PLAINTIFF'S EXHIBIT

DOW-1223

DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
504 687-4321

LOCATION CHLOR-ALKALI - 3601 BLDG.

ENVIRONMENTAL HEALTH REPORT

FILE NO. 101-13-1

DATE 1-13-75

AUTHOR Dannie Kennedy

CHECKED Charles E. Halphen

DATE

ASBESTOS SURVEY
CHLOR-ALKALI II

SUMMARY

Operator exposure to asbestos fibers while pulping cells have been monitored. The results were within the O.S.H.A. time weighted average limits for an eight-hour shift of 5 fibers per cc greater than 5 microns in length and also below Dow's goal of 2 fibers per cc. The two samples recorded were .046 and .79 fibers per cc.

Operators must be kept informed of the test results and the hazards involved in handling asbestos. Proper handling procedure and the wearing of proper respiratory equipment must also be re-emphasized. The MSA Comfo Respirator (Type BM 2301) with the dust filter is required.

ST0178366

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AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

LIFE IS FRAGILE · HANDLE WITH CARE

CHLOR-ALKALI II

Caught two samples while operators were pulping cells with the Bendix pump set at 2 liters per minute. The samples were collected from the breathing zone, with the sampler pinned on the operators lapel.

To pulp a cell the operators make up an asbestos-water slurry and pour it into the cell to plug leaks. The operators mix dry asbestos with water in a box to form the slurry. The asbestos should always be handled wet from the time the bag is opened until the slurry is completed. The operators wore required MSA Comfo Respirators with the asbestos dust covers (Type BM 2301).

The two samples varied from .046 to .79 fibers per cc greater than 5 microns in length. This is well below the O.S.H.A. standard of 5 fibers per cc and Dow's guideline of 2 fibers per cc.

The notable difference between the two samples could be due to the different procedures employed by the operators. Operators must be informed of the sample results and must also be made very conscious of the hazards involved with handling asbestos.

Safe operating procedures should be emphasized to keep exposure to a minimum. Wetting the asbestos thoroughly and wearing the proper breathing equipment when mixing the slurry also is most important. When using the respirator it is imperative that the asbestos dust cover be fitted on it. Another important precaution is the necessity for being extremely careful not to get slurry on clothing which will dry out and give off airborne asbestos particles. Partially used bags of asbestos should also be handled with caution and kept sealed in plastic to prevent airborne asbestos particles.

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DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
504 687-4321

LOCATION CHLORINE CELL SERVICE - 2603 BLDG.

ENVIRONMENTAL HEALTH REPORT

FILE NO. 102-13-1

DATE 1-13-75

AUTHOR Dannie Kennedy

CHECKED Charles E. Halphen

DATE

ASBESTOS SURVEY

CHLORINE CELL SERVICE

SUMMARY

Surveyed diaphragm drawing area for asbestos exposure while mixing asbestos slurry. The results were all within the O.S.H.A. time weighted average limits for an eight-hour shift of 5 fibers per cc greater than 5 microns in length and also within Dow's limits of 2 fibers per cc. The highest reading recorded was 0.46 fibers per cc.

Operators must be made aware of the survey results and the hazards of handling asbestos. The proper use and importance of protective respiratory equipment should be re-emphasized. The MSA Comfo Respirator (Type BM 2301) with the dust filter is required when handling asbestos.

ST0178350

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AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

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CHLORINE CELL SERVICE

Caught four samples at cell service in the diaphragm drawing area during normal asbestos slurry mixing cycle, using the Bendix pump set at 2 liters per minute, to determine the amount of asbestos exposure and whether or not the venting system was working properly.

The first sample was a breathing zone personnel sample taken during dumping of dry asbestos from bag into the mix tank. The dumping operation is within a vented hood area. No detectable fiber greater than 5 microns in length were detected in this sample.

The second sample was a 10 minute sample taken from the desk area which is some twelve feet from the mix tank. This sample contained 0.11 fibers per cc greater than 5 microns in length.

The third, an eighteen minute sample, caught at the top of the mix tank contained .061 fibers per cc greater than 5 microns in length.

The fourth sample was a two minute sample caught at the mix tank vent system scrubber. The sample was taken two minutes after dumping asbestos into the mix tank. The sample contained 0.46 fibers per cc greater than 5 microns in length.

These samples are well within the O.S.H.A. time weighted average limits for an eight-hour shift of 5 fibers per cc greater than 5 microns in length and also within Dow's limits of 2 fibers per cc which indicate that the entire system is working satisfactorily.

Personnel must be made aware of the monitoring results and the hazards of handling asbestos. The proper use and importance of proper protective respiratory equipment should be re-emphasized. The MSA Comfo Respirator (Type BM 2301) with the dust filter is required when handling asbestos.

DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70784
504 887-4321

LOCATION CHLORINE - 2601 BLDG.

ENVIRONMENTAL HEALTH REPORT

FILE NO. 103-13-1

DATE 1-13-75

ASBESTOS SURVEY
CHLORINE

AUTHOR Dannie Kennedy

CHECKED Charles E. Halphen

DATE

SUMMARY

Monitoring operations in the cell building for asbestos exposure while pulping cells has been completed. Results were favorable as they were well within the O.S.H.A. time weighted average limits for an eight-hour shift. The samples ranged from a low of .029 to a high of 0.33 fibers per cc greater than 5 microns in length which compares favorably to the O.S.H.A. eight-hour standard of 5 fibers per cc and Dow's standard of 2 fibers per cc.

Operators must be kept informed of the monitoring results and the hazards of handling asbestos. Proper handling procedure, and the wearing of proper breathing equipment should also be re-emphasized. The MSA Comfo Respirator (Type BM 2301) with the dust filter is required when handling asbestos.

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CHLORINE

Collected four samples at Chlorine using the Bendix pump set at 2 liters per minute. The samples were collected from the breathing zone with the sampler pinned on the operator's lapel.

The samples were collected while the operators were pumping cells. To pulp a cell the operators have to make up an asbestos-water slurry and pour it into the cell to plug any leaks. The operators mix dry asbestos with water in a 55 gallon drum to form the necessary slurry. The asbestos should be wet down anytime it is being handled.

The four samples ranged from a low of .029 fibers per cc greater than 5 microns in length to a high of 0.33 fibers per cc greater than 5 microns in length which is well within the standard, set by O.S.H.A., of 5 fibers per cc greater than 5 microns in length and Dow's standard of 2 fibers per cc.

<u>Results of Survey</u>

Sample	#1	0.029
	#2	0.10
	#3	0.33
	#4	0.13

Operators must be shown results of test and encouraged to continue following safety precautions by wetting asbestos thoroughly and wearing proper breathing apparatus when mixing slurry. The MSA Comfo Respirator (Type BM 2301) with the dust filter is required.

Another precaution that should be discussed is the necessity for being extremely careful not to get the slurry on clothing which will dry out and give off airborne asbestos particles. All partially used bags of asbestos should be kept covered with plastic to eliminate another source of airborne asbestos particles.

ST0178371

DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
504 687-4321

LOCATION - CHLORINE - CELL SERVICE - 2603 BUILDING

ENVIRONMENTAL HEALTH REPORT

FILE NO. 106-26-2

DATE February 4, 1975

AUTHOR Dannie Kennedy

ASBESTOS SURVEY

CHLORINE - CELL SERVICE

CHECKED Charlie Halphen

DATE February 22, 1975

SUMMARY

Conducted an update asbestos survey at Cell Service. Results were favorable and well within OSHA standards of 5 fibers per cubic centimeter and Dow's standard of 2 fibers per cubic centimeter.

The survey findings ranged from .03 to .11 fibers per cubic centimeter which indicate that the exhaust ventilation and scrubber system is functioning efficiently.

Please keep in mind that whenever such a volume of asbestos is being handled by so many people we must enforce safety precautious. Test results, potential hazards of over-exposure, safe operating procedures and the wearing of proper equipment must be discussed with each individual working in the area by supervision.

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INTRODUCTION

Conducted an asbestos survey at the Chlorine Cell Service building(2603) in the diaphragm dipping area to determine how much airborne asbestos was present and whether or not there had been any significant changes since the last survey.

METHODOLOGY

Five samples were collected with the shortest time period for any sample being three hours. The samples were collected using a calibrated Bendix pump (model C-115) with a millipore filter mounted in an open face filter holder. The sampler was attached to the operators lapel to get a breathing zone sample, while the remainder of the samples were collected at stationary points.

The first sample monitored the operators breathing zone for six hours while he was working in the vicinity of the diaphragm dipping tank and the asbestos slurry mix tank. The average flow on the pump was 1.9 litus per minute. The second sample was caught by placing the sampler on the operators desk, located approximately twelve feet from the slurry mix tank, for three hours with a pump flow of 2.0 litus per minute. The third sample was collected by setting the sampler on top of the exhaust ventilation hood of the slurry mix tank for four hours with an average pump flow of 1.8 litus per minute. The fourth sample was obtained by placing the sampler on the roof in the discharge flow of the vent scrubber for five hours with an average pump flow of 1.9 litus per minute. The last sample was caught by placing the sampler on top of a scale cabinet just behind the slurry mix tank for four hours with an average flow of 1.9 litus per minute.

RESULTS

	Location	Fibers per Cubic Centimeter	Calibrated Flow Rate (li/min.)
1.	Operator	.04	1.9
2.	Desk Top	.03	2.0
3.	Hood Top	.10	1.8
4.	Scrubber Discharge	.03	1.9
5.	Scale Cabinet Top	.11	1.9

Results are well within the OSHA standard of 5 fibers per cubic centimeter greater than five microns in length and Dow's standard of 2 fibers per cubic centimeter. These results indicate that the exhaust ventilation hood and vent scrubber are working efficiently.

CONCLUSIONS

Although the survey results were favorable, it is important to keep in mind that whenever such a volume of asbestos is being handled by so many different people we have to enforce necessary precautious.

RECOMMENDATIONS

Whenever operators are handling dry asbestos, they are required to wear the MSA Comfo Respirator (type 2301) with the asbestos dust cover (type 2301), rubber gloves and aprons or protective clothing. The asbestos should always be handled wet even to the point of wetting the bags before cutting them open. Practice good handling techniques to avoid spilling asbestos and never drop or throw sacks down which will result in airborne asbestos. Be careful not to get wet asbestos on tools and clothing which will dry out and give off airborne asbestos.

Housekeeping is another consideration. All broken sacks, waste material, empty sacks and contaminated material should be kept sealed and labeled in impermeable bags and containers. Asbestos should never be blown off contaminated areas. It should be vacuumed off and placed in the proper containers. Always wash hands after handling asbestos and never carry food or cigarettes in pockets while handling asbestos.

Another important point is to always be on the alert for problem areas and report them to supervision. Have any suspected area monitored.

COMMENTS

The results of the survey, consequences of an overexposure and precautionary measures must be emphasized and discussed with each individual working in the area. Cell Service supervision is responsible for the progress made in the area and are encouraged to maintain good housekeeping and careful handling of asbestos.

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