

DIAMOND SHAMROCK PLASTICS CORPORATION
Delaware City Plant



September 9, 1981

TO: J. R. Semancik*

FROM: R. A. Barrish*

SUBJECT: Delaware City Health and Environmental Report - August, 1981

CC: Dr. R. McBurney
Messrs. E. Baier*
J. A. Bailey
D. C. Bobish/J. E. Pyle/C. W. Greenberg/S. A. Kuhls
B. Christensen
C. A. Burkins/P. L. Bowman
R. F. Cronin/W. D. Peeples
D. L. Lull
R. E. Nagy
S. W. Schaefer
File No. E1* (* with attachments)

I. Health

A. General

Airborne lead sampling was conducted in the Compound Plant on August 5 in conjunction with the OSHA inspection. Our values ranged from 136 to 1170 $\mu\text{g}/\text{m}^3$ (PEL=50 $\mu\text{g}/\text{m}^3$) while OSHA's range was 90 to 12,000 $\mu\text{g}/\text{m}^3$. A follow-up study conducted 2½ weeks after the termination of the lead run showed the operators exposed to 18-49 $\mu\text{g}/\text{m}^3$ and area samples of 7 to 20 $\mu\text{g}/\text{m}^3$. The background level of airborne lead is high and there is an excessive level of lead during a lead production run. Before the next run, engineering and work practice controls will be developed and implemented along with upgrading the respiratory protection program.

B. VCM

1. Personnel Exposure

- a. A total of 12 TWA samples were analyzed during August. A copy of the results is attached. (Exhibit I)

<u>VCM Range</u> <u>(ppm)</u>	<u>Number of</u> <u>TWA</u>	<u>Number of</u> <u>Masks Worn</u>
<1	11	10
1-5	1	1
5-10	0	0
>10	0	0

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1. Personnel Exposure (cont'd)

- b. One ceiling sample was analyzed during August. The purpose of this test was to determine the necessity for respiratory equipment while sampling unstripped latex. A two minute sample resulted in an exposure of 6.38 ppm. This job function will be retested.

<u>VCM Range</u> <u>(ppm)</u>	<u>Number of</u> <u>Ceiling</u>	<u>Number of</u> <u>Masks Worn</u>
<1	0	0
1-5	1	1
5-10	0	0
>10	0	0

- c. Personnel exposure by area is summarized below and in Exhibit II.

<u>Month</u>	<u>Poly Area</u> <u>VCM (ppm)</u>	<u>Bio Plant Avg.</u> <u>VCM (ppm)</u>	<u>Reclaim</u> <u>& Unloading</u> <u>Avg. VCM (ppm)</u>	<u>Incineration</u> <u>Avg.</u> <u>VCM (ppm)</u>
Aug., 1981	0.31	0.10	0.48	0.14
July, 1981	0.35	0.10	0.14	0.10
June, 1981	0.83	0.10	0.47	0.13
May, 1981	1.35	0.10	0.12	0.11
April, 1981	1.57	0.44	0.42	0.20
March, 1981	2.37	0.27	0.44	0.26
Feb., 1981	1.30	0.10	0.93	0.12
Jan., 1981	3.47	0.18	1.07	0.21
Dec., 1980	1.36	0.10	0.22	0.10
Nov., 1980	2.82	0.10	0.31	0.1
Oct., 1980	3.71	0.10	1.24	1.18
Sept., 1980	1.30	0.10	0.36	0.1
Aug., 1980	0.60	0.10	0.36	0.1

2. Area Surveys

- a. ARCAS area averages are summarized below and in Exhibit III.

<u>Area</u>	<u>Average (ppm)</u>	<u>% <1.0 ppm</u>
Polymerization	0.7	93.4
#1 Suspension Polymerization	0.7	90.8
Suspension Charge	0.9	88.5
Suspension Drop	0.6	90.9
Weigh Room	0.1	97.5

2. Area Surveys (cont'd)

<u>Area</u>	<u>Average (ppm)</u>	<u>% <1.0 ppm</u>
Suspension Blowdown	0.3	95.1
#2 Paste Polymerization	0.8	90.8
#2 Paste Charge	0.8	92.8
#2 Paste Drop	1.0	89.6
#2 Paste Strip	0.6	93.6
#2 Latex Transfer	1.0	87.3
#3 Paste Polymerization	0.8	90.8
#3 Paste Condensers	1.1	88.7
#3 Paste Charge	0.5	91.5
#3 Paste Drop	0.5	94.2
#3 Paste Strip	0.6	94.0
#3 Latex Transfer	0.8	92.4
Reclaim Area	0.3	96.2
Unloading Area	0.1	98.2
Incineration Area	2.2	91.6
Bio Dewatering	0.1	99.2
Breathing Air	0.1	99.9

(Note: #2 Paste Plant is shut down. Readings are being observed to determine background levels).

b. Area readings for the control rooms are summarized below:

<u>Area</u>	<u>Arcas Average</u>	<u>% <1.0</u>	<u>TWA</u>
Suspension	0.2	94.6	0.10
#3 Paste	1.0*	98.7	0.10
Paste Dryer	0.2	99.1	0.14
Reclaim	0.1	97.0	0.10

* One excessive reading (2660 ppm), probably caused by cross-contamination with another stream, resulted in an average of 1.0. The control room was <1.0 ppm 98.7% of the time.

C. Dust

Dust sampling was once again conducted in the paste bagging area. Results indicate that there is no problem. Dust sampling will be conducted quarterly in the paste bagging, suspension bagging, and compound blender floor areas. One of these areas will be sampled each month.

Results are included as Exhibit IV.

D. Noise

There were no noise surveys during August. The noise dosimeters were returned to the corporate group. A set of noise dosimeters were ordered and will be received during September. Further noise surveys will support the noise reduction program in the Compound Plant.

E. Lead

The results of the lead testing were highlighted earlier in the report. The results are included as Exhibit V.

Engineering and work practice controls will be developed and implemented. The respiratory protection program will be upgraded and additional respiratory training will be conducted.

II. Environmental

A. Air

There still has been no action by the Federal EPA concerning our response on safety valve releases.

The monthly VCM data is summarized below:

1. Incinerators

1.22 ppm

2. Stripping

	<u>August</u>	<u>Year-to-Date</u>
a. <u>Latex</u>		
Number of batches stripped	312	2136
Average value (ppm)	1295	986
Batches out of compliance	54	272
Excursions (24 hr. average)	1	10
b. <u>Suspension</u>		
Slurry average (ppm)	35	30
Excursions (24 hr. average)	0	3
c. <u>Wastewater</u>		
Monthly average (ppm)	1.5	2.7
Excursions (24 hr. average)	0	8

3. Reactor Openings

a. <u>Suspension</u>		
Number of charges	1352	11,118
Number of openings	1352	11,118
Reactors sampled	21	189
Samples exceeding compliance limit	1	22

3. Reactor Openings (cont'd)

	<u>August</u>	<u>Year-to-Date</u>
b. Paste		
Number of charges	263	2112
Number of openings	45	643
Reactors sampled	4	41
Samples exceeding compliance limit	0	5

4. Leak Detection

Leaks detected	74	1005
Leaks repaired	82	813

5. <u>EPA Reportable Releases</u>	0	2
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6. Total VCM Emissions

a. Suspension Stripping		
Permitted pounds	3094	26,029
Actual pounds	271	1953
Over/(under) pounds	(2823)	(24,076)
b. Paste Stripping		
Permitted pounds	3359	24,707
Actual pounds	2175	12,163
Over/(under) pounds	(1184)	(12,544)
c. Reactor openings		
Permitted pounds	189	1547
Actual pounds	67	1107
Over/(under) pounds	(122)	(440)
d. Relief Valve Discharges		
Actual pounds	0	2220

B. Solid Waste

1. Monitoring of the on-site PVC landfill continues. Air readings continue to be below 0.10 ppm. Well water samples are being taken monthly.

The DSWA has tentatively approved the disposal of our waste treatment sludge and grits at the county landfill. A letter from DNREC stating that the wastes are non-hazardous is still required. This should be a formality as they have already stated that the wastes are non-hazardous.

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C. Water

Sampling was conducted during the week of August 31. The purpose is to establish levels of pollutants for a separate NPDES permit for the Plastics Plant, and to establish base levels of "priority pollutants" which will be required for future permits.

III. Safety

Reactor Rescue Procedure Modifications

A block and tackle assembly was purchased and is being set up in the suspension poly room. More testing will be done to evaluate the block and tackle and our new procedure.



R. A. Barrish

RAB:js
Att.

PERSONNEL AND AREA CHARCOAL METHOD VCM ANALYSIS SHEETS

[illegible]

★ Exposure slip issued.

* Air mask worn.

PERSONNEL AND (AREA) CHARCOAL METHOD VCM ANALYSIS SHEETS

Date/ Year '81	Sample No.	Job Description	Personnel Pump			Pump No.	Sample Type	Operation Performed, Area Monitored, etc.	VCM (PPM)	Technician Signature
			On	Off	Flow/l					
8-6	3037A		0800	1445	59.54	9766	TWA	NORTH PVC LANDFILL	<0.10	W. King
	3038A		0800	1445	59.94	9768	TWA	SOUTH "	<0.10	
	3039A		0800	1445	60.35	9769	TWA	EAST "	<0.10	
	3040A		0800	1445	59.54	9774	TWA	WEST "	<0.10	W. King
8-11	3041A		1325	1340	2.19	9774	CEILING	EAST INCINERATOR STACK GAS	1.22	W. King
8-13	3042A		0800	1430	58.11	9766	TWA	PASTE #3 POLY CONT. RM.	<0.10	
	3043A		0800	1430	58.11	9768	TWA	POLY CONTROL ROOM	<0.10	
	3044A		0800	1430	58.11	9769	TWA	WEIGH ROOM	<0.10	
	3045A		0810	1430	55.48	9774	TWA	RECLAIM CONTROL ROOM	<0.10	
	3046A		0810	1435	57.37	9778	TWA	PASTE DRYER CONT. RM.	0.14	
	3047A		0805	1435	57.72	9824	TWA	SUSE DRYER CONT. RM.	<0.10	
	3048A		0815	1435	55.86	9805	TWA	BIO DEWATERING SCREENS	<0.10	W. King
8-14	3049A		0810	1445	58.86	9766	TWA	NORTH PVC LANDFILL	<0.10	
	3050A		0810	1445	58.86	9768	TWA	SOUTH "	<0.10	
	3051A		0810	1445	58.86	9769	TWA	EAST "	<0.10	
	3052A		0810	1445	56.21	9774	TWA	WEST "	<0.10	W. King
8-19	3053A		0805	1425	56.62	9766	TWA	CHG DECK ARMAS PT. NEAR PT. 203	0.60	
	3054A		0805	1425	55.48	9768	TWA	" " " 217	1.67	
	3055A		0805	1425	56.24	9769	TWA	DROP DECK " " 202	0.94	
	3056A		0805	1425	55.48	9774	TWA	" " " 217	3.25	W. King
8-21	3057A		0800	1445	60.35	9766	TWA	NORTH PVC LANDFILL	<0.10	
	3058A		0800	1445	59.13	9768	TWA	SOUTH "	<0.10	
	3059A		0800	1445	59.94	9769	TWA	EAST "	<0.10	
	3060A		0800	1450	59.86	9774	TWA	WEST "	<0.10	W. King

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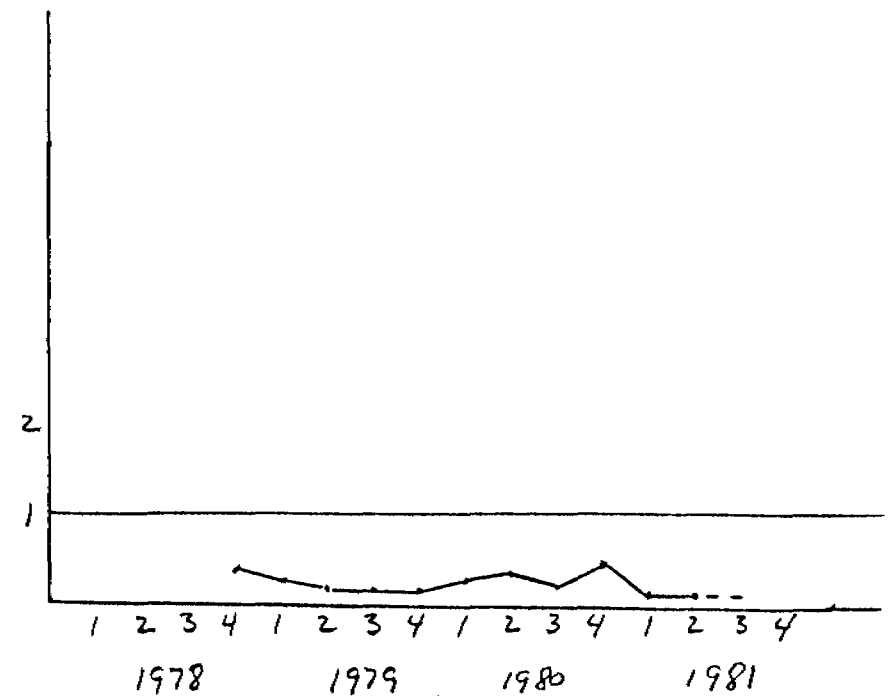
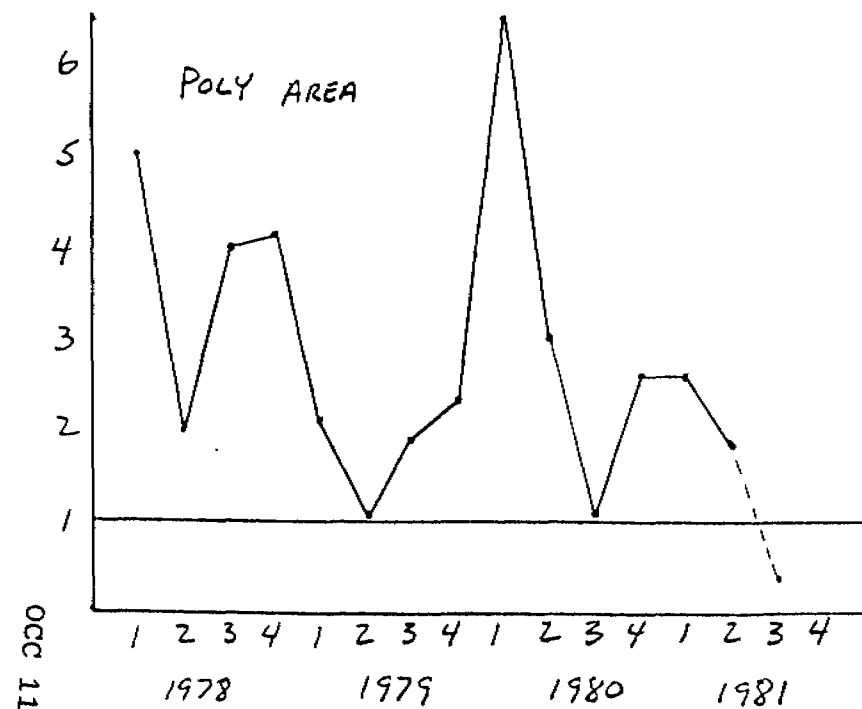
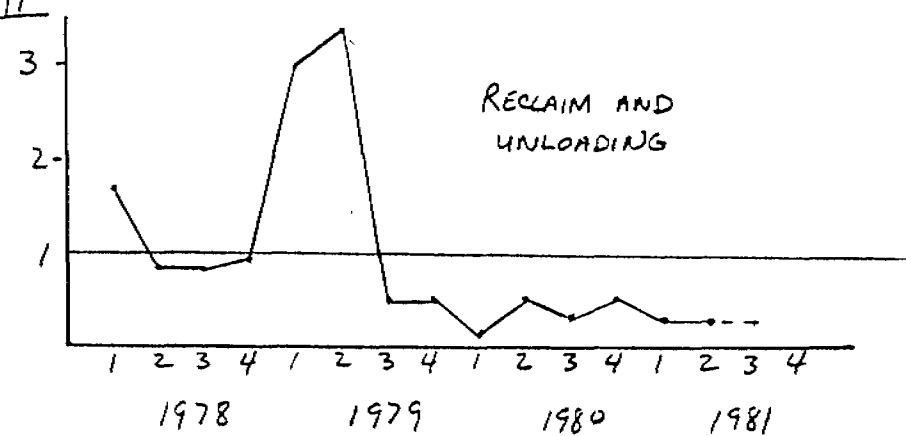
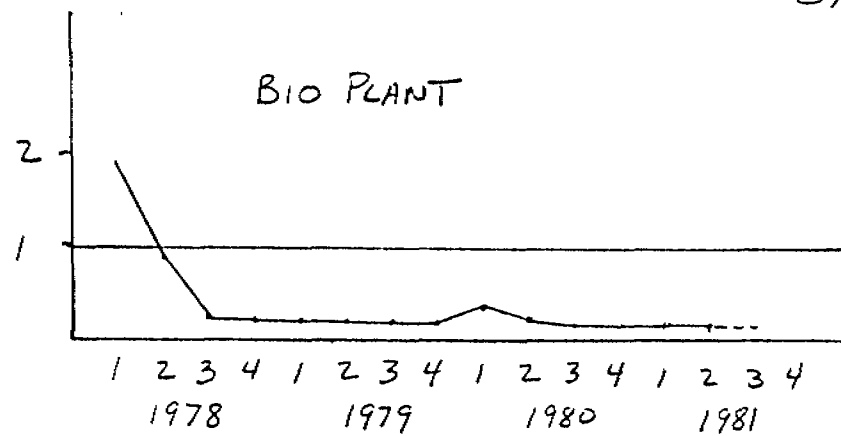
★ Exposure slip issued.

* Air mask worn.

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* Air mask worn.

EXHIBIT II



QUARTERLY AVERAGES FOR PERSONNEL VCM SAMPLING (TWA)

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STRM	SMPLS	NO > 1	NO > 5	AVERAGE	HIGH				
1	2754	147	37	.3	280.0	18:06	8/25	SUSP CHARGE 1	
2	2737	104	24	.2	71.6	14:39	8/22	PASTE CHARGE 1	
3	2729	76	24	.3	124.0	3:27	8/02	VCM UNLOAD COMP	
4	2741	147	31	.4	123.0	14:37	8/06	RECLAIM COMP	
5	2740	209	67	.5	121.0	9:41	8/08	SUSP DROP 5	
6	2741	184	55	.5	110.0	15:09	8/03	SWECO SCREEN	
7	2735	70	13	.1	27.4	15:26	8/08	WEIGH ROOM	
8	2745	21	6	.0	11.0	14:13	8/25	RAIL UNLOAD	
9	2734	209	37	.3	102.0	11:32	8/18	SUSP CHARGE 3	
10	2739	102	26	.2	74.4	15:57	8/19	PASTE DROP 1	
11	2734	83	19	.1	31.3	5:10	8/05	RECLAIM CONT RM	
12	2745	27	10	.0	28.1	9:03	8/11	TRUCK UNLOAD A	
13	2733	184	60	.6	190.0	14:18	8/25	SUSP DROP 1	
14	2739	177	59	.7	147.0	12:40	8/05	LATEX TRANSFER	
15	2725	489	152	1.8	513.0	1:49	8/19	SUSP CHARGE 5	
16	2742	164	29	.2	55.3	8:46	8/07	SUSP VAC COMP	
17	2835	279	52	.5	82.4	15:52	8/19	SUSP DROP 2	
18	2836	301	40	1.4	1040.0	16:02	8/10	PASTE CHARGE 2	
19	2830	97	12	.2	82.0	16:03	8/10	VCM CHARGE PUMP	
20	2837	39	7	.1	42.4	7:32	8/20	RECLAIM DECANT	
21	2833	501	99	1.3	1000.0	19:43	8/11	SUSP CHARGE 4	
22	2833	288	47	.5	146.0	12:13	8/03	PASTE BLEND TKS	
23	2840	154	17	.2	20.0	16:04	8/13	POLY CONTROL RM	
24	2843	734	159	2.2	1020.0	13:22	8/10	EAST GASHOLDER	
25	2816	332	71	1.0	388.0	16:00	8/19	SUSP DROP 4	
26	2839	481	63	1.8	3000.0	16:01	8/19	PASTE DROP 2	
27	2828	154	27	.4	208.0	18:12	8/10	HRC PUMP HOUSE	
28	2832	24	7	.0	20.0	21:58	8/10	TRUCK UNLOAD B	
29	2838	260	43	.9	584.0	16:55	8/04	SUSP CHARGE 2	
30	2840	422	71	1.4	884.0	20:15	8/10	PASTE BLWDN TKS	
31	2842	266	45	.6	104.0	17:36	8/11	SUSP DROP 3	
32	2837	4	1	.1	280.0	23:47	8/10	BREATH AIR SYS	
33	2815	25	9	.2	416.0	9:55	8/22	PASTE DRY CONT	
34	2809	117	50	.2	27.6	19:26	8/30	PASTE VAC PUMPS	
35	2818	36	16	1.0	2660.0	9:58	8/22	PASTE POLY CTRL	
36	2809	161	94	.5	154.0	9:42	8/22	EXPAN DROP DECK	
37	2821	112	49	.3	99.0	10:00	8/22	OG BLOWDOWN TK	
38	2813	238	127	.5	98.4	9:44	8/22	7M REAC CHG DCK	
39	2811	297	157	.7	33.2	4:59	8/18	EXP CONDENSER S	
40	2814	40	18	.2	89.4	9:46	8/22	UTIL BLDG ROOF	
41	2811	22	11	.1	244.0	22:17	8/20	BIO DEWATERING	
42	2804	334	151	1.5	786.0	9:48	8/22	EXP CONDENSER N	
43	2798	150	75	.7	782.0	14:24	8/14	EXP STRIP 2FL W	
44	2801	307	177	1.3	538.0	14:25	8/14	EXP STRIP 1FL	
45	2818	48	22	.7	782.0	9:51	8/22	BREA AIR INTAKE	
46	2815	32	15	.7	638.0	9:36	8/22	BREA AIR PIPE	
47	2810	235	198	2.2	1900.0	9:53	8/22	INCIN AREA	
48	2819	186	93	.4	42.8	20:59	8/01	EXP STRIP 2FL E	

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EXHIBIT III

OCC 11478

EXHIBIT IV

LOG SHEET

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OCC 11479

EXHIBIT V

LOG SHEET

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OCC 11480