



DOW CHEMICAL U.S.A.

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LOUISIANA DIVISION

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INDUSTRIAL HYGIENE REPORT

ASBESTOS SURVEY -

CELL SERVICE PLANT, BLOCK 56
CHLORINE PLANT, BLOCK 26
LOUISIANA DIVISION

CRI NO. _____

FILE NO. LAD-1H-81.02

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SUMMARY

The asbestos in air monitoring for the second half of 1980 has been completed in the Cell Service and Chlorine blocks. Survey results were satisfactory and well below the acceptable threshold limit value of 2 fibers per cubic centimeter greater than five (5) microns in length.

The highest breathing zone sample recorded was 0.15 fibers per cc of air. Due to the low results obtained in routine time-weighted sampling, it is recommended that short duration excursion sampling be emphasized in future surveys.

Good housekeeping, strict safe operating procedures, and a constant vigil for problem areas are the most important considerations for a successful abatement program. Employees must be informed of the survey results and must review the consequences of over-exposure to asbestos fibers. (See Attachment 2.)

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INTRODUCTION

The required asbestos in air monitoring for second half of 1980 has been completed. The survey serves to protect the employees against over-exposure, pinpoint problem areas and fulfill the requirements of the Federal Occupational Safety and Health Act.

DISCUSSION

In addition to everyday safety equipment, operators are required to wear disposable paper suits, rubber gloves and proper dust respirators when handling or working with asbestos. The safe procedure for handling asbestos should be discussed with each new employee before entering the work area and reviewed annually with the experienced operators as part of the ongoing Industrial Hygiene Education Program.

EXPERIMENTAL

Sampling Method

Personnel samples are collected from the operators' breathing zone with a millipore filter (37 mm diameter; 0.8 micron pore size) mounted on an open-face filter holder and attached to the operators' lapels. These cassettes are connected to monitoring pumps calibrated with a soap bubble meter to operate at a rate of 1.5 to 2.0 liters per minute.

Area samples are collected utilizing the same equipment and method as the personnel samples.

Analytical

The asbestos samples are analyzed using the NIOSH-Approved Method, P & CAM 239.

RESULTS (See Attachment 1)

Monitoring results of seven samples indicate all samples were well below the present exposure limit of 2 fibers > 5 microns in length per cubic centimeter.

Three personnel samples were collected from the operators' breathing zones. A high of 0.15 fibers per cc was recorded.

The four stationary samples recorded a high of 0.07 fibers per cc in the asbestos storage room.

RECOMMENDATIONS

Short-term excursion sampling is recommended in future sampling to better determine if problems exist in some jobs.

CONCLUSIONS

The monitoring results were satisfactory and well below the established exposure limit of two fibers per cubic centimeter. However, due to the hazardous nature of asbestos, house-keeping and good safe operating procedures remain the most important considerations for a good abatement program. This must be a daily, job-by-job program to be successful and to offer the greatest protection to the employee.

The Cell Service and Chlorine employees must be informed of this survey's results and the consequences of over-exposure reviewed. (See Attachment 2.)

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ATTACHMENT 1

CHLORINE PLANT

<u>DATE</u>	<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DURATION (MIN)</u>	<u>VOLUME (1)</u>	<u>FIBERS/ <5 MICRONS IN LENGTH</u>
9/16/80	1494	SOT - Pulping Cells	45	81.0	0.06
9/16/80	1496	Area - Asbestos Storage #2 Shed	270	594.0	0.01
9/19/80	1497	OT - Pulping Cells	62	124.0	0.15
10/14/80	1591	SOT - Pulping Cells	30	30.0	< 0.01

CELL SERVICE PLANT

<u>DATE</u>	<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DURATION (MIN)</u>	<u>VOLUME (1)</u>	<u>FIBERS/ <5 MICRONS IN LENGTH</u>
12/9/80	1649	Area - Center of Bldg.	390	663.0	0.03
12/9/80	1650	Area - S.W. end of Bldg.	390	663.0	0.01
12/9/80	1651	Area - Asbestos Storage Bldg.	390	663.0	0.07

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CONSEQUENCES OF EXPOSURE TO TOXIC AMOUNTS

COMPOUND: ASBESTOS

EYES: CONTACT WITH THE DUST CAN CAUSE MECHANICAL IRRITATION
SIMILAR TO THAT CAUSED BY ANY SOLID PARTICLE.

SKIN: UNLIKE FIBROUS GLASS, THE FIBERS DO NOT CAUSE DISCOMFORT
OR MECHANICAL IRRITATION.

INGESTION: SOME EVIDENCE SUGGESTS THAT LONG TERM INGESTION OF
ASBESTOS MAY INCREASE CHANCES OF STOMACH CANCER.

DUST INHALATION: SHORT TERM: HIGH CONCENTRATIONS (WELL ABOVE ACCEPTABLE
LEVELS) MAY CAUSE ONLY MODERATE DISCOMFORT FROM
MECHANICAL IRRITATION.

LONG TERM: THE FIBERS CAN CAUSE SCARRING OF THE
LUNGS (ASBESTOSIS). A CANCER OF THE CHEST LINING
(MESOTHELIOMA) MAY ALSO RESULT FROM ASBESTOS EXPOSURE.
MOST IMPORTANT, ASBESTOS EXPOSURE AND CIGARETTE
SMOKING GREATLY INCREASE THE RISK OF LUNG CANCER.

IHG: ACGIH TLV IS 2 FIBERS/CC

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