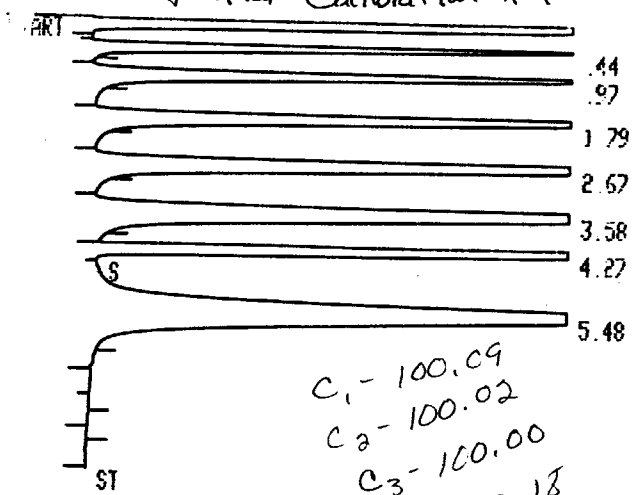
Solar Turbines - Sanmarcos

Initial Calibration #1



C_1 - 100.09
C_2 - 100.02
C_3 - 100.00
C_4 - 100.18
C_5 - 98.27
C_6 - 100.00

RUN # 728

AREA%

RT	AREA	TYPE	AR/HT	AREA%
0.44	444190	PB	0.114	2.025
0.97	624030	PB	0.148	2.845
1.79	927600	PB	0.150	4.229
2.67	1250500	PB	0.162	5.701
3.58	1528500	PB	0.215	6.968
4.27	1.5335E+07	DSPB	0.069	69.914
5.48	1824400	BB	0.393	8.318

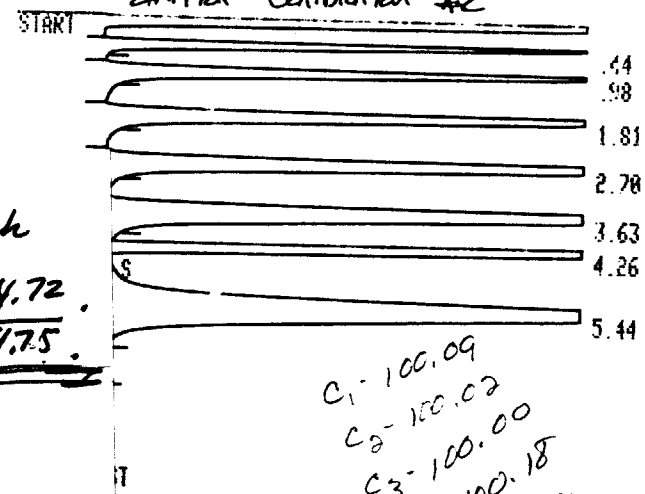
TOTAL AREA= 2.1935E+07
MUL FACTOR= 1.0000E+00

Average Calib.

C1	450,660
C2	616,995
C3	925,240
C4	1253,000
C5	1528,850
C6	1854,900

6/28

Initial Calibration #2



? 4.27 peak in blank @ 4.72 & 4.75.

C_1 - 100.09
C_2 - 100.02
C_3 - 100.00
C_4 - 100.18
C_5 - 98.27
C_6 - 100.00

RUN # 729

AREA%

AREA	TYPE	AR/HT	AREA%
457130	BB	0.116	2.120
609900	PB	0.147	2.828
922880	PB	0.152	4.279
1255500	PB	0.164	5.821
1529200	PB	0.214	7.090
.908E+07	DSPB	0.068	69.121
1885400	BB	0.387	8.741

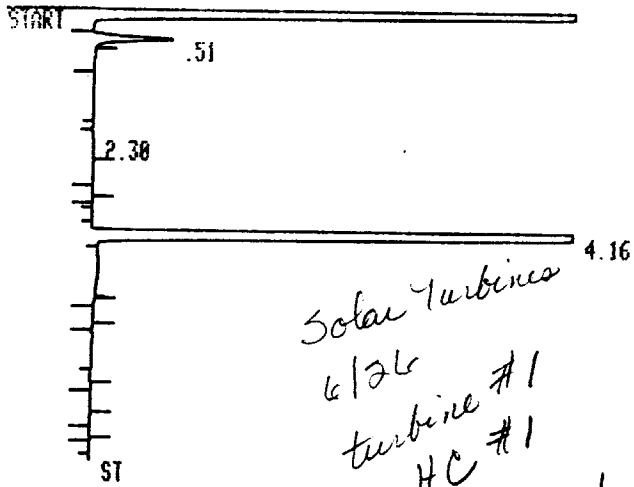
TOTAL AREA= 2.1568E+07
MUL FACTOR= 1.0000E+00

6/28

Third plus checked vs p 50. ok

8-18

I think .51 peak covers up .99 peak (of air?) Is this TCD? Or was .47 contam FID?



Solar Turbines
6/26
turbine #1
HC #1
GC-1

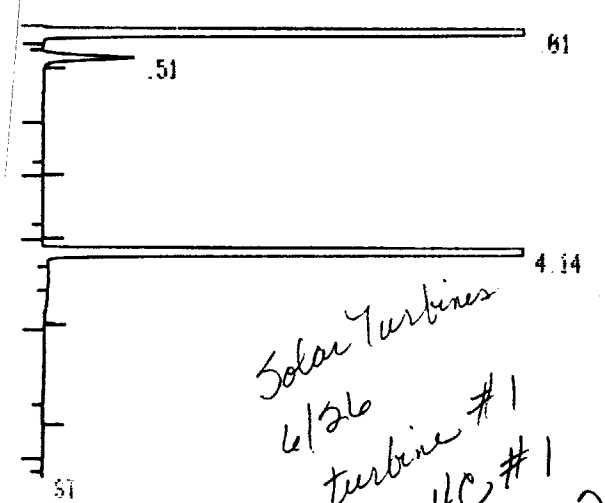
RUN # 730

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
Cl	0.51	60570	D PB	0.106	0.420
Noise	2.30	4894	PB	0.255	0.034
BF	4.16	1.4356E+07	DSHB	0.068	99.546

TOTAL AREA= 1.4422E+07
MUL FACTOR= 1.0000E+00

BF = Back Flush ??



Solar Turbines
6/26
turbine #1
HC #1
GC-2

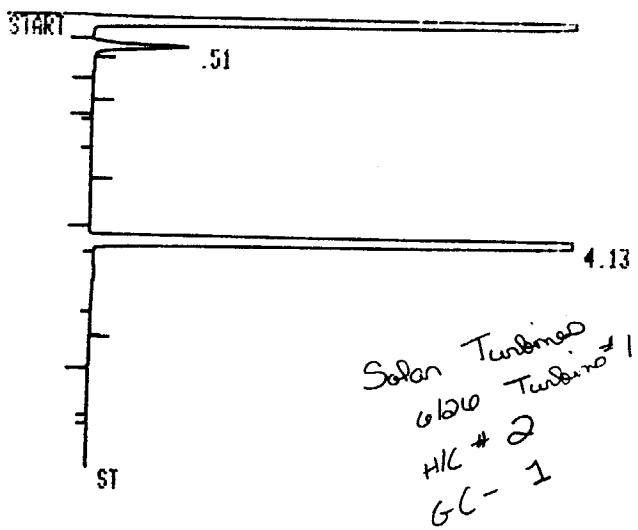
RUN # 731

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
	0.01	1749400	D BB	0.041	11.064
Cl	0.51	69133	D PB	0.104	0.437
BF	4.14	1.3993E+07	DSBB	0.069	88.499

TOTAL AREA= 1.5812E+07
MUL FACTOR= 1.0000E+00

4/28



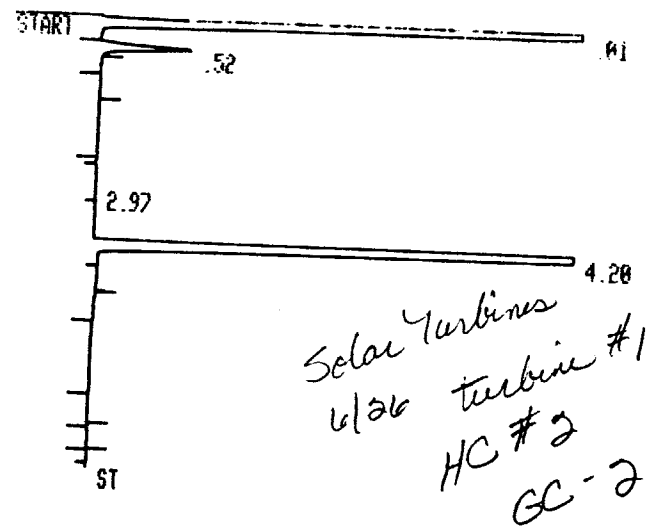
RUN # 732

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
CI	0.51	70506	D PB	0.102	0.502
GF	4.13	1.3969E+07	DSPB	0.068	99.498

TOTAL AREA= 1.4039E+07
MUL FACTOR= 1.0000E+00

6/28



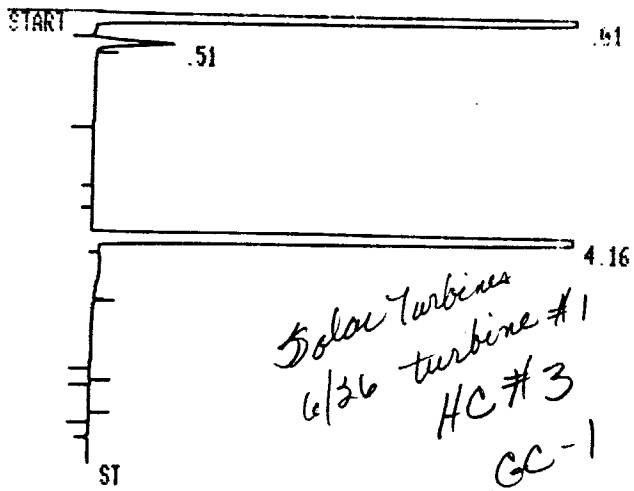
RUN # 733

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
	0.01	1792800	D BB	0.041	11.369
CI	0.52	69093	D BB	0.105	0.438
Note	2.97	5345	PP	0.412	0.034
GF	4.20	1.3903E+07	SPB	0.068	88.159

TOTAL AREA= 1.5770E+07
MUL FACTOR= 1.0000E+00

6/28



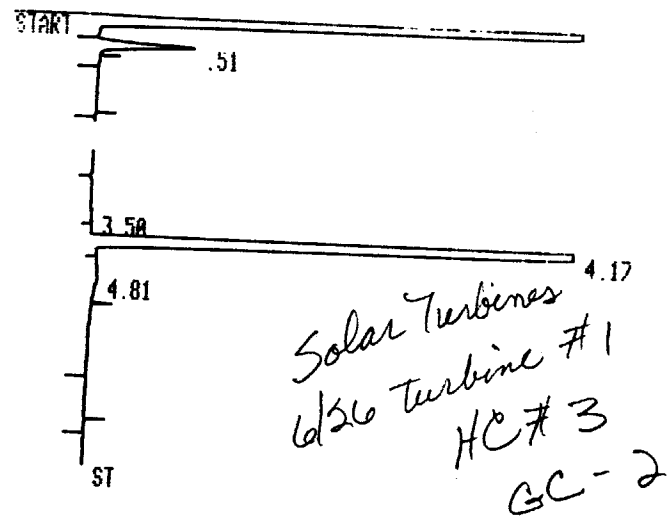
RUN # 734

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
	0.01	1725200	D BB	0.041	10.983
Cl	0.51	61526	D BB	0.107	0.392
BF	4.16	1.3922E+07	DSHB	0.068	88.626

TOTAL AREA= 1.5709E+07
MUL FACTOR= 1.0000E+00

6/28



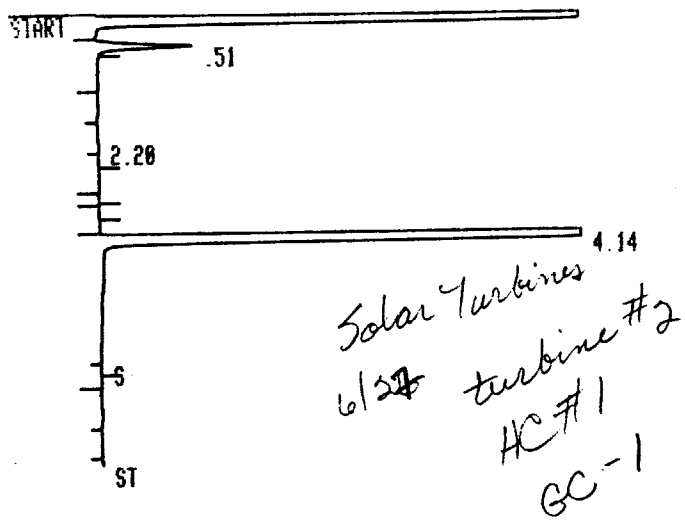
RUN # 735

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
Cl	0.51	73655	D BB	0.105	0.518
	3.50	10937	PH	0.744	0.077
BF	4.17	1.4130E+07	DSHB	0.069	99.321
	4.81	12019	TBB	0.472	0.085

TOTAL AREA= 1.4227E+07
MUL FACTOR= 1.0000E+00

6/28



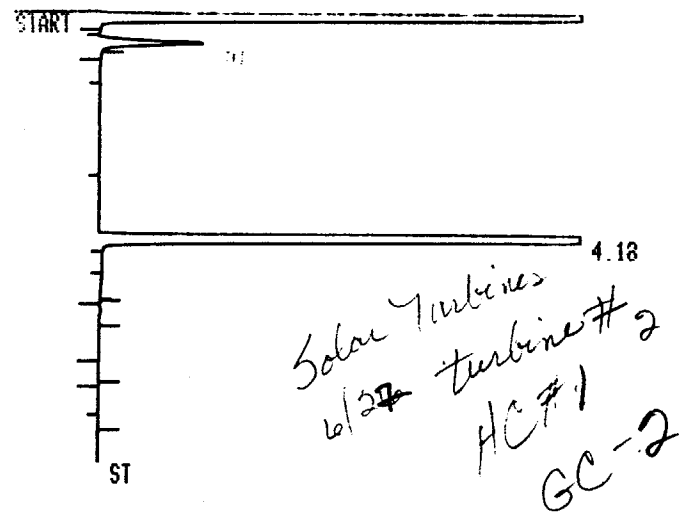
RUN # 736

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
CI	0.51	70289	D BB	0.103	0.503
Note	2.20	3443	PV	0.317	0.025
BF	4.14	1.3909E+07	DSBB	0.068	99.473

TOTAL AREA= 1.3983E+07
MUL FACTOR= 1.0000E+00

6/28



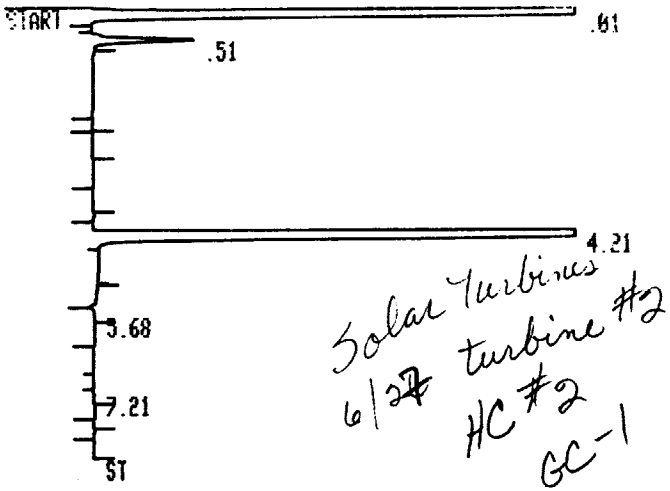
RUN # 737

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
CI	0.51	75249	D PB	0.103	0.537
BF	4.18	1.3930E+07	DSPB	0.068	99.463

TOTAL AREA= 1.4005E+07
MUL FACTOR= 1.0000E+00

6/28



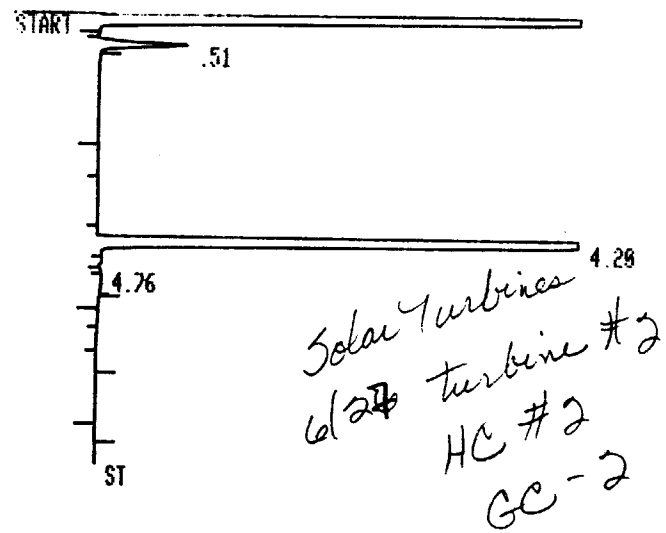
RUN # 738

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
	0.01	1757300	D BB	0.038	11.071
cl	0.51	75169	D PB	0.102	0.474
bf	4.21	1.4036E+07	DSPB	0.069	88.425
	~~5.68~~	3698	BB	0.174	0.023
	~~7.21~~	1214	PB	0.108	0.008

TOTAL AREA= 1.5874E+07
MUL FACTOR= 1.0000E+00

6/28



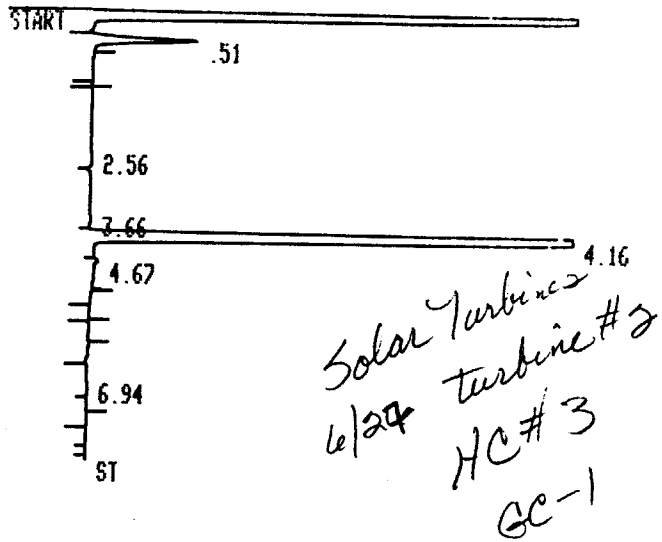
RUN # 739

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
cl	0.51	68133	D PB	0.104	0.474
bf	4.20	1.4313E+07	DSHB	0.068	99.518
	~~4.76~~	1131	TPV	0.060	0.008

TOTAL AREA= 1.4382E+07
MUL FACTOR= 1.0000E+00

6/28



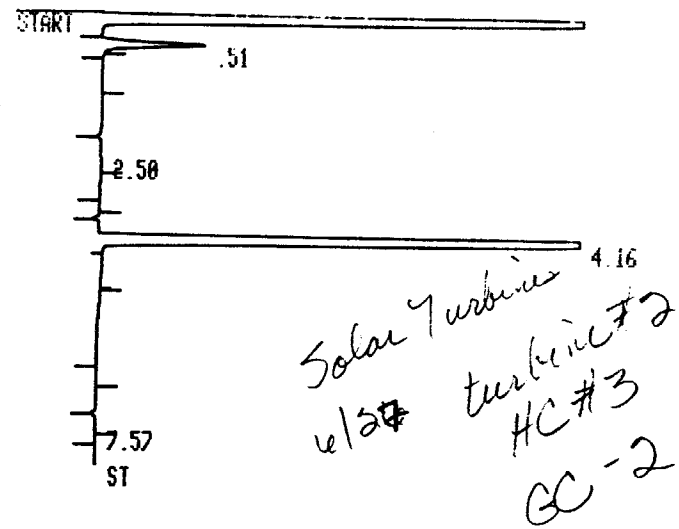
RUN # 740

AREA%

	RT	AREA	TYPE	AR/HT	AREA%
C1	0.51	76926	D PB	0.103	0.532
C4	2.56	26129	PP	1.081	0.181
	~~3.66~~	19848	PH	0.937	0.137
BF	4.16	1.4323E+07	DSHB	0.069	99.076
	~~4.67~~	5602	DTBB	0.180	0.039
	~~6.94~~	5076	BV	0.383	0.035

TOTAL AREA= 1.4457E+07
MUL FACTOR= 1.0000E+00

6/28



RUN # 741

AREA%

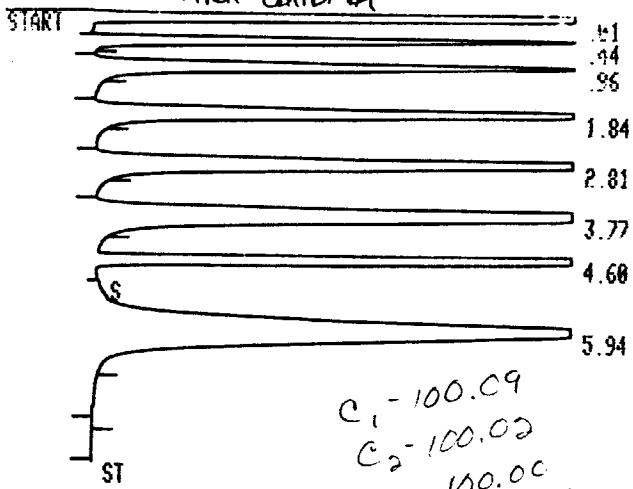
	RT	AREA	TYPE	AR/HT	AREA%
C1	0.51	75245	D BB	0.103	0.516
C4	2.50	7509	PB	0.382	0.052
BF	4.16	1.4491E+07	DSBB	0.069	99.406
	~~7.57~~	3870	PB	0.171	0.027

TOTAL AREA= 1.4577E+07
MUL FACTOR= 1.0000E+00

6/28

Solar Turbines: San Marcos

Final Calib. #1



C_1 - 100.09
C_2 - 100.02
C_3 - 100.00
C_4 - 100.13
C_5 - 98.27
C_6 - 100.00

RUN # 743

AREA%

RT	AREA	TYPE	AR/HT	AREA%
0.01	2066000	D BB	0.035	8.934
0.44	436700	BB	0.115	1.888
0.96	597980	PB	0.156	2.586
1.84	902820	PB	0.163	3.904
2.81	1203600	PB	0.168	5.205
3.77	1453600	PB	0.220	6.285
4.60	1.4787E+07	DSBB	0.068	63.942
5.94	1678000	BB	0.426	7.256

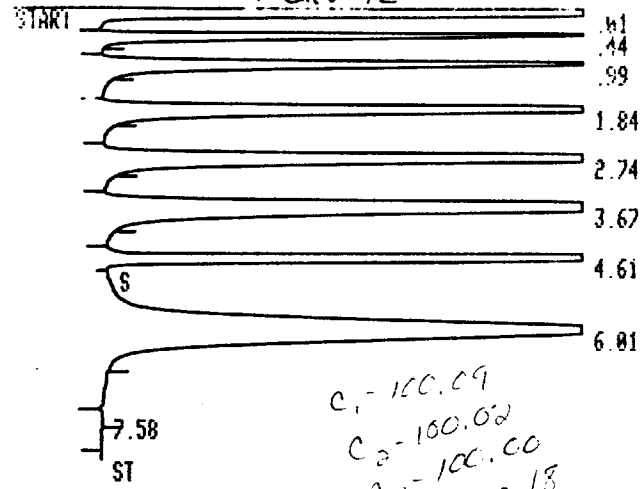
TOTAL AREA= 2.3126E+07
MUL FACTOR= 1.0000E+00

Average Calib.

C1	440,045
C2	589,215
C3	884,165
C4	1,183,800
C5	1,444,600
C6	1,682,450

6/08

Final Calib #2



C_1 - 100.09
C_2 - 100.02
C_3 - 100.00
C_4 - 100.13
C_5 - 98.27
C_6 - 100.00

RUN # 744

AREA%

RT	AREA	TYPE	AR/HT	AREA%
0.01	3003500	D BB	0.039	11.764
0.44	443390	BB	0.116	1.737
0.99	580450	PB	0.150	2.274
1.84	865510	PB	0.154	3.390
2.74	1164000	PB	0.165	4.559
3.67	1435600	PB	0.216	5.623
4.61	1.6348E+07	DSBB	0.069	64.033
6.01	1686900	BB	0.434	6.607
7.58	3438	BB	0.173	0.014

TOTAL AREA= 2.5531E+07
MUL FACTOR= 1.0000E+00

6/08

HYDROCARBON EMISSIONS

REF: Kern County APCD, guidelines for compliance test reports, Hydrocarbon testing and methodology

Sampling Procedures:

A sample was pressurized upstream of the orifice plate through an iced impinger and into a tedlar bag., The bag was purged 5 times and filled.

Analytical Procedure:

The contents of the tedlar bag are analyzed by gas chromatography. The gas chromatograph is calibrated with an appropriate standard for each carbon #, before and after each set of samples are analyzed. The sample is speciated by carbon #-C1, C2, C3, C4, C5, and C6+ backflush.

Calculations:

Symbol Identification = i = carbon #; i = 1 to 6
s = refers to standard for that carbon #
Rx_i = response factor for C_i
MW = molecular weight - g/mole
SDCFM = average volume flow rate of unit tested

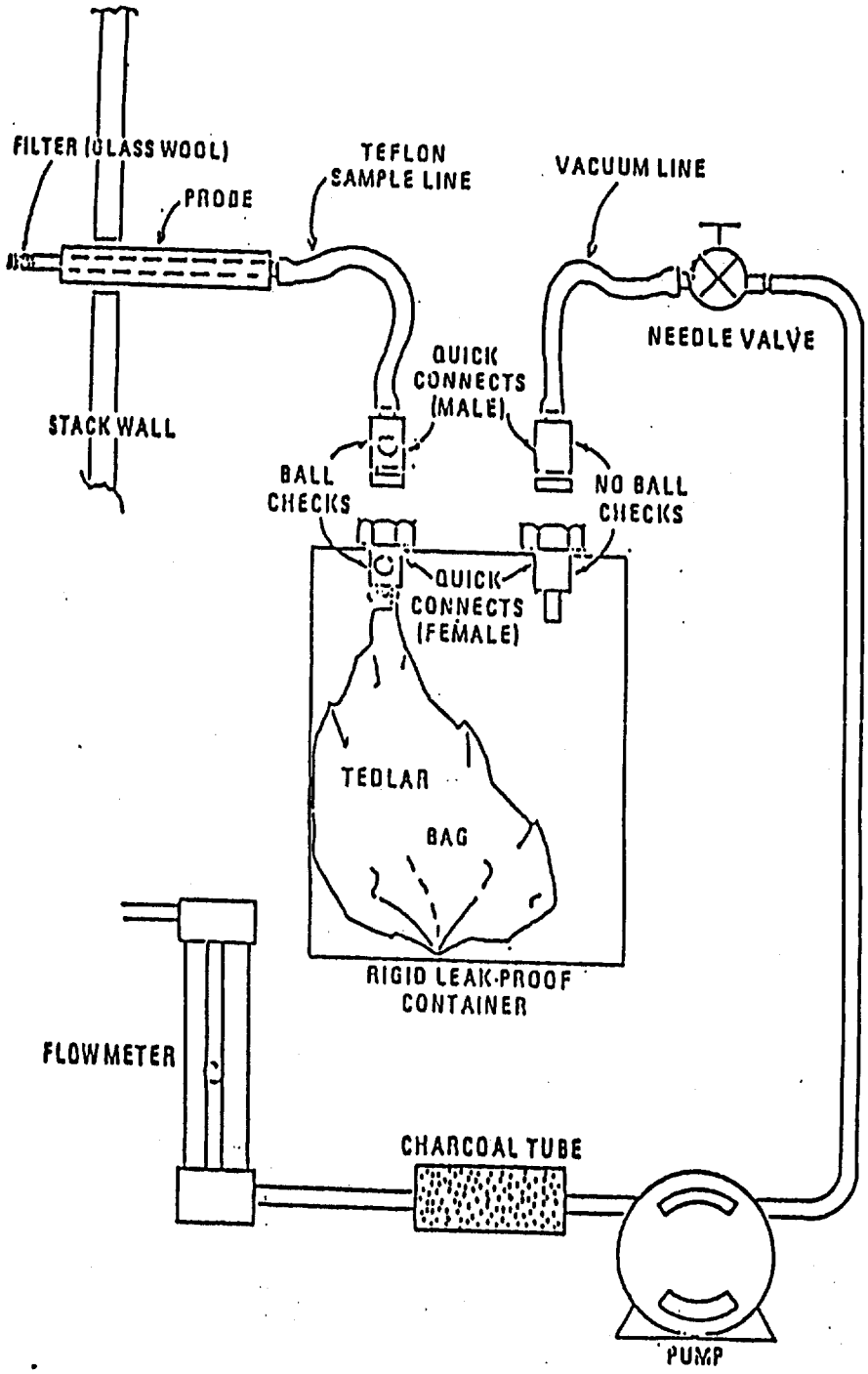
Equations:

$Rx_i = \text{ppm std}/(\text{Area}_s)$ $\quad Rx_i = \dfrac{\text{Area std}}{\text{ppm std}}$

$$\text{sample ppm}_i = \frac{1}{Rx_i} * \text{Area}_i$$

$$\text{lbs/hr}_i = \text{ppm}_i * MW_i * \text{SDCFM} * 1.581 * 10^{-7}$$

$$\text{total non-methane lbs/hr} = \sum_{2}^{6+} \text{lbs/hr}_i$$

Note: If lbs/hr as methane is required, MW; will equal 16.0 (MW of methane)

EPA METHOD # 18