

CINCINNATI 15, OHIO

TELEPHONE: 821-3000

January 16, 1963

Mr. John T. Cantlon
40 West Third Avenue
Columbus 1, Ohio

Dear John:

Attached is the report from Mr. Fosdick which is excellent, and I believe serves the purpose required. Considering he had only three days this was quite a bit of territory to cover.

I am enclosing the separate information about compensation claims on the West Coast relative to Asbestosis for your background information. I don't think this ought to be given to anyone since it may not be public information, but you could relate the story if you want without identifying the name or the company.

I thought you might like to make additional copies of Mr. Fosdick's report for the joint conference that would be held in Cincinnati. As you will note on page 9, it will take 40 engineering days alone to take care of priority one in 14 areas. There would be the additional costs for the laboratory chemical analyses of the dusts.. After we talk together about this I can contact Mr. Fosdick to get an estimate of costs.

Personal regards.

Sincerely yours,

Tom

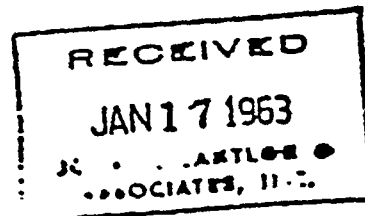
Thomas F. Mancuso, M.D.

TFM:bn

Enc.

P.S. I found the bill tucked in the main envelope, which I am now enclosing.

TFM



CANTON
2-16-79

Preliminary Industrial Hygiene Survey
at the
PHILIP CAREY MANUFACTURING COMPANY
(December 17, 18, 19, 1962)

Preliminary Industrial Hygiene Survey
at the
PHILIP CAREY MANUFACTURING COMPANY

A preliminary industrial hygiene engineering survey was conducted at the Philip Carey Manufacturing Company, Cincinnati, Ohio on December 17, 18, 19, 1962.

Observations were made of the dust-producing operations, namely those involving asbestos and free silica. In addition, various other potentially hazardous environmental conditions were noted.

The purpose of this preliminary evaluation was to establish:

1. a priority schedule - determine which dust producing operations appear to involve the greatest potential hazard. (First efforts would be directed at these operations for proper evaluation and control.)
2. a plan for environmental evaluation - indicate generally where and what types of air samples, ventilation measurements, etc., should be taken to properly define potentially hazardous areas.
3. preliminary time estimates - estimate the approximate time necessary to carry out the steps indicated in (2) above.

Environmental Evaluation -- Priority Schedule

Table I summarizes the areas recommended for environmental evaluation on a priority basis. As indicated, facilities in several of the areas were not observed in operation. Priority ratings for those areas have been based on the types of operations involved, the materials used, the existence or absence of exhaust control and room ventilation, and on the general appearance of the area's dust spillage, rafter dust accumulation, etc.

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DEFINITION

PRICATI

ENVIRONMENTAL RESULTS

1992

AIR SAMPLES	BULK SAMPLE, RAFTER DUST	VENTILATION MEASUREMENTS
12Z dust count (Asbestos)	Particle size measurement of dust.	Measure General ventilation.
12A dust count	. median size . standard deviation	(Roof fan inoperative).
12Z dust count	Particle size measurement.	Gen. venti- lation
12A dust count (Asbestos)	Particle size	Gen. venti- lation
12Z dust count	"	"
12Z " "	"	"
12Z (Asbestos)	"	"
12Z (Asbestos)	"	"
12Z (Asbestos)	"	"
12Z Asbestos	Particle size	General venti- lation measure- ments
12A + Silica	for Silica + Asbestos	
12Z - Silica	% free Silica in the dust	Gen. Vent. Meas.
12Z Asbestos + Silica	% free Silica in the dust	

SECRET

3rd Floor

- .. 3-bins receiving Asbestos from scrap
Grinder in basement
- .. charging port to 2nd floor beater
storage of Asbestos; handling

2nd FLOR

- beater - loading operation
- storage of Asbestos; handling

1st Floor

- .. rotary cutting operation
 - .. scrap cutter feed operation
 - .. emulsion dept., charge ports (3)
- Basement
- .. ream cutter (Saybolt)
 - .. scrap cutter (fed from 1st floor)
 - .. emulsion draw-off, mix

ПРИЛОЖЕНИЕ 2 - СВИДЕТЕЛЬСТВО

TOP. FLOOR

- .. addition of Asbestos thru charging
ports (ground scrub)

DISCUSSION

- Roofing machine - sand addition

PLI. 42 A.1112

- .. Scrap grinder - shingles and asphalt paper

6 Recommended priority for study
 * 10 - Breaching zone of operator
 * 10 - General filling mechanism

	AIR SAMPLES	BULK SAMPLE, RAFTER DUST	VENTILATION MEASUREMENTS	COMMENTS
BUILDING #4 - PAPER MILL BASEMENT • Asbestos addition to beaters • storage area charging to fiberizer charging onto conveyor 1st FLOOR • paper machine machine room dryer (area by 1st four rollers)	1	BZ + CA (Asbestos)	Gen. Vent. Measurements	
	2	DZ + CA (Asbestos)	Gen. Vent. Measurements	
	4	CA (Asb.)	Gen. Vent. Measurements	Asphalt fumes
	1	BZ + CA Asbestos + Silica	Meas. all local exhaust systems + gen. ventilation	Meas. Dow Benax 2A2 (S disodium 4-dodecylated oxydibenzene-sulfonate)
BUILDING #3 BASEMENT • dry cement mixer operation • plastic cement mixing operation 1st FLOOR • sample room; dust due to rotary mixer operation, small carbo saw, and band saw	2	DZ (Asbestos)	"	"
	4	CA samples (Asbestos)	Local exhaust on saws; Gen. room vent.	(Not observed in opera
	2	BZ (Silica) CA	(semi-outdoors) roof only.	Asphalt fumes
	-			Potential exposures to
BUILDING #39 - EMULSION DEPARTMENT • ribbon mixer operation • slurry mixers • asphalt mix	2	DZ (Asbestos) CA (Asbestos)	Effect of exhaust on asphalt mix; gen. vent.	Chlorothene vapors, esp fumes. Not observed in operation.

VENTILATION MEASUREMENTS

DATE: 11/27/77

LOCATION: 1st FLOOR SOUTH END

CONCENT

AIR SAMPLES: BULK SAMPLES, RAFTER DUST VENTILATION MEASUREMENTS

4	GA (Asbestos)	Particle size for Asbestos	Gen. Vent.	"
1	BZ + GA Asb.	"	Check local exhaust	Not operating during in- tion. Priority based on of operation, General ex- haust, exhaust control, and of persons involved, spe- cial dust accumulation, etc.
1	"	"	"	"
2	BZ+GA Silica	Particle size for Silica	"	"
1	BZ+GA Silica	% free Silica	"	"
1	GA Silica	"	"	"
1	BZ + GA for Asbestos + Silica	Particle size of Asb. and of Silica; + % free Silica in rafter dust	Check all local exhaust systems and general ventilation	"
1	GA (Asbestos + Silica)	"	"	Check paint spray area (apparent good control)
3	BZ + GA for Asbestos	Particle size of Asbestos	"	"
3	"	"	"	"
3	"	"	"	"
1	"	"	"	"
3	BZ + GA for Asbestos	Particle size of Asbestos	Gen vent. and all local ex- haust systems	"
3	"	"	"	"
2	"	"	"	Not observed in operation
2	"	"	"	"

1st FLOOR SOUTH END

storage area, handling

asbestos fiberizer operation

Canadian Asbestos "cluffer"

sand unloading operation

Silica grinder (ball mill)

Silica flour draw off (for Manco platform use)

MEZZANINE

charging weigh cars

charging stock mixers

hand charge mixer

hopper, elevator, collector area

MAIN FLOOR AREA

board cutting and trimming

scrap cutting for trimmer

edge trimming

scrap grinding room

2nd FLOOR - CAREY-TEMP.

4th FLOOR

Asbestos fiberizer

Asbestos weighing, charging

3rd FLOOR

band saw operation

2nd FLOOR

hand stripping operation

INDEX #30

- Carbo-saw operation
- Dynamometer saw
- Kinetic saws (2)
- Field saw
- DeWalt saw
- Small carbo saws (outside)
- New saw
- Crating operation
- Shear cutters
- General shop area
- Laminator mixing platform

INDEX #19 - SHINGLE MILL

- 1st FLOOR
 - Asbestos unloading hopper
 - sand and mica addition to reverse side of shingle
- 2nd FLOOR
 - mixers, weigh scale for 'c dust
 - belt conveyors for granules
- 3rd FLOOR
 - 'c dust vibratory separator
 - slate dust store and delivery
 - Granule bins

AIR SAMPLES	EULK SAMPLE, RAFTER DUST	VENTILATION MEASUREMENTS	CONCENT
BZ (Asbestos)		Check local exhaust on all units	
BZ "			
BZ "			
BZ "			
BZ "	Particle size of Asbestos		
BZ "			
BZ "			
BZ "			
BZ "			
BZ "			
GA "			EZ sample; measure Dori (sodium pentachlorophen. check caustic use.
GA "			
BZ (Asbestos)	Particle size; % free Silica		Asphalt fumes
GA (Silica)			
GA (Asbestos)	Particle size; % free Silica	Check enclosures, local exhaust systems; Gen. ventilation	
GA (Silica)			
BZ (Asbestos)	Particle size	"	Not observed in operation
GA Asbestos + Silica	% free Silica		

SECTION

INDIVIDUAL MEASUREMENTS

CONCENT

EDGES #14 - PAINT HOUSE

TOP FLOOR
two charging ports for mixers on 2nd floor

2nd FLOOR
mixers; charging ports
charge area for #9 mixer on 1st floor

1st FLOOR
#9 mixer; surrounding area
General area - other mixers and draw off points

EDGES #15 - ROCK WOOL

cupole areas

wool chamber - wool lines

AIR SAMPLES	BULK SAMPLE, RAFTER DUST	VENTILATION MEASUREMENTS
BZ + GA for Asbestos + % free Silica	Particle size of Asbestos	Gen. ventilation
BZ + GA for Asbestos + Silica	Particle size of Asbestos + Silica	Check local (slot) exhaust on charging set-up for #9 mixer
Carbon monoxide, sulfur dioxide, lead fumes various binders (list to be obtained)		Check local exhaust on draw off; check entire exhaust system
		Gen. bldg. ventilation
		Local exhaust systems, inlet and outlet ends wool chamber

Measure chlorinated hydrocarbon concentration in air (zones.)

Asphalt fumes, chlorinated hydrocarbons, mineral dust from floors above

This building only covered briefly in this preliminary survey (directed mainly the Asbestos and Silica problems). Needs attention

Representative Air Samples

The exact number and location of breathing zone and general room air samples has not been specified for each operation. This can only be determined when detailed area evaluations are undertaken. At that time the measurements necessary to accurately describe each area will be determined by such factors as:

1. the quantities and types of materials used
2. how the materials are handled; variations in process
3. whether the operation is continuous or intermittent
4. how many persons are involved; their locations
5. whether personnel are exposed to dust from several different operations
6. changes in room air flow patterns; seasonal variations, etc.
7. effect of local exhaust systems.

The problem of obtaining representative samples is a complicated one. The time required to obtain dust samples usually is of the order of minutes or hours; while a period of some months up to many years is generally required for the development of diseases from dusts. These diseases result from the integrated effect of dust breathed over a long period. On the other hand, a single in-plant dust determination represents only the amount of dust in the atmosphere at a definite time and place. It cannot give an indication of the average exposure of a man over a period of years -- particularly if he has not worked continuously at the one job.

Thus a proper measure of dust exposures requires a picture of the variations in dustiness -- the dust floods -- as well as a measure of the average concentration. The locations of the sampling points, the volume of sample to be collected, and

The frequency of sampling must therefore be chosen carefully through a detailed study of the particular operation. Generally every effort is made to evaluate a dusty area with as few samples as possible -- dust counts and particle size measurements are tedious and time consuming operations.

The casual observer might well ask why any air samples or atmospheric measurements are necessary -- some of the plant areas are quite obviously very dusty. However, it is only by actual atmospheric dust measurements that the quantity of respirable contamination can be established. Beyond this, of course, is the major objective of sampling which is to identify the principal sources of dust in order to apply appropriate control measures. Follow-up atmospheric samples then can indicate the effectiveness of such control measures.

Time Estimate -- Engineering Evaluation

Table II contains time estimates (in man-days) to conduct in-plant and laboratory measurements, to interpret and compute the results, and to formulate recommendations. These estimates are the best approximations which can be given at this time. (The actual time will depend largely upon the number of samples necessary, which in turn will vary from operation to operation as explained in the previous section, page 7.)

TABLE II

TIME ESTIMATES -- ENGINEERING SURVEY

PRIORITY
(14 Areas)

Time to Complete
(in man-days)

In-Plant Measurements

- air samples (estimate between 25 and 45 samples)
- bulk samples (est. between 10 and 15 samples)
- ventilation; local exhaust, general air movement
- occupational analysis

14

Laboratory Measurements

- dust counts (estimate between 25 and 45)
- particle size measurements (est. between 12 and 18)
- chemical analyses (est. between 5 and 8)

16

Interpretation

- computations, data analysis
- conclusions, recommendations, report

10

Total 40

PRIORITY
(19 Areas)

In-Plant Measurements

- air samples (estimate between 26 and 48 samples)
- bulk samples (est. between 12 and 17 samples)
- ventilation measurements; local exhaust, general air
- occupational analysis

15

Laboratory Measurements

- dust counts (estimate between 26 and 48 counts)
- particle size measurements (est. between 10 and 20)
- chemical analyses (est. between 5 and 8)

16

Interpretation

- computations, data analysis
- conclusions, recommendations, report

10

Total 41

TABLE II (cont'd)

PRIORITY (15 Areas)

Time to Complete
(in man-days)

In-Plant Measurements

- air samples (estimate between 22 and 40 samples)
- bulk samples (est. between 5 and 8 samples)
- ventilation measurements; all areas
- occupational analysis

12

Laboratory Measurements

- dust counts (estimate between 22 and 40 counts)
- particle size measurements (est. between 6 and 10)
- chemical analyses (est. between 2 and 4)

13

Interpretation

- computations, data analysis
- conclusions, recommendations, report

8

Total 33

PRIORITY (6 Areas)

In-Plant Measurements

- air samples (estimate between 10 and 18)
- bulk samples (est. between 4 and 8)
- ventilation measurements
- occupational analysis

7

Laboratory Measurements

- dust counts (est. between 10 and 18)
- particle size measurements (est. between 4 and 8)
- chemical analyses (est. between 2 and 4)

7

Interpretation

- computations, data analysis
- conclusions, recommendations, report

5

Total 19

Lee B. Fosdick
Industrial Hygiene Engineer

THRESHOLD LIMIT VALUES

In any dusty environment there is the question of "how much" dust is safe. To help answer this question, Threshold Limit Values for various toxic materials have been established by the American Conference of Governmental Industrial Hygienists. These values of allowable air concentrations represent conditions under which most workers may be repeatedly exposed, day after day, without adverse effects. They are guides for the control of health hazards -- not fine lines between safe and dangerous concentrations.

The limits are based on the best available information from industrial experience, from experimental studies, and, when possible, from a combination of the two. They are subject to modification as more complete data become available. In the case of dusts containing at least 45% free silica, 5 million particles of dust per cubic foot of air (mppcf) has been established as the Threshold Limit Value.

In dusty atmospheres containing asbestos, the level similarly has been set at 5 mppcf.

However, because of the fibrous nature of asbestos, the threshold limit cannot be considered to be as firmly established as are limits for some of the other dusts. Techniques used for evaluating most other dusts* (considered as spherical particles) may not be entirely valid for asbestos. The etiology of asbestosis still is under study and research efforts are vitally concerned with the effect of the length and diameter of the fibers in producing lung damage.

* Based on the standard procedure for sampling and counting dusts adopted by the Fifth Annual Meeting of ACGIH (1942).

One large manufacturer of products using asbestos evaluates air samples taken in plant for both dust and fibers. The respirable dust consists of the more or less spherical particles 10 microns* and less in diameter, while the fiber is considered to be those elongated particles greater than 10 microns in length.

A threshold limit of 5 million particles per cubic foot of air (mppcf) is applied for the dust and 1 mppcf is applied to the fiber. (The 1 mppcf fiber threshold limit is based on experimental work conducted at the Saranac Laboratories, Saranac, New York and reported in "Experimental Studies of Asbestosis".) These guide lines are said to have worked out well based on this particular industry's clinical experience.

* 1 micron is approximately $\frac{1}{25,000}$ of an inch.