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TEXAS DIVISION
FREEPORT, TEXAS 77541

ENVIRONMENTAL HEALTH REPORT

AIRBORNE ASBESTOS SURVEY
PERSONNEL AND AREA MONITORING
CELL SERVICES
A-1003

FILE NO. A10-1534
DATE July 26, 1978
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Summary
Two of the 19 employees monitored were above the limit for asbestos. These were an unusual type of a possible potential exposure. Area monitoring throughout the area does not indicate the location of this potential exposure other than in the dry asbestos handling area. If the fibers were from this area, then no exposure to the employee occurred because of the use of proper protective clothing which is mandatory within that area.

It is however, recommended that employees within the 702 area be re-examined by personnel and area monitoring again during a dry period of weather.

All employees should be informed of the exposures, the consequences of overexposure and the proper methods of safe handling. This informing should be documented.

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INTRODUCTION

The Occupational Safety and Health Act (OSHA) requires that occupational exposures to airborne asbestos be controlled so that no worker is exposed to more than 2.0 asbestos fibers per cubic centimeter of air based on a count of fibers greater than 5 micrometers in length. These are determined by a time-weighted average (TWA) exposure for an 8 hour work day, and no peak concentrations of asbestos more than 10.0 fibers per cubic centimeter as determined by a minimum sampling time of 15 minutes.

It is now proposed to lower the limit to 0.5 fibers per cubic centimeter with a peak of 5.0 fibers. This proposal has not been promulgated.

This survey was conducted at Cell Services to evaluate the employee exposures by personnel monitoring. The tests were taken from December 10, 1977 through May, 1978.

METHODOLOGY

Airborne samples were collected using a Bendix Micronair Permissible air sampling pump (Bendix Corp., Baltimore, Md.). The fibers were collected by pulling air through a Millipore filter (AAWG 03700) mounted in an open face Millipore disposable cassette. Flow rates for the pumps were calibrated at 1500 cubic centimeters per minute and sampling times are shown in Table I. Fifteen minute samples were collected for area monitoring as shown in Table II.

All samples were collected by M. Moreno of Cell Services and Environmental Health, and analyzed by A. Herron of Central Laboratory using the following technique:

> Four marked squares are cut from a filter about half-way from the edge to the center. This section is then placed on a drop of clearing solution[1] and placed on a microscope slide. The sample is covered with a cover slip and allowed to clear (about 15 minutes). The sample count is made on a Reichert Zetopan Optical microscope using Normaraki interference contrast at 500 magnification. Counts are made for particles greater than 5.0 microns, and reported as fibers per filter square.

[1] Clearing solution: 0.1 g/ml clean Millipore filter paper in a 1:1 diethyloxalate: dimethylphathalate.

RESULTS & DISCUSSION

In December, 1977, two of the personnel samples collected were above the prescribed limits of 2.0 fibers/cc greater than 5 micrometers. The laboratory reported these as differing from samples normally collected. Samples were again collected in January, March and May in order to locate the potential exposure areas (Table II). None of these area samples were above the limits and the only possible area of high exposures would be the bagging area while handling dry asbestos. These areas require proper personnel protection and therefore, exposures to the employee would be very low.

CONCLUSIONS

Two employees show a high and unusual exposure to asbestos fibers that cannot be explained by normal operations.

RECOMMENDATIONS

It is recommended that the employees who work within the 702 area be remonitored by both the present monitor from Cell Services, but also by the Environmental Health Services group. This should be done when the most asbestos is being used and during dry weather.

Until these new monitoring results can be obtained, it is recommended that each employee be informed of the potential hazards and instructed to use respiratory protection. All employees should be informed of the consequences of over-exposure. This informing should be documented.

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TABLE I
AIRBORNE ASBESTOS
CELL SERVICES
FIBERS/CC > 5.0 Mu

NAME	MASTER NO.	JOB CLASSIFICATION	DATE	TIME(MIN.)	FIBERS/CC > 5.0 Mu
S. J. Damion	138429	Class 1 Oper.	12-1-77	300	10.6*
L. E. Feagin	132713	Class 1 Oper.	12-1-77	300	10.7*
C. Johnson	134663	Foreman	12-1-77	300	0.3
J. M. Montelongo	139621	Class 1 Oper.	12-1-77	300	0.7
G. A. Woodward	137633	Class 1 Oper.	12-2-77	450	0.8
A. L. Bonner	138466	Class 2 Oper.	12-2-77	405	< 0.1
C. L. Bradshaw	134646	Class 2 Oper.	12-3-77	200	0.3
R. G. Damian	135494	Class 2 Oper.	12-2-77	450	< 0.1
L. B. Doskocil	134272	Class 2 Oper.	12-4-77	310	< 0.1
H. L. Edwards	135626	Class 2 Oper.	12-3-77	260	0.2
J. L. Garcia	138294	Class 2 Oper.	12-1-77	300	0.3
J. L. Garcia	138294	Class 2 Oper.	12-3-77	245	0.4
V. L. Markwardt	132053	Class 2 Oper.	12-4-77	320	0.2
D. D. Matthews	139028	Class 2 Oper.	12-3-77	245	< 0.1
G. Prince, Jr.	130615	Class 2 Oper	12-3-77	405	< 0.1
R. H. Stanley	135796	Class 2 Oper.	12-4-77	315	0.2
J. F. Stolarsky, Jr.	138378	Class 2 Oper.	12-2-77	480	0.2
R. E. Taylor	135125	Class 2 Oper.	12-2-77	445	0.2
D. D. Stidman	134280	Crane Oper. Cab	12-4-77	315	0.2

* Exceeds limits but contains fibers unusual to ones found in other samples.

TABLE II
AREA MONITORING
FIBERS/CC > 5 Mu

LOCATION		JAN., 1978	MARCH, 1978	MAY, 1978
Fig. I	#1	< 0.1	< 0.1	< 0.1
	#2	< 0.1	< 0.1	< 0.1
	#3	< 0.1	< 0.1	< 0.1
	#4	0.2	0.3	< 0.1
	#5	0.2	0.2	0.3
	#6	0.3	0.2	0.2
	#7	< 0.1	0.2	< 0.1
	#8	< 0.1	< 0.1	0.2
	#9	< 0.1	< 0.1	< 0.1
	#10	< 0.1	< 0.1	< 0.1
Fig. II	#11	0.3	0.5	0.5
	#12	0.5	0.5	0.8
	#13	0.3	< 0.1	0.2
	#14	0.2	0.5	0.5
	#15	0.3	< 0.1	0.4
	#16	0.2	0.2	0.3
Fig. I	#17	---	< 0.1	0.2
	#18	---	< 0.1	< 0.1
	#19	---	< 0.1	< 0.1

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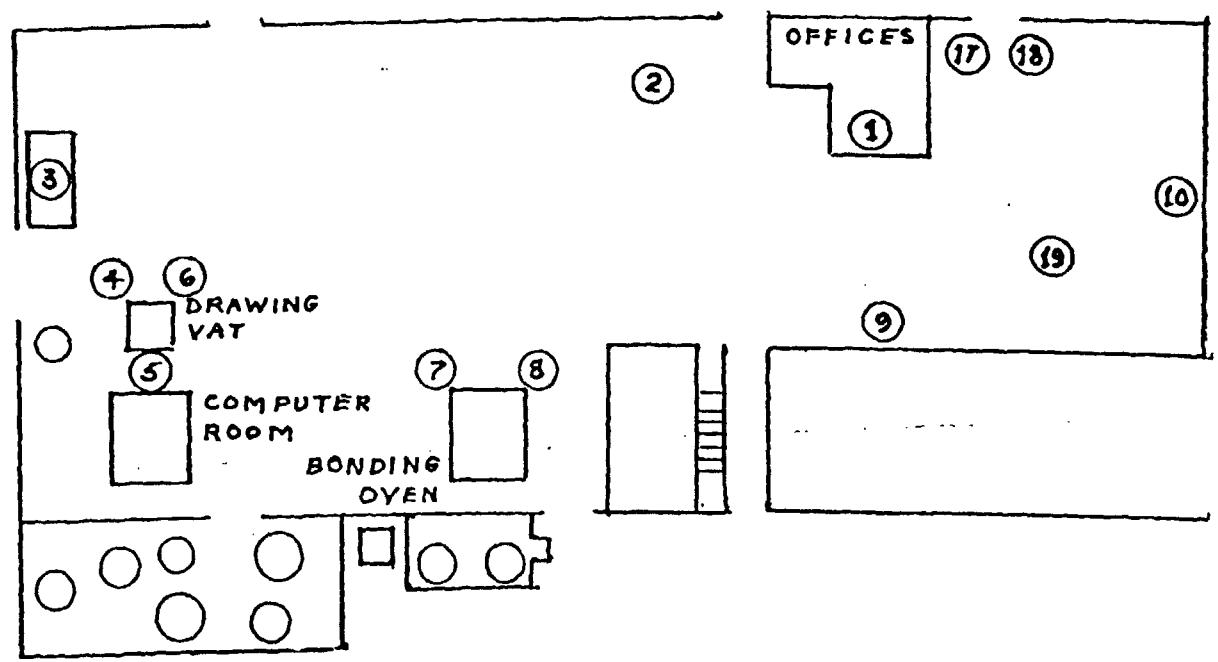
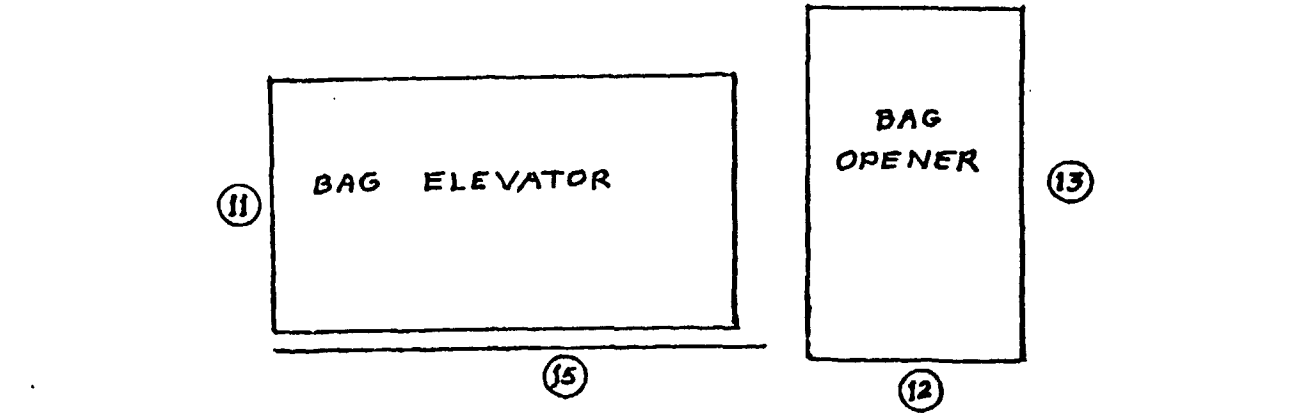


Figure 1



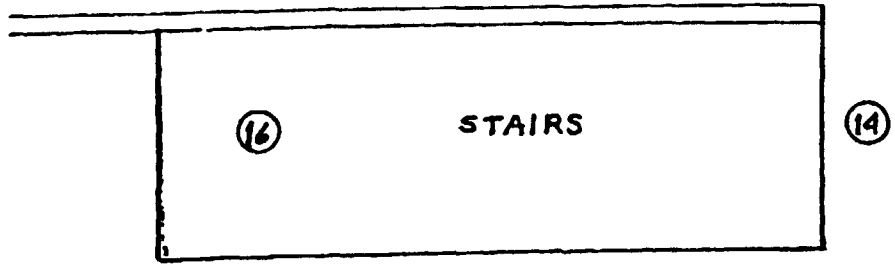


Figure 2