



*Air Products and Chemicals*  
INC.

ESCAMBIA PLANT

INTEROFFICE MEMORANDUM

To: Mr. E. A. Ray

Date: 20 March 1974

From: W. C. Wilde

Copies: J. T. Barr

Re: Personal Monitoring for VCM  
Exposure at Pace Plant

T. L. Carey  
R. Fleming  
J. D. Kramer  
A. K. McMillan  
E. A. Primeau  
G. B. H. Speed ✓  
R. R. Spiegelhalter  
M. Stermon

Personal monitoring of VCM exposure to the utility operators (reactor cleaners) at Pace has continued. Twenty four (24) samples have been taken and the average of all samples is 43 ppm. The operator did not enter any reactors during four (4) of the sampling periods and these four analyses ranged from 5 ppm to 27 ppm. This shows that the high readings are due to VCM exposure while the operator is in the reactor.

The VCM exposure levels have tended to be higher on the off shifts. The averages of all readings by shift are:

|                        |                |
|------------------------|----------------|
| 7-3 Shift (days)       | 27 ppm average |
| 3-11 Shift (evenings)  | 34 ppm average |
| 11-7 Shift (midnights) | 72 ppm average |

Noting this trend, we believed that the new reactor purging procedures were not being followed as closely as possible, especially on the 3-11 and 11-7 shifts. A meeting was held with all four shift supervisors on 3/13/74 to point out the importance of following the proper purging procedures, and to get their views on improving and implementing these procedures. Before this meeting, the VCM levels had averaged 52 ppm and since the meeting, the levels have averaged 31 ppm. As the operators gain experience with these new procedures, it is expected that the VCM exposure levels will continue to decrease. Another meeting with the supervisors will be held on 3/20/74 to re-emphasize the importance of following the procedures.

The reactors are now being checked by the shift supervisors with the Syntok before allowing entry. The Century instruments will be used again when they are repaired. As a possible alternate to the purging procedure presently being used, a reactor was filled with water and boiled. (This is the procedure used at Calvert City). Preliminary results showed that the boil out is about as effective as the present procedure. The test will be repeated and a complete report will be written by D. H. Francke.

AP00050371

Mr. E. A. Ray  
Personal Monitoring for VCM Exposure  
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The battery charging schedule has been changed to allow a full 8-hour sample to be taken. This will allow Pace results to be directly compared to Calvert City results. The new schedule will reduce the number of samples taken to one/four shifts.

*W C Wilde*  
W. C. Wilde

WCW:bp

Enclosure

**AP00050372**

PERSONAL MONITORING  
FOR VCM EXPOSURE

| <u>Operator's<br/>Job Title</u> | <u>Operator's Name</u> | <u>Date</u> | <u>Sampling Time</u> |             | <u>Shift Taking<br/>Sample</u> | <u>T.W.A.<br/>VCM<br/>Level</u> |
|---------------------------------|------------------------|-------------|----------------------|-------------|--------------------------------|---------------------------------|
|                                 |                        |             | <u>Start</u>         | <u>Stop</u> |                                |                                 |
| Solutions                       | J. Summerlin           | 3/6/74      | 10:30 am             | 1:30 pm     | 7-3 "D"                        | 8 ppm                           |
| Recovery                        | A. Collins             | 3/6/74      | 4:00 pm              | 7:00 pm     | 3-11 "A"                       | 6 ppm                           |
| Utility                         | F. Henderson           | 3/6/74      | 4:00 pm              | 7:00 pm     | 3-11 "A"                       | 27 ppm                          |
| Utility *                       | F. Henderson           | 3/7/74      | 4:30 pm              | 7:00 pm     | 3-11 "A"                       | 14 ppm                          |
| Utility *                       | Martin (Carrol)        | 3/8/74      | 12:00 mn             | 3:00 am     | 11-7 "B"                       | 180 ppm                         |
| Utility                         | Henderson              | 3/8/74      | 8:00 pm              | 11:00 pm    | 3-11 "A"                       | 17 ppm                          |
| Utility *                       | Berry                  | 3/9/74      | 10:30 am             | 1:30 pm     | 7-3 "C"                        | 14 ppm                          |
| Utility *                       | Henderson              | 3/9/74      | 3:30 pm              | 6:30 pm     | 3-11 "A"                       | 69 ppm                          |
| Utility *                       | Henderson              | 3/10/74     | 1:30 am              | 4:30 am     | 11-7 "B"                       | 88 ppm                          |
| Utility *                       | Berry                  | 3/10/74     | 10:45 am             | 1:30 pm     | 7-3 "C"                        | 74 ppm                          |
| Utility *                       | Henderson              | 3/10/74     | 4:30 pm              | 7:30 pm     | 3-11 "A"                       | 5 ppm                           |
| Utility *                       | Watson                 | 3/11/74     | 2:00 am              | 5:40 am     | 11-7 "B"                       | 23 ppm                          |
| Utility *                       | Berry                  | 3/11/74     | 11:40 am             | 2:45 pm     | 7-3 "C"                        | 33 ppm                          |
| Utility *                       | Jones (Carrol)         | 3/11/74     | 3:00 pm              | 6:00 pm     | 3-11 "A"                       | 21 ppm                          |
| Utility *                       | Randall (Carrol)       | 3/12/74     | 11:00 pm             | 1:30 am     | 11-7 "B"                       | 135 ppm                         |
| Utility *                       | Martin (Carrol)        | 3/13/74     | 11:35 pm             | 1:35 am     | 11-7 "B"                       | 31 ppm                          |
| Utility                         | Berry                  | 3/13/74     | 11:00 am             | 2:15 pm     | 7-3 "C"                        | 5 ppm                           |
| Utility                         | Berry                  | 3/14/74     | 9:30 am              | 12:30 pm    | 7-3 "C"                        | 12 ppm                          |
| Utility *                       | Randall (Carrol)       | 3/14/74     | 7:00 pm              | 10:00 pm    | 3-11 "D"                       | 29 ppm                          |
| Utility *                       | Berry                  | 3/15/74     | 8:00 am              | 11:00 am    | 7-3 "C"                        | 16 ppm                          |
| Utility *                       | Randall (Carrol)       | 3/15/74     | 5:20 am              | 8:20 am     | 3-11 "D"                       | 83 ppm                          |
| Utility *                       | Jones (Carrol)         | 3/16/74     | 11:00 pm             | 2:00 am     | 11-7 "A"                       | 38 ppm                          |

**AP00050373**

| <u>Operator's<br/>Job Title</u> | <u>Operator's Name</u> | <u>Date</u> | <u>Sampling<br/>Start</u> | <u>Time<br/>Stop</u> | <u>Shift Taking<br/>Sample</u> | <u>T.W.A.<br/>VCM<br/>Level</u> |
|---------------------------------|------------------------|-------------|---------------------------|----------------------|--------------------------------|---------------------------------|
| Utility *                       | Randall (Carrol)       | 3/15/74     | 3:45 pm                   | 6:45 pm              | 3-11 "D"                       | 43 ppm                          |
| Utility *                       | Martin (Carrol)        | 3/17/74     | 9:00 am                   | 12:45 pm             | 7-3 "B"                        | 30 ppm                          |
| Utility *                       | Martin (Carrol)        | 3/17/84     | 2:15 pm                   | 3:15 pm              | 7-3 "B"                        | 37 ppm                          |
| Utility *                       | Jones (Carrol)         | 3/18/74     | 11:30 pm                  | 1:30 am              | 11-7 "A"                       | 13 ppm                          |

\*Operator was in reactor cleaning during sampling period

**AP00050374**

*Products and Chemicals*  
INC.

PUT IT IN WRITING

Date 18 March, 1974

J. D. Kramer

Subject Sampling of ambient air in PVC Plant  
with Personnel Monitors.

From M. H. Stermon

( ) Take Action ( ) For Your Approval (X) For Your Info ( ) Discuss With Me  
( ) For Your Comments ( ) As Requested ( ) File ( ) Note & Return

Listed are the results of air samples taken during the past week in the PVC plant with the Bendix Personnel monitors.

| <u>DATE</u> | <u>SHIFT</u> | <u>FLOOR</u> | <u>ppm Vcl</u> |
|-------------|--------------|--------------|----------------|
| 3-10-74     | 2nd          | 2nd          | 7.0            |
| 3-11-74     | 2nd          | Utility man  | 11.1✓          |
| 3-11-74     | 3rd          | 1st          | 9.2            |
| 3-12-74     | 3rd          | Utility man  | 16.1✓          |
| 3-13-74     | 1st          | Utility man  | 51.5✓          |
| 3-13-74     | 3rd          | Utility man  | 12.0✓          |
| 3-14-74     | 3rd          | Utility man  | 16.1✓          |
| 3-15-74     | 2nd          | 1st          | 15.6           |

*Handwritten note:*  
Handwritten initials and text.

*Handwritten signature:*  
M. H. Stermon

MHS/kg

CC: J. T. Barr - V.F.  
D. V. Lowe  
R. W. McGinnis  
J. C. Novak - V.F.  
F. L. Riddle  
C. J. Smith  
G.B.H. Speck  
R. R. Spiegelhalter - Pensacola

AP00050375



PUT IT IN WRITING

Date 11 March 1974To J. D. Kramer - Calvert City Subject SAMPLING OF AMBIENT AIR IN PVCFrom M. H. Stermon - Calvert City PLANT WITH PERSONNEL MONITORS.

( ) Take Action ( ) For Your Approval (X) For Your Info ( ) Discuss With Me  
( ) For Your Comments ( ) As Requested ( ) File ( ) Note & Return

Listed are the results of air samples taken during the past week in the PVC plant with the Bendix Personnel monitors.

| <u>DATE</u> | <u>SHIFT</u> | <u>FLOOR</u>    | <u>PPM VC1</u> |
|-------------|--------------|-----------------|----------------|
| 3/3/74      | 3            | 3               | 5.7 ✓          |
| 3/5/74      | 2            | 1               | 57.5 (1)       |
| 3/5/74      | 3            | 3               | 15.3 ✓         |
| 3/6/74      | 1            | Dryer Building  | 6.5 ✓          |
| 3/7/74      | 1            | Maintenance Man | 3.6            |
| 3/7/74      | 2            | Utility Man     | 9.6 (2) ✓      |
| 3/8/74      | 2            | 1               | 16.4           |

(1) High readings obtained with Century analyzer on day shift.

(2) Was wearing monitor while cleaning reactor.

  
M. H. STERMON

MHS:dm

cc: J. T. Barr - V.F.  
D. V. Lowe  
R. W. McGinnis  
J. C. Novak - V.F.  
F. L. Riddle  
C. J. Smith  
G. B. H. Speed  
R. R. Spiegelhalter - Pensacola

AP00050376



PUT IT IN WRITING

Date 4 March 1974To J. D. Kramer - Calvert City Subject SAMPLING OF AMBIENT AIR IN PVC PLANTFrom M. H. Stermon - Calvert City WITH BENDIX PERSONNEL MONITOR.  
( ) Take Action ( ) For Your Approval (X) For Your Info ( ) Discuss With Me  
( ) For Your Comments ( ) As Requested ( ) File ( ) Note & Return

After considerable time developing sampling and analytical techniques required for reliable data, ambient air samples are now being taken daily in the PVC plant. These samples are being taken by the wearing of the Personnel Monitor by the operator as he goes about his normal shift duties.

The VCl monomer is adsorbed on activated carbon, then extracted from the carbon using carbon disulfide, and analyzed by gas chromatograph.

To determine the efficiency of the adsorption-extraction procedure tests were made using standard concentrations of VCl monomer in air. The efficiency was found to be 77.7%.

Following are the results obtained to-date. The results will now be reported on a regular basis.

## Concentration of VCl Monomer

| <u>Date</u> | <u>Shift</u> | <u>Floor</u> | <u>PPM VCl</u> |
|-------------|--------------|--------------|----------------|
| 2/22/74     | 3rd          | 3rd          | 10.8✓          |
| 2/23/74     | 1st          | 2nd          | 5.7✓           |
| 2/23/74     | 2nd          | 2nd          | 9.2✓           |
| 2/23/74     | 3rd          | 2nd          | 16.7✓          |
| 2/24/74     | 1st          | 2nd          | 15.2✓          |
| 2/27/74     | 3rd          | 1st          | 9.7✓           |
| 2/28/74     | 2nd          | 3rd          | 24.7✓          |
| 2/28/74     | 2nd          | 2nd          | 23.1✓          |
| 3/3/74      | 1st          | 2nd          | 37.8✓          |

  
M. H. STERMON

MHS:dm

cc: J. T. Barr - V.F.  
D. V. Lowe  
R. W. McGinnis  
J. C. Novak - V.F.  
F. L. Riddle  
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AP00050377