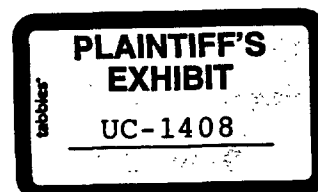


SUMMARY OF DUST COUNTS

<u>N.B. No.</u>	<u>Description</u>	<u>Fiber Count Fibers/ml. > 5 μ</u>	<u>Total Dust mmppcf</u>
1929-48-1	Environmental - "Background" sample near filler bins on (81 min.) ladder 15 ft. from bag hopper for small raw material ingredients.	1.7	2.8
1929-48-2	Personal - Operator's assistant handing bags to man (2 min.) who dumps.	6.2	6.9
1929-48-3	Personal - Operator dumping 2 bags 7RF9 and 3 bags (2 min.) SG-210	8.0	10.1
1929-48-4	Personal - Operator dumping 7 bags Muscovite mica (2 min.)	3.6	13.8



AIRBORNE FIBER COUNTS

for

TAPE JOINT & TEXTURE PAINT COMPOUNDER

August 21, 1973

Present for

Present for Union Carbide Corporation: Mr. J. E. Walsh

Samples Analyzed By: Mr. E. J. Kleber

UNION CARBIDE CORPORATION
Mining and Metals Division
Niagara Falls, New York

DESCRIPTION OF PLANT & TESTS

Tests were conducted August 21, 1973 at manufacturers of Tape Joint Compounds.

Personal breathing zone and environmental samples were collected in an effort to determine the amount of airborne asbestos fiber generated during the manufacture of and during unloading of a car of SG-210. Samples are described in the Table.

Sampling and dust counting were carried out in accordance with OSHA Regulation 1910.93a, using the Bayer, Zummalde and Brown method for counting asbestos fibers by phase contrast microscopy (Bureau of Occupational Safety and Health, Feb. 1969).

Battery-powered air pumps (M.S.A. type) calibrated to 2 liters per minute were used to collect personal breathing zone and environmental samples on millipore membrane filters of 0.8 micron porosity.

Fiber counting was performed on a Vicker's phase contrast microscope utilizing a Porton reticle for sizing and field definition.

TEST RESULTS

Two figures have been reported for each sample. They are:

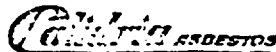
1. Total Fiber - Any material longer than 5 microns having an aspect ratio greater than 3:1.

2. Probable Asbestos Fiber - Any material meeting the criteria in No. 1 which in the judgement of the operator could possibly be Chrysotile fiber.

SUMMARY OF FIBER COUNTS

Sample No	Field No	Description	Total Fiber Fibers/cc > 5 μ	Probabl Asbesto Fiber Fibers/ >5-
1	110	Environmental - Located 5 ft. off floor and 2 ft. to the left of dry blending through. Monitored between batches. (10 min.)	0.7	0.4
2	221	Personal - Dry blender operator () during addition of 200 lb. 7RF9 and 90 lb. SG-210. (5 min.)	22.2	16.7
3	218	Environmental - Same position as No. 1 during addition of 200 lb. 7RF9 and 90 lb. SG-210. (15 min.)	3.9	1.5
4	212	Personal - Dry blender operator () completing batch with other dry ingredients such as Mica, etc. (12 min.)	3.6	0.6
5	269	Environmental - Same position as No. 1 between batches. (16 min.)	2.2	0.2
6	292	Personal - Wet mix operator () during blending of dry ingredients with and water. (11 min.)	3.5	1.9
	207	Environmental - Located 12 ft. from floor in middle of car door opening. Monitored from time door was opened until completion of unloading. (75 min.)	2.0	1.5
8	145	Personal - Car unloader () during entire unloading. (87 min.)	2.7	2.1

REPORT OF CALL



cc for

✓ E. J. Kleber - Niagara Falls.
 T. P. Morris - Chicago
 H. B. Rhodes - Niagara Falls
 W. C. Thurber - NY 38
 KC Files
 NF Files

UNION CARBIDE CORPORATION

P.O. Box 579 Niagara Falls, N.Y. 14302

By J. E. Walsh

Date 7/31/73

Full Name	Georgia Pacific	Interviewed
Address	Marietta, Georgia	Bob Favero - Plant Manager
Mfrs. of	Tape Joint Muds	Doug Jones - Quality Control

Call made to run dust count per their request. The following is the data on the samples taken which have been forwarded to E. J. Kleber's attention for counting.

Sample No.	Sample Time	
2.2 139 1.5-0.9	125 min.	- Sample was attached to John Tinker, plant foreman, during his normal travels around the plant. It was felt that Tinker would be the most logical person who, during his work day, would cover all areas in the plant.
13.8 210 11.4	7 min.	- Personal sample on James Conner during redi-mix operation where H ₂ O, latex and blended dry ingredients are mixed on five foot high platform.
26.6 20.9	6 min.	- Exact repeat of sample 210 on next batch made to give us duplicate results to compare count levels.
71.7 225 4.2-21.9	7 min.	- Background sample directly behind the wet mix platform area 10 feet above the floor. Sample taken during one complete batch mixing of water, latex and blended dry ingredients. A noticeable puff of dust is generated when dry ingredients are dropped into the tank.
35.8 216 2.2-13.3	7 min.	- Personal sample on Gary Dellorso during the mixing of dry asbestos ingredients only. Two 100-lb. bags PF9 and three 30-lb. bags of SG-210 were added to dry mix trough with overhead dust collector.

<u>Sample No.</u>	<u>Sample Time</u>	
48.3 241 33.5	4 min.	- Personal sample on Gary Dolorso during the addition of the balance of dry mix materials. Materials added were 350 lbs. mica, 40 lbs. PVA, 37-1/2 lbs. Natrosol.
15.5219 13.9	11 min.	- Exact repeat of sample 216 on next batch to give us duplicate results to compare count levels. Asbestos ingredients only.
372 206 21.2 - 12.1	5 min.	- Exact repeat of sample 241 on next batch to give us duplicate results to compare count levels. Other dry ingredients only.
11.0 198 7.3	18 min.	- Background sample during mixing of all dry ingredients. Located two feet to the left of the trough and five feet above the floor. Slight amount of dust was noticeable that trough overhead dust collector did not take out.
3.3 130 2.5 - 1.1	37 min.	- Background sample located in same area as sample 198 and taken during the period directly after the last batch of dry ingredients were mixed and up to the start of the next batch mixing cycle.

Some interesting comments picked up during the day were that Gene O'Neill from Tigard is due to report in here August 1 and will be their Q.C. and R & D head for tape joint muds in the Southeast. Hank Peal, located in Wilmington, Delaware, is G-P's Eastern Regional Manager for Safety and all OSHA and EPA regulations. Jones phoned Peal after the count was done and discussed the cost of the equipment needed to run spot counts in the future, and it looks like Marietta will get the O.K. to buy one. G-P may have solved the problem of an asbestos replacement in dry-mix muds but are at a dead end for one in redi-mix muds.

During the mixing of asbestos dry ingredients, the bags of 210 on the pallet used were dirty, in some cases torn, and with visible asbestos evident, laying between the bags throughout the pallet. The 7RF9 bags from the pallet being used were, unfortunately, all clean and untorn, and loose asbestos was not evident

JEW/cs

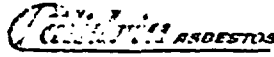
Typed: 8/1/73

COUNT SHEET

SAMPLE #	77	77	77	77	77	77
time	8:10	8:10	8:10	8:10	8:10	8:10
FLOW						
1	5	1912	0/0	141	0/0	167
2	4	1843	0/1	105	1/0	154
3	1	1896	0/0	102	0/0	184
4	2		0/0	131	1/0	171
5	2		2/0	91	1/0	154
6	1		0/0		0/0	
7	4		0/1		0/1	
8	4		0/0		1/1	
9	1		0/0		0/0	
10	3		0/0		0/0	
11	0		1/0		0/0	
12	1		0/0		0/0	
13	1		1/1		0/1	
14	1		0/0		0/0	
15	0		0/0		0/0	
16	1		0/0		0/1	
17	0		0/0		0/0	
18	1		0/0		0/0	
19	5		0/0		0/0	
20	2		0/0		1/0	
TOTAL	39	5651	7	570	9	832
AUG	1.95	1883.7	11.5	114.0	22.5	166.4
FIELD AREA						
FILTER AREA						
VOLUME	162	5.71	4	1412	4	1412
CONCENTRATION	1.72	2.8	7.13	6.9	10.1	3.56
			6.2		8.0	
FILTER CNT X FILTER AREA						
FIELD AREA X SAMPLE VOLUME						

REPORT OF CALL

cc for
 ✓ E. J. Kleber - Niagara Falls
 B. L. Ingalls - Niagara Falls
 T. P. Morris - Chicago
 H. B. Rhodes - Niagara Falls
 W. C. Thurber - NY 38
 KC Files
 WF Files



UNION CARBIDE CORPORATION
 P.O. Box 579 Niagara Falls, N.Y. 14302

By J. E. Walsh

Date 8/21 & 8/22/73

Full Name	Georgia Pacific	Interviewed
Address	Marietta, Georgia	Doug Jones - Quality Control
Mfrs. of	Tape Joint Muds	

Call made to collect another set of mixing samples and to observe the unloading condition of the six shrink-wrapped pallets of SG-210 in the car. The following samples were collected during the manufacturing of joint cement:

- ✓ No. 210 - Background - Sample was hung five feet off the floor and two feet to the left of the dry blending trough and covered the period between the finish of the last batch and the mixing of dry blend ingredients for the next batch. Time on, 1:15 p.m., off 1:15 p.
- ✓ No. 221 - Personal - Attached to Sam Gayton, the operator of the dry blender. Sample covers the addition of two 100-lb. bags of 7RF9 and three 30-lb. bags of SG-210. Time on 1:15 p.m., off 1:20 p.m.
- ✓ No. 218 - Background - Sample was located in the same position as 110 sample and covered the period during the dumping of 200 lbs. of 7RF9 and 90 lbs. of SG-210. Time on 1:15 p.m., off 1:30 p.m.
- ✓ No. 212 - Personal - Attached to Sam Gayton, the dry blend operator, during the addition of the following dry ingredients to complete the batch: Mica, 350 lbs.; Gelvatol, 40 lbs.; Natrosol, 37-1/2 lbs.; Dowicil 100, 7-1/2 lbs.; Calgon, 12-1/2 lbs. Time on 1:16 p.m., off 1:20 p.m.
- ✓ No. 269 - Background - Sample was located in same position as 110 and run during the period starting from the end of one batch to the start of the next one. Time on 1:30 p.m., off 1:46 p.m.
- ✓ No. 292 - Personal - Attached to wet mix operator Robert Hule during the mixing of the blended dry ingredients with latex and water. Time on 1:48 p.m., off 1:59 p.m.

The above samples were taken on 8/21 prior to delivery of the carload by the railroad. At about 4:30 p.m., the railroad spotted car Southern 19206 by G-P's unloading door. Doug and I tried to open the car door but it was stuck so we went to the use of a crowbar and tension chain. The best we could do was open the door about two inches, and when we did, a virtual asbestos snowstorm came blowing out the door, covering us from head to toe in white. After it stopped blowing, we looked in the door opening and saw that the problem was that the front four pallets by the door had shifted during transit and about 40 SG-210 bags were wedged against the door, preventing us from moving it. Due to the hour, we decided to forget it for the day and start in on it at 7 a.m. the next day. In the morning, with the help of an experienced fork lift driver and boxcar unloader, we finally were able to free the door after 40 minutes of time had elapsed. After removing the damaged bags in the door area, I climbed up inside the car to locate the shrink wrapped pallets. Four of them were visible in the far end of the car. Loose asbestos lay on top of every pallet in the car and five to ten pound piles were all over the door area, between pallets, on the floor and between bags. The following samples were taken:

✓ No. 207 - Background - On 7:55 a.m., off 9:10 a.m. Located 12 feet from the floor in the middle of the car door opening. Sample was run from the time the door was opened until the work on the car was stopped.

✓ No. 145 - Personal - On 7:45 a.m., off 9:12 a.m. Attached to John Tinker, operator unloading the car, from the time the door was opened until work on the car stopped.

After an hour's work, the doorway area was still only half cleared and our chances of getting to the shrink wrapped pallets were about a day away, according to Tinker. As the writer had to catch an 11:00 plane, it was agreed that G-P would set aside the shrink wrapped pallets when the car was finally unloaded and I would come back after Labor Day to observe what they looked like.

JEW/cs

Typed: 8/31/73

August 2, 1973

Mr. Doug Jones
Georgia-Pacific Company
1466 White Circle
Marietta, GA 30060

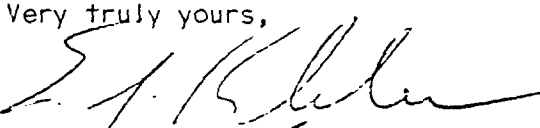
Dear Mr. Jones:

At the request of J. E. Walsh, enclosed is a copy of the recognized procedure for obtaining airborne asbestos fiber counts. Along with that is a list of equipment needed to perform these counts. If you intend only to obtain these counts and have them analyzed elsewhere, you only need the equipment marked with a red line. A substitution that can be easily made is the soap film flowmeter. One can cut the bottom of a graduate and rig a flowmeter without spending \$40.00.

Please let us know if we can be of any further assistance. Simply contact Mr. Walsh at Union Carbide's Atlanta Sales Office.

We look forward to serving you.

Very truly yours,


Edward J. Kleber
Customer Service Representative

Enclosure

cc: J. E. Walsh

/ds

ASBESTOS FIBER COUNTS

for

December 29, 1972

Personnel Present:

Mr. E. J. Kleber
Union Carbide Corporation

Mr. T. P. Norris
Union Carbide Corporation

UNION CARBIDE CORPORATION
Mining and Metals Division
Niagara Falls, New York

DESCRIPTION OF PLANT AND TESTS

Tests were conducted November 27, 1972
manufacturers of tape joint compounds.

Dry ingredients are added at a loading hopper the load is then conveyed to a bagging machine. Both operations were monitored.

APPARATUS AND PROCEDURE

Sampling and dust counting were carried out in accordance with OSHA Regulation 1910.93a, using the Bayer, Zummalde and Brown method for counting asbestos fibers by phase contrast microscopy (Bureau of Occupational Safety and Health, Feb. 1969).

Battery powered air pumps (M.S.A. type) calibrated to 2 liters per minute were used to collect personal breathing zone and environmental samples on Millipore membrane filters of 0.8 micron porosity.

Fiber counting was performed on a Leitz microscope utilizing phase contrast illumination at 400X and a Patterson Globe and Circle reticle.

Total dust was determined by light field microscopy at 100X.

TEST RESULTS

Three figures have been reported for each sample. They are:

- 1) Total Fiber - Any material 5 microns or longer having an aspect ratio of 3 or greater. Reported as fibers per milliliter.

Note: This figure is considerably higher than the "possible" asbestos fiber count. The presence of Mica in the test accounts for the large figure. Mica, a mineral with a platelet-type appearance fits the strict rule of greater than 5 microns in length and having an aspect ratio larger than 3. However, it is obvious that these platelet structures are not asbestos, nor even fibrous in nature.

- 2) Asbestos Fiber - Any material, 5 microns or longer, having an aspect ratio of 3 or greater, which in the judgment of the operator could possibly be asbestos. Reported as fibers per milliliter.
- 3) Total Dust - Any fiber or particle present. Reported as million particles per cubic foot.

INTERPRETATION

The regulations have been established with the 5 fiber limit on a time-weighted average. This essentially means the figures must be arranged to show an employee's average intake of fibers per milliliter on an 8-hour day. For example, the highest reading in the test was 3.6 fibers/ml. If this was the only contact with asbestos that day, the 2-minute sample would be extrapolated to 8 hours, giving a time-weighted average of less than 0.02 fibers/ml.

SUMMARY OF DUST COUNTS

N.B. No.	Description	"Possible" Asbestos Count Fibers/ml $\geq 5\mu$	Total Fiber Count Fibers/ml $\geq 5\mu$	Total Dust mg/m ³
1929-64-1	Environmental - Bagging area, 3 ft. from operator (8 min.) at fill and dump area.	0.9	2.6	8.1
1929-64-2	Environmental - At loading hopper during shaking (2 min.) of a load of dry mix.	3.4	6.8	0.1
1929-64-3	Personal - Operator dumping Mica into loading (2 min.) hopper.	0	82.5	51.1
1929-64-4	Personal - Operator dumping 2 bags 7RF9. (2 min.)	3.6	16.0	18.1
1929-64-5	Environmental - In office on top of file cabinets.	0.4	0.8	2.0

AIRBORNE DUST COUNTS

for

TAPE JOINT COMPOUNDS

December 8, 1972

Personnel Present:

E. J. Kleber
Union Carbide Corporation

J. E. Walsh
Union Carbide Corporation

UNION CARBIDE CORPORATION
Mining and Metals Division
Niagara Falls, New York

Description of Plant and Tests

Tests were conducted October 30, 1972 at manufacturers of tape joint compounds

Asbestos is added at a hopper which has an overhead, negative pressure hood. Personal samples were collected from both the man dumping asbestos and his assistant, handing him the bags. A personal sample was also obtained during the dumping of mica. An environmental sample was placed near the dumping area and allowed to run for approximately one hour.

Sampling and dust counting were carried out in accordance with OSHA Regulation 1910.93a, using the Bayer, Zummalde and Brown method for counting asbestos fibers by phase contrast microscopy (Bureau of Occupational Safety and Health, Feb. 1969).

Battery powered air pumps (M.S.A. type) calibrated to 2 liters per minute were used to collect personal breathing zone and environmental samples on millipore membrane filters of 0.8 micron porosity.

Fiber counting was performed on a Leitz microscope utilizing phase contrast illumination at 400X and a Patterson Globe and Circle reticle.

Total dust was determined by light field microscopy at 100X.

Test Results

Two figures have been reported for each sample. They are:

- 1) Total Fiber - Any material 5 microns or longer having an aspect ratio of 3 or greater. Reported as fibers per milliliter.
- 2) Total Dust - Any fiber or particle present. Reported as million particles per cubic foot.

Interpretation

The regulations have been established with the 5 fiber limit on a time-weighted average. This essentially means the figures must be arranged to show an employee's average intake of fibers per milliliter on an 8-hour day. For example, the highest reading in the test was 8.0 fibers/ml. If this was the only contact with asbestos that day, the 2-minute sample would be extrapolated to 8 hours, giving a time-weighted average of less than 0.04 fibers/ml.

SUMMARY OF DUST COUNTS

<u>N.B. No.</u>	<u>Description</u>	<u>Fiber Count Fibers/ml. > 5 μ</u>	<u>Total Dust mmppcf</u>
1929-48-1	Environmental - "Background" sample near filler bins on (81 min.) ladder 15 ft. from bag hopper for small raw material ingredients.	1.7	2.8
1929-48-2	Personal - Operator's assistant handing bags to man (2 min.) who dumps.	6.2	6.9
1929-48-3	Personal - Operator dumping 2 bags 7RF9 and 3 bags (2 min.) SG-210	8.0	10.1
1929-48-4	Personal - Operator dumping 7 bags Muscovite mica (2 min.)	3.6	13.8

REPORT OF CALL

cc: E. J. Kleber - Niagara Falls
T. P. Morris - Chicago
H. B. Rhodes - Niagara Falls
W. C. Thurber - NY 38
 KC Files
 NF Files

Calidria ASSISTERS

UNION CARBIDE CORPORATION

P.O. Box 579 Niagara Falls, N.Y. 14302

By J. E. Walsh

Date 8/7/74

Full Name	Georgia Pacific	Interviewed
Address	Marietta, Georgia	Bob Favero, Plant Manager
Mfrs. of	Tape joint muds	George Fowler, Tech Service

Call made on SG-210 carload account to run a dust count.

GP's mud business is way down, according to Bob, as they are now running only one shift as compared to three a year ago at this time. The carload we are shipping this month is the first since May as they now have only a 5-6 order backlog to work on compared to a 4-6 week backlog last year. An asbestos warning sign now greets you as you enter the plant, and Bob showed me the warning stickers they now put on their redi-mix cans. He also showed me some dry mix vinyl topping compound with "asbestos free" in big letters. Right now it is shipped into the Chicago area only, he said. George and I got into an interesting discussion re why they couldn't use an all 210 mud formula. George knew of no reason other than, maybe, we hadn't pushed at Tigard. After reviewing the economics now since the latest Canadian increase, it looks like we could save them 1 2/3¢/lb before figuring in the cost of limestone to make up the volume. George said his lab is all set up now, and he was going to whip up some all 210 muds, and if they are favorable, send a report to Tigard. He seemed interested in doing the work here because if it is workable, he could pick up some "brownie points" based on the amount of money he could save them.

EJK The dust samples taken were as follows:

#I-41 - on 10:25 A.M. Personal sample attached to operator, Larry James,
 off 10:30 A.M. during the addition of 212 lbs of Carey 7RF-9 and 87½ lbs
 of SG-210.

#J-15 - on 10:30 A.M. Attached to operator, Larry James, during the addition of
 off 10:37 A.M. the following ingredients to complete the makeup of all dry
 materials in the batch: muscovite mica 350 lbs, Gelvatol 20 lb
 Natrosol 37½ lbs, Calgon T 12½ lbs, Troyson 5 lbs.

#H-17 - on 10:51 A.M.
 off 10:58 A.M. repeat of sample 1-41 on the next asbestos dump.

#I-17 - on 10:58 A.M. repeat of sample J-15 on the next batch of other dry
off 11:02 A.M ingredients dumped.

EJK Please phone me the results before mailing the report to Favero.

JW Follow up on next call with Fowler re his all 210 mud work.

ASBESTOS COUNT RECORD SHEET

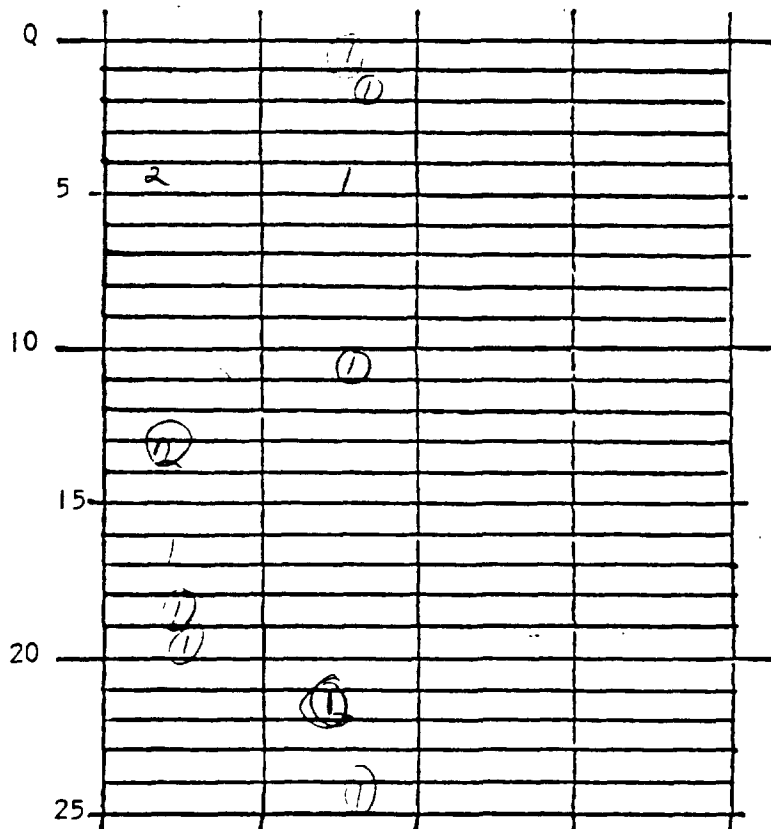
SAMPLE # _____ OPERATION _____

FLOW 2 TIME 6 VOLUME 1100 DATE 1 1

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV.COUNT 2618 CONCENTRATION 3.9/2.7

COMMENTS:



0-20

SAMPLE

DATE

INST.

FLOW RATE

BLANK

12 36 - 12:42

TOTAL TIME

TOTAL AIR VOLUME

LARRY JAMES

EMPLOYEE'S NAME

JOB TITLE

DESCRIPTION OF OPERATION:

Per. ~~weighing~~
weighing &
adding 212⁵ LBS bag
TRTY
2875 LBS. SG-210
MICA, CELUATOL, NATROSOL, CALGON T,
GLYCOL, (PCOB)

DESCRIPTION OF CONTROLS:

8/1/10

Packaging

Control
Anful

SAMPLE

0-5

DATE

INST.

FLOW RATE

12:37-12:47

TOTAL TIME

BLANK

TOTAL AIR VOLUME

EMPLOYEES NAME

JOB TITLE

DESCRIPTION OF OPERATION:

CHV

Plung

DESCRIPTION OF CONTROLS:

SAMPLE

0-3

DATE

INST.

FLOW RATE

12:42-12:46

TOTAL TIME

BLANK

TOTAL AIR VOLUME

EMPLOYEES NAME

CARY Sayer

JOB TITLE

DESCRIPTION OF OPERATION:

MICA Crib

& Beef DISPOSAL
into barrel

DESCRIPTION OF CONTROLS:

ASBESTOS COUNT RECORD SHEET

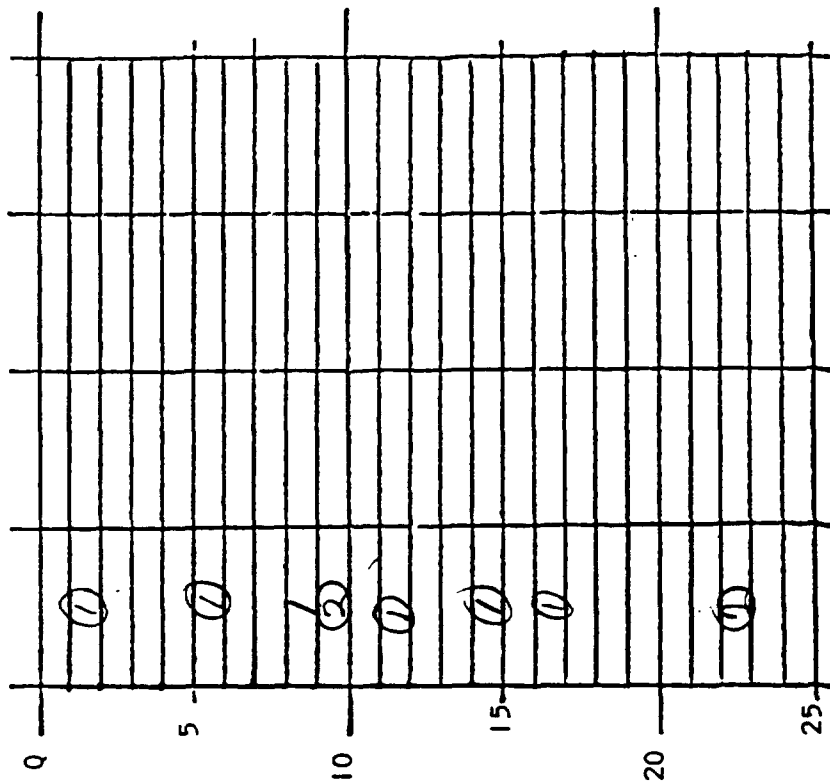
SAMPLE # _____ OPERATION _____

FLOW ✓ TIME 10 VOLUME 20,000 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 41.36 CONCENTRATION 3.6 / 3.2

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

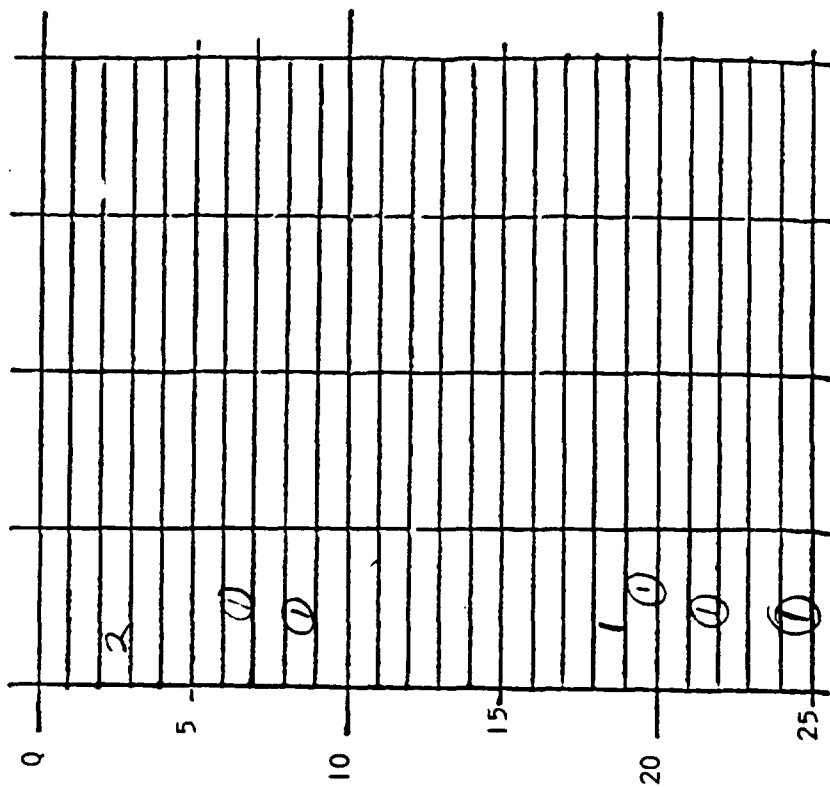
SAMPLE # _____ OPERATION _____

FLOW ✓ TIME 4 VOLUME 100 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 32.2 CONCENTRATION 7.1 / 4.9

COMMENTS: _____



SAMPLE 04 DATE _____

INST. _____ FLOW RATE _____ BLANK _____
TOTAL TIME 12:47-1:01 TOTAL AIR VOLUME _____

EMPLOYEES NAME _____

JOB TITLE _____

DESCRIPTION OF OPERATION:

*ENV
Belton*

DESCRIPTION OF CONTROLS:

SAMPLE 04 DATE _____

INST. _____ FLOW RATE _____ BLANK _____
TOTAL TIME 12:46-1:00 TOTAL AIR VOLUME _____

EMPLOYEES NAME CANAF

JOB TITLE _____

DESCRIPTION OF OPERATION:

Belton Belts

DESCRIPTION OF CONTROLS:

ASBESTOS COUNT RECORD SHEET

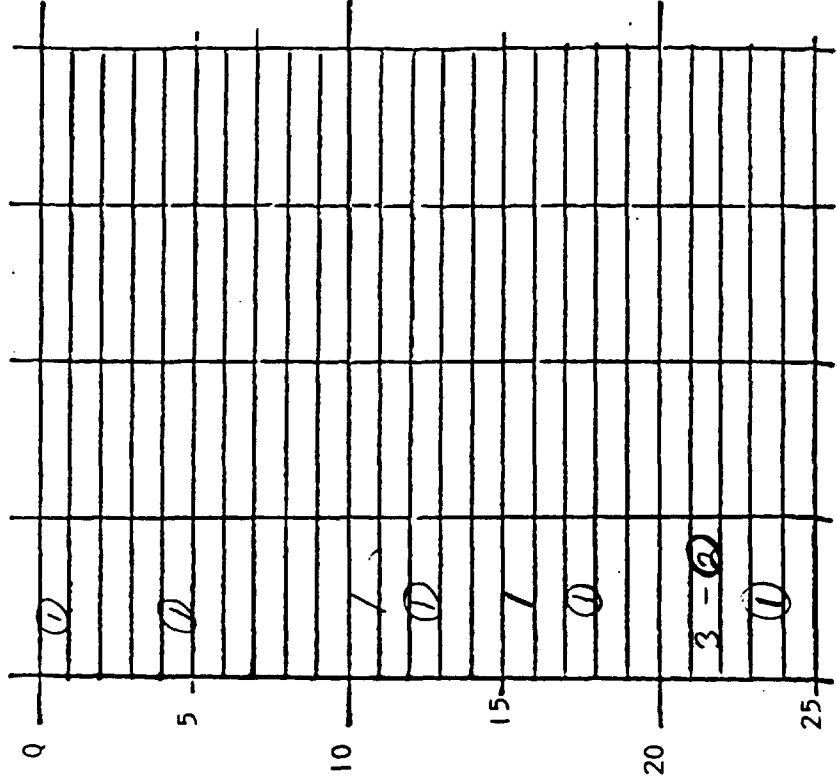
SAMPLE # _____ OPERATION _____

FLOW 2 TIME 11 VOLUME 28000 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV.COUNT 14126 CONCENTRATION 2.5 / 1.8

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

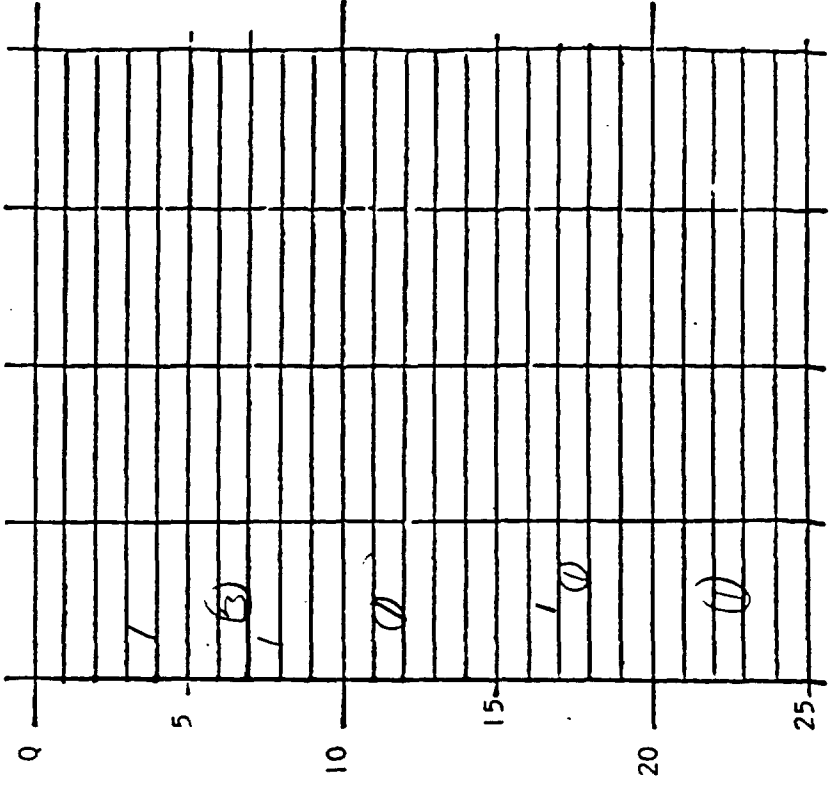
SAMPLE # _____ OPERATION _____

FLOW 2 TIME 11 VOLUME 28000 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV.COUNT 136128 CONCENTRATION 2.3 / 1.5

COMMENTS: _____



SAMPLE 0-23 10-2-1 DATE

INST. 1.00 FLOW RATE 1.30 BLANK
TOTAL TIME TOTAL AIR VOLUME

EMPLOYEES NAME

JOB TITLE

DESCRIPTION OF OPERATION:

Low
Dry
Return

DESCRIPTION OF CONTROLS:

SAMPLE 0-24 DATE

INST. 1.00 FLOW RATE 1.13 BLANK
TOTAL TIME TOTAL AIR VOLUME

EMPLOYEES NAME Capay

JOB TITLE

DESCRIPTION OF OPERATION:

Weld Batch
W Hole Batch

DESCRIPTION OF CONTROLS:

ASBESTOS COUNT RECORD SHEET

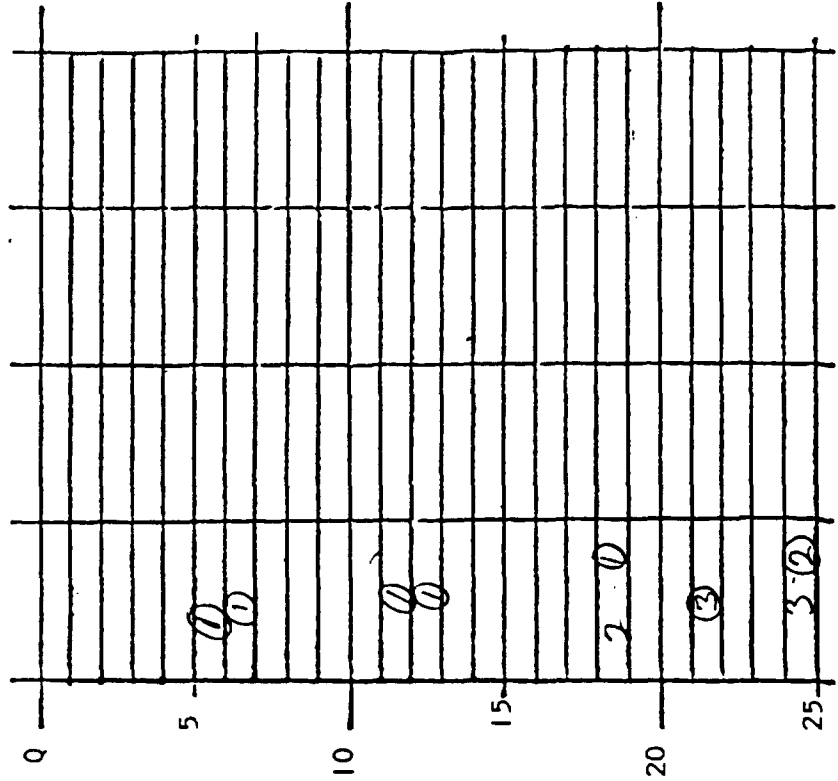
SAMPLE # _____ OPERATION _____

FLOW 2 TIME 13 VOLUME 2600 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 48/4 CONCENTRATION 3.3/2.7

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

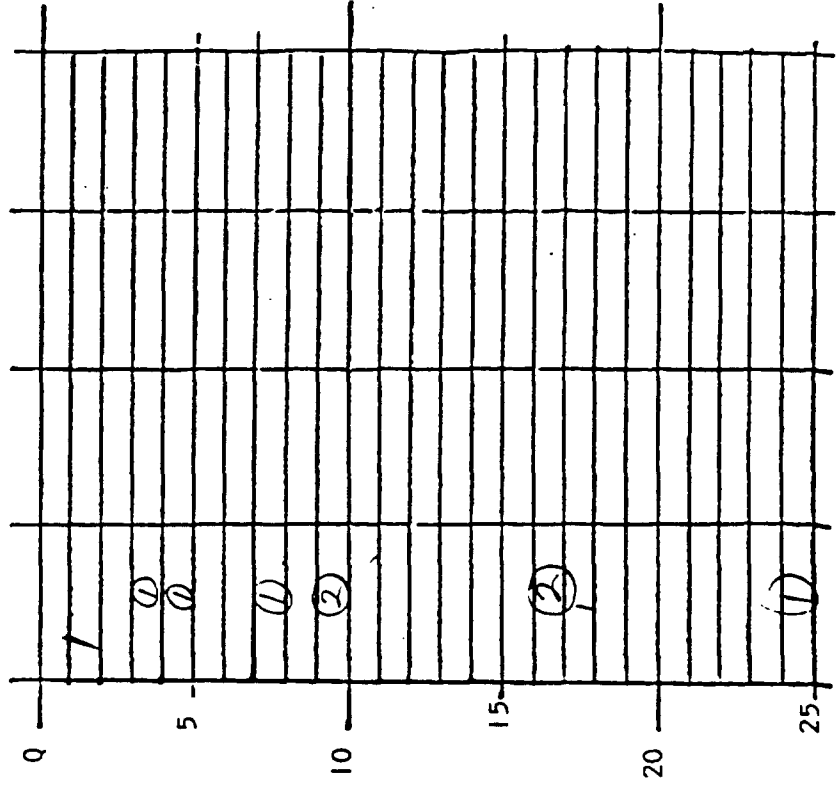
SAMPLE # _____ OPERATION _____

FLOW 2 TIME 29 VOLUME 5800 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 41/28 CONCENTRATION 1.2/0.8

COMMENTS: _____



SAMPLE 036 DATE

INST. 113-1130 FLOW RATE

TOTAL TIME 113-1130 BLANK

TOTAL AIR VOLUME

EMPLOYEES NAME Caray

JOB TITLE

DESCRIPTION OF OPERATION:

Between Paths

Q.C. Samples

Pkging etc.

DESCRIPTION OF CONTROLS:

SAMPLE 07 DATE

INST. 1130-1145 FLOW RATE

TOTAL TIME 1130-1145 BLANK

TOTAL AIR VOLUME

EMPLOYEES NAME Caray

JOB TITLE

DESCRIPTION OF OPERATION:

Weld
Paired

DESCRIPTION OF CONTROLS:

ASBESTOS COUNT RECORD SHEET

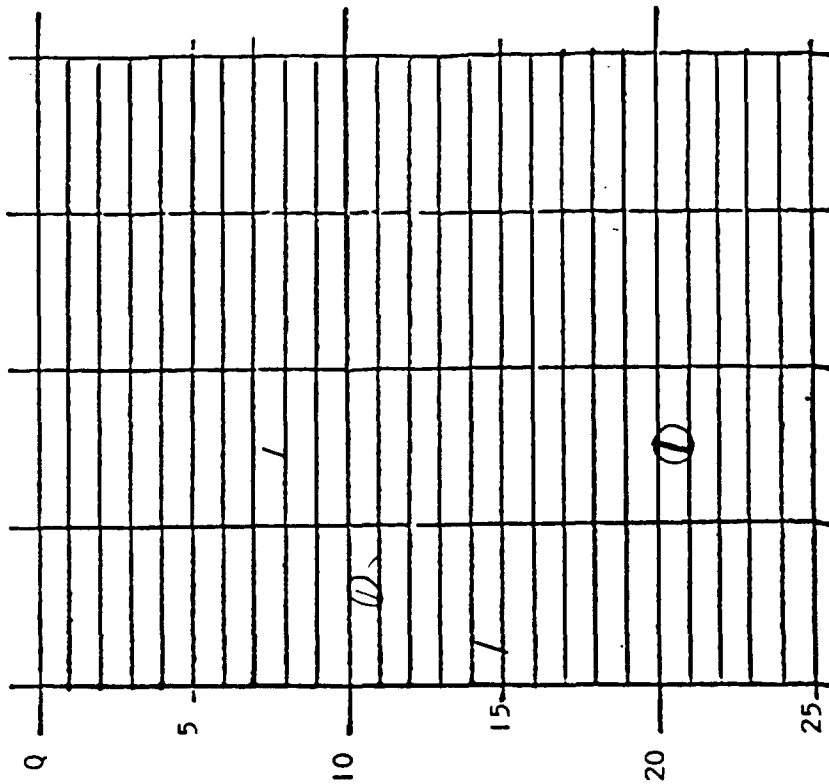
SAMPLE # _____ OPERATION _____

FLOW 2 TIME 17 VOLUME 34000 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT .08% CONCENTRATION 0.4 / 0.2

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

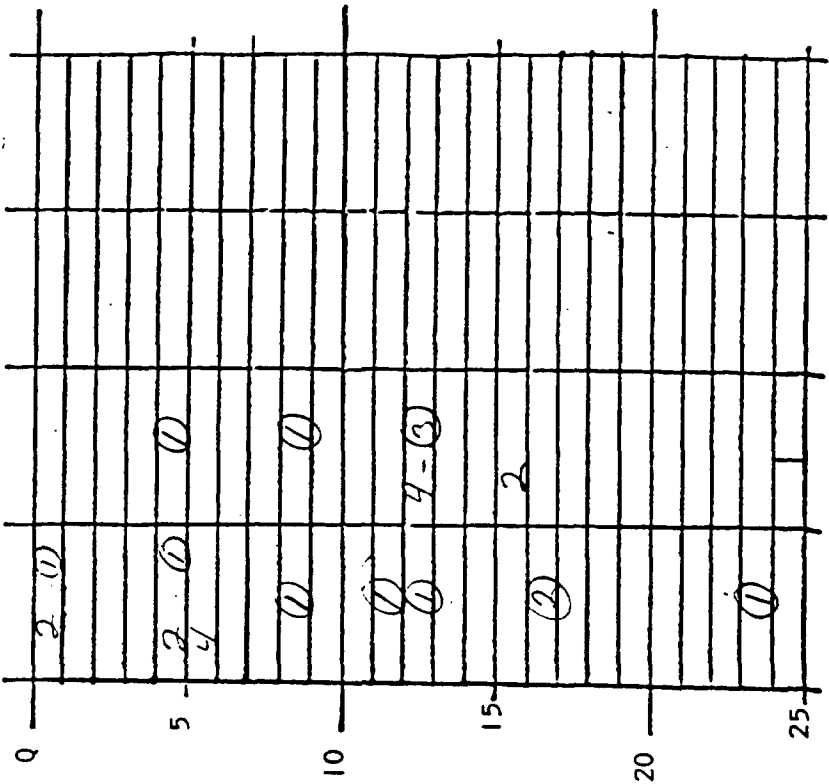
SAMPLE # 01 OPERATION _____

FLOW 2 TIME 13 VOLUME 26000 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT .44 / 26 CONCENTRATION 3.0 / 1.8

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

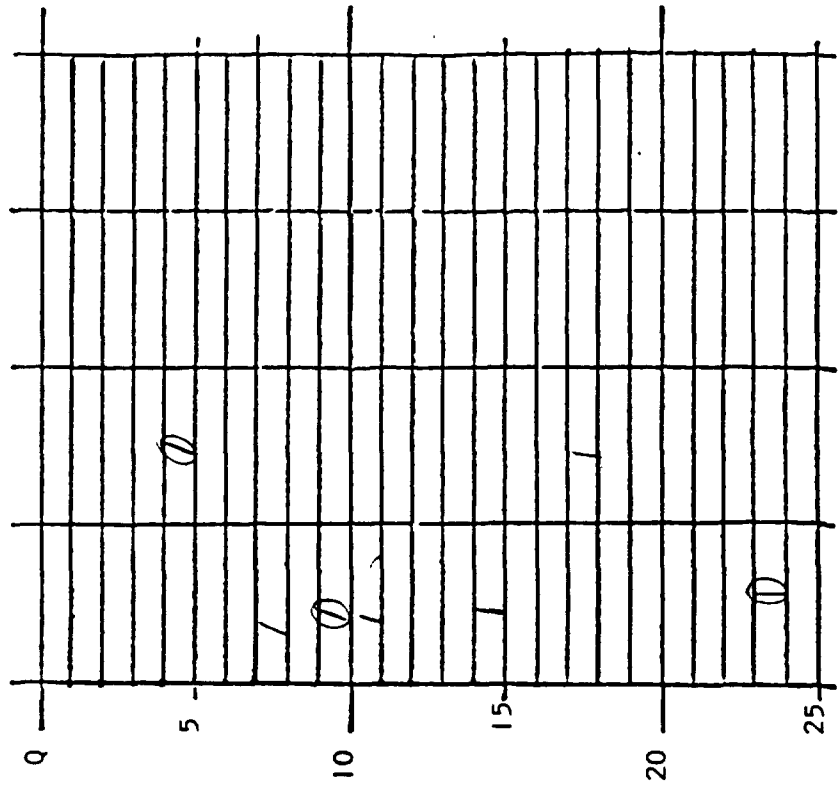
SAMPLE # _____ OPERATION _____

FLOW 2 TIME 22 VOLUME 100 DATE 1/1

INITIALS _____ F. AREA _____ BLK. CNT. AV. _____

AV. COUNT 14 / 0.6 CONCENTRATION 0.57 / 0.24

COMMENTS: _____



SAMPLE 0-26 DATE _____

INST. _____ FLOW RATE _____ BLANK _____

1.35 - 1:13 TOTAL TIME _____ TOTAL AIR VOLUME _____

EMPLOYEES NAME _____

JOB TITLE _____

DESCRIPTION OF OPERATION:

LNU
WHS'ing used
~ 50 ft. from
Dry pit area
Ni ASO with
20 ft.

DESCRIPTION OF CONTROLS:

ASBESTOS COUNT RECORD SHEET

SAMPLE # 027 DATE _____

INST. 1143-2105 FLOW RATE _____ BLANK _____

TOTAL TIME 2:05 TOTAL AIR VOLUME _____

EMPLOYEES NAME LAARV

JOB TITLE _____

DESCRIPTION OF OPERATION:

after Batcher

DESCRIPTION OF CONTROLS:

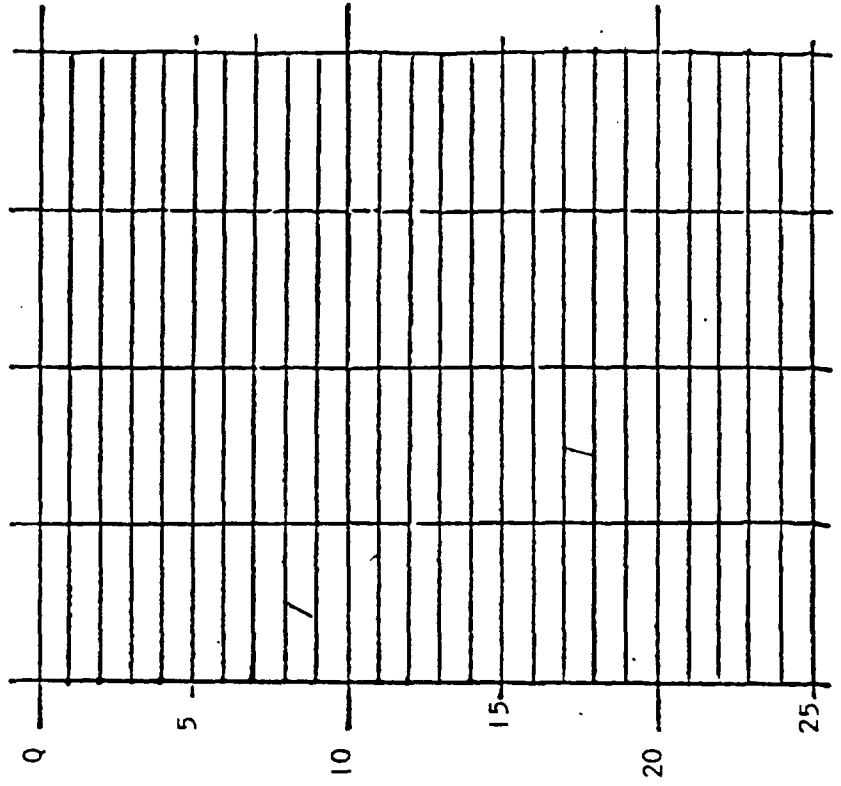
SAMPLE # _____ OPERATION _____

FLOW 2 TIME 15 VOLUME 1111 DATE 1/1

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV.COUNT 04 CONCENTRATION 0.24

COMMENTS:



ASBESTOS COUNT RECORD SHEET

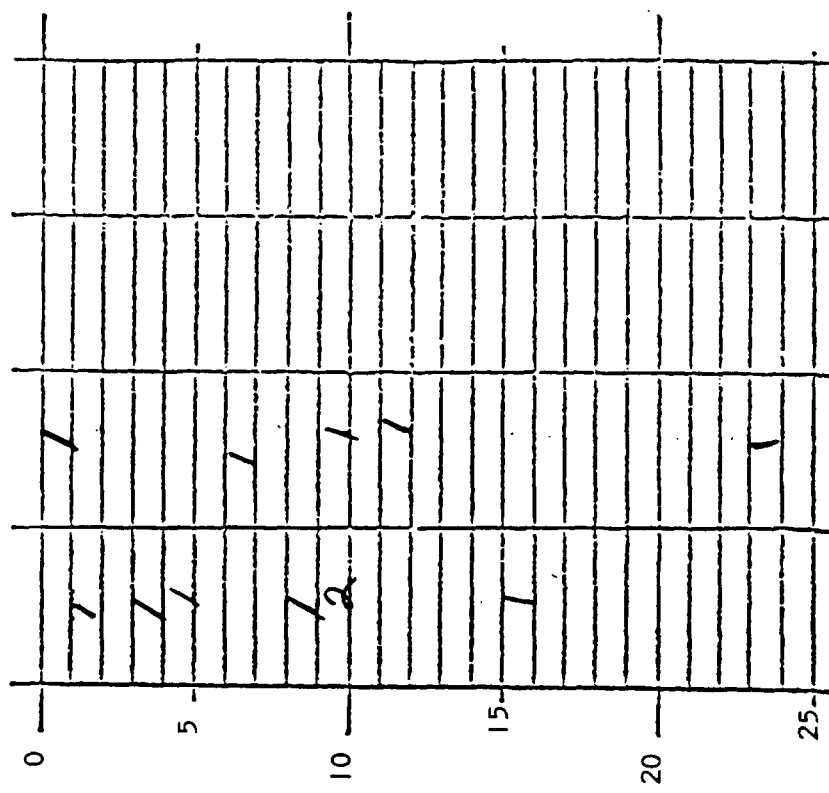
SAMPLE # J-15 OPERATION _____

FLOW 2 TIME 7 VOLUME 1 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV.COUNT 24 CONCENTRATION 3.1

COMMENTS:



ASBESTOS COUNT RECORD SHEET

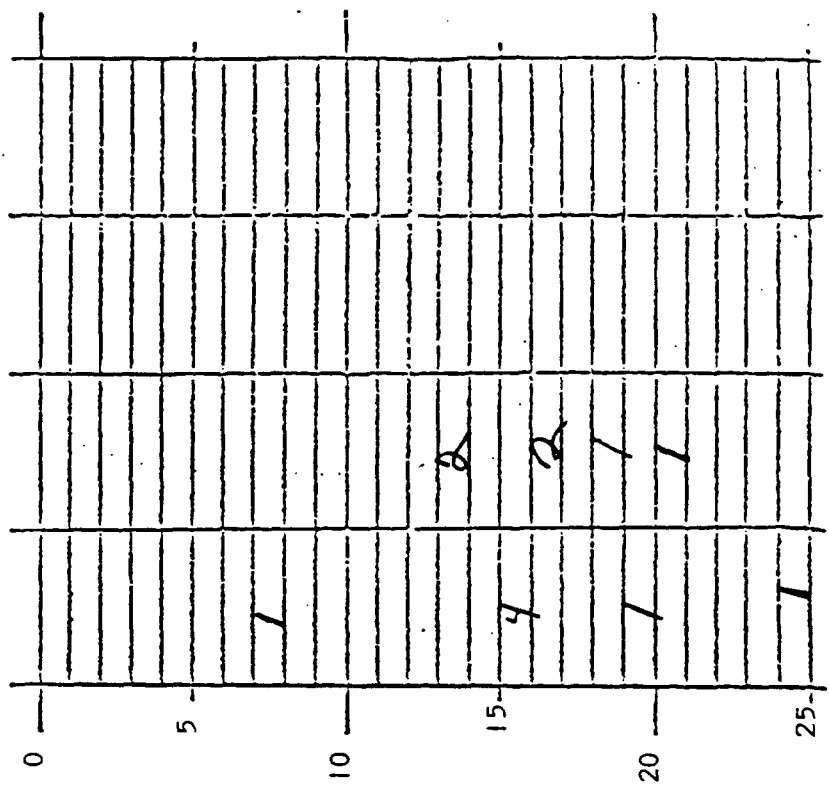
SAMPLE # 1-17 OPERATION _____

FLOW 2 TIME 9 VOLUME 8000 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV.COUNT 124 CONCENTRATION 5.8

COMMENTS:



ASBESTOS COUNT RECORD SHEET

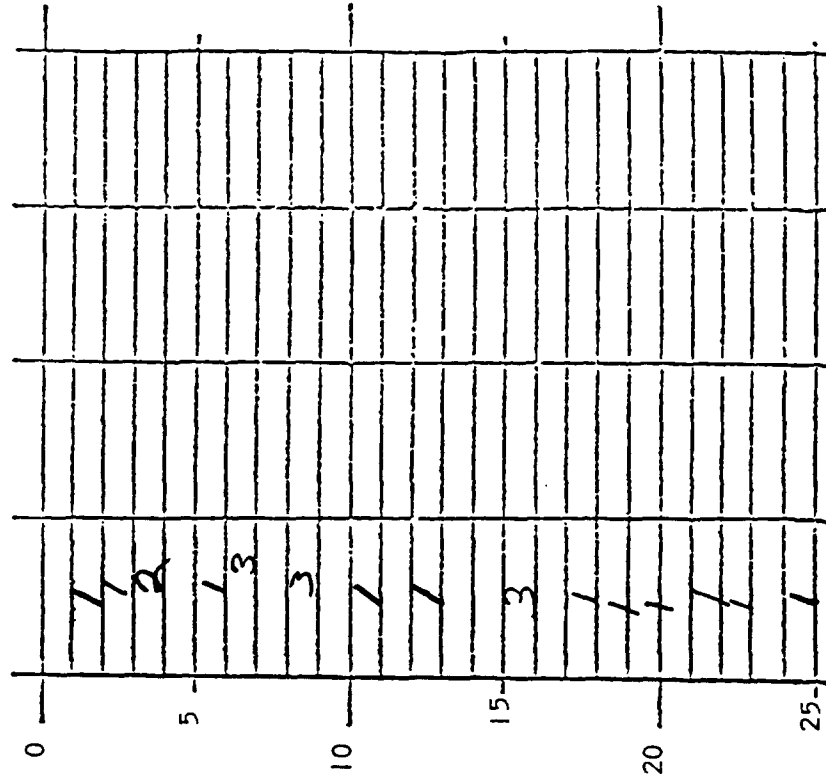
SAMPLE # 1-41 OPERATION _____

FLOW 2 TIME 5 VOLUME 1000 DATE 11 / 11 / 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT .88 CONCENTRATION 15.7

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

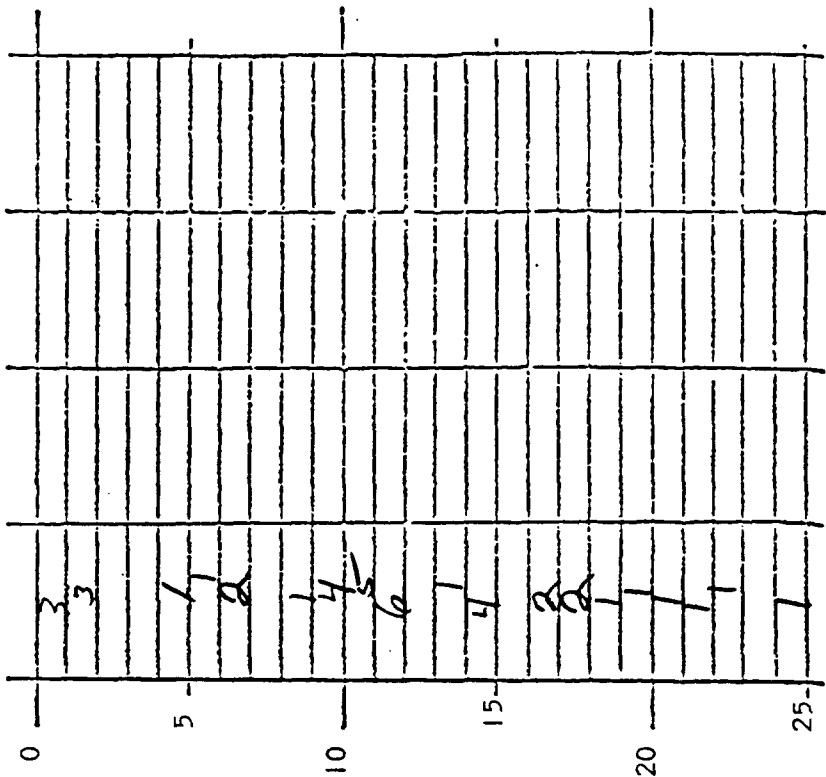
SAMPLE # 4-17 OPERATION _____

FLOW 2 TIME 7 VOLUME 1100 DATE 11 / 11 / 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 1.64 CONCENTRATION 20.9

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

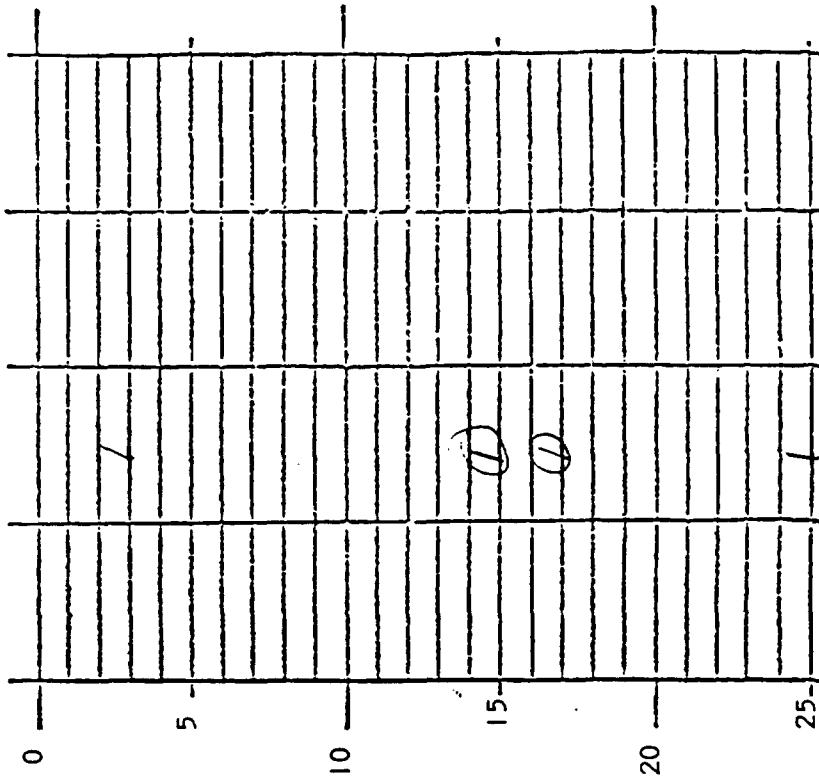
SAMPLE # 110 OPERATION _____

FLOW 2 TIME 10 VOLUME 10 DATE 11 / 11 / 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 0.8 / 0.4 CONCENTRATION 0.7 / 0.4

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

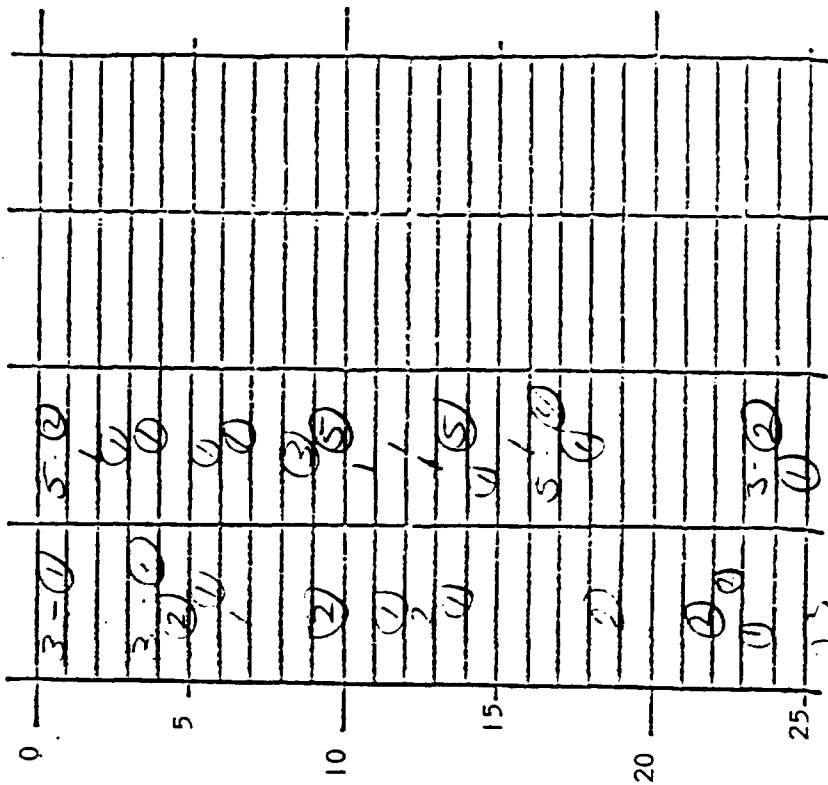
SAMPLE # 221 OPERATION _____

FLOW 2 TIME 5 VOLUME 5 DATE 11 / 11 / 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 1.22 / 1.92 CONCENTRATION 22.2 / 16.7

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

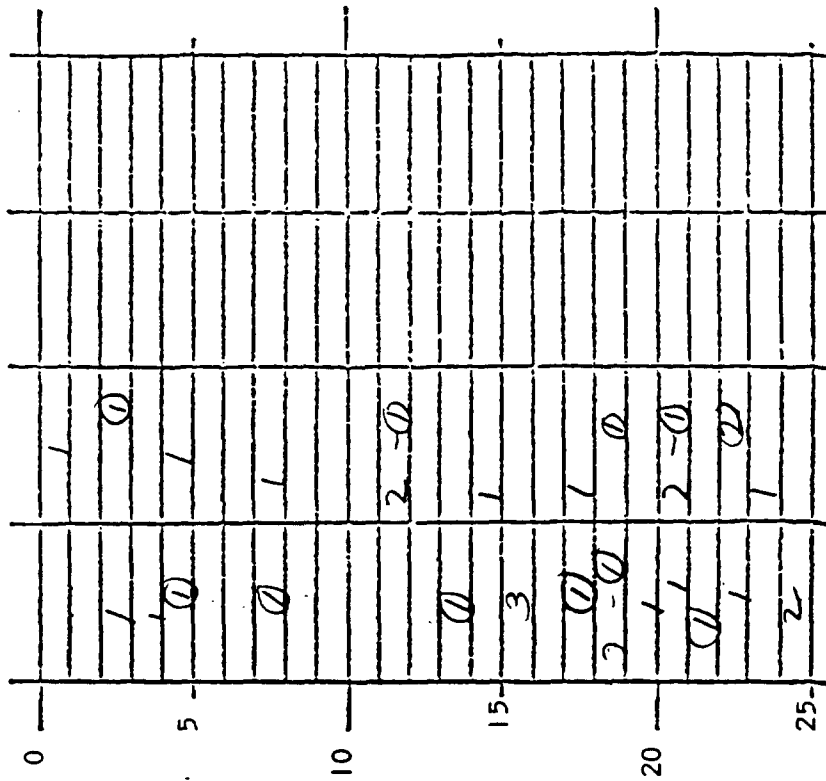
SAMPLE # 218 OPERATION _____

FLOW 2 TIME 15 VOLUME 50 DATE 1/1

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 163 / 2.9 CONCENTRATION 3.9 / 1.5

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

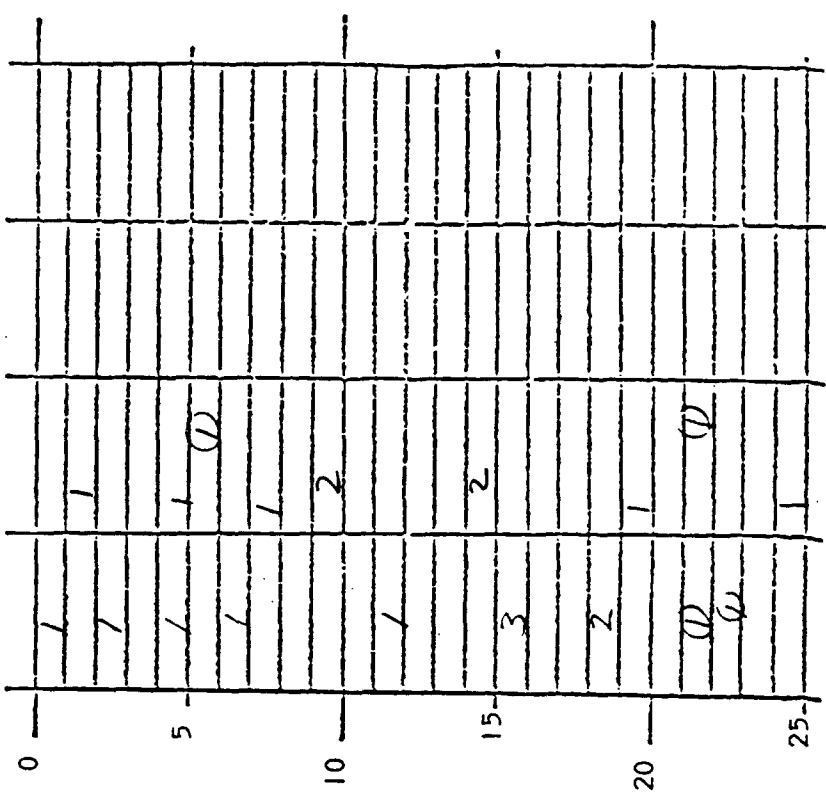
SAMPLE # 212 OPERATION _____

FLOW 2 TIME 12 VOLUME 2400 DATE 1/1

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 44.08 CONCENTRATION 3.6 / 0.60.5

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

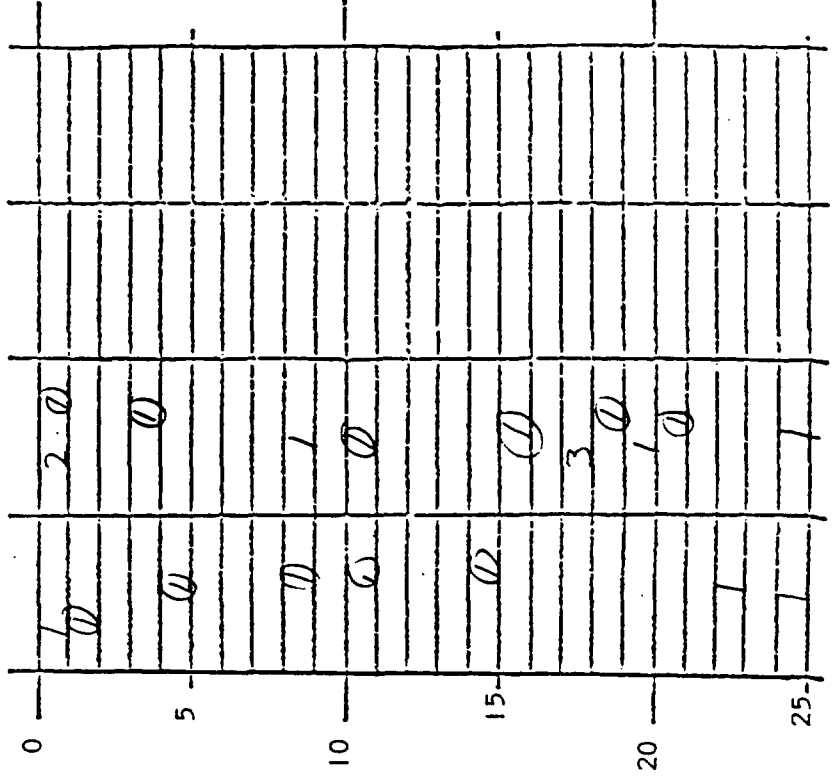
SAMPLE # 242

FLOW 1 TIME 11 VOLUME 1.00 ✓ DATE 1/1

INITIALS _____ F. AREA _____

AV. COUNT, 42 / 1.2 CONCENTRATION 3.5 / 1.9

COMMENTS:



ASBESTOS COUNT RECORD SHEET

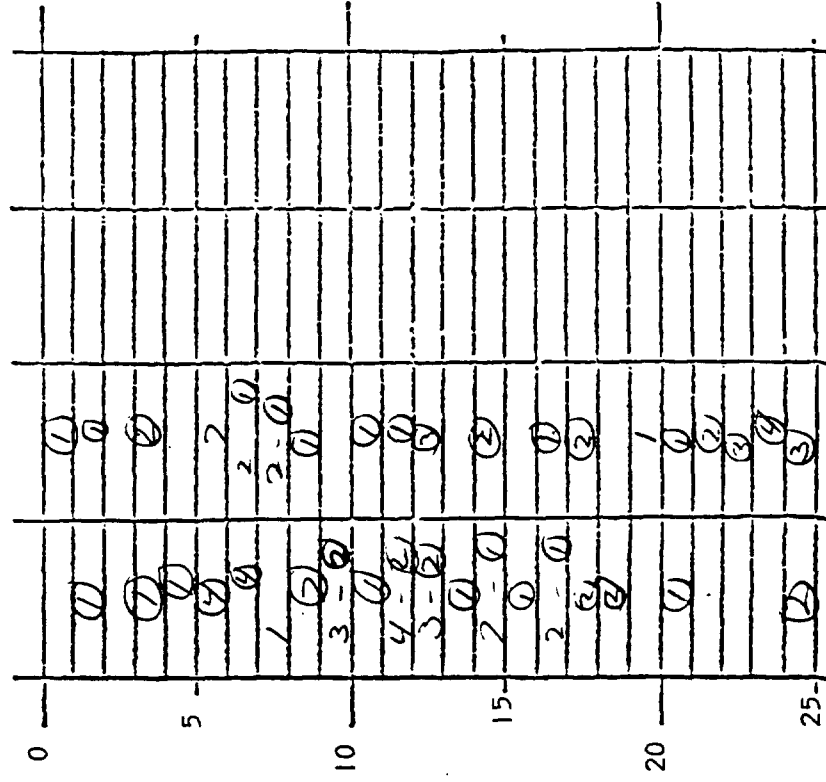
SAMPLE # 201 OPERATION _____

FLOW 1 TIME 75 VOLUME 31.0 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT, 44/1.2 CONCENTRATION 0.5 / 1.5
2.0

COMMENTS:



ASBESTOS COUNT RECORD SHEET

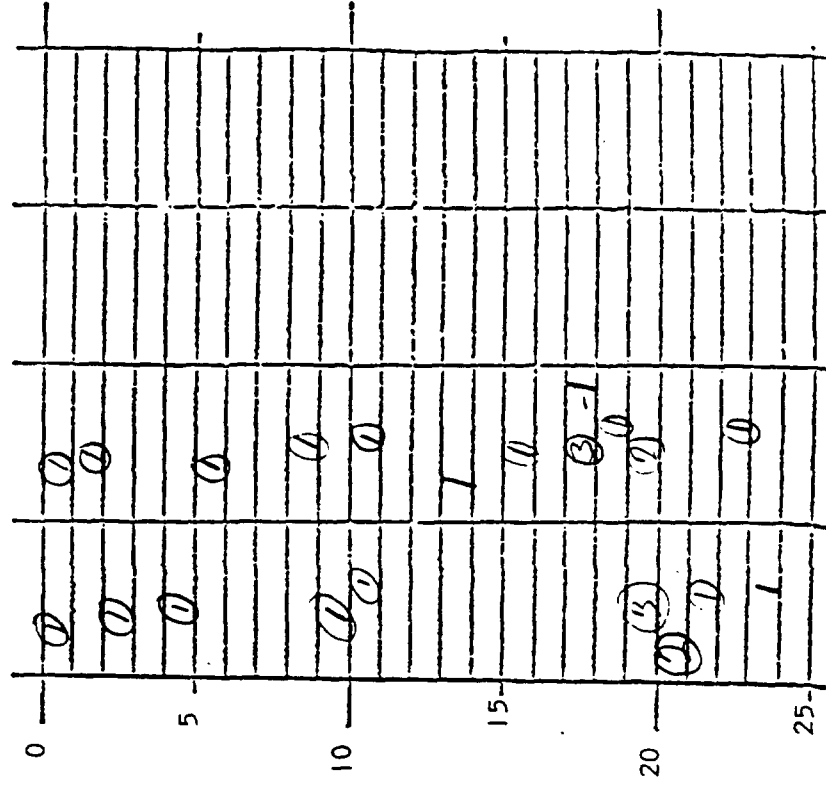
SAMPLE # 17 OPERATION _____

FLOW _____ TIME _____ VOLUME 4000 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT, 52/1.44 CONCENTRATION 23.6 / 22.3
80

COMMENTS:



ASBESTOS COUNT RECORD SHEET

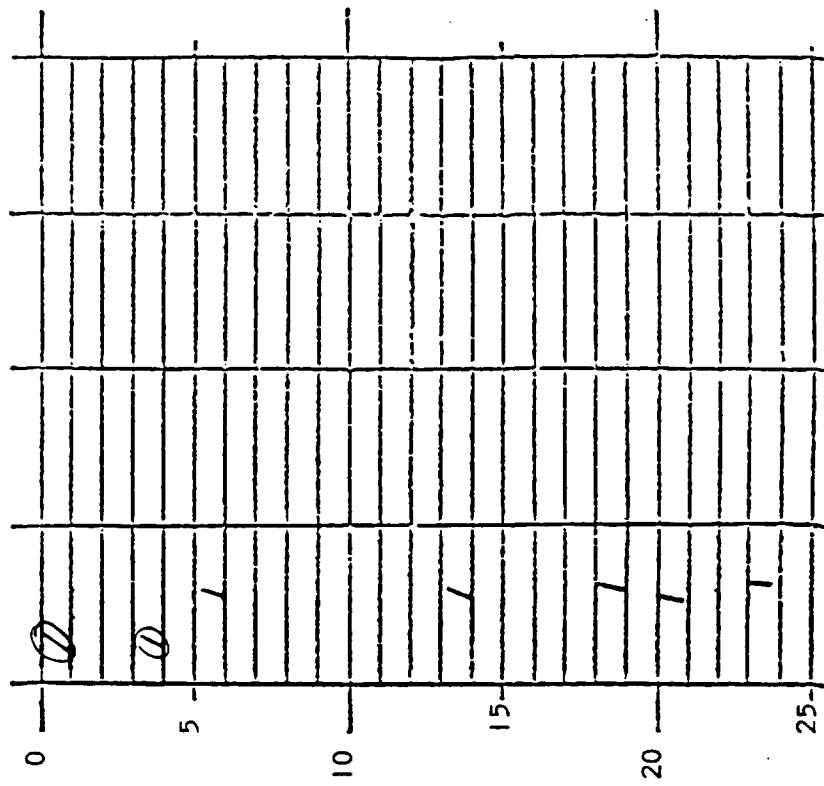
SAMPLE # 94 OPERATION _____

FLOW _____ TIME _____ VOLUME 6000 DATE 11/14

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 281.08 CONCENTRATION 1281 3.69

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

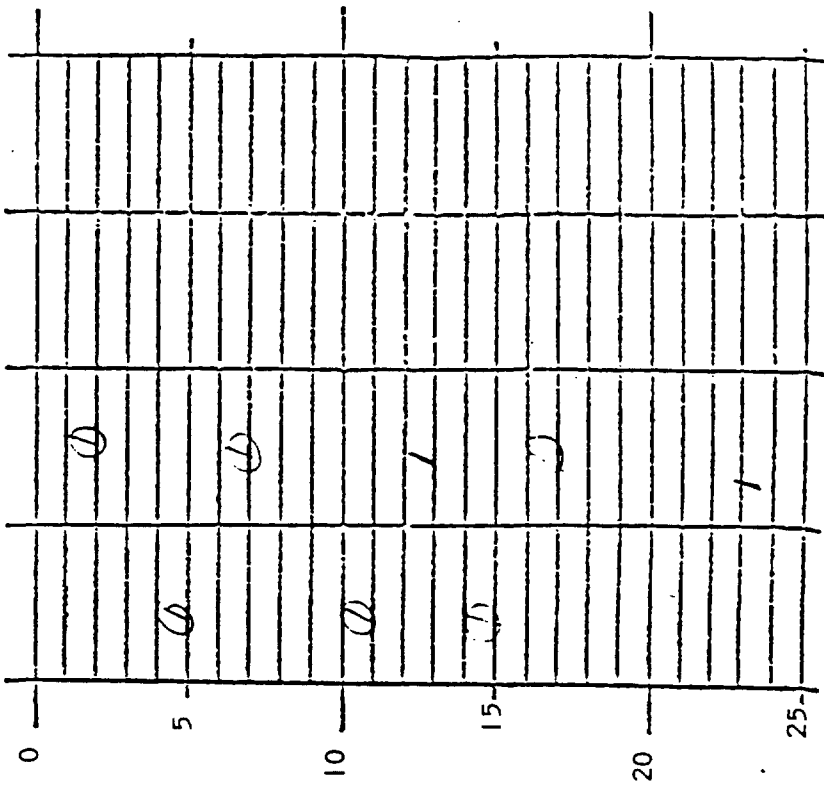
SAMPLE # 77 OPERATION _____

FLOW _____ TIME _____ VOLUME 6000 DATE 11/14

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 181.14 CONCENTRATION 811 6.4

COMMENTS: 62



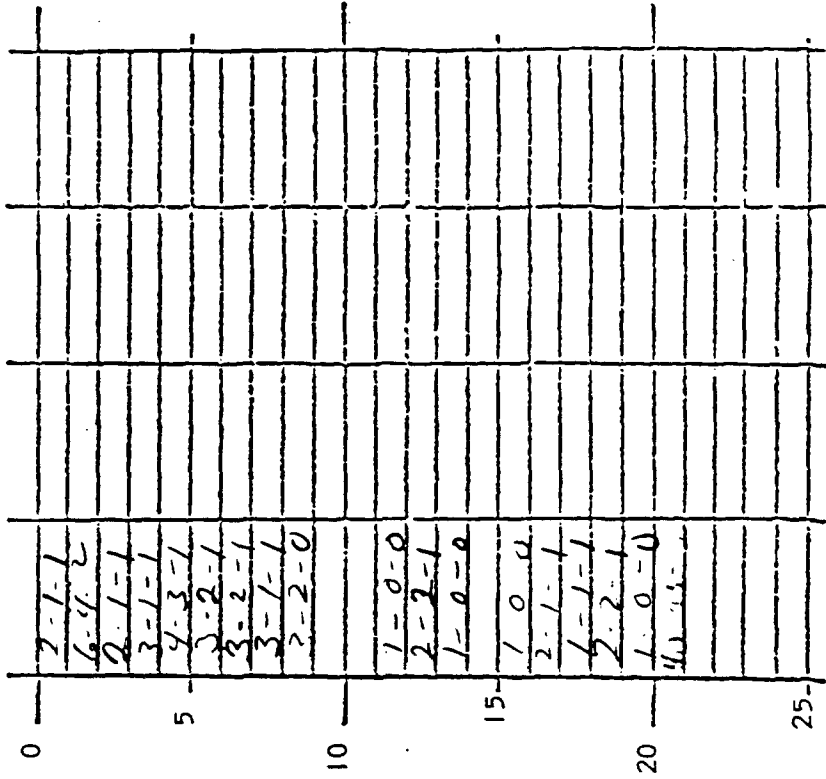
ASBESTOS COUNT RECORD SHEET

SAMPLE # 206 OPERATION _____

FLOW 2 TIME 5 VOLUME 200 DATE 1/1

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 2.0 / 1.5 CONCENTRATION 37.2 / 213 / 12.1

COMMENTS:

ASBESTOS COUNT RECORD SHEET

SAMPLE # 130 OPERATION _____

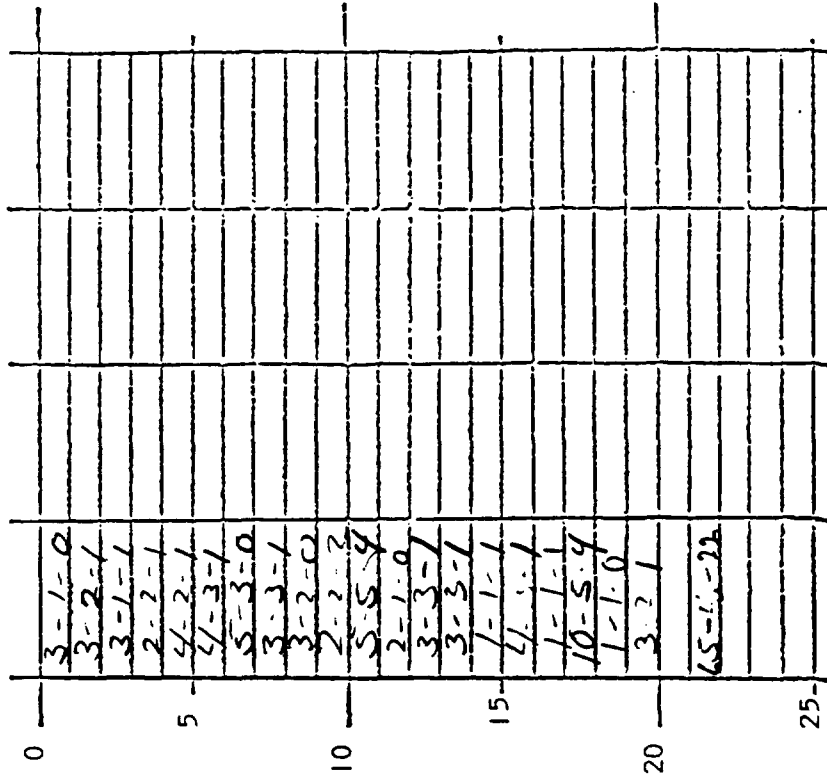
FLOW 2 TIME 37 VOLUME 112 DATE 11 / 12 / 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 3.25 / 1.84 CONCENTRATION 8.2 / 4.6 / 2.8

1.1

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

SAMPLE # 241 OPERATION _____

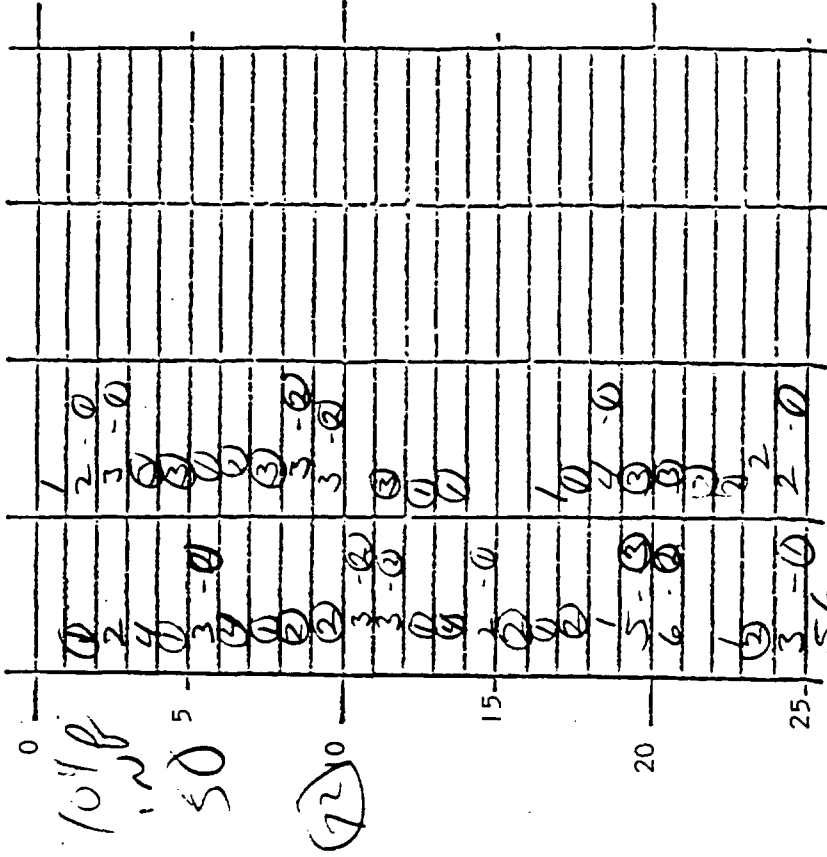
FLOW _____ TIME 4m VOLUME 800 DATE 11 / 11 / 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 2.08 CONCENTRATION 48.3

1.44

COMMENTS: _____



ASBESTOS COUNT RECORD SHEET

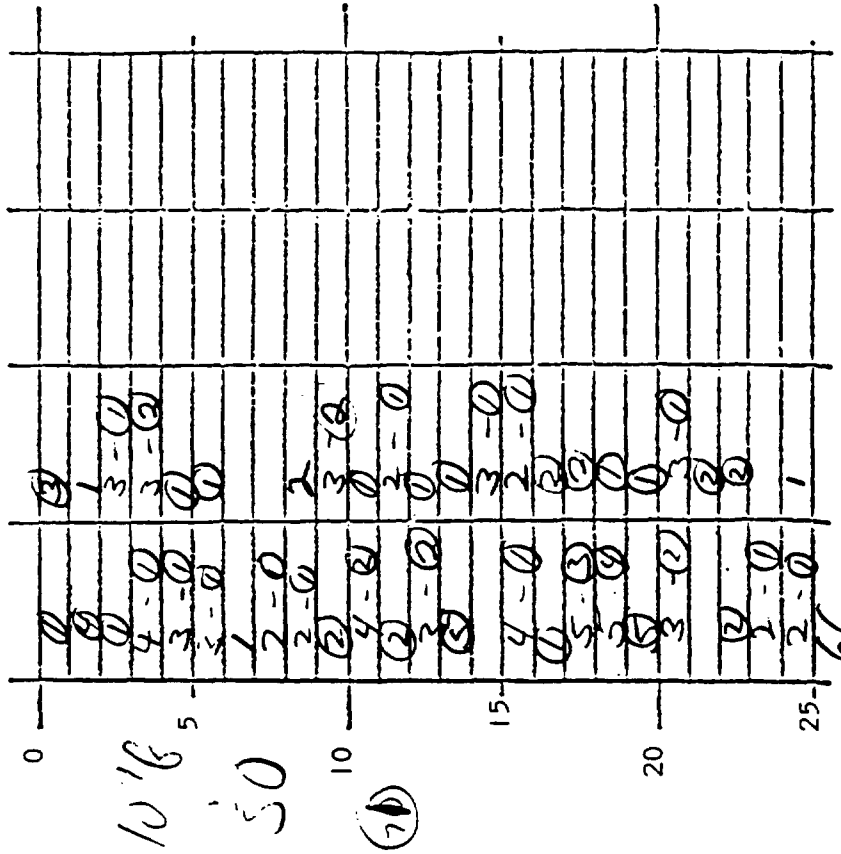
SAMPLE # 198 OPERATION _____

FLOW 2 TIME 18 VOLUME 36 DATE 11/18

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 2.14 CONCENTRATION 11.0

COMMENTS: 1.42 7.3



ASBESTOS COUNT RECORD SHEET

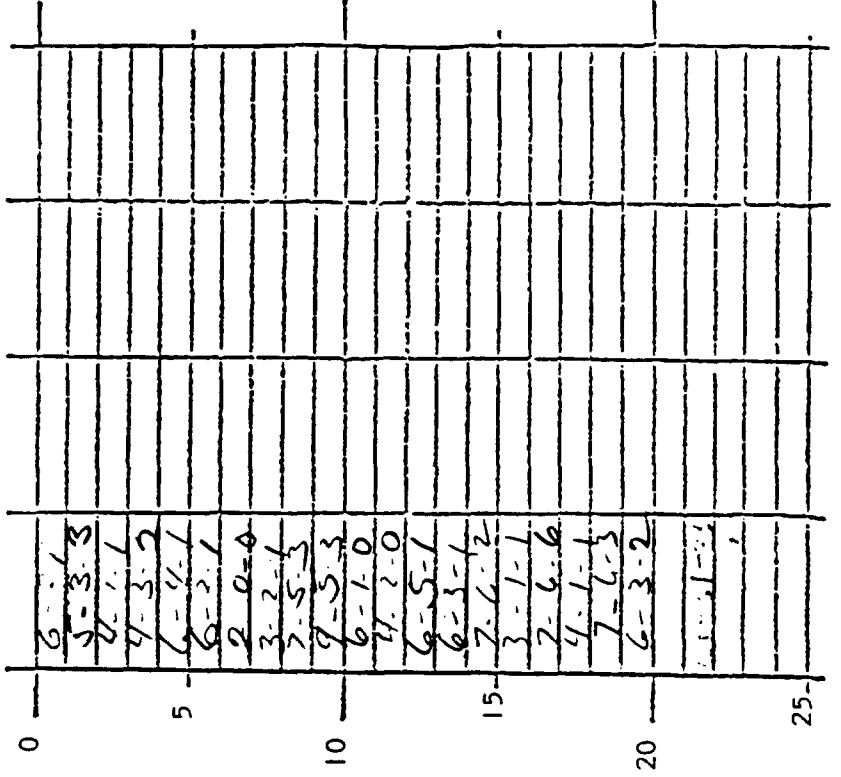
SAMPLE # 225 OPERATION _____

FLOW _____ TIME 7 VOLUME 100 DATE 1/1

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 5.1 CONCENTRATION 717 1412 219

COMMENTS: 1.5



ASBESTOS COUNT RECORD SHEET

2

SAMPLE #	OPERATION
216	

—

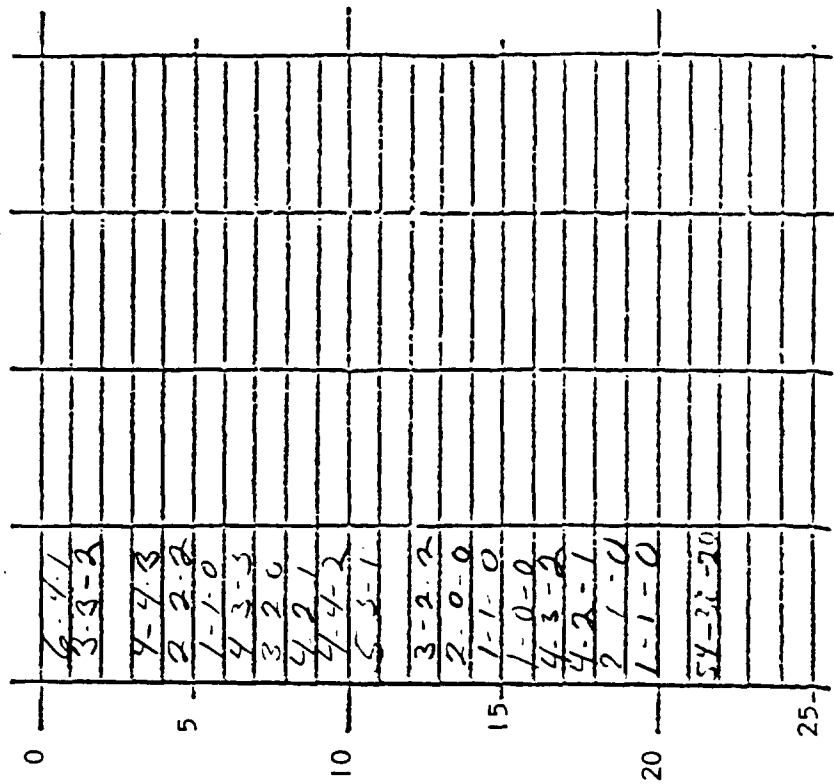
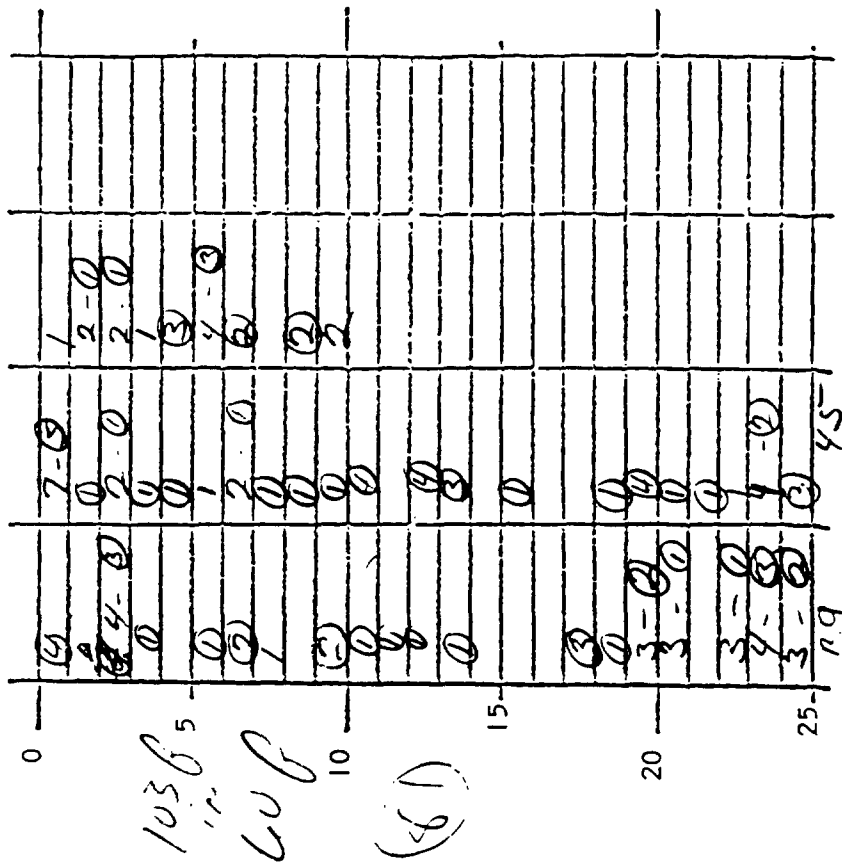
[illegible]

3

AV. COUNT 2.1 / 1 CONCENTRATION 35.8 / 25.2 / 13.3

155

COMMENTS:



ASBESTOS COUNT RECORD SHEET

SAMPLE # 97

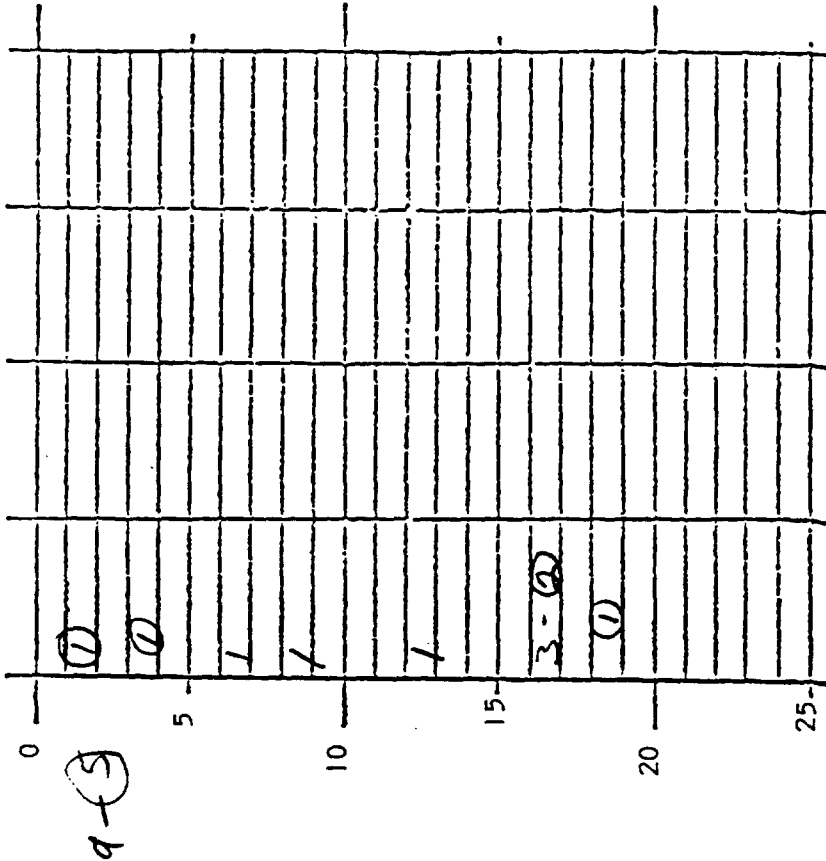
OPERATION

FLOW	TIME	VOLUME	DATE	/	/

INITIALS	F. AREA	BLK.CNT.AV.
-----------------	----------------	--------------------

AV. COUNT 451.25 CONCENTRATION 20.9 / 11.6

COMMENTS:



ASBESTOS COUNT RECORD SHEET

SAMPLE # 219 OPERATION _____

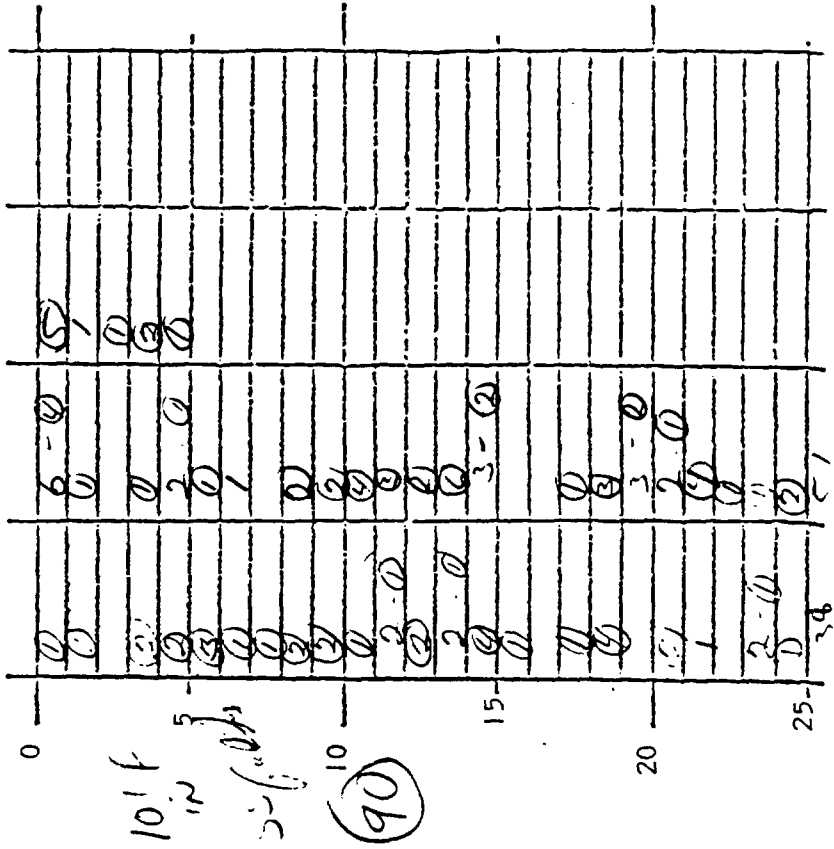
OPERATION

FLOW 2 TIME 11 VOLUME 2' Job DATE 11

INITIALS	F. AREA	BLK.CNT.AV.
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AV. COUNT 1.84 CONCENTRATION 15.5

COMMENTS: 1.64



ASBESTOS COUNT RECORD SHEET

SAMPLE # 210 OPERATION _____

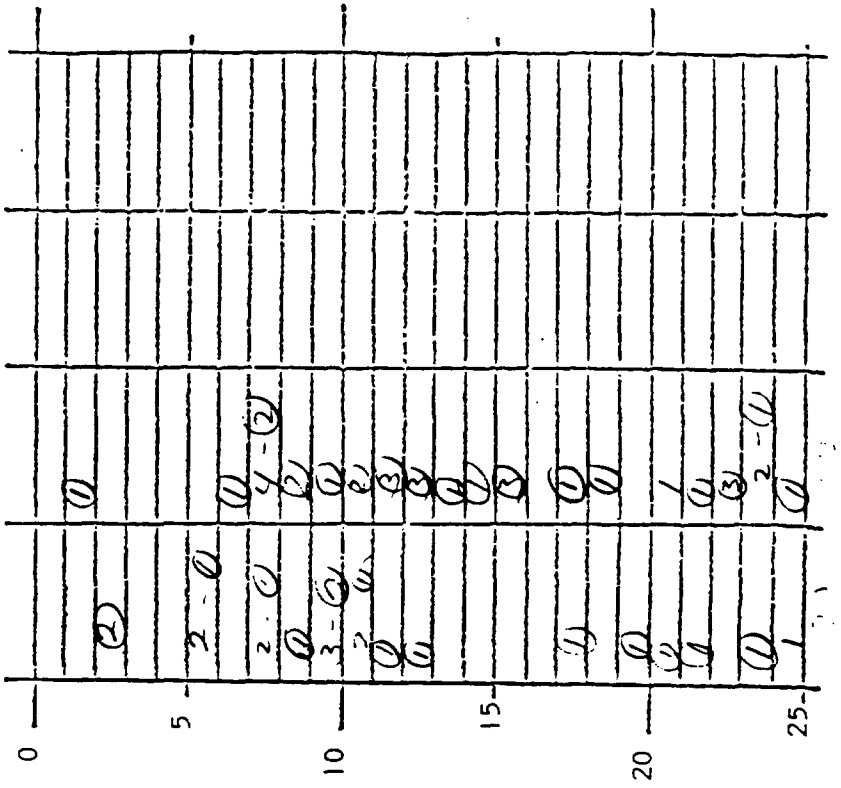
FLOW 1 TIME 1 VOLUME 5 DATE 11

INITIALS _____ F. AREA _____ BLK.CNT.AV. _____

AV. COUNT 104 CONCENTRATION 13.8

COMMENTS: 186 11/1

1



12-79

SAMPLE _____ DATE _____

INST. _____ FLOW RATE _____ BLANK _____

TOTAL TIME _____ TOTAL AIR VOLUME _____

EMPLOYEES NAME _____

JOB TITLE _____

DESCRIPTION OF OPERATION:

DESCRIPTION OF CONTROLS:

SAMPLE _____ DATE _____

INST. _____ FLOW RATE _____ BLANK _____

TOTAL TIME 12:24-12:37 TOTAL AIR VOLUME _____

EMPLOYEES NAME _____

JOB TITLE _____

DESCRIPTION OF OPERATION:

Dry Blowing Area
2 ft fan hopper
3 1/2 ft off floor
- NO ACTIVITY -

DESCRIPTION OF CONTROLS:

AIRBORNE FIBER COUNTS
for
Georgia-Pacific Corporation
Marietta, GA

August 21, 1973

Present for Georgia-Pacific:	Mr. D. Jones
Present for Union Carbide Corporation:	Mr. J. E. Walsh
Samples Analyzed By:	Mr. E. J. Kleber

UNION CARBIDE CORPORATION
Mining and Metals Division
Niagara Falls, New York

DESCRIPTION OF PLANT & TESTS

Tests were conducted August 21, 1973 at Georgia-Pacific Corporation Marietta, Georgia, manufacturers of Tape Joint Compounds.

Personal breathing zone and environmental samples were collected in an effort to determine the amount of airborne asbestos fiber generated during the manufacture of Joint Cements and during unloading of a car of SG-210. Samples are described in the Table.

Sampling and dust counting were carried out in accordance with OSHA Regulation 1910.93a, using the Bayer, Zummalde and Brown method for counting asbestos fibers by phase contrast microscopy (Bureau of Occupational Safety and Health, Feb. 1969).

Battery-powered air pumps (M.S.A. type) calibrated to 2 liters per minute were used to collect personal breathing zone and environmental samples on millipore membrane filters of 0.8 micron porosity.

Fiber counting was performed on a Vicker's phase contrast microscope utilizing a Porton reticle for sizing and field definition.

TEST RESULTS

Two figures have been reported for each sample. They are:

1. Total Fiber - Any material longer than 5 microns having an aspect ratio greater than 3:1.
2. Probable Asbestos Fiber - Any material meeting the criteria in No. 1 which in the judgement of the operator could possibly be Chrysotile fiber.

SUMMARY OF FIBER COUNTS

Sample No	Field No	Description	Total Fiber Fibers/cc > 5 μ	Probable Asbestos Fiber Fibers/cc > 5 μ
1	110	Environmental - Located 5 ft. off floor and 2 ft. to the left of dry blending through. Monitored between batches. (10 min.)	0.7	0.4
2	221	Personal - Dry blender operator (Sam Gayton) during addition of 200 lb. 7RF9 and 90 lb. SG-210. (5 min.)	22.2	16.7
3	218	Environmental - Same position as No. 1 during addition of 200 lb. 7RF9 and 90 lb. SG-210. (15 min.)	3.9	1.5
4	212	Personal - Dry blender operator (Sam Gayton) completing batch with other dry ingredients such as Mica, etc. (12 min.)	3.6	0.6
5	269	Environmental - Same position as No. 1 between batches. (16 min.)	2.2	0.2
6	292	Personal - Wet mix operator (Robert Huie) during blending of dry ingredients with Latex and water. (11 min.)	3.5	1.9
7	207	Environmental - Located 12 ft. from floor in middle of car door opening. Monitored from time door was opened until completion of unloading. (75 min.)	2.0	1.5
8	145	Personal - Car unloader (John Tiaker) during entire unloading. (87 min.)	2.7	2.1