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PROGRESS REPORT
TECHNICAL SERVICES DEPARTMENT
ANNISTON, ALABAMA PLANT

JOB NO. 002-1026 **REPORT NO.** 2 **DATE** July 21, 1970

F.L

TITLE: AROCLOR LOSSES AT THE ANNISTON PLANT

OBJECTIVE: To report all data which is available to date on Aroclor losses in the Anniston Plant. Also, to report all data on Aroclor residues in the Snow Creek - Choccolocco Creek Watershed. To summarize progress to data on Aroclor clean-up efforts at Anniston.

PERSONNEL: E. G. Wright, (J. T. Bell)

REPORTED BY: E. G. Wright

SUMMARY: Aroclor losses from the Anniston Plant for the period April 15 through June 30, 1970, averaged ≈16 lbs./day. This is a considerable improvement over losses of > 250 lbs./day for a comparable period during 1969. (Note: > 250 lbs./day is used for the 1969 figure because improved analytical methods and actual measurement of material from the catch tank and coalescer have shown that the losses were approximately 10 times as high as was reported in 1969.) This reduction has been primarily achieved by an educational program and resulting changed operating habits plus HCl organics removal projects. Other projects are being installed and evaluated which will further reduce these losses toward the Business Group goal of 10 ppb.

FUTURE WORK:

1. Continue sampling and analyzing for Aroclor losses on a routine basis.
2. Continue to sample and analyze grab samples from Snow and Choccolocco Creeks for Aroclor content.
3. Sample and analyze ambient air for Aroclor content.
4. Sample and analyze tank vents in the Aroclor department to pinpoint atmospheric loss points.
5. Collect additional aquatic samples from Choccolocco Creek Watershed.
6. Issue periodical reports on Anniston Plant losses and progress toward 10 ppb goal.

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DISCUSSION

I. Aroclor Department Sewers

A. HCl Sewer

Since the installetion of e catch tank in the HCl gas line and a coalescer in the acid stream, the Aroclor content in the waste acid stream has been greatly reduced. (i.e., Approximately 200 pounds of organic material is being removed by these two projects.) During the sampling period, this sewer averaged 13.0 ppb of Aroclor. (See Data Sheet I.) Based on this data, the decision was made not to route this stream to the sump presently being installed. This resulted in a substantial savings on installing the sump. However, at times, the spent carbon from the HCl carbon towers was dumped into this sewer. Alternate methods are being evaluated to collect the spent carbon for disposal.

B. Chlorinator and Still Room Sewers

At times these sewers had a two phase flow. The quantity of the Aroclor phase could not be determined. However, these two sewers are being routed through the Aroclor sump. When the sump is completed and put into operation, the Aroclor phase can then be quantified. The sump will also provide a means for recovering this second phase, which under present conditions eventually makes its way out of the plant.

When the sump is installed in these sewers, a daily sample will be taken and analyzed to monitor the efficiency of the sump. A second phase of projects is scheduled for further reduction of Aroclor in these process streams. (Ref.: Anniston Progress Report No. 1, Job No. 003-1051).

C. Warehouse Sewer

The major losses from this sewer are due to spills while drumming or flaking. These spills are then swept to the sewer during floor clean-up. Presently, clean-up is accomplished by use of Du-Bois steam cleaning which considerably raises the solubility of Aroclor in water. Alternate methods of clean-up and disposal are presently being evaluated.

D. Total Plant Effluent

During the period April 15 through June 30, 1970, the total plant losses averaged 16 lbs./day. This is excluding the period April 21 through May 20, 1970, when the acid neutralization pit was being cleaned. During this period, the losses ran very high (See Data Sheet V.) due to the fact that the Aroclor which was trapped in the pit was being stirred and entrained into the plant effluent.

The discrepancy between the 1.7 lbs./day losses from the sewers and the 16 lbs./day losses reported from the plant effluent may possibly be due to two things: 1) Samples from the sewers did not include any of the Aroclor phase and 2) Due to the mixing and the velocity at the plant effluent sampler, some of the Aroclor was being entrained and, therefore,

giving higher results. A closer correlation is expected when an accurate measure of the Aroclor phase can be accomplished. Close observation of the sump should provide this information.

E. Miscellaneous Samples (Data Sheet VII & VIII)

These samples were collected from Snow and Choccolocco Creeks at various times. They show that Aroclors are present in the Choccolocco Creek, even above where the Monsanto effluent enters the creek. They also indicate significant amounts of Aroclor in the mud and water of Choccolocco and Snow Creeks a condiserable distance (15-20 miles) downstream from the Anniston Plant. In fact, Aroclor concentrations can probably be found in the Coosa River system.

Data Sheet VIII lists the results of samples taken while the Aroclor department was not operating. These results indicate that significant Aroclor is being lost even when the plant is down or that these are deposits of Aroclor in the various sewers.

The sample from Coldwater Spring (City of Anniston's water supply) was taken for the purpose of establishing a background for this area. It might be interesting to note that this is the only sample collected to date which does not contain Aroclors.

DATA SHEET I

Sample Location: HCl Department Sewer
Average Flow: 200 GPM

Date	Aroclor Concentration (PPB)	Aroclor Losses (#/day)
4/15/70	12	0.030
4/16/70	7.8	0.019
4/17/70	8.3	0.020
4/20/70	18.5	0.044
4/21/70	6.2	0.015
4/22/70	16.4	0.039
4/23/70	10.6	0.025
4/24/70	20.4	0.050
4/27/70	15.0	0.036
4/28/70	13.1	0.031
4/29/70	18.7	0.045
5/3/70	10.5	0.025
5/4/70	11.3	0.027
Average:	13.0	0.031

DATA SHEET II

Sample Location: Warehouse Sewer
Average Flow: 65 GPM (Estimated)

Date	Aroclor Concentration (PPB)	Aroclor Losses (#/day)
4/22/70	2,800	2.18
4/23/70	2,860	2.23
4/24/70	1,250	0.98
4/27/70	1,520	1.18
4/28/70	1,300	1.02
4/29/70	2,130	1.66
5/3/70	1,320	1.03
5/4/70	1,480	1.15
Average:	1,833	1.43

DATA SHEET III

Sample Location: Aroclor Still Room Sewer
Average Flow: 150 GPM (Estimated)

Date	Aroclor Concentration (PPB)	Aroclor Losses (#/day)
4/22/70	12,500*	
4/23/70	13.8	0.025
4/24/70	30.0	0.054
4/27/70	17.0	0.036
4/28/70	12.2	0.022
4/29/70	4.8	0.009
5/4/70	20.0	0.036
5/6/70	11.0	0.020
5/8/70	23.4	0.042
Average:	16.5	0.031

*Contaminated sample - not included in average.

DATA SHEET IV

Sample Location: Aroclor Chlorinator Sewer
Average Flow: 275 GPM (Estimated)

Date	Aroclor Concentration (PPB)	Aroclor Losses (#/day)
4/22/70	80.0	0.264
4/23/70	46.5	0.153
4/24/70	35.0	0.115
4/27/70	51.0	0.168
4/28/70	56.5	0.186
4/29/70	70.0	0.233
5/3/70	81.6	0.262
5/4/70	73.0	0.241
5/6/70	85.3	0.281
Average:	64.3	0.212

DATA SHEET V

Sample Location: Total Plant Effluent
Average Flow: 900 GPM

Date	Aroclor Concentration (PPB)	Aroclor Losses (#/day)
4/15/70	98	1.08
4/16/70	150	1.65
4/17/70	3,300	36.30
4/21/70	10,800	119.00
4/22/70	16,000	176.00
4/23/70	875	9.62
4/27/70	13,750	151.00
5/4/70	18,000	198.00
5/5/70	3,300 *	36.30 *
5/6/70	9,750	107.00
5/7/70	9,900	109.00
5/10/70	3,300	36.30
5/12/70	1,327	14.60
5/20/70	2,650	29.20
5/25/70	68	0.75
6/2/70	216	2.38
6/3/70	880	9.70
6/5/70	148	1.63
6/6/70	360	3.96
6/7/70	950	10.45
6/8/70	315	3.46
6/9/70	3,100	34.10
6/10/70	400	4.40
6/11/70	760	8.35
6/12/70	1,540	16.90
6/13/70	1,875	20.60
6/14/70	85	0.94
6/15/70	820	9.00
6/16/70	520	5.72
6/17/70	1,820	20.00
6/18/70	490	5.40
6/19/70	3,500	38.50
6/20/70	3,825	42.00
6/21/70	800	8.80
6/22/70	720	7.92
6/23/70	1.920	21.10
6/24/70	1,620	17.80
6/25/70	1,460	16.10
6/26/70	2,940	32.40
6/27/70	680	7.47
6/28/70	3,966	43,60
6/29/70	3,200	35.20
6/30/70	4,200	46.20
Average:	1,460	15.74

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*Limestone Pit being cleaned out - Data not included in average.

DATA SHEET VI

Sample Location: Snow Creek Sampling Station

Date	Aroclor Concentration (PPB)	
4/15/70	1,800.0	
4/16/70	233.0	
4/17/70	124.0	
4/18/70	499.0	
4/19/70	5,435.0	
4/20/70	1,950.0	
4/21/70	1,220.0	
4/22/70	2,550.0	
4/23/70	3,200.0	
4/24/70	3,750.0	
4/25/70	3,800.0	
4/26/70	2,166.0	
4/27/70	1,860.0	
4/28/70	860.0	
4/29/70	2,800.0	
5/1/70	2,800.0	
5/2/70	1,450.0	*
5/7/70	1,320.0	
5/8/70	1,760.0	
5/9/70	1,840.0	
5/10/70	9,600.0	
5/11/70	1,740.0	
5/12/70	3.8	
5/13/70	1,566.0	
5/14/70	1,325.0	
5/18/70	1,920.0	
5/19/70	2,400.0	
5/20/70	1,320.0	
5/21/70	3,000.0	
5/22/70	1,500.0	
5/23/70	800.0	
5/24/70	1,540.0	
5/29/70	12.5	
5/30/70	5.0	
5/31/70	14.8	
6/1/70	25.0	
6/2/70	16.4	
6/3/70	36.0	
6/4/70	14.0	
6/5/70	1,320.0	
6/6/70	140.0	
6/7/70	240.0	
6/8/70	104.0	
6/9/70	430.0	

DATA SHEET VI - continued

Date	Aroclor Concentration (PPB)
6/12/70	630.0
6/13/70	760.0
6/14/70	254.0
6/15/70	1,470.0
6/16/70	41.5
6/17/70	110.0
6/19/70	216.0
6/20/70	272.0
6/21/70	480.0
Average:	768.0

*Limestone pit being cleaned out - Data not included in average.

DATA SHEET VII

Sample No.	Date	Sample Location	Aroclor Concentration (PPB) Mud	Water
1	10-8-69	Snow Creek at Glenaddie	2.36×10^7	23.3
2	10-8-69	Choccolocco Creek at Boiling Springs (upstream from Monsento's effluent)	78	8.1
3	10-8-69	Choccolocco Creek at City Treatment Plant (1 block below confluence of Snow and Choccolocco Creeks)	738,000	< 2.0
4	10-8-69	Choccolocco Creek at Jackson Shoals (≈20 miles downstream)	7,300	5.8
5	10-8-69	Choccolocco Creek at Eureka Bridge (≈25 miles downstream, mouth of Choccolocco into Coosa River)	3,240	< 2.0
6	11-23-69	Snow Creek - 1 block below plant	2.19×10^6	20,300
7	11-23-69	Snow Creek at Glenaddie	1.84×10^6	1,435
8	11-23-69	Choccolocco Creek at Highway 9 (≈15 miles upstream from the confluence of Snow and Choccolocco Creeks)	1,536	11
9	11-23-69	Choccolocco Creek at Boiling Springs (upstream from Monsanto's effluent)	26	10
10	11-23-69	Choccolocco Creek at City Treatment Plant (1 block below confluence of Snow and Choccolocco Creeks)	--	58
11	11-23-69	Choccolocco Creek at Jackson Shoals (≈20 miles downstream)	470	10

DATA SHEET VIII

Date		Sample Location	Aroclor Concentration (PPB)
10-3-69	*	Limestone Pit Influent	4,180
10-3-69	*	Limestone Pit Effluent	103
10-3-69	*	Plant Effluent	74
10-3-69	*	Warehouse Sewer	216
10-3-69	*	Aroclor Chlorinator Sewer	317
10-3-69	*	HCl Department Sewer	264
10-3-69	*	Plant Storm Sewer	2
4-20-70		Coldwater Spring (City Water Supply)	NDA

*Note: These samples were collected after the Aroclor department had been shutdown one week due to a fire in the motor control center.

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