PLAINTIFF'S EXHIBIT

DOW-776

DOW CHEMICAL U.S.A.

50983

TEXAS DIVISION
FREEPORT, TEXAS 77541

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ENVIRONMENTAL HEALTH REPORT

EVALUATION OF ASBESTOS EXPOSURES
DURING PIPE INSULATION REMOVAL
B-1900

FILE NO. B19-2393

DATE March 1, 1983

AUTHOR R. A. Dommer

CHECKED K. L. Daniel

DATE March 1, 1983

Summary

Industrial Hygiene monitoring was performed on February 7 and 8, 1983 to evaluate potential asbestos exposures to contractor personnel (Ultimate Insulators, Inc.) during removal of pipe insulation in the B-1900 block. The results of personnel monitoring show potential exposure levels were within the OSHA guideline of 2 fibers/cc. Incidental exposures to other block personnel were judged to be insignificant.

ST0015160

bbs
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INTRODUCTION

Industrial hygiene monitoring was performed to evaluate potential exposures to asbestos for contractor personnel during insulation removal in the B-1900 block. The monitoring was conducted by J. M. Carroll on February 7 and 8, 1983.

METHODOLOGY

Air samples were collected using Bendix BDX-44 air sampling pumps to pull air through open face 0.8 u Millipore filters. The air sampling rate for each sample was determined before and after sampling using a calibrated rotameter (Gilmont S/N B3975). Asbestos fibers present in the sampled air were trapped on the filters which were analyzed by Analytical Services using optical microscopy (File #3563).

DISCUSSION OF RESULTS

The results of the monitoring are presented in Table 1. Also listed on the table is the Exposure Guideline of 2.0 fibers greater than 5 microns in length per cubic centimeter of air. Repeated exposures to asbestos dust at average concentrations less than the exposure guideline should not result in a significant increase in the risk of asbestos related injury. This guideline is the current OSHA permissible exposure level for asbestos.

The personnel monitoring results for the two contractors who performed most of the insulation removal are within the exposure guideline. As a precaution, respiratory protection (3M Dust Respirator Model 8710) was worn by all personnel who performed the insulation removal. Because of the respiratory protection, actual exposures were less than the measured potential exposure levels shown in Table 1.

In addition, while initial recommendations did not include the use of disposable paper coveralls, they were used after February 8 when removing friable insulation. This was based on observations of the job that indicated the potential for contamination was higher than anticipated due to the condition of the insulation.

An area sample collected 15 to 20 feet downwind of the job on February 8 (wind from the South at about 10 mph) showed an average concentration of asbestos of 0.06 fiber/cc. This indicates that incidental potential exposures to other B-1900 block personnel who occasionally walked by the roped off area, were well with acceptable exposure guidelines.

ST0015161

RECOMMENDATIONS

The results of this monitoring should be provided to the contractor supervision (Ultimate Insulators, Inc.) and it should be recommended that they inform the personnel who were monitored, of the results.

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RAD/bbs

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TABLE 1

RESULTS OF ASBESTOS MONITORING
B-1900 INSULATION REMOVAL

SAMPLE DESCRIPTION		ASBESTOS # FIBERS > 5 μ/CC
G. Lopez	S.S. #536-647-7057 Worked underneath pipe 10:00 a.m. - 3:15 p.m. 2-7-83	0.53
DeLaFuente	S. S. #518-562-2396 Worked above pipe; 10:00 a.m - 3:15 p.m. 2-7-83	0.11
G. Lopez	S. S. #536-647-7057 In pipe rack; 8:20 a.m.- 2:40 p.m.; 2-8-83	0.72
DeLaFuente	S. S. #518-562-2396 In pipe rack; 8:20 a.m.- 2:40 p.m.; 2-8-82	(0.5)*
	Area sample 15-20 feet downwind of work, 2/8/83; 8:20 a.m.-2:40 p.m.	0.06
	Exposure Guideline 8 Hr. TWA	2.0

* Sampling pump was not running properly when picked up. This value is estimated and may not be accurate.

Note: Personnel involved in insulation removal wore approved respiratory protection. The values reported here represent potential exposures without regard to protective equipment.

bbs

ST0015163

support lab File B19-2393

FOR: R.A. Dommer
CHARGE: 6915-
SUBJECT: Air Monitors

Date: 2/25/83
File #: 3563
By: B. H. Lewis

Sample Description	# of Fibers Counted	# of Passes	
		12 passes/sq.	12 passes/sq. 150 ft/pass
#1	184	1/pass	
#2	114	4	
#3	315	1	
#4	163	1	
#5 Cass	121	4	
Blank	5	12	
		Total fibers in Sample	l air / fibers/l
#1	((184 x 12) - 5) 88 =	194000	365 / 0.53
#2	((114 x 3) - 5) 88 =	29700	261 / 0.11
#3	((315 x 12) - 5) 88 =	332.000	464 / 0.72
#4	((163 x 12) - 5) 88 =	172000	~340* / ~0.5
#5	((121 x 3) - 5) 88 =	31504	555 / 0.06

* pump problems

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INDUSTRIAL HYGIENE SAMPLE RECORD

FILE NUMBER	PROCESS	BLDG. NO.	DATE
		B-1900 Area	2-7-83

MATERIAL	SAMPLING METHOD	TRAPPING MEDIUM
Asbestos	Pump / filter cassette	Filter cassette

EQUIPMENT NUMBER	TYPE OF EQUIPMENT	FLOW INDICATOR SETTING	SAMPLE FLOW RATE	OUTSIDE TEMP.	INSIDE TEMP.
1 + 7	BENDIX	#1 56 RTM #7 45 RTM		20°C	

REMARKS (VENTILATION, ETC.)
OUTSIDE 15' HIGH WIND NW 5-15 MPH

Rotameter S/N B-3975

SAMPLE No.	DESCRIPTION OF SAMPLE	TIME Start	TIME End	PUMP STROKES Start	PUMP STROKES End
1	UISC G. LOPEZ Pump 1	1000	[illegible]	~~65 RTM~~ 41700	~~50 RTM~~ [illegible]
	SS 536647057	3.5 x [illegible] =		[illegible]	[illegible]
	315 min @ avg rate		1.16 l/min =	365 l	
	0.53 fibers/cc				
2	De LA Fuente Pump 1	1000	[illegible]	~~45 RTM~~ 7367	
	[illegible]				
	315 min @ avg rate of 0.83 l/min =			261 l	
	0.11 fibers/cc				

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INDUSTRIAL HYGIENE SAMPLE RECORD

FILE NUMBER	PROCESS	BLDG. NO.	DATE
		B1900	2-8-83

MATERIAL	SAMPLING METHOD	TRAPPING MEDIUM
Asbestos	Pump/Filter Cassette	Filter Cassette

EQUIPMENT NUMBER	TYPE OF EQUIPMENT	FLOW INDICATOR SETTING	SAMPLE FLOW RATE	OUTSIDE TEMP.	INSIDE TEMP.
1-7		#1 65 RTM #2 45 " #3 80 "		60 °C	°F

REMARKS (VENTILATION, ETC.)
Outside 15' high Wind 7-12 mph South

SAMPLE No.	DESCRIPTION OF SAMPLE	TIME Start	TIME End	PUMP STROKES Start	PUMP STROKES End
3	UISC G. LOPEZ	8:20	24°	65 RTM 45880	55 RTM 51300
pump 1	SS 536647057				
	380 min @ avg rate 1.22 l/min =			464 l	
	0.72 fibers/cc				
4	De La Fuente ~38 cc/stk estimated from sample #2 data	8:20	2:40	45 RTM 14574	ALMOST STOPPED 23509
pump 7	SS 578562396				
	~340 l				
	~ 0.50 fibers/cc				
5	Area STANDARD AT GRATING NEAR	8:20	2:40	80 RTM 58686	60 RTM 68323
pump F	WEST END OF DEMOLITION (15-20' from work)				
	Wind S @ 7-12 MPH				
	380 min @ avg rate 1.46 l/min =			555 l	
	0.06 fibers/cc				

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