

Monsanto

FROM (NAME & LOCATION)

John E. Fox - Texas City, Texas

PLAINTIFF'S EXHIBIT

MON-2302

December 15, 1972

→ α → R. G. McNeely - CB

SUBJECT : Asbestos Fiber Counting

REFERENCE :

TO : J. D. Fairing
Central Research S-3-B
St. Louis

Enclosed are ten dust samples for asbestos fiber analysis.
Nine are from Chocolate Bayou. All sample numbers beginning
with CB are to be charged to 10-46-908.12-863.

<u>Sample Number</u>	<u>Sampling Time, Minutes</u>	<u>Flow Rate Liters/Minute</u>
CB-72-1	15	2
CB-72-2	180	2
CB-72-3	15	2
CB-72-4	15	2
CB-72-5	135	2
CB-72-6	30	2
CB-72-7	45	2
CB-72-8	225	2
CB-72-9	225	2
TC-72-16	10	2


John E. Fox

JEF:wy

Encl.

MAP 04181

LAM000012

Name [REDACTED] Badge No. OMC 22 Date 12-8-72

Sample No. CB-72-1 Analysis _____ 8 hr. TWA _____

Work Area OMC INSULATION SHOP Hours 15min Asbestos yes - no

Job Description sawing 2" flat Thermobestos

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

MAP 04182

11/14/72

LAM000013

CA-72-1
SAMPLE

BLANK
12.24 L/m.c.
CONCENTRATION

INITIALS

TOTAL

FIBERS
> 5 μ

> 100 μ

[illegible]

0
1
1
1
2
2
2
5
5
0
1
3
2
1
2
1
3
0
0
1

[illegible]

TOT. _____

33

AV. _____

165

3.67125×10^5 lbs on lift
30 l of air

COUNT SHEET

MAP 04183

LAM000014

Name [REDACTED] Badge No. 22 Date 12/8/72
Sample No. 2 Analysis _____ 8 hr. TWA _____

Work Area OMC INSULATORS Shop Hours 3 Asbestos yes - no

Job Description SAWING & ROUTINE WORK

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

11/14/72

MAP 04184

LAM000015

INITIALS

0.03 liter/cc
CONCENTRATION

TOTAL

FIBERS
> 5 μ

 $\geq 10 \mu$ [illegible][illegible]

.

TOT. _____

1

AV. -

0.05

$$\frac{0.11125 \times 10^5 \text{ l. base on filter}}{360 \text{ l of air}} \times \frac{0.05}{1} = 0.0153$$

COUNT SHEET

Name Area Sample Badge No. _____ Date 12-8-77

Sample No. CB-72-3 Analysis _____ 8 hr. TWA _____

Work Area Shop Area^{OMC} Hours 15 min Asbestos yes - no

Job Description Area sample taken 15' from saw
while cutting 2" flat Fiberglass

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

MAP 04186

11/14/72

LAM000017

INITIALS

CB-72-3
SAMPLE

BLANK

7.05 lbs/lcc
CONCENTRATION

TOTAL

FIBERS
> 5 μ

> f0 y

[illegible]

1
0
0
4
0
2
0
1
1
2
0
0
1
2
0
2
1
1
1
0

[illegible]

TOT. _____

19

AV.

0.95

$$\frac{2.11375 \times 10^5 \text{ fibers on filter}}{30 \text{ l of air}}$$

COUNT SHEET

MAP 04187

LAM000018

Name [REDACTED] Badge No. 25 Date 12/8/72

Sample No. 4 Analysis _____ 8 hr. TWA _____

Work Area 50 E-8 Hours 15 MIN Asbestos yes - no

Job Description HAND SAWING 1" IN. THERMOBESTOS FOR INSULATION
EXCHANGERS - ALSO PUTTING UP INSULATION

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

MAP 04188

11/14/72

LAM000019

INITIALS

CR-72-4
SAMPLE

BLANK

0.74 L.F. - 1 cc
CONCENTRATION

TOTAL

FIBERS
> 5 μ

> 10 μ

[illegible][illegible][illegible]

TOT. _____

2

AV.

0.1

0.2225×10^5 liter or liter
30 l of air

COUNT SHEET

Name [REDACTED] Badge No. 25 Date 12/8/72

Sample No. 5 Analysis 8 hr. TWA

Work Area 50 E-8 Hours 2hr 15min Asbestos yes - no

Job Description INSTALLING & SAWING THERMOBESTOS @ Ground
Level

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

MAP 04190

11/14/72

LAM000021

DATE _____

SAMPLE

FIELD AREA

BLANK

0.77 Liters / cc
CONCENTRATION

CONCENTRATION

FIBERS
> 5 μ

 $\geq 10 \mu$ [illegible]

0
0
1
1
2
1
0
0
2
0
1
0
4
0
0
0
0
1
1
3

[illegible]

TOT. _____

17

AV. _____

0.85
$$\frac{1.89125 \times 10^5 \text{ liters or liters}}{270 \text{ l of air}}$$

270 l of air

COUNT SHEET

LAM000022

Name [REDACTED] Badge No. 22 Date 12-13-72

Sample No. 6 Analysis _____ 8 hr. TWA _____

Work Area OMC Insulation shop Hours 30 MIN. Asbestos yes - no

Job Description Working in insulation shop

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

MAP 04192

11/14/72

LAM000023

DATE _____

SAMPLE

FIELD AREA

BLANK

INITIALS

1.300.000/c.c
CONCENTRATION

TOTAL

FIBERS
> 5 μ

10 μ

[illegible]

0
0
0
0
0
1
2
1
0
0
0
0
0
1
0
0
1
0
1
0

[illegible]

TOT.

7

AV. _____

0.37

0.77875×10^5 l. per 60 l. of air

COUNT SHEET

Name [REDACTED] Badge No. 79 Date 12-13-72

Sample No. 7 Analysis _____ 8 hr. TWA _____

Work Area Dept 27 Hours 45 Asbestos yes - no

Job Description insulating exchangers

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

MAP 04194

11/14/72

LAM000025

LAM000026

Name [REDACTED] Ige No. 79 Date 12-13-72

Sample No. 8 Analysis _____ 8 hr. TWA _____

Work Area Q7 - Lunch room Hours 4:15 Asbestos yes - no

Job Description Insulating exchangers - lunch room

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

MAP 04196

11/14/72

LAM000027

INITIALS

CB-72-8
SAMPLE

BLANK

0.49 Liters / cc
CONCENTRATION

TOTAL

FIBERS
> 5 μ

 $\geq 10 \mu$ [illegible]

0
1
0
3
1
0
0
1
0
1
2
1
1
1
3
3
1
0
1
0

[illegible]

TOT. _____

20

AV.

1

2.225×10^5 fibers on filter
450 l. of air

COUNT SHEET

MAP 04197

LAM000028

Name [REDACTED] Ige No. 94 Date 12-13-72

Sample No. 9 Analysis 8 hr. TWA

Work Area 26-27 Hours 4:15 Asbestos yes - no

Job Description insulating exchangers - lunch room

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

MAP 04198

11/14/72

LAM000029

CR-72-9
SAMPLE

BLANK
0.47 liters/cc
CONCENTRATION

INITIALS

FIBERS
> 5 μ

 $\geq 10 \mu$ [illegible]

2
3
1
0
1
1
0
0
0
0
3
0
2
0
1
2
0
0
2

[illegible]

TOT. _____

19

AV. _____

0.95

$2,11375 \times 10^5$ liters on filter
450 l of air

COUNT SHEET

1-26 73

CB-73

Job Description _____

Job Description _____

Job Description _____

<u>Job Description</u>	

11/14/72

LAM000031

M O N S A N T O C O M P A N Y
C O R P O R A T E R E S E A R C H D E P A R T M E N T
P H Y S I C A L S C I E N C E S C E N T E R
M I C R O S C O P Y G R O U P
S T. L O U I S

A S B E S T O S F I B E R C O U N T

F O R

J O H N E . F O X

L O C A T I O N

T E X A S C I T Y

S A M P L E I D E N T I F I C A T I O N

C B - 7 3 - 1 0

TOTAL NUMBER OF FIELDS COUNTED =	20.	
FIELD SIZE =	0.003842	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS COUNTED =	0.	
AVERAGE NUMBER OF FIBERS PER FIELD =	0.000	
AREA OF FILTER =	855.	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS ON FILTER =	0.	
AIR FLOW =	2.00	LITERS PER MINUTE
SAMPLING TIME =	15.	MINUTES
TOTAL VOLUME OF AIR SAMPLED =	30.00	LITERS

FIBERS PER CUBIC CENTIMETER OF AIR =

0.000

DATE: APRIL 19, 1973
COUNTED BY: JOHN RUPRECHT
REQUEST NO: 01069

MAP 04201

LAM000032

Name [REDACTED] Inge No. 22 Date 1-26-73

Sample No. CB73-11 Analysis 8 hr. TWA

Work Area Omni Insulating Shop Hours 0:15 Asbestos yes - no

Job Description Cutting Insulating on Band Saw

(SAMPLE TAKEN AFTER 1ST REVISION OF SHOP AREA)

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

MAP 04202

11/14/72

LAM000033

M O N S A N T O C O M P A N Y
C O R P O R A T E R E S E A R C H D E P A R T M E N T
P H Y S I C A L S C I E N C E S C E N T E R
M I C R O S C O P Y G R O U P
S T. L O U I S

A S B E S T O S F I B E R C O U N T

F O R

J O H N E . F O X

L O C A T I O N

T E X A S C I T Y

S A M P L E I D E N T I F I C A T I O N

C B - 7 3 - 1 1

TOTAL NUMBER OF FIELDS COUNTED =	20.	
FIELD SIZE =	0.003842	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS COUNTED =	27.	
AVERAGE NUMBER OF FIBERS PER FIELD =	1.350	
AREA OF FILTER =	855.	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS ON FILTER =	300429.	
AIR FLOW =	2.00	LITERS PER MINUTE
SAMPLING TIME =	15.	MINUTES
TOTAL VOLUME OF AIR SAMPLED =	30.00	LITERS

FIBERS PER CUBIC CENTIMETER OF AIR = 10.014

DATE: APRIL 19, 1973
COUNTED BY: JOHN RUPRECHT
REQUEST NO: 01069

MAP 04203

LAM000034

Name [REDACTED] I dge No. 22 Date 1-26-73

Sample No. CB7312 Analysis 8 hr. TWA

Work Area ^{one} Insulating Shop Hours 0:30 Asbestos yes - no

Job Description Sawing Block (Brick) asbestos

(SAMPLE TAKEN AFTER 1ST REVISION OF SHOP AREA)

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

MAP 04204

11/14/72

LAM000035

M O N S A N T O C O M P A N Y
C O R P O R A T E R E S E A R C H D E P A R T M E N T
P H Y S I C A L S C I E N C E S C E N T E R
M I C R O S C O P Y G R O U P
S T. L O U I S

A S B E S T O S F I B E R C O U N T

F O R

J O H N E . F O X

L O C A T I O N

T E X A S C I T Y

S A M P L E I D E N T I F I C A T I O N

C B - 7 3 - 1 2

TOTAL NUMBER OF FIELDS COUNTED =	20.	
FIELD SIZE =	0.003842	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS COUNTED =	31.	
AVERAGE NUMBER OF FIBERS PER FIELD =	1.550	
AREA OF FILTER =	855.	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS ON FILTER =	344938.	
AIR FLOW =	2.00	LITERS PER MINUTE
SAMPLING TIME =	30.	MINUTES
TOTAL VOLUME OF AIR SAMPLED =	60.00	LITERS

FIBERS PER CUBIC CENTIMETER OF AIR =

5.749

DATE: APRIL 19, 1973
COUNTED BY: J O H N R U P R E C H T
REQUEST NO: 01069

LAM000036

MAP 04205

Name [REDACTED] Page No. 22 Date 1-26-73

Sample No. CBZ-13 Analysis 8 hr. TWA

Work Area CMC Insulating Shop Hours: 45 Asbestos yes - no

Job Description Cutting asbestos blocks - sheets on
Band Saw. (SAMPLE TAKEN AFTER 1ST REVISION OF SHOP
AREA)

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

[illegible]

Job Description _____

Work Area	Hours	Asbestos yes - no
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Job Description _____

Work Area _____ Hours _____ Asbestos yes - no

Job Description _____

M O N S A N T O C O M P A N Y
C O R P O R A T E R E S E A R C H D E P A R T M E N T
P H Y S I C A L S C I E N C E S C E N T E R
M I C R O S C O P Y G R O U P
S T. L O U I S

A S B E S T O S F I B E R C O U N T

F O R

J O H N E . F O X

L O C A T I O N

T E X A S C I T Y

S A M P L E I D E N T I F I C A T I O N

C B - 7 3 - 1 3

TOTAL NUMBER OF FIELDS COUNTED =	20.	
FIELD SIZE =	0.003842	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS COUNTED =	19.	
AVERAGE NUMBER OF FIBERS PER FIELD =	0.950	
AREA OF FILTER =	855.	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS ON FILTER =	211413.	
AIR FLOW =	2.00	LITERS PER MINUTE
SAMPLING TIME =	45.	MINUTES
TOTAL VOLUME OF AIR SAMPLED =	90.00	LITERS

FIBERS PER CUBIC CENTIMETER OF AIR = 2.349

DATE: APRIL 19, 1973
COUNTED BY: JOHN RUPRECHT
REQUEST NO: 01069

MAP 04207

LAM000038

Name [REDACTED] Page No. 22 Date 4-12-72

Sample No. CB73-14 Analysis 8 hr. TWA

Work Area Fabricating Area Hours 4 Asbestos yes - no

Job Description General shop work Kays 10

(SAMPLED AFTER 2ND REVISION)

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

MAP 04208

11/14/72

LAM000039

M O N S A N T O C O M P A N Y
C O R P O R A T E R E S E A R C H D E P A R T M E N T
P H Y S I C A L S C I E N C E S C E N T E R
M I C R O S C O P Y G R O U P
S T. L O U I S

A S B E S T O S F I B E R C O U N T

F O R

J O H N E . F O X

L O C A T I O N

T E X A S C I T Y

S A M P L E I D E N T I F I C A T I O N

C B - 7 3 - 1 4

TOTAL NUMBER OF FIELDS COUNTED =	20.	
FIELD SIZE =	0.003842	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS COUNTED =	7.	
AVERAGE NUMBER OF FIBERS PER FIELD =	0.350	
AREA OF FILTER =	855.	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS ON FILTER =	77889.	
AIR FLOW =	2.00	LITERS PER MINUTE
SAMPLING TIME =	240.	MINUTES
TOTAL VOLUME OF AIR SAMPLED =	480.00	LITERS

FIBERS PER CUBIC CENTIMETER OF AIR =

0.162

DATE: APRIL 19, 1973
COUNTED BY: JOHN RUPRECHT
REQUEST NO: 01069

MAP 04209

LAM000040

Name [REDACTED] Idge No. 22 Date 9-12-73

Sample No. CB73-15 Analysis 8 hr. TWA

Work Area Cutting Room
Relocating Shop Hours 2 Asbestos yes - no

Job Description General shop work & cutting 90°ells
with Raylo 10 - Relocating insulation
(SAMPLED AFTER 2ND REVISION)

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

LAM000041

MAP 04210

11/14/72

M O N S A N T O C O M P A N Y
C O R P O R A T E R E S E A R C H D E P A R T M E N T
P H Y S I C A L S C I E N C E S C E N T E R
M I C R O S C O P Y G R O U P
S T. L O U I S

A S B E S T O S F I B E R C O U N T

F O R

J O H N E . F O X

L O C A T I O N

T E X A S C I T Y

S A M P L E I D E N T I F I C A T I O N

C B - 7 3 - 1 5

TOTAL NUMBER OF FIELDS COUNTED =	20.	
FIELD SIZE =	0.003842	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS COUNTED =	13.	
AVERAGE NUMBER OF FIBERS PER FIELD =	0.650	
AREA OF FILTER =	855.	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS ON FILTER =	144651.	
AIR FLOW =	2.00	LITERS PER MINUTE
SAMPLING TIME =	120.	MINUTES
TOTAL VOLUME OF AIR SAMPLED =	240.00	LITERS

FIBERS PER CUBIC CENTIMETER OF AIR =

0.603

DATE: APRIL 19, 1973
COUNTED BY: JOHN RUPRECHT
REQUEST NO: 01069

MAP 04211

LAM000042

Name [REDACTED] I.D. No. 22 Date 4-12-73

Sample No. CB73-16 Analysis 8 hr. TWA

Work Area Cutting Room 15 minutes Hours Asbestos yes - no
Fabrication Shop

Job Description Cutting 90°ells with Kaylo 10

(SAMPLED AFTER 2nd Revision)

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

MAP 04212

11/14/72

LAM000043

M O N S A N T O C O M P A N Y
C O R P O R A T E R E S E A R C H D E P A R T M E N T
P H Y S I C A L S C I E N C E S C E N T E R
M I C R O S C O P Y G R O U P
S T. L O U I S

A S B E S T O S F I B E R C O U N T

F O R

J O H N E . F O X

L O C A T I O N

T E X A S C I T Y

S A M P L E I D E N T I F I C A T I O N

C B - 7 3 - 1 6

TOTAL NUMBER OF FIELDS COUNTED =	20.	
FIELD SIZE =	0.003842	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS COUNTED =	45.	
AVERAGE NUMBER OF FIBERS PER FIELD =	2.250	
AREA OF FILTER =	855.	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS ON FILTER =	500716.	
AIR FLOW =	2.00	LITERS PER MINUTE
SAMPLING TIME =	15.	MINUTES
TOTAL VOLUME OF AIR SAMPLED =	30.00	LITERS

FIBERS PER CUBIC CENTIMETER OF AIR = 16.691

DATE: APRIL 19, 1973
COUNTED BY: JOHN RUPRECHT
REQUEST NO: 01069

MAP 04213

LAM000044

Name [REDACTED] Inge No. 22 Date 4-12-73

Sample No. CB73-17 Analysis 8 hr. TWA

Work Area Cutting Room 15 minutes
Fabricating Shop Hours Asbestos yes - no

Job Description Cutting 90° elle with Raylo 10

SAMPLED AFTER 2ND REVISION

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

Work Area Hours Asbestos yes - no

Job Description

MAP 04214

11/14/72

LAM000045

M O N S A N T O C O M P A N Y
C O R P O R A T E R E S E A R C H D E P A R T M E N T
P H Y S I C A L S C I E N C E S C E N T E R
M I C R O S C O P Y G R O U P
S T. L O U I S

A S B E S T O S F I B E R C O U N T

F O R

J O H N E . F O X

L O C A T I O N

T E X A S C I T Y

S A M P L E I D E N T I F I C A T I O N

C B - 7 3 - 1 7

TOTAL NUMBER OF FIELDS COUNTED =	20.	
FIELD SIZE =	0.003842	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS COUNTED =	48.	
AVERAGE NUMBER OF FIBERS PER FIELD =	2.400	
AREA OF FILTER =	855.	SQUARE MILLIMETERS
TOTAL NUMBER OF FIBERS ON FILTER =	534097.	
AIR FLOW =	2.00	LITERS PER MINUTE
SAMPLING TIME =	15.	MINUTES
TOTAL VOLUME OF AIR SAMPLED =	30.00	LITERS

FIBERS PER CUBIC CENTIMETER OF AIR = 17.803

DATE: APRIL 19, 1973
COUNTED BY: JOHN RUPRECHT
REQUEST NO: 01069

MAP 04215

LAM000046