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145445

LABORATORY REPORT
FOR
VALLEY FORGE ENGINEERING

OBJECT: Determine if submitted samples contain Polychlorinated Biphenyls (PCB). Determine the flash point of submitted samples.

PROCEDURE: PCB - The sample was dissolved in Hexane. If necessary, acidified and cleaned with concentrated Sulfuric Acid, passed through a Florisil Column, and compared to a standard mixture of Aroclors on an Electron Capture-Gas Chromatograph.

Flasn Point - ASTM D 1310

Sample Date: 1/13/82 Date Received: 1/18/82

Sample Type: Oil

Customer Sample Number	Tank 22	29	32	33	42
E & E Lab Number 82-	72	73	74	75	76
Aroclor 1221, ppm	<2.5	<2.5	<2.5	<2.5	<2.5
Aroclor 1242, ppm	<2.5	<2.5	<2.5	<2.5	<2.5
Aroclor 1232, ppm	<7.5	<7.5	<7.5	<7.5	<7.5
Aroclor 1248, ppm	<2.S	<2.5	<2.5	<2.5	<2.5
Aroclor 1254, ppm	<7.5	<7.5	<7.5	<7.5	<7.5
Aroclor 1260, ppm	<2.5	<2.5	<2.5	<2.5	<2.5
Aroclor 1016, ppm	<5.0	<5.0	<5.0	<5.0	<5.0
Total PCB	<30	<30	<30	<30	<30
Flash Point, °F	>200	>200	>200	>200	>200

Supervising Analyst G. Hahn

Date January 29, 1982

GH:gb

recycled paper

036129

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LABORATORY REPORT

FOR

VALLEY FORGE ENGINEERING, INC.

Job No. VF-422-3 P. O. No. 113

Sample Date: 1/13/82 Sampled By: Client

Date Received: 1/16/82 Delivered By: U. S. Mail

Sample Type: Oil

E & E Lab Number 82-	72	73	74	75	76
Customer Number	22	29	32	33	42
% Chlorine	0.76	0.65	0.07	0.21	0.52

0.42 avg

Analytical REferences - ASTM D 808

Supervising Analyst D. Hahn

Date 1.29-82

recycled paper

036129

CHROMATOGRAPHIC CONOITIONS

OPERATOR L. Franzek

DATE 2/12/82

JOB NUMBER VF-422

SAMPLE IDENTIFICATION OiT Samples

SOLVENT 6% Ether/Hexane

ANALYTICAL METHOD U.S.EPA,Cincinnati,Ohio-6/24/80 "The Analysis of Polychlorinated Biphenyls in Transformer Fluid and Waste Oil"

COLUMN

Type Glass

Length 6'

Diameter 1/4" OD, 4 mm ID

Liquid Phase (% wt.) 4% SE-30/6% QF-1

Support Supelcoport

Mesh 100/120

CARRIER GAS Nitrogen

Rotameter 60

Inlet Pressure, psig 26

Flow Rate, mL/min. 30

SCAVENGER GAS

SPLIT

FID GAS

Hydrogen, mL/min.

Air, mL/min.

CHART SPEED, cm/min. T.0

DETECTOR ECD

Range 10^{-12}

Attenuation 8

TEMPERATURE, °C

Detector 300

Injection Port 250

Column

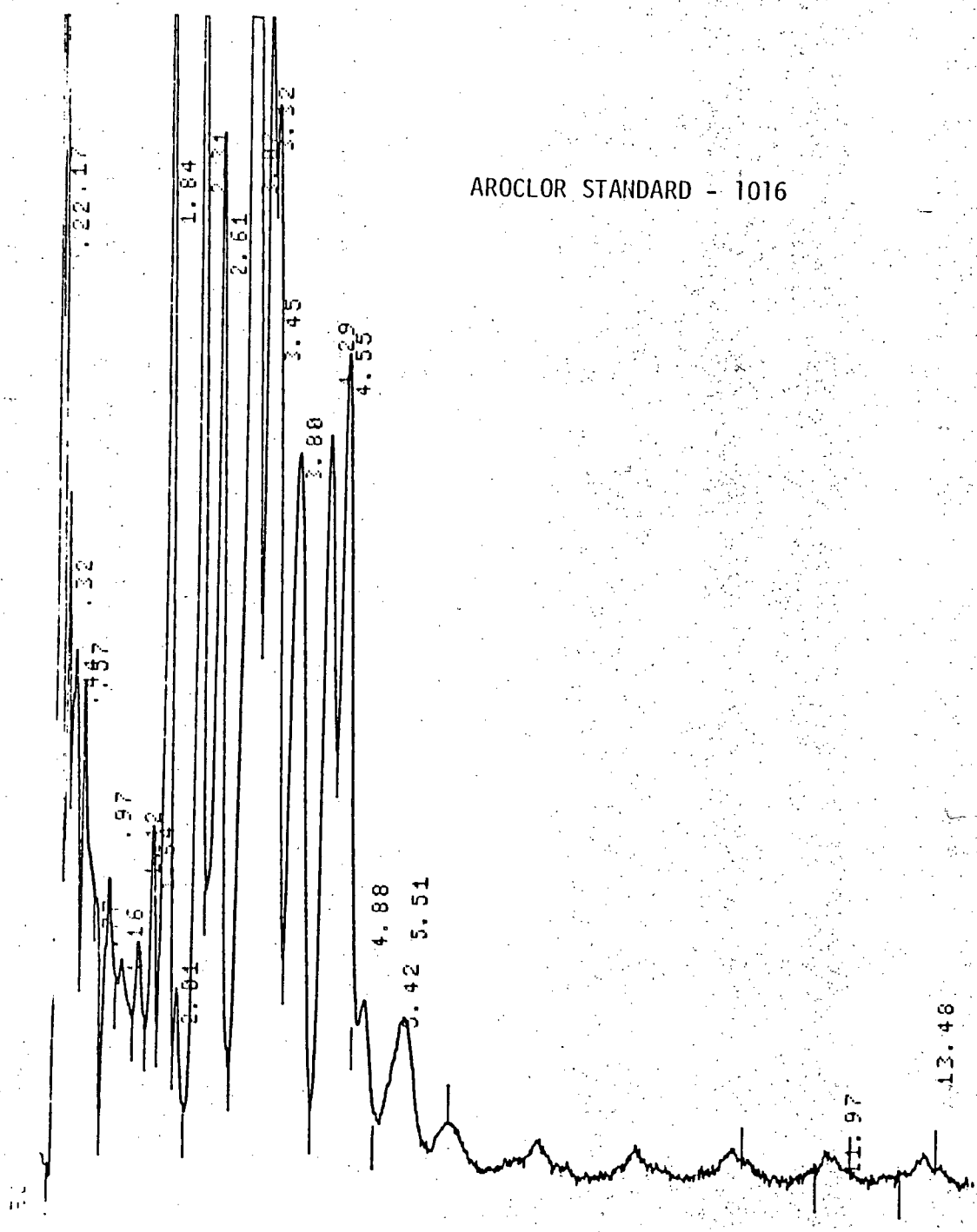
Initial 200

Program

Final

INSTRUMENT Varian 3700 GC

AROCLOR STANDARD - 1016

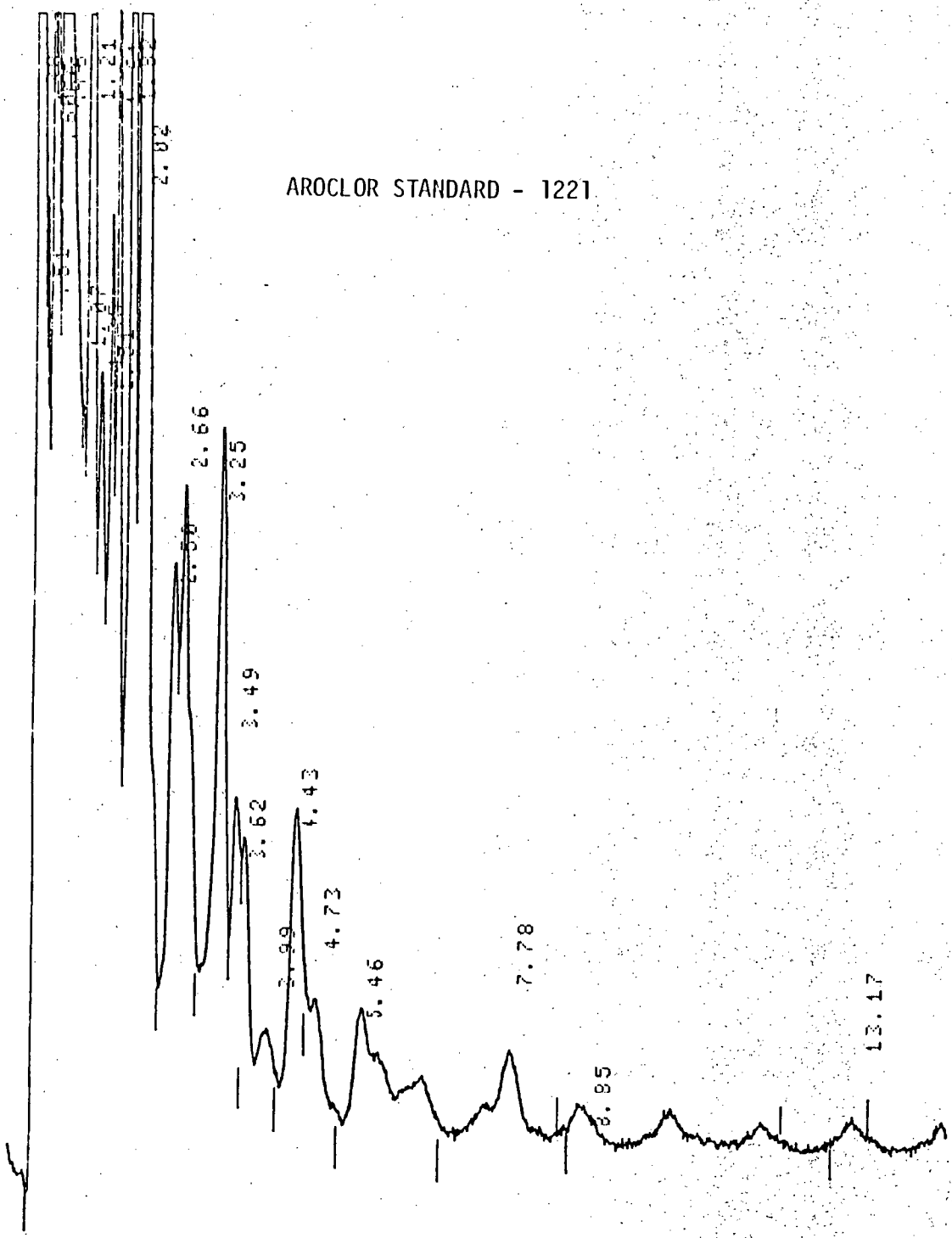


06:45:38

FILE 1 METHOD 0. RUN 14 INDEX 14

PEAK#	AREA%	RT	AREA	BC
1	11.504	0.17	237008	02
2	5.585	0.22	115075	02
3	1.645	0.32	33895	02
4	2.453	0.44	58539	02
5	2.922	0.57	68208	02
6	0.645	0.77	13281	02
7	1.872	8.97	38578	02
8	1.675	1.16	34587	02
9	1.288	1.42	26545	02
10	1.386	1.64	28550	02
11	5.568	1.84	114722	02
12	0.757	2.81	15600	02
13	6.41	2.31	132055	02
14	5.937	2.61	122319	02
15	17.544	3.07	361466	02
16	6.331	3.32	130444	02
17	5.351	3.45	110247	02
18	6.876	3.8	141663	02
19	5.351	4.29	110239	02
20	6.431	4.55	132487	02
21	1.007	4.88	20739	02
22	0.484	5.42	9982	02
23	0.745	5.51	15342	03
24	0.133	11.97	2748	01
25	0.099	13.48	2049	01
TOTAL	100.		2860288	

AROCLOR STANDARD - 1221

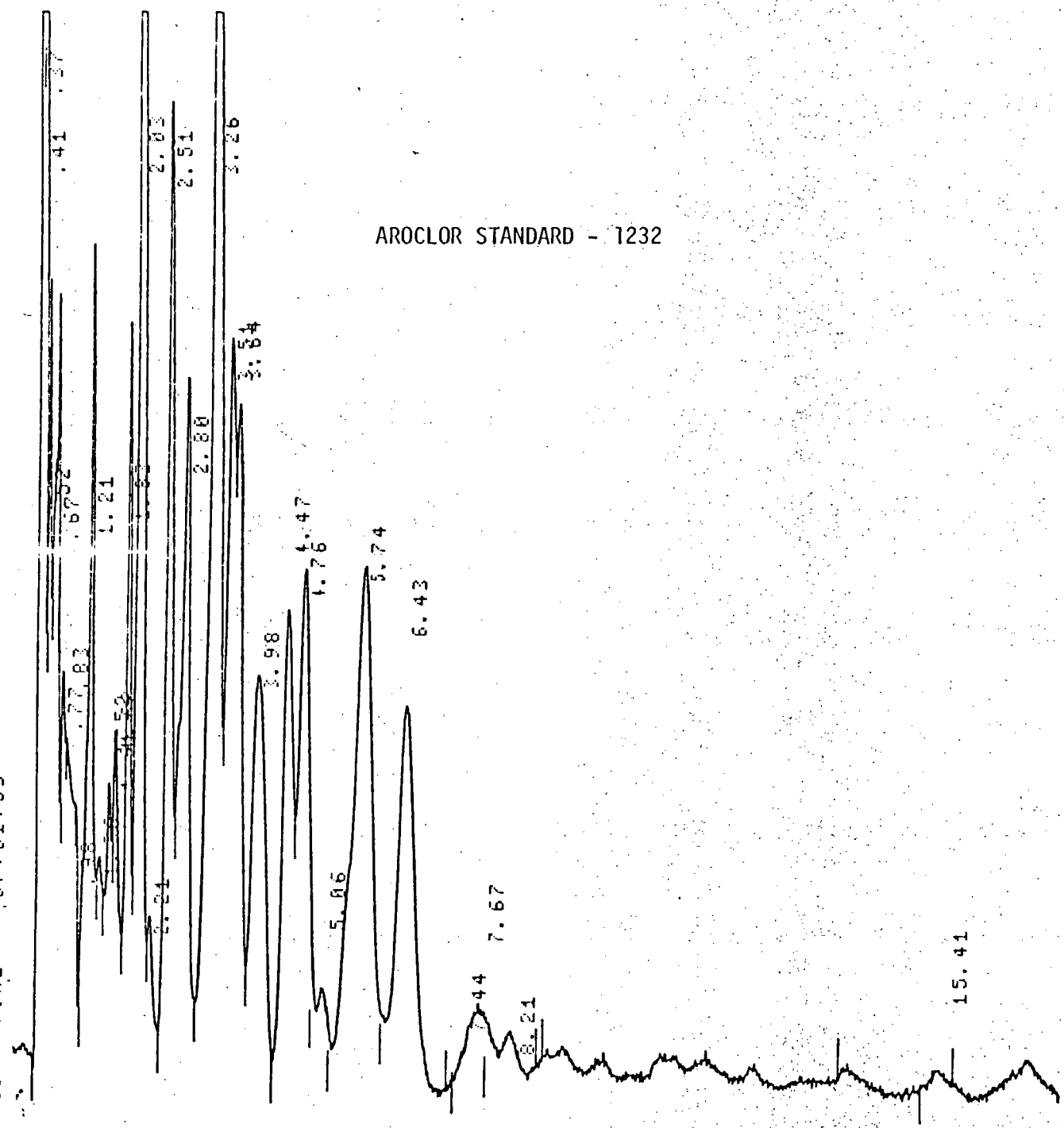


02:43:42

FILE 1 METHOD 0. RUN 5 INDEX 5

PEAK#	AREA%	RT	AREA	BC
1	32.777	0.38	1296531	02
2	0.999	0.51	39520	02
3	1.662	0.6	65744	02
4	1.69	0.66	66844	02
5	12.282	0.76	485844	08
6	0.804	1.07	170	06
7	5.65	1.21	223497	02
8	1.978	1.35	78251	02
9	1.818	1.51	71922	02
10	2.031	1.61	111999	02
11	5.023	1.82	198674	02
12	21.742	2.02	860030	08
13	1.212	2.5	47924	06
14	1.967	2.66	77820	06
15	2.204	3.25	87176	06
16	0.784	3.49	30995	06
17	0.52	3.62	20560	06
18	0.21	3.99	8321	06
19	1.383	4.43	54693	06
20	0.467	4.73	18488	06
21	1.685	5.46	66656	06
22	0.021	7.78	32484	07
23	0.219	8.05	8649	01
24	0.071	13.17	2810	01
TOTAL	180.		3955682	

AROCLOR STANDARD - 1232

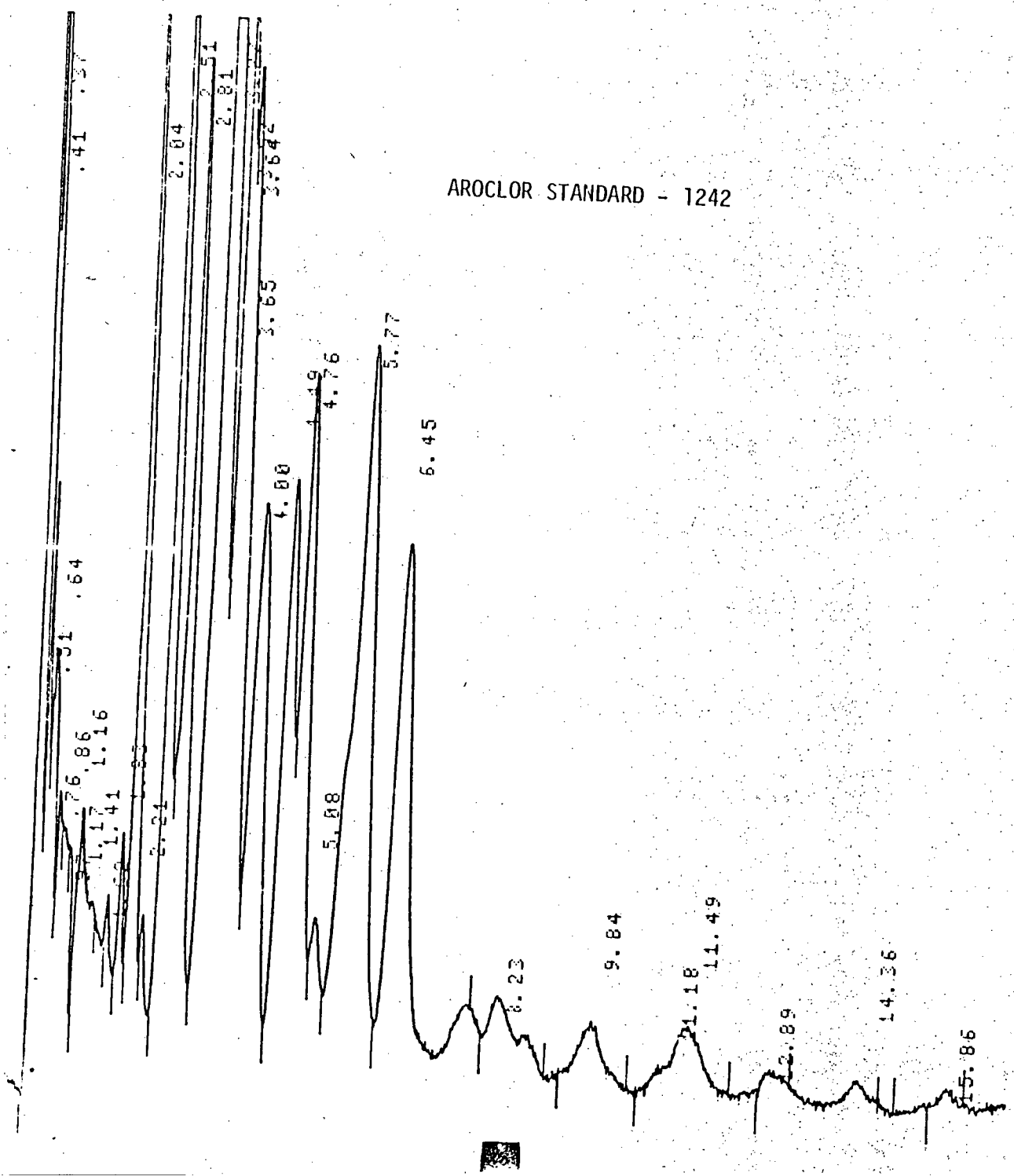


87:01:53

FILE 1 METHOD 0. RUN 15 INDEX 15

PEAK#	AREA%	RT	AREA	BC
1	9.539	0.37	220897	02
2	11.651	0.41	269812	02
3	1.657	0.52	38308	02
4	3.077	0.67	71263	02
5	1.174	0.77	27180	02
6	1.561	0.83	36143	02
7	0.494	0.98	11437	02
8	3.146	1.21	72852	02
9	0.806	1.36	20524	02
10	1.06	1.52	24556	02
11	0.557	1.61	12904	02
12	0.859	1.62	19902	02
13	2.5	1.83	57899	02
14	8.587	2.83	198865	02
15	0.69	2.21	15985	02
16	4.162	2.51	96382	02
17	4.591	2.8	106315	02
18	11.165	3.26	258563	02
19	3.878	3.51	89799	02
20	3.411	3.64	78994	02
21	3.813	3.98	88297	02
22	3.511	4.47	81301	02
23	4.135	4.76	95765	82
24	0.63	5.06	14581	02
25	7.397	5.74	171304	02
26	4.568	6.43	105792	03
27	0.061	7.44	1419	02
28	0.903	7.67	20986	02
29	0.229	8.21	5300	03
30	0.106	15.41	2462	01
TOTAL	100.		2315779	

AROCLOR STANDARD - 1242

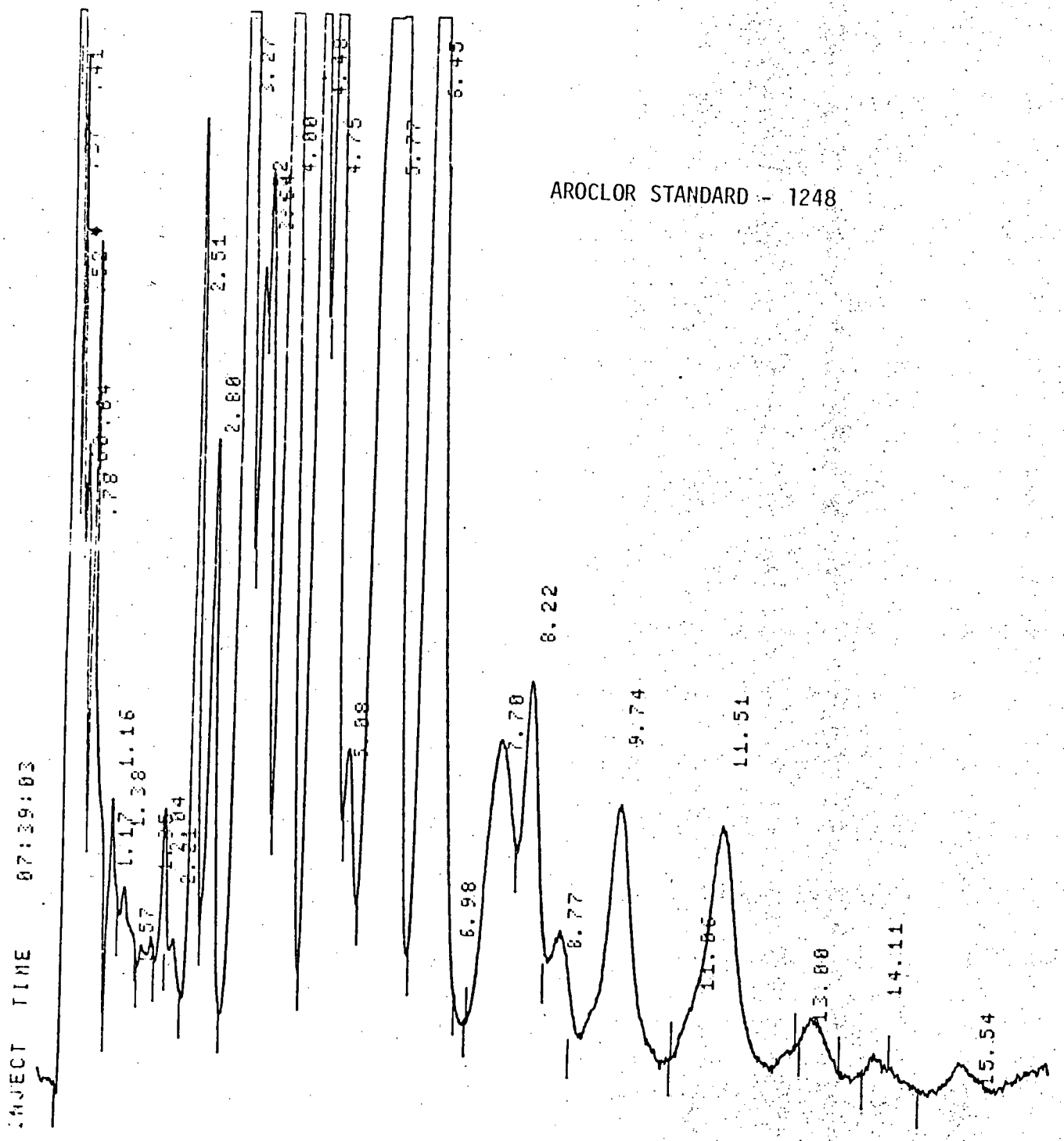


07:20:43

FILE 1 METHOD 0. RUN 16 INDEX 16

PEAK#	AREA%	RT	AREA	BC
1	8.07	0.37	196836	02
2	6.787	0.41	165549	02
3	1.315	0.51	32079	02
4	1.984	0.64	48383	02
5	1.128	0.76	27513	02
6	0.982	0.86	23958	02
7	0.564	0.97	13754	02
8	0.816	1.16	19897	02
9	1.645	1.17	48121	02
10	0.862	1.41	21026	02
11	0.847	1.62	20668	02
12	0.974	1.83	23761	02
13	4.469	2.04	108998	02
14	0.749	2.21	18262	02
15	5.929	2.51	144625	02
16	5.721	2.81	139539	02
17	14.996	3.27	365772	02
18	5.458	3.52	133134	02
19	1.782	3.64	43467	02
20	3.135	3.65	76473	02
21	5.192	4.	126638	02
22	4.047	4.49	98715	02
23	4.982	4.76	119576	02
24	0.861	5.08	21003	02
25	8.942	5.77	218188	02
26	4.323	6.45	105442	03
27	0.838	8.23	20432	01
28	0.766	9.84	18682	81
29	0.228	11.18	5568	02
30	1.135	11.49	27681	03
31	0.219	12.89	5350	01
32	0.231	14.36	5640	01
33	0.104	15.86	2526	01
TOTAL	100.		2439160	

AROCLOR STANDARD - 1248

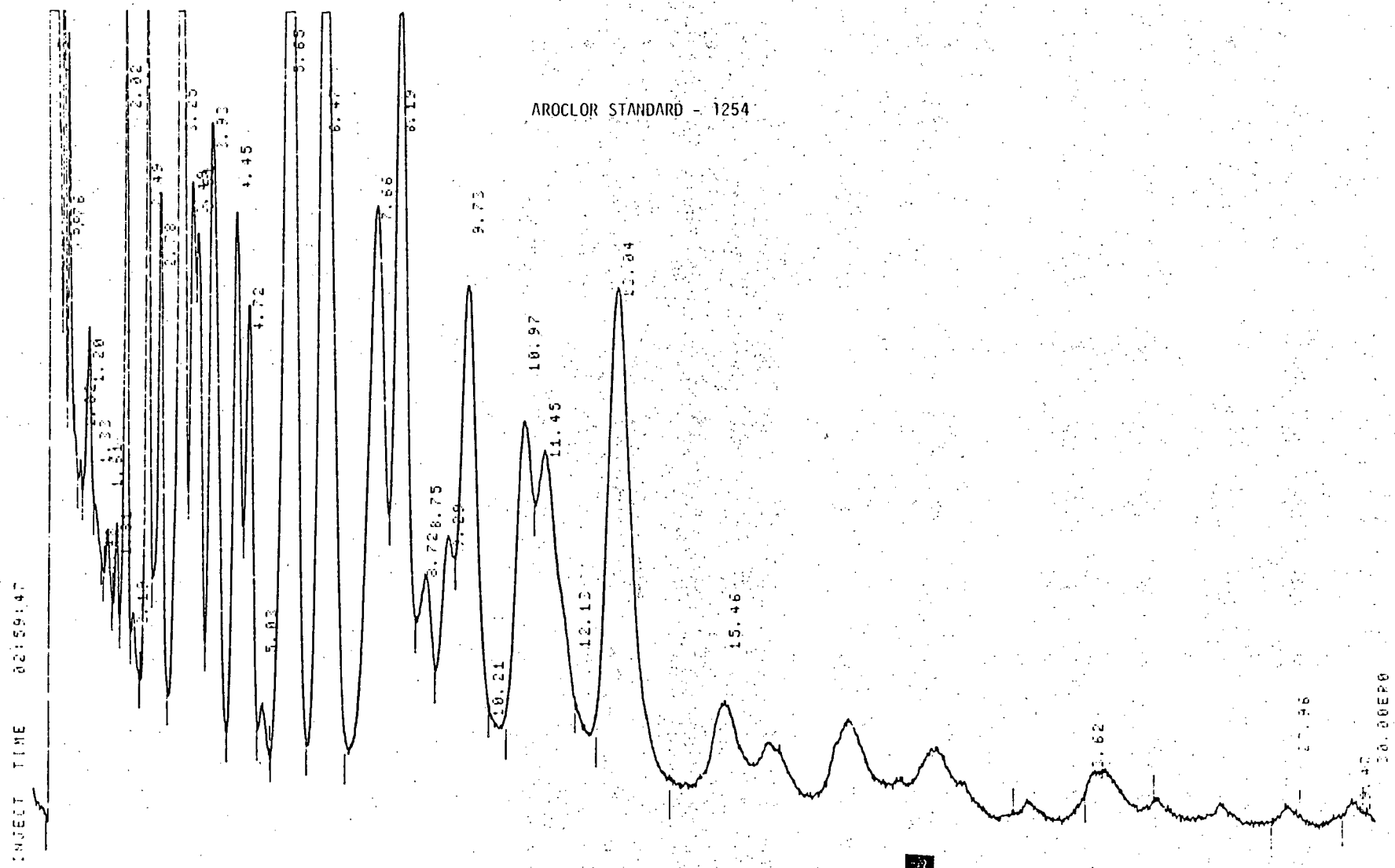


07:39:03

FILE 1 METHOD 8. RUN 17 INDEX 17

PEAK#	AREA%	RT	AREA	BC
1	8.853	0.37	385942	02
2	6.702	8.41	292202	02
3	1.322	8.52	57624	02
4	0.349	8.6	15288	02
5	1.174	0.64	51161	02
6	2.390	0.78	104552	02
7	0.42	1.16	18293	02
8	0.497	1.17	21665	02
9	0.878	1.38	38290	02
10	0.125	1.57	5441	02
11	0.704	1.85	30675	02
12	0.771	2.04	33603	02
13	0.464	2.21	20217	02
14	2.205	2.51	96120	02
15	1.983	2.8	86445	02
16	8.848	3.27	385732	02
17	1.972	3.52	85977	02
18	2.743	3.64	119608	02
19	7.418	4.	323487	02
20	5.27	4.48	229732	02
21	6.683	4.75	287847	02
22	1.22	5.00	53176	02
23	15.944	5.77	695100	02
24	10.062	6.45	438649	02
25	0.022	6.98	966	03
26	2.789	7.7	121571	02
27	2.437	8.22	106222	02
28	0.718	8.77	31285	02
29	2.173	9.74	94754	03
30	0.167	11.06	7285	02
31	2.148	11.51	93643	03
32	0.193	13.	8419	01
33	8.044	14.11	1926	01
34	0.387	15.54	16898	21
TOTAL	100.		4359611	

AROCLOR STANDARD - 1254

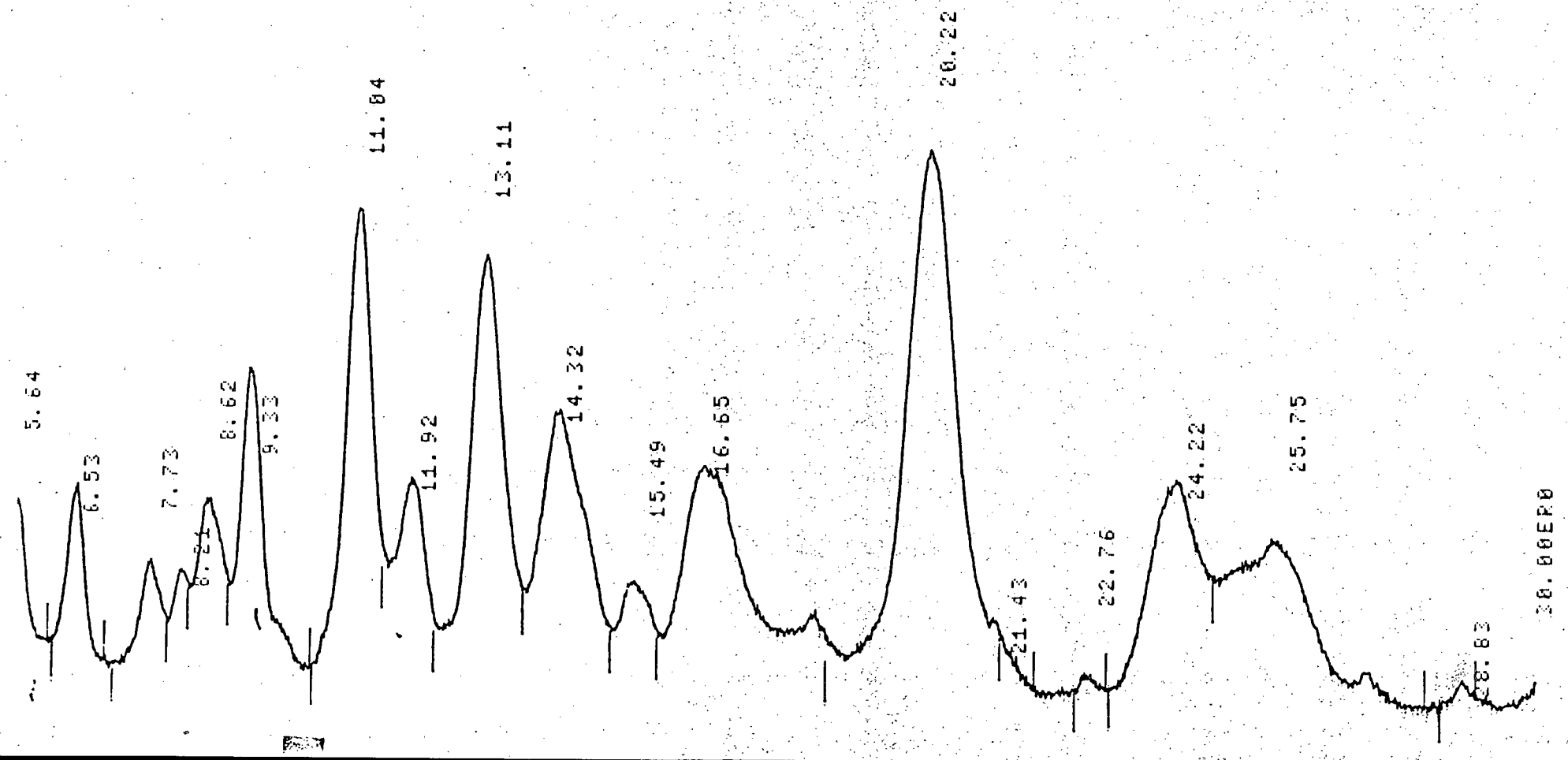


02:59:47

FILE 1 METHOD 0. RUN 6 INDEX 6

PEAK#	AREA%	RT	AREA	BC
1	62.603	0.43	6679971	88
2	0.583	0.66	62247	05
3	0.211	0.76	22462	05
4	0.011	1.02	1217	06
5	0.229	1.2	24467	86
6	0.035	1.33	3747	06
7	0.001	1.48	70	07
8	0.047	1.61	5017	81
9	0.062	1.81	6573	02
18	0.634	2.02	67629	02
11	0.042	2.19	4488	03
12	0.841	2.49	89717	02
13	0.739	2.78	78839	02
14	2.273	3.25	242511	02
15	0.79	3.49	84318	02
16	0.667	3.61	71147	02
17	1.419	3.93	151429	02
18	1.045	4.45	111499	02
19	0.909	4.72	97838	02
20	0.071	5.03	7556	03
21	3.619	5.65	386202	02
22	3.562	6.47	380868	02
23	2.6	7.66	277432	82
24	2.943	8.19	314036	02
25	0.238	8.72	25425	02
26	0.476	8.75	50771	02
27	0.844	9.29	98014	02
28	2.262	9.73	241396	02
29	8.285	10.21	21914	02
30	1.729	10.97	184582	02
31	2.842	11.45	217876	02
32	0.278	12.13	29644	02
33	3.352	13.04	357662	08
34	2.481	15.46	264780	05
35	0.097	23.62	10391	01
36	0.031	27.96	3268	01
37	0.028	29.47	3815	01
TOTAL	100.		10670338	

AROCLOR STANDARD - 1260



FILE 1 METHOD 0. RUN 18 INDEX 18

PEAK#	AREA%	RT	AREA	BC
1	6.597	0.37	218848	02
2	5.186	0.42	172825	02
3	1.138	0.52	37765	02
4	1.319	0.64	43771	02
5	21.11	0.78	788278	08
6	0.527	1.16	17476	06
7	0.617	1.4	28470	06
8	0.179	1.56	5953	06
9	0.613	1.69	20336	06
10	0.194	1.85	6437	06
11	0.596	2.03	19784	06
12	0.189	2.33	3627	06
13	9.237	2.69	7874	06
14	0.481	3.29	15953	06
15	1.295	5.64	42970	07
16	1.186	6.53	39350	01
17	0.949	7.73	31482	02
18	8.646	8.21	21423	02
19	1.882	8.62	62446	02
20	3.136	9.33	184831	03
21	5.777	11.04	191629	02
22	2.591	11.92	85955	02
23	6.618	13.11	219532	02
24	5.351	14.32	177587	02
25	1.28	15.49	42455	02
26	6.611	16.65	219382	02
27	12.766	28.22	423494	02
28	0.26	21.43	8648	03
29	0.082	22.76	2710	01
30	4.967	24.22	164767	02
31	5.689	25.75	186084	03
32	8.089	28.83	2948	01
TOTAL	100.		3317330	

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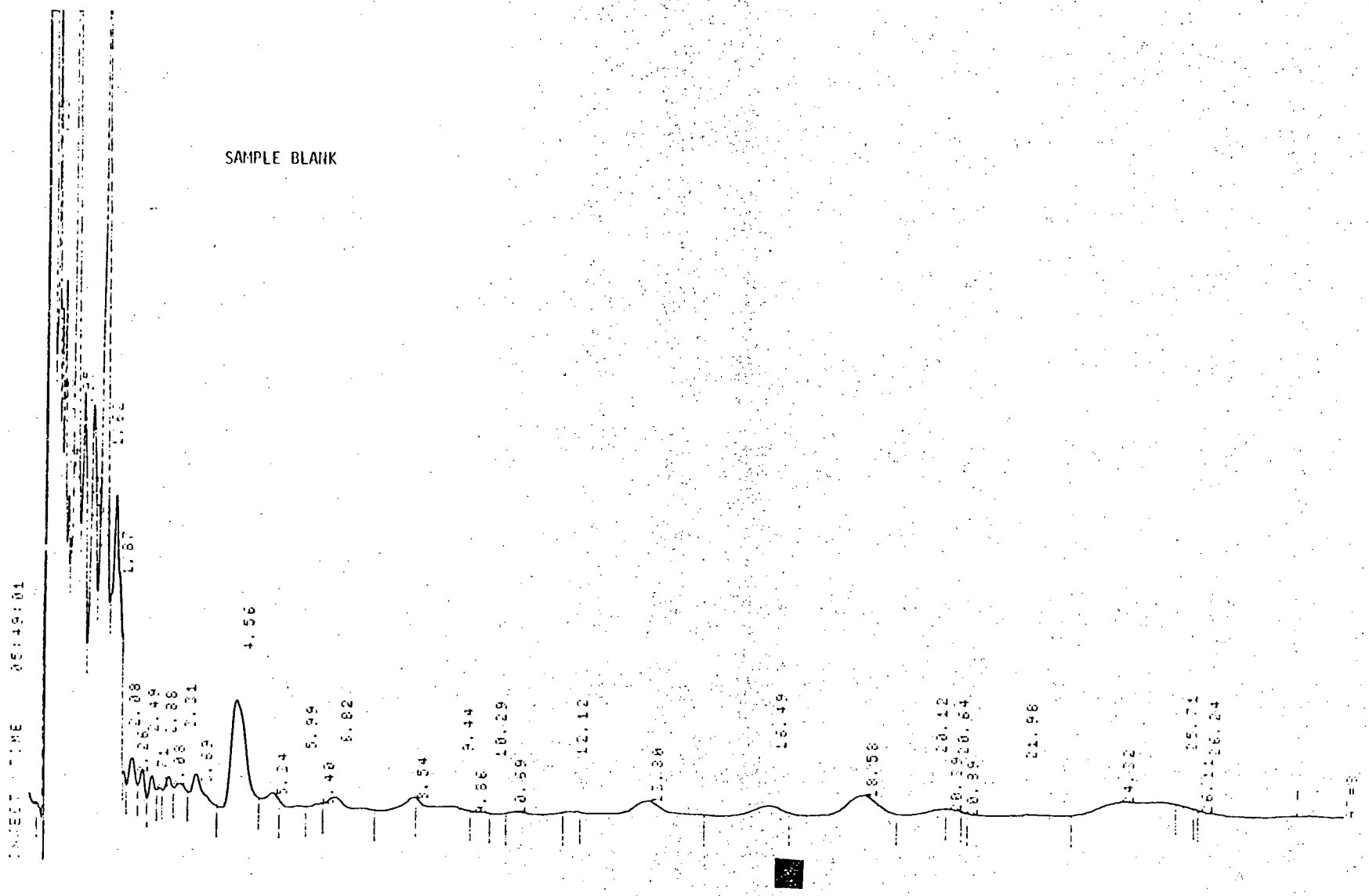
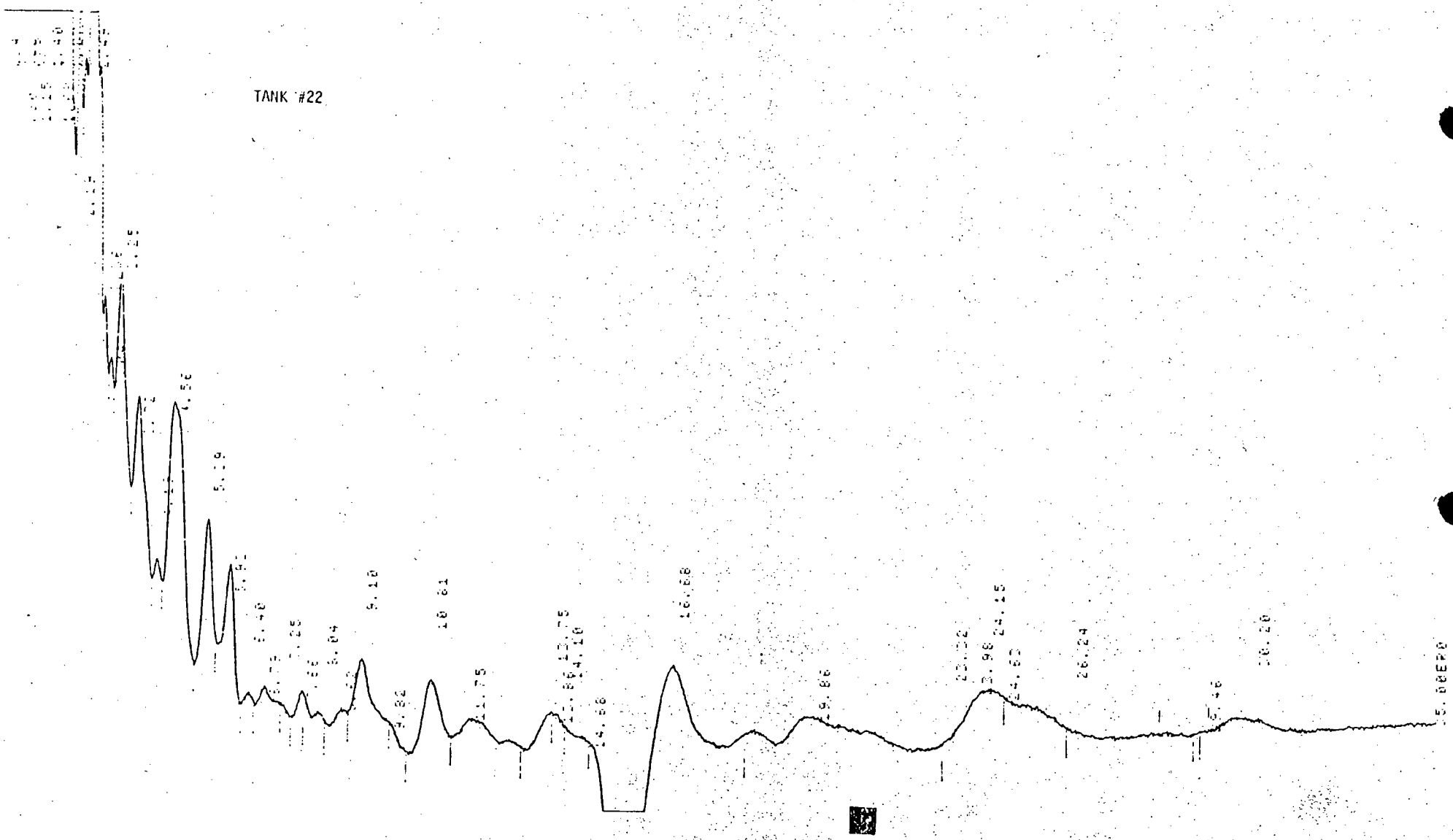


FILE 1 METHOD 0. RUN 2805:49I8DEX 28

PEAK#	AREA%	RT	AREA	BC
1	39.403	0.35	1281147	02
2	3.048	0.55	99111	02
3	2.346	0.64	76283	02
4	8.595	8.95	279461	02
5	1.86	1.14	60486	02
6	2.134	1.35	69385	02
7	4.523	1.62	147848	02
8	2.464	1.87	80103	02
9	0.446	2.08	14494	02
10	1.57	2.26	51831	82
11	0.988	2.49	32113	02
12	0.922	2.71	29992	82
13	0.463	2.88	15068	02
14	1.119	3.08	36380	02
15	1.297	3.31	42169	02
16	2.113	3.69	68686	02
17	6.643	4.56	215986	02
18	1.4	5.34	45531	02
19	0.59	5.99	19192	02
20	0.556	6.4	18074	02
21	1.692	6.82	55025	02
22	1.87	8.54	60817	02
23	0.927	9.44	30132	02
24	0.195	9.86	6333	02
25	0.108	10.29	3498	82
26	0.464	10.69	15075	02
27	0.323	12.12	18589	02
28	2.078	13.8	67565	02
29	1.351	16.49	43914	02
30	2.658	18.58	86422	02
31	0.33	20.12	10733	02
32	0.446	20.39	14582	02
33	0.233	20.64	7585	02
34	0.145	20.89	4714	02
35	0.321	21.98	10448	02
36	3.778	24.32	122844	02
37	0.458	25.71	14897	02
38	0.891	26.11	2972	02
39	0.051	26.24	1667	03
TOTAL	100.		3251392	

TANK #22

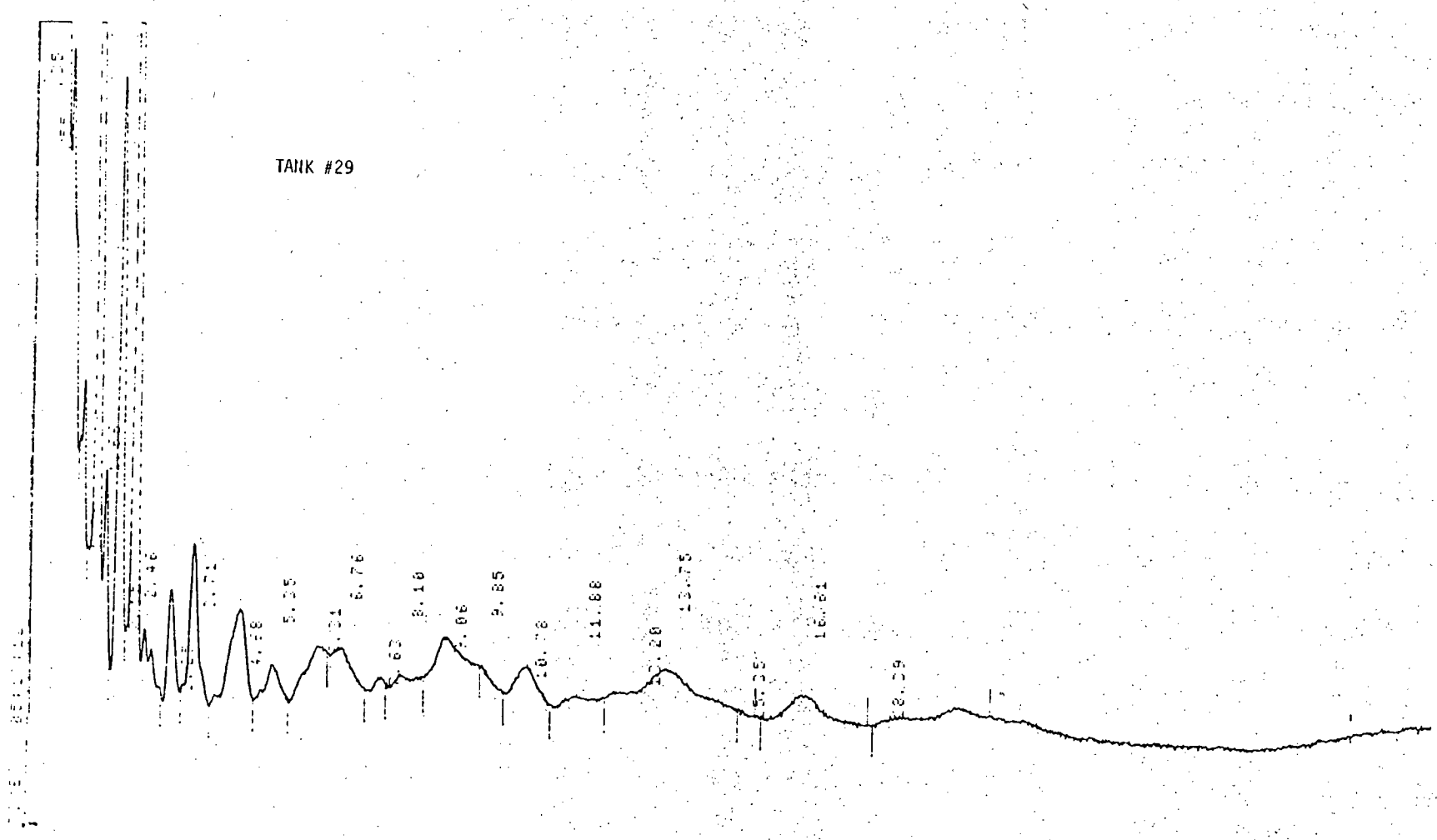


04:29:12

FILE 1 METHOD 0. RUN 26 INDEX 26

PEAK#	AREA%	RT.	AREA	BC
1	73.216	0.34	28448622	02
2	3.78	0.8	1468310	02
3	3.593	0.88	1395620	82
4	1.36	1.15	528141	02
5	1.033	1.4	481386	02
6	0.96	1.68	372882	02
7	1.061	1.87	412052	02
8	0.396	2.19	153798	02
9	1.458	2.49	566312	02
10	0.228	2.86	88588	02
11	0.167	3.04	64877	02
12	0.598	3.25	232274	02
13	0.536	3.72	208338	02
14	0.183	4.19	71162	02
15	8.736	4.56	285783	02
16	0.393	5.39	152484	02
17	0.371	5.93	144029	02
18	0.148	6.4	57368	02
19	0.305	6.79	118683	02
20	0.185	7.25	48743	02
21	0.228	7.66	88430	02
22	0.187	8.04	72642	02
23	0.234	8.62	90987	02
24	0.595	9.1	231223	02
25	0.233	9.82	90323	02
26	0.625	10.81	242588	02
27	1.056	11.75	418112	02
28	0.475	13.75	184686	02
29	0.179	13.86	69554	02
30	0.393	14.1	152742	02
31	0.32	14.68	124448	02
32	1.344	16.68	522198	02
33	2.648	19.86	1028661	08
34	0.004	23.32	1440	06
35	0.002	23.98	679	06
36	0.233	24.15	90525	02
37	0.377	24.63	146581	02
38	0.12	26.24	46738	03
39	0.001	29.46	228	01
40	0.121	30.2	46897	21
TOTAL	100.		38844798	

TANK #29

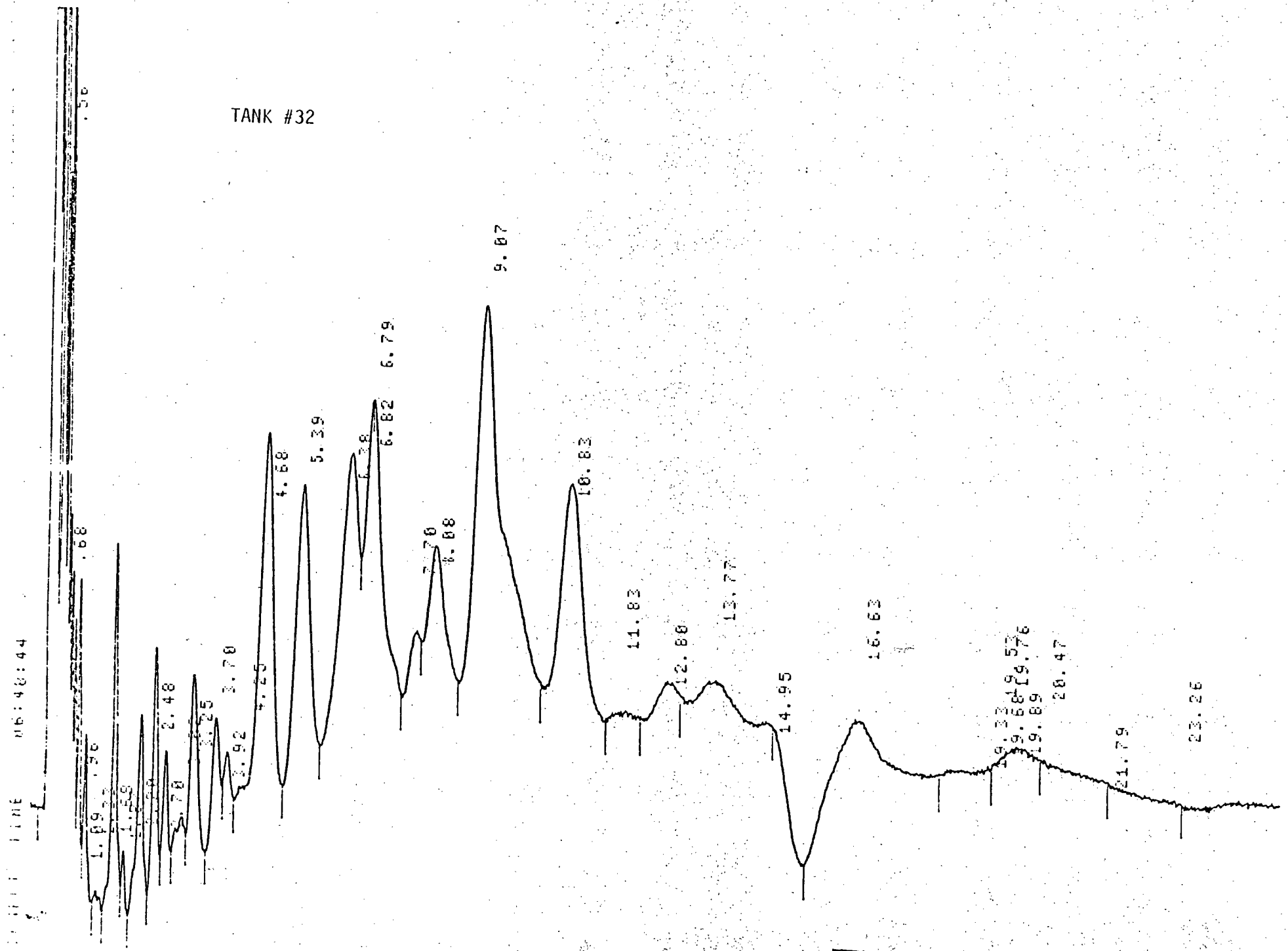


05:17:12

FILE 1 METHOD 0. RUN 27 INDEX 27

PEAK#	AREA%	RT	RREA	BC
1	43.247	0.35	9893216	02
2	47.706	0.55	18030638	02
3	8.318	1.31	66787	02
4	.513	1.66	318097	02
5	0.617	2.15	129685	02
6	1.233	2.46	259198	02
7	0.307	3.25	64587	02
8	0.457	3.71	95986	02
9	0.602	4.68	126538	02
10	0.381	5.35	80073	02
11	0.508	6.31	106851	02
12	0.451	6.76	94768	02
13	0.2	7.63	42143	02
14	0.336	8.1	70671	02
15	0.644	9.06	135372	02
16	0.202	9.85	42432	02
17	0.334	10.78	70212	02
16	0.236	11.88	49701	02
19	0.151	13.2	31802	02
20	0.402	13.75	84443	02
21	0.005	15.35	1088	03
22	0.099	16.61	20898	01
23	0.052	18.39	10963	01
TOTAL	108.		21826061	

TANK #32

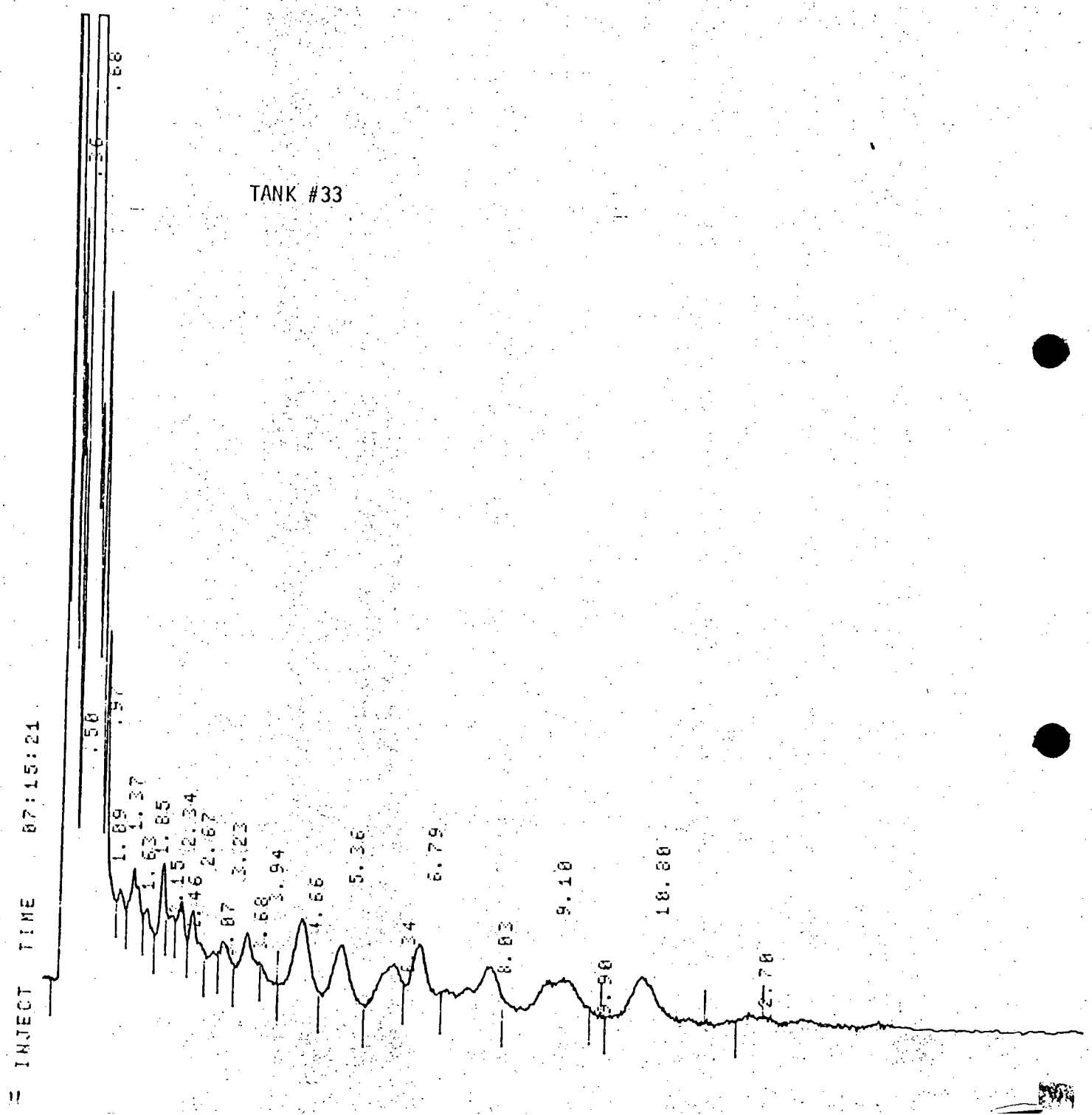

06:48:44
1.89
1.56
1.28
.98
.56
2.48
2.25
3.70
2.92
4.25
4.68
5.39
6.79
6.82
7.70
8.08
9.07
10.83
11.83
12.80
13.77
14.95
16.63
19.32
19.57
19.89
19.76
20.47
21.79
23.26

06:48:44

FILE 1 METHOD 0. RUN 30 INDEX 30

PEAK#	AREA%	RT	AREA	BC
1	53.686	8.37	4661699	02
2	1.513	0.56	131383	02
3	1.211	0.68	105194	02
4	0.232	0.96	28188	02
5	0.14	1.09	12186	02
6	0.018	1.33	1535	02
7	0.453	1.68	39369	02
8	0.063	1.87	5486	02
9	0.353	2.2	30658	02
10	0.396	2.48	34381	02
11	0.272	2.7	23578	02
12	0.279	3.02	24247	02
13	0.63	3.25	54665	82
14	0.5	3.7	43408	02
15	0.393	3.92	34129	02
16	0.322	4.25	27997	02
17	2.201	4.63	191132	02
18	2.243	5.39	194748	02
19	2.863	6.38	248619	02
28	1.082	6.79	93934	02
21	2.305	6.82	208179	02
22	1.033	7.7	89693	02
23	2.5	8.08	217124	02
24	6.677	9.07	579768	02
25	3.888	18.83	337588	02
26	1.422	11.83	123457	02
27	1.835	12.8	159327	02
28	3.381	13.77	293599	02
29	0.523	14.95	45429	02
30	2.625	16.63	227964	02
31	1.348	19.33	117056	02
32	0.128	19.53	11136	02
33	0.154	19.68	13379	02
34	0.095	19.76	8256	02
35	0.774	19.89	67218	02
36	1.111	28.47	96511	02
37	0.745	21.79	64650	02
38	0.603	23.26	52368	23
TOTAL	100.		8683230	

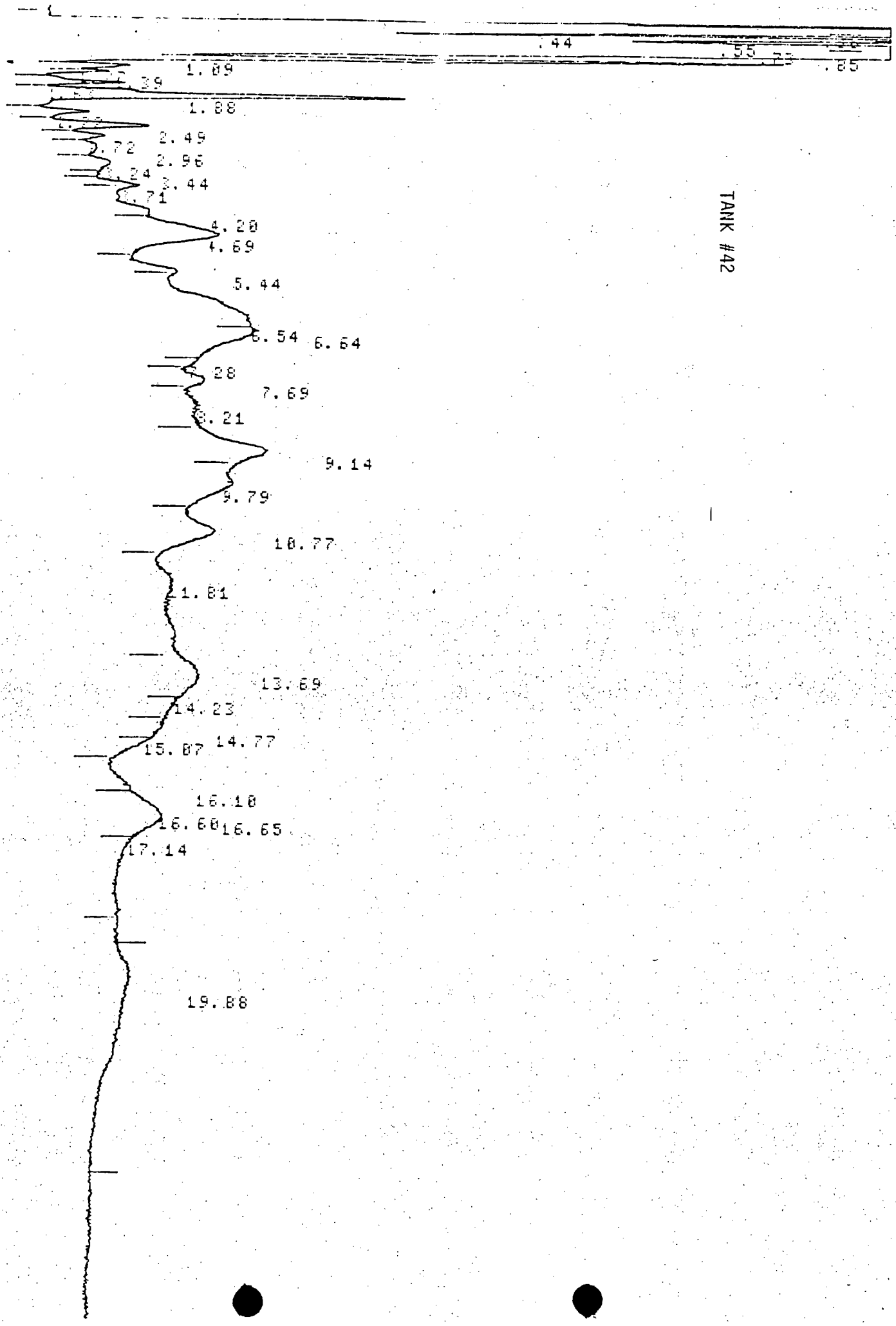
TANK #33


INJECT TIME 07:15:21
.50
.97
.68
1.89
1.37
1.63
1.85
2.15
2.34
2.46
2.67
2.87
3.23
3.68
3.94
4.66
5.36
6.34
6.79
8.03
9.10
9.90
10.80
2.70

07:15:21

FILE 1 METHOD 0. RUN 31 INDEX 31

PEAK#	AREA%	RT	AREA BC
1	86.956	0.36	6147330 02
2	0.491	0.5	34725 02
3	7.391	0.88	522478 02
4	0.678	0.97	47958 02
5	0.512	1.09	36215 02
6	0.195	1.37	13785 02
7	0.347	1.63	24523 02
8	0.162	1.85	11445 02
9	0.261	2.15	18455 02
10	0.09	2.34	6369 02
11	0.178	2.46	12564 02
12	0.217	2.67	15357 02
13	0.067	3.07	4756 02
14	0.122	3.23	8590 02
15	0.175	3.68	12364 02
16	0.023	3.94	1652 03
17	0.282	4.66	19919 02
18	0.244	5.36	17238 02
19	0.27	6.34	19059 02
20	0.384	6.79	27125 02
21	0.336	8.03	23779 02
22	0.366	9.1	25887 02
23	0.005	9.9	340 03
24	0.241	10.8	17019 01
25	0.000	12.7	560 01
TOTAL	100.		7069492


.44
.55
.65
1.09
1.88
2.49
2.96
3.44
4.20
4.69
5.44
6.54
6.64
7.69
9.14
9.79
10.77
13.69
14.23
14.77
15.07
16.10
16.60
16.65
17.14
19.88

TANK #42

86:20:05

FILE 1 METHOD 0. RUN 29 INDEX 29

PEAK#	RREA%	RT	AREA	BC
1	64.331	0.36	4993366	02
2	4.759	0.44	369410	02
3	1.746	0.55	135546	02
4	2.112	0.73	163969	02
5	5.025	0.85	390004	02
6	0.724	1.09	56218	02
7	0.122	1.27	9492	02
8	0.06	1.39	4656	02
9	0.104	1.63	8081	02
10	0.58	1.88	45010	02
11	0.075	2.22	5843	02
12	0.213	2.49	16546	02
13	0.133	2.72	10292	02
14	0.286	2.96	15966	02
15	0.249	3.24	19350	02
16	0.069	3.44	6941	02
17	0.312	3.71	24237	02
18	0.545	4.2	42311	02
19	1.384	4.69	107456	02
20	0.629	5.44	48805	02
21	2.068	6.54	160518	02
22	1.513	6.64	117439	02
23	0.343	7.28	26627	02
24	0.77	7.69	59794	02
25	1.293	8.21	100342	02
26	2.07	9.14	168682	02
27	1.475	9.79	114454	02
28	1.479	10.77	114782	02
29	2.183	11.81	169457	02
30	1.144	13.69	88788	02
31	0.532	14.23	41297	02
32	0.252	14.77	19579	02
33	0.213	15.07	16513	02
34	0.139	16.1	10796	02
35	0.246	16.6	19109	82
36	0.313	16.65	24324	02
37	0.193	17.14	15009	03
38	0.373	19.88	28928	01
TOTAL	100.		7761937	

CHROMATOGRAPHIC CONDITIONS

OPERATOR C. Wojtowicz

DATE February 15, 1982

JOB NUMBER VF-422

SAMPLE IDENTIFICATION 82-72, 82-74

SOLVENT None

ANALYTICAL METHOD

COLUMN

Type Glass

Length 6'

Diameter 2 mm ID

Liquid Phase (% wt.)

3% SP 2250

Support Supelcoport

Mesh 100/120

CARRIER GAS Helium

Rotameter

Inlet Pressure, psig 60

Flow Rate, mL/min. 30

SCAVENGER GAS

SPLIT

FID GAS

Hydrogen, mL/min.

Air, mL/min.

CHART SPEED, cm/min.

DETECTOR Mass Spectrometer

Range 50 - 500 amu

Attenuation

TEMPERATURE, °C

Detector

Injection Port 225°

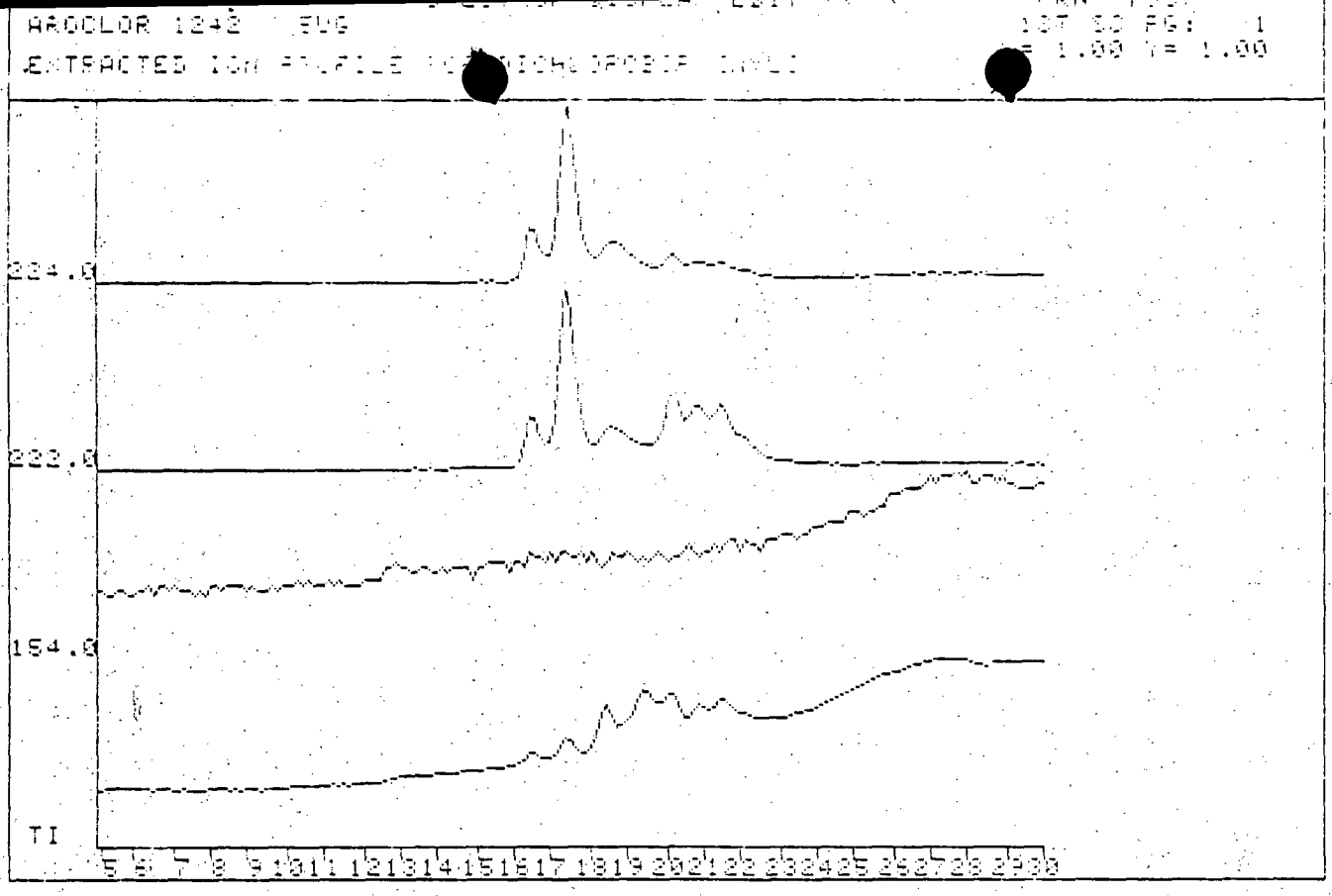
Column

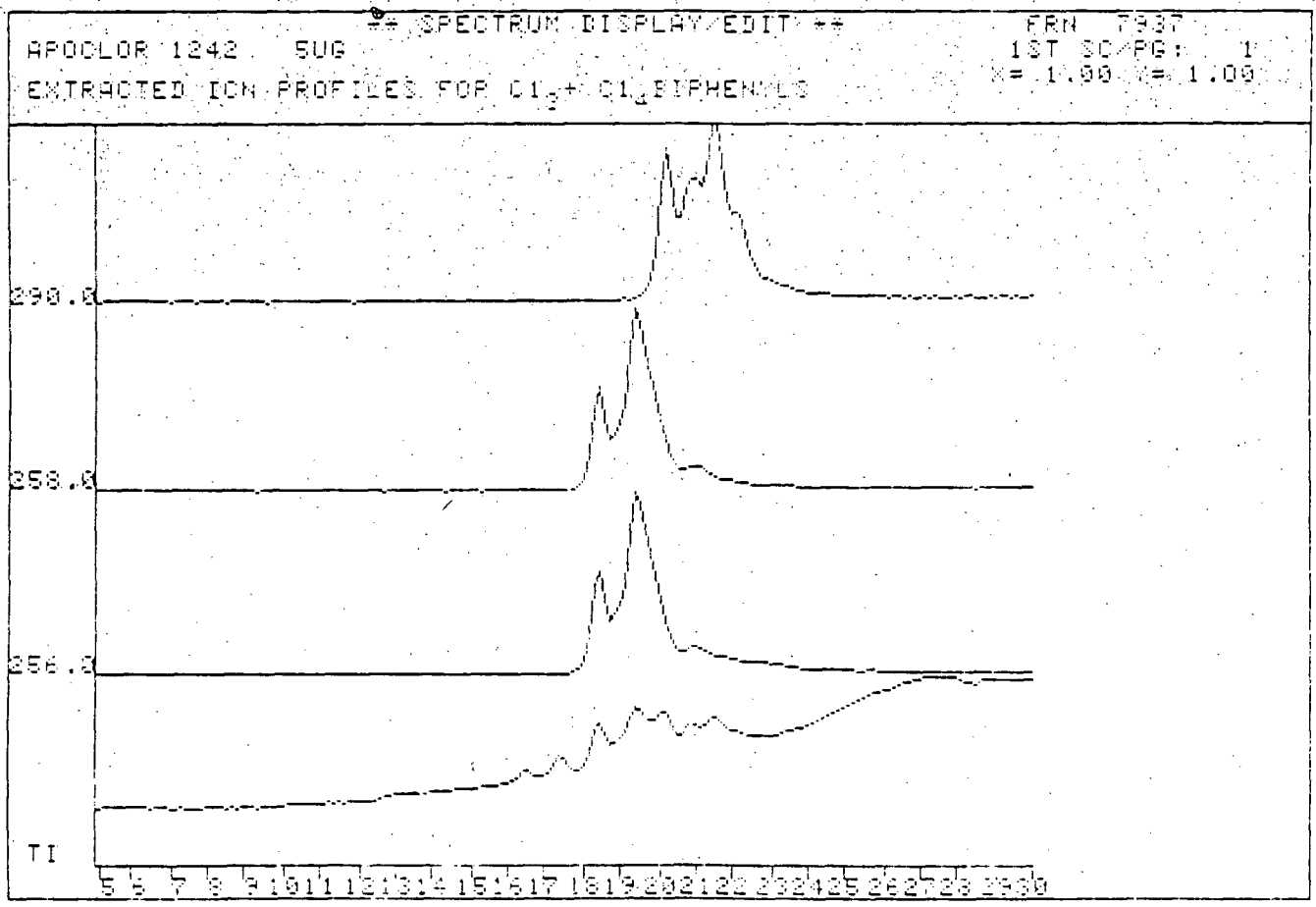
Initial 100°/5 min

Program 10°/min

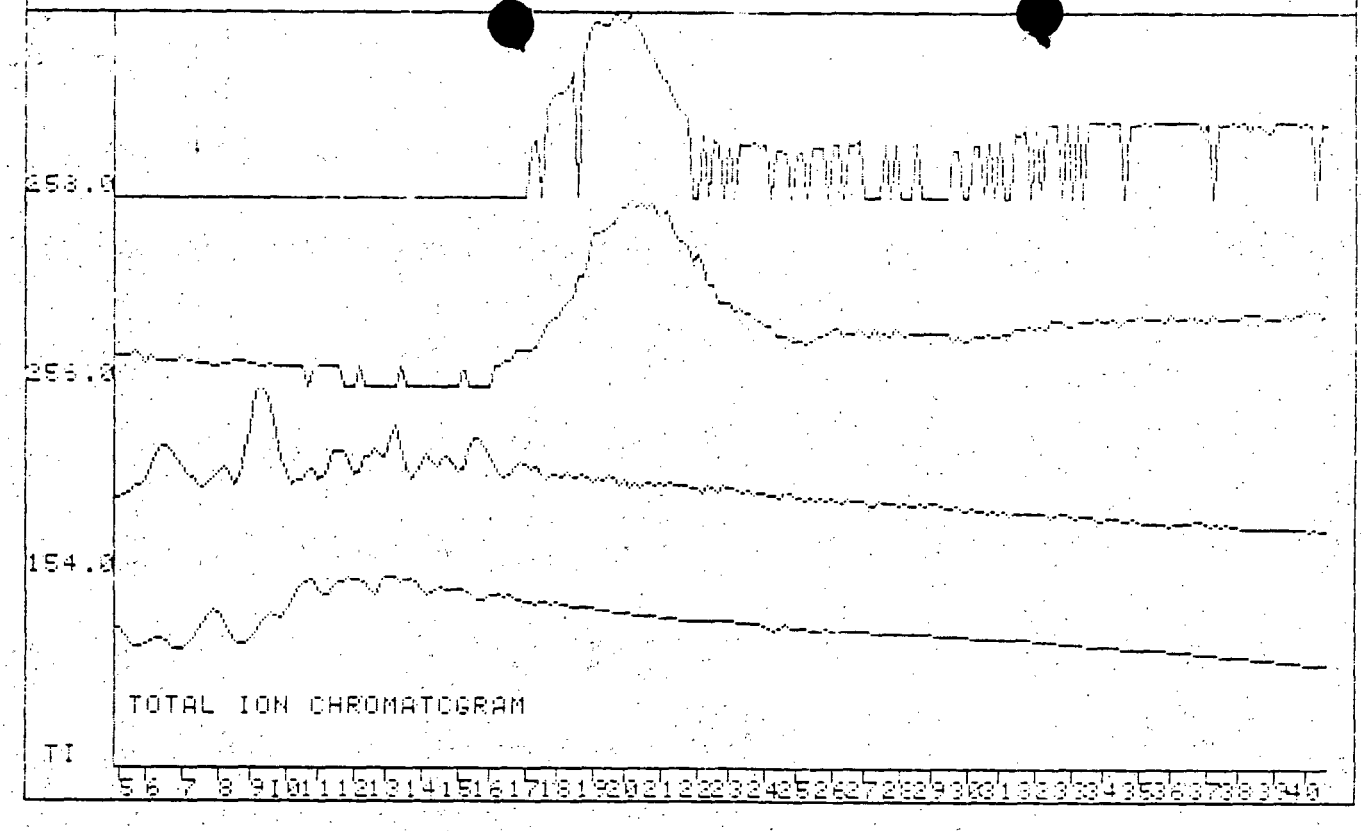
Final 270°

INSTRUMENT HP 5993 GC/MS


AROCLOR 1242 SUG
EXTRACTED ION PROFILE
1ST SC PG: 1
X= 1.00 Y= 1.00
224.0
222.0
154.0
TI


** SPECTRUM DISPLAY/EDIT **
FRN 7937
AROCLOR 1242 SUG
1ST SC/PG: 1
X= 1.00 Y= 1.00
EXTRACTED ION PROFILES FOR Cl3+ Cl4 BIPHENYLS
290.0
258.0
256.0
TI

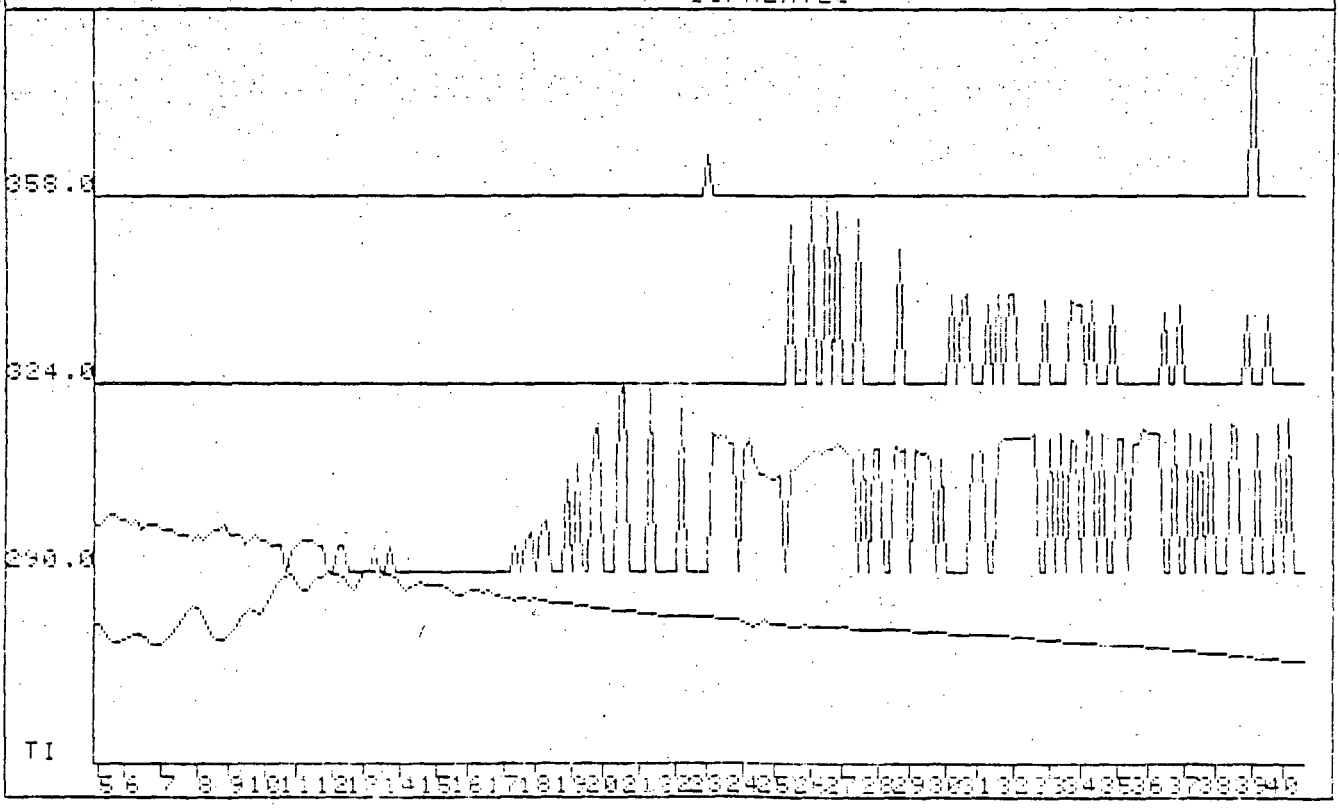
EXTRACTED MASS PROFILES FOR TRICHLOROBIPHENYLS X= 1.00 Y= 1.00

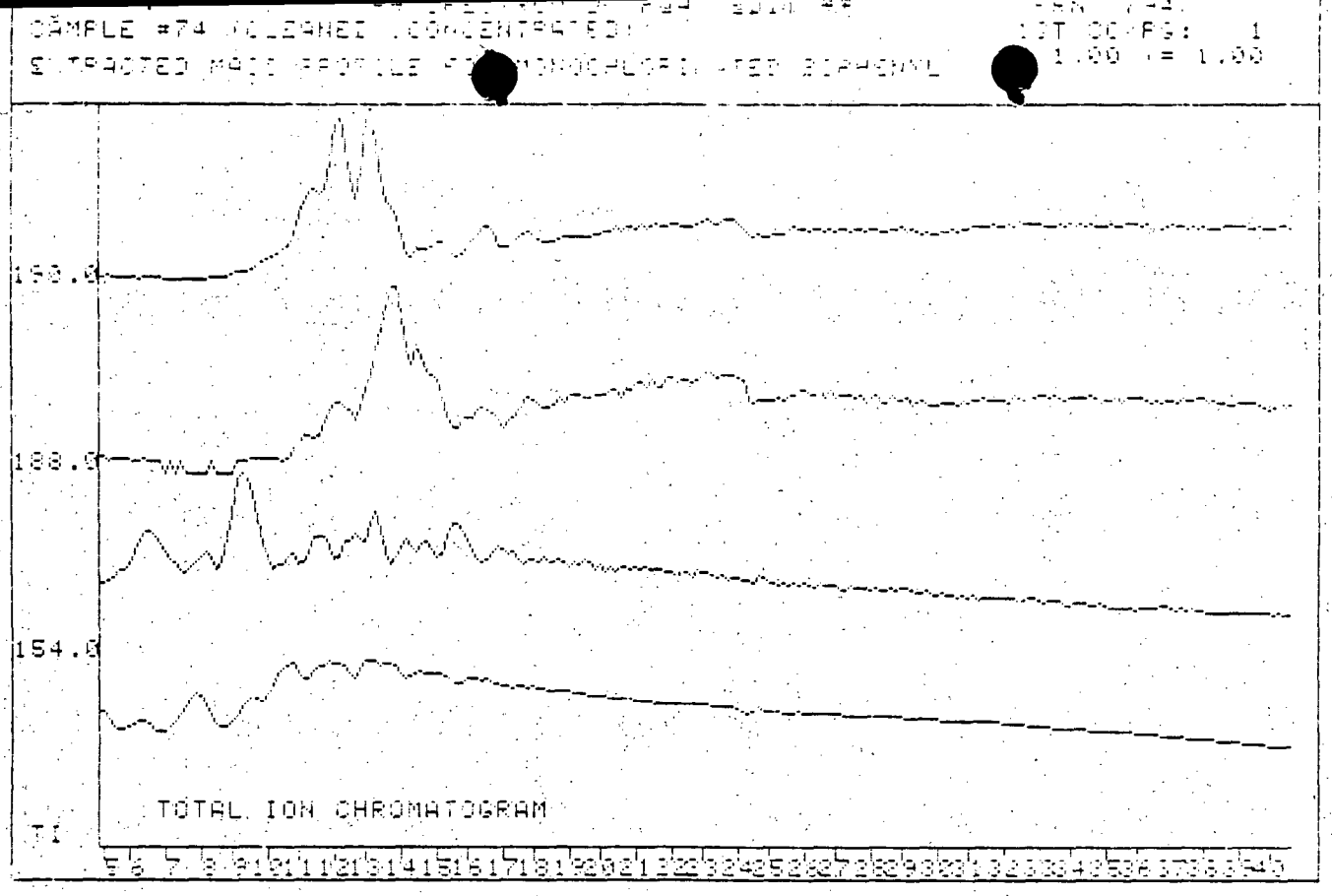


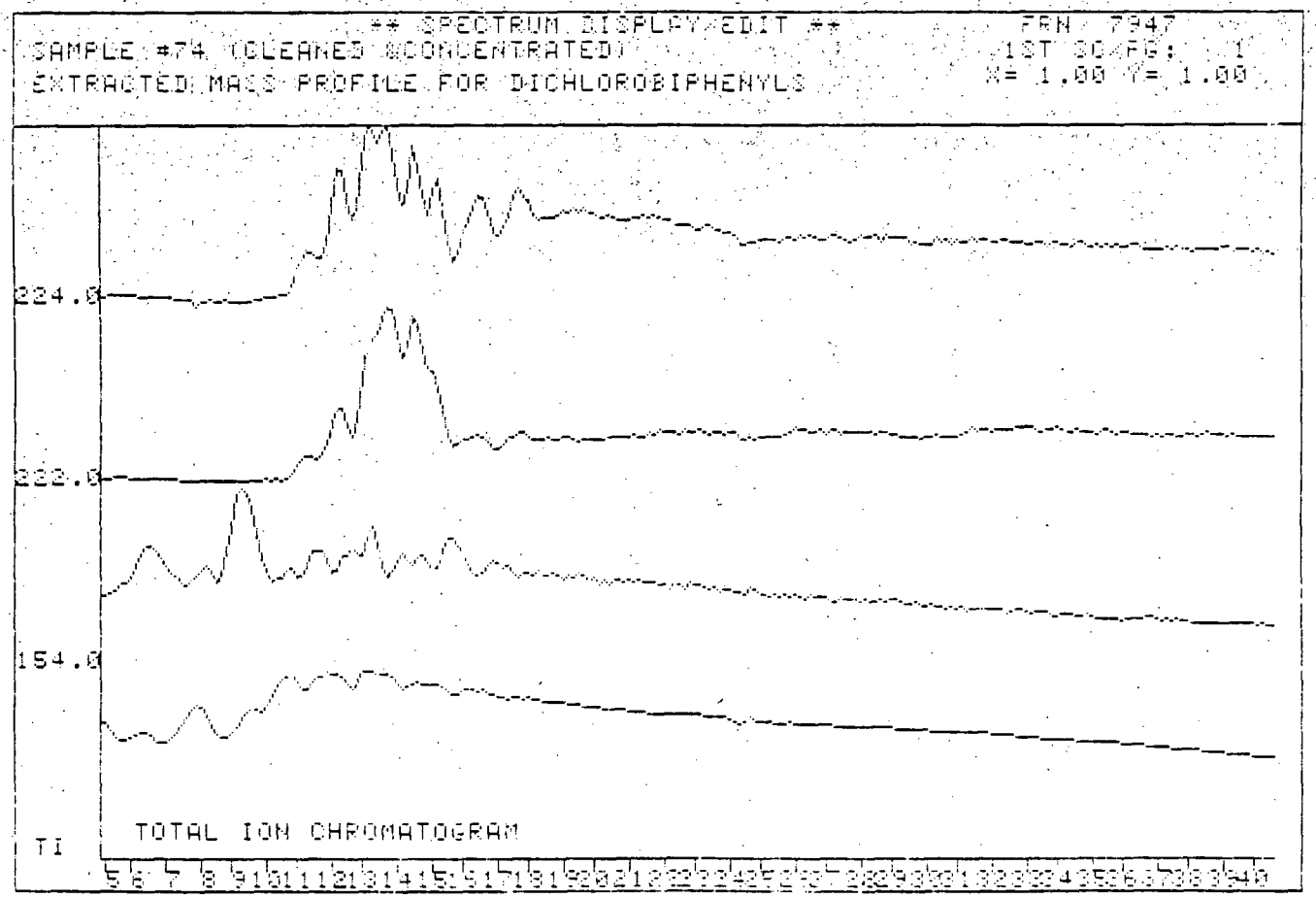
** SPECTRUM DISPLAY/EDIT ** FPN 7947

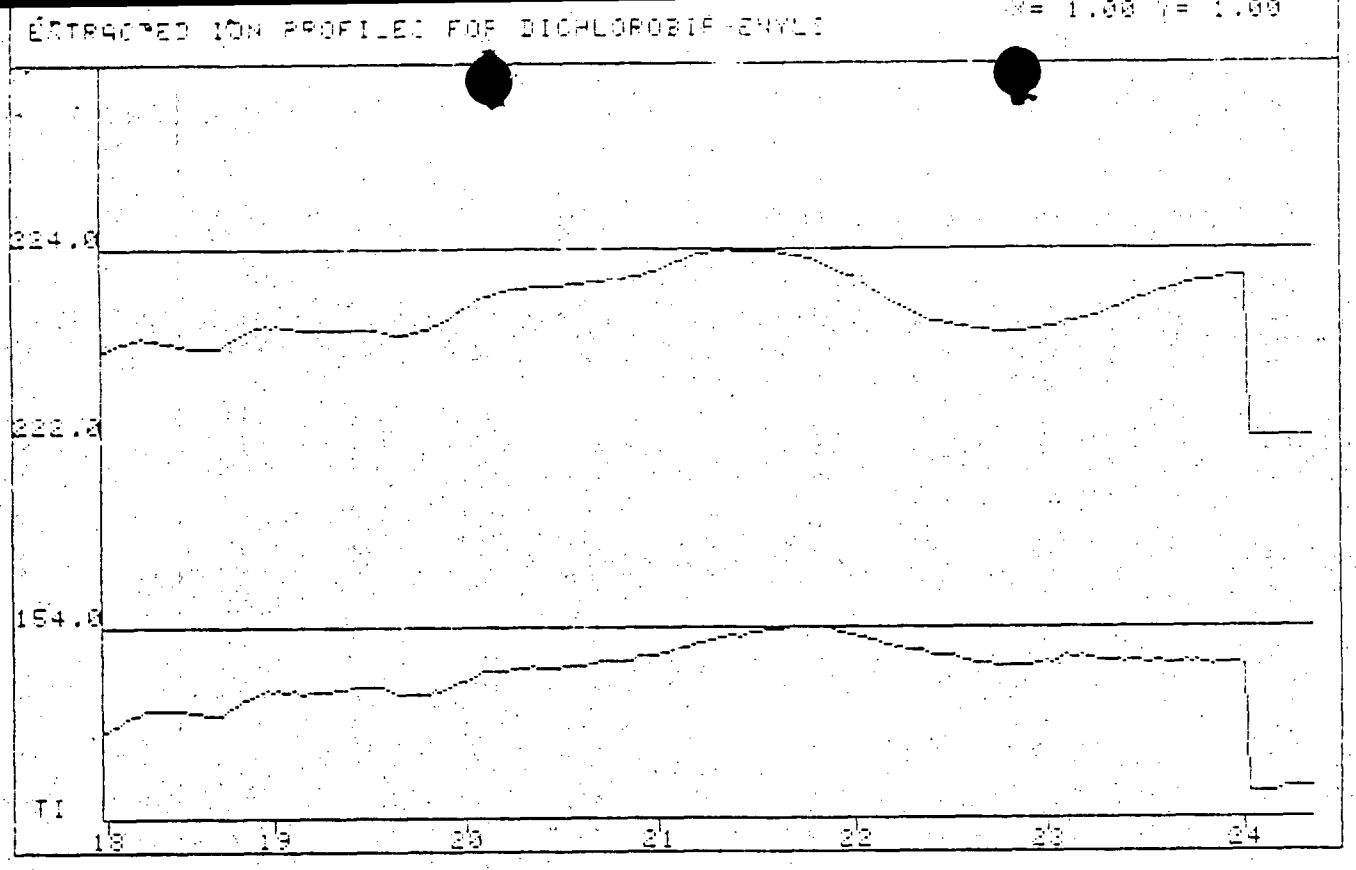
SAMPLE #74 (CLEANED &CONCENTRATED) 1ST SC/PG: 1

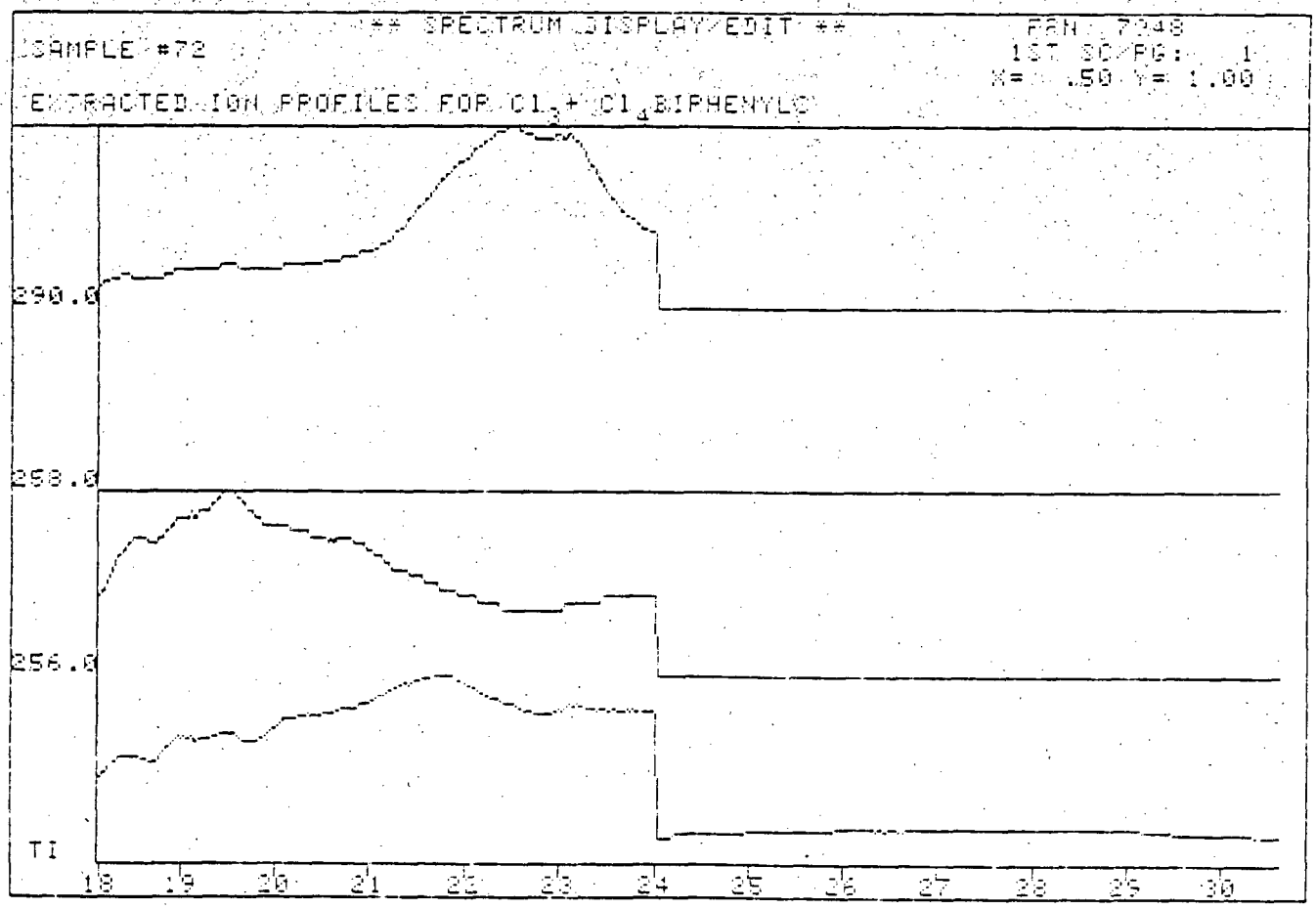
EXTRACTED ION PROFILES FOR OTHER POLYCHLORINATED BIPHENYLS X= 1.00 Y= 1.00




SAMPLE #74 (CLEANED &CONCENTRATED)
EXTRACTED MASS PROFILE FOR MONOCHLORINATED BIPHENYL
1.00 Y= 1.00
190.0
188.0
154.0
TI
TOTAL ION CHROMATOGRAM


** SPECTRUM DISPLAY/EDIT **
SAMPLE #74 (CLEANED &CONCENTRATED)
EXTRACTED MASS PROFILE FOR DICHLOROBIPHENYLS
X= 1.00 Y= 1.00
224.0
222.0
154.0
TI
TOTAL ION CHROMATOGRAM


EXTRACTED ION PROFILES FOR DICHLOROBIPHENYLS
X= 1.00 Y= 1.00
224.0
222.0
154.0
TI
18
19
20
21
22
23
24


** SPECTRUM DISPLAY/EDIT **
RAN: 7248
1ST SC/PG: 1
X= .50 Y= 1.00
SAMPLE #72
EXTRACTED ION PROFILES FOR Cl3 + Cl4 BIPHENYLS
290.0
258.0
256.0
TI
18
19
20
21
22
23
24
25
26
27
28
29
30

Stablex-Reutter Inc.

Ninth and Cooper Streets • P. O. Box 499
Camden, New Jersey 08101
Telephone: (609) 541-6700 TWX: 834477

February 10, 1982

NJDEP
Solid Waste Division
32 Hanover Street
Trenton, NJ 08625

Attention: Mr. Wayne Howitz, Hazardous Waste Bureau

Reference: Test Report No. SR6449

This report covers the analysis of four (4) oil samples submitted to Stablex-Reutter, Inc. (S-R) on January 22, 1982. The samples were submitted for the following analyses:

- Organics
  - Volatile Aromatic Hydrocarbons
  - Volatile Halogenated Hydrocarbons
  - Polychlorinated Biphenyls
  - Oil and Grease
- Physical
  - Flashpoint

This test report is organized in the following manner:

- Sample Preparation
- Analysis
- Analytical Results

I. Sample Preparation

Organic Preparatory Work

A known weight (1.00 grams ± 0.05 grams) of homogenized sample is quantitively transferred to a centrifuge tube and shaken vigorously with 10 ml of pesticide grade methanol for five minutes. The mixture is allowed to separate, and is then centrifuged to facilitate separation of the two phases. An aliquot of the methanol layer is then analyzed by Gas Chromatography for volatile halogenated organics, volatile aromatic compounds and Polychlorinated Biphenyls. Any required dilutions are done with pesticide grade methanol.

The samples were also prepared for Polychlorinated Biphenyl Analysis using procedures in the following reference.

- EPA-EMSL-The analysis of Polychlorinated Biphenyls in Transformer Fluids & Waste Oils, 1980.

II. Analysis

Following preparation, the samples were analyzed as described in the following publications.

- Methods 601, 602 Federal Register, Vol. 44 No. 233, December 3, 1979. (Columns and GC conditions for aromatics and volatile halogenated organics).
- EPA-EMSL - The Analysis of Polychlorinated Biphenyls in Transformer Fluids and Waste Oils, 1980. (Columns and GC conditions for PCB's, as well as GC/MS conditions for PCB confirmation.)
- ASTM Method D-56-Standard Method of test for Flash Point by tag closed tester.
- EPA - Test Methods for Evaluating Solid Waste-Physical/Chemical Methods-SW846-1980. (Procedure for oil and grease determination, partition Gravimetric procedure).

The volatile halogenated organics and Polychlorinated Biphenyls were analyzed on the Hall Electrolytic Conductivity Detector. The aromatics were analyzed using a Photoionization Detector. PCB's were confirmed by GC/MS/DS.

III. Analytical Results

The parameters analyzed and results are delineated in the following tables. The interlaboratory variability of the parameters analyzed in the type of sample matrix submitted has not been established by EPA, and could be at least $\pm$ 20%. S-R is currently evaluating the variability of all tests performed for NJDEP in different types of matrices.

Stablex-Reutter Inc.

NJDEP
Solid Waste Division
Test Report No. SR6449
February 10, 1982

Volatile Aromatic Hydrocarbon Screen

	Sample and Designation					SR6449-1 + Spike	
Constituent	SR6449-1 A1127	SR6449-2 A1128	SR6449-3 AI130	SR6449-4 AI131	SR6449-2 Dup. AI128 Dup.	Amount of Spike	% Recover
Benzene	<1	<1	<1	<1	<1	300	111
Toluene	28,000	11,000	410	11,000	13,000	1000	100
Xylenes, total	<1	950	<1	<1	780	---	---
Ethylbenzene	<1	<1	<1	<1	<1	---	---

Volatile Halogenated Hydrocarbon Screen

	Sample and Designation					SR6449-1 + Spike	
Constituent	SR6449-1 A1127	SR6449-2 AI128	SR6449-3 AI130	SR6449-4 AI131	SR6449-2 Dup. AI128 Dup.	Amount of Spike	% Recov
Vinyl Chloride	<1	<1	<1	<1	<1	---	---
Methylene Chloride	14	15	1.2	20	8.0	---	---
Chloroform	3.7	3.7	<1	16	7.2	370	150
Carbon Tetrachloride	<1	<1	<1	<1	<1	---	---
Dibromochloromethane	<1	<1	<1	<1	<1	---	---
Bromodichloromethane	<1	<1	<1	<1	<1	---	---
1,1,1 Trichloroethane	<1	3000	<1	<1	2500	400	160
1,1,2 Trichloroethane	<1	<1	<1	<1	<1	---	---
Trichloroethylene	2.6	26	<1	150	17	397	60
Tetrachloroethylene	13	140	<1	1200	80	400	140
1,2 Dichloroethane	<1	<1	<1	<1	<1	---	---
1,1 Dichloroethylene	<1	<1	<1	<1	<1	---	---
1,1 Dichloroethane	<1	<1	<1	<1	<1	---	---
1,2 Dichloropropane	<1	<1	<1	<1	<1	---	---
2-Chloroethylvinyl Ether	<1	<1	<1	<1	<1	---	---
Bromoform	<1	<1	<1	<1	<1	---	---
1,1,2,2,-Tetrachloroethane	<1	<1	<1	<1	<1	---	---
Chlorobenzene	<1	<1	<1	<1	<1	---	---

All results are in micrograms of constituent per gram of sample.

Dup. - Duplicate Analysis

Stablex-Reutter Inc.

Polychlorinated Biphenyl Analysis

Quantitative Analysis by GC

Constituent	Sample and Designation					
					SR6449-1 + Spike	
	SR6449-1 AI127	SR6449-2 AI128	SR6449-3 AI130	SR6449-4 AI131	Amount of Spike	% Recovery
Polychlorinated Biphenyl fragments, Total as Arochlor 1254, ug/gram						
Primary Analysis	320	1200	<1.0	1200	225	84
Confirmatory analysis	340	1200	<1.0	1600	---	---

Primary column - 1.5% SP-2250; 1.95% SP-2401 on 100/120 Supelcoport

Confirmatory Column - 4% SE-30; 6% SP2401 on 100/120 Supelcoport

Qualitative Confirmation by GC/MS/DS

Sample No. 6449-2 and 6449-4 were confirmed by GC/MS/DS using a forward search against the SR priority pollutant library as well as against the NBS Library. The technique of multiple interval scanning was used against the characteristic ions listed below, setting the characteristic ions at the centroid of the interval.

PCB Compound	Target Ions*			Scan Interval
Arochlor 1016	224	260	294	185 - 230
Arochlor 1221	190	224	260	
Arochlor 1242	224	260	294	255 - 300
Arochlor 1248	294	330	362	325 - 370
Arochlor 1254	294	330	362	
Arochlor 1260	330	362	394	385 - 400

* From Federal Register, Vol. 44 No. 233, Dec. 3, 1979, Method 625.

Stablex-Reutter Inc.

Using the above multiple interval scanning procedure, the following Polychlorinated Biphenyl fragments were identified.

Qualilative GC/MS/DS Scan for PCB's

Sample and Designation	Polychlorinated Biphenyl Fragment Peaks	Fit*
SR6449-2 (AI128)	1,1' - Biphenyl, 2,2' - Dichloro	998
	1,1' - Biphenyl, 2,4 - Dichloro	938
	(1,1' - Biphenyl)-4 ol, 3-Chloro	948
SR6449-4 (AI131)	1,1' - Biphenyl, 2,2' - Dichloro	992
	1,1' - Biphenyl, 2- Chioro	951
	1,1' - Biphenyl, 4- Chioro	954

A Fit of 850 or above is considered as positive identification of the analyte against the library, with 1000 being a perfect fit.

Miscellaneous Analysis

Parameter	Sample and Designation			
	SR6449-1 AI127 32	SR6449-2 AI128 42	SR6449-3 AI130 27	SR6449-4 AI131 29
Flash Point, °F closed cup	>180	175	>180	>180
Oil and Grease, %	79	75	.098	82

If you have any questions concerning the above analysis, please don't hesitate to contact me.

Respectfully submitted,

STABLEX-REUTTER, INC.

William J. Ziegler

William J. Ziegler
Laboratory Manager

WJZ/bb