

3/25/86
12.

INDUSTRIAL HYGIENE REPORT

SECOND HALF OF 1983 BI-ANNUAL ASBESTOS SURVEY IN
THE CHLOR-ALKALI II AND CHLORINE PLANTS

CRI NO. _____

FILE NO. LAD-IH-84.03

DATE April 4, 1984

AUTHOR Terry Campbell

CHECKED Charlie Halphen

DATE 4-3-84

SUMMARY

The asbestos in air monitoring for second half of 1983 has been completed in the Chlor-Alkali II and Chlorine plants. Short term personnel excursion sampling was selected to depict peak concentrations of airborne asbestos. Survey results should be compared to the OSHA Permissible Exposure Limits (PEL) of two (2) fibers per cubic centimeter greater than five (5) microns for eight-hour time weight averages and a ceiling limit of ten (10) fibers per cubic centimeter greater than five (5) microns. Survey results in the Chlor Alkali II, and Chlorine plants were below the PEL of two (2) fibers per cubic centimeter greater than five (5) microns in length for an eight-hour time weighted average. The short term exposure sampling results were well within the PEL ceiling limit.

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 exposure to toxic amounts of asbestos fibers. (See attachment)

DISTRIBUTION

LOUISIANA

*J. R. Birdwell - 2306
*T. P. Rozas - 2306
H. M. Bell - 4701
Dr. Currier - 2303
G. W. Daigre - 3502-E
C. E. Halphen - 3502-E
J. Diamond - 2601
*R. A. Gaska - 3701
J. Medine - 2601
J. Bock - 3601

W. Clark - 3601
J. Paul - 3601
B. Heinze - 3701

MIDLAND

L. W. Rappy - 1702
R. R. Langner - 2030
M. Swank, - 1803
*J. E. LeBeau - 1803
*R. M. Croyle - 474

OTHER DIVISIONS

*F. D. Axe, Pittsburg
*S. A. Goode, OCD
*Gary Meier, Strongsville
*A. Pollock, Sarnia
*F. H. Braunlich, Tulsa

DO 083434
CONFIDENTIAL

Introduction

The required asbestos in air monitoring for the second half of 1983 has been completed. The survey serves to help 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 or work uniforms laundered on-site, rubber gloves and proper dust respirators when handling or working with friable 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.

Sampling Method - Personnel samples are collected from the operators' breathing zone with a mixed cellulose ester membrane 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.

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

Results (See Attachment)

Monitoring results of fifteen (15) samples indicated all samples were below the present exposure limit of 2 fibers > 5 microns in length per cubic centimeter for an eight-hour time weight average PEL.

Fifteen (15) personnel samples were collected from the operators' breathing zones. A high of 0.15 fibers per cc was recorded. The highest personnel breathing zone sample was a short term excursion sample of 40 minutes during pulping procedure on a series of cells. This short term excursion sample should be compared to PEL ceiling of ten (10) fibers per cc > five (5) microns in length.

DO 083435
CONFIDENTIAL

Conclusions

The monitoring results were satisfactory and below the established permissible exposure limit of two (2) fibers per cubic centimeter eight-hour time-weighted average and for short term excursion sampling below the ten (10) fiber per cubic centimeter ceiling. The hazardous nature of asbestos necessitates housekeeping and safe operating procedures remain the most important considerations for an abatement program. This must be a daily, job-by-job program to be successful and to offer the greatest protection to the employee.

The Chlor-Alkali II and Chlorine plants employees must be informed of this survey's results and the consequences of exposure to toxic amounts of asbestos reviewed. (See Attachment.)

TC:sb

DO 083436
CONFIDENTIAL

CHLORINE BLOCK

ATTACHMENT

<u>DATE</u>	<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DURATION (MIN.)</u>	<u>VOLUME (L.)</u>	<u>FIBERS/CC >5 MICRONS IN LENGTH</u>
11/8/83	4339	*Personnel - SOT Pulping Series	45	94.5	0.01
11/8/83	4340	*Personnel - SOT Pulping Series	55	110.0	0.01
11/10/83	4344	*Personnel - SOT Pulping Series	50	140.0	0.04
11/10/83	4345	*Personnel - SOT Pulping Series	40	84.0	0.15
11/10/83	4349	*Personnel - SOT Filled Pulp Wagon and Pulping Series	80	160.0	<0.01
11/10/83	4354	*Personnel - SOT Pulping Series	50	100.0	0.03
11/14/83	4350	*Personnel - OT Pulping Series	45	90.0	0.02
11/14/83	4351	*Personnel - OT Pulping Series	45	94.5	0.02

*Respiratory Protection Worn

DO 083437
CONFIDENTIAL

CA II BLOCK

ATTACHMENT

<u>DATE</u>	<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DURATION (MIN.)</u>	<u>VOLUME (L.)</u>	<u>FIBERS/CC >5 MICRONS IN LENGTH</u>
7/6/83	3075	*Personnel - OTT Pulping Series	84	142.8	<0.01
7/19/83	3074	*Personnel - OTT Pulping Series	49	83.3	0.04
7/20/83	3073	*Personnel - OTT Pulping Series	70	85.0	0.08
7/30/83	3072	*Personnel - OTT Pulping Series	45	90.0	0.05
9/9/83	3069	*Personnel - OTT Pulping Series	132	144.0	<0.01
9/9/83	3068	*Personnel - OT Filled Pulp Wagon and Pulping Series	132	144.0	<0.01
9/16/83	3066	*Personnel - OT Pulping Series	63	126.0	0.01

*RESPIRATORY PROTECTION WORN

DO 083438
CONFIDENTIAL

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 HEALTHY
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.

IHS: ACGIH TLV IS 2 FIBERS/CC

AUTHOR: G. H. FLORES

CHECKED BY: R. L. DANIEL - INDUSTRIAL HYGIENE
G. C. JERSEY - TOXICOLOGY
R. E. FLAKE - MEDICAL

ISSUE DATE: REVISED: 6-6-80

DO 083439
CONFIDENTIAL