AC Pa 3-14-89 file

INDUSTRIAL HYGIENE REPORT

TEXAS OPERATIONS

DOW CHEMICAL U.S.A.
AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

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TITLE:
ASBESTOS MONITORING DURING TRANSITE REMOVAL AT FABRICATION SHOP, B-105, BY THE PLANT B CARPENTERS

PLAINTIFF'S EXHIBIT
DOW-837

AUTHOR(S)
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SUMMARY

Area asbestos monitoring was done during a transite removal job at B-105 Fabrication Shop on February 9, 10 and 13, 1989. The monitoring was done to ensure that the approved asbestos handling procedures would result in acceptable airborne concentrations of asbestos.

All measured asbestos concentrations were well below the OSHA Permissible Exposure Limit (PEL) of 0.2 fibers per cubic centimeter. The highest level found was 0.05 fibers per cubic centimeter during the transite removal job.

ST0015399

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ASBESTOS MONITORING DURING TRANSITE REMOVAL AT FABRICATION SHOP, B-105, BY THE PLANT B CARPENTERS

INTRODUCTION

Area monitoring for asbestos was done during the removal of transite panels located in the Fabrication Shop, B-105. The removal was done by Dow Plant B Carpenters. The monitoring was conducted to ensure that the use of approved job procedures would result in acceptable concentrations of asbestos.

CONCLUSIONS AND RECOMMENDATIONS

1. All measured asbestos concentrations were well below the OSHA Permissible Exposure Limit (PEL) of 0.2 fibers per cubic centimeter. The highest level found was 0.05 fibers per cubic centimeter during the transite removal. All exposures exposures were potential since workers within the regulated areas wore half-face respirators with high-efficiency particulate air (HEPA) cartridges.

2. Texas Operations asbestos handling procedures must always be followed. The Texas Operations Asbestos Handbook and Safety Standard T-12 must be reviewed. These procedures are designed to make the transite removal jobs safe. If these procedures are not followed, a potentially serious exposure or safety situation may result. For this reason, the asbestos handling procedures must be reviewed, understood, and enforced by all personnel involved in the asbestos removal jobs.

RESULTS AND DISCUSSION

Table I shows the results of area monitoring during the removal of transite panels. The highest area measurement was 0.05 fibers per cubic centimeter, located in the shop area near the removal site. Results showed that all measured concentrations were well below the OSHA PEL of 0.2 fibers per cubic centimeters.

The results clearly showed that the potential for harmful exposure to asbestos during the transite removal job was very low. As long as the proper procedures for asbestos handling are followed there should be no problem of overexposure to asbestos. The procedures for transite removal are outlined in the Texas Operations Asbestos Handbook.

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METHODOLOGY

Asbestos samples were collected using Gilian HFS 513A and 113A air sampling pumps. A known volume of air was pulled through a 25 millimeter mixed cellulose ester membrane filter, 0.8 micron pore size. Samples were collected at a flow rate of approximately 2.0 liters per minute. The pumps were calibrated before and after the sampling, and the samples were counted by McKee Environmental Health Services using phase contrast microscopy. NIOSH method 7400 used.

EVALUATION CRITERIA

The evaluation of exposure levels was based on the following criterion:

AGENT	EXPOSURE GUIDELINE	SOURCE
Asbestos	0.2 fibers/cc	OSHA (PEL)

The OSHA Permissible Exposure Limit (PEL) is the time-weighted average concentration for a normal 8-hour workday, 40-hour work week, to which nearly all workers may be repeatedly exposed without adverse health effects.

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IHS File B1-3467

TABLE I
ASBESTOS MONITORING DURING TRANSITE REMOVAL
AT B-105 FOR THE FABRICATION SHOP

AREA	SAMPLE NUMBER	DATE	SAMPLE TIME (MIN)	CONCENTRATION (fibers/cc) TWA
In shop area near removal site	2889-2	2-9-89	441	0.050
Outside perimeter line near disposal pallets	2889-3	2-9-89	441	0.004
In shop area near south door	2889-4	2-9-89	441	0.006
In shop area near removal site	2889-5	2-10-89	435	0.010
Outside perimeter line near disposal pallets	2889-6	2-10-89	455	0.004
In shop area near south door	2889-7	2-10-89	450	0.003
In shop area near removal site	2889-10	2-13-89	335	0.006
Outside perimeter line near disposal pallets	2889-11	2-13-89	331	0.003
In shop area near south door	2889-12	2-13-89	331	<0.010

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File #81-3467

McKEE ENVIRONMENTAL HEALTH SERVICES

11114 Sugarpark • Houston TX 77089 • (713) 481-3501

February 20, 1989

LAB ANALYSIS REPORT

Client: Dow Chemical USA
Attn: M.J. Sorrells, B101Y
Texas Operations
Freeport, TX 77541

Test Performed: NIOSH Analytical Method #7400
Fiber Counts (Asbestos)

Lab Number: 8992

Sample Number	Fields	Fibers	f/mm^2
A612-1A	100	27.5	35.03
" 2A	100	6.	7.64
" 3A	100	3.	3.82
" 4A	100	1.5	1.91
" 5A	100	5.	6.37
" 6A	100	7.	8.92
" 7A	100	20.	25.48
" 8A	100	2.	2.55
" 9A	100	6.	7.64
" 10A	100	13.	16.56
" 11A	100	1.5	1.91
" 12A	100	3.	3.82
RLW-2889-1	100	2.	2.55
" 2	92	101.	128.66
" 3	100	10.5	13.38
" 4	100	13.5	17.2
" 5	100	20.5	26.11
" 6	100	10.5	13.38
" 7	100	9.	11.46
" 8	100	0.5	0.64
" 9	100	2.	2.55
" 10	100	11.5	14.65
" 11	100	7.	8.92
" 12	100	1.5	1.91
IHS-22	22	101.5	587.7
IHS-23	100	18.	22.93
IHS-25	68	102.5	192.0

Ronald S. McKee, CIH
Ronald S. McKee
Certified Industrial Hygienist

#350

ST0015403

INDUSTRIAL HYGIENE SAMPLE RECORD

FILE NO. 81-3467	PROCESS B-105 Fabrication Shop	BLDG. B-105	DATE 2-9-89
MATERIAL Asbestos	SAMPLING METHOD	TRAPPING MEDIUM	
TYPE OF PUMP Gilian	FLOW SET	FLOW RATE	FLOW FACTOR

REMARKS (VENTILATION, ETC.)

#1 Blank

SAMPLE NO	SAMPLE DESCRIPTION		STROKE COUNT	TIME	TOTAL TIME (MIN.)	
1260C #2 Pre-Cal 2.1 2.1 2.1 2.1 2.1 2.1	PUMP S/N 1260C FLOW FACTOR:	START	8:09	3:30 pm	441	Post CAL 2.1 2.1 2.1 2.1 2.1 2.1
		STOP				
		TOTAL LITERS AIR:				
	* BZ Height * Transite walls being removed					
	Area					
2801 2.1 2.1 2.1 2.1 2.1 2.1	PUMP S/N 2801 FLOW FACTOR:	START	8:08	3:30 pm	441	Post CAL 2.2 2.2 2.2 2.2 2.2 2.2
		STOP				
		TOTAL LITERS AIR:				
	* BZ HEIGHT					
	Area					
#4 2097C 2.1 2.1 2.1 2.1 2.1	PUMP S/N 2097C FLOW FACTOR:	START	8:08	3:30 pm	441	Post CAL 2.1 2.1 2.1 2.1 2.1 2.1
		STOP				
	Area	TOTAL LITERS AIR:				
	* BZ HEIGHT					

SIGNATURE: DATE: 2-9-89

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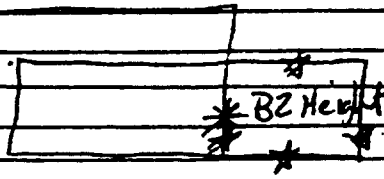
INDUSTRIAL HYGIENE SAMPLE RECORD

FILE NO.	PROCESS	BLDG. B-105	DATE 2-10-8
MATERIAL	SAMPLING METHOD	TRAPPING MEDIUM	
TYPE OF PUMP	FLOW SET	FLOW RATE	FLOW FACTOR

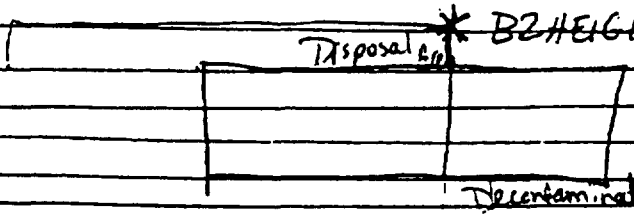
REMARKS (VENTILATION, ETC.)

#8 Blank

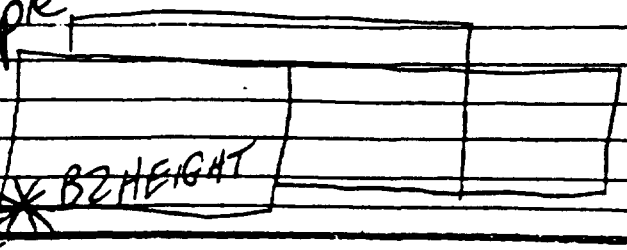
SAMPLE NO	SAMPLE DESCRIPTION		STROKE COUNT	TIME	TOTAL TIME (MIN.)	Pb
1260C #5	PUMP S/N	START	8:05 Am		435	2.
2.1	FLOW FACTOR:	STOP	3:20 Pm			2.1
2.1	Area Sample	TOTAL LITERS AIR:				2.1
2.1						2.1
2.1						2.1
2.1						2.
2.1						



1260C #6	PUMP S/N	START	7:45 Am		455	2
2.1	FLOW FACTOR:	STOP	3:20 Pm			2.
2.1	Area Sample	TOTAL LITERS AIR:				2.
2.1						2.
2.1						2.
2.1						2.
2.1						



2801 #7	PUMP S/N	START	7:45 Am		450	Pb
2.1	FLOW FACTOR:	STOP	3:15 Pm			2.
2.1	AREA Sample	TOTAL LITERS AIR:				2.
2.1						2
2.1						2.
2.1						2
2.1						



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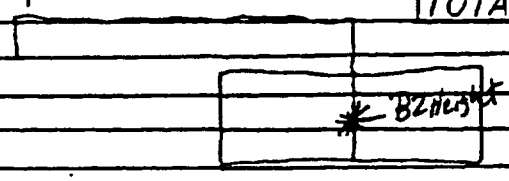
INDUSTRIAL HYGIENE SAMPLE RECORD

FILE NO.	PROCESS	BLDG. B-105	DATE 2-13
MATERIAL	SAMPLING METHOD	TRAPPING MEDIUM	
TYPE OF PUMP	FLOW SET	FLOW RATE	FLOW FACTOR

REMARKS (VENTILATION, ETC.)

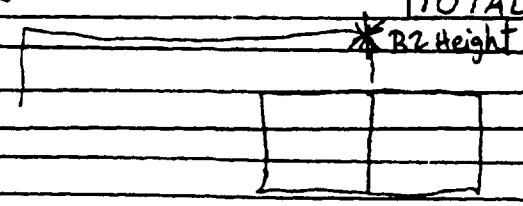
#9-Blank

SAMPLE NO	SAMPLE DESCRIPTION		STROKE COUNT	TIME	TOTAL TIME (MIN.)
1260C PreCal 2.1 #10 2.1 2.1 1 2.1 2.1	PUMP S/N FLOW FACTOR: Area Sample Inside	START		7:50	335
		STOP		1:45 pm	
		TOTAL LITERS AIR:			

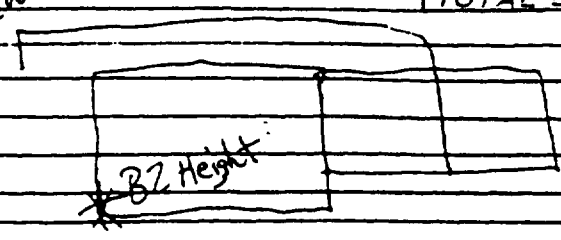


Transite Walls Being Removed

SAMPLE NO	SAMPLE DESCRIPTION		STROKE COUNT	TIME	TOTAL TIME (MIN.)
3 #11 Pre-cal 2.5 2.5 2.5 2.5 2.5 2.2	PUMP S/N FLOW FACTOR: Outside Area Sample	START		7:52	331
		STOP		1:43 pm	
		TOTAL LITERS AIR:			



SAMPLE NO	SAMPLE DESCRIPTION		STROKE COUNT	TIME	TOTAL TIME (MIN.)
2801 #12 2.2 2.2 2.2 2.2 2.2 2.2	PUMP S/N FLOW FACTOR: southend. Area Sample	START		7:54	331
		STOP		1:45 pm	
		TOTAL LITERS AIR:			



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2.55 2.55 .64 1.91

#2 $\frac{(128.66 - 1.91) \times 385}{2100 \times 441} = \frac{46796.75}{926100} = .05$

#3 $\frac{(13.38 - 1.91) \times 385}{2100 \times 441} = \frac{4415.95}{926100} = .004$

#4 $\frac{(17.2 - 1.91) \times 385}{2100 \times 441} = \frac{5886.65}{926100} = .006$

#5 $\frac{(26.11 - 1.91) \times 385}{2100 \times 455} = \frac{9317}{913500} = .010$

#6 $\frac{(13.38 - 1.91) \times 385}{2100 \times 455} = \frac{4415.95}{955500} = .004$

#7 $\frac{(11.46 - 1.91) \times 385}{2100 \times 450} = \frac{3676.75}{945000} = .003$

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300
290
45
335

#10 $\frac{(14.65-1.91)\times 385}{2100\times 335} = \frac{4904.9}{703500} = .006$

#11 $\frac{(8.92-1.91)\times 385}{2200\times 331} = \frac{2698.85}{728200} =$

#2 $\frac{(1.91-1.91)\times 385}{2200\times 331} = < .01$

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