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PLAINTIFF'S EXHIBIT

FD 1915

Inter Office

Personnel and  
Organization Staff

May 28, 1980

Mr. J. D. Carney, Manager  
Sandusky Plant

cc G. L. Cook  
R. D. Esch  
H. E. Snedden, M. D.  
D. Vaughn

Subject: Industrial Hygiene Studies - Asbestos and Cotton Dusts

As requested, the Industrial Hygiene Services Section evaluated employee exposures to airborne asbestos fibers during maintenance repair of the #2 powerhouse boiler. This monitoring was done in accordance with a previously extended OSHA citation which cited failure to perform employee asbestos exposure monitoring during maintenance repair of powerhouse boilers.

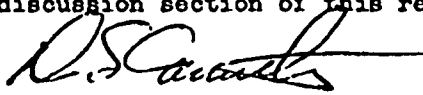
In addition to the powerhouse, samples were collected for asbestos fibers in Department 653 during assembly of water temperature switch gaskets and for cotton dust in the oil filter build-up area.

The results of air sampling, which were previously submitted to Mr. G. L. Cook in draft form per his request, are outlined on attachments I through III.

All asbestos exposures were shown to be below permissible limits. Powerhouse employees would therefore, not be required to wear self-contained breathing apparatus during wet asbestos gasket demolition. However, as a matter of good industrial hygiene practice, employees should wear approved negative pressure air purifying dust respirators. Medical monitoring of powerhouse employees potentially exposed to asbestos must be continued. Precautionary sign posting, waste disposal, contaminated clothing and housekeeping requirements were followed and must also be continued pursuant to 29 CFR 1910.1001.

Regarding cotton dust in the oil filter areas, both cotton waste suppliers (Leigh Textile and Newco Fiber Co.) have informed our Toxicology Section that the cotton material in question is "washed". Consequently, the newly promulgated OSHA cotton dust standard would not apply to Sandusky Plant oil filter operations.

Additional details are outlined in the discussion section of this report.

  
David S. Carruthers  
Industrial Hygienist  
Industrial Hygiene and Toxicology Department  
Employee Health Services

Attachment  
pj

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## DISCUSSION

### A. Powerhouse

Two employees entered the #2 powerhouse boiler to remove an asbestos rope gasket. One employee remained at the boiler entrance as observer and waste handler.

All employee asbestos exposures (Attachment I) were shown to be below the current permissible exposure limit (PEL) of 2 fibers per cubic centimeter of air (f/cc). Further, employee eight-hour time weighted average exposures (TWAE) were below the OSHA program directive that requires medical examinations at or above 0.1 f/cc. Based on sampling results and observations of work practices during this process, the following items must be performed when asbestos rope gaskets are removed:

1. Continue the wet method of asbestos demolition by hosing the boiler rope gasket with water prior to removal.
2. The monitoring results indicate that a negative pressure air purifying respirator approved for use with asbestos dust will provide sufficient protection. Therefore, the self-contained breathing apparatus (SCBA) is not essential.
3. Although the latest monitoring results indicate employee exposures below levels at which medical monitoring is required, past employee exposures cannot be defined. Since the likelihood of excessive employee exposure is present, it is recommended that medical monitoring of powerhouse employees be continued.
4. Asbestos waste disposal and contaminated clothing handling procedures as well as posting precautionary warning signs must be continued whenever asbestos demolition occurs.
5. Every effort must be made to substitute non-asbestos materials where applicable such as the #2 boiler replacement gasket (A-Best products, Style 500-1).
6. Any additional requirements under 29 CFR 1910.1001 such as housekeeping and monitoring must be followed.

### B. Department 653

- One employee who assembles an asbestos laden gasket (ESF-M8Q55-A) on water temperature sender switches was sampled for asbestos exposure. As shown on Attachment II, no detectable levels of asbestos were found. No apparent health hazard is present from this assembly. Medical monitoring of employees is not required. Should a process change occur that may increase potential for asbestos exposures, a resurvey of this operation should be performed.

### C. Oil Filter Area

Pursuant to the recently promulgated cotton dust standard, a general area sample was collected on the Gilman Innercan assembly. Additional samples could not be collected because of production delays. The sample results indicate airborne dust level below the then existing PEL.

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DISCUSSION

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On March 27, 1980 OSHA reduced the PEL by 50 percent which would indicate excessive exposure levels. However, our office has been informed by our suppliers that the cotton used in oil filter manufacturing is "prewashed" prior to shipment, and therefore, the hazard to employees is significantly reduced. Based on this information, the cotton dust standard does not apply.

For comparison purposes, the PEL for nuisance dust has been included.

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ATTACHMENT I

INDUSTRIAL HYGIENE SERVICES SECTION  
INDUSTRIAL HYGIENE AND TOXICOLOGY DEPARTMENT  
EMPLOYEE HEALTH SERVICES

SANDUSKY PLANT

Powerhouse - Department 641

February 20, 1980

PERMISSIBLE OCCUPATIONAL EXPOSURE LIMITS TO AIRBORNE CONTAMINANTS:

| <u>Contaminant</u> | <u>8-Hour Time Weighted<br/>Average Exposure Limit (TWAE)</u> |
|--------------------|---------------------------------------------------------------|
| Asbestos           | 2 fibers/cc                                                   |

RESULTS

| <u>Employee/Description</u>           | <u>Operation</u>                                 | <u>Sample<br/>Time</u> | <u>Average Airborne Concentration<br/>Asbestos (f/cc)</u> |
|---------------------------------------|--------------------------------------------------|------------------------|-----------------------------------------------------------|
| D. E. Hammer<br>284-32-6075           | Inside No. 2 boiler                              | (63 min.)              | 0.041                                                     |
| D. W. Iden<br>293-34-1318             | Inside No. 2 boiler                              | (62 min.)              | ND <sup>(1)</sup>                                         |
| . Nielson<br>298-12-9588              | Operating coal hopper                            | (79 min.)              | 0.045                                                     |
| J. Thayer<br>299-24-9135              | Observer and waste handler<br>at boiler entrance | (68 min.)              | 0.29                                                      |
| General area sample on desk (ambient) |                                                  | (52 min.)              | ND                                                        |

DATA RETRIEVAL NUMBERS: DSC-870 through DSC-874

INSTRUMENTATION: Bendix BDx-41 personal sampling pumps with open faced membrane filters  
in plastic cassettes.

ANALYSIS: Ford Motor Company Industrial Hygiene Laboratory;  
NIOSH fiber count method utilizing phase-contrast microscopy.

ANALYSES PERFORMED BY: L. LaTorre, Senior Industrial Hygienist

ND<sup>(1)</sup> asbestos fibers "not detected" at an analytical sensitivity of .005 f/cc

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Industrial Hygiene Laboratory  
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ATTACHMENT II  
INDUSTRIAL HYGIENE SERVICES SECTION  
INDUSTRIAL HYGIENE AND TOXICOLOGY DEPARTMENT  
EMPLOYEE HEALTH SERVICES

SANDUSKY PLANT

Department 653

February 21, 1980

PERMISSIBLE OCCUPATIONAL EXPOSURE LIMITS TO AIRBORNE CONTAMINANTS:

| <u>Contaminant</u> | <u>8-Hour Time Weighted<br/>Average Exposure Limit (TWAE)</u> |
|--------------------|---------------------------------------------------------------|
| Asbestos           | 2 fibers/cc                                                   |

RESULTS

| <u>Employee</u>          | <u>Operation</u>                            | <u>Sample<br/>Time</u> | <u>Average Airborne Concentration<br/>Asbestos (f/cc)</u> |
|--------------------------|---------------------------------------------|------------------------|-----------------------------------------------------------|
| W. Willis<br>412-56-4972 | Water temperature<br>switch-gasket assembly | (60 min.)              | ND <sup>(1)</sup>                                         |

DATA RETRIEVAL NUMBER: DSC-878

INSTRUMENTATION: Bendix BDx-41 personal sampling pump with membrane filter in open faced plastic cassette

ANALYSIS: Ford Motor Company Industrial Hygiene Laboratory; NIOSH fiber count method using phase-contrast microscopy

ANALYSIS PERFORMED BY: L. Latorre, Senior Industrial Hygienist

ND<sup>(1)</sup> asbestos fibers "not detected" at an analytical sensitivity of .004 f/cc

FORD MOTOR COMPANY  
Industrial Hygiene & Toxicology Laboratory  
Ann Arbor, Michigan 48106  
American Industrial Hygiene Association

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ATTACHMENT III  
INDUSTRIAL HYGIENE SERVICES SECTION  
INDUSTRIAL HYGIENE AND TOXICOLOGY DEPARTMENT  
EMPLOYEE HEALTH SERVICES

SANDUSKY PLANT  
Gilman Innercan Assembly Line

February 21, 1980

PERMISSIBLE OCCUPATIONAL EXPOSURE LIMITS TO AIRBORNE CONTAMINANTS:

| <u>Contaminant</u>                                     | <u>8-Hour Time Weighted<br/>Average Exposure Limit (TWAE)</u>      |
|--------------------------------------------------------|--------------------------------------------------------------------|
| Cotton Dust<br>(as measured by<br>vertical elutriator) | 1.0 mg/M <sup>3</sup> (0.5 mg/M <sup>3</sup> effective<br>3/27/80) |
| Nuisance Particulate                                   | 10.0 mg/M <sup>3</sup>                                             |

RESULTS

| <u>Sample Description</u>                                    | <u>Sample<br/>Time</u> | <u>Average Airborne Concentration<br/>Dust (mg/M<sup>3</sup>)</u> |
|--------------------------------------------------------------|------------------------|-------------------------------------------------------------------|
| Area sample on panel of<br>Gilman Innercan assembly<br>No. 1 | (48 min.)              | 0.53                                                              |

DATA RETRIEVAL NUMBER: DSC-879

INSTRUMENTATION: BDX-41 personal sampling pumps with glass fiber filter in plastic cassette with 17 inch vertical elutriator

ANALYSIS: Ford Motor Company Industrial Hygiene Laboratory; gravimetric analysis

ANALYSIS PERFORMED BY: W. J. Falzone, Industrial Hygiene Technologist

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Industrial Hygiene Laboratory  
Assembly & Test Center  
American Industrial Hygiene Association

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TODAY: 5-27-80

☒ Data Sheet

☒ Date Typed 5-27-80 & 5-28

☒ To Writer for:

Signature & Master copy

☒ To Roger for Approval 5-28

☒ To Writer for 5-29-80

6 copies

☒ Mailed out 5-30-80

Pls Sandusky  
Asbestos Cotton Dusts

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