MCL 143
959

PROGRESS REPORT

TECHNICAL SERVICES DEPARTMENT

SQ 10300

JOB NO:- //7130/2333

REPORT:- No.16.

DATE:- 6th July, 1970.

Distribution:- COMPANY CONFIDENTIAL

Newport.
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Ruabon
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St.Louis.
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Brussels.
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TITLE: EFFLUENT CONTROL ARACLORS - STATUS OF SAMPLING AND MEASUREMENT PROGRAMME.

PERSONNEL: H.A. Bird, D.W.H. Casey, [A.F. Regen].

PROBLEM: Environmental Control PCB.

SUMMARY: This is a follow up report to Report No.4. dated 27th January 1970, and results listed in Report No.14 dated 11th May 1970.

Newport now has its own test equipment [commissioned May] namely Hewlett Packard 402 Gas Chromatograph EC detector, and Perkin Elmer F11 Gas Chromatograph fitted with EC detector.

All backlog of samples has been returned from Ruabon and analysed. Results of all samples taken to date are listed in this report; for convenience, samples since 1st January are included, some of which have been reported previously. Sample locations and present frequencies are:-

a] Losses from Aroclor Plant. One per week. Appendix A.

b] Main effluent discharge from site. Composite over 2-3 days. App. B.

c] Mud samples from Severan Estuary. One per month. Appendix C.

Results on main effluent show downward trend but occasional very high level result.

FUTURE WORK:

1. Continue present sample test schedule. Report of results with minimum delay to allow investigation/action on high figure. Immediate.

2. Investigate possibility of automation of extraction techniques.

3. Repeat monitoring of Finished Product hydrochloric acid; reports from Ruabon indicated nil P.C.B. content. Immediate

4. When information received from MC. monitor atmospheric pollution in and around plant.

A Regen

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APPENDIX A

Samples from PLANT LOCATIONS - Frequency, one per week.

All results are given in parts per American Billion (10^9)

DATE	PLANT EFFLUENT				EJECTOR	
	Interceptor Pit		Milk of Lime Slurry			
	Sample No.	P.C.B.	Sample No.	P.C.B.	Sample No.	P.C.B.
Jan.5	48	10,340	49	Hi boilers	50	32
13	75	7,170	77	33,520	76	3,790
20	83	203,200	84	15,750	85	6,600
27	93	20,720	94	11,750	95	260
Feb.3	104	7,730	105	55,830	106	22,240
10	134	2,847	135	8,550	136	87
17	148	423,190	149	7,200	150	940
24	158	379,520	159	31,850	160	23,360
Mar 3.	166	47,550	167	18,460	168	14,720
10.	180	830	182	8,760	181	290
17.	191	100,950	193	Containgr empty on arrival from Rumbon.	192	2,230
24.	199	7,590	201	545	200	610
April 1	206	95,000	204	30,000	205	1,000
7	209	32,000	210	22,000	211	4,130
14	212	6,000	213	4,670	214	250
21	221	3,070	223	3,570	222	600
May 5	232	1,680	233	9,490		
12	240	2,500	239	780		
19	244	58,730	245	-		
26	248	6,955	247	340		
June 2	249	2,140	250	14,870		
10	261	645	260	11,620		
19	-	-	266	1,216		
23	269	188	270	9,197		
30			274	3,182		

From 5th May Ejector Stream System modified.

Closed system straight into effluent drain instead of to surface water.

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APPENDIX B

EFFLUENT DISCHARGE

Results to 19th January, given in Report No.1

Date	Sample No.	P.C.B.
Jan 1	45	510
2	46	600
5	47	1,500
6	57	1,400
8	65	3,240
9	66	1,430
12	72	5,560
13	73	7,030
14	78	2,950
15	79	1,940
16	80	3,200
19	81	3,330
20	82	1,770
21	87	4,030
22	88	930
23	89	2,000
26	90	520
27	91	270
28	97	525
29	99	830
30	100	360
Feb 2	101	750
3	103	800
4	107	1,270
5	115	820
6	119	225
9	124	520
10	133	490
11	138	835
12	140	215

COMPOSITE SAMPLES

Date	Sample No.	P.C.B.
23 -25	92	580
25 -28	98	185
28- 30	116	275
30.1 - 4.2.	117	310
4 - 5	118	6,610
3 - 6	131	550
6 - 8	132	520
9 -10	139	330
11-12	142	152

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Appendix B - cont.

Date	Sample No.	PCB
Feb 13	141	120
16	143	630
17	144	180
18	146	150
19	147	175
20	153	1180
23	154	1550
24	156	270
25	161	470
26	162	470
27	163	COMPOSITE SAMPLES
Mar 2	164	
3	165	160
4	170	465
5	171	180
6	172	420
9	175	2470
10	176	220
11	183	300
12	187	Bottle returned empty.
13	188	270
16	189	115
17	190	125
18	194	640
19	195	175
20	196	95
23	197	376
24	198	165
25	202	255
26	203	385
Apr 1	207	7500
2	208	15000
9	218	210
10	219	300

Date	Sample No.	PCB
Apr 12	220	100
14	224	85
17	225	1250
19	226	110
22	227	55
24	228	90
26	229	195
28	230	105
30	231	135
May 3	237	55,000
11	238	100
12	241	555
13	242	150
18	243	890
22	246	255
	257	9,920
June 2	258	6,940
6	259	790
11	262	3,314
12	263	93
13	264	57
16	265	112
17	267	50
20	268	122
22	271	67
24	272	32
26	273	30
29	275	119

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APPENDIX C - SEVERN ESTUARIAL MUD

		July 69	Dec 69	Jan 70	Feb	Mar	Apr.
BEACHLEY	↑			491	134	340	328
COLADHARBOUR	UPSTREAM	665	320	82	160	965	1092
COLDCLIFF	|	966	1050	14	126	300	540
* MONSANTO	|						
LIGHTHOUSE	|	2068	870	138	52	347	330
PETERSTONE	DOWNSTREAM	470	1850	188	13	526	849
SULLY	↓			2090	1053	128	200

July figures reported by St.Louis; December figures by Ruabon; remainder determined at Newport.

Figures show irregular pattern; could be associated with sample size, estuarial tidal flow, winter v. summer conditions. Higher results at Sully may be associated with Wiggins Teape Tafarest outfall [see Report No.6].

Chromatograms run on some of these samples after acetonitrile and hexane extraction procedures showed interference by other pollutants which masked the P.C.B. peaks. Further clean-up procedures on the extractant were necessary to obtain satisfactory chromatograms.

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