November 20, 1975

C. Cooper
J. L. Nelson

Attached is a copy of the report of the industrial hygiene survey made at the Henry plant in July, 1975.

Note that Mr. Shepler has made a number of recommendations. I would appreciate your advising me as to their status within 30 days.

Please contact me if you have any questions concerning this report.

E.B. Katzenmeyer, Jr.
Manager, Industrial Hygiene

v

cc: G. Smith, Henry
G. Pow
H. Waltemate
W.C. Holbrook
R.W. Strassburg
M.N.Johnson/A.V.Gold

2210800001

NGC 01199

C. Cooper	Henry Plant	
Thomas W. Shepler	D/0020, 5-H, Akron	11-20-75

INDUSTRIAL HYGIENE SURVEY - HENRY CHEMICAL PLANT

On July 29, 30 and 31, 1975, an industrial hygiene survey was performed at the Henry Chemical Plant.

The Henry plant exhibits an aggressive attitude,as demonstrated by the Henry employees, toward diagnosing and resolving workplace health problems. Current reports emanating from the plant show intense ventilation studies in the Polymerization and Polymer Chemicals buildings. These reports are of excellent quality and provide a good basis, in conjunction with personal exposure, for the determination of the magnitude of the problems and what modifications or additions are necessary.

The plant's major problems, aside from the ventilation of the Polymerization building, are moderately high concentrations of benzene vapors on the third floor of the Polymer Chemicals building (X-70 process), lack of local exhaust ventilation for the welding operators in the old boiler house, and the need for an eyewash fountain and shower at the cooling tower.

These and other items are discussed in Section I-Recommendations and Discussion and Section II-Tables.

I wish to convey my appreciation to you and your staff for your assistance and cooperation in this survey.

Thomas W. Shepler

Thomas W. Shepler
Industrial Hygienist

v

SECTION I.

RECOMMENDATIONS

1. Make certain that your written respiratory protection program is in total compliance with OSHA 29 CFR 1910.134.

2. Make certain that you continue to perform complete blood counts on those employees routinely exposed to benzene. The blood tests should be run on a quarterly basis.

3. Reduce the benzene concentration at the X-70 process, third floor of the Polymer Chemicals Building.

4. Make certain that the compressed air system used for breating air meets the requirements of OSHA 29 CFR 1910.134. Also, reference BFG Chemical Company Engineering Standard ST-404.6 "Breating Air Supply for Areas not Immediately Hazardous to Human Life".

5. Make certain that employees routinely assigned to jobs involving the handling of leaded chemicals continue to receive semi-annual lead blood and urine examinations.

6. Increase the hood performance at the pre-compounding station located on the second floor of Bldg. 741 - Compounding Building to approximately 175 fpm (feet per minute) face velocity.

7. Repair the non-operational ventilation system associated with the weigh hood located in the pigment room, third floor of the Polymerization Building.

8. Install an eyewash fountain and shower in the immediate vicinity of the acid handling area at the cooling tower.

9. Make certain that all workers handling asbestos materials (new and rip-out) receive annual chest x-rays and pulmonary function tests, and that all precautions as outlined in OSHA 29 CFR 1910.1001 are being followed.

10. Color code, or permanently label, all new or unused asbestos insulation; thereby properly identifying it as asbestos when it is removed from pipes and vessels.

11. Whenever possible, purchase only asbestos-free insulation.

12. Provide additional ventilation in the old boiler house to control the welding fumes and gasses generated there.

13. Purchase only those welding rods which do not contain fluoride compounds.

14. Replumb the transport lines from the VCM cylinder to the vinyl hood in the Lab Building such that the outlet is inside the hood and pointing vertically, or away from, the front of the hood. Presently all plumbing terminates outside the hood.

15. Require that cuber room doors in the Compounding Building be kept closed at all times when cuber is operating.

16. Maintain a six to ten foot clear distance around all external exhaust fans located in the Polymer Chemical Building. Presently these fans are being blocked by stored raw materials.

17. Replace the exterior wall panels in the Polymer Chemicals Building to increase the effectiveness of the present ventilation system.

18. On the purchase of all new cartridge respirators, be sure that they are NIOSH approved.

19. Develop a new bag disposal procedure to minimize dust exposures to employees at the hopper filling operation on the fourth floor of the Compounding Building.

20. Place all recovery operators who work on the first floor of the Polymerization Building on the hearing conservation program. This is to consist of issuing and enforcing the wearing of hearing protectors and preplacement, annual and termination audiometric examinations.

21. Improve the ventilation in the Polymerization Building such that dead air areas could not exist in high potential VCM leakage areas. Specific areas would include the metering lines on the third floor and the compressors on the first floor.

DISCUSSION

Due to the illness of the Safety Supervisor on the second and third days of my visit, I was unable to adequately review some of your safety/industrial hygiene programs. It was mentioned that the plant does have a written respirator program; however, it should be reviewed and made certain that it meets the requirements set forth in OSHA 29 CFR 1910.134.

Also of concern is whether employees exposed to benzene (X-70 process and Geltral process) are receiving complete blood counts quarterly. As Table III indicates, employees working with the X-70 process experience high benzene concentrations which approach or exceed the TLV. These high concentrations are attributed to process leaks and lack of ventilation. Two temporary solutions are possible until permanent controls are implemented; one is the use of appropriate respirators and the second is the use of floor fans to dissipate areas of high concentration. Your OVA should give an indication of the effectiveness of this system.

On the second floor of Bldg. 741-Compounding Bldg., a hood is used for precompounding a variety of pigments including lead. As Table IV and Table V document, the hood is not adequate. Face velocities should be 150-175 fpm to adequately control fugitive dust. It should also be ascertained as to whether the employee is receiving semi-annual blood lead tests.

The breating air systems used in the plant, especially so in the Polymerization Building, must meet OSHA 29 CFR 1910.134 requirements. BFG Chemical Company has recently prepared an engineering specification for breating air systems which fully meets the OSHA requirements.

An eyewash fountain and shower is needed at the cooling tower. Presently both chromic and sulfuric acids are being handled and stored there. Both acids are used in treating the water supply in an operation that involves only one employee. This employee is provided with a face shield, but does not have an eyewash fountain or shower within any acceptable distance.

Those employees working with asbestos, either installing, removing, or bagging, should be provided with adequate protective equipment and be fully advised of the safe handling procedures necessary with asbestos. OSHA 29 CFR 1910.1001 adequately describes what is needed for an effective asbestos program. Employees not previously exposed to asbestos should not be assigned to handle it except as a last resort.

All unused asbestos material should be color-coded or labeled as such for proper identification as to its hazard, if and when it is used, and removed at a later date.

During the survey, welding was observed in the old boiler house. Under the operating conditions prevailing at the time (open double door, one floor fan and ceiling fan operating), no problem exists as substantiated by Table V. In winter months, however, it is anticipated that the doors will be closed, the floor fan turned off or removed, and the ceiling fan possibly turned off. Under these circumstances the work area would be unsatisfactory. I recommend that a local exhaust system be installed. This system could be portable, or permanent, and would primarily consist of an air mover, transport duct and small hood attachment. The exhaust air of this system should be vented outside the building, regardless of whether it is filtered or not.

Because of BFG's philosophy of minimizing potential health problems when practicable, I recommend that only those welding rods and fluxes that are fluoride free be purchased. At present, the stock of rods containing fluoride may be used, but only under localized exhaust ventilation.

The vinyl hood located in the Lab Building presently has plumbing running from VCM cylinders over to, and terminating in front of the vinyl hood. This should be corrected such that the plumbing terminates inside the hood with the tubing opening pointing in a vertical plane, or toward the back of the hood. The reasoning behind this is apparent in that if the rubber tubing running from the plumbing into the hood is removed or comes loose and the cylinder is venting, then monomer could contaminate the laboratory, possibly with significant exposures.

As Tables I and II show, the recovery operators working on the first floor of the Polymerization Building are being over-exposed to noise. These employees should be [illegible]ed hearing protectors and required to wear them in high noise areas as well as receive pre-placement, annual, and termination audiometric examinations. Care should be taken that the employees are thoroughly indoctrinated as to hazards of high noise.

It was observed that many dead air areas exist in the Polymerization Building. Ideally, with a substance as toxic as vinyl chloride, a 50 ft. per minute air velocity should be maintained in all areas where VCM leaks are likely to occur. Further, this air movement should be of uniform flow and continuously exhausted from the workplace with fresh air being continuously brought into the work area. At present, air flow is minimal at best in the area of the metering lines on the third floor. On the first floor in the compressor area, the air movement is in the vertical direction at approximately 10 to 20 ft. per minute, and could account for, at least in part, the high VCM levels on the mezzanine floor.

Thomas W. Shepler/v.

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Industrial Hygienist

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v

NGC 01206

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Thomas W. Shepler Jr.

Thomas W. Shepler
Industrial Hygienist

v

SECTION II.

TABLE I.

NOISE MEASUREMENTS

HENRY PLANT

Location		dBA
Poly Building		
1st Floor Compressor Area		90-92
Rest of area		88-91
Third Floor	(emergency fans off)	84-88
Mezzanine		86-89
Dryer Building		
1st Floor - east of granulator room		88-90.5
- pumps east of granulator room(air leaks)		92-93
- bagger stations		85-86
Boiler House (steam leak at north door)		89-91
Compounding Building		
1st Floor @ Cuber Room (cuber room doors open)		96-99
in other areas		85-88
2nd Floor @ Henschel (intermittent)		90-95

OSHA limit for noise = 90 dBA for 8 hours.

TABLE II.

DOSIMETRY MEASUREMENTS

HENRY PLANT

Name	Sample Time (min.)	8-Hr. %	dBA
Henschel Operator, Bldg. 741	339	55	---
OBT^S Bagger, Bldg. 712	340	15	---
Boiler House Operator	334	77.6	88
Recovery Operator 1st Floor, Poly Bldg.	305	118	91

OSHA Limit for Noise = 100% or 90 dBA.

REDACTED

TABLE III.

ORGANIC VAPOR MEASUREMENTS

HENRY PLANT

Name	Location	Sample Time (min.)	Compounds	Concentrati (ppm)
CBTS Process	Polymer Chemical Bldg.	75	Cyclo Hexane Toluene	1.1 0.6
A-70 Process	" "	70	Isobutylene Benzene	0 13.7
OBTS Process	" "	81	Isopropyl Alcohol	0
Geltral Process	" "	87	Benzene	4.6
Geltral Process	" "	123	Benzene	2.5
A-70 Process	" "	127	Benzene Isobutylene	9.0 0

OSHA TLV for Benzene = 10 ppm
" " " Toluene = 100 ppm

REDACTED

TABLE IV.

VENTILATION MEASUREMENTS

HENRY PLANT

Location	FPM	
Maintenance Shop		
West Welding Station		
Flex Hose with Cone	300 @ 10-12"	
East Welding Station	250-300 @ 10-12"	(cooling fan disrupts effectivenes
Lab Building		
Raw Materials Lab		
North Hood	160-170	(door open 12". Hood does n operate efficiently when ho brings in supply air)
South Hood (vinyl hood)	150-200	(door open 12")
Polymer Chemical Lab		
North Hood	125-150	(door open 12")
Middle Hood	150-170	(door open 12". Works well with supply air and door do
South Hood	125-150	(door open 12")
Compounding Building		
2nd flr. compounding booth	50-100	(hood is not effective)
4th flr. hopper filling hoods	200-600	(at capture zone)
Polymerization Building		
1st flr. compressor area	$\ll 50$	(some vertical migration)
3rd flr.-between metering lines	$\ll 50$	
-by 26 poly	$\ll 50$	
-pigment room hood	Not operational	
Mezzanine, on east side	$\lll 50$	(extremely poor)
* Polymer Chemical Building		
1st flr.		
Stalite Operator	$\ll 50$	
MBTS Bagger	200-400	(cooling fans which may not be present during winter)
OBTS Bagger	60	(flows back toward bagger)
Bleach Pump Dike	$\ll 50$	(dead area)
Caustic Decanter	$\ll 50$	

TABLE IV. (Con't)

VENTILATION MEASUREMENTS

HENRY PLANT

Location	FPM	
Polymer Chamicals Bldg. (con't)		
3rd Flr.		
Northeast Corner	$\ll 50$	
Southeast Corner	$\ll 50$	(no air movement)
PNA Dump Chute Area	50-100	(air flow is back toward operatc
X-70 Area	$\ll 50$	(no air movement)
Lightning Mixer Area	$\ll 50$	(no air movement)

* On the 3rd floor of the Polymer Chemical Bldg., the only exhaust fans operating were two emergency fans. Also, exterior wall panels were removed in conjunction with the fans being blocked by raw material storage which results in loss of effectiveness of the fans.

TABLE V.

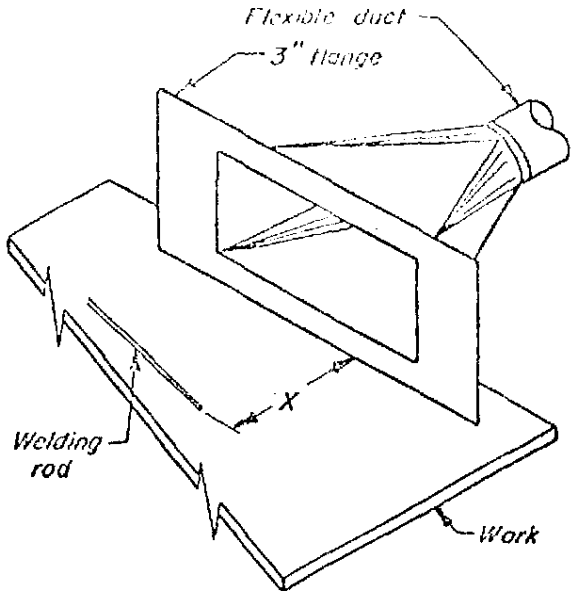
DUST MEASUREMENTS

HENRY PLANT

Name	Location	Sample Time (min.)	Concentration (mg/M^3)
	Dispersion Bagger Bldg. 732	282	1.3
	Precompounder Bldg. 741	336	3.0
	OBTS Flaker Bagger PC Bldg.	334	1.0
	PVC Bagger	300	1.2
	Welder - Old Boiler Bldg.	231	3.44
	Dumping Powders 4th flr. compounding Bldg. 712	151	4.1
	PPD Operator Bldg. 712	312	<0.2 - PNA
	PPD Operator Bldg. 712	269	<0.2 - PNA

OSHA TLV for nuisance dust = 15 mg/M^3.

REDACTED



PORTABLE EXHAUST

X, inches	Plain duct cfm	Flange or cone cfm
up to 6	335	250
6 - 9	755	560
9 -12	1335	1000

Face velocity = 1500 fpm
Duct velocity = 3000 fpm minimum
Entry loss = 0.25 duct VP
Also see "Granite Cutting" VS-909

GENERAL VENTILATION, where local exhaust cannot be used:

Rod, diam	cfm/welder
5/32	1000
3/16	1500
1/4	3500
3/8	4500

For toxic materials higher airflows are necessary and operator may require respiratory protection equipment.

OTHER TYPES OF HOODS
Bench: See VS-416
Booth: For design See VS-415, VS-604
Q=100 cfm/sq ft of face opening

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

WELDING BENCH

DATE 1-74 | VS-416.1

August 10, 1978

C. B. Cooper
A. W. Clements
G. F. Krcmar

INDUSTRIAL HYGIENE SURVEY - HENRY PLANT

In June, Mr. Thomas Bialke conducted an industrial hygiene survey at the Henry Chemical plant. A copy of Mr. Bialke's report is attached.

Please note that he has made a number of recommendations concerning asbestos insulation, respirator program, ventilation, etc.

I would appreciate being advised as to the status of these recommendations as they are implemented.

E. B. Katzenmeyer, Jr.
Manager, Industrial Hygiene

v

cc: H. Waltemate
E.W. Harrington
R.A. Kelley
H.W. Dietz
R.A. Guyton
R.W. Strassburg
A.W. Otto
J.D. Krumholz
N.L. Kuchenmeister
D.E. Giffen

25996001

NGC 01218

18

INTER-ORGANIZATION CORRESPONDENCE

TO	FIELD POINT OR DEPT. & BLDG. NO.	DATE YOUR LETTER
C. B. Cooper	Henry	
FROM	**FIELD POINT OR DEPT. & BLDG. NO.**	**DATE THIS LETTER**
T. S. Bialke	Akron - D/0020, 5-H	8-9-78

SUBJECT

INDUSTRIAL HYGIENE SURVEY - HENRY PLANT

On June 19-23, 1978 an industrial hygiene survey was conducted at the Henry Chemical plant.

The plant's program for controlling vinyl chloride and the medical surveillance program for all workers are functioning adequately.

Procedures for handling and disposing of asbestos insulation must be developed and implemented as quickly as possible. A plant-wide respirator program must also be written.

The plant management is to be complimented on the enthusiasm of its staff. I would like to thank the Henry plant management for the consideration given to me during my visit and I look forward to working with them in the future.

T. S. Bialke

T. S. Bialke
Industrial Hygienist

v

cc: A.W. Otto
J.D. Krumholz
N.L. Kuchenmeister
D.E. Giffin

25996002

BFG-4956-O 2/77 1111-0 USA

NGC 01219

RECOMMENDATIONS

1. Asbestos

Remove and properly dispose of all 2" I.D. preformed pipe insulation designated by sample #1 stored in carpenter shop as it contains asbestos.

Develop and implement asbestos insulation removal procedures requiring the use of approved respirators, wet methods, bag labeling and proper disposal (see Appendix I for example of asbestos insulation procedures and OSHA 1910.1001).

Restrict purchase of insulation to asbestos-free types.

2. Respirator Program

Develop and implement a written respirator program and provide for ongoing review of the program by placing one individual to be totally responsible for the program's maintenance and enforcement.

Provide for periodic review of the serviceability and cleanliness of those respirators assigned to individuals.

Provide maintenance personnel who carry respirators with them with storage bags that can be hung on maintenance carts.

3. Install hydrocarbon and CO removal devices in breathing air lines at reservoirs leading into PVC, PC and 3114 process buildings.

4. Implement a program for periodic cleaning and maintenance of all local exhaust ventilation systems in the compounding and polymer chemical buildings.

5. Maintain a stock of toxic dust respirators and require them to be worn when compounding toxic pigments i.e., Pb, Cd, Sb pigments. If the use frequency of such pigments is increased, the compound weigh booth ventilation system must be reevaluated and increased to provide at least 100 fpm across workers breathing zone.

6. Poly Building

Repair steam and compressed air leaks in poly building.

Conduct additional noise dosimeter monitoring of baggers and others.

RECOMMENDATIONS (con't)

7. Polymer Chemicals

Clean local exhaust ventilation systems.

Develop plans to upgrade existing and provide new local exhaust ventilation at dry compound addition points and bagging operations.

8. 3114 Process

Modify local exhaust ventilation hood over manhead to provide higher capture velocity across manhead opening.

Provide hoods and hangers at the end of flexible exhaust ducts provided for sampling point spot ventilation that will allow for easy access to sample sites.

9. Supply noise dosimeter data to the plant nurse so that comparisons with individual audiometric results can be made.

DISCUSSION AND FINDINGS

Five bulk samples of various types of insulation were collected and analyzed for asbestos (see Table I for results). Two samples were found to contain asbestos; sample #1, a preformed 2" type of pipe insulation discovered in the carpenter shop storage room and #5, a sample of insulation found in a 55 gallon drum outside the polymer chemicals building which had been removed as a result of repair work on the MBT crude reactor. The material found in the barrel was disposed of improperly and had not been wetted down upon removal.

An asbestos handling procedure similar to the one prepared by Avon Lake (Appendix I) must be developed and implemented by the Henry plant. The preformed insulation corresponding to sample #1 must be properly disposed of (see Appendix I or OSHA 1910.1001 for procedure). All pipe insulation, unless known otherwise, should be handled as if it were asbestos.

The Henry plant uses a number of respirators of different types. During my walk-through, I observed many practices such as improper storage of respirators, failure to clean respirators and non-approved airline respirators that were in violation of OSHA. The plant needs to develop a written respirator program with responsibility for the program assigned to one individual for the monitoring of its effectiveness. The program has to provide for the periodic review of the serviceability, cleanliness and maintenance of all respirator equipment by an individual or individuals trained in and impressed with the importance and necessity of such a program.

DISCUSSION/FINDINGS (con't)

Respirators assigned to maintenance personnel were found to be draped over the handle bars of their tool carts. Such practice is improper as far as OSHA is concerned and will eventually lessen the service life of a respirator. Small canvas bags are being used at other plants to store respirators assigned to maintenance personnel. Avon Lake General Chemical plant obtained canvas pouches that do the job from Salem County Rehabilitation, Mannington Road, Salem, New Jersey 08079. Cost is $7.50 per pouch and they are called "canvas respirator pouch with belt".

Currently CO and hydrocarbons are being removed from instrument air at the airline stations to provide approved breathing air. Such a dispersed filtration system is hard to maintain and is expensive when replacement of many filter cartridges is required. Centralizing the production of breathing air by filtering instrument air before it enters either the PVC, PC or 3114 process areas would reduce the frequency of replacing filters and reduce operating costs. The certainty of supplying adequately filtered breathing air to all airline stations within a building would be assured. Such plans are under consideration by the plant and are encouraged.

The local exhaust ventilation systems of both the PVC compounding building and Polymer Chemicals building were found to be in need of a clean-out. A branch of the local exhaust system over the bin in the compounding building was totally plugged. A requirement for routine cleaning of all ventilation systems was described to me. Such a procedure, to be effective, must be properly implemented and maintained to insure adequate ventilation.

The handling of toxic pigments (Pb, Cd, Sb) in the PVC compounding building is very infrequent. However, when such pigments are used, the employees must wear toxic dust respirators such as the 3M 9900. Respirators are required as the ventilation in the weigh booth and Henschel area is not adequate to control toxic dusts. The system is adequate, however, for nuisance dusts. If the use frequency of toxic pigments is increased to weekly, the ventilation system must be upgraded and monitoring for toxic pigments begun.

The Poly building has a potential for overexposing workers to high intensity noise. More dosimeter work is needed in this area to adequately characterize the exposure, especially for PVC baggers. Steps can be taken to reduce noise and save energy by initiating a program to plug steam leaks, compressed air leaks and sealing faulty switches and agitators, all of which are sources of high frequency noise in the area.

DISCUSSION/FINDINGS (con't)

The polymer chemical building has numerous sources of dust exposure to both raw materials and final product at the packaging sites. Dust monitoring has not shown any overexposure to nuisance dust. Most, if not all, compounds used or bagged in the PC building are characterized as such. Even though no overexposure exists, as defined by present standards, it behooves the Henry plant to proceed with plans to upgrade existing local exhaust systems and to install additional exhaust ventilation at other sources of dust exposure; the packaging operations for example.

Steps must be taken to close up existing sources/leaks of dust as much as possible.

As noted in the 3114 process start-up review, the local exhaust ventilation drops at the sampling points are in need of modification. Various suggestions have been made to provide adequate ventilation at the sample site to remove any vapors produced and yet allow for easy access to the sample site. Whatever design is decided upon will certainly provide for better conditions than now exist with the free hanging flexible ducts with no hoods or hangers. The exhaust hood over the manhead also is poorly designed. It needs to be lowered or modified to provide a higher capture velocity across the manhead. Here again, various design changes have been suggested. Any of these will do a better job. When a design is decided upon, its installation must proceed rapidly.

Noise dosimeter results are to be provided to the plant nurse so that she can compare them with an individual's audiometric examinations and properly counsel him/her on whether a hearing problem is a result of on or off the job noise exposure.

Air sampling for vinyl chloride, benzene and acrylonitrile was performed (Table II). All readings were within published or recommended standards. The plant's physical examination requirements were reviewed and found to be in order.

TSB

TABLE I.

INSULATION BULK SAMPLE RESULTS

Henry Plant

Sample No.		Collection Site	Constituent
1.	2" I.D. preformed pipe insulation	Carpenter Shop storage	Asbestos
2.	6" I.D. ditto	ditto	Fiberglas synthetic fiber
3.	6" x 1½" x 32" preformed pipe insulation	ditto	ditto
4.	Eagle-Picher Super 66	ditto	Rock wool
5.	MBT crude reactor insulation	Uncovered waste barrel outside PC bldg.	Asbestos

TABLE II.

AIR SAMPLING RESULTS

Henry Plant

Location	Type	Sample Time (min.)	Pollutant	ppm
PVC Milling	General area	284	VC	<0.1
PVC Milling	Over mill	260	VC	0.2
Polymer Chemicals	PC operator	245	Benzene	0.1
Polymer Chemicals	General area, 3rd flr. slurry tank	250	Benzene	0.1
3114 Building	General area 3rd floor 3114 dryer	239	Acrylonitrile	<0.1

APPENDIX I.

B. F. GOODRICH CHEMICAL COMPANY
Avon Lake General Chemical Plant

Department Managers
General Foremen

GENERAL NOTICE: EN-2
Issued: September 17, 1976
Page One

SUBJECT: AIRBORNE ASBESTOS

Purpose: The purpose of this procedure is to identify asbestos and the methods required to handle it safely by BFG and contract personnel.

Definition: "Asbestos: includes chrysolite, amosite, crocidolite, tremolite, anthrophyllite, and actinolite.

"Asbestos fibers" means asbestos fibers that are longer than 5 micrometers.

Limits: The eight (8) hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeters of ai

Types of Exposure: This procedure deals only with airborne asbestos fibers. Exposure would be through the respiratory system. Physical contact with the skin is not considered hazardous as long as the asbestos is removed and does not enter the respiratory system.

Methods of Measurement: All determinations of airborne concentration of asbestos fibers shall be made by the membrane filter method at 400 - 450 X (magnification) (4 millimeter objective) with phase contrast illumination.

Use of Asbestos Containing Material

Usage of asbestos containing material will be limited to the following:

a) Fire blankets
b) Packings and gaskets
c) Gloves

Pipe or equipment covering materials containing asbestos will not be allowed.

Disposal of Asbestos Containing Material

All asbestos containing materials where the asbestos can be exposed as free fibers must be placed in an impermeable container and buried in a land fill. The impermeable container must be tagged with a tag bearing the following information:

C A U T I O N

Contains asbestos fibers
Avoid creating dust
Breathing asbestos dust may cause serious bodily harm.

25996009

NGC 01226

SUBJECT: AIRBORNE ASBESTOS

Probable Contact Areas: Asbestos containing materials will possibly be encountered in the demolition, renovation or removal of pipe or equipment coverings.

The following precautions will be taken in the demolition, renovation or removal of asbestos containing material.

a) All material that is suspected of containing asbestos must be treated as asbestos.

b) Any material identified in (a) above must be adequately wetted before it is removed or handled. Where this is not practical due to damage of the equipment from the water it must be removed carefully, placed in an impermeable container and lowered to the ground.

c) All asbestos containing material must be handled in such a manner that dust emmissions are eliminated. It must not be thrown from one level to another.

d) Personal protective equipment must be worn by anyone handling asbestos containing materials or by those in the area where possible exposure may be made due to the handling of asbestos. It will consist of the following:

1) Respirator - dust mask - for normal exposure A0 R9100T or equal. This can be used if the expected exposure is not over 10 times the 8-hour time weighted average.

2) Fresh Air Respirator - with a full face piece shall be used if the concentration is expected to be from 10 times to 100 times the 8-hour time weighted avera

3) Type "C" Supplied - air respirator (Scott Air Pak) for concentration above 100 times the allowable 8 hour time weighted average.

4) Clothing - Working clothing will be provided by the employer. It will be handled as follows:

a) If a man has worked in an area where the level of asbestos air-borne contamination is above the acceptable 8 hour time weighted average his uniform must be placed in an impermeable container and tag attached.

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Department Managers
General Foremen

GENERAL NOTICE: EN-2
Issued: September 17, 1976

SUBJECT: AIRBORNE ASBESTOS

Probable Contact Areas - continued

b) All contaminated clothing must be tagged with a tag bearing the following information:

C A U T I O N

Contains asbestos fibers
Avoid creating dust
Breathing asbestos dust may cause serious bodily harm.

General — If questions arise concerning the above procedure, they should be directed to the Safety Department.

D.E. Fisk,
Plant Engineer

Written by: D.J. McDonald
Approved by Operation Council 9/16/76

DJM:wml

25996011

Inter-organization Correspondence

B.F.Goodrich

TO	FIELD POINT OR AKRON DEPARTMENT & BLDG. NO.	DATE YOUR LETTER
T. W. Shepler	D/0020, B/5-H, Akron	
FROM	**FIELD POINT OR AKRON DEPARTMENT & BLDG. NO.**	**DATE THIS LETTER**
C. B. Cooper	Henry Plant SEP 27 1976	9/23/76

SUBJECT

Reply to Henry Plant Industrial Hygiene Survey - Your Letter of 8/5/76

In your report of the Industrial Hygiene Survey conducted last summer, you listed four areas in need of immediate attention. All four of these have been corrected or are being aggressively pursued. These were of a general nature. The twenty specific items recommended are largely complete, with a few requiring design work or further study. Three of them appear undesirable or impractical to us:

Item 13. "Re-locate the third floor compacter in the Compound Building closer to the hoppers".

The present location appears to us to be the most practical considering the movement of materials to and from the hoppers. The compacter would definitely interfere in any other location on this floor.

Item 18. "Establish a larger selection of cartridge respiracors to accommodate employees with unique facial structures".

Ray Ehnle, our Safety Engineer. has looked into this and assures me that the flexible aluminum base of the half-masks can be shaped to fit any facial structure.

Item 20. "Re-plumb the transfer lines from the VCM cylinders to the vinyl hood in the Laboratory Building".

The air flow in the Laboratory is from the ends of the transfer lines to the hood. Many samples have been taken in this area and the amount of vinyl chloride escaping from these lines is very low so that the concentration never exceeds the allowable limit.

If you would like a detailed summary of all the work going on, I would suggest a telephone conversation or another visit to the plant. John McCool and Jim Klupar spent a couple of days earlier this week taking samples and looking at the current program to eliminate leaks of all vapors in the Polymer Chemicals Building and were complimentary about what has been accomplished. Most of their samples were of Benzene. Perhaps John McCool will give you a summary of his findings.

CBCooper

C. B. Cooper

CBC:vck

cc: A. W. Otto
D. W. Doty
D. E. Giffin
R. L. Ehnle
File

25995004

NGC 01229

August 6, 1976

J. L. Nelson
A. W. Clements
E. W. Harrington
C. Cooper

Attached please find Mr. Thomas Shepler's report concerning the industrial hygiene survey of the Henry plant.

I would appreciate being advised of the status of these recommendations. Please contact me if you have any questions regarding this report.

E.B. Katzenmeyer, Jr.
Manager, Industrial Hygiene

v

cc: G. Pow
H.Waltemate/B.Johnson
W.C.Holbrook/K.J.Kaminski
R.W. Strassburg
A.V.Gold/M.N.Johnson