



DOW CHEMICAL U.S.A.

PLAINTIFF'S EXHIBIT

DOW-785

August 24, 1987

TEXAS OPERATIONS
FREEPORT, TEXAS 77541

Mr. Steve Peirce
Texas Air Control Board
5555 West Loop Suite 300
Bellaire, Texas 77401

**NOTIFICATION OF INTENT TO RENOVATE ACCORDING TO EPA NATIONAL
EMISSIONS STANDARD 40 CFR 61**

- (i) Name and address of owner: The Dow Chemical Company
Texas Operations
Freeport, Texas 77541
- (ii) Description of Process: General office facilities
estimated to have been in service 30 years.
- (iii) Quantity of Asbestos: Approximately 4,000 square feet as
estimated from building dimensions.
- (iv) Location: Texas Operations, B-1201
- (v) Starting Date: September 20, 1987
Completion Date: December 31, 1987
- (vi) Nature of Renovation: Asbestos containing fire proofing
will be removed from building structure during renovation
activities.
- (vii) Procedure to be Followed: Appropriate area will be
barricaded and proper signs will be posted. The proper
safety equipment will be used. Insulation will be wet
down, then placed in impermeable containers. Proper
labeling will be attached.
- (viii) Disposal Site: The Dow Chemical Company, Freeport, Texas

R. E. Snelgrove

R. E. Snelgrove
Environmental Services

dp

xc: W. E. Cragar, B-101
C. R. Ford, APB

ST0015229

SECTION X

ASBESTOS ABATEMENT MINIMUM REQUIREMENTS

LARGE SCALE, LONG DURATION PROJECTS.

GENERAL:

1. The Superintendent/owner must contact Environmental Services (2414) a minimum of 25 days prior to starting asbestos removal work and specify a project supervisor.
2. The project supervisor must provide a written Safe Work procedure specific for each job which includes as a minimum the Safe Work procedures listed below.
3. The project supervisor must meet with the industrial hygienist, safety director for the area, and personnel performing the job to discuss the Safe Work procedure and arrange for audit and monitoring.
4. The project supervisor must arrange to have a "Competent Person" for the job. If work is contracted, the contractor must also provide a "Competent Person" to supervise the job.
5. Employees who work with asbestos must receive training in asbestos hazards before the initial assignment and annually thereafter.
6. Personnel in the general area must be notified that asbestos work is in progress.

SAFETY:

1. Safety equipment required by the job location must be worn.
2. An approved respirator must be worn during material removal and cleanup. Employee must have completed the mandatory fit test within the last 6 months. Contact (409) 238-3536 for information.
3. Disposable coveralls with attached boots and hoods must be worn during cleanup and removal operations. Coverall boots may be worn over work shoes or inside rubber boots.
4. "Street clothes" must not be worn underneath disposable coveralls.
5. If work clothing is worn underneath, it must be left in the "dirty room" of the decontamination facilities. Contaminated clothing for laundering must be contained in a sealed asbestos waste bag and laundered in a manner which will minimize the release of asbestos fibers. Personnel laundering asbestos contaminated clothing must be informed of this requirement.
6. Vacuum and local exhaust ventilation systems must be equipped with HEPA filters.
7. Personnel monitoring must be done at the beginning of each job unless glove bags are used or personnel wear supplied air respirators or previous personnel monitoring of similar jobs shows 8 hour TWA exposure potentials less than 0.1 fibers/cc. Contact Industrial Hygiene Services (409) 238-1281 for information.
8. A decontamination area must be provided. It must be contiguous to the regulated area if feasible. Egress to the regulated area must be through the decontamination area.
9. Water for wetting must contain a surfactant.
10. Local exhaust ventilation must be provided for hand operated or power operated tools; such as but not limited to, saws, scorers, abrasive wheels, and drills if the use of these tools would cause potential exposure levels to equal or exceed 0.2 fibers/cc 8 hour TWA. The efficiency of local exhaust ventilation systems must be verified by Industrial Hygiene Services.
11. An Asbestos Safety Checklist must be completed for each job.

ST0015230

SECTION X

Large Scale
Asbestos Abatement Minimum Requirements
Page 2

REGULATED AREA:

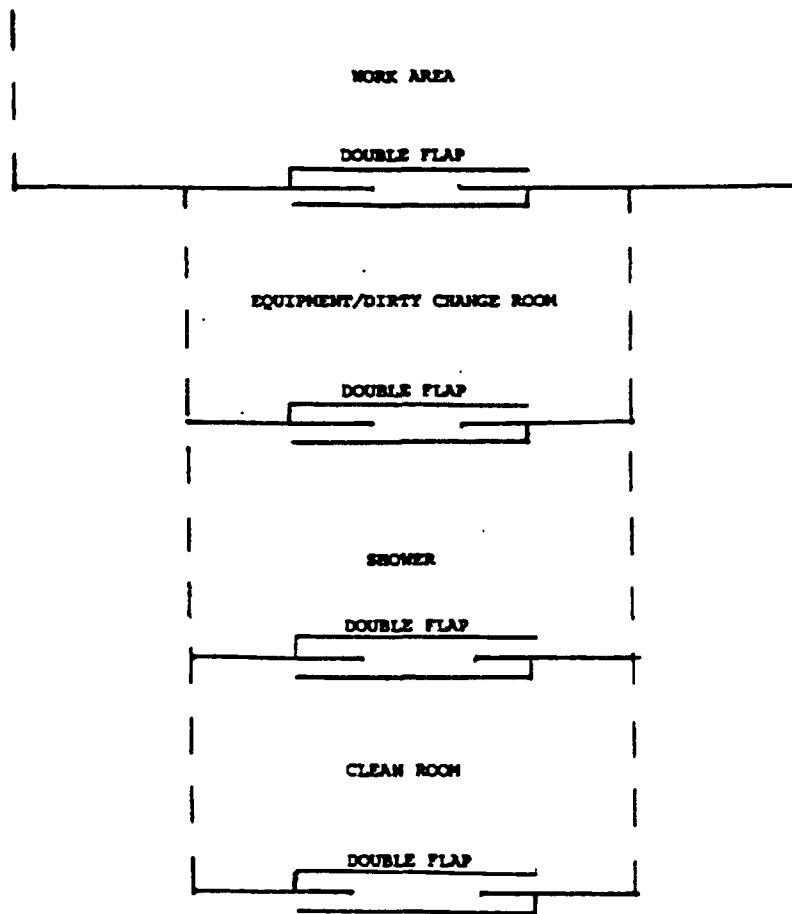
1. A regulated area must be established and asbestos warning signs posted to restrict access to authorized personnel only.
2. Area must be cleaned of existing asbestos contamination and other debris.
3. Portable objects must be removed to prevent contamination.
4. Coverings must be placed over remaining objects and underneath the work area. Scaffold landings must be covered. Materials must not be dropped to the ground. Pre-job planning must include provisions for keeping deteriorated material in place after jacketing is removed.
5. Glove bags, mini-enclosures or negative pressure enclosures must be used for jobs whenever feasible if the potential exposure level may equal or exceed 0.2 fibers/cc 8 hour TWA (local exhaust ventilation or other engineering controls methods may eliminate the need for enclosures).

REMOVAL:

1. The materials must be wet down before, during, and after removal to prevent airborne emissions. Materials must be thoroughly wetted, but not to the point that they crumble and turn to mush. Wetting of materials may be eliminated if water is not compatible with the process, or materials/equipment may be seriously damaged, or local exhaust ventilation reduces the potential exposure limit below 0.2 fibers/cc 8 hour TWA.
2. Material must be removed and placed into labeled polyethylene bags or containers approved by Environmental Operations. Bags or containers must be lowered to the ground, not dropped.
3. The surface from which asbestos has been removed must be wetted and cleaned.
4. Exposed asbestos must be encapsulated at terminations.
5. After asbestos removal, a thorough inspection and cleanup of the area must be conducted. Pick up and dispose of coverings and double bag contaminated or broken bags. Vacuum work area as required.
6. All items removed from the regulated area must be decontaminated.
7. All materials used to establish the regulated area must be removed.
8. Bags or containers must be transported to the dumpster or collection area.

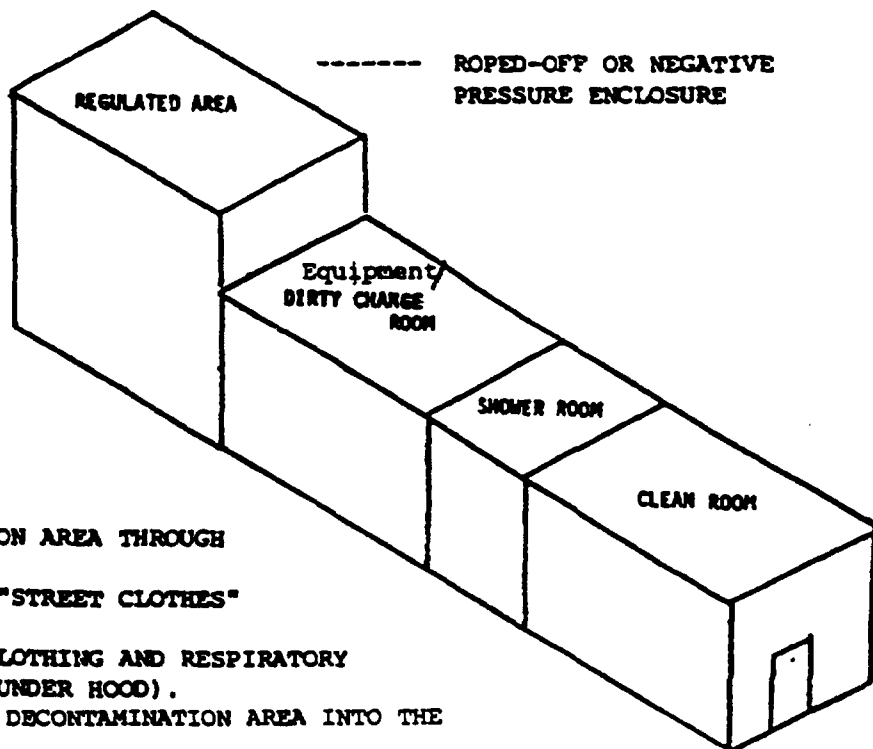
ST0015231

SECTION X
TYPICAL DECONTAMINATION AREA
LAYOUT



ST0015232

SECTION X
DECONTAMINATION AREA
(CONTIGUOUS TO WORK AREA)



ST0015233

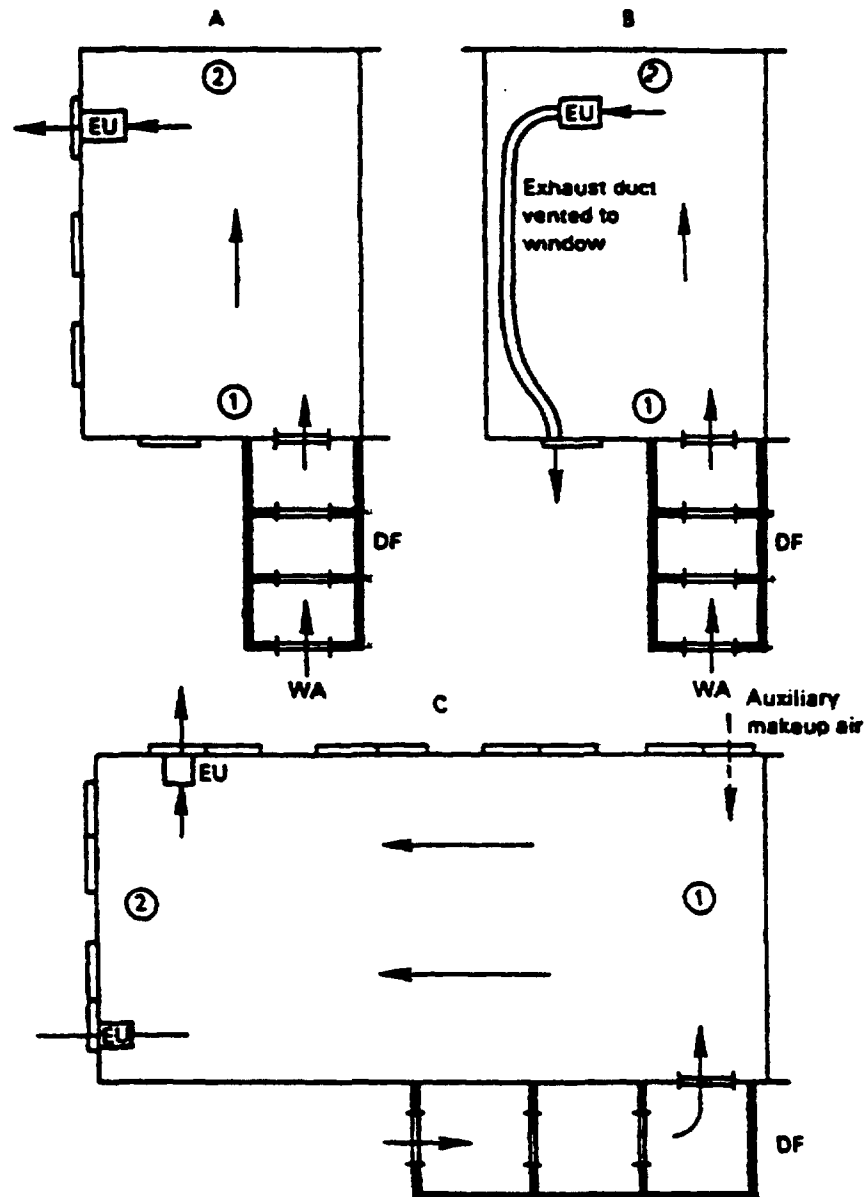
ENTRY

1. ENTER DECONTAMINATION AREA THROUGH CLEAN ROOM.
2. REMOVE AND DEPOSIT "STREET CLOTHES" IN LOCKER.
3. PUT ON PROTECTIVE CLOTHING AND RESPIRATORY PROTECTION (STRAPS UNDER HOOD).
4. PROCEED THROUGH THE DECONTAMINATION AREA INTO THE REGULATED AREA.

EXIT

1. REMOVE GROSS CONTAMINATION FROM SUIT.
2. REMOVE PROTECTIVE CLOTHING IN EQUIPMENT/DIRTY CHANGE ROOM AND DEPOSIT IN LABELED IMPERMEABLE BAGS.
3. WEAR RESPIRATOR INTO SHOWER AREA.
4. SHOWER BEFORE ENTERING CLEAN ROOM.
5. PUT ON STREET CLOTHES.
6. EXIT DECONTAMINATION AREA.

SECTION X
EXAMPLES OF NEGATIVE PRESSURE SYSTEMS



DF, Decontamination Facility; EU, Exhaust Unit; WA, Worker Access;
A, Single-room work area with multiple windows; B, Single-room work
area with single window near entrance; C, Large single-room work area
with windows and auxiliary makeup air source (dotted arrow). Arrows
denote direction of air flow. Circled numbers indicate progression of
removal sequence.

LIBRATOR VERSION 1.1

FLOW	AVERAGE	# SAMPLES
2244	2244	01
2239	2242	02
2242	2242	03
2239	2241	04
2294	2250	05
2226	2246	06
2224	2243	07
2201	2237	08
2216	2235	09
2215	2233	10

Pump #
2099C
Before
6/25/87

-2059	000.0	00
2060	2060	01
2063	2062	02
2062	2062	03
2060	2061	04
2060	2061	05
2062	2061	06
2062	2061	07
2062	2061	08
2062	2061	09
2065	2062	10

Pump #
2003C
Before
6/25/87

FLOW	AVERAGE	# SAMPLES
2069	2069	01
2071	2070	02
2069	2070	03
2069	2070	04
2069	2069	05
2070	2070	06
2070	2070	07
2070	2070	08
2070	2070	09
2071	2070	10

B12-315
#280
After
6/25/87

FLOW AVERAGE # SAMPLES

FLOW AVERAGE # SAMPLES

FLOW AVERAGE # SAMPLES

FLOW	AVERAGE	# SAMPLES
2116	2116	01
2116	2116	02
2113	2115	03
2113	2115	04
2110	2114	05
2111	2113	06
2113	2113	07
2113	2113	08
2108	2113	09
2111	2112	10

Pump #
1944C
Before
6/25/87

FLOW	AVERAGE	# SAMPLES
2260	2260	01
2252	2256	02
2241	2251	03
2249	2251	04
2231	2247	05
2151	2231	06
-2151	2247	05
2220	2242	06
2220	2239	07
2223	2237	08
2223	2235	09
2226	2235	10

B12-3127
#2099
After
6/25/87

FLOW	AVERAGE	# SAMPLES
2551	2551	01
2558	2555	02
2556	2555	03
2554	2555	04
2554	2555	05
2556	2555	06
2556	2555	07
2564	2556	08
2564	2555	07
2556	2555	08
2558	2555	09
2545	2554	10
2564	2554	10
2560	2555	11

B12-3
#209
After
6/25/87

FLOW	AVERAGE	# SAMPLES
2065	2065	01
2071	2067	02

FLOW	AVERAGE	# SAMPLES
2586	2586	01
2586	2586	02
2582	2585	03
2586	2585	04
2584	2585	05
2584	2585	06
2582	2584	07
2582	2584	08
2586	2584	09
2582	2584	10

Pump #
2096C
Before
6/25/87

FLOW	AVERAGE	# SAMPLES
2138	2138	01
2139	2139	02
2136	2138	03
2138	2138	04
2138	2138	05
2136	2138	06
2139	2138	07
2138	2138	08
2139	2138	09
2138	2138	10

B12-3127
#1944
After
6/25/87

FLOW AVERAGE # SAMPLES

ST0015235

INDUSTRIAL HYGIENE SAMPLE RECORD

FILE NUMBER: B12-3127 PROJECT: APB ADMINISTRATION BUILDING BLOC. NO: B-1201 DATE: 6/25/87

MATERIAL: ASBESTOS SAMPLING METHOD: NIOSH 7400 TRAPPING MEDIUM: 25mm FILTER

EQUIPMENT NUMBER: SEE BELOW TYPE OF EQUIPMENT: GILIAN HFS 513A FLOW INDICATOR SETTING: 2.5 SAMPLE FLOW RATE: OUTSIDE TEMP.: INSIDE TEMP.:

REMARKS (VENTILATION, ETC.): AREA SAMPLES WHERE ASBESTOS MATERIAL IS LOCATED

SAMPLE NO.	CONTAINER NO.	DESCRIPTION OF SAMPLE	TIME		CONCENTRATION
			START	INCREMENT	
3	2099C	STAIR #5 Between 1 & 2 Floor	9:10	3:30	4.40
		$4.46 - 0.6 = 3.86 \text{ fibers/mm}^2$		(380 min)	(2.22/fm)
		$(3.86)(385) = 0.002 \text{ fibers/cc}$			
		$(886)(10^3)$			
4	1944C	STAIRWELL #4 Between 1st & 2nd Floor	9:30	3:35	12.1
		$12.10 - 0.6 = 11.50 \text{ fibers/mm}^2$		(365 min)	(2.12/fm)
		$(11.50)(385) = 0.006 \text{ fibers/cc}$			766.5 L
		$(968)(10^3)$			
5	2803C	North end of Lobby	9:18	3:25	19.75
		$19.75 - 0.6 = 19.15 \text{ fibers/mm}^2$		(367 min)	(2.12/fm)
		$(19.15)(385) = 0.01 \text{ fibers/cc}$			770.7 L
		$(981)(10^3)$			
6	2096C	IN PLANTER INSIDE HALLWAY BEHIND LOBBY	9:20	3:25	5.7
		$5.73 - 0.6 = 5.13 \text{ fibers/mm}^2$		(365 min)	(2.62/fm)
		$(5.13)(385) = 0.002 \text{ fibers/cc}$			949 L
		$(949)(10^3)$			
Blank	# 1 & 2				20.6
					20.1

ST0015236

SIGNATURE: Linda Bullard

DATE: 6/25/87

B12-3127

McKee Environmental
Health Services

July 7, 1987

LAB ANALYSIS REPORT

Client: Dow Chemical, USA
Texas Operations
Freeport, Texas 77541

Attention: Dave Mathurin (B101Y)

Analysis Performed: NIOSH Method #7400
Fiber Counts (Asbestos)

Sample I.D.	M.E.H.S. No.	# of fields	# of fibers	Fibers per mm ²
BC 1	871378	100	LT 0.5	LT 0.6
2	9	100	26.5	33.76
3	80	100	7.	8.92
4	1	100	LT 0.5	LT 0.6
OC-3122-1	871386	100	5.5	7.01
2	7	100	LT 0.5	LT 0.6
3	8	100	LT 0.5	LT 0.6
4	9	100	3.	3.82
5	90	100	0.5	0.6
B31-2789-1	1	100	LT 0.5	LT 0.6
2	2	88	110.	159.2
3	3	100	6.5	8.28
B101-1	4	100	LT 0.5	LT 0.6
2	5	100	10	12.74
3	6	100	13	16.56
B12-3127-1	871419	100	LT 0.5	LT 0.6
2	20	100	LT 0.5	LT 0.6
3	1	100	3.5	4.46
4	2	100	9.5	12.10
5	3	100	15.5	19.75
6	4	100	4.5	5.73
A1704-1	5	100	0.5	0.6
2	6	100	3.5	4.46
B24-1/CS	7	100	7.5	9.55
2/CS	8	100	LT 0.5	LT 0.6
SIH - 7	9	73	101.	176.2
8	30	20	130.5	831.2
9	1	100	28.5	36.3
A1800-1	2	100	LT 0.5	LT 0.6
2	3	100	1.	1.27
3	4	100	4.	5.10

ST0015237

U #2 - 15	5	100	2.	2.55
16	6	100	LT 0.5	LT 0.6
17	7	100	6.	7.64
18	8	100	16.	20.38
19	9	100	4.5	5.73
20	40	100	3.	3.82
21	1	100	2.	2.55
B56-2916 AN-3	2	100	6.	7.64
U #1-1	3	100	4.5	5.73
2	4	100	5.	6.37
3	5	100	1.5	1.91
4	6	100	6.	7.64
5	7	100	LT 0.5	LT 0.6

ST0015238

Ronald S. McKee C.I.H.

Ronald S. McKee
Certified Industrial Hygienist

Rme

INDUSTRIAL HYGIENE SAMPLE RECORD

PROJECT NO. B12-3127 PROJECT APB ADMINISTRATION BLOCK NO. B1201 DATE 8/4/85

MATERIAL ASBESTOS SAMPLING METHOD NIOSH 7400 TRAPPING MEDIUM 25mm FILTER

EQUIPMENT NUMBER SEE BELOW TYPE OF EQUIPMENT GILIAN HFS 513A FLOW INDICATOR SETTING 2.5 SAMPLE FLOW RATE SEE BELOW OUTSIDE TEMP. . INSIDE TEMP. .

REMARKS (VENTILATION, ETC.) AREA SAMPLES FOR AIRBORNE ASBESTOS

SAMPLE NO.	CONCENTRATION	DESCRIPTION OF SAMPLE	TIME		CONCENTRATION
			START	INCREMENT	
B12-3127-D	2100	attic at 3rd floor level stairwell	8:50	3:53	8.1
	Before flow rate 2.4	(2.5)(423 min) = 1058 l		423	
	After 2.5	8.92 - 0.6 = 8.32 fibers/mm ²			
		(8.32)(385)			
		(1058)(10 ³) = 0.003 fibers/cc or <0.01 fibers/cc			
B12-3127-8	2099	at entrance executive driveway	8:30	3:22	2.1
	Before flow rate 2.4	(2.4 l/min)(412 min) = 989 l		412	
	After 2.4	2.55 - 0.6 = 1.95 fibers/mm ²			
		(1.95)(385)			
		(989)(10 ³) = 0.001 = <0.01 fibers/cc			
B12-3127-9	2801	In attic over labelling	8:45	3:41	14.1
	Before flow rate 2.2	(2.2 l/min)(422 min) = 928 l		422	
	After 2.2	14.01 - 0.6 = 13.41 fibers/mm ²			
		(13.41)(385)			
		(928)(10 ³) = 0.006 = <0.01 fibers/cc			
B12-3127-7		Blank			<0.6

ST0015239

SIGNATURE

DATE

McKee Environmental
Health Services

September 8, 1987

LAB ANALYSIS REPORT

Client: Dow Chemical, USA
Texas Operations
Freeport, Texas 77541

Attention: Dave Mathurin (B101Y)

Analysis Performed: NIOSH Method #7400
Fiber Counts (Asbestos)

Sample I.D.	M.E.H.S. Number	# of fields	# of fields	Fibers per mm ²
R3081-1	871922	100	2.5	3.18
2	3	100	LT 0.5	LT 0.6
3	4	100	2	2.55
4	5	100	LT 0.5	LT 0.6
5	6	100	7	8.92
6	7	100	5	6.37
7	8	100	2.5	3.18
8	9	100	1.5	1.91
B12-3127-7	83182	100	LT 0.5	LT 0.6
8	3	100	2	2.55
9	4	100	11	14.01
10	5	100	7	8.92
A36-1	6	100	13.5	17.20
2	7	100	LT 0.5	LT 0.6
3	8	100	14.5	18.47
4	9	100	6.5	8.28
CPB	90	100	31.	39.49
CPC	1	100	70.5	89.81
CPD	2	100	15.	19.11
CPE	3	100	17.	22.29
SIH #16	4	20	130.	828.0
17	5	49	101.	262.6
18	6	100	27.	34.39
U#2 #1	7	100	4.5	5.73
2	8	100	1.5	1.91
3	9	100	2.	2.55
4	83200	100	LT 0.5	LT 0.6
5	1	100	2.	2.55
6	2	100	5.5	7.01
7	3	100	LT 0.5	LT 0.6
8	4	100	LT 0.5	LT 0.6

LT = less than

Ronald L. McKee, M.H.

ST0015240

17.054C

Calibration

1/27/87

1/27/87

Before

After

2.212

2.205

2.206

2.199

2.202

2.204

2.196

2.200

2.170

2.204

2.1972

2.2024

2.2

ST0015241

McKee Environmental
Health Services

February 2, 1987

LAB ANALYSIS REPORT

Client: Dow Chemical, USA
Texas Operations
Freeport, TX 77541

Attention: Joe Ennis 3101Y

Analysis performed: NIOSH Method #100
Fiber Count (Asbestos)

Sample Identification	M.E.H.S. number	Results fibers/mm ²
451-1	87276	30.23
81-3065-61	7	8.82
62	6	1.51
63	9	12.59
64	80	3.78
65	1	10.08
66	2	6.30
FAB	87288	LT 1.26
1	9	149.9
2	90	overload - dust
3	1	73.05
4	1	overload - dust
5	3	overload - dust
6	4	117.1
7	5	173.8
8	6	LT 1.26
9	7	LT 1.26
10	8	37.78
844-8072-1	9	LT 1.26
2	87300	42.82
3	1	12.59
812-3062-10	2	18.89
11	3	12.59
12	4	7.56
13	5	191.5
IHS 10	6	335.9
11		

LT = less than

Ronald L. McKee R.L.H.

[Signature]

File # 812-3062

ST0015242

FILE NUMBER	PROCESS	BLOG NO	DATE
B12-3062	APB	B1201	11/27/87
MATERIAL	SAMPLING METHOD	TRAPPING MEDIA	
ASBESTOS	NIOSH 7400	25 mm FILTER	
EQUIPMENT NUMBER	TYPE OF EQUIPMENT	FLOW INDICATOR SETTING	SAMPLE FLOW RATE
12054C	GILIAN HFS 113A	2.5	2.2
REMARKS (VENTILATION, ETC.)		OUTSIDE TEMP.	INSIDE TEMP.
CLEAN Room SAMPLE			

[illegible]

SUMMARY

Leide Tullard

0218

1/27/87

FORM C-100 (REVISED 6-1-77)

ST0015243

12057

Calibration

1/21/87

1/27/87

Before

After

2.319

2.294

2.311

2.296

2.305

2.296

2.298

2.293

2.288

2.292

2.3042

2.2942

2.3

ST0015244

File # B12-3062

Page 2

3	3	LT	1.26
4	4	LT	1.26
5	5	LT	1.26
6	6		3.78
7	7	LT	1.26
8	8	LT	1.26
9	9	LT	1.26
10	60	LT	1.26
11	1	LT	1.26
12	2	LT	1.26
✓ B12-3062-1	87063	LT	1.26
✓ 2	4		133.5
✓ 3	5	filter overload - fibers & dust	
✓ 4	6		138.5
✓ 5	7		161.2
✓ 6	8	V	O I D
✓ 7	9		75.57
✓ 8	70	LT	1.26
✓ 9	1	LT	1.26
B1021 - 1	2		10.08
2	3		49.12
3	4	LT	1.26
4	5		8.82
5	6		13.85
6	7		28.97
7	8		5.04
8	9		42.82
9	80		74.31
10	1		16.37
11	2		12.59
12	3		5.04
A75 - 3	4		156.2
A86 - 4	5		251.9
B2401-1A	6		13.85
2A	7		231.7
3A	8	filter overload	
4A	9		18.89
5A	87090	filter overload - fibers	
6A	1	LT	1.26
7A	2	LT	1.26
8A	3		221.7
9A	4	filter overload - fibers	
10A	5		268.0
A83-2	6		734.1
A87-3	7		503.2

ST0015245

PULF NUMBER B-12		PROCESS APPB		BLDG. NO. B1201		DATE 1/21/67	
MATERIAL Asbestos		SAMPLING METHOD NIOSH 7400		TRAPPING MEDIA 25mm FILTER			
EQUIPMENT NUMBER 12057	TYPE OF EQUIPMENT GILIAN HFS113A	FLOW INDICATOR SETTING 2.5	SAMPLE FLOW RATE 2.3	OUTSIDE TEMP. °		INSIDE TEMP. °	
REMARKS (VENTILATION, ETC.) CLEAN ROOM SAMPLE							

ST0015246

SIGNATURE Linda Bullard

DATE 1/27/87

PUMP NUMBER		PROCESS		BLDG NO		DATE	
Bldg-2062		APP EQUIPMENT Room		B-1201		1/29/87	
MATERIAL		SAMPLING METHOD		TRAPPING MEDIUM			
ASBESTOS		NIOSH 7400		25mm FILTER			
EQUIPMENT NUMBER		TYPE OF EQUIPMENT		FLOW INDICATOR SETTING		SAMPLE FLOW RATE	
12056C		GILIANHES 113A		2.5		2.4	
REMARKS (VENTILATION, ETC.)						OUTSIDE TEMP.	
CLEAN Room Sample						INDOOR TEMP.	

INTRODUCTION

9418

11/27/87

ST0015247

12056

Calibration

1/29/87

1/27/87

Before

After

2.398

2.439

2.399

2.443

2.401

2.440

2.402

2.421

2.398

2.408

2.3996

2.4302

2.4

ST0015248

BREWARD

1/9/87 7:30 AM

PROCEDURE FOR REMOVING ASBESTOS
AT B-1202 MECHANICAL ROOM.

Shut off steam & open
waste pipes & 9

Start
circulate
the air

See
stream on at
5:00 PM
Mond

1. Fill out ASBESTOS REMOVAL CHECKLIST PRIOR to REMOVING ASBESTOS.
2. WEAR ALL REQUIRED SAFETY EQUIPMENT:
 - a. RESPIRATOR
 - b. SIDE-SHIELDS
 - c. COTTON GLOVES
 - d. RUBBER BOOTS
 - e. DISPOSABLE COVERALLS WITH HOODES
 - f. HARD HAT
3. TAPE OFF ENTRANCES TO ROOM AND POST ASBESTOS REMOVAL SIGNS.
4. PLACE POLYFILM ON FLOOR UNDERNEATH LINES BEING STRIPPED.
5. WET LINE AS YOU CUT OUTER COVERING. WATER SHOULD CONTAIN SURFACTANT. WET ~~the~~ INSULATION AFTER OUTER COVERING IS REMOVED. USE AS MUCH WATER AS NECESSARY TO PREVENT DUST BUT NOT SO MUCH THAT INSULATION BECOMES MUSHY AND RUNOFF OCCURS.
6. PLACE INSULATION DIRECTLY INTO POLY BAG FROM LINE, SEAL BAG AND LOWER TO GROUND.
7. AFTER STRIPPING IS COMPLETE, DISPOSE OF POLY FILM AS ASBESTOS AND CLEAN UP ALL RESIDUAL ASBESTOS.
8. AFTER FINAL CLEANUP REMOVE YELLOW TAPE AND ASBESTOS SIGNS.

ST0015249

File # B12-3062

ST0015250

CALIBRATION DATA

FILE NUMBER B12-30622 DATE 12/15/7PLANT NAME ORP PLANT ID

COLLECTION MEDIA:

CALIBRATION METHOD

PUMP # SETTING	PUMP # 2092-C SETTING		PUMP # 1260-C SETTING 1/3/87		PUMP # 12056-C SETTING 1-3-87		PUMP # 9288 SETTING 1-3-87	
	BEFORE	AFTER	BEFORE	AFTER	BEFORE	AFTER	BEFORE	AFTER
	2004	2036	2065	2051	2044	2001	2060	2121
	2005	2037	2065	2048	2077	1995	2070	2150
	2008	2038	2066	2046	2022	1992	2074	2150
	2007	2037	2056	2036	2001	1986	2074	2150
	2003	2040	2065	2035	2005	1992	2070	2149
	1999	2040						
	1999	2041						
	2005	2046						
	2001	2042						
	2007	2047						
	200	204	2034	2044	2026	1932	20704	215
	avg 202		avg 205		avg 201			avg 211

*** NOTES:

FILE NUMBER		PROJECT		BLOG. NO.		DATE	
B12-3127		HEMESTAS REMOVAL AT HPD		B1201		11/19/8	
MATERIAL		SAMPLING METHOD		TRAPPING MEDIUM			
ASBESTOS		NIOSH 7400		25MM FILTER			
EQUIPMENT NUMBER		TYPE OF EQUIPMENT		FLOW INDICATOR SETTING		SAMPLE FLOW RATE	
8977		GILIAN HFS 113A		2.5			
REMARKS (VENTILATION, ETC.)				OUTSIDE TEMP.		INDOOR TEMP.	
POST ASBESTOS MONITORING STAIRWELL # 2 & 3							

\$100 | 5.279

15/11/87

ST0015280

FLOW	AVERAGE	# SAMPLES
2016	2016	01
2018	2017	02
2017	2017	03
2010	2017	04
2017	2017	05
2010	2017	06
2004	2015	07
2016	2016	08
2013	2015	09
2014	2015	10
2016	2015	11

*Before
pump #
12053
11/19/87*

FLOW	AVERAGE	# SAMPLES
2116	2116	01
2116	2116	02
2117	2116	03
2117	2117	04
2119	2117	05
2117	2117	06
2114	2117	07
2118	2116	08
2114	2116	09
2118	2115	10

*Before
pump #
8420
11/19/87*

FLOW	AVERAGE	# SAMPLES
2129	2129	01
2129	2126	02
2123	2124	03
2119	2124	04
2113	2121	05
2107	2118	06
2104	2116	07
2106	2114	08
2101	2113	09
2104	2112	10
2098	2110	11

*After
8479
11/19/87*

FLOW	AVERAGE	# SAMPLES
1991	1991	01
1998	1990	02
1994	1991	03
1987	1990	04
1996	1991	05
1990	1991	06
1987	1990	07
1987	1990	08
1982	1989	09
1992	1990	10

*After
12053
11/19/87*

INDUSTRIAL HYGIENE SAMPLE RECORD

FILE NUMBER B12-3127	PROCESS APB Asbestos Removal	BLOC. NO. B1201	DATE 10/31/87
MATERIAL Asbestos	SAMPLING METHOD NIOSH 7400	TRAPPING MEDIUM 25mm FILTER	
EQUIPMENT NUMBER SEE BELLO	TYPE OF EQUIPMENT GILIAN 513HFS	FLOW INDICATOR SETTING 2.0	SAMPLE FLOW RATE OUTSIDE TEMP. INSIDE TEMP.
REMARKS (VENTILATION, ETC.) STAIRWELL # 2 & 3			

SAMPLE	CONTAIN	DESCRIPTION OF SAMPLE	TIME	CONCENTRATION	
				...	fibers/m
		Pump # 2801C - filter # 3127-34 (second floor)	10:15 AM	4:13 PM	356 38.22
		Pump # 1261 filter # 3127-32 (third floor)	10:18 AM	4:12 PM	357 21.66
		Pump # 2099 filter # 3127-33 (N.A.M. outfit)	10:22 AM	4:04 PM	347 10.83
		filter # 3127-35 Blank			<0.6
Flow rate		Sample # 3127-34 (2.2 l/min) (356 min) = 783 l			
		$(38.22)(385)$			
		$(783)(10^3)$			
		0.02 fibers/cc			
		Sample # 3127-32 (2.0 l/min) (357 min) = 714 l			
		$(21.66)(385)$			
		$(714)(10^3)$			
		0.01 fibers/cc			
		Sample # 3127-33 (2.1 l/min) (347 min) = 729 l			
		$(10.83)(385)$			
		$(729)(10^3)$			
		0.006 fibers/cc			
Signature		Date			

ST0015281

ST0015282

FLOW	AVERAGE	# SAMPLES
1949	1949	01
1944	1947	02

FLOW	AVERAGE	# SAMPLES
2136	2136	01
2135	2136	02
2129	2133	03
2129	2132	04
2129	2132	05
2126	2131	06
2123	2130	07
2122	2128	09
2122	2127	10
2122	2127	11

000.0 1825 11

FLOW	AVERAGE	# SAMPLES
------	---------	-----------

FLOW	AVERAGE	# SAMPLES
1654	1654	01
1654	1654	02
1654	1654	03
1654	1654	04

FLOW	AVERAGE	# SAMPLES
2257	2257	01
2267	2262	02
2274	2266	03
2272	2268	04
2279	2270	05
2282	2272	06
2272	2272	07
2276	2272	08
2281	2273	09
2279	2274	10

GILBRATOR VERSION 1.1

FLOW	AVERAGE	# SAMPLES
2005	2005	01
2016	2011	02
2012	2011	03
2010	2011	04
2010	2011	05
2007	2010	06
2005	2009	07
2005	2009	08
2005	2008	09

FLOW	AVERAGE	# SAMPLES
------	---------	-----------

FLOW	AVERAGE	# SAMPLES
2188	2188	01
2183	2186	02
2182	2184	03
2182	2184	04
2182	2183	05
2185	2184	06
2182	2183	07
2180	2183	08
2182	2183	09
2180	2183	10

FLOW	AVERAGE	# SAMPLES
2114	2114	01
2186	2110	02
2184	2108	03
2095	2105	04
2094	2103	05
2091	2101	06
2087	2099	07
2084	2097	08
2080	2095	09
2078	2093	10

FLOW	AVERAGE	# SAMPLES
------	---------	-----------

FLOW	AVERAGE	# SAMPLES
1995	1995	01
1996	1996	02
1994	1995	03
1994	1995	04
1994	1995	05
1983	1993	06
1985	1995	07
1990	1994	08
1990	1995	09
1988	1995	10
1991	1992	11
1992	1992	12
1987	1992	13

10/30/87
Pump #
2099
Before

pump #
2801
10/30/87
Before

pump #
1261
10/30/87
Before

After
pump #
2801
11/2/87

After
pump #
2099
11/2/87

After
pump #
1261
11/2/87



McKee ENVIRONMENTAL HEALTH SERVICES

11114 Sagepark • Houston, TX 77049 • (713) 481-3501

December 1, 1987

LAB ANALYSIS REPORT

Client: Dow Chemical, USA
Attn: Cheryl Sandlin (B101Y)
Texas Division, Industrial Hygiene

Test Performed: NIOSH Analytical Method #7400
(Fiber Counts - Asbestos)

ST0015283

Sample I.D.	M.E.H.S. No.	# of fields	# of fields	Fibers per mm ²
RW-1	83409	100	1.	1.27
2	10	100	2.	2.55
3	1	100	9.5	12.10
4	2	100	15.	19.11
5	3	100	7.5	8.92
A26/CS #5	4	100	64.5	82.17
LD-A	5	100	11.	14.01
CPW	6	73	103.5	131.8
CPT 8/21	7	100	61.5	78.34
CPK 8/31	8	100	6.	7.64
VER-3	9	100	4.	5.10
VER-2	21	100	19.	24.20
NP/n-1	20	100	19.5	24.84
SAT-2	83422	100	7.5	9.55
EDA-2	3	100	5.	6.37
EDA-4	4	100	11.	14.01
SIH #23	6	20	136.	866.2
#24	5	100	28.	35.67
#25	7	20	116.	738.9
B12-3127				
-18✓	9	100	4.5	5.73
BLANK 19✓	8	100	0.5	0.6
21✓	30	100	19.	24.20
22✓	1	100	9.	11.46
23✓	2	100	8.	10.19
24✓	3	100	2.	2.54
25✓	4	100	71.	90.45
26✓	5	100	46.	58.60
27✓	6	100	53.	67.52
BLANK 28✓	7	100	LT 0.5 LT	0.6

29✓	8	100	4.	5.10
30✓	9	100	12.5	15.92
31✓	40	100	13.	16.56
32✓	1	100	17.	21.66
33✓	2	100	8.5	10.83
34✓	3	100	30.	38.22
BLANK 35✓	4	100	LT 0.5	LT 0.6
36✓	5	100	24.	30.57
37✓	6	100	2.	2.55
38✓	7	100	12.	15.29
BLANK 39✓	8	100	2.	2.55
OCD I-2938				
-1	9	100	24.5	31.21
2	50	100	13.	16.56
3	1	100	1.	1.27
4	2	100	13.5	17.20
5	3	100	LT 0.5	LT 0.6
6	83458	100	LT 0.5	LT 0.6
A-ISB-1	83454	21	101.	612.1
2	5	26	104.	509.8
3	6	100	31.	39.49
4	7	100	LT 0.5	LT 0.6

LT = less than

ST0015284

Emc

Ronald S. McKee, I.H.

Ronald S. McKee
Certified Industrial Hygienist

FILE NUMBER A12-3127		PROCESS APP Asbestos Removal			BLDG. NO. B1201		DATE 10/30/87	
MATERIAL Asbestos		SAMPLING METHOD NIOSH 7400			TRAPPING MEDIUM 25MM FILTER			
EQUIPMENT NUMBER SEE BELOW		TYPE OF EQUIPMENT GILIAN HFS Pump		FLOW INDICATOR SETTING 2		SAMPLE FLOW RATE		OUTSIDE TEMP. °
REMARKS (VENTILATION, ETC.) POST REMOVAL MONITORING IN STAIRWELL #1								

SIGNATURE _____ DATE _____

\$10015285

ST0015286

FLOW	AVERAGE	# SAMPLES
582.9	583.8	21

FLOW	AVERAGE	# SAMPLES
1885	1885	01
1885	1885	02
1885	1885	03
1882	1884	04
1881	1884	05
1877	1883	06
1873	1881	07
1873	1880	08
1872	1879	09
1872	1879	10

After pump 120 10/1

FLOW	AVERAGE	# SAMPLES
1909	1910	02
1906	1908	03
1909	1909	04
1903	1907	05
1903	1907	06
1903	1906	07
1903	1906	08
1902	1905	09
1902	1905	10

FLOW	AVERAGE	# SAMPLES
1909	1910	02
1906	1908	03
1909	1909	04
1903	1907	05
1903	1907	06
1903	1906	07
1903	1906	08
1902	1905	09
1902	1905	10

Before pump 120

FLOW	AVERAGE	# SAMPLES
1910	1910	01
1916	1913	02
1915	1914	03
1913	1914	04
1913	1913	05
1913	1913	06
1913	1913	07
1915	1914	08
1905	1913	09
1907	1912	10

Before pump 120 10/12

INDUSTRIAL HYGIENE SAMPLE RECORD

FILE NUMBER B12-3127	PROJECT APB ASBESTOS REMOVAL	BLOG NO B1201	DATE 10/24/87
MATERIAL ASBESTOS	SAMPLING METHOD NIOSH 7400	TRAPPING MEDIUM 25mm FILTER	
EQUIPMENT NUMBER SEE BELOW	TYPE OF EQUIPMENT GILIAN HES PUMPS	FLOW INDICATOR SETTING 2.0	SAMPLE FLOW RATE 2.0
REMARKS (VENTILATION, ETC.)		OUTSIDE TEMP.	INDIDE TEMP.

OUTSIDE NEGATIVE PRESSURE ENCLOSURE DURING REMOVAL OF ASBESTOS FROM STAIRWELL #1

SAMPLE NO.	CONCENTRATION PUMP	DESCRIPTION OF SAMPLE	TIME		CONCENTRATION
			START	STOP	
B12-3127-27	1261	7th Floor Filter Area	7:40am	4:20	69.0 fibers/cc
B12-3127-25	12055	2nd Floor Exit	7:47am	3:55	90.0 fibers/cc
B12-3127-26	2099	Hall to Lobby	7:52am	3:50	58.0 fibers/cc
B12-3127-29	12053	Exhaust Area Ground Floor	8:05am	4:13	5.0 fibers/cc
B12-3127-28	Blank				<0.1
Flow rate Before 1.986 After 1.991 Avg. 2.0 Sample # B12-3127-27 Pump # 1261 (496 min) (2.0 l/min) = 992 l $\frac{(67.52)(385)}{(992)(10^3)} = 0.03 \text{ fibers/cc}$					
Flow rate Before 2.211 After 2.194 Avg. 2.2 Sample # B12-3127-25 Pump # 12055 (2.2 l/min) (485 min) = 1067 l $\frac{(90.45)(385)}{(1067)(10^3)} = 0.03 \text{ fibers/cc}$					
Flow rate Before 1.943 After 1.901 Avg. 1.9 Sample # B12-3127-26 Pump # 2099 (1.9)(479) = 910 l $\frac{(58.60)(385)}{(910)(10^3)} = 0.02 \text{ fibers/cc}$					
Flow rate Before 2.032 After 1.969 Avg. 2.0 Sample # B12-3127-29 Pump # 12053 (2.0)(473) = 946 l $\frac{(5.10)(385)}{(946)(10^3)} = 0.002 \text{ fibers/cc}$					

SIGNATURE
Deirda Bullard

DATE
10/24/87

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ST0015288

FLOW	AVERAGE	# SAMPLES
2028	2028	01
2030	2029	02
2033	2030	03
2033	2031	04
2026	2030	05
2030	2030	06
2034	2031	07
2033	2031	08
2037	2032	09
2034	2032	10

Before
pump #
12053
10/22/87

FLOW	AVERAGE	# SAMPLES
2213	2213	01
2213	2213	02
2213	2213	03
2213	2213	04
2215	2213	05
2210	2212	07
2208	2212	08
2210	2212	09
2208	2211	10

Before
pump #
12055
10/22/87

FLOW	AVERAGE	# SAMPLES
1986	1986	01
1986	1986	02
1988	1987	03
1987	1987	04
1987	1987	05
1983	1986	06
1987	1986	07
1984	1986	08
1984	1986	09
1984	1986	10

Before
pump #
1261
10/22/87

FLOW	AVERAGE	# SAMPLES
------	---------	-----------

FLOW	AVERAGE	# SAMPLES
1935	1935	01
1958	1947	02
1958	1950	03
1948	1950	04
1948	1949	05
1941	1948	06
1941	1947	07
1937	1946	08
1932	1944	09
1855	1935	10
1855	1944	09
1927	1943	10

Before
pump #
2099
10/22/87

FLOW	AVERAGE	# SAMPLES
------	---------	-----------

FLOW	AVERAGE	# SAMPLES
1972	1972	01
1970	1971	02
1969	1970	03
1969	1970	04
1968	1970	05
1968	1969	06
1968	1969	07
1967	1969	08
1967	1969	09
1969	1969	10

After
pump #
120
10

FLOW	AVERAGE	# SAMPLES
1991	1991	01
1991	1991	02
1991	1991	03
1992	1991	04
1992	1991	05
1992	1992	06
1990	1991	07
1991	1991	08
1991	1991	09
1991	1991	10

After
pump #
121
10

FLOW	AVERAGE	# SAMPLES
2199	2199	01
2199	2199	02
2197	2198	03
2194	2197	04
2194	2197	05
2193	2196	06
2193	2196	07
2198	2195	08
2188	2194	09
2191	2194	10

After
pump #
120
10

FLOW	AVERAGE	# SAMPLES
1914	1914	01
1908	1911	02
1905	1909	03
1903	1908	04
1901	1906	05
1900	1905	06
1996	1904	07
1997	1903	08
1893	1902	09
1890	1901	10

After
pump #
209
10

P.A.C. NUMBER 010-3127		PROJECT APB Asbestos Removal		BLDG. NO. B-1201		DATE 10/22/8	
MATERIAL Asbestos		SAMPLING METHOD NIOSH 7400		TRAPPING MEDIUM 25mm FILTERS			
EQUIPMENT NUMBER -	TYPE OF EQUIPMENT GILIAN HES Pumps		FLOW INDICATOR SETTING 2.0	SAMPLE FLOW RATE	OUTSIDE TEMP. °		INSIDE TEMP.
REMARKS (CONTAMINATION, ETC.) POST REMOVAL MONITORING							

ST0015289

STAYSAFE

Linda Bullard

Price

10/22/87

ST0015290

FLOW	AVERAGE	# SAMPLES
2077	2077	01
2078	2078	02
2080	2078	03
2080	2079	04
2083	2080	05
2077	2079	06
2077	2079	07
2078	2079	08
2076	2078	09
2069	2078	10

*Before
pump
321
10/22*

FLOW	AVERAGE	# SAMPLES
1973	1973	01
1970	1972	02
1972	1972	03
1972	1972	04
1970	1971	05
1964	1970	06
1964	1969	07
1958	1968	08
1958	1967	09
1953	1965	10

*Before
pump #
1259
10/22/87*

FLOW AVERAGE # SAMPLES

GILIBRATOR VERSION 1.1

FLOW	AVERAGE	# SAMPLES
2095	2095	01
2107	2101	02
2103	2102	03
2094	2100	04
2103	2100	05
2093	2101	07
2083	2099	08
2080	2097	09
2084	2096	10

*After
pump #
321
10/22*

FLOW	AVERAGE	# SAMPLES
1974	1974	01
1972	1973	02
1972	1973	03
1970	1972	04
1965	1971	05
1969	1971	07
1969	1971	08
1969	1971	09
1970	1971	10

*After
pump #
125
10/22*

INDUSTRIAL HYGIENE SAMPLE RECORD

PLC NUMBER 012-3127	PROJECT APB ASBESTOS REMOVAL	BLDG. NO. B1201	DATE 10/17/87
MATERIAL ASBESTOS	SAMPLING METHOD NIOSH 7400	TRAPPING MEDIUM 25mm FILTER	
EQUIPMENT NUMBER SEE BELOW	TYPE OF EQUIPMENT GILIAN HFS PUMP	FLOW INDICATOR SETTING 2	SAMPLE FLOW RATE 2
REMARKS (VENTILATION, ETC.)		OUTSIDE TEMP.	INDSIDE TEMP.

SAMPLES TAKEN OUTSIDE NEGATIVE PRESSURE ENCLOSURE DURING REMOVAL IN STAIRWELL 4

SAMPLE NO.	CONCENTRATION	DESCRIPTION OF SAMPLE	TIME		CONCENTR. fibers/cc
			START	STOP	
24 B12-3127-3217		THIRD FLOOR OUTSIDE NEG. AIR UNIT	9:44 AM	4:03 PM	2.5
	Flow Rate				
	Before 2.070	(377 min) (2.1 l/min) = 792 l			
	After 2.064				
	Avg. 2.067	(2.54 fibers/mm ²) - (0.6 fibers/mm ²) = 1.94 fibers/mm ²			
		(1.94)(385) < 0.001 fibers/cc			
		(792)(10 ³)			
812-3127-19	12053	SECOND FLOOR OUTSIDE NEG. AIR UNIT	9:44 AM	4:00 PM	5.73
	Flow Rate				
	Before 2.092	(371)(2.1) = 779 l			
	After 2.095				
	Avg. 2.094	(5.13)(385) = 0.003 fibers/cc			
		(779)(10 ³)			
812-3127-21	12055	EXHAUST OF NEG. AIR MACHINE	9:44 AM	3:58 PM	24.2
	Flow Rate				
	Before 2.174	24.20 - .6 = 23.6 (2.2)(361) = 794 l			
	After 2.203				
	Avg. 2.189	(23.6)(385) = 0.01 fibers/cc			
		(794)(10 ³)			
812-3127-19		Blank			0.6

SIGNATURE Steve F. McVey

DATE 10/17/87

ST0015291

FLOW AVERAGE # SAMPLES

1969	1969	01
1982	1976	02
1982	1978	03
1981	1979	04
1978	1978	05
1976	1978	06
1976	1978	07
1970	1977	08
1968	1976	09
1969	1975	10

Before
10/16
pump
12
LE

FLOW AVERAGE # SAMPLES

2169	2169	
2179	2174	
2180	2176	
2179	2177	04
2176	2177	05
2173	2176	06
2173	2176	07
2173	2175	08
2171	2175	09
2160	2173	10
2160	2175	09
2171	2174	10
2169	2174	11

Before
10/16/87
pump #
12055

FLOW AVERAGE # SAMPLES

2083	2083	01
2101	2092	02
2101	2095	03
2097	2096	04
2097	2096	05
2100	2097	06
2095	2096	07
2093	2096	08
2093	2096	09
2094	2095	10

After
pump
12
10/1

FLOW AVERAGE # SAMPLES

FLOW AVERAGE # SAMPLES

2093	2093	01
2091	2092	02
2091	2092	03
2094	2092	04
2093	2092	05
2091	2092	06
2091	2092	07
2087	2091	08
2093	2092	09
2093	2092	10

Before
10/16/87
pump #
12053

FLOW AVERAGE # SAMPLES

1957	1957	01
1957	1957	02
1957	1957	03
1957	1957	04
1954	1956	05
1955	1956	06
1954	1956	07
1953	1956	08
1954	1955	09
1953	1955	10
1953	1955	11

After
pump
12
10/1

FLOW AVERAGE # SAMPLES

2071	2196	13
2071	2188	14

FLOW AVERAGE # SAMPLES

2071	2071	01
2070	2071	02
2073	2071	03
2069	2071	04
2071	2071	05
2069	2071	06
2070	2070	07
2070	2070	08
2067	2070	09
2069	2070	10

Before
10/16/87
pump #
3217

FLOW AVERAGE # SAMPLES

2207	2206	01
2204	2205	02
2204	2205	03
2202	2204	04
2201	2204	05
2201	2203	06
2201	2203	07
2202	2203	08
2202	2203	09
2209	2203	10

After
pump
12

FLOW AVERAGE # SAMPLES

2067	2067	01
2070	2069	02
2066	2068	03
2069	2068	04
2067	2068	05
2066	2068	06
2068	2066	07
2059	2066	08

After
pump
32
10/12

ST0015292

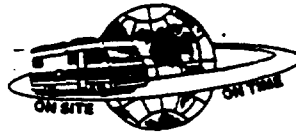
INDUSTRIAL HYGIENE SAMPLE RECORD

FILE NUMBER B12-3127	PROJECT APB ASBESTOS REMOVAL	ALOC. NO. 8-1201	DATE 10/12/87
MATERIAL Asbestos	SAMPLING METHOD NIOSH 7400	TRAPPING MEDIUM 25mm FILTER	
EQUIPMENT NUMBER See Below	TYPE OF EQUIPMENT GILIAN 113 HFS PUMPS	FLOW INDICATOR SETTING 2	SAMPLE FLOW RATE
REMARKS (VENTILATION, ETC.) POST REMOVAL MONITORING		OUTSIDE TEMP. 	INSIDE TEMP.

SAMPLE NO.	CONTAINER NO.	DESCRIPTION OF SAMPLE	TIME		CONCENTRATION
			START	END	
B123127-20	Pump # 12053	SECOND FLOOR STAIRWELL 5	8:30	3:30	10.19
	Flow rate				
Before	1.9 l/min	(1.9 l/min)(419) = 796 l	419		
After	1.9 l/min	(10.19)(385) = 0.005 fibers/cc			
		(796)(10 ³) =			
B123127-17	Pump # 12057	1st FLOOR STAIRWELL 5	8:40	3:30	19
	Flow rate				
Before	1.9 l/min	(1.9 l/min)(413 min) = 785 l	413		
After	1.9 l/min	(19.75)(385) = 0.01 fibers/cc			
		(785)(10 ³) =			

SIGNATURE Linda Bullard DATE 10/2/87

ST0015293



McKEE ENVIRONMENTAL HEALTH SERVICES

11114 Sagepark • Houston, TX 77089 • (713) 481-3501

November 2, 1987

AIR MONITORING SURVEY

Client: Dow Chemical, U.S.A.
Attn: Cheryl Sandlin
Texas Operations
Freeport, Texas 77541

Test Performed: NIOSH Analytical Method #7400
(Fiber Counts - Asbestos)

Sample I.D.	M.E.H.S. Number	# of fields	# of fibers	Fibers per cm ²
312-3127				
-11	872352	100	26	33.12
13	3	100	8.5	10.83
14	4	100	LT 0.5	LT 0.6
15	5	100	LT 0.5	LT 0.6
17	6	100	15.5	19.75
20	7	100	8	10.19
CPA 8/20	83289	100	31.5	40.13
CPA 8/21	90	100	10	12.74
MGMA -1	1	100	13.5	17.20
3	2	100	4	5.10
5	3	100	LT 0.5	LT 0.6
5	4	100	LT 0.5	LT 0.6
7	5	100	filter overload	
9	6	100	filter overload	
SD/CS 7	83306	100	LT 0.5	LT 0.6
8	7	100	LT 0.5	LT 0.6
9	8	100	LT 0.5	LT 0.6
A6-CS1	9	100	90	114.6
CS2	10	100	95	12.10
CS3	1	100	LT 0.5	LT 0.6
CS2 #1	83314	100	LT 0.5	LT 0.6
2	5	100	12.5	15.92
3	6	100	1	1.27
4	7	100	5	7.64
5	8	100	0.5	0.6
6	9	100	3	3.82
7	10	100	4	5.10
8	1	100	LT 0.5	LT 0.6
9	2	100	LT 0.5	LT 0.6

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INDUSTRIAL HYGIENE SAMPLE RECORD

USE NUMBER 012-3127	PROJECT APB Asbestos Removal	LOG NO B-1201	DATE 10/10/87
SUBSTRATE ASBESTOS	SAMPLING METHOD NIOSH 7400	TRAPPING MEDIA 25mm FILTER	
EQUIPMENT NUMBER SEE BELOW	TYPE OF EQUIPMENT GILIAN HFS Pump	FLOW INDICATOR SETTING 2.0	SAMPLE FLOW RATE
REMARKS (VENTILATION, ETC.)		OUTSIDE TEMP. 	INDOOR TEMP.

SAMPLE NO.	CONTAINER NO.	DESCRIPTION OF SAMPLE	TIME		CONCENTRATION fibers/cc
			START	INCREMENT	
B12-3127-12	2802C	TOP FLOOR STAIRWELL #5	AM 7:48	480 3:49 PM	ND ND ND
Flow rate Before 1.3 l/min (1.8 l/min) (480 min) = 864 l After 1.8 l/min (0.6) (385) < 0.0003 fibers/cc (864) (10 ³)					
B12-3127-13	1260C	TOP FLOOR STAIRWELL #5	AM 7:56	472 3:47 PM	10.83
Flow rate Before 2.2 l/min (2.2 l/min) (472 min) = 1038 l After 2.1 l/min (10.83) (385) 0.004 fibers/cc (1038) (10 ³)					
B12-3127-11	1259	OUTSIDE APB BY DISCHARGE OF NEG. AIR 11/AM	AM 7:56	430 3:35 PM	33.1
Flow rate Before 2.0 l/min (2.0 l/min) (430 min) = 860 l After 2.0 l/min (33.12) (385) 0.015 fibers/cc (860) (10 ³)					
B12-3127-14	Blank				ND ND ND

SIGNATURE [Signature] DATE 10/10/87

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GILBRATOR VERSION 1.1

Pump # 1259

FLOW	AVERAGE	# SAMPLES
2000	2000	01
2009	2005	02
2009	2006	03
2000	2007	04
2007	2007	05
2004	2006	06
2000	2005	07
2000	2005	08
1999	2004	09
1997	2003	10

10/9/87

Before

B12-3127

FLOW	AVERAGE	# SAMPLES
2166	2166	01
2163	2166	02
2163	2163	03
2159	2163	04
2160	2163	05
2159	2162	06
2157	2161	07
2157	2161	08
2157	2160	09
2156	2160	10

10/9/87

Before

pump # 12056

B12-3127

FLOW	AVERAGE	# SAMPLES
2180	2177	02
2179	2177	03

10/9/87

Before

pump # 1260

B12-312

FLOW	AVERAGE	# SAMPLES
2176	2176	01
2174	2175	02
2177	2176	03
2173	2175	04
2177	2175	05
2171	2175	06
2173	2174	07
2173	2174	08
2174	2174	09
2171	2174	10

Before

pump # 2002

10/9/87

B12-3127

FLOW	AVERAGE	# SAMPLES
1849	1849	01
1853	1853	02
1852	1853	03
1853	1851	05
1848	1851	06
1847	1850	07
1847	1850	08
1856	1848	09
1846	1849	11
1847	1848	12

FLOW	AVERAGE	# SAMPLES
1806	1806	01
1820	1813	02
1818	1815	03
1817	1815	04
1818	1816	05
1816	1816	06
1815	1816	07
1810	1815	08
1810	1814	09
1810	1814	10

After Pump 2002 10/12/87

FLOW	AVERAGE	# SAMPLES
2133	2133	01
2138	2136	02
2138	2136	03
2135	2136	04
2136	2136	05
2135	2136	06
2133	2135	07
2133	2135	08
2133	2135	09
2133	2135	10

After Pump 1260 10/14/87

FLOW	AVERAGE	# SAMPLES
1950	1950	01
1953	1952	02
1953	1952	03
1952	1952	04
1950	1952	05
1949	1951	06
1950	1951	07
1950	1951	08
1948	1951	09
1948	1950	10

After Pump 1259 10/12/87

FLOW	AVERAGE	# SAMPLES
1910	1910	01
1910	1910	02
1910	1910	03
1910	1910	04
1910	1910	05
1910	1910	06
1910	1910	07
1910	1910	08
1910	1910	09
1910	1910	10

After Pump 1205 10/13/87

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