

CHICAGO JOINT CEMENT PLANT
AIRBORNE ASBESTOS DUST SURVEY

April 5, 1976

PLAINTIFF'S EXHIBIT

GP-2070

SGP 0021627



intracompany memo

to	Mr. M. A. Palmowski	location	Chicago	
from	G. W. Green	location	Tigard	
subject	Airborne Asbestos Monitoring at <u>Chicago Joint Cement Plant</u>		date	April 29, 1976

F
I
L
E

Three production workers at the Chicago Plant were monitored for airborne asbestos fibers on April 5, 1976. All the time weighted averages continue to be well below the maximum of 5 fibers per milliliter. The overall average of 0.57 is slightly higher than the previous count. The reason for this is explained in the letter from George Fowler which is attached to this report.

The fiber counts were done by Dawn Steyaert.

G. W. G.

GWG/gvp

Att.

cc: Mr. J. R. Hurd - Portland
Mr. T. W. Richards - Tigard
Mr. G. F. Fowler - Marietta

check. G. W. G. should have been going to the client's products being in the building. he took samples

Georgia-Pacific



intracompany memo

to Mr. M. A. Palmowski location Chicago
from G. W. Green location Tigard
subject Airborne Dust Survey date July 23, 1976

F
I
L
E

The Chicago plant was sampled for ceiling concentrations of asbestos dust by George Fowler on June 28, 1976. This is a supplement to the April 5, 1976 sampling during which ceiling limit samples were inadvertently omitted. Please attach these results to that report. Results are as follows:

<u>Name</u>	<u>Location</u>	<u>Filter No.</u>	<u>Elapsed Time</u>	<u>Fibers/ml</u>
Tate Sylvester	Dry Mixer	442	15	1.55
Rafael Rodrigues	Wet Mixer	445	15	3.49
Mike Oravis	Stacking Area	433	15	1.09

G. W. G.

GWG/gvp

atts.

cc: Mr. J. R. Hurd - Portland
Mr. T. W. Richards - Tigard
Mr. G. F. Fowler - Marietta

SGP 0021629



intracompany memo

to Mr. G. W. Green
from G. F. Fowler
subject Chicago Airborne Samples

location Tigard
location Marietta
date July 12, 1976

On June 28, 1976 the Chicago plant was sampled for ceiling levels of asbestos fibers airborne. Normal production was observed.

A new dryblend mixer man was working that area. He had been on the job about three weeks. General plant was clean with good housekeeping observed in most areas.


G. F. F.

GFF/gvp

SGP 0021630

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago

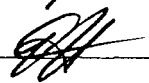
Date 6-28-76

Name *TATE Sylvester

Pump Serial No. B0 60288

Title DRY Mixer

Sampled by George Fowler

Signature 

LOCATION	Dry mix area				
FILTER NO.	442				
FLOW:					
Pump Setting	6				
Liter/min (R)	1.7				
TIME:					
On	2:27				
Off	2:42				
ELAPSED TIME (min) (t)	15				
VOLUME, Liters (t x r)	25.5				
REMARKS	1 Batch of R/m filter dropped during test	* Has been on Job 3 wks.			
CONCENTRATION (F) fibers/ml	1.55				

Total Sample Time (T) _____ mins.

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

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago

Date 6-28-76

Name Rafael Rodrigues

Pump Serial No. B 06 0288

Title Wet Mixer

Sampled by George Fowler

Signature *GF*

LOCATION	Ready Mix Wet Mixer				
FILTER NO.	445				
FLOW:					
Pump Setting	6				
Liter/min (R)	1.7				
TIME:					
On	2:45				
Off	3:00				
ELAPSED TIME (min) (t)	15				
VOLUME, Liters (t x r)	25.5				
REMARKS	1 Batch of R/m Pumped off during test				
CONCENTRATION (F) fibers/ml	3.49				

Total Sample Time (T) _____ mins.

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

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago

Date 6-28-76

Name Mike Oravis

Pump Serial No. B 06 0288

Title _____

Sampled by George Fowler

Signature *[Signature]*

LOCATION	STACKING AREA				
FILTER NO.	433				
FLOW:					
Pump Setting	6				
Liter/min (R)	1.7				
TIME:					
On	10:05				
Off	10:20				
ELAPSED TIME (min) (t)	15				
VOLUME, Liters (t x r)	25.5				
REMARKS					
CONCENTRATION (F) fibers/ml	1.69				

Total Sample Time (T) _____ mins.

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

SGP 0021633

Date: 7-19-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 442 ELAPSED TIME (t) 15 mins.
 FLOW RATE 1.7 l/min VOLUME (V) 25.5 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) 0 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .20 fibers/field

0	0	C	C	C	C
	0	1	C	C	C
	1	0	0	C	C
	1	0	0	1	C
	C	C	1	C	0
	0	C	1	C	C
5	0	C	1	C	1
	0	C	0	1	0
	C	0	C	0	0
	0	1	0	1	0
	0	0	0	0	0
10	1	0	0	0	C
	1	C	1	0	0
	0	C	0	0	C
	0	C	0	0	C
15	0	1	C	C	C
	0	1	C	0	C
	0	1	C	0	1
	C	1	C	C	C
20	C	C	C	1	0
SUBTOTALS	4	6	4	4	2

TOTAL 20

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.20 - 0)}{25.5} = 1.55$

Date: 7-19-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 445
FLOW RATE 1.7 l/min
FIELD AREA (a) 0.0432 mm²
FILTER AREA (A) 855 mm²

ELAPSED TIME (t) 15 mins.
VOLUME (V) 25.5 liters
BLANK COUNT (b) 0 fibers/field
AV. FIBER COUNT (f) .45 fibers/field

	1	1	1	1	1
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 10

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.45 - 0)}{25.5} = 3.49$

Date: 7-19-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 4133 ELAPSED TIME (t) 15 mins.
FLOW RATE 1.7 l/min VOLUME (V) 25.5 liters
FIELD AREA (a) .00432 mm² BLANK COUNT (b) 0 fibers/field
FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .14 fibers/field

0	C	O	C	1	O
	O	O	O	C	1
	O	O	O	C	O
	O	O	O	C	O
	O	C	1	C	C
5	O	O	C	O	C
	O	O	C	C	O
	1	O	1	C	C
	O	O	C	C	C
	C	O	O	O	O
	O	O	O	O	C
10	1	1	O	C	O
	O	1	O	C	O
	1	O	O	C	O
15	O	C	O	1	1
	O	1	O	O	1
	O	O	O	C	C
	O	C	O	C	O
	O	C	O	O	1
20	O	O	O	O	O
SUBTOTALS	3	3	2	2	4
TOTAL					<u>14</u>

Constant $k = \frac{A}{1000 a} = 199$

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{199 (.14 - 0)}{25.5} = 1.09$

CHICAGO JOINT CEMENT PLANT
AIRBORNE ASBESTOS DUST SURVEY

Date Sampled: April 5, 1976

Name	Location or Job Title	Time Weighted Average fiber/ml	Filter No.	Elapsed Time Mins.	Individual Count fiber/ml
Rafael Rodrigues	Wet Mix Operator	.37	356	154	.25
			360	128	.17
			368	95	.52
			373	72	.35
			371	58	.86
Pat Bell	All Areas	.42	354	97	.57
			370	138	.25
			361	92	.45
			365	74	.67
			358	51	.21
Mike Oravis	Dry Blend	.89	359	103	.42
			366	120	1.12
			374	80	.44
			363	40	1.34
			372	60	.98
Environmental	Dry Blend Lab Warehouse Wet Mix		357	94	.33
			355	120	.39
			367	147	.15
			362	108	.46

SGP 0021637

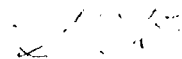


intracompany memo

to	G. W. Green	location	Tigard
from	G. F. Fowler	location	Marietta
subject	Chicago Sampling for <u>Airborne Asbestos</u>	date	April 6, 1976

On 4/5/76 samples were taken at the Chicago Plant. Production was limited to Ready Mix and Ready Mix Filler. Mike Oravis was a new man doing the dry blending. It was noted that due to his inexperience, an excess amount of dust was created. Generally, good housekeeping was observed at most working stations. Production for the day was just slightly down from their average production.

Please note that on two of the reports, additional pumps were used. This was due to minor malfunctions. Sample #364 is being returned as a blank.


G. F. F.

GF/ gp

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago
 Name PAT Bell
 Title _____

Date 4-5-76
 Pump Serial No. R-75-1206
 Sampled by George Fowler
 Signature *gff*

LOCATION	ALL AREAS	ALL AREAS	ALL AREAS	—	—					
FILTER NO.	354	370	361	365	358					
FLOW:										
Pump Setting	6	6	6	6	6					
Liter/min (R)	2.0	2.0	2.0	2.0	2.0					
TIME:										
On	7:20	8:57	11:15	1:17	2:31					
Off	8:57	11:15	1:17	2:31	3:22					
ELAPSED TIME (min) (L)	97	138	92	74	51					
VOLUME, Liters (L x r)	194	276	184	148	102					
REMARKS			30 min Lunch Pump off							
CONCENTRATION (F) fibers/ml	.57	.25	.45	.67	.21					

Total Sample Time (T) 452 mins.

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

$$55.29 + 34.5 + 41.4 + 49.58 + 10.71 = 191.48 \div 452 = \boxed{.42}$$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago

Date 4-5-76

Name MIKE CRAVIS

Pump Serial No. B-06-0444

Title Laborer

Sampled by George Fowler

Signature 

* B-06-0422

LOCATION	DRY Blend AREA	—	—	* —	—	—				
FILTER NO.	359	366	374	363	372	369				
FLOW:										
Pump Setting	6	6	6	6	6	6				
Liter/min (R)	1.75	1.75	1.75	1.75	1.75	1.75				
TIME:										
On	7:12	8:55	10:55	12:45	1:25	2:25				
Off	6:55	10:55	12:45	1:25 1:25	2:25	3:24				
ELAPSED TIME (min) (t)	103	120	80	40	60	59				
VOLUME, Liters (t x r)	180	210	140	70 68	105	103				
REMARKS			30 min lunch Pump off							
CONCENTRATION (F) fibers/ml	.42	1.12	.44	1.34 1.36	.98	1.42				

Total Sample Time (T) 462 mins.

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

$$43.26 + 134.4 + 35.2 + 53.6 + 58.8 + 83.78 = 409.04$$

$$409.04 \div 462 =$$

.89

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago

Date 4-5-76

Name Rafael Rodriguez

Pump Serial No. B-06-0305

Title Wet Mix operator

Sampled by [Signature]

Signature George Fowler

* B-06-0288

LOCATION	WET mix AREA	—	—	—	—					
FILTER NO.	356	360	368	373	371					
FLOW:										
Pump Setting	6	6	6	6	6					
Liter/min (R)	1.8	1.8	1.8	1.7	1.8					
TIME:										
On	7:08	9:02	11:10	1:15	2:27					
Off	9:02	11:10	1:15	2:27	3:25					
ELAPSED TIME (min) (t)	154	128	95	72	58					
VOLUME, Liters (t x r)	277	230	171	122	104					
REMARKS			* 30 min Lunch Pump off							
CONCENTRATION (F) fibers/ml	.25	.17	.52	.37	.86					

Total Sample Time (T) 507 mins.

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

$$38.5 + 21.76 + 49.4 + \frac{26.64}{25.2} + 49.88 = \frac{184.74}{186.18} \div 507 = \boxed{.37}$$

AIRBORNE ASBESTOS FIBER SAMPLING

Plant Chicago
 Name ENVIRONMENTAL
 Title _____

Date 4-5-76
 Pump Serial No. B-08-0490
 Sampled by George Fowler
 Signature George Fowler

LOCATION	DRY Blend	LAB	Warehouse	WET Mix Area	Blank
FILTER NO.	357	355	367	362	364
FLOW: Pump Setting	6	6	6	6	1
	Liter/min (R)	1.70	1.70	1.70	
TIME: On	7:26	9:00	11:00	1:27	1
	Off	9:00	11:00	3:15	
ELAPSED TIME (min) (t)	94	120	147	108	
VOLUME, Liters (t x r)	160	204	250	184	
REMARKS					
CONCENTRATION (F) fibers/ml	.33	.39	.15	.46	

Total Sample Time (T) 469 mins.

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

$$31.02 + 46.8 + 22.05 + 49.68 = 149.55 \div 469 = \boxed{.32}$$

Date: 4-22-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 354 ELAPSED TIME (t) 97 mins.
 FLOW RATE 2.0 l/min VOLUME (V) 194 liters
 FIELD AREA (a) 100432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) .60 fibers/field

0	2	0	1	1	0
	0	0	0	0	0
	1	1	2	0	0
	1	0	2	0	0
	0	0	0	1	0
5	2	3	0	2	2
	0	0	1	0	0
	3	0	0	0	0
	2	0	1	0	0
	0	0	0	0	0
10	0	0	1	1	1
	1	1	0	0	0
	1	0	1	0	0
	1	0	0	0	0
15	1	0	0	0	1
	0	4	0	0	0
	1	2	1	0	1
	1	1	1	0	0
	1	1	2	1	1
20	0	0	1	1	2
SUBTOTALS	18	13	14	7	8
					TOTAL <u>.60</u>

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

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.60 - .04)}{194} = .57$$

Date: 4-28-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 3104 - P1015

ELAPSED TIME (t) _____ mins.

FLOW RATE _____ l/min

VOLUME (V) _____ liters

FIELD AREA (a) _____ mm²

BLANK COUNT (b) _____ fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .04 fibers/field

0					
5					
10					
15					
20					

SUBTOTALS

TOTAL 1

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

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

SGP 0021644

Date: 4-23-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 370
 FLOW RATE 2.0 l/min
 FIELD AREA (a) .00432 mm²
 FILTER AREA (A) 855 mm²

ELAPSED TIME (t) 138 mins.
 VOLUME (V) 276 liters
 BLANK COUNT (b) .04 fibers/field
 AV. FIBER COUNT (f) .39 fibers/field

0	0	0	0	1	1
	1	1	0	0	0
	0	1	0	1	0
	1	0		0	1
	0	0		0	1
5	0	0	1	2	0
	0		1	1	0
	0		0	0	1
			1	0	1
	1		0	1	0
10	1		0	2	0
	0		1	0	0
	0	1	0	1	0
	0	2	0	0	0
15	0	0	1	0	0
	0		2	0	0
		0			1
	0	0	0	2	1
		1	0	1	1
20	1	0	0	1	1
SUBTOTALS	13	9			

SGP 0021645

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.39 - .04)}{276} = .25$

Date: 4-26-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 301

ELAPSED TIME (t) 92 mins.

FLOW RATE 2.0 l/min

VOLUME (V) 184 liters

FIELD AREA (a) 00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .46 fibers/field

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

SUBTOTALS

TOTAL 198

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.46 - .04)}{184} = .45$

SGP 0021646

Date: 4-22-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 3105
 FLOW RATE 2.0 l/min
 FIELD AREA (a) .00432 mm²
 FILTER AREA (A) 855 mm²

ELAPSED TIME (t) 74 mins.
 VOLUME (V) 148 liters
 BLANK COUNT (b) .04 fibers/field
 AV. FIBER COUNT (f) .54 fibers/field

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

SUBTOTALS 10 9 5 9 11 TOTAL 54

SGP 0021647

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.54 - .04)}{148} = .67$

Date: 4-26-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 358
FLOW RATE 2.0 1/min
FIELD AREA (a) .00432 mm²
FILTER AREA (A) 855 mm²

ELAPSED TIME (t) 51 mins.
VOLUME (V) 102 liters
BLANK COUNT (b) .04 fibers/field
AV. FIBER COUNT (f) .15 fibers/field

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

SGP 0021648

TOTAL 15

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.15 - .04)}{102} = .21$

Date: 4-26-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 359

ELAPSED TIME (t) 103 mins.

FLOW RATE 1.75 l/min

VOLUME (V) 180 liters

FIELD AREA (a) 1.0432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .42 fibers/field

0	0	1	0	0	1
	0	0	0	0	0
	1	0	0	0	0
	0	0	0	1	0
	0	1	2	1	1
5	1	0	0	0	0
	0	0	1	0	0
	0	1	1	0	1
	0	1	1	1	0
	1	0	0	0	1
10	1	0	0	0	1
	1	0	0	1	0
	2	1	0	0	0
	1	0	0	0	2
	0	0	0	0	1
15	1	0	0	0	1
	0	0	1	0	1
	0	0	1	1	0
	1	1	1	0	0
	0	0	0	1	1
20	0	0	0	1	1
	9	7	3	7	11

SUBTOTALS

TOTAL 40

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

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.42 - .04)}{180} = .42$$

SGP 0021649

Date: 4-28-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 3106
 FLOW RATE 1.75 1/min
 FIELD AREA (a) .00432 mm²
 FILTER AREA (A) 855 mm²

ELAPSED TIME (t) 120 mins.
 VOLUME (V) 210 liters
 BLANK COUNT (b) .04 fibers/field
 AV. FIBER COUNT (f) 1.23 fibers/field

0	3	2	1	2	1
	1	1	1	1	
	2	1	1	1	
	2	2	1	1	
	4	0	2	0	
	1	1	1	1	
5	0	2	1	1	
	1	3	2	0	
	0	1	1	2	
	2	1	0	1	
	2	3	3	1	
10	2	1	2	2	
	0	1	1	1	
	1	1	1	0	
	3	1	1	1	
15	4	2	0	2	
	0	1	2	1	
	0	2	2	1	
	1	1	1	0	
20	1	2	2	0	
SUBTOTALS	50	27	17	19	

SGP 0021650

TOTAL 107

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (1.23 - .04)}{210} = 1.12$

Date: 4-12-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 374ELAPSED TIME (t) 80 mins.FLOW RATE 1.75 l/minVOLUME (V) 140 litersFIELD AREA (a) .00432 mm²BLANK COUNT (b) .04 fibers/fieldFILTER AREA (A) 855 mm²AV. FIBER COUNT (f) .35 fibers/field

0	0	0	1	0	0
	0	1	0	0	0
	1	0	1	1	0
	0	1	0	1	0
	1	0	0	0	0
	0	1	0	0	0
5	1	0	1	1	0
	1	2	0	0	0
	0	0	0	0	1
	0	1	1	2	0
	0	1	0	0	0
10	0	0	0	0	0
	0	0	0	1	0
	0	0	0	1	1
	0	0	1	1	0
15	0	0	0	0	0
	0	0	0	0	1
	1	0	3	0	1
	2	0	0	0	0
	0	1	0	0	0
20	7	3	8	8	4
SUBTOTALS					

SGP 0021651

TOTAL 35

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

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.35 - .04)}{140} = .44$$

Date: 4-12-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 363

ELAPSED TIME (t) 40 mins.

FLOW RATE 1.78 l/min

VOLUME (V) ~~70~~ 68 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .50 fibers/field

0	3	0	1	0	0
	1	2	1	0	0
	0	0	0	0	0
	0	0	0	2	1
	0	0	1	0	0
	0	1	0	1	0
5	1	0	0	0	1
	1	1	0	0	2
	0	0	0	0	1
	0	0	0	0	0
	0	1	1	1	0
10	1	0	0	0	0
	2	0	1	0	1
	1	1	1	0	1
	1	0	0	1	0
15	0	1	0	1	0
	1	2	0	1	1
	0	0	1	0	0
	1	1	1	1	0
	0	1	0	1	1
20	0	1	0	1	1
SUBTOTALS	15	11	8	5	9

SGP 0021652

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.50 - .04)}{68} = \frac{13.2}{1.34}$

Date: 4-23-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 372 ELAPSED TIME (t) 60 mins.
 FLOW RATE 1.75 l/min VOLUME (V) 105 liters
 FIELD AREA (a) .00432 mm² BLANK COUNT (b) .04 fibers/field
 FILTER AREA (A) 855 mm² AV. FIBER COUNT (f) 1.56 fibers/field

0	0	1	1	0	1
	1	0	0	0	0
	1	1	1	1	0
	0	0	0	0	0
	0	0	1	1	1
	0	0	0	0	1
5	1	2	0	2	0
	0	0	2	0	1
	0	1	1	3	0
	1	1	5	0	2
	0	0	1	0	0
10	0	1	0	0	0
	0	1	0	0	0
	0	0	2	1	1
	1	0	1	1	1
15	2	0	1	0	0
	0	1	1	1	2
	0	0	0	0	1
	0	1	0	0	0
	0	1	0	0	0
20	7	11	17	10	11

SUBTOTALS

SGP 0021653

TOTAL 56

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.56 - .04)}{105} = .98$

Date: 4-22-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 3109

ELAPSED TIME (t) 59 mins.

FLOW RATE 1.75 l/min

VOLUME (V) 103 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .78 fibers/field

0	1	1	1	0	1
	1	1	2	1	0
	0	0	0	0	0
	0	0	1	1	2
	2	1	1	1	1
	1	0	2	1	1
5	1	0	0	1	3
	3	2	0	0	0
	0	0	0	1	1
	0	0	1	0	0
	0	0	1	1	1
10	0	0	1	1	1
	2	1	1	1	0
	0	0	0	0	1
	0	2	0	0	4
	0	1	1	0	2
15	1	1	0	1	1
	2	1	1	0	0
	1	1	0	1	0
	1	2	2	0	1
	1	0	0	0	1
20	1	0	0	0	1
SUBTOTALS	21	22	14	10	21

SGP 0021654

TOTAL 78

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

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198(.78-.04)}{103} = 1.42$$

Date: 4-22-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 356

ELAPSED TIME (t) 154 mins.

FLOW RATE 1.8 l/min

VOLUME (V) 277 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .39 fibers/field

0					
5					
10					
15					
20					

SUBTOTALS

TOTAL 39

SGP 0021655

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

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.39-.04)}{277} = .25$$

Date: 4-12-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 360

ELAPSED TIME (t) 128 mins.

FLOW RATE ~~1.8~~ 1.8 l/min

VOLUME (V) 230 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .24 fibers/field

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

SGP 0021656

TOTAL 24

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.24 - .04)}{230} = .17$

Date: 4-23-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 3108

ELAPSED TIME (t) 95 mins.

FLOW RATE 1.8 l/min

VOLUME (V) 171 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .49 fibers/field

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

SUBTOTALS

TOTAL 49

SGP 0021657

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.49 - .04)}{171} = .52$

Date: 4-23-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 373

ELAPSED TIME (t) 72 mins.

FLOW RATE ~~1.8~~ 1.7 l/min

VOLUME (V) ~~129~~ 122 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .27 fibers/field

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

SUBTOTALS

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

TOTAL .27

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.27-.04)}{122} = \frac{35}{122} = .37$$

SGP 0021658

Date: 4-27-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 371

ELAPSED TIME (t) 58 mins.

FLOW RATE 1.8 l/min

VOLUME (V) 104 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .49 fibers/field

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

SUBTOTALS

TOTAL

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

Fiber Concentration (F) = $\frac{k (f-b)}{V} = \frac{198 (.49 - .04)}{104} = .86$

SGP 0021659

Date: 4-22-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 357

ELAPSED TIME (t) 94 mins.

FLOW RATE 1.70 l/min

VOLUME (V) 160 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .31 fibers/field

0	0	0	0	1	1
	0	1	0	0	0
	0	0	1	0	1
	1	1	0	0	1
	0	0	0	0	0
	0	1	0	0	0
5	0	0	0	1	0
	0	0	0	1	0
	0	1	0	0	0
	0	1	0	0	0
	0	1	1	1	0
10	1	1	2	0	1
	1	0	0	0	0
	0	0	0	0	0
	0	1	0	0	0
15	1	0	0	1	0
	0	0	0	0	0
	1	0	0	0	0
	1	0	0	1	0
	1	0	2	1	0
20	7	8	5	7	4

SUBTOTALS

SGP 0021660

TOTAL 31

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

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.31 - .04)}{160} = .33$$

Date: 4-12-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 355

ELAPSED TIME (t) 120 mins.

FLOW RATE 1.70 l/min

VOLUME (V) 204 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .44 fibers/field

0	0	0	1	0	0
	2	1	0	0	0
	0	1	1	0	0
	1	1	0	0	1
	0	0	0	1	1
	0	0	0	1	0
5	1	0	1	1	0
	1	0	1	1	0
	0	1	0	1	3
	1	0	2	0	1
	0	1	1	0	0
10	0	0	1	1	0
	1	1	0	0	0
	0	0	1	1	0
	1	0	0	1	0
15	0	0	0	1	1
	0	0	1	0	0
	0	0	1	0	0
	0	0	0	1	0
20	1	0	0	0	1
SUBTOTALS	9	6	11	10	8

SGP 0021661

TOTAL 44

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

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.44 - .04)}{204} = .39$$

Date: 4-26-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 3107
 FLOW RATE 1.70 l/min
 FIELD AREA (a) .00432 mm²
 FILTER AREA (A) 855 mm²

ELAPSED TIME (t) 147 mins.
 VOLUME (V) 250 liters
 BLANK COUNT (b) .04 fibers/field
 AV. FIBER COUNT (f) .23 fibers/field

0	1	1	0	1	1
	0	0	0	0	0
	1	0	0	0	1
	1	1	0	0	0
	0	0	1	0	1
	0	0	0	0	0
5	0	0	0	0	0
	0	0	0	0	1
	0	0	0	0	0
	0	1	0	0	0
	0	0	1	0	0
	0	0	1	0	0
10	0	0	0	0	0
	0	0	0	1	1
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
15	0	0	0	0	1
	0	0	1	0	0
	0	0	0	0	0
	0	1	0	0	0
	0	0	0	0	1
20	0	0	0	0	1
SUBTOTALS	3	4	5	3	3

SGP 0021662

TOTAL .23

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

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.23 - .04)}{250} = .15$$

Date: 4-22-76

ASBESTOS FIBER COUNT WORKSHEET

SAMPLE NO. 362

ELAPSED TIME (t) 108 mins.

FLOW RATE 1.70 l/min

VOLUME (V) 184 liters

FIELD AREA (a) .00432 mm²

BLANK COUNT (b) .04 fibers/field

FILTER AREA (A) 855 mm²

AV. FIBER COUNT (f) .47 fibers/field

0	1	0	0	1	0
	0	2	0	0	0
	1	1	1	1	0
	0	0	0	1	0
	2	0	0	0	0
5	1	0	0	1	0
	1	0	2	0	1
	1	0	1	0	0
	0	0	0	1	1
	1	1	0	0	0
	1	0	1	0	1
10	0	0	1	2	0
	1	0	0	0	0
	0	0	0	1	1
	0	0	1	2	0
15	0	0	2	0	1
	0	0	1	0	0
	0	2	1	0	1
	0	1	1	0	0
20	0	1	0	0	1
SUBTOTALS	16	8	19	16	7

SGP 0021663

TOTAL 47

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

$$\text{Fiber Concentration (F)} = \frac{k (f-b)}{V} = \frac{198 (.47 - .04)}{184} = .46$$