

Interoffice Memorandum



TO (Name and Location) H. P. Heathman	DATE August 27, 1985
FROM (Name and Location) C. W. Whaley	REFERENCE NO. CWW-608-85



cc: E. L. Tejml
J. N. Gann
C. R. Pennington
K. L. Rozanc
E. D. Luke

W. G. Cornman
R. E. Allen
A. B. Savage
J. C. Nash
M. R. Stenzel - Dallas

SUBJECT: Employee Notification of p-Benzoquinone Monitoring Results

Attached is an interpretive statement for an industrial hygiene monitoring survey for p-Benzoquinone in the Vinyl Acetate Unit. Please communicate this information through line supervision to affected employees. I am available to assist in the communication if needed. The statement will be posted on appropriate plant bulletin boards per plant policy.

C. W. Whaley
C. W. Whaley

CWW/b1

005071

DO IT RIGHT THE FIRST TIME

Interpretive Statement

p-Benzoquinone Monitoring Survey - Bay City Plant

An industrial hygiene monitoring survey for p-Benzoquinone (PBQ) has been completed in the Vinyl Acetate Unit. The data (Table I) shows that potential employee exposure can exceed the American Conference of Governmental Industrial Hygienist (ACGIH) Short Term Exposure Limit (STEL) during PBQ mixing operations.

PBQ vapor is irritating to the eyes. Single or repeated exposure to markedly irritating concentrations can cause corneal edema, ulceration, and scarring. Chronic exposure may result in loss of visual acuity. Contact with the solid or vapor may cause severe damage and discoloration to the skin as well as irritation to the upper respiratory tract.

The Occupational Safety and Health Administration (OSHA) has established an 8 hour time-weighted-average (TWA) Permissible Exposure Limit (PEL) of 0.1 part per million (PPM) for PBQ. The ACGIH recommends an 8 hour TWA Threshold Limit Value (TLV) of 0.1 PPM and a STEL of 0.3 PPM. The TLV and PEL are the concentrations to which nearly all workers can be exposed for an 8 hours per day, 40 hours per week for a working life-time without adverse health effects. The STEL is the concentration to which workers can be exposed continuously for a short period of time without suffering from irritation, chronic or irreversible tissue damage, or narcosis of sufficient degree to increase the likelihood of accidental injury, impair self rescue or materially reduce work efficiency, provided the daily TLV-TWA is not exceeded.

Monitoring data shows that exposure to PBQ during mixing operations could pose a health hazard to employees. Though average short term exposure is only 0.09 PPM compared to the ACGIH STEL of 0.3 PPM, individual sample concentrations exceed the STEL a significant amount of time as indicated by the data range (<.01 to .95 PPM) and 90% tolerance level (1.93 PPM).

PBQ mixing is done infrequently and the operation is of short duration. Employees are required to wear fullface air supplied respirators and gloves to prevent exposure when mixing PBQ. The survey reinforces the importance of wearing proper protective equipment when handling this material.

005072

TABLE 1
para-Benzquinone Monitoring Data
Short Term Exposure Limit (STEL)

<u>Zone Number</u>	<u>Description</u>	<u>Job Classification</u>	<u>Number of Samples</u>	<u>Geometric Mean-PPM</u>	<u>Geometric Standard Deviation</u>	<u>Range - PPM</u>	<u>90% Tolerance Level</u>
036	Acetaldehyde/ Vinyl Acetate Unit and Control Room	B-Operator	13	.09	4.9	<0.01 to .95	1.93

005073

Interoffice Memorandum



TO (Name and Location) W. G. Cornman	DATE August 27, 1985
FROM (Name and Location) C. W. Whaley	REFERENCE NO. CWW-609-85

cc: E. L. Tejml
J. N. Gann
C. R. Pennington
E. D. Luke
K. L. Rozanc
H. P. Heathman
R. E. Allen
B. A. Logue
A. B. Savage
M. R. Stenzel - Dallas

SUBJECT: Employee Notification of Calcium Hydroxide Monitoring Results

Attached is an interpretive statement for an industrial hygiene monitoring survey for calcium hydroxide (lime) in the Utilities Unit-Water Treatment Area. Please communicate this information through line supervision to affected employees. I am available to assist in the communication if needed. The statement will be posted on appropriate plant bulletin boards per plant policy.

A handwritten signature in cursive script that reads 'Carol Whaley'.
C. W. Whaley

CWW/b1

005074

DO IT RIGHT THE FIRST TIME

Interpretive Statement

Calcium Hydroxide (Lime) Monitoring Survey - Bay City Plant

An industrial hygiene monitoring survey for calcium hydroxide has been completed in the Utilities Unit-Water Treatment Area. The monitoring data (Table I) shows that personal exposure is well below the recommended American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Value (TLV). Results indicate that calcium hydroxide exposure does not pose a health risk to employees.

Calcium hydroxide is an alkaline material and therefore is irritating to the skin and respiratory system. It can cause dermatitis, irritation of the eyes, and mucous membranes.

The Occupational Safety and Health Administration (OSHA) has not established a Permissible Exposure Level (PEL) for calcium hydroxide. The ACGIH has assigned an 8 hour time-weighted-average (TWA) TLV of 5 milligrams (Mg) per cubic meter (M³) of air. The level was set to prevent irritation. The TLV is the concentration to which nearly all workers can be exposed for 8 hours per day, 40 hours per week for a working lifetime without adverse health effect. No short term exposure level has been established.

Calcium hydroxide mixing is intermittent and of short duration. Employee exposure over an entire work day is well below the ACGIH TLV of 5 Mg/M³ and therefore the mixing operation should pose no health hazard to employees. Short term personnel and area samples taken during the mixing operation show levels which may be irritating to some employees. Should irritation occur, the employee should wear a disposable dust mask, goggles, and gloves during the mixing operation.

005075

TABLE I

Calcium Hydroxide (Lime) Monitoring Data

<u>Zone Number</u>	<u>Description</u>	<u>Job Classification</u>	<u>Number of Samples</u>	<u>Geometric Mean-Mg/M3</u>	<u>Geometric Standard Deviation</u>	<u>Range-Mg/M3</u>	<u>Comments</u>
007	Utilities-Water Treatment and Control Room	A Operator	5	0.4	3.1	0.1 to 1.0	8 Hr. Time Weighted Average (TWA) Samples
007	Utilities-Water Treatment and Control Room	A Operator	8	3.5	4.0	0.4 to 18.9	Short Term Samples
007	Utilities-Water Treatment and Control Room	Area	2	0.1	1.6	.07 to .14	8 Hr Time Weighted Average (TWA) Samples
007	Utilities-Water Treatment and Control Room	Area	6	10.2	2.4	4.9 to 29.3	Short Term Samples

005076

SHE
Department

CELANESE CHEMICAL CO., INC.
Employee Communique
Industrial Hygiene (Interpretive Statement)

Policy No. 5
07/25/85
Page 1 of 1

PURPOSE

The purpose of this Guideline/Policy is to provide for a uniform employee communique for the reporting of industrial hygiene monitoring data (interpretive statement).

SCOPE

This Guideline/Policy outlines the basic components necessary for a good employee communique relating to monitoring data and for its distribution.

PROCEDURE

It will be the responsibility of the facility Industrial Hygienist function to summarize, evaluate, interpret and disseminate all industrial hygiene monitoring survey results. A written employee communique should be prepared by the facility IH function and if practical verbally communicated to the employee. A bulletin board posting is also necessary. The employee communique should include the basic components as listed below.

- Listing and explanation of appropriate exposure limits (PEL, TWA, etc)
- Summary of effects of exposure
- Data, including time of survey, place, etc.
- Interpretation of data
- Plan of action, if necessary

Reference Hazard Comm. Binder (attach MSDS)

005077

Interoffice Memorandum.

TO (Name and Location) L. E. Hackfeld	DATE January 14, 1980
FROM (Name and Location) C. W. Whaley	REFERENCE NO. CWW-129-80

SUBJECT: Cyclohexane Monitoring Data - Interpretative Statement

Attached is an interpretative statement on a cyclohexane monitoring survey conducted at the BCP. Survey results are to be communicated to BCP employees through supervision and posting. Individual results were communicated to employees through supervision as they were completed. Please post the statement and attachments on appropriate bulletin boards.

C. W. Whaley
C. W. Whaley

CWW/cmr

Attachments

cc: E. L. Tejml
D. H. Miller
K. A. Dunn
W. F. Soward
H. P. Heathman
L. E. Moore
D. F. Ripple
C. J. Schaefer
A. Kemp
N. V. Smith
W. J. Seeliger
D. G. Bremer
C. D. Barrett, Dallas
L. R. Birkner, NYO

W. T. McNair, CCCTC
Central Files, CCCTC (2)

File: 71-2

UNITERMS: Cyclohexane
Propanol
Warehouse/Traffic
CHOX
OSHA

005078

Cyclohexane Monitoring Survey - Interpretative Statement

An Industrial Hygiene Monitoring survey for cyclohexane has been completed at the Bay City Plant. Several 8-hour time-weighted-average (TWA) samples (see Attachment #1) were obtained on Operations personnel in the Warehouse/Traffic area and the CHOX unit. In addition short term exposure samples were obtained on Warehouse/Traffic Operators during cyclohexane barge unloading and tank strapping jobs. Two area samples were collected near T-110 OH oil sample point in the Propanol unit (see Attachment #2).

The Occupational Safety and Health Administration (OSHA) has set the permissible exposure level to cyclohexane at 1,050 mg/M³ based on an 8-hour TWA. The American Conference of Governmental Industrial Hygienist (ACGIH) likewise recommends an 8-hour TWA limit of 1,050 mg/M³ but further recommends a short term exposure limit (STEL) of 1,300 mg/M³.

Both 8-hour TWA and STEL monitoring data for cyclohexane is well below the Federal Safety Standard of 1,050 mg/M³. Celanese believes that the results of this survey do not indicate a health hazard.

005079

Attachment #1

Cyclohexane Monitoring Data - Personnel Samples

<u>Unit or Area</u>	<u>Operator Classification</u>	<u>Monitoring Results - mg/M³</u>	<u>Comments</u>
CHOX	A-Outside	<1.0	
	B	2.0	
	B	<1.0	
	B	1.0	
	B	2.0	
	Average ($\bar{X}$)	<1.4	
Warehouse/ Traffic	B	147	Strapped cyclohexane storage tank V-646 (5 min sample)
	A	60	Gauged cyclohexane barge (13 min sample)
	A	256	Strapped cyclohexane storage tank V-646 (4 min sample)
	A	20	Cyclohexane barge and strapped storage tank V-646 (438 minute sample)
	A	10	Cyclohexane barge (159 min sample)
	B	3	Cyclohexane barge (452 min sample)

005080

Attachment #2

Cyclohexane Monitoring Data - Area Samples

<u>Area Sample Location</u>	<u>Monitoring Results - mg/M³</u>	<u>Comment</u>
T-110 OH, Oil Sample Point	<.1	380 min sample
T-110 OH, Oil Sample Point	<.1	369 min sample
Average ($\bar{X}$)	<.1	

005081

CWW-129-80

Interoffice Memorandum

TO (Name and Location)	DATE
Mr. L. E. Hackfeld	December 27, 1979
FROM (Name and Location)	REFERENCE NO.
C. W. Whaley	CWW-123-79

SUBJECT: Nylon Salt Monitoring - Interpretative Statement

Attached is an interpretative statement for Nylon Salt monitoring performed on Arthur Brothers, Inc. employees during the past year. This information will be communicated to employees through supervision and posting. Individual sample results were communicated through supervision as they were completed. Please post the statement and attachments on appropriate bulletin boards.


C. W. Whaley

CWW:gmt

Attachments

cc: E. L. Tejml
K. A. Dunn
W. F. Soward
D. H. Miller
C. J. Schaefer
H. P. Heathman
R. J. Kane
D. G. Bremer
T. Conway - Arthur Brothers
C. D. Barrett - Dallas
L. R. Birkner - NYO
W. T. McNair - CCCTC
Central Files, (2), CCCTC

Unitersms

Nylon Salt
OSHA

005082

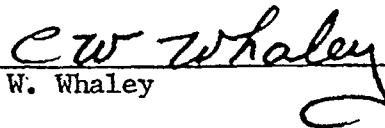
Nylon Salt Monitoring - Interpretative Statement

During the past year, numerous 8 hour time-weighted-average (TWA) area and personnel nylon salt dust samples were obtained on Arthur Brothers Inc. (ABI) personnel who work in the Nylon Salt Unit. Sampling was centered around the nylon salt bagging and sealedbin unloading jobs. The data (see attachments I and II) shows that exposure to nylon salt dust can exceed the total nuisance dust standard.

There is no established permissible exposure limit (PEL) for nylon salt dust. The OSHA nuisance or inert dust standard of 15 mg/m^3 (total dust) or 5 mg/m^3 (respirable dust) was used to determine compliance. Respirable dust is the fraction that reaches the terminal airways of the lungs and is therefore of greatest hygienic significance.

There was one known case of overexposure to total dust during the year at the nylon salt bagging machine. The overexposure occurred because the ABI Operator was not wearing a dust mask, which is required during bagging and sealedbin unloading. Dust masks are required because the existing dust collection systems are not totally effective in removing dust. Since the overexposure more emphasis has been placed on the importance of wearing dust masks and correcting violations.

Celanese believes that the results do not indicate a health hazard. Average potential respirable dust exposure of 0.7 mg/m^3 is well below the Federal Standard of 5.0 mg/m^3 . In addition dust masks and protective clothing are required to minimize employee exposure. We are attempting however, to reduce total dust exposure through engineering controls. Process and Engineering are currently reviewing possible solutions to the dusting problem at the bagging machine.


C. W. Whaley

005083

Attachment I

Nylon Salt Monitoring - Personnel Samples

Date	Job Description	Actual Exposure-mg/m ³		Potential Exposure-mg/m ³	
		<u>Total Dust</u>	<u>Respirable Dust</u>	<u>Total Dust</u>	<u>Respirable Dust</u>
11/3/78	Nylon Salt Bagger		0.2		
11/6/78	Nylon Salt Bagger		0.8		
11/10/78	Nylon Salt Bagger		0.2		
6/12/79	Sealedbin Unloading			40.0	
8/20/79	Nylon Salt Bagger	23.9			
8/22/79	Nylon Salt Bagger		0.1		
8/24/79	Nylon Salt Bagger		3.2		
8/28/79	Nylon Salt Bagger		2.3		
8/29/79	Nylon Salt Bagger				0.3
10/1/79	Nylon Salt Bagger			2.3	
10/3/79	Nylon Salt Bagger			2.6	
10/8/79	Nylon Salt Bagger				0.1
10/11/79	Nylon Salt Bagger			1.5	
10/15/79	Nylon Salt Bagger				0.8
11/1/79	Nylon Salt Bagger			9.7	
11/2/79	Nylon Salt Bagger				0.5
11/6/79	Nylon Salt Bagger				0.5
11/13/79	Nylon Salt Bagger				<0.1
11/16/79	Nylon Salt Bagger			4.5	
12/7/79	Nylon Salt Bagger				<0.1
12/13/79	Nylon Salt Bagger			35.2	
Average (X)		23.9	1.1	13.7	0.3
Range		-----	0.1 to 3.2	1.5 to 40.0	<0.1 to 0.8

005084

Attachment II

Nylon Salt Monitoring - Area Samples

<u>Date</u>	<u>Area Sample Location</u>	<u>Total Dust - mg/m³</u>
8/29/79	Weigh Scales @ N.S. Bagging	14.3
10/11/79	Weigh Scales @ N.S. Bagging	5.5
11/2/79	Weigh Scales @ N.S. Bagging	45.2
11/5/79	Weigh Scales @ N.S. Bagging	4.4
11/15/79	Weigh Scales @ N.S. Bagging	6.8
12/6/79	Weigh Scales @ N.S. Bagging	2.3
12/10/79	Weigh Scales @ N.S. Bagging	0.7
Average (X)		11.3
Range		0.7 to 45.2

005085

Interoffice Memorandum

TO (Name and Location) As Listed*	DATE September 17, 1979
FROM (Name and Location) C. W. Whaley	REFERENCE NO. CWW-103-79

*W. G. Cornman
C. J. Schaefer
D. G. Bremer

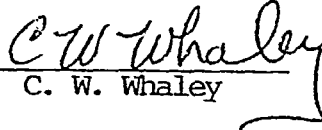
SUBJECT: Hydrogen Sulfide Monitoring Survey - Interpretative Statement

An industrial hygiene monitoring survey for hydrogen sulfide exposure has been conducted in the Partial Oxidation (POX) Unit. Four 8-hour time-weighted-average personal samples were obtained on the outside B-operator. Results follow:

1. <0.1 ppm (actually none detected)
2. <0.1 ppm " " "
3. <0.1 ppm " " "
4. <0.1 ppm " " "

The Occupational Safety and Health Administration (OSHA) has established a ceiling concentration of 20 ppm for personal exposure to hydrogen sulfide and a peak exposure of 50 ppm for ten minutes. This means an employee's exposure shall not exceed at anytime during an 8-hour shift the 20 ppm concentration limit except for a ten-minute period where a peak concentration of 50 ppm is allowable. The ten-minute peak exposure is allowed once per 8-hour shift provided no other measurable exposure occurs. The American Conference of Governmental Industrial Hygienist (ACGIH) has recommended an 8-hour TWA threshold limit value (TLV) of 10 ppm for hydrogen sulfide and short-term exposure limit (15 minutes) of 15 ppm.

Celanese believes that the monitoring results do not indicate a health hazard from hydrogen sulfide exposure. All monitoring results are well below the 8-hour TWA TLV recommended by the ACGIH. Barring a significant process leak, employees should not be exposed to hydrogen sulfide concentrations approaching the ceiling limit of 20 ppm established by OSHA.


C. W. Whaley

CWW/cmr

cc: E. L. Tejml
D. H. Miller
W. F. Soward
K. A. Dunn
L. E. Moore
C. D. Barrett, Dallas

005086

Interoffice Memorandum

TO (Name and Location)	DATE
AS LISTED*	6/4/79
FROM (Name and Location)	REFERENCE NO.
M. R. STENZEL	MRS-85-79

CW WHALEY-BAY CITY
 G ILLE-BISHOP
 RM GUEDIN-CCCTC
 KF BAILEY - CLEAR LAKE
 JD WILSON-PAMPA

SUBJECT: INTERPRETATIVE STATEMENTS

At the recent company Industrial Hygiene meeting in Chicago, it was requested that the company Department of Industrial Hygiene and Toxicology review our position on interpretative statements. Attached is a copy of the guidelines originally issued in April of 1978. Our position has not changed since this letter. The plant Industrial Hygienist (I.H.) is responsible for writing the interpretative statement. Normally, the only way our group will get involved is if the Plant I.H. requests our help or if the study has to be coordinated at the company level.

It is apparent from the Chicago meeting that although each plant has a different procedure for notifying employees of monitoring results, all the procedures are consistent with the attached guidelines.

Mark Stenzel
 MARK STENZEL
 COMPANY INDUSTRIAL HYGIENIST

MS/dr
 Attach.

CC: BAY CITY
 DG BREMER
 LE HACKFELD
 DH MILLER
 CJ SCHAEFER

BISHOP
 C. GARY
 AR HANCOCK
 CW HARRISON
 RW JAMES
 MP NEFF
 PM SYKES

CCCTC
 GH FISHER
 RA GANGEMI
 JP HAWTHORNE
 EC DAMEV

CLEAR LAKE
 JJ BRUNER
 CR DEROSE
 JW DUNN
 JR LAIRD
 JL WARD

DALLAS
 CD BARRETT
 RE LARSEN
 RW SWANBECK
 GA VOS

PAMPA
 CE LOEFFLER
 KL LOMBARDOZZI
 AA MILLER
 HA THOMAS
 WH THIE

TERMINALS
 JE SANBORN-BAYPORT
 JT SIXEAS-NEWARK

CELCO (NARROWS,VA)
 R TANKERSLEY

005087

Office Memorandum

(Name and Location)	Messrs. J. A. Bousquet and B. R. Miller - NYO	DATE	4/4/78
M (Name and Location)	C. D. Barrett -Corpus Christi	REFERENCE NO.	CDB-53-78

Subject: Informing Management and Employees of Monitoring Results

I have attached a set of guidelines for informing management and employees of industrial hygiene monitoring results. These guidelines are consistent with Company policy and are actually just a restatement and elaboration of "Industrial Hygiene Administrative Procedures" that have already been distributed to the plants. In the guideline, we have attempted to answer several key questions relating to employee notification.

Please review and notify James concerning your comments.



C. D. Barrett, Industrial Hygienist

/mg

Attachment

005088

teroffice Memorandum

(Name and Location)	DATE
*As Listed	
M (Name and Location)	REFERENCE NO.
C. D. Barrett and J. M. Ramey	

<u>*Bay City</u>	<u>Bishop</u>	<u>Clear Lake</u>	<u>Pampa</u>
D. G. Bremer	M. P. Neff	J. R. Laird	H. A. Thomas
C. W. Whaley	J. M. Jackson	R. E. Green	M. R. Stenzel
L. E. Hackfeld	R. W. Swanbeck	J. Bruner	R. W. James
D. H. Miller	C. W. Harrison	D. L. Collison	P. A. Turek
C. J. Schaefer	W. H. Meyer	J. W. Dunn	W. H. Tuke
	G. D. Boyd		

<u>CCCTC</u>	<u>Newark</u>	<u>Bayport</u>
J. P. Hawthorne	J. Sixeas	J. E. Sanborn
E. S. Ramey		
A. A. Miller		
R. F. Stubbeman		
R. M. Guedin		

Subject: Informing Employees of Monitoring Results

At the recent Industrial Hygiene Meeting in Houston, there was considerable discussion concerning the best methods for informing employees of monitoring results. Since the meeting, we have discussed this subject on several occasions.

As I'm sure we all agree, both management and hourly employees need to be kept well informed of air monitoring results. They need to have the answers to such questions as: Do chemical exposures pose acute or immediate hazards? Do they pose long-term or chronic hazards? What corrective action is required? Are we in compliance with OSHA? All of these questions could be "boiled down" to one overriding concern - Is the job safe, and if not, what should be done to make it safe? Sounds like a simple question - until you try to answer it!

How do we keep management and hourly employees meaningfully informed of monitoring results? Well, obviously, there is no one ideal approach. However, the following guideline is consistent with the new organization and conforms to "good industrial hygiene" practice.

Guideline for Management/Employee Notification of Monitoring Results

It will be the responsibility of the plant Industrial Hygienist to disseminate completed survey results (with conclusions, interpretative statements and corrective action requirements) to the Safety Supervisor and other management personnel (including the Division Industrial Hygienist). Individual sampling results will generally not be reported to Management by the plant Industrial Hygienist until the general sampling study has been completed.

005089

Communications of the reported test results to the employee(s) in the work area will be the responsibility of the Safety Supervisor. Communication of test results should be done as soon as possible but no later than five days after the survey results have been reported by the plant Industrial Hygienist. In cases of serious exposures, the employee should be informed of test results immediately and of the corrective action being taken. Information should be communicated to the employee as follows:

Copies of all completed Industrial Hygiene Monitoring Forms (or equivalent such as a summary of sampling results - see Attachment A) will be posted in the operating area on the bulletin board for ten days to facilitate employee review. The posted monitoring forms should always be accompanied by a written interpretative statement of the sampling results (i.e., tell the employees what the numbers mean). This interpretative statement will be provided by the plant Industrial Hygienist. Oral review of the meaning and significance of personnel monitoring results will be the responsibility of the Safety Supervisor or his designee. Oral review of test results should always precede the posting of test results. Extreme care must be exercised to prevent false "positive" or false "negative" results from unduly alarming employees due to unrepresentative results of transient conditions. Review should address validity of the analysis; whether or not the sample was truly representative of the work place environment; the reason for the exposure--whether or not it is a simple excursion due to equipment failure or is an inherent process design problem; and, most important, to assess the seriousness of the problem and make sure proper corrective action is taken. In reviewing sampling results, the major emphasis should be in interpreting the meaning of the sampling results and not on the "raw" sampling data. Furthermore, employees should not be informed of individual results until the overall sampling study has been completed. The Safety Supervisor may request the plant Industrial Hygienist to assist in communicating information to employees.

Questions and Answers on Guideline

1. When should individual sampling results be reported to Management and employees BEFORE the survey is completed?

Preliminary results should be reported:

- a) when required by law;
- b) when preliminary results indicate immediate hazard to health (such as high carbon monoxide, nitrogen dioxide, or acid vapors);

- c) when special circumstances arise (i.e., such as when results are needed immediately to make a decision on tank entry or when an employee complaint has triggered the monitoring and the employee is over alarmed, or when non-routine operations are monitored, etc.

2. Besides the circumstances mentioned above, what is the big danger in reporting preliminary results?

In most of our sampling, we're concerned with low levels of chemical exposure that might cause chronic effects after 30 years of exposure. Therefore, a single sample result is almost meaningless. Due to the variability in exposure conditions in our plant, many personal samples are required to accurately assess employee exposure. Attempting to draw conclusions based on one test result is analogous to the blind man trying to describe an elephant after only touching the trunk.

What may initially appear to be a serious chronic exposure may, in fact, be due to a non-representative sample. In such cases, premature conclusions and reporting would serve only to confuse the employee, over alarm management, and possibly result in needless engineering expenditures.

3. Give an example of an "interpretative statement" of sampling results.

Assume that a survey was completed of benzene exposure among chemical operators. Twenty 8-hour time-weighted-average personal samples were obtained as follows:

1. 0.8 ppm	6. 1.1	11. 0.2	16. 3.1
2. 2.1	7. 2.6	12. 6.8	17. 2.0
3. 0.1	8. 2.7	13. 1.1	18. 2.1
4. 0.15	9. 3.4	14. 0.9	19. 0.7
5. 3.60	10. 0.5	15. 0.1	20. 0.1

Mean = 1.7 ppm

"The results do not indicate a health hazard." In other words, exposure to benzene at an average level of 1.7 ppm should not affect your health in any way. The average exposure (i.e., 1.7 ppm) is well below the existing Federal Safety Standard for benzene of 10.0 ppm. As you're all aware, overexposure to benzene (probably well above 25 ppm as a daily average) for a period of years may result in a cancer hazard. We are attempting to reduce our benzene exposures to below 1 ppm in order to incorporate a greater safety margin. "Sample catching" procedures are being modified to further reduce your exposure.

005091

(Note: The above statement will have to be modified when the OSHA Benzene Standard is released; furthermore, Mr. G. Rodenhausen has been asked to review.)

4. Does the interpretative statement have to be written? Can it be communicated orally?

Unless the Safety Supervisor appoints the Plant Industrial Hygienist to personally communicate the results to the employees, it is essential for the statement to be written (by the Plant Industrial Hygienist) and sent to the Safety Supervisor.

~~Although sometimes it will be necessary for the Plant Industrial Hygienist to assist in communicating results directly to employees, we strongly agree that in many cases the best approach for informing the employees is through line management.~~

5. Is it always necessary to "post" the samples results and interpretative statement in the work area?

Although we prefer that results be posted, the requirement can be waived if you can assure that the information is communicated to all employees.

6. Is it necessary to have the employee sign a statement indicating that he has been informed of sampling results?

Although we may eventually be required to do this, we did not feel that a "sign off" is required at this time.

7. Who is responsible for writing the interpretative statement? What wording should be used?

The Plant Industrial Hygienist is always responsible for providing the interpretative statement. When necessary, we will assist the Plant Hygienist in writing the appropriate statement.

8. What if time does not allow us to always provide an interpretative statement and to promptly notify employees of sampling results?

In such a case, we have only two options - either place a higher priority on the notification procedure or reduce the number of samples being taken. The American Conference of Governmental Industrial Hygienists and the American Industrial Hygiene Association have traditionally held the opinion that employers would be well advised to terminate monitoring programs unless results can be interpreted by trained individuals and then promptly communicated to employees.

CDB-
JMR-

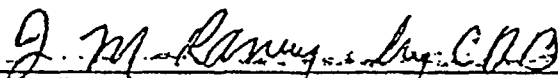
-4-

9. Many times our monitoring results indicate extremely low levels of chemical exposures. Should these "negative" results be communicated to management and employees?

Certainly! Notification (with interpretative statement) of negative results should be given the same priority as positive results.



C. D. Barrett, Industrial Hygienist



J. M. Ramey, Manager, Industrial Hygiene and Toxicology

/mg

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CONTAMINANT MONITORING DATA DISTRIBUTION FORM

Contaminant: Benzene OSHA Permissible Exposure Level: 10 ppm Date: 3/10/78
 8-Hour TWA 25
 Ceiling 50
 Peak

Sample No.	Date the Sample Was Collected	Type Sample Area or Personal	Name of Employee or Position of the Sampler	Area Monitored	Concentration of Contaminant
165	2/24/78	P	Mark Stenzel	Laboratory	0.09 ppm
166	"	A	Mounted on the face of the air-conditioner in the control room exit port.	IV	0.82 ppm
167	"	A	Mounted near the air-conditioner intake at the SE corner of the roof.	IV	0.46 ppm
168	"	A	Mounted at the break in the duct system on top of Area Lab.	IV	0.69 ppm
169	"	A	Mounted on the control room log desk.	IV	0.83 ppm
170	"	A	Mounted at the exhaust from the electrical room.	IV	0.56 ppm
171	"	A	Same position as Sample 166.	IV	0.29 ppm
172	"	A	Same position as Sample 167.	IV	0.09 ppm

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