C TRANSFER CONTROL TO THE NEXT SEGMENT
0314 C
0315     IF(LU.NE.26) CALL NAMIT(LU,NSEG2)
0316     CALL EXEC(8,NSEG2)
0317     END
```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 02066 COMMON = 00000

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```

0318 SUBROUTINE DUCER(IDUCER,CFAC,IDATE,IGFCTR,LU)
0319 C
0320 C THIS SUBROUTINE GETS THE CALIBRATION FACTORS FOR THE TRANSDUCERS
0321 C FROM A FILE THAT HAS THE TRANSDUCER SERIAL #'S, CAL. FACTOR,
0322 C AND DATE THAT THE TRANSDUCER WAS LAST CALIBRATED.
0323 C
0324 DIMENSION IDUCER(4),CFAC(4),IDATE(4,3),NAME(3),IDCB(144),IBUF(21)
0325 DATA NAME /2HPT,2HCA,1HL/
0326 IF(IGFCTR.EQ.0) IGFCTR=1
0327 CALL OPEN(IDCB,IERR,NAME,1,FD,15)
0328 CALL ERR(IERR,100)
0329 DO 200 N=1,4
0330 CALL READF(IDCB,IERR,IBUF)
0331 CALL ERR(IERR,110)
0332 50 CALL READF(IDCB,IERR,IBUF)
0333 IF (IERR.EQ.-12) GO TO 150
0334 CALL ERR(IERR,120)
0335 CALL CODE
0336 READ(IBUF,100) I,A,J,K,L
0337 100 FORMAT(5X,15,8X,F10.6,5X,2(I2,1X),I2)
0338 IF(I.NE.IDUCER(N)) GO TO 50
0339 125 CFAC(N)=A/IGFCTR
0340 IDATE(N,1)=J
0341 IDATE(N,2)=K
0342 IDATE(N,3)=L
0343 CALL RWNDF(IDCB)
0344 GO TO 200
0345 150 CONTINUE
0346 CALL RWNDF(IDCB)
0347 CALL READF(IDCB,IERR,IBUF)
0348 CALL ERR(IERR,130)
0349 CALL READF(IDCB,IERR,IBUF)
0350 CALL ERR(IERR,140)
0351 CALL CODE
0352 READ(IBUF,100) I,A,J,K,L
0353 IDUCER(N)=I
0354 GO TO 125
0355 200 CONTINUE
0356 CALL CLOSE(IDCB)
0357 RETURN
0358 C 900 WRITE(LU,910) IDUCER(N)
0359 C 910 FORMAT("***** WARNING !!! *****"/
0360 C + "TRANSDUCER "15" NOT FOUND IN FILE PTCAL !!"/
0361 C + "PLEASE UPDATE ! ")
0362 C CALL CLOSE(IDCB)
0363 C CALL ERR(-18,99)
0364 C RETURN
0365 C END

```

FTH4 COMPILER: HP92000-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00399

COMMON = 00000

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```

0366      PROGRAM PRD00(5)
0367 C
0368 C DATA COLLECTION! REDUCTION AND STORAGE TO FILES IS DONE IN THE SON PROGRAM
0369 C
0370      COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0371      + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
0372      + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,IBZ,LUC,IDCB1(144),IDCB2(144),
0373      + ITAP(192),JSIZE,IWIND,
0374      + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0375      + IIBF(3),NTAPS,NREV,NAM3(3),KLEFT,KITAP,NAMS(3),VREF(4),ID(15)
0376      DIMENSION COEF(4,192),VOLTG(4,4),JTAP(192),IBUF(10),
0377 C
0378 C VOLTG MUST BE DIMENSIONED AT LEAST (4,NCHAN)
0379 C
0380      + X(4),ISIZ3(2),STRE(4),NAMEO(3)
0381      EQUIVALENCE (IBUF(3),X(1))
0382      DATA ISIZ3 /12,1026/
0383      DATA NAMEO /2HNO,2HTY,2HET/
0384      DATA IBELL /7/
0385      K=0
0386 C
0387 C IF USING MODE 2 OR 3 SET THE ZEROS TO ZERO
0388 C AND SET A DATE RECORD IN THE ZEROS FILE
0389 C AND STORE THE TRANSDUCER #'S IN THE ZEROS FILE
0390 C
0391      IF(NZERO.EQ.1) GO TO 100
0392      DO 50 I=1,NCHAN
0393      STRE(I)=FLOAT(IDUCER(I))
0394 50  ADCZ(I)=0.0
0395 C      CALL ZEROS(LU,500,ICHAN,NCHAN,STRE)      K.C.M. 9 22 82
0396 C
0397 C WIND DIRECTION FOR THIS RUN ?
0398 C
0399      100 WRITE(LU,101)
0400      101 FORMAT("WIND DIRECTION (NEG TO STOP) ? -")
0401      READ(LU,*) IWIND
0402      IF (IWIND.LT.0) CALL ERR(-18,0)
0403      IWIND=MOD(IWIND,360)
0404 C
0405 C DUMP CONFIGURATION, WIND DIRECTION, AND TUBING NUMBER INTO FILENAME
0406 C STORAGE ARRAY "NAM1". DO THIS AS CLUMSILY AS POSSIBLE. REDUCE FORTRAN
0407 C TO A LOW LEVEL LANGUAGE.
0408 C
0409      NAM1(3)=ITUBEC
0410      CALL CHUND((1000+IWIND),IBUF)
0411      NAM1(2)=IBUF(3)
0412      ITEMP=IAND(IBUF(2),377B)
0413      JTEMP=IAND(ICONF,177400B)
0414      NAM1(1)=IOR(ITEMP,JTEMP)
0415 C
0416 C NOTE: CHUND PUTS A NUMBER INTO IBUF AS ASCII CHARACTERS. IOR AND IAND
0417 C COMPARE BINARY VALUES. HERE THEY ARE USED TO CHOP OFF THE LEFT HALF
0418 C OF IBUF(2) AND THE RIGHT HALF OF ICONF, AND IOR ADDS THE REMAINING
0419 C HALVES TOGETHER AS NAM1(1). THE '1000' IS IN THE CHUND STATEMENT
0420 C TO PUT A ZERO IN THE LEFT HALF OF IBUF(2). - S.J.M.

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0421 C
0422 C
0423 C CHECK FOR NEW CONFIGURATION
0424 C
0425 IF(K.NE.0) GO TO 104
0426 CALL OPEN(IDCB1,IERR,NAM3,2,1026,ICR)
0427 CALL CLOSE(IDCB1)
0428 IF(IERR.GE.0) GO TO 104
0429 IF(IERR.EQ.-6) GO TO 102
0430 CALL ERR(IERR,150)
0431 102 WRITE(LU,103)IBELL,ICONF
0432 103 FORMAT(R1,/,48(" "),/,",",46X,"",/,",* WARNING! NEW CONFIGURATION
0433 + IS BEING STARTED *",/,",* CONFIGURATION ".A1,30X,"",/,",",46X,""
0434 + ,/,48(" "),/,)
0435 K=K+1
0436 NAMEO(1) = 2HNO
0437 GO TO 100
0438 C
0439 C CHECK FOR DUPLICATE WIND DIRECTION!!!!
0440 C SEARCH THROUGH THE FAXXXX FILE TO MAKE SURE THIS WIND
0441 C DOES NOT ALREADY EXIST.
0442 C
0443 104 CALL OPEN(IDCB1,IERR,NAM3,2,1026,ICR)
0444 IF(IERR.EQ.-6) GO TO 109
0445 CALL ERR(IERR,160)
0446 CALL READF(IDCB1,IERR,NFILES,1)
0447 CALL ERR(IERR,170)
0448 DO 106 I=1,NFILES
0449 CALL READF(IDCB1,IERR,IBUF,3)
0450 CALL ERR(IERR,180)
0451 IF(NAM1(1).NE.IBUF(1)) GO TO 106
0452 IF(NAM1(2).NE.IBUF(2)) GO TO 106
0453 IF(NAM1(3).NE.IBUF(3)) GO TO 106
0454 GO TO 107
0455 106 CONTINUE
0456 CALL CLOSE(IDCB1)
0457 GO TO 109
0458 107 WRITE(LU,108) NAM1,IBELL
0459 108 FORMAT(IX," PRESC : FILE ",3A2," FOUND IN LIST FILE !",R1/
0460 + " WOULD YOU LIKE TO PURGE THE CURRENT WIND DIRECTION ? _")
0461 IF(MOYES(LU)) 100,107,209
0462 209 CONTINUE
0463 NAMEO(1) = 2HNO
0464 CALL CLOSE(IDCB1)
0465 CALL PURGF(IDCB1,NAM3,ICR,NAM1,IPROJ,IERR,LU)
0466 CALL ERR(IERR,185)
0467 C
0468 C SAMPLE TO GET ZERO'S IF IN MODE 2 OR IN MODE 3
0469 C
0470 109 JFLAG=0
0471 IF(NZERO.EQ.1) GO TO 440
0472 IF(NZERO.NE.3) GO TO 110
0473 C
0474 C MODE THREE MUST FIRST HIT A SWITCH TO GET THE ZEROS
0475 C NEEDS A FLAG SO THE STEPPING MOTOR WILL NOT GET ACTIVATED

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0476 C      CALL EXEC(3,217,ICHNL)
0477      JFLAG=3
0478      110 CALL SAMPL(VOLTG,JFLAG,1,1)
0480      IZFLAG=0
0481      JFLAG=0
0482      DO 420 J=1,NCHAN
0483      ZNEW=VOLTG(1,J)
0484      DRIFT=ZNEW-ADCZ(J)
0485      WRITE(LU,410) J,ZNEW
0486      410 FORMAT(/"CHANNEL "I2"      ZERO VOLTAGE = "F7.3"_)
0487      IF(ADCZ(J).NE.0.0) WRITE(LU,411) DRIFT
0488      411 FORMAT("      DRIFT = "F7.3"_)
0489      TEST=ZTOLR*FLOAT(IGFCTR)
0490      IF(ABS(DRIFT).GT.TEST.AND.ADCZ(J).NE.0.0) IZFLAG=111
0491      ADCZ(J)=ZNEW
0492      420 CONTINUE
0493 C      CALL ZEROS(LU,IWIND,ICHAN,NCHAN,ADCZ)      K.C.M. 9/22/82
0494      IF(IZFLAG.EQ.0) GO TO 440
0495      WRITE(LU,430) TEST
0496      430 FORMAT(/"*****"T30"WARNING !!!"T60"*****/
0497      + "***** ZERO DRIFT IS BEYOND SYSTEM TOLERANCE OF "F5.3,
0498      + " !! "T60"*****/
0499      + " !! "      OKAY TO CONTINUE ?? _")
0500      IF(NOYES(LU)) 431,420,440
0501      431 CONTINUE
0502 C
0503 C      IF NO GOOD ZERO REWIND THE PRESSURE VALVE AND RETURN TO THE
0504 C      WIND DIRECTION
0505 C
0506      CALL RVALV(NZERO,IVALVE,ICYCH,IDRCH,4,47)
0507      GO TO 100
0508 C
0509 C      SAMPLE TO GET REFERENCE VELOCITIES
0510 C      HIT THE ZERO SWITCH AGAIN IF IN MODE THREE
0511 C
0512      440 IF(NZERO.EQ.3) CALL EXEC(3,217,ICHNL)
0513      CALL SAMPL(VOLTG,JFLAG,1,0)
0514 C
0515 C      PRINT RESULTS
0516 C
0517      WRITE(LU,123) IPROJ,ICONF,ITUBE,IWIND,TEMP,PRES
0518      123 FORMAT(/"PROJECT",I5,5X,"CONFIGURATION",A1,5X,"TUBING",I3,
0519      + 5X,"WIND DIRECTION",I4,/, "TEMPERATURE",F5.1," F",5X,"PRESSURE",
0520      + F7.2," IN HG",/)
0521      DO 113 J=1,NCHAN
0522      IF(VOLTG(1,J).GT.0.0) GO TO 113
0523      WRITE(LU,112) J,IBELL
0524      112 FORMAT("*****WARNING VOLTAGE NEGATIVE ON CHANNEL ",I2,
0525      + " *****",R2)
0526      312 IF(NZERO.EQ.2) GO TO 314
0527      CALL RVALV(NZERO,IVALVE,ICYCH,IDRCH,4,47)
0528      GO TO 100
0529      314 CALL RVALV(NZERO,IVALVE,ICYCH,IDRCH,5,46)
0530      GO TO 100

```

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```

0531 113 CONTINUE
0532     VMIN = 100.0
0533     VMAX = 0.0
0534     DO 120 I=1,NCHAN
0535         VREF(I)=ABS(VOLTG(1,I))
0536         VEL=VFACTR*SQRT(VREF(I)*CFAC(I))
0537         WRITE(LU,115)I,VEL
0538 115  FORMAT("CHANNEL",I2," REF. VEL. =",F7.2," FPS")
0539         IF(VEL.GT.VMAX) VMAX = VEL
0540         IF(VEL.LT.VMIN) VMIN = VEL
0541 120 CONTINUE
0542     IF((VMAX-VMIN).LT.1.25) GO TO 124
0543     WRITE(LU,121)IBELL
0544 121  FORMAT(13(" "),14X,"WARNING!!",14X,13(" "),/,13(" "), "VELOCITIES
0545     +DIFFER BY MORE THAN 1.25 ",13(" "),R2)
0546 321  WRITE(LU,331)
0547 331  FORMAT("WOULD YOU LIKE TO CONTINUE ? -")
0548     IF (NOYES(LU)) 312,321,124
0549 C
0550 C REFRESH THE TAP-LIST
0551 C
0552 124 DO 125 I=1,NTAPS
0553     JTAP(I)=ITAP(I)
0554 125 CONTINUE
0555 C
0556 C LOOP THROUGH ALL VALVE POSITIONS
0557 C
0558     KLEFT=NCHAN
0559     DO 140 I=1,NSTEP
0560         KITAP=(I-1)*NCHAN+1
0561         IF (I.EQ.NSTEP) KLEFT=NTAPS-KITAP+1
0562 C
0563 C SAMPLE THE FOUR CHANNELS
0564 C
0565         CALL SAMPL(VOLTG,JFLAG,0,0)
0566 C
0567 C CHECK BREAK-FLAG
0568 C
0569         IF (IFBRK(ID).GE.0) GO TO 140
0570         NREVO = NREV - (NSTEP - I)
0571         NREVN = NREV + (NSTEP - I)
0572         CALL RVALY (NZERO,IVALVE,ICYCH,IDRCH,NREVO,NREVN)
0573         CALL ERR(-18,18)
0574 140 CONTINUE
0575 C
0576 C ALL DONE, REWIND PRESSURE-VALVE
0577 C
0578         CALL RVALY (NZERO,IVALVE,ICYCH,IDRCH,NREV,NREV)
0579 C
0580 C IF THE SON PROGRAM IS FINISHED WITH THE LAST SET OF DATA
0581 C READ THE DATA OUT OF THE FILE
0582 C
0583     REC=EXEC(24,NAMS,0,0,0,0,1)
0584     CALL OPEN(IDC92,IERR,NAM1,0,IPOJ,ICR)
0585     CALL ERR(IERR,190)

```


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```

0586      CALL READF(IDC2, IERR, IBUF, 3)
0587      CALL ERR(IERR, 890)
0588      DO 152 I=1, NTAPS
0589      CALL READF(IDC2, IERR, IBUF, 10)
0590      CALL ERR(IERR, 210)
0591      DO 151 J=1, 4
0592      COEF(J, I)=X(J)
0593      151 CONTINUE
0594      152 CONTINUE
0595      C
0596      C SORT THE DATA ACCORDING TO TAP NUMBER
0597      C
0598      CALL SORT(NTAPS, JTAP, COEF)
0599      C
0600      C REWIND THE DATA FILE FOR THE SORTED DATA
0601      C
0602      CALL RWIND(IDC2)
0603      C
0604      C SET UP FIRST RECORD AND WRITE TO FILE
0605      C
0606      IBUF(1)=IPROJ
0607      IBUF(2)=IWIND
0608      IBUF(3)=NTAPS
0609      CALL WRITE(IDC2, IERR, IBUF)
0610      CALL ERR(IERR, 220)
0611      D
0612      C WRITE THE DATA TO THE FILE
0613      C
0614      DO 160 I=1, NTAPS
0615      IBUF(1)=JTAP(I)
0616      DO 155 J=1, 4
0617      X(J)=COEF(J, I)
0618      155 CONTINUE
0619      CALL WRITE(IDC2, IERR, IBUF)
0620      CALL ERR(IERR, 230)
0621      160 CONTINUE
0622      CALL CLOSE(IDC2)
0623      C
0624      C OPEN THE LIST-FILE AND ENTER THE FILE NAME
0625      C
0626      CALL OPEN(IDC1, IERR, NAM3, 2, 1026, ICR)
0627      IF (IERR.EQ.-6) GO TO 165
0628      CALL ERR(IERR, 240)
0629      GO TO 175
0630      C
0631      C IF THE FILE DOES NOT EXIST, CREATE IT AND WRITE THE INFORMATION
0632      C INTO IT.
0633      C
0634      165 CALL CREAT(IDC1, IERR, NAM3, ISIZ3, 3, 1026, ICR)
0635      CALL ERR(IERR, 250)
0636      CALL WRITE(IDC1, IERR, 1, 1)
0637      CALL ERR(IERR, 260)
0638      CALL WRITE(IDC1, IERR, NAM1, 3)
0639      CALL ERR(IERR, 270)
0640      CALL CLOSE(IDC1)

```


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```

0641      GO TO 195
0642      C
0643      C WRITE FILE NAME AT THE END OF THE FILE, REWIND,
0644      C AND UPDATE THE NUMBER OF FILES.
0645      C
0646      175 NUR=NFILES+1
0647      CALL POSHT(IDCBI,IERR,NUR)
0648      CALL WRITF(IDCBI,IERR,NAM1,3)
0649      CALL ERR(IERR,280)
0650      CALL RWNOF(IDCBI,IERR)
0651      NFILES=NFILES+1
0652      CALL WRITF(IDCBI,IERR,NFILES,1)
0653      C
0654      CALL ERR(IERR,290)
0655      CALL CLOSE(IDCBI)
0656      GO TO 195
0657      C
0658      C PRINT DATA ON LINE PRINTER
0659      C
0660      195 CALL PRINT(JTAP,COEF)
0661      C
0662      C COMPARE THIS FILE WITH THE PREVIOUS ONE FOR DATA SPIKES OF MORE
0663      C THAN .5 MAX CP
0664      C
0665      CALL COMPR(NAMED)
0666      C
0667      C PRINT END OF RUN MESSAGE AT TERMINAL
0668      C
0669      200 WRITE(LU,200) NAM1,IBELL,IBELL
0670      200 FORMAT(" PRES: RUN COMPLETE ON ",3A2,2R1)
0671      IF(IBZ.GT.0) CALL BUZZR(IBZ)
0672      GO TO 100
0673      205 CONTINUE
0674      END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 03336 COMMON = 00000

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```
0674 C
0675 C
0676 SUBROUTINE BUZZR(IBZ)
0677 CALL BEEP(16,IBZ)
0678 CALL BEEP(8,IBZ)
0679 CALL BEEP(8,IBZ)
0680 CALL BEEP(16,IBZ)
0681 CALL BEEP(16,IBZ)
0682 CALL BEEP(0,IBZ)
0683 CALL BEEP(16,IBZ)
0684 CALL BEEP(16,IBZ)
0685 RETURN
0686 END
```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00042 COMMON = 00000

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```
0687      SUBROUTINE BEEP(NUM,IBZ)
0688      IPULSE = 70
0689      IF(NUM.LT.1) GO TO 50
0690      LENGTH = NUM * IPULSE / 16 / 2
0691      CALL EXEC(3,153,IBZ)
0692      CALL WAIT(LENGTH,0,IERR)
0693      CALL EXEC(3,89,IBZ)
0694      CALL WAIT(LENGTH,0,IERR)
0695      RETURN
0696 50      CALL WAIT(IPULSE,0,IERR)
0697      RETURN
0698      END
```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00067

COMMON = 00000

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```

0699 C
0700 C
0701 SUBROUTINE COMPR(NAMO)
0702 COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0703 + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,MZERO,IVALVE,
0704 + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,IBZ,LUC,IDCB1(144),IDCB2(144),
0705 + ITAP(192),JSIZE,IWIND,
0706 + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0707 + IIBF(3),NTAPS,NREV,NAM3(3),KLEFT,KITAP,NAMS(3),VREF(4),ID(15)
0708 DIMENSION NAMO(3),IBUF1(10),X(4),IBUF2(10),Y(4)
0709 EQUIVALENCE (IBUF1(3),X(1)),(IBUF2(3),Y(1))
0710 IF (NAMO(1) EQ 2HND) GO TO 900
0711 CALL OPEN(IDCB1,IERR,NAMO,0,IPROJ,ICR)
0712 CALL ERR(IERR,801)
0713 CALL OPEN(IDCB2,IERR,NAM1,0,IPROJ,ICR)
0714 CALL ERR(IERR,802)
0715 CALL READF(IDCB1,IERR,IBUF1)
0716 CALL ERR(IERR,803)
0717 CALL READF(IDCB2,IERR,IBUF2)
0718 CALL ERR(IERR,804)
0719 C
0720 C CHECK FOR IDENTICAL NUMBER OF TAPS
0721 C
0722 IF (IBUF1(3) NE IBUF2(3)) GO TO 800
0723 NTAPS = IBUF1(3)
0724 C
0725 C LOOP THROUGH EACH TAP CHECKING THE MAX FOR .5CP DIFFERENCE
0726 C
0727 DO 100 I=1,NTAP
0728 CALL READF(IDCB1,IERR,IBUF1)
0729 CALL ERR(IERR,805)
0730 CALL READF(IDCB2,IERR,IBUF2)
0731 CALL ERR(IERR,806)
0732 C
0733 C CHECK FOR IDENTICAL TAP #
0734 C
0735 IF (IBUF1(1) NE IBUF2(1)) GO TO 800
0736 IF (Y(3) LT (X(3)+0.5)) GO TO 100
0737 IF (IBUF1(1) NE 0) WRITE(LU,90) IBUF1(1),Y(3),X(3)
0738 90 FORMAT(" TAP "I4" - POSSIBLE DATA SPIKE > MAX = "2F10.3)
0739 100 CONTINUE
0740 800 CALL CLOSE(IDCB1)
0741 CALL CLOSE(IDCB2)
0742 900 NAMO(1)=NAM1(1)
0743 NAMO(2)=NAM1(2)
0744 NAMO(3)=NAM1(3)
0745 RETURN
0746 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00265

COMMON = 00000

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```

0747 C
0748 C
0749 SUBROUTINE ZEROS(LU,IWD,ICHAN,NCHAN,ADCZ)
0750 C
0751 C THIS SET OF SUBROUTINES WILL KEEP AN ACCURATE RECORD OF A/D
0752 C ZEROS GIVING THE DATE AND TIME AND WIND DIRECTION. THE
0753 C FILE 'ZER0001AD115' WILL BE PRINTED OUT WHEN IT GETS FULL
0754 C WHICH IS 1000 ENTRIES. PROGRAM ZEROL WILL PRINT OUT THE
0755 C FILE IF THE USER WANTS BEFORE THE FILE IS FULL AND WILL
0756 C RE-INITIALIZE IT IF THE USER GIVES THE GO AHEAD.
0757 C
0758 C
0759 C UPDATED- WILL ALSO PRINT OUT THE TRANSDUCER USED ON THAT CHANNEL
0760 C
0761 C DIMENSION NAME(3),ADCZ(4),IDCB(144),IBUF(11),ISIZE(2)
0762 C DATA NAME,ISIZE /2HZE,2HRO,2H00,86,11/
0763 C LUC=KCVT(LU)
0764 C IF(LU.LT.10) LUC=LUC+100000
0765 C NAME(3)=LUC
0766 C CALL OPEN(IDCB,IERR,NAME,2,2HAD,15)
0767 C IF(IERR.NE.-6) GO TO 100
0768 C CALL CREAT(IDCB,IERR,NAME,ISIZE,2,2HAD,15)
0769 C CALL ERR(IERR,1111)
0770 C CALL INITZ(IDCB)
0771 C CALL PUTZ(ADCZ,ICHAN,NCHAN,IDCB,IWD)
0772 C GO TO 500
0773 100 CALL ERR(IERR,1212)
0774 C CALL READF(IDCB,IERR,IBUF,11)
0775 C IF(IERR.NE.-12) GO TO 110
0776 80 WRITE(LU,80)
0777 C FORMAT("PRESO : PRINTING ZEROES. PLEASE WAIT. !!!!")
0778 C CALL PRNTZ(IDCB,LU)
0779 C CALL PUTZ(ADCZ,ICHAN,NCHAN,IDCB,500)
0780 C IERR = 1
0781 C GO TO 100
0782 110 CALL ERR(IERR,2222)
0783 C IF(IBUF(1).NE.999) GO TO 100
0784 C CALL POSHT(IDCB,IERR,-1)
0785 C CALL PUTZ(ADCZ,ICHAN,NCHAN,IDCB,IWD)
0786 500 CALL CLOSE(IDCB)
0787 C RETURN
0788 C END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00337 COMMON = 00000

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```
0788      SUBROUTINE INITZ(IDCIB)
0789      DIMENSION IDCIB(144),IBUF(11)
0790      IBUF(1)=999
0791      DO 100 I=1,1000
0792      CALL WRITF(IDCIB,IERR,IBUF,11)
0793      CALL ERR(IERR,3333)
0794      100 CONTINUE
0795      CALL RWNDF(IDCIB)
0796      RETURN
0797      END
```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00053 COMMON = 00000

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```

0798      SUBROUTINE PUTZ(ADCZ, ICHAN, NCHAN, IDCB, IWD)
0799      DIMENSION ADCZ(4), IBUF(11), IDCB(144), Z(4), ITIME(6)
0800      EQUIVALENCE (Z(1), IBUF(4))
0801      CALL EXEC(11, ITIME(1), ITIME(6))
0802      IBUF(1) = IWD
0803      IF (IWD.LT.360) GO TO 50
0804      IBUF(2) = ITIME(5)
0805      IBUF(3) = ITIME(6)
0806      IBUF(4) = ICHAN
0807      IBUF(5) = NCHAN
0808      IBUF(6) = IFIX(ADCZ(1))
0809      IBUF(7) = IFIX(ADCZ(2))
0810      IBUF(8) = IFIX(ADCZ(3))
0811      IBUF(9) = IFIX(ADCZ(4))
0812      GO TO 200
0813      50  IBUF(2) = ITIME(4)
0814      IBUF(3) = ITIME(3)
0815      DO 100 I=1, NCHAN
0816      Z(I) = ADCZ(I)
0817      100 CONTINUE
0818      200 CALL WRITE(IDCB, IERR, IBUF, 11)
0819      CALL ERR(IERR, 4444)
0820      RETURN
0821      END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

```

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00182 COMMON = 00000

```

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```

0822      SUBROUTINE PRNTZ(IDCIB, ITUN)
0823      DIMENSION IDCIB(144), JBUF(11), Z(4), ITRAN(4)
0824      EQUIVALENCE (Z(1), JBUF(4))
0825      CALL RWNDF(IDCIB)
0826      CALL LURQ(1, 6, 1)
0827      WRITE(6, 5) ITUN
0828      5  FORMAT(1H1, 15X "A/D ZEROS FOR SELECTED CHANNELS TAKEN AT TUNNEL # "
0829      +      I3)
0830      ILINE=58
0831      DO 100 I=1, 1000
0832      CALL READF(IDCIB, IERR, JBUF, 11)
0833      CALL ERR(IERR, 5555)
0834      IF(JBUF(1).EQ.999) GO TO 300
0835      IF(JBUF(1).NE.500) GO TO 80
0836      ICHAN=JBUF(4)
0837      NCHAN=JBUF(5)
0838      CALL MONTH(JBUF(2), IM, ID)
0839      IYEAR=JBUF(3)
0840      NN = 5 + NCHAN
0841      DO 20 KK = 6, NN
0842      ITRAN (KK - 5) = JBUF(KK)
0843      20  CONTINUE
0844      IF(ILINE.LT.6) GO TO 55
0845      40  N=ICHAN+NCHAN-1
0846      WRITE(6, 50) IM, ID, IYEAR, (JJ, JJ=ICHAN, N)
0847      50  FORMAT(5X "DATE" 46X "CHANNEL # 'S" / I3, " / " I2, " / " I4 "      W.D. " 5X
0848      +      " TIME " 2X, 4I13)
0849      WRITE(6, 53) (ITRAN(KK), KK=1, NCHAN)
0850      53  FORMAT(33X, 4(6X("I5")))
0851      ILINE=ILINE-4
0852      GO TO 100
0853      55  WRITE(6, 60)
0854      60  FORMAT("1")
0855      ILINE=60
0856      GO TO 40
0857      80  WRITE(6, 90) (JBUF(II), II=1, 3), (Z(JJ), JJ=1, NCHAN)
0858      90  FORMAT(10X, I9, I6, " : " I2, 3X, 4F13.3)
0859      ILINE=ILINE-1
0860      IF(ILINE.GT.2) GO TO 100
0861      GO TO 55
0862      100 CONTINUE
0863      300 CALL LURQ(0, 6, 1)
0864      CALL RWNDF(IDCIB)
0865      CALL INITZ(IDCIB)
0866      RETURN
0867      END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00365 COMMON = 00000

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```
0868      SUBROUTINE MONTH(MDAY,IMONTH,IDAY)
0869      DIMENSION IYEAR(12)
0870      DATA IYEAR /31,28,31,30,31,30,31,31,30,31,30,31/
0871      MDAY=MDAY
0872      DO 100 I=1,11
0873      IMONTH=I
0874      LDAY=MDAY-IYEAR(I)
0875      IF(LDAY.LT.0) GO TO 150
0876      MDAY=LDAY
0877      100 CONTINUE
0878      150 IDAY=MDAY
0879      RETURN
0880      END
```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00056 COMMON = 00000

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```

0881 C
0882 C
0883 SUBROUTINE RVALV (NZERO,IVALVE,ICYCH,IDRCH,NUMBO,NUMBN)
0884 C
0885 C REMIND PRESSURE VALVES
0886 C OLD ONE WAS STEPPED FORWARD NSTEP + 2 IF MODE 2
0887 C NSTEP + 1 IF MODE 1 OR 3
0888 C
0889 C NEW ONE MUST BE STEPPED FORWARD THE REMAINDER OF THE 48
0890 C POSITIONS
0891 C
0892 DIMENSION IBUF(3)
0893 CALL WAIT (1,2,IERR)
0894 IF (IVALVE.EQ.1HN) GO TO 310
0895 IF (NUMBO.EQ.0) GO TO 320
0896 REG = EXEC (3, 89, IDRCH)
0897 DO 300 I = 1, NUMBO
0898 REG = EXEC (3, 217, ICYCH)
0899 300 CONTINUE
0900 REG = EXEC (3, 153, IDRCH)
0901 DO 305 I = 1, 3
0902 REG = EXEC (3, 217, ICYCH)
0903 305 CONTINUE
0904 GO TO 320
0905 310 CONTINUE
0906 IF (NUMBN.EQ.0) GO TO 320
0907 IBUF (1) = ICYCH
0908 IBUF (2) = 25
0909 IBUF (3) = NUMBN
0910 CALL EXEC (2, 89, IBUF, 3)
0911 320 CONTINUE
0912 RETURN
0913 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00124

COMMON = 00000

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```

0914 C
0915 C
0916 SUBROUTINE ERR(IERR,LOC)
0917 COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0918 + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
0919 + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,IBZ,LUC,IDCB1(144),IDCB2(144),
0920 + ITAP(192),JSIZE,IWIND,
0921 + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0922 + IIBF(5),NTAPS,NREV,NAM3(3),KLEFT,KITAP,NAMS(3),VREF(4),ID(15)
0923 C
0924 C ERROR DETECTION AND PROCESSING
0925 C
0926 IF (IERR.GE.0) RETURN
0927 CALL CLOSE(IDCB1)
0928 C
0929 C CLOSE AND PURGE THE RAW DATA FILE
0930 C
0931 CALL CLOSE(IDCB2)
0932 CALL PURGE(IDCB2,JERR,IIBF,0,15)
0933 IF (IERR.EQ.-18) IERR=0
0934 IF (LOC.EQ.0) GO TO 115
0935 C
0936 C PRINT ERROR MESSAGE
0937 C
0938 WRITE(LU,100) IERR,LOC
0939 100 FORMAT(" PRES: FILE MANAGER ERROR",I4," AT LOCATION",I4)
0940 C
0941 C SAFE TO PURGE THE REDUCED DATA FILE ?
0942 C
0943 IF (LOC.LT.20) GO TO 110
0944 IF (IERR.EQ.-2) GO TO 110
0945 C
0946 C YES, PURGE IT !
0947 C
0948 CALL PURGE(IDCB1,JERR,NAM1,IPROJ,ICR)
0949 WRITE(LU,105) NAM1,JERR
0950 105 FORMAT(" PRES: ",3A2," IS PURGED",I4)
0951 110 STOP 7777
0952 115 STOP 0000
0953 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00138

COMMON = 00000

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```

0954 C
0955 SUBROUTINE PRINT(JTAP,COEF)
0956 C
0957 C SUBROUTINE TO OUTPUT REDUCED DATA TO PRINTER
0958 C
0959 DIMENSION JTAP(192),COEF(4,192)
0960 COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0961 + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
0962 + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,IBZ,LUC,IDCB1(144),IDCB2(144),
0963 + ITAP(192),JSIZE,IWIND,
0964 + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0965 + IIBF(5),NTAPS,NREV,NAM3(3),KLEFT,K1TAP,NAM5(3),VREF(4),ID(15)
0966 C
0967 IF (IFLIST.NE.1HY) RETURN
0968 C
0969 C PRINT HEADER
0970 C
0971 CALL LURQ(1,6,1)
0972 WRITE(6,120) IPROJ,ICONF,IWIND,ITUBE
0973 C
0974 C OUTPUT DATA
0975 C
0976 NL=NTAPS/3
0977 NR=MOD(NTAPS,3)
0978 K1=1
0979 K2=K1+NL
0980 IF (NR.GT.0) K2=K2+1
0981 K3=K2+NL
0982 IF (NR.GT.1) K3=K3+1
0983 DO 100 J=1,NL
0984 WRITE(6,125) JTAP(K1),(COEF(I,K1),I=1,4),
0985 + JTAP(K2),(COEF(I,K2),I=1,4),
0986 + JTAP(K3),(COEF(I,K3),I=1,4)
0987 K1=K1+1
0988 K2=K2+1
0989 K3=K3+1
0990 100 CONTINUE
0991 IF (NR.EQ.0) GO TO 110
0992 IF (NR.EQ.2) GO TO 105
0993 WRITE(6,125) JTAP(K1),(COEF(I,K1),I=1,4)
0994 GO TO 110
0995 105 WRITE(6,125) JTAP(K1),(COEF(I,K1),I=1,4),
0996 + JTAP(K2),(COEF(I,K2),I=1,4)
0997 C
0998 C OUTPUT BAD DATA FLAGS
0999 C
1000 110 WRITE(6,135)
1001 DO 115 I=1,NTAPS
1002 CALL CHECK(I,COEF,1,JTAP,6)
1003 115 CONTINUE
1004 WRITE(6,130)
1005 CALL LURQ(0,6,1)
1006 RETURN
1007 120 FORMAT(1H1"DATA FOR PROJECT"15" CONFIGURATION "A2" WIND DIR."
1008 +14" TUBING NO. "13//2X,3("TAP"4X"MEAN"4X"SMS"4X"MAX"4X"MIN"5X)//)

```


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```
1009      125 FORMAT(3(1X,I4,2X,F6.3,1X,F6.3,1X,F6.3,1X,F6.3,3X))
1010      130 FORMAT(1H1)
1011      135 FORMAT(1X,///)
1012      END
```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00408 COMMON = 00000

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```

1013      SUBROUTINE SORT(NTAPS,JTAP,COEF)
1014      C
1015      C SORT DATA INTO INCREASING TAP NUMBERS
1016      C
1017      DIMENSION JTAP(192),COEF(4,192)
1018      IF(NTAPS.LT.2) RETURN
1019      NM1=NTAPS-1
1020      DO 110 I=1,NM1
1021      IP1=I+1
1022      DO 105 J=IP1,NTAPS
1023      IF (JTAP(I).LT.JTAP(J)) GO TO 105
1024      ITEMP=JTAP(I)
1025      JTAP(I)=JTAP(J)
1026      JTAP(J)=ITEMP
1027      DO 100 K=1,4
1028      TEMP=COEF(K,I)
1029      COEF(K,I)=COEF(K,J)
1030      COEF(K,J)=TEMP
1031      100 CONTINUE
1032      105 CONTINUE
1033      110 CONTINUE
1034      RETURN
1035      END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00135

COMMON = 00000

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```

1036 SUBROUTINE PURGE(IDCBI,NAM3,ICR,NAM1,IPJ,IERR,LU)
1037 DIMENSION NAM1(3),NAM3(3),IDCB1(144),IBUF(3)
1038 CALL OPEN(IDCBI,IERR,NAM3,2,1026,ICR)
1039 IF(IERR.LT.0) GO TO 10
1040 IL=1
1041 CALL READF(IDCBI,IERR,IBUF,IL)
1042 IF(IERR.LT.0) GO TO 20
1043 N=IBUF(1)
1044 DO 3 I=1,N
1045 IL=3
1046 CALL READF(IDCBI,IERR,IBUF,IL)
1047 IF(IERR.LT.0) GO TO 30
1048 IF(IBUF(1).NE.NAM1(1)) GO TO 3
1049 IF(IBUF(2).NE.NAM1(2)) GO TO 3
1050 IF(IBUF(3).NE.NAM1(3)) GO TO 3
1051 DO 2 J=1,3
1052 2 IBUF(J)=2HZZ
1053 NUR=-1
1054 IR=0
1055 CALL POSHT(IDCBI,IERR,NUR,IR)
1056 IF(IERR.LT.0) GO TO 40
1057 CALL WRITF(IDCBI,IERR,IBUF,IL)
1058 IF(IERR.LT.0) GO TO 50
1059 CALL CLOSE(IDCBI,IERR)
1060 IF(IERR.LT.0) GO TO 60
1061 CALL PURGE(IDCBI,IERR,NAM1,IPJ,ICR)
1062 IF(IERR.LT.0) GO TO 70
1063 WRITE(LU,160)NAM1
1064 RETURN
1065 3 CONTINUE
1066 CALL PURGE(IDCBI,IERR,NAM1,IPJ,ICR)
1067 IF(IERR.NE.-6) GO TO 4
1068 WRITE(LU,170) NAM1
1069 4 IF(IERR.LT.0) GO TO 70
1070 CALL CLOSE(IDCBI)
1071 WRITE(LU,175) NAM1
1072 RETURN
1073 10 WRITE(LU,180)IERR
1074 RETURN
1075 20 WRITE(LU,190)IERR
1076 RETURN
1077 30 WRITE(LU,200)IERR
1078 RETURN
1079 40 WRITE(LU,210)IERR
1080 RETURN
1081 50 WRITE(LU,220)IERR
1082 RETURN
1083 60 WRITE(LU,230)IERR
1084 RETURN
1085 70 WRITE(LU,240)IERR
1086 RETURN
1087 160 FORMAT("FILE ",3A2," PURGED")
1088 170 FORMAT("FILE ",3A2," NOT LISTED OR FOUND ON CART. NO"
1089 " PURGE MADE")
1090 175 FORMAT("FILE "3A2" NOT LISTED BUT FOUND ON CART AND PURGED")

```

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```
1091      180 FORMAT("PURGF ER ON OPEN IERR=",I4)
1092      190 FORMAT("PURGF ER ON 1ST READ IERR=",I4)
1093      200 FORMAT("PURGF ER ON LOOP READ IERR=",I4)
1094      210 FORMAT("PURGF ER ON POSNT IERR=",I4)
1095      220 FORMAT("PURGF ER ON WRITE IERR=",I4)
1096      230 FORMAT("PURGF ER ON CLOSE IERR=",I4)
1097      240 FORMAT("PURGF ER ON PURGE IERR=",I4)
1098      END
```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00484

COMMON = 00000

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```

1099      SUBROUTINE SAMPL(VOLTG,JFLAG,IFLAG,KFLAG)
1100      C
1101      C SAMPLE FROM THE A/D AND RETURN MEAN,RMS,MAX,MIN
1102      C FOR UP TO FOUR CHANNELS
1103      C
1104      REAL MAX,MIN,L
1105      DIMENSION VOLTG(4,4),MAX(4),MIN(4),S1(4),S2(4),I7(3),IBUF(128),
1106      + JBUF(578)
1107      C
1108      C VOLTG MUST BE DIMENSIONED AT LEAST (4,NCHAN)
1109      C MAX,MIN,S1,S2 MUST BE DIMENSIONED AT LEAST (NCHAN)
1110      C
1111      COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
1112      + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
1113      + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,IBZ,LUC,IDCB1(144),IDCB2(144),
1114      + ITAP(192),JSIZE,IWIND,
1115      + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
1116      + IIBF(5),NTAPS,NREV,NAM3(3),KLEFT,K1TAP,NAMS(3),VREF(4),ID(15)
1117      EQUIVALENCE (JLOC,IP(1)),(JERR,IP(2)),(JBUF(1),IPROJ)
1118      DO 100 I=1,16
1119      VOLTG(I)=0.0
1120      100 CONTINUE
1121      C
1122      C SCHEDULE THE DATA PROGRAM
1123      C
1124      CALL OPEN (IDCB2,IERR,IIBF,1,0,15)
1125      105 REG=EXEC(23,NAMP,ICHAN,LCHAN,IRATE,NSAM,0,IIBF,5)
1126      CALL RMPAR(IP)
1127      IF (JLOC.EQ.-2) GO TO 105
1128      CALL ERR(JERR,JLOC)
1129      C
1130      C STEP THE VALVE TO THE NEXT POSITION
1131      C IF USING MODE 3 TO GET THE ZEROS HERE DO NOT STEP THE VALVE
1132      C (THIS IS DONE HERE TO ALLOW TIME FOR THINGS TO SETTLE DOWN)
1133      C
1134      IF(JFLAG.NE.3) REG=EXEC(3,217,ICYCH)
1135      C
1136      C CLOSE THE SCRATCH FILE AND CALL THE REDUCING SON PROGRAM
1137      C IF WE ARE GETTING THE VELOCITIES OR THE ZEROS REDUCE THE DATA HERE
1138      C
1139      IF(IFLAG.EQ.1) GO TO 200
1140      CALL CLOSE(IDCB2)
1141      REG=EXEC(24,NAMS,0,0,0,0,0,JBUF,578)
1142      IF(IIBF(1).EQ.2H$P) GO TO 120
1143      IIBF(1)=2H$P
1144      RETURN
1145      120 IIBF(1)=2H$P
1146      RETURN
1147      200 CONTINUE
1148      C
1149      C HERE IS THE REGULAR REDUCTION
1150      C
1151      C RE-POSITION THE SCRATCH FILE AND REDUCE THE DATA TO VOLTAGES
1152      C
1153      CALL RWNDF(IDCB2)

```


PAGE 0032 SAMPL 2:30 PM WED., 4 JAN., 1984

```

1154      CALL READF(IDCIB2,IERR,IBUF)
1155 D      CALL ERR(IERR,15)
1156      DO 210 I=1,NCHAN
1157      MAX(I)=FLOAT(IBUF(I))
1158      MIN(I)=FLOAT(IBUF(I))
1159      S1(I)=0.0
1160      S2(I)=0.0
1161      210 CONTINUE
1162      K=1
1163      DO 225 I=1,NSAM
1164      DO 220 J=1,NCHAN
1165      IF (K.LE.128) GO TO 215
1166      CALL READF(IDCIB2,IERR,IBUF)
1167 D      CALL ERR(IERR,41)
1168      K=1
1169      215 L=FLOAT(IBUF(K))
1170      IF (L.LT.MIN(J)) MIN(J)=L
1171      IF (L.GT.MAX(J)) MAX(J)=L
1172      V=L
1173      S1(J)=S1(J)+V
1174      S2(J)=S2(J)+V*V
1175      K=K+1
1176      220 CONTINUE
1177      225 CONTINUE
1178      DO 230 I=1,NCHAN
1179      S1(I)=S1(I)/(3275.2*TOT)
1180      S2(I)=S2(I)/(3275.2*3275.2)
1181      S2(I)=SQRT(ABS((S2(I)-S1(I)*S1(I)*TOT)/TOT))
1182      230 CONTINUE
1183      DO 235 I=1,NCHAN
1184      VOLTG(1,I)=S1(I)
1185      IF (KFLAG.EQ.0) VOLTG(1,I)=VOLTG(1,I) - ADCZ(I)
1186      VOLTG(2,I)=S2(I)
1187      VOLTG(3,I)=MAX(I)/3275.2 - ADCZ(I)
1188      VOLTG(4,I)=MIN(I)/3275.2 - ADCZ(I)
1189      235 CONTINUE
1190      CALL CLOSE(IDCIB2)
1191      RETURN
1192      END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00701

COMMON = 00000

PAGE 0033 FTH. 2:30 PM WED., 4 JAN., 1984

```

1193      SUBROUTINE CHECK(K1TAP,COEF,NCHAN,JTAP,LU)
1194      C
1195      C SUBROUTINE TO CHECK FOR POSSIBLE BAD DATA AND OUTPUT A FLAG
1196      C
1197      DIMENSION COEF(4,192),JTAP(192)
1198      DATA IW1,IW2,IW3,IW4,IW5,IW6,IW7 /2H01,2H02,2H03,2H04,2H05,2H06,
1199      + 2H07/
1200      K2=K1TAP
1201      DO 100 I=1,NCHAN
1202      ITAP=JTAP(K2)
1203      IF(ITAP.EQ.0) GO TO 90
1204      C
1205      C CHECK FOR LOW MAX-MIN DIFFERENCE
1206      C
1207      Q=COEF(3,K2)-COEF(4,K2)
1208      IF (Q.LT.0.2) WRITE(LU,105) IW1,ITAP,Q
1209      C
1210      C CHECK FOR HIGH RMS
1211      C
1212      Q=COEF(2,K2)
1213      IF (Q.GE.0.5) WRITE(LU,105) IW2,ITAP,Q
1214      C
1215      C CHECK FOR MAX GUST
1216      C
1217      Q=(COEF(3,K2)-COEF(1,K2))/COEF(2,K2)
1218      IF(Q.GT.10.0) WRITE(LU,105) IW3,ITAP,Q
1219      C
1220      C CHECK FOR DATA SCRAMBLE
1221      C
1222      IF(Q.LT.0.0) WRITE(LU,105) IW5,ITAP,Q
1223      C
1224      C CHECK FOR MIN GUST
1225      C
1226      Q=(COEF(1,K2)-COEF(4,K2))/COEF(2,K2)
1227      IF(Q.GT.10.0) WRITE(LU,105) IW4,ITAP,Q
1228      C
1229      C CHECK FOR DATA SCRAMBLE
1230      C
1231      IF(Q.LT.0.0) WRITE(LU,105) IW6,ITAP,Q
1232      C
1233      C CHECK FOR MAX AND MEAN BOTH GREATER THAN ONE
1234      C
1235      IF(COEF(1,K2).GT.1.0.AND.COEF(3,K2).GT.1.0)
1236      + WRITE(LU,105) IW7,ITAP,COEF(1,K2)
1237      90 K2=K2+1
1238      100 CONTINUE
1239      RETURN
1240      105 FORMAT("  PRES: ",A2," TAP",I5," TROUBLE=",F10.3)
1241      END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

PAGE 0034 CHECK 2:30 PM WED., 4 JAN., 1984

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00353 COMMON = 00000

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1242 \$

PAGE 0001 FTH. 2:46 PM WED., 4 JAN., 1984

```

0001 FTH4,L
0002 BLOCK DATA
0003 COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0004 + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
0005 + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,LUC,LLU,IDCB1(144),IDCB2(144),
0006 + ITAP(192),JSIZE,IWIND,
0007 + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0008 + IIBF(5),NTAPS,HREV,NAM3(3),KLEFT,KITAP,NAMS(3),VREF(4),ID(15)
0009 END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS **

BLOCK COMMON INDTA SIZE = 00579

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```

0010      PROGRAM PRI00(3,91),KCM -MAY 1981 , REVISION OF PRESC
0011      C
0012      C THIS IS THE REDUCTION END OF PRESC
0013      C
0014      REAL MAX,MIN,L
0015      DIMENSION VOLTG(4,4),MAX(4),MIN(4),S1(4),S2(4),IP(5),IBUF(128),
0016      + JBUF(578),X(4)
0017      COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0018      + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
0019      + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,LUC,LLU,IDCB1(144),IDCB2(144),
0020      + ITAP(192),JSIZE,IWIND,
0021      + NAM1(3),LCHAN,TOT,ICR,HAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0022      + IIBF(5),NTAPS,NREV,NAM3(3),KLEFT,KITAP,NAMS(3),VREF(4),ID(15)
0023      EQUIVALENCE (JBUF(1),IPROJ),(IBUF(3),X(1))
0024      C
0025      C RECOVER THE TRANSFERRED DATA
0026      C
0027      CALL RMPAR(IP)
0028      CALL LIBER(1)
0029      IF(IP(5).EQ.1) GO TO 170
0030      CALL EXEC(14,1,JBUF,578)
0031      C
0032      C READ IN THE DATA AND REDUCE THE DATA TO VOLTAGES
0033      C
0034      CALL OPEN(IDCB2,IERR,IIBF,1,0,15)
0035      CALL ERR(IERR,1111)
0036      CALL READF(IDCB2,IERR,IBUF)
0037      CALL ERR(IERR,2222)
0038      DO 110 I=1,NCHAN
0039      MAX(I)=FLOAT(IBUF(I))
0040      MIN(I)=FLOAT(IBUF(I))
0041      S1(I)=0.0
0042      S2(I)=0.0
0043      110 CONTINUE
0044      K=1
0045      DO 125 I=1,NSAM
0046      DO 120 J=1,NCHAN
0047      IF (K.LE.128) GO TO 115
0048      CALL READF(IDCB2,IERR,IBUF)
0049      CALL ERR(IERR,3333)
0050      K=1
0051      115 L=FLOAT(IBUF(K))
0052      IF (L.LT.MIN(J)) MIN(J)=L
0053      IF (L.GT.MAX(J)) MAX(J)=L
0054      V=L
0055      S1(J)=S1(J)+V
0056      S2(J)=S2(J)+V*V
0057      K=K+1
0058      120 CONTINUE
0059      125 CONTINUE
0060      DO 130 I=1,NCHAN
0061      S1(I)=S1(I)/(3275.2*TOT)
0062      S2(I)=S2(I)/(3275.2*3275.2)
0063      S2(I)=SQRT(ABS((S2(I)-S1(I)*S1(I)*TOT)/TOT))
0064      130 CONTINUE

```

PAGE 0003 PRI00 2:46 PM WED., 4 JAN., 1984

```

0065      DO 135 I=1,NCHAN
0066      VOLTG(1,I)=S1(I) - ADCZ(I)
0067      VOLTG(2,I)=S2(I)
0068      VOLTG(3,I)=MAX(I)/3275.2 - ADCZ(I)
0069      VOLTG(4,I)=MIN(I)/3275.2 - ADCZ(I)
0070      135 CONTINUE
0071      C
0072      C      DIVIDE OUT THE REFERENCE VOLTAGE TO GET THE PRESSURE COEFFICIENTS
0073      C
0074      DO 139 J=1,KLEFT
0075      Q=VREF(J)
0076      DO 137 K=1,4
0077      VOLTG(K,J)=VOLTG(K,J)/Q
0078      137 CONTINUE
0079      139 CONTINUE
0080      CALL CHECK(KITAP,VOLTG,KLEFT,ITAP,LU)
0081      C
0082      C      AFTER CHECKING THE DATA OPEN OR CREAT THE DATA FILE AND PLACE
0083      C      THE REDUCED DATA IN IT
0084      C
0085      CALL OPEN(IDCB1,IERR,NAM1,2,IPROJ,ICR)
0086      IF(IERR.EQ.-6) GO TO 145
0087      CALL ERR(IERR,4444)
0088      GO TO 150
0089      145 CALL CREAT(IDCB1,IERR,NAM1,ISIZ1,2,IPROJ,ICR)
0090      CALL ERR(IERR,5555)
0091      IBUF(1)=IPROJ
0092      IBUF(2)=IWIND
0093      IBUF(3)=NTAPS
0094      CALL WRITE(IDCB1,IERR,IBUF,3)
0095      CALL ERR(IERR,8877)
0096      CALL RWNDF(IDCB1)
0097      C 150 NUR=KITAP-1
0098      150 NUR=KITAP
0099      CALL POSNT(IDCB1,IERR,NUR)
0100      DO 160 I=1,KLEFT
0101      IBUF(1)=ITAP(KITAP+I-1)
0102      DO 155 J=1,4
0103      X(J)=VOLTG(J,I)
0104      155 CONTINUE
0105      CALL WRITE(IDCB1,IERR,IBUF,10)
0106      C      CALL ERR(IERR,8888)
0107      160 CONTINUE
0108      CALL CLOSE(IDCB1)
0109      CALL CLOSE(IDCB2)
0110      170 CONTINUE
0111      END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00812

COMMON = 00000

PAGE 0004 FTH 2:46 PM WED., 4 JAN., 1984

```

0112      SUBROUTINE CHECK(KITAP,VOLTG,NCHAN,JTAP,LU)
0113      C
0114      C SUBROUTINE TO CHECK FOR POSSIBLE BAD DATA AND OUTPUT A FLAG
0115      C
0116      DIMENSION VOLTG(4,4),JTAP(192)
0117      DATA IW1,IW2,IW3,IW4,IW5,IW6,IW7 /2H01,2H02,2H03,2H04,2H05,2H06,
0118      + 2H07/
0119      K2=KITAP
0120      DO 100 I=1,NCHAN
0121      ITAP=JTAP(K2)
0122      IF(ITAP.EQ.0) GO TO 90
0123      C
0124      C CHECK FOR LOW MAX-MIN DIFFERENCE
0125      C
0126      Q=VOLTG(3,I)-VOLTG(4,I)
0127      IF (Q.LT.0.2) WRITE(LU,105) IW1,ITAP,Q
0128      C
0129      C CHECK FOR HIGH RMS
0130      C
0131      Q=VOLTG(2,I)
0132      IF (Q.GE.0.5) WRITE(LU,105) IW2,ITAP,Q
0133      C
0134      C CHECK FOR MAX GUST
0135      C
0136      Q=(VOLTG(3,I)-VOLTG(1,I))/VOLTG(2,I)
0137      IF(Q.GT.10.0) WRITE(LU,105) IW3,ITAP,Q
0138      C
0139      C CHECK FOR DATA SCRAMBLE
0140      C
0141      IF(Q.LT.0.0) WRITE(LU,105) IW5,ITAP,Q
0142      C
0143      C CHECK FOR MIN GUST
0144      C
0145      Q=(VOLTG(1,I)-VOLTG(4,I))/VOLTG(2,I)
0146      IF(Q.GT.10.0) WRITE(LU,105) IW4,ITAP,Q
0147      C
0148      C CHECK FOR DATA SCRAMBLE
0149      C
0150      IF(Q.LT.0.0) WRITE(LU,105) IW6,ITAP,Q
0151      C
0152      C CHECK FOR MEAN AND POSITIVE MAX BOTH GREATER THAN ONE
0153      C
0154      IF(VOLTG(1,I).GT.1.0.AND.VOLTG(3,I).GT.1.0)
0155      + WRITE(LU,105) IW7,ITAP,VOLTG(1,I)
0156      90 K2=K2+1
0157      100 CONTINUE
0158      RETURN
0159      105 FORMAT("  PRES: ",A2," TAP",I5," TROUBLE=",F10.3)
0160      END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

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** NO WARNINGS ** NO ERRORS ** PROGRAM = 00353 COMMON = 00000

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0161      SUBROUTINE ERR(IERR,LOC)
0162      COMMON /INDTA/ IPROJ,ICONF,ITUBE,NSAM,ICHAN,CFAC(4),
0163      + ADCZ(4),TEMP,PRES,ICYCH,IDRCH,IRATE,NCHAN,IFLIST,NZERO,IVALVE,
0164      + ICHNL,ZTOLR,IDUCER(4),IGFCTR,LU,LUC,LLU,IDCB1(144),IDCB2(144),
0165      + ITAP(192),JSIZE,IWIND,
0166      + NAM1(3),LCHAN,TOT,ICR,NAMP(3),ISIZ1(2),VFACTR,ITUBEC,NSTEP,
0167      + IIBF(5),NTAPS,NREV,NAM3(3),KLEFT,KITAP,NAMS(3),VREF(4),ID(15)
0168      C
0169      C ERROR DETECTION AND PROCESSING
0170      C
0171      IF (IERR.GE.0) RETURN
0172      CALL CLOSE(IDCB2)
0173      C
0174      C CLOSE AND PURGE THE RAW DATA FILE
0175      C
0176      CALL CLOSE(IDCB1)
0177      CALL PURGE(IDCB1,JERR,IIBF,0,15)
0178      IF (IERR.EQ.-18) IERR=0
0179      IF (LUC.EQ.0) GO TO 115
0180      C
0181      C PRINT ERROR MESSAGE
0182      C
0183      WRITE(LU,100) IERR,LOC
0184      100 FORMAT "  PRES: FILE MANAGER ERROR",I6," AT LOCATION",I6)
0185      C
0186      C SAFE TO PURGE THE REDUCED DATA FILE ?
0187      C
0188      IF (LOC.LT.20) GO TO 110
0189      IF (IERR.EQ.-2) GO TO 110
0190      C
0191      C YES, PURGE IT !
0192      C
0193      CALL PURGE(IDCB1,JERR,NAM1,IPROJ,ICR)
0194      WRITE(LU,105) NAM1,JERR
0195      105 FORMAT "  PRES: ",3A2," IS PURGED",I4)
0196      110 STOP 7777
0197      115 STOP 0000
0198      END

```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00138 COMMON = 00000

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0199 \$

PAGE 0001 FTH. 2:50 PM WED., 4 JAN., 1984

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0001 FTH4,L
0002 PROGRAM TAP20(3,80),5/08/79 JD
0003 DIMENSION IDC8(144),NAME(3),IBUF(10),PCOF(4),IPAR(5),ID(2)
0004 DIMENSION PMEAN(129),PRMS(129),PMAX(129),PMIN(129),AZIM(129)
0005 EQUIVALENCE (IBUF(3),PCOF(1))
0006 EQUIVALENCE (DMY,ID(1)),(LEN,ID(2))
0007 C
0008 C GET LU NUMBER OF SCHEDULING TERMINAL, IF NOT 26, QUIT.
0009 C
0010 CALL RMPAR(IPAR)
0011 LU=IPAR(1)
0012 IF (LU.LT.1) LU=1
0013 CALL LIBER(LU)
0014 IF (LU.NE.26) STOP 7777
0015 C
0016 C USER INPUT: THE NAME OF THE S-FILE, PROJECT NUMBER, AND CARTRIDGE
0017 C
0018 10 WRITE(LU,800)
0019 800 FORMAT("S-FILE; NAME: CARTRIDGE ? _")
0020 DMY=REIO(1,4008+LU,IDC8,-72)
0021 ISCR=1
0022 IF (NAMR(IBUF,IDC8,LEN,ISCR)) 10,20
0023 20 IF (IP(0,IBUF(4)).NE.3) GO TO 10
0024 NAME(1)=IBUF(1)
0025 NAME(2)=IBUF(2)
0026 NAME(3)=IBUF(3)
0027 IF (IP(1,IBUF(4)).EQ.1) GO TO 30
0028 CALL CODE
0029 READ(NAME,805) IPROJ
0030 805 FORMAT(2X,I4)
0031 GO TO 40
0032 30 IPROJ=IBUF(5)
0033 40 IF (IP(2,IBUF(4)).NE.1) GO TO 10
0034 ICR=IBUF(6)
0035 C
0036 C ASK FOR STARTING PAGE NUMBER
0037 C
0038 44 WRITE(LU,807)
0039 807 FORMAT("STARTING PAGE ? (NEG TO STOP) _")
0040 READ(LU,*) IP1
0041 IF (IP1.LT.0) GO TO 440
0042 C
0043 C REQUEST FIRST WIND DIRECTION, AND LAST WIND DIRECTION
0044 C
0045 809 WRITE(LU,809)
0046 809 FORMAT("FIRST - LAST WIND DIRECTIONS ? _")
0047 READ(LU,*) WIND1,WINDL
0048 IF (WIND1.GT.WINDL) WINDL=WINDL+360.0
0049 C
0050 C OPEN THE S-FILE, IF NOT THE RIGHT PROJECT, QUIT WITH SECURITY
0051 C CODE ERROR.
0052 C
0053 CALL OPEN(IDC8,IERR,NAME,1,IPROJ,ICR)
0054 IF (IERR.LT.0) GO TO 900
0055 CALL READF(IDC8,IERR,IBUF,10,LEN,1)

```


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```

0056      IF (IERR.LT.0) GO TO 900
0057      IERR=-7
0058      IF (IPROJ.NE.IBUF(1)) GO TO 900
0059      C
0060      C GET IMPORTANT NUMBERS OUT OF THE FIRST RECORD
0061      C
0062      ICON=NAME(1)
0063      ICON=MOD(ICON,256)
0064      NWIND=IBUF(2)
0065      NTAPS=IBUF(3)
0066      C
0067      C DETERMINE HOW MANY PAGES, AND TAP-PLOTS ARE REQUIRED
0068      C
0069      NPAGES=(NTAPS + 19)/20
0070      NFULL=NTAPS/20
0071      NLAST=MOD(NTAPS,20)
0072      IF (NLAST.EQ.0) NLAST=20
0073      C
0074      C PLOT PARAMETERS
0075      C
0076      RG=10.0
0077      XL=4095.0/(5.0 + 16.0/RG)
0078      YL=2731.0/(4.0 + 16.0/RG)
0079      DX=XL/RG
0080      DY=YL/RG
0081      IXL=XL
0082      IYL=YL
0083      IMX=DX
0084      IMY=DY
0085      ISX=IXL + 2*IMX
0086      ISY=IYL + 2*IMY
0087      C
0088      C BEGIN PLOTTING
0089      C
0090      IF (IP1.GT.NPAGES) GO TO 440
0091      59 WRITE(LU,60)
0092      60 FORMAT("IS THE FIRST PAGE READY ??  _")
0093      IF(NOYES(LU)) 59,59,61
0094      61 CONTINUE
0095      DO 430 IPAGE=IP1,NPAGES
0096      C
0097      C LOCK LU 26, AND INITIALIZE THE PAGE.
0098      C
0099      CALL LURQ(1,26,1)
0100      CALL PENON
0101      CALL INITT(120)
0102      CALL TERM(3,4096)
0103      CALL ALROT(0)
0104      CALL CHSCL(30,44)
0105      C
0106      C PLOT 20 TAPS PER PAGE, EXCEPT THE LAST PAGE.
0107      C
0108      IYMN=7*IMY + 3*ISY
0109      DO 420 I=1,4
0110      IXMN=4*IMX

```


PAGE 0003 TAP20 2:50 PM WED., 4 JAN., 1984

```

0111      DO 410 J=1,5
0112      KPL0T=(I-1)*5 + J
0113      IF (KPL0T.GT.NLAST.AND.IPAGE.EQ.NPAGES) GO TO 421
0114      C
0115      C PLOT ONE TAP, FIRST GET THE DATA FROM THE FILE.
0116      C
0117      IREC=(IPAGE-1)*20 + KPL0T + 1
0118      DO 100 K=1,NWIND
0119      CALL READF(IDCB,IERR,IBUF,10,LEN,IREC)
0120      IF (IERR.LT.0) GO TO 900
0121      ITAP=IBUF(1)
0122      IREC=IREC+NTAPS
0123      AZIM(K)=FLOAT(IBUF(2))
0124      PMEAN(K)=PCOF(1)
0125      PRMS(K)=PCOF(2)*2.0 - 4.0
0126      PMAX(K)=PCOF(3)
0127      PMIN(K)=PCOF(4)
0128      100 CONTINUE
0129      C
0130      C SET THE WINDOW, AND BEGIN PLOTTING
0131      C
0132      CALL AZCHG(AZIM,PMEAN,PRMS,PMAX,PMIN,NWIND,WIND1,WINDL)
0133      CALL SWIND(IXMN,IXL,IYMN,IYL)
0134      CALL DWIND(WIND1,WINDL,-4.0,2.0)
0135      CALL PERIM(4,2,6,1)
0136      C
0137      CALL MOVEA(0.0,0.0)
0138      CALL MOVEA(WIND1,0.0)
0139      CALL DRAWA(WINDL,0.0)
0140      CALL CURVE(AZIM,PMEAN,NWIND,WIND1,WINDL)
0141      CALL CURVE(AZIM,PMAX,NWIND,WIND1,WINDL)
0142      CALL CURVE(AZIM,PMIN,NWIND,WIND1,WINDL)
0143      CALL CURVE(AZIM,PRMS,NWIND,WIND1,WINDL)
0144      CALL LABL(ITAP,IXMN,IYMN,IYL)
0145      C
0146      C FINISHED THIS TAP, GO ON TO NEXT
0147      C
0148      IXMN=IXMN+ISX
0149      IYMN=IYMN-ISY
0150      410 CONTINUE
0151      420 CONTINUE
0152      C
0153      C UNLOCK THE LU FOR A NEW PAGE
0154      C
0155      421 CALL TITLE(IPROJ,ICON,IMX,IMY,WIND1,WINDL)
0156      CALL FINIT(4095,2731)
0157      CALL PENOF
0158      CALL LURQ(1000000B,26,1)
0159      IF (IPAGE.EQ.NPAGES) GO TO 430
0160      423 WRITE(LU,810)
0161      810 FORMAT('READY TO DO NEXT PAGE ? _')
0162      IF (NOYES(LU)) 440,423,430
0163      430 CONTINUE
0164      GO TO 44
0165      C
0166      C ALL FINISHED !!!!

```

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```
0166 C
0167 440 CALL CLOSE(IDC8)
0168 STOP
0169 900 WRITE(LU,840) IERR
0170 840 FORMAT(" FILE ERROR",I6)
0171 CALL CLOSE(IDC8)
0172 STOP 7777
0173 END
```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 02309 COMMON = 00000

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```

0174 SUBROUTINE AZCHG(AZIM,PMEAN,PRMS,PMAX,PMIN,NWIND,WIND1,WINDL)
0175 DIMENSION AZIM(129),PMEAN(129),PRMS(129),PMAX(129),PMIN(129)
0176 IF(WINDL.LE.360.0) RETURN
0177 DO 100 I=1,NWIND
0178 IF(AZIM(I).GE.WIND1) GO TO 100
0179 AZIM(I)=AZIM(I)+360.0
0180 100 CONTINUE
0181 C
0182 C SORT THESE INTO ASCENDING ORDER
0183 C
0184 N=NWIND-1
0185 DO 200 I=1,N
0186 J=I+1
0187 DO 190 K=J,NWIND
0188 IF(AZIM(I).LT.AZIM(K)) GO TO 190
0189 TEMP=AZIM(I)
0190 AZIM(I)=AZIM(K)
0191 AZIM(K)=TEMP
0192 TEMP=PMEAN(I)
0193 PMEAN(I)=PMEAN(K)
0194 PMEAN(K)=TEMP
0195 TEMP=PRMS(I)
0196 PRMS(I)=PRMS(K)
0197 PRMS(K)=TEMP
0198 TEMP=PMAX(I)
0199 PMAX(I)=PMAX(K)
0200 PMAX(K)=TEMP
0201 TEMP=PMIN(I)
0202 PMIN(I)=PMIN(K)
0203 PMIN(K)=TEMP
0204 190 CONTINUE
0205 200 CONTINUE
0206 RETURN
0207 END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00259

COMMON = 00000

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```
0208      SUBROUTINE LABL(ITAP,IXMN,IYMN,IYL)
0209      DIMENSION KTAP(4),JTAP(5)
0210      DATA KTAP /84,97,112,35/
0211      X=FLOAT(ITAP)
0212      CALL ENCOD(JTAP,X,5,0,0)
0213      JX=IXMN + 60
0214      JY=IYMN + IYL - 55
0215      CALL MABS(JX,JY)
0216      CALL ANSTR(4,KTAP)
0217      CALL ANSTR(5,JTAP)
0218      RETURN
0219      END
```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00057 COMMON = 00000

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```

0220      SUBROUTINE TITLE(IPROJ,ICON,IMX,IMY,WIND1,WINDL)
0221      DIMENSION JPROJ(7),KPROJ(5),JCONF(8),IWIND(7),JWIND(7)
0222      C          P R O J E C T
0223      DATA JPROJ /80,82,79,74,69,67,84/
0224      C          C O N F I G
0225      DATA JCONF /67,79,78,70,73,71,46,32/
0226      C          W I N D
0227      DATA IWIND /32,32,87,46,68,46,32/
0228      C          0 0 0 - 0 0 0
0229      DATA JWIND /48,48,48,45,48,48,48/
0230      X=FLOAT(IPROJ)
0231      CALL ENCOD(KPROJ,X,5,0,0)
0232      CALL ENCOD(JWIND(1),WIND1,3,0,0)
0233      WIND=WINDL
0234      IF(WIND.GT.360.0) WIND=WIND-360.0
0235      CALL ENCOD(JWIND(5),WIND,3,0,0)
0236      CALL CHSCL(112,176)
0237      IX=4*IMX
0238      IY=2*IMY
0239      CALL MABS(IX,IY)
0240      CALL ANSTR(7,JPROJ)
0241      CALL ANSTR(5,KPROJ)
0242      C
0243      IX=31*IMX
0244      IY=IY+88
0245      CALL MABS(IX,IY)
0246      CALL CHSCL(56,60)
0247      CALL ANSTR(7,IWIND)
0248      IY=IY-88
0249      CALL MABS(IX,IY)
0250      CALL ANSTR(7,JWIND)
0251      CALL CHSCL(112,176)
0252      C
0253      IX=4095-2*IMX-1120
0254      CALL MABS(IX,IY)
0255      CALL ANSTR(8,JCONF)
0256      CALL ANCH0(ICON)
0257      CALL CHSCL(56,88)
0258      RETURN
0259      END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00199

COMMON = 00000

PAGE 0008 FTH. 2:50 PM WED., 4 JAN., 1984

```
0260      FUNCTION NOYES(LU)
0261      C
0262      C FUNCTION NOYES RETURNS A +1 IF IANS IS YES
0263      C                               -1 IF IANS IS NO
0264      C                               0 IF IANS IS NEITHER
0265      C
0266      CALL KEYIN(IANS,LU)
0267      IF (IANS.EQ.1HY) GO TO 10
0268      IF (IANS.EQ.1HN) GO TO 20
0269      NOYES=0
0270      RETURN
0271  10    NOYES=+1
0272      RETURN
0273  20    NOYES=-1
0274      RETURN
0275      END
```

FTH4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00039

COMMON = 00000

PAGE 0009 FTH. 2:50 PM WED., 4 JAN., 1984

```
0276      FUNCTION IP( IBITS, IWORD )
0277      JWORD = IWORD / ( 4 * IBITS )
0278      IP = MOD( JWORD, 4 )
0279      RETURN
0280      END
```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00028 COMMON = 00000

PAGE 0010 FTM. 2:50 PM WED., 4 JAN., 1984

```

0281      SUBROUTINE CURVE(AZIM,PRESS,NWIND,WIND1,WINDL)
0282      DIMENSION AZIM(1),PRESS(1)
0283      C      IF (WIND1.GT.WINDL) GO TO 500
0284      DO 100 I=1,NWIND
0285      IF (AZIM(I).LT.WIND1) GO TO 100
0286      CALL MOVEA(AZIM(I),PRESS(I))
0287      NEXT=I+1
0288      GO TO 120
0289      100  CONTINUE
0290      RETURN
0291      120  DO 200 I=NEXT,NWIND
0292      IF (AZIM(I).GT.WINDL) GO TO 300
0293      CALL DRAWA(AZIM(I),PRESS(I))
0294      200  CONTINUE
0295      IF (WINDL.NE.360.0) GO TO 300
0296      IF (AZIM(1).NE.0.0) GO TO 300
0297      CALL DRAWA(360.0,PRESS(1))
0298      300  RETURN
0299      END

```

FTN4 COMPILER: HP92060-16092 REV. 1901 (781201)

** NO WARNINGS ** NO ERRORS ** PROGRAM = 00124 COMMON = 00000

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0300 \$