

MILFORD, VIRGINIA, JOINT CEMENT PLANT
AIRBORNE ASBESTOS DUST SURVEY

Date Sampled: May 7, 1975

Name	Location or Job Title	Time Weighted Average fiber/ml	Filter No.	Elapsed Time mins.	Individual Cou fiber/ml
	Wet Mix Operator	0.59	87 79 90 82	109 98 99 163	0.36 2.07 0.55 0.13
	Dry Mixer	2.4	77 94 81 91 80 86 98	81 58 68 90 74 40 60	1.97 1.46 2.50 3.66 3.35 3.48 4.04
	Stacker	0.46	78 95	214 259	0.76 0.21
	Lid Placer	1.3	85 88	203 260	1.46 1.22
	Fork Truck Operator	0.24	76 83	408 60	0.26 0.10
Area Samples	Warehouse Dry Blending Dry Blending Wet Mixer Office		94 89 99 92 97	197 121 60 95 35	0.43 1.28 0.82 0.68 0.13

Date:

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 97 BLANK ELAPSED TIME (t) mins.
 FLOW RATE 1/min VOLUME (V) liters
 FIELD AREA (a) mm² BLANK COUNT (b) fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .07 fibers/field

0					
5					
10					
15					
20					

SUBTOTALS

TOTAL

$$\text{Constant } k = \frac{A}{1000 a}$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

Date: 5/1/77

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 96 Blk/c ELAPSED TIME (t) — mins.
 FLOW RATE 1/min VOLUME (V) — liters
 FIELD AREA (a) — mm² BLANK COUNT (b) — fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .08 fibers/field

0		—	1	1	—
			—		
		—	—	—	—
		—	—	—	—
		—	—	—	—
5		—	—	1	1
		—	—	—	—
		1	—	1	—
		—	—	—	—
		—	—	—	—
10		—	—	—	—
		—	—	—	—
		—	—	—	—
		—	—	—	—
15		1	—	—	—
		—	—	—	—
		—	—	—	—
		1	—	—	—
20		—	—	—	—

SUBTOTALS

TOTAL 8

$$\text{Constant } k = \frac{A}{1000 \text{ a}}$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Milford

Date 5-7-75

Name ENVIRONMENT

Pump Serial No. B-06-042

Title ---

Sampled by George Fowler

Signature _____

LOCATION	Warehouse	Dry Blending Area	Dry Blending Area	Wet Mix Area	Office
FILTER NO.	84	89	99	92	11
FLOW:					
Pump Setting	6	6	1	1	6
Liter/min (R)	1.7	1.7	1		
TIME:					
On	7:27	10:44	12:45	1:45	3:50
Off	10:44	12:45 12:55	1:45	3:30	4:05
ELAPSED TIME (min) (t)	197	212	60	95	35
VOLUME, Liters (t x r)	335	701	100	167	11
REMARKS					
CONCENTRATION (F) fibers/ml	1.1	1.0	1.0	1.0	

Total Sample Time (T) _____ mins.

Time Weight Av. Concentration =
$$\frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

Date: 8

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 92

ELAPSED TIME (t) 9 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 15.3 liters

FIELD AREA (a) 1000 mm²

BLANK COUNT (b) 0 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 1.1 fibers/field

0	1	1	—	1	1
	2	2	—	—	—
	1	2	—	2	—
	3	—	—	—	1
	2	—	—	—	—
5	1	1	—	1	—
	—	—	—	—	1
	—	—	1	1	1
	—	—	—	1	1
	—	—	1	—	—
10	—	1	1	2	1
	1	—	—	1	1
	—	2	2	—	—
	—	1	—	—	—
15	—	1	2	1	1
	1	—	—	—	2
	—	1	2	—	—
	—	1	1	—	—
	1	—	—	—	1
20	11	13	10	12	13
SUBTOTALS					TOTAL <u>47</u>

$$\text{Constant } k = \frac{A}{1000 a}$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

19.24
10

1.68

Date: 5/1/01

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 2077 ELAPSED TIME (t) _____ mins.
FLOW RATE 1.7 l/min VOLUME (V) _____ liters
FIELD AREA (a) 0.0422 mm² BLANK COUNT (b) _____ fibers/field
FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) 1/2 fibers/field

0					
5					
10					
15					
20					

SUBTOTALS

TOTAL _____

Constant $k = \frac{A}{1000 a}$

Fiber Concentration (F) = $\frac{k (f-b)}{V}$

1.12 1.13

Date: 9/1/77

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 84 ELAPSED TIME (t) 197 mins.
FLOW RATE 1.7 1/min VOLUME (V) 33.3 liters
FIELD AREA (a) mm² BLANK COUNT (b) 100 fibers/field
FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) 2.0 fibers/field

0					
	1	1	1	6	1
	1	1	2	1	1
	1	2	1	1	1
	1	1	2	1	1
5	1	1	1	1	2
	1	1	2	1	1
	1	1	2	1	1
	1	1	1	1	2
	1	1	1	2	3
	1	1	1	1	2
10	1	1	1	1	1
	1	1	1	2	3
	1	1	1	1	2
15	1	1	1	1	1
	1	1	1	2	2
	1	1	2	1	1
	2	1	1	1	1
	1	1	2	1	1
20					
SUBTOTALS	14	11	14	21	20
TOTAL					

Constant $k = \frac{A}{1000 a}$

Fiber Concentration (F) = $\frac{k (f-b)}{V}$ 1.180

Date: 1

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 89

ELAPSED TIME (t) 12 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 6 liters

FIELD AREA (a) 60432 mm²

BLANK COUNT (b) 0 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 1.11 fibers/field

0		4	1	1	
		3	1	2	
		3	1	2	
		1	1	2	
		2	2	2	
5		1	1	2	
		1	1	2	
		1	2	1	
		2	2	2	
		1	1	1	
10		1	1	1	
		1	1	1	
		1	1	1	
		1	1	1	
15		1	1	1	
		1	1	1	
		1	1	1	
		1	1	1	
20		1	1	1	
SUBTOTALS		31	21	22	
					TOTAL <u>11</u>

$$\text{Constant } k = \frac{A}{1000 a}$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

1987/1/1 128

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 99ELAPSED TIME (t) 60 mins.FLOW RATE 1.7 l/minVOLUME (V) 102 litersFIELD AREA (a) 0.0432 mm²BLANK COUNT (b) 0.8 fibers/fieldFILTER AREA (A) 855 mm²AV. FIBER COUNT (f) 5.1 fibers/field

0	2	4	1	-	2
	1	-	-	1	1
	-	-	-	-	1
	1	-	-	-	-
	-	1	1	-	-
5	2	-	-	-	2
	1	1	-	1	-
	1	1	-	-	2
	-	1	-	1	-
	1	-	-	-	-
10	1	1	-	1	-
	-	-	-	-	1
	1	-	-	1	2
15	1	-	-	-	-
	-	-	-	-	-
	1	1	1	-	-
	1	1	-	-	-
	-	1	1	-	1
20					
SUBTOTALS	14	12	5	7	17
TOTAL					60

$$\text{Constant } k = \frac{A}{1000 \text{ a}}$$

$$\text{Fiber Concentration (F)} = \frac{k(f-b)}{V}$$

19.65 fibers/liter

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Milford

Date 5-7-75

Name [Signature]

Pump Serial No. B-28-0490

Title Wet-Mix operator

Sampled by George E. Fowler

Signature _____

LOCATION	WET mix	WET mix	WET mix		
PUMP NO.	87	79	90	82	
FLOW:					
	Pump Setting	6	6	6	6
	Liter/min (R)	1.7	1.7	1.7	1.7
TIME:	On	7:21	9:00	10:38	12:47
	Off	9:00	10:38	12:47	3:30
ELAPSED TIME (min) (t)	109	98	99	163	
VOLUME, Liters (t x r)	18.5	16.7	16.8	27.7	
REMARKS					
CONCENTRATION (F) fibers/ml	0.30	2.07	1.10	1.12	

Total Sample Time (T) 469 mins.

Time Weight Av. Concentration =
$$\frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

$$\frac{(109)(0.30) + (98)(2.07) + (99)(1.10) + (163)(1.12)}{469}$$

$$39.2703 + 202.86 + 108.99 + 182.72$$

$$533.84$$

11.17

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 87ELAPSED TIME (t) 1.1 mins.FLOW RATE 1.7 l/minVOLUME (V) 1.9 litersFIELD AREA (a) 922 mm²

BLANK COUNT (b) _____ fibers/field

FILTER AREA (A) 855 mm²AV. FIBER COUNT (f) 92 fibers/field

0		1	—	—	—	—
		—	1	—	—	—
		1	—	1	1	2
		—	—	1	1	—
		—	1	5	1	1
5		1	—	1	—	—
		—	1	1	—	—
		—	—	—	—	—
		1	—	—	1	—
		—	1	—	1	—
10		—	1	—	1	—
		—	2	1	1	1
		—	—	1	—	—
		—	—	—	—	—
15		—	—	—	—	1
		1	1	1	1	—
		—	—	—	—	—
		1	—	—	—	—
		—	—	1	—	—
20		—	—	—	—	—
SUBTOTALS		6	10	13	6	5

TOTAL 40

$$\text{Constant } k = \frac{A}{1000 a} = 1.93$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

1.93

1.93

Date: 5/11/11

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 82
FLOW RATE 1.75 l/min
FIELD AREA (a) .00432 mm²
FILTER AREA (A) 855 mm²

ELAPSED TIME (t) 163 mins.
VOLUME (V) 2.77 liters
BLANK COUNT (b) 100 fibers/field
AV. FIBER COUNT (f) 2.6 fibers/field

0		1	—	2	—	1
		1	—	—	1	2
		—	—	—	1	1
		—	1	—	—	—
		1	—	—	1	
5		—	—	—	—	
		—	—		—	—
		—	2	1	—	
		1	1	1	1	
		—	—	—	—	
10		—	—	—	—	—
		—	—		—	1
		—		1	—	—
15			—	—	—	
			—	—	—	
			1	—	1	
			—	—	1	
		1	—	1	—	
20						

SUBTOTALS

TOTAL 176

Constant $k = \frac{A}{1000 a}$ 176

Fiber Concentration (F) = $\frac{k (f-b)}{V}$ 1.3

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 90ELAPSED TIME (t) 77 mins.FLOW RATE 1.7 l/minVOLUME (V) 16.8 litersFIELD AREA (a) .00432 mm²BLANK COUNT (b) .08 fibers/fieldFILTER AREA (A) 855 mm²AV. FIBER COUNT (f) .5 fibers/field

0					
	-	-	3	1	-
	-	-	-	1	1
	-	2	-	1	1
	-	2	-	1	-
	-	-	1	1	-
5	-	1	1	-	1
	-	-	1	-	-
	1	1	1	1	1
	1	-	-	-	-
	-	2	1	-	1
10	-	-	1	-	1
	1	-	-	1	1
	2	1	-	-	-
		1	1		
15	2	-	-	1	-
	-	-	-	-	-
	-	1	1	1	1
	1	-	1	-	1
	-	2	1	-	-
20					
SUBTOTALS	8	13	12	9	13
TOTAL <u>55</u>					

$$\text{Constant } k = \frac{A}{1000 a} \quad 177$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

17708
16
17.55

Date: 3/14/88

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 29

ELAPSED TIME (t) 2.5 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 167 liters

FIELD AREA (a) .00421 mm²

BLANK COUNT (b) _____ fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 1.52 fibers/field

0	—	1	2		
	2	1	2		
	2	2	1		
	1	2	3		
	2	2	1		
5	10	1	3		
	—	3	—		
	2	2	—		
	5	2	1		
	1	2	4		
10	1	2	3		
	2	—	—		
	2	1	3		
			1		
15	2	2	1		
	1	2	—		
	—	3	—		
	4	2	—		
	—	2	1		

SUBTOTALS 47 36 37

TOTAL 111

$$\text{Constant } k = \frac{A}{1000 \cdot a} = 19$$

$$\text{Fiber Concentration (F)} = \frac{k(f-b)}{V}$$

111 167 1.52 19 2.07

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Milford

Date 5-7-75

Name George Fowler

Pump Serial No. B-06-0105

Title Lid-placer

Sampled by George Fowler

Signature George Fowler

LOCATION	Lid Placer	Lid Placer			
FILTER NO.	85	88			
FLOW:					
Pump Setting	6	6			
Liter/min (R)	2.0	2.0			
TIME:					
On	7:17	10:40			
Off	10:40	3:30			
ELAPSED TIME (min) (t)	203	260			
VOLUME, Liters (t x r)	406	520			
REMARKS	Using FACE MASK Pump off 20 minutes for 1 inch 12 612.13				
CONCENTRATION (F) fibers/ml	1.46	1.			

Total Sample Time (T) 462 mins.

Time Weight Av. Concentration = $\frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$

$\frac{203(1.46) + (260)(1.)}{462} = 1.3$

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 85ELAPSED TIME (t) 7.0 mins.FLOW RATE 2.0 l/minVOLUME (V) 14.0 litersFIELD AREA (a) 10422 mm²BLANK COUNT (b) 0 fibers/fieldFILTER AREA (A) 855 mm²AV. FIBER COUNT (f) 2.0 fibers/field

0	6	4			
	2	2			
	5	1			
	1	3			
	2	1			
5	2	1			
	1	6			
	1	2			
	3	2			
	2	6			
10	2	5			
	2	1			
	2	1			
15	5	4			
	2	2			
	3	4			
	4	6			
	6	3			
20					

SUBTOTALS

52 71TOTAL 123

$$\text{Constant } k = \frac{A}{1000 a}$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

Date: 5/1/77

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 289

ELAPSED TIME (t) 7.00 mins.

FLOW RATE 2.0 l/min

VOLUME (V) 14.0 liters

FIELD AREA (a) 2.0 mm²

BLANK COUNT (b) 0.0 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 11.2 fibers/field

0	5	3			
	3	2			
	2	5			
	5	4			
	2	4			
5	2	4			
	3	3			
	3	2			
	4	2			
	3	6			
10	4	3			
	3	—			
	5	2			
15	4	3			
	3	2			
	3	4			
	2	7			
20	4	4			

SUBTOTALS 66 65

TOTAL 121

$$\text{Constant } k = \frac{A}{1000 a} = 178$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = 178 (11.2 - 0) = 1993.6$$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Milford

Date 5-7-75

Name J. J.

Pump Serial No. B-06-0282

Title Fork Truck operator

Sampled by George Fowler

Signature George Fowler

LOCATION	warehouse fork truck	warehouse fork truck			
FILTER NO.	76	83			
FLOW:					
Pump Setting	6	6			
Liter/min (R)	1.1	1.1			
TIME:					
On	7:12	2:30			
Off	2:30	3:30			
ELAPSED TIME (min) (t)	408	60			
VOLUME, Liters (t x r)	692	102			
REMARKS	pump off 30 minutes for lunch 11:40-12:30				
CONCENTRATION (F) fibers/ml	22	1			

Total Sample Time (T) 468 mins.

Time Weight Av. Concentration = $\frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$

$\frac{(408)(22) + 60}{468}$

$\frac{106 + 6}{468}$

$\frac{112}{468}$

Date: 8/11/88

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 76

ELAPSED TIME (t) 1 mins.

FLOW RATE 1.7 l/min

VOLUME (V) 1.7 liters

FIELD AREA (a) .00177 mm²

BLANK COUNT (b) 0 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 17 fibers/field

0	3	2	1	6	1
	1	1	2	1	1
	1	1	2	1	2
	1	2	2	1	1
	1	1	4	1	3
5	1	1	1	1	1
	1	1	1	1	1
	1	2	1	1	2
	1	3	1	1	1
	3	1	1	3	1
10	1	1	1	2	2
	1	1	2	1	3
	1	2	2	1	1
15	1	1	1	1	3
	3	1	1	1	1
	1	2	1	1	1
	2	1	1	1	2
20					
SUBTOTALS	19	21	23	25	TOTAL 93

$$\text{Constant } k = \frac{A}{1000 a}$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

26

Date: 5/1

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 83

ELAPSED TIME (t) 1 mins.

FLOW RATE 17 l/min

VOLUME (V) 17 liters

FIELD AREA (a) 855 mm²

BLANK COUNT (b) 0 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 17 fibers/field

0					
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
5	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
10	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
15	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
	1	1	1	1	1
20	1	1	1	1	1

SUBTOTALS

TOTAL 17

$$\text{Constant } k = \frac{A}{1000 a}$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

17 fibers/liter

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Milford

Date 5-7-75

Name N

Pump Serial No. B-06-0305

Title STACKER operator

Sampled by George Fowler

Signature George Fowler

LOCATION	STACKER	STACKER			
PUMP NO.	78	95			
FLOW:					
Pump Setting	6	6			
Liter/min (R)	1.0	1.0			
TIME:					
On	7:07	10:41			
Off	10:41	3:30			
ELAPSED TIME (min) (t)	214	257			
VOLUME, Liters (t x r)	385	466			
REMARKS		- 3.0 v.v. (unlabeled)			
CONCENTRATION (F) fibers/ml		1			

Total Sample Time (T) 47 mins.

Time Weight Av. Concentration =
$$\frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

$$\frac{.76(214) + (.21)(257)}{47}$$

1.046

Date: 5/10/00

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 95

ELAPSED TIME (t) 2:09 mins.

FLOW RATE 1.8 l/min

VOLUME (V) 3.6 liters

FIELD AREA (a) 100 mm²

BLANK COUNT (b) 0 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 1.7 fibers/field

0					
	1	—	1	2	—
	—	—	—	—	—
	—	—	—	1	1
	—	1	—	1	—
	—	—	1	2	1
5	1	—	—	2	1
	1	1	2	1	—
	1	1	—	—	1
	—	—	—	—	—
	—	—	—	—	—
10	—	—	—	—	—
	—	2	—	2	—
	—	1	—	1	—
	—	—	2	—	1
15	1	—	—	—	—
	—	—	1	—	—
	—	—	1	—	—
	—	—	—	—	—
	—	3	2	1	2
20					
SUBTOTALS	8	10	15	11	7
					TOTAL <u>51</u>

$$\text{Constant } k = \frac{A}{1000 a} = 1.95$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

1.95 (1.7 - 0) / 3.6 = 0.94

Date: 6/11

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 78

ELAPSED TIME (t) _____ mins.

FLOW RATE 1.8 l/min

VOLUME (V) _____ liters

FIELD AREA (a) 4.2 mm²

BLANK COUNT (b) _____ fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 1.56 fibers/field

0	2	15	2	1	2
	1	5	1	1	—
	2	1	—	2	—
	11	1	9	—	—
	1	2	—	2	2
5	3	1	1	—	1
	12	2	2	—	1
	2	9	1	—	2
	1	2	—	1	—
	—	2	1	—	2
10	1	2	—	—	1
	2	—	1	1	1
	7	1	—	1	—
15	3	1	—	—	1
	—	1	1	—	1
	1	1	2	1	1
	1	3	1	2	—
	2	2	2	2	1
20					
SUBTOTALS	34	40	23	26	20
					TOTAL <u>11</u>

Constant $k = \frac{A}{1000 \text{ a}}$

Fiber Concentration (F) = $\frac{k(f-b)}{V}$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Milford

Date 5-7-75

Name George Fowler

Pump Serial No. B-06-0444

Title Dry mix operator

Sampled by George Fowler

Signature George Fowler

LOCATION	Dry mixer	Dry mixer	Dry mixer	Dry mixer	Dry mixer
FILTER NO.	77	94	81	91	80
FLOW:					
Pump Setting	6	6	6	6	6
Liter/min (R)	1.75	1.75	1.75	1.75	1.75
TIME:					
On	7:07	8:30	9:28	10:36	12:34
Off	8:30	9:28	10:36	12:36	1:50
ELAPSED TIME (min) (t)	77	94	81	91	80
VOLUME, Liters (t x r)	142	161	142	158	140
REMARKS	USES FACE MASK DURING the time RAW MATERIALS ARE BEING DUMPED				
CONCENTRATION (F) fibers/ml	1.97	1.97	1.97	1.97	1.97

Total Sample Time (T) 471 mins.

Time Weight Av. Concentration = $\frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$

$(81)(1.97) + 58(1.40) + 62(1.40) + 90(1.40) + 14(1.40) + 14(1.40)$
471

160 + 85 + 170 + 279 + 194 + 194

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Milford

Date 5-7-75

Name

Pump Serial No. B-06-0444

Title Dry-mix operator

Sampled by George Fowler

Signature George Fowler

LOCATION	Dry mixer	Dry mixer			
FILTER NO.	86	98			
FLOW:					
Pump Setting	6	6			
Liter/min (R)	1.75	1			
TIME:					
On	1:50	2:30			
Off	2:30	3:30			
ELAPSED TIME (min) (t)	40	60			
VOLUME, Liters (t x r)	70	156			
REMARKS					
CONCENTRATION (F) fibers/ml	3.1	4.1			

Total Sample Time (T) _____ mins.

Time Weight Av. Concentration =
$$\frac{(t_1 F_1) + (t_2 F_2) + (t_3 F_3) + \dots}{T}$$

Date: 15

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 77

ELAPSED TIME (t) 1 mins.

FLOW RATE 1 l/min

VOLUME (V) 1 liters

FIELD AREA (a) mm²

BLANK COUNT (b) fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 1.17 fibers/field

0	4	1	1	1	
	2	3	1	1	
	2	3	2	1	
	1	1	1	2	
	—	5	1	2	
5	1	1	1	2	
	—	3	—	1	
	2	3	1	1	
	3	1	—	—	
	—	1	1	2	
10	2	2	2		
	4	1	—		
	—	2	2		
	—				
15	4	1	2		
	1	—	2		
	—	—	1		
	2	2	2		
	—	—	2		
20					
SUBTOTALS	29	22	26	19	
					TOTAL

Constant $k = \frac{A}{1000 a}$ 1.9

Fiber Concentration (F) = $\frac{k (f-b)}{V}$ 1.97

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 94

ELAPSED TIME (t) _____ mins.

FLOW RATE 1.75 l/minVOLUME (V) 102 litersFIELD AREA (a) 10437 mm²

BLANK COUNT (b) _____ fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) _____ fibers/field

0	3	—	2	1	1
	—	—	1	1	1
	1	1	—	2	1
	—	2	—	—	4
	—	2	2	2	1
5	—	—	2	—	—
	2	—	—	1	—
	1	1	1	1	1
	1	—	—	—	—
	—	1	—	—	—
10	1	1	—	1	—
	1	—	2	1	—
	1	—	1	—	2
	1	1	1	—	—
15	2	1	1	1	—
	2	1	—	1	1
	—	—	—	1	1
	—	2	2	1	1
	—	2	3	—	2
20	17	15	18	17	16

SUBTOTALS

TOTAL

$$\text{Constant } k = \frac{A}{1000 a}$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

12360000 11.96

Date: 9/11/11

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 81
FLOW RATE 1.25 l/min
FIELD AREA (a) 1111 mm²
FILTER AREA (A) 855 mm²

ELAPSED TIME (t) 11 mins.
VOLUME (V) 11 liters
BLANK COUNT (b) 0 fibers/field
AV. FIBER COUNT (f) 1.5 fibers/field

0	2	2	4	1	
	1	-	3	2	
	1	9	-	2	
	2	-	3	-	
	3	1	4	1	
5	1	1	1	1	
	1	1	-	1	
	2	-	-	1	
	2	1	1	2	
	2	3	1	2	
10	1	1	-	4	
	1	1	2	1	
	1	-	2	2	
	1	1			
15	1	3	2		
	5	3	-	1	
	-	3	2	2	
	1	1	1	3	
	2	1	4	2	
20	55	27	32	34	
SUBTOTALS					TOTAL <u>12</u>

Constant $k = \frac{A}{1000 a} = 1.4$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{1.4 (1.5 - 0)}{11} = 0.19$

Date: 6.7

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 291

ELAPSED TIME (t) 10 mins.

FLOW RATE 1.25 l/min

VOLUME (V) 12.5 liters

FIELD AREA (a) 855 mm²

BLANK COUNT (b) 0 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) 1.2 fibers/field

0					
	1	1			
	1	1			
	2	2			
	2	2			
5	1	1			
	2	2			
	3	6			
	2	2			
	2	2			
10	2	2			
	5	1			
	4	4			
15	2	3			
	1	4			
	2	2			
	1	2			
	2	2			
20					
SUBTOTALS	50	66			
TOTAL <u>12.5</u>					

$$\text{Constant } k = \frac{A}{1000 a} = 1.2$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

12.5 1.2 1.6

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 280ELAPSED TIME (t) 70 mins.FLOW RATE 1.75 l/minVOLUME (V) 12.25 litersFIELD AREA (a) 7000 mm²BLANK COUNT (b) 1.5 fibers/fieldFILTER AREA (A) 855 mm²AV. FIBER COUNT (f) 2.2 fibers/field

0	5	1	1		
	3	2	1		
	5	2	2		
	2	2	3		
	3	2	2		
5	1	2	5		
	1	2	3		
	1	1	1		
	4	1	5		
	1	2	5		
10	1	1	1		
	6	4	2		
	6	2	1		
15	2	1	1		
	6	6	2		
	2	1	1		
	3	1	6		
	3	1	1		

20
SUBTOTALS

64 34 49

TOTAL 151Constant $k = \frac{A}{1000 a}$ 175Fiber Concentration (F) = $\frac{k (f-b)}{V}$ 175 2.2 1.5
175

175

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 56ELAPSED TIME (t) 20 mins.FLOW RATE 1.21 l/minVOLUME (V) 20 litersFIELD AREA (a) 0.00432 mm²BLANK COUNT (b) 0 fibers/fieldFILTER AREA (A) 855 mm²AV. FIBER COUNT (f) 1.31 fibers/field

0		2	—	2	.	
		1	2	7	.	
		...	2	—	1	
		..		..	.	
		..	2	.	.	
5		3	—	.	.	
		—	—	1		
		1	5	.		
		4	2	2	1	
		1	1	2	.	
10		1	1	2	.	
		—	—	—	.	
		..	2	..	.	
15		1	2		.	
		—	—	2	.	
		1	1	—	.	
		—	2	—	.	
		2	6	1	.	
20						
SUBTOTALS				26	27	
						TOTAL

$$\text{Constant } k = \frac{A}{1000 a} = 12$$

$$\text{Fiber Concentration (F)} = \frac{k(f-b)}{V} = \frac{12(1.31-0)}{20} = 0.786$$

Date: _____

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 98ELAPSED TIME (t) 1.5 mins.FLOW RATE 1.75 l/minVOLUME (V) 1.05 litersFIELD AREA (a) 1.001122 mm²BLANK COUNT (b) 1.00 fibers/fieldFILTER AREA (A) 855 mm²AV. FIBER COUNT (f) 2.22 fibers/field

0	3	2	2		
	0	5	1		
	3	3	2		
	4	2	3		
	3	3	4		
5	1	1	2		
	1	2	2		
	3	2	4		
	2	3	4		
	3	1	2		
10	4	2	1		
	1	1	2		
	3	2	2		
	1	1			
15	2	4	2		
	3	4	1		
	—	6	2		
	3	—	1		
	1	4	2		
20	42	48	43		
SUBTOTALS					

TOTAL 133

$$\text{Constant } k = \frac{A}{1000 a} \quad 198$$

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V}$$

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

CSHO NO. T-2710	OSHA-1 NO. 183	FY 76
AREA 0280	REGION 04	

TO:
2. Georgia Pacific Corporation
P. O. Box 776
Marietta, Georgia, 30060

NOTIFICATION
OF FAILURE TO CORRECT ALLEGED VIOLATION
AND OF PROPOSED ADDITIONAL PENALTY

On the 7th day of August, 19 75,
Citation(s) was (were) issued to you in accordance with the provisions of section 9(a) of the Occupational Safety and Health Act of 1970 (84 Stat. 1601; 29 U.S.C. 651, et seq.), hereinafter referred to as the Act, notifying you of certain alleged violations of the Act and the dates by which they were to be corrected.

Based upon reinspection conducted on October 16, 1975, it is alleged that you have failed to correct the alleged violations specified below within the times prescribed:

5. SERIOUS VIOLATIONS:

5A. Citation No.:	Number of 5B. Days Failed to Correct	5C. Proposed Daily Additional Penalty	Proposed Total 5D. Additional Penalty For Failure To Correct
		X	

6. NONSERIOUS VIOLATIONS:

6A. Citation No. and Item No.	6B. Number of Days Failed to Correct	6C. Proposed Daily Additional Penalty	6D. Proposed Total Daily Additional Penalty	6E. Previously Allowed Abatement Credit	6F. Proposed Total Additional Penalty For Failure to Correct
1, Item 3	9	\$25.00	\$225.00	None	\$225.00
Item 4	10	\$18.50	\$185.00	None	\$185.00
				Total	\$410.00

7. Area Director Joseph L. Camp

8. Date October 22 19 75

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

CSHO NO. T-2710	OSHA-1 NO. 183	FY 75
AREA 0280	REGION 04	

TO:
2. Georgia Pacific Corporation
P. O. Box 786
Marietta, Georgia, 30060

NOTIFICATION
OF FAILURE TO CORRECT ALLEGED VIOLATION
AND OF PROPOSED ADDITIONAL PENALTY

On the 7th day of August, 19 75,
a Citation(s) was (were) issued to you in accordance with the provisions of section 9(a) of the Occupational Safety
and Health Act of 1970 (84 Stat. 1601; 29 U.S.C. 651, et seq.), hereinafter referred to as the Act, notifying you
of the alleged violations of the Act and the dates by which they were to be corrected.

Based upon reinspection conducted on October 16, 1975, it is alleged that you
have failed to correct the alleged violations specified below within the times prescribed:

5. SERIOUS VIOLATIONS:

Citation No. 5	Number of 5B. Days Failed to Correct	☒	5C. Proposed Daily Additional Penalty	Proposed Total 5D. Additional Penalty For Failure To Correct
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6. NON-SERIOUS VIOLATIONS:

Citation No. and Item No.	6B. Number of Days Failed to Correct	6C. Proposed Daily Additional Penalty	6D. Proposed Total Daily Additional Penalty	6E. Previously Allowed Abatement Credit	6F. Proposed Total Additional Penalty For Failure to Correct
Item 3	9	\$25.00	\$225.00	None	\$225.00
Item 4	10	\$18.50	\$185.00	None	\$185.00
Total					\$410.00

7. Area Director Joseph L. Camp

8. Date October 22 19 75

Georgia-Pacific



intracompany memo

to * See Below

location

from G. E. Wilson

location Portland

subject Asbestos

date October 23, 1975

As you are all aware, we find ourselves in a position of being legislated out of the use of asbestos in joint cement. The question at this time is not if it will happen, but when, as all signs are definite that levels will be established too low for us to live with.

With this in mind, one of our major priority in joint cement at this time is to develop a Ready-Mix that does not contain asbestos. We want to do this as soon as possible but at the same time want to take an orderly approach so that we do not get ourselves into a major catastrophe.

You can be of great assistance by fully cooperating with the product development people in formula changes and field trials, making sure that when material is sent out it is followed and we get accurate readings on performance. In view of the program, I would also remind you that you should maintain close control of your asbestos inventory so that we do not find ourselves in a position of writing off large quantities that are no longer useable.

G. E. W.

GEN:jb

* TO: Messrs. K. W. Brown - Acme
I. P. Weibel - Akron, N. Y.
M. A. Palmowski - Chicago J. S. Plant
R. V. Favero - Marietta
H. W. Scharf - Milford

cc: Messrs. E. B. Hollingsworth - Wilmington, Del. - Gypsum
T. W. Richards - Tigard Lab
C. W. Lehnert - Tigard Lab
E. L. Assen

RECEIVED

OCT 24 1975