



DOW CHEMICAL U.S.A.

April 9, 1975

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
804 687-4321E.P. Edwards
Chlor-Alkali Manager

cc: C. Halphen

1. Hazards of Materials (toxicity sheets) are included in Safety Manual.

These sheets and control methods will be reviewed by F. Howard with each employee in group meetings by April 29.

Each employee will sign statement that review was held. This record will be filed in our Training Record and in industrial hygiene files.

2. Existing environmental conditions (9 materials) are sampled annually and semi-annually on asbestos. This will be done between 4/10/75 and 5/5/75.

Results communicated by letter and presented in regular safety meetings beginning 5/6/75.

Record kept as above.

3. Ran HCBP baselines in January 1975.
4. Currently completing annual physicals. Will be complete by May 5, 1975.

Charlie

P.C. Robert

Flash

Flash Howard

ST 0178543



DATA GATHERING
CHEMICAL EXPOSURE AND
NOISE SURVEYS

1975

NAME	CLASSIFICATION AND AREA	TYPE INSTRUMENT	START		FINISH		OTHER
			FLOW	TIME	FLOW	TIME	
VINCE SUBERMAN	SOT/CELLS	IMMULUENT SCOW	3.0cc	7:30 am	2.9cc	2:45 pm	APP: CHLORINE
Redacted	SOT-C-115	Bond's Air Sampling Pump	2.00/m	2330	2.00/m	0650	.0188 FE
	SOT-Lip	"	2.01/m	2330	2.00/m	0650	.0188
	SOT-Arine	"	2.00/m	2330	1.50/m	0615	.0040
	SOT-Buyer	"	2.00/m	2300	1.62/m	0600	.0055
	SOT-Caustic	"	2.01/m	2330	2.00/m	0630	.0261
	SOT-Brine	"	2.00/m	2330	2.00/m	0630	.0055
	SOT-Cells	"	1.80/m	2300	1.80/m	0600	.0165
	SOT-Power	"	2.00/m	2300	2.00/m	0545	.0165
	SOT-Cells	"	1.75/m	2300	1.75/m	0645	.0055
	SOT-Caustic	"	2.00/m	2330	2.00/m	0630	.0055
	SOT-Bob Crow	"	2.00/m	0730	1.60/m	1515	.0174
	SOT-Bob Crow	"	2.00/m	0730	1.60/m	1515	.0055
	SOT-Day Maint.	"	2.00/m	2730	1.80/m	1500	.0361
	SOT-Lag	"	1.80/m	11:15	1.70/m	0620	.0361
	SOT-Day Maint.	"		0730		1515	.0055

DATA GATHERING
CHEMICAL EXPOSURE AND
NOISE SURVEYS

NAME	CLASSIFICATION AND AREA	TYPE INSTRUMENT	START		FINISH		OTHER AG	
			FLOW	TIME	FLOW	TIME		
WIPER SUPERMAN	SOT / CELLS	IMMEDIATE SCANS	3.0cc	7:30 am	2.9cc	2:45 pm	CHLORINE	
Redacted	SOT-CELLS	DOSIMETER		7:00		2:55	61	5%
	SOT-CELLS	DOSIMETER		9:45		2:55	24	3%
	SOT-NAOH	DOSIMETER		8:00		2:35	42	0%
	SOT-NAOH	DOSIMETER		7:30		2:50	63	6%
	SOT-Power	DOSIMETER		7:00		2:45	32	14%
	SOT-Power	DOSIMETER		7:00		3:00	95	56%
	SOT-Lig. Cl ₂	DOSIMETER		7:00		3:00	42	-
	Brine	DOSIMETER		7:20		4:45	53	12%
	SOT-DAY MAINT.	DOSIMETER		7:30	Worn Red By Turbin 10 min.	3:20	22	18%
	SOT-DAY MAINT.	DOSIMETER		7:30		3:20	24	2%
	Pool Crew	DOSIMETER		7:35		3:30	61	3%
	Pool Crew	DOSIMETER		7:35		3:30	4:	8%
	SOT-Lig Cl ₂	DOSIMETER		7:30		3:00	0:	10%

DATA GATHERING
CHEMICAL EXPOSURE AND
NOISE SURVEYS

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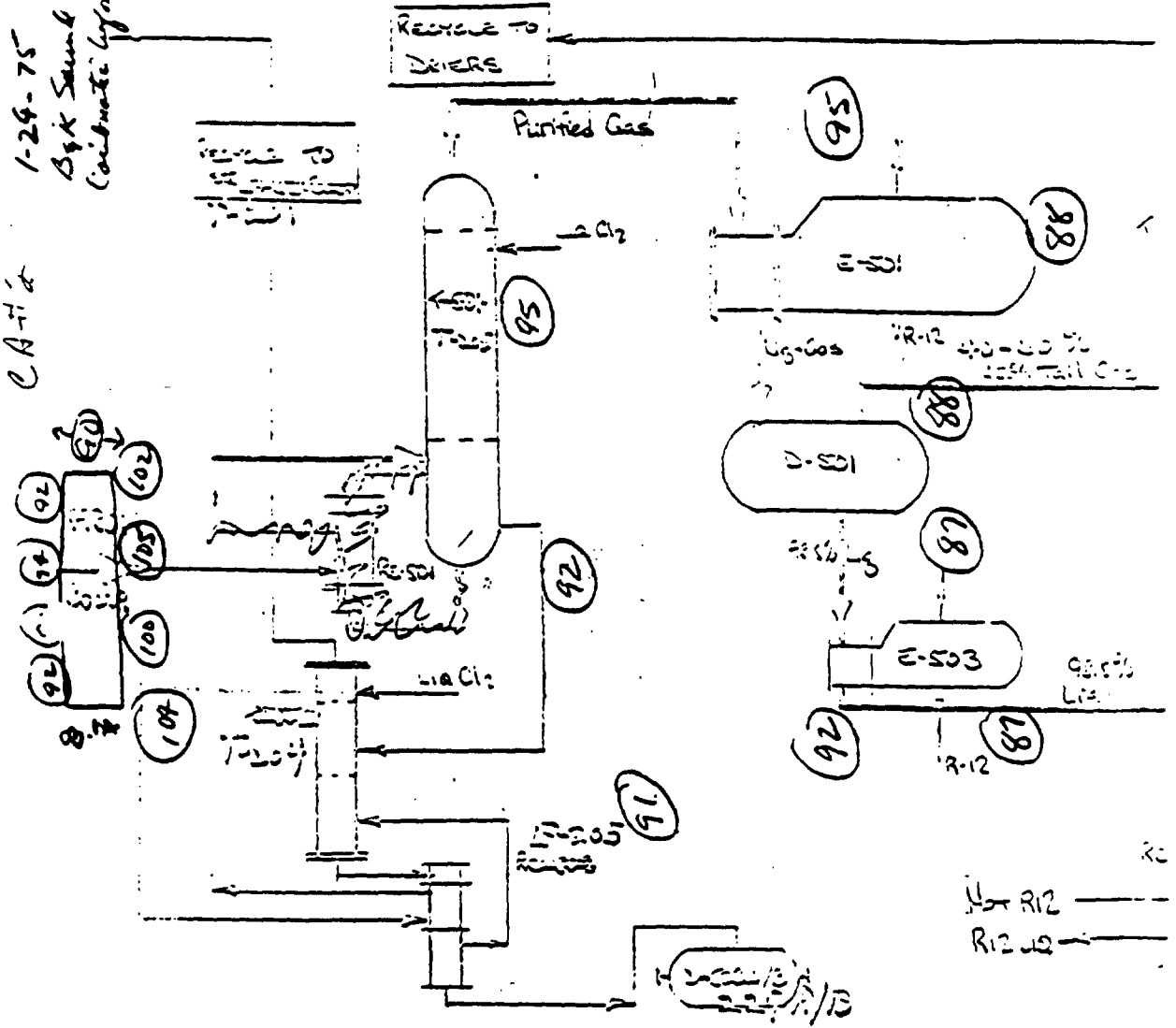
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Denney Kennedy

THE DOW CHEMICAL COMPANY
LOUISIANA DIVISION
RESEARCH AND DEVELOPMENT

REFERENCE NO. 1257-19

DATE THIS REPORT 9/25/75

CHARGE 38

DEPT. (i H II)

REPORT OF ANALYSIS

Environmental Health Analysis DATE OF SAM. 8/11/75
(H_2SO_4 , HCl , $NaOH$ in air)

H_2SO_4 = #1 + #2 - < 0.06 PPM(w)

$NaOH$ = #1 - 0.20 PPM(w)
#2 - 0.09 PPM(w)

HCl = #1 + #2 - < 0.20 PPM(w) —

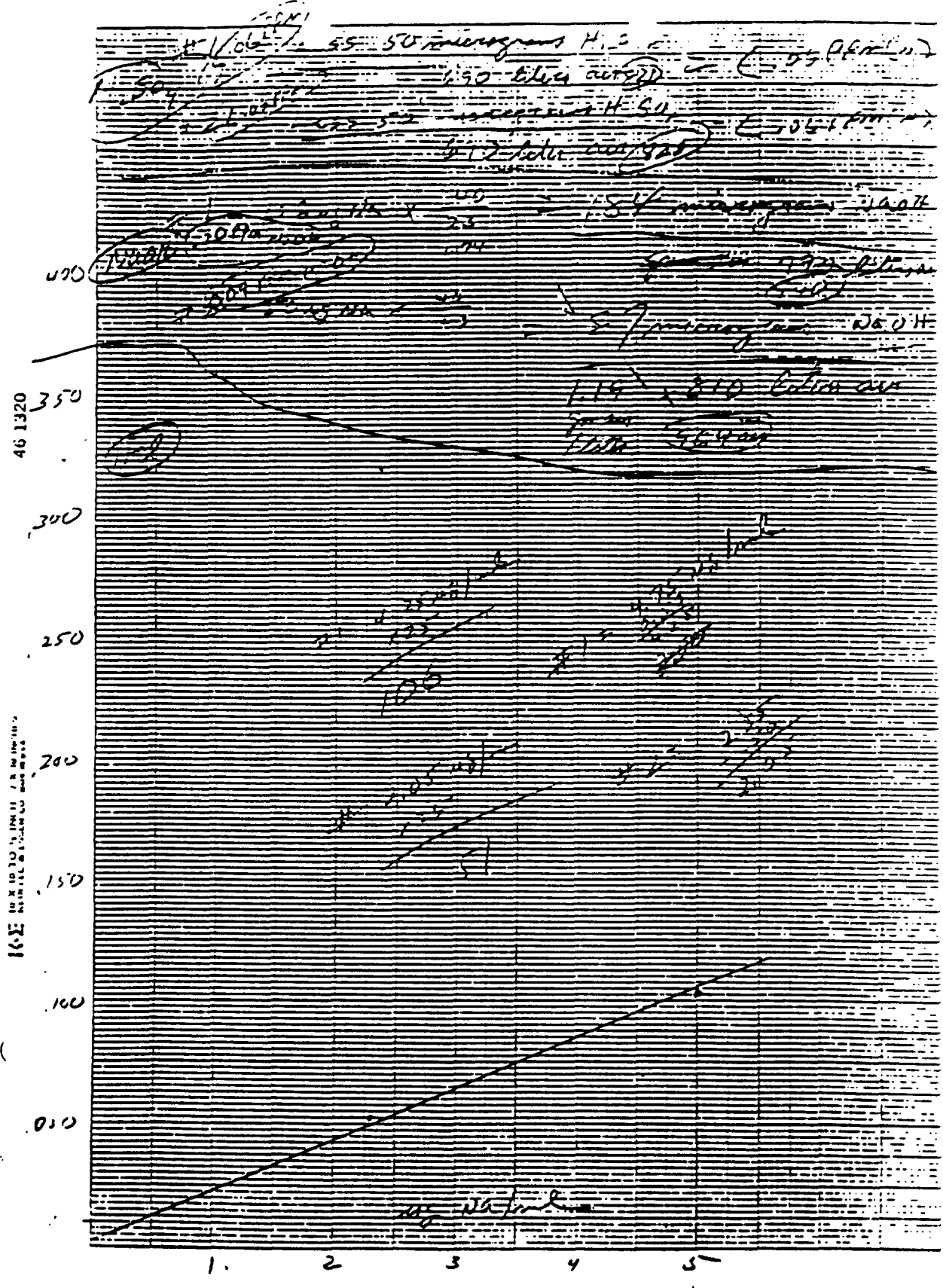
$$PPM_{BY\ VOL} \times X = \frac{mg}{m^3}$$

$$\frac{mg}{kg \text{ air}} \times 10^6 = \pi$$

$$\frac{mg}{\pi \text{ l/m}^3}$$

BY KH

Wayne Lagarias



7. 25

$$\begin{array}{r} \text{HCl} - <.15 \times .05 \times 1.03646 = <.00027 \text{ gm HCl} \\ \hline \text{450} \times 1.28 \\ \text{900 liters air} \times 1.28 \\ 1152 \end{array}$$

$$= <0.2 \text{ ppm}^{(w)} \text{ HCl in both samples}$$

To	Reagent	Date
Strong NaOH Sump	1N HCl	1-447
Start 2.0 flow	Cello	2.0 flow
Stop 1.5 flow		2.0 flow
0910 - 1545		0900 - 1545
8/7/75		8/7/75
Date Has Blank Sample		
① H ₂ SO ₄ Samples	② 1N NaOH	
8/5/75	8/5/75	
1025 - 1610	1025 - 1610	
2 flow —	2 flow —	
HCl Samples		
① 8/6/75	② 8/6/75	
0745 - 1515	0745 - 1515	
2 flow —	2 flow —	
From:		

000011000

Done H₂ - STORAGE, DRYING TOWERS 24 HRS
 Done HCL - STORAGE, 24 HRS.
 Done CELL IS - STORER^{24 HRS}, OPERATOR SW SWJ(3) - 24 HRS
 Done CELL - 2 SPOTS L & R 24 HRS.
 CILCOR IS - STORAGE 24 HRS
 DUST - SWP SWRS(2) BRINE TREAT 24 HRS (2) - 4 TONNE
 Done CELL - CELL REFUSING CILCOR - 24 HRS, SWP 24 HRS, ^{FLUORIDE} DECK 2.
 DERAKHUC - WAREY FLUORINE PAPER

HCB D

1. under W 504 B ^{start 3267¹⁰} 185674 ^{stop} 312534 (out at 1400 Hrs 7-21-75)
 2. Team next to P-508 ²²⁷⁻¹⁵ 642524 910964 (IN. at 1400 Hrs 7-22-75)

Asbestos

i.	Name	Sample		out area	1400 Hrs 7-21-75	
		Time	Time		Time started	Time finished
a)	Redacted	2.0	2.0	cells	1530	2200
b)		2.0	2.0	cells	2130	3600
c)		2.0	2.0	cells	0715	1515
d)		2.0	2.0	storage	^{7:15} 1400hrs	1400hrs 7/27/75

H₂SO₄ ① Storage Tanks Out @ 1025 8-5-75 @ 2.0 Fl.
 ② Drying Towers In @ 1610 8-5-75 @ 2.0 Fl.

HCL ① Behind D-202 Out @ 0745 5-6-75 @ 2.0 Fl.
 ② at H₂SO₄ unloading In @ 1515 @ 2.0 Fl.

.0472

①/F-5

TIME	FEED	FEED	FILTER DP	
0	5.0/250ml	1090	105#	Klett
5 min	9.0/250ml			1.92
15 min	16.25/250ml			2.2
25 min	WET CURR INTERIOR			3.0
10:50	5.6/250ml		2-3#	4.1
10:55	6/250ml		NOT clear ~100#	5.1
10:57			Clear up.	
11:30	22.4/250ml			
11:40	23.8/250ml		104#	
11:55	25/250ml		106#	
12:17	34.4/250ml			
12:39	38/250ml		Cloudy	

510110031

128.1731g = sample in oven
 2570.5g = Cake weight

NaOH

- ① Between S-4 & S-5 Out @ 0900 hrs 8-7-75 @ 2
- ② South I-Beam at Sump I In @ 1545 hrs 8-7-75 @ 26

5/8/75

Chlorothene

	Flow	Start Time	Factor	Flow	Finish
① East end of drum storage	970964	0730	.600	129853	1
② West end of drum storage	129853	0730	.600	282290	1

Dust

- ① By N. Exit of shop Out @ 0730 8-11-75
- Top of Sparkler Filter leaf storage In @ 1530
- ② 20.1382 4.3275 ϕ 20.1395 .0013g = 1.3mg / 960ms 1.355
- ③ 20.1482 4.3856 ϕ 20.1494 .0012g = 1.2mg / 960ms 1.25

Dust

- ③ Under Seperan Tank Out @ 0730 8-12-75 Flow 2.0
- ④ N of Magniflu Tank In @ 1500 Flow 2.0
- ① 20.1426 4.3540 20.1430 ϕ .0004g = 1.1mg / 960ms 1.1
- ② 20.2350 4.3569 20.2360 ϕ .0010g = 1.1mg / 960ms 1.1



DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
804 887-4321

LOCATION: Chlor-Alkali II - 3601 Building

INDUSTRIAL HYGIENE REPORT

ASBESTOS SURVEY

CHLOR-ALKALI II

FILE NO. 112-15-9

DATE Sept. 15, 1975

AUTHOR *Daniel Kennedy*

CHECKED *Charles H. Hylle*

DATE 9-15-75

SUMMARY

Conducted second asbestos survey for 1975 at Chlor-Alkali II. Monitored three operators for asbestos exposure while performing routine duties in the cell area and obtained a stationary sample in the asbestos storage area.

Results were favorable and ranged from .01 to .03 fibers (greater than 5 microns in length) per cubic centimeter.

Dow TLV is 2 fibers/cc. - (greater than 5 microns in length)

Good housekeeping and wearing proper respiratory equipment are necessary considerations whenever asbestos is handled.

DISTRIBUTION

Ed Edwards - 3701
Ronnie Cardinal - 3601
Flash Howard - 3601
Medical Dept. - 2303

G. W. Daigre - 2501
R. Langner - 1803 Bldg. - Midland
R. Daniels - B. 101 - Freeport



AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY



DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
604 687-4321

LOCATION - CHLOR-ALKALI 3601 BUILDING

ENVIRONMENTAL HEALTH REPORT

ASBESTOS SURVEY
CHLOR-ALKALI II

FILE NO. 107-28-2

DATE February 24, 1975

AUTHOR Dannie Kennedy

CHECKED Charlie Falphen

DATE

SUMMARY

Monitored operator exposure to asbestos while making rounds and pulping cells. The results are all well below the OSHA Standard of 5 fibers per cubic centimeter greater than 5 microns in length and Dow's goal of 2 fibers per cubic centimeter. The two samples recorded while making the rounds were .07 and .01 fibers per cc greater than 5 microns in length. The two samples collected while pulping cells registered .06 and .40 fibers per cubic centimeter.

The operators must be informed of the monitoring, results and the hazards involved in handling asbestos. The need for wearing and maintaining proper respiratory equipment must be reemphasized. The importance of safe work procedures and continued good housekeeping should also be recognized.

DISTRIBUTION

J. W. Bristol B. 2304
G. W. Daigre B. 2301
E. D. Campbell B. 2601
E. P. Edwards B. 3701
P. C. Robert B. 3601
L. G. Witty B. 3601
C. Howard B. 3601

H. R. Hoyle - 1707 Bldg. - Midland
F. D. Axe - Pittsburg
C. E. Caldwell - OCD
R. R. Langner - 607 Bldg. - Midland
C. L. Sercu - Cleveland
R. L. Daniel - B. 101 - Freeport
File (2)

AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY



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INTRODUCTION

Made required six month asbestos survey to update status of asbestos levels in the block.

METHODOLOGY

Caught four samples using the Bendix pump (Model C-115) and the millipore filter mounted in an open face filter holder. The sampler was attached to the operators lapel so that the area sampled would be in the breathing zone of the operator.

Two samples were caught as the operators were making their routine rounds through the plant (These two samples were of thirty-five and eighty-five minutes duration.) The other two samples were collected while the operators were pulping cells. (To pulp a cell the operators make up an asbestos-water slurry and pour it into the cells to plug leaks.) These samples were of eighty and forty minutes duration.

RESULTS

The two samples monitoring the operators making their rounds measured .07 and .01 fibers per cubic centimeter greater than 5 microns in length. The two samples which monitored the operators pulping cells measured .06 and .40 fibers per cubic centimeter.

CONCLUSIONS

These levels of asbestos remain well within the OSHA time weighted average of 5 fibers per cubic centimeter greater than 5 microns in length and Dow's goal of 2 fibers per cubic centimeter. Sampling will continue on a six month basis.

RECOMMENDATIONS

Since the operators must handle dry asbestos to form the pulping slurry there are several precautions that must be followed. The operators are required to wear the MSA Comfo Respirator (type BM 2301) with the asbestos dust cover (type BM 2301), rubber gloves and paper suits.

The asbestos should always be handled wet (the sack should be wet down even before cutting open). Practice good handling techniques to avoid spilling asbestos. All efforts should be made to prevent asbestos from becoming airborne when handling. Wet asbestos on tools and clothing should not be allowed to dry and eventually become airborne.

After the job is completed asbestos waste and empty asbestos sacks should be sealed and labeled in impermeable bags and containers. The asbestos should never be blown or shook off the contaminated suits. It should be vacuumed and placed in the proper designated containers.

Always wash hands after handling asbestos and never carry cigarettes or candy in pockets while working with asbestos.

The last point is to always be on the alert for problem areas, report them to supervision and have the area monitored if it is suspect.



DOW CHEMICAL U.S.A.

LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
804 887-4321

LOCATION - CHLOR-ALKALI 3601 BUILDING

ENVIRONMENTAL HEALTH REPORT

ASBESTOS SURVEY
CHLOR-ALKALI II

FILE NO. 107-28-2

DATE February 24, 1975

AUTHOR Dannie Kennedy

CHECKED Charlie Halphen

DATE February 22, 1975

SUMMARY

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The operators must be informed of the monitoring, results and the hazards involved in handling asbestos. The need for wearing and maintaining proper respiratory equipment must be reemphasized. The importance of safe work procedures and continued good housekeeping should also be recognized.

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AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY



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RECOMMENDATIONS

Since the operators must handle dry asbestos to form the pulping slurry there are several precautions that must be followed. The operators are required to wear the MSA Comfo Respirator (type BM 2301) with the asbestos dust cover (type BM 2301), rubber gloves and paper suits.

The asbestos should always be handled wet (the sack should be wet down even before cutting open). Practice good handling techniques to avoid spilling asbestos. All efforts should be made to prevent asbestos from becoming airborne when handling. Wet asbestos on tools and clothing should not be allowed to dry and eventually become airborne.

After the job is completed asbestos waste and empty asbestos sacks should be sealed and labeled in impermeable bags and containers. The asbestos should never be blown or shook off the contaminated suits. It should be vacuumed and placed in the proper designated containers.

Always wash hands after handling asbestos and never carry cigarettes or candy in pockets while working with asbestos.

The last point is to always be on the alert for problem areas, report them to supervision and have the area monitored if it is suspect.

Asbestos analysis

Date 10-16-1973

Std. TLV - 5 fib./cc < 5 μ long

ceiling - 5 fib./cc < 5 μ long

Area Tested	no. of test	Sample no. 9 - high - low fib./cc	
Cell area	5	.008 -	.005
Day crew - OT	3	.005 -	.005
Brine area	2	Nd	
Caution area	1	Nd	
Office area	1	Nd	
Power area	1	Nd	

L. Wittig

10/16/73

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 were 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: CHLOR-ALKALI - 3601 BLDG.

ENVIRONMENTAL HEALTH REPORT

ASBESTOS SURVEY
CHLOR-ALKALI II

FILE NO. 101-13-1

DATE 1-13-75

AUTHOR Dannie Kennedy

CHECKED Charles E. Hale

DATE

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 EM 2301) with the dust filter is required.

DISTRIBUTION :

J. W. Bristol	B. 2304	H. R. Hoyle - 1707 Bldg. - Midland
G. W. Daigre	B. 2501	F. D. Axe - Pittsburg
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File (2) AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY





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LOUISIANA DIVISION
PLAQUEMINE, LOUISIANA 70764
804 687-4321

LOCATION: Chlor-Alkali II - 3601 Building

INDUSTRIAL HYGIENE REPORT

ASBESTOS SURVEY

CHLOR-ALKALI II

FILE NO. 112-15-9

DATE Sept. 15, 1975

AUTHOR *Ronnie K. ...*

CHECKED *L. L. ...*

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AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY



CHANGE NO

SUBJECT: Shenton Court Street

Chin? 1/2 2

AUTH 913

FILE NO

BY

DATE 9/11/75

CHECKED BY

SHEET 1 OF 1

[illegible]

C4 #2 Abstraction Cont

4/10/75

① Harold Hubert

7/20/75

$$\frac{156 \times 92}{390 \times 2000} = .01840$$

② Gary Rugg

7/20/75

$$\frac{100 \times 92}{390 \times 2000} = .01179$$

③

Fred Williams

7/20/75

$$\frac{318 \times 92}{480 \times 2000} = .03078$$

④

Stationary Sample

7/21/75

$$\frac{164 \times 92}{1440 \times 2000} = .00524$$

Dennis Kennedy