

ASBESTOS - EVALUATION AND SURVEY

Date March 7, 1975 Project Salvage
 Department Services Location Bldg 712 Bldg. No. _____
 Requested by RWC Reason Possible Asbestos Exposure
 General Conditions: Stripping insulation from
pipe & stainless steel baths.

Sampling Method and Equipment 38C-29X4-R1a

Sampled by Beth

Sample Number	Sampling Time - Min.	Flow Rate	CONCENTRATION
			Fibers/ml >5 μ
#1	40	2 LPM	< 0.01

Special Conditions

MATERIAL WAS
 wet down - MAX.
 Snyder was wearing
 a respirator.
 SCRAP insulation
 was placed in
 plastic bag & tied.

Calculation: $\frac{(\text{Avg. Fiber Count} - \text{Avg. Blank Count}) \text{ Total Filter Area}}{(\text{Counting Area}) (\text{Vol. Air-Liters}) (1000)} = \text{Concentration, fibers per milliliters } >5\mu$

Remarks:

Sketch - See reverse side. Reference No. _____ Analyzed by Beth Date March 11, 1975

ASBESTOS COUNT RECORD SHEET

SAMPLE # Sydney OPERATION Salvage

FLOW 2 Lpm TIME _____ VOLUME _____ DATE 3/7/75

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

AV. COUNT 0 CONCENTRATION _____

COMMENTS No Fibers - Same dust + small particles

	1	2	3	4	5	6
0	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
5	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
10	0	0	0	0	0	0
15						
20						
25						

SUB-TOTALS

$$\begin{array}{r} 855 \\ \times 0.017 \\ \hline 14.535 \end{array}$$

$$\frac{1}{0.017} = 58.82$$

$$58.82 \times 855 = 50187.9$$

$$\begin{array}{r} 31.80 \\ 2544 \overline{) 81400} \\ \underline{25440} \\ 56000 \\ \underline{50880} \\ 51200 \end{array}$$

ASBESTOS - EVALUATION AND SURVEY

Date 5-13-75 Project Stripping Insulation from Salvage pipe

Department Services Location Bldg 712 Salvage Bldg. No.

Requested by RWC Reason Possible Asbestos Exposure

General Conditions: Wet insulation - strip material from pipe with hatchet & cut wires with pliers. Laborn - Daniel Snyder.

Sampling Method and Equipment metrical filter & personal pump.

Sampled by L. V. Bette

Sample Number	Sampling Time - Min.	Flow Rate	CONCENTRATION
			Fibers/ml >5μ
<u>1</u>	<u>45</u>	<u>2 LPM</u>	<u>0</u>

Special Conditions

Calculation: $\frac{(\text{Avg. Fiber Count} - \text{Avg. Blank Count}) \text{ Total Filter Area}}{(\text{Counting Area}) (\text{Vol. Air-Liters}) (1000)} = \text{Concentration, fibers per milliliters } >5\mu$

Remarks: No fibers (Asbestos)

Sketch - See reverse side. Reference No. Analyzed by Bette Date 6-9-75

ASBESTOS - EVALUATION AND SURVEY

Date 5-13-75 Project Stripping Insulation from Salvage pipe

Department Services Location Bldg 712 Salvage Bldg. No.

Requested by RWC Reason Possible Asbestos Exposure

General Conditions: Wet insulation - strip material from pipe with hatchet & cut wires with pliers. Laborer - Daniel Snyder.

Sampling Method and Equipment mechanical filter & personal pump.

Sampled by L.W. Bette

Sample Number	Sampling Time - Min.	Flow Rate	CONCENTRATION
			Fibers/ml > 5 μ
<u>1</u>	<u>45</u>	<u>2 LPM</u>	<u>0</u>

Special Conditions

Calculation: $\frac{(\text{Avg. Fiber Count} - \text{Avg. Blank Count}) \text{ Total Filter Area}}{(\text{Counting Area}) (\text{Vol. Air-Liters}) (1000)}$ = Concentration, fibers per milliliters > 5 μ

Remarks: No fibers (Asbestos)

Sketch - See reverse side. Reference No. Analyzed by Bette Date 6-9-75

ASBESTOS - EVALUATION AND SURVEY

Date MARCH 7, 1975 Project Salvage
 Department Services Location Bldg 712 Bldg. No. _____
 Requested by RWC Reason Possible Asbestos Exposure
 General Conditions: Stripping insulation from
pipe & stainless steel baths.

Sampling Method and Equipment 38C-29X4-R1a

Sampled by Bett

Sample Number	Sampling Time - Min.	Flow Rate	CONCENTRATION
			Fibers/ml >5 μ
<u>#1</u>	<u>40</u>	<u>2 LPM</u>	<u>0</u>

Special Conditions

MATERIAL WAS
 wet down - mx.
 Snyder was wearing
 a respirator.
 SCRAP insulation
 WAS placed in
 plastic bag & tied.

Calculation: $\frac{(\text{Avg. Fiber Count} - \text{Avg. Blank Count}) \text{ Total Filter Area}}{(\text{Counting Area}) (\text{Vol. Air-Liters}) (1000)} = \text{Concentration, fibers per milliliters } >5\mu$

Remarks:

Sketch - See reverse side. Reference No. _____ Analyzed by Bett Date MARCH 11, 1975

ASBESTOS COUNT RECORD SHEET

SAMPLE # 54492 OPERATION Schlage

FLOW 2 LPM TIME _____ VOLUME _____ DATE 3/7/75

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

AV. COUNT 0 CONCENTRATION _____

COMMENTS No Fibers - Some dust & paper
particles

	1	2	3	4	5	6
0	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
5	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
10	0	0	0	0	0	0
15						
20						
25						

SUB-TOTALS



FILE COPY

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: W. T. Shelton, 704 Shop

Computer Ref. W-1425

Date April 20, 1983

cc: R. E. Peele, 701-334
R. G. Rowe, M.D., 791

PERSON MONITORED J. W. Greenlee

Location Building 709 Date 04/06/83

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	0.32 fibers/cc	33 Mins (0912-0945 hrs)	Sample collected on mixed cellulose ester filter.
2			
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) 0.02 fibers/cc

Ceiling Concentration -

ALLOWABLE EXPOSURE (8 Hr.)

TWA 2 fibers/cc X OSHA UCC Other
Ceiling UCC Other

COMMENTS Mr. Greenlee was monitored for exposure to asbestos fibers while stripping the insulation from an old hot water tank which measured approximately six feet in length and thirty inches in diameter. During the stripping operation Mr. Greenlee wore coveralls, a disposable respirator, and used a water spray to keep dust down. Plastic sheets were also placed beneath the tank to catch falling debris. Sample analysis indicates that the exposure level (0.32 fibers/cc) was below the OSHA standard of 2 fibers/cc. Please notify Mr. Greenlee of exposure results.

WORK BY

Mario F. Stowers
Mario F. Stowers

APPROVED BY

Manhar A. Patel
Manhar A. Patel

UCC 024433



INTERNAL
CORRESPONDENCE

IN FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To Name: H. E. Rucker
Division: 2009
Location: 512
Area:

Date: July 23, 1987

Originating Dept: EM&TS - HS&EA

Area: Industrial Hygiene

Subject: Asbestos Exposure Monitoring

Copy to: B. H. Avashia, M.D. - 512/23
W. L. Browning - 2009
R. E. Coyner - 2009
D. B. Matthews - 2009
C. P. Maxwell - 701/2
B. R. McMakin - 2009

Attached are the results of asbestos monitoring for two days on insulators at the Institute Plant while removing asbestos from lines in the tank farm between number two and number three docks on the river bank. Approximately 195 feet of 3-inch steam line was stripped. Glove bags and enclosures were not used because of heat involved in stripping the steam line melting the plastic. Amended water was used to wet the asbestos as soon as it was pulled away from the hot pipe.

All personal exposure samples were below the 0.1 fiber/cc action level. Employees should be ammended for the professional manner that was employed in this asbestos removal project. Exposure monitoring may not be needed on a continuous basis if other monitoring levels remain below the action level. Monitoring may not be needed if supplied air respirators in a positive pressure mode are used in asbestos removal projects. We encourage the use of supplied air respirators as much as possible in the asbestos abatement procedures.

Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R-57-A half-face HEPA cartridge respirators. They showered before lunch and at the end of the workday before leaving the plant.

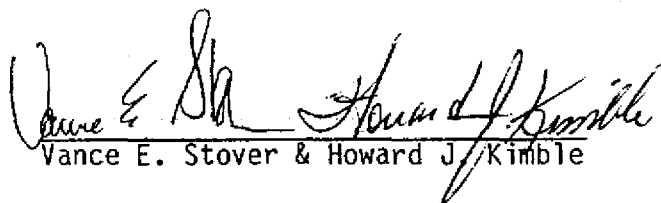
Please inform P. K. Snodgrass, B. J. Agosti, S. R. Erskine and C. B. Clendenin of their exposure monitoring results as soon as possible. Have them sign and date this report and return it to M. A. Patel at Building 701-330.

UCC 024434

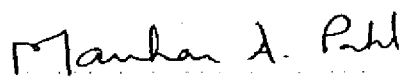
July 23, 1987

If you have any questions or if we can be of further assistance,
please call us on extension 4779 or 3750.

WORK BY:


Vance E. Stover & Howard J. Kimble

APPROVED BY:


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2524P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
5-20-87	Personal/ P. K. Snodgrass	7hrs 8min	0.040	0.036	Stripped, bagged and vacuumed approx. 120 feet of line at tank farm between #1 and #2 docks.
5-20-87	Personal/ B. J. Agosti	7hrs 5min	0.043	0.038	Stripped, bagged and vacuumed approx. 120 feet of line at tank farm between #1 and #2 docks.
5-20-87	Personal/ S. R. Erskine	7hrs 5min	0.062	0.055	Stripped, bagged and vacuumed approx. 120 feet of line at tank farm between #1 and #2 docks.
5-20-87	Personal/ C. B. Clendenin	7hrs 0min	0.076	0.067	Stripped, bagged and vacuumed approx. 120 feet of line at tank farm between #1 and #2 docks.
6-1-87	Personal/ P. K. Snodgrass	6hrs 58min	0.073	0.063	Stripped, bagged and vacuumed approx. 75 feet of line at tank farm between #1 and #2 docks.
6-1-87	Personal/ B. J. Agosti	6hrs 58min	0.104	0.090	Stripped, bagged and vacuumed approx. 75 feet of line at tank farm between #1 and #2 docks.
6-1-87	Personal/ C. B. Clendenin	6hrs 58min	0.110	0.096	Stripped, bagged and vacuumed approx. 75 feet of line at tank farm between #1 and #2 docks.



INTERNAL
CORRESPONDENCE

IH FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location
Area

Date June 11, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
J. W. Barna - 2009/6
W. L. Browning - 2009
R. E. Coyner - 2009
J. E. Llana - 740/2322
C. P. Maxwell - 701/2
B. R. McMakin - 2009

Attached are the results of asbestos exposure monitoring for two days at the Institute Plant while removing asbestos on a 3-inch steam line at the #3 dock area. The line stripped was located on risers and an overhead piperack extending across the railroad tracks. Glovebags and enclosures were not used because it was not feasible according to the Construction Department insulation craft representative (Asbestos Competent Person) and the 512 Plant Industrial Hygiene Department. Employees used a powered man-basket to reach lines that were overhead. Area was barricaded until removal of asbestos was completed.

Two out of six personal exposure samples exceeded the 0.2 fiber/cc permissible exposure level standard and three other personal exposure samples exceeded the 0.1 fiber/cc action level standard. We encourage you to use supplied air respirators as much as possible in the asbestos abatement procedure.

Employees wore two pair of coveralls, headcovers, boots, gloves and A0 R57-A half-face HEPA cartridge respirators. No street clothes were worn. They showered before lunch and at the end of the workday before leaving plant.

June 11, 1987

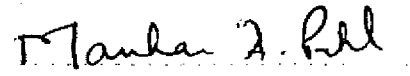
Please inform S. R. Erskine, B. J. Agosti, P. K. Snodgrass and C. B. Clendenin of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have any questions or if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover & 
H. J. Kimble


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2385P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sample Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
4-30-87	Personal/ B. J. Agosti	6hr 50min	1.153	0.985	Stripped, bagged and vacuumed approx. 100 feet of line at #3 dock.
4-30-87	Personal/ C. B. Clendenin	6hr 46min	0.047	0.040	Stripped, bagged and vacuumed approx. 100 feet of line at #3 dock.
4-30-87	Personal/ P. D. Snodgrass	6hr 46min	0.190	0.161	Stripped, bagged and vacuumed approx. 100 feet of line at #3 dock.
5-1-87	Personal/ P. K. Snodgrass	7hr 3min	0.233	0.205	Stripped, bagged and vacuumed approx. 70 feet of line at #3 dock.
5-1-87	Personal/ S. R. Erskine	7hr 3min	0.116	0.103	Stripped, bagged and vacuumed approx. 70 feet of line at #3 dock.
5-1-87	Personal/ C. B. Clendenin	6hr 59min	0.119	0.104	Stripped, bagged and vacuumed approx. 70 feet of line at #3 dock.



INTERNAL
CORRESPONDENCE

IH FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location
Area

Date June 11, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
J. W. Barna - 2009/6
W. L. Browning - 2009
R. E. Coyner - 2009
J. E. Llana - 740/2322
C. P. Maxwell - 701/2
B. R. McMakin - 2009

Attached are the results of asbestos exposure monitoring for two days on insulators at the Institute Plant while removing asbestos on lines at the #2 dock area. One area sample result is included in the data. A 3-inch steam line and two 3-inch product lines were stripped on the risers and the overhead piperack across the roadway. Glovebags and enclosures were not used because it was not feasible according to the Construction Department insulation craft representative (Asbestos Competent Person) and the 512 Plant Industrial Hygiene Department. Employees used a powered man-basket to reach lines that were overhead. Area was barricaded until removal of asbestos was completed.

Employees wore two pair of coveralls, headcovers, boots, gloves and A0 R57-A half-face HEPA cartridge respirators. No street clothes were worn. They showered before lunch and at the end of the workday before leaving plant.

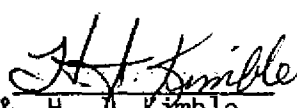
June 11, 1987

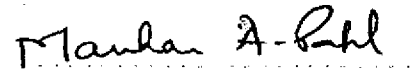
Please inform S. R. Erskine, P. K. Snodgrass and C. B. Clendenin of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have any questions or if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover & 
H. J. Kimble


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2384P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sample Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
1-24-87	Personal/ C. B. Clendenin	5hr 46min	0.006	0.004	Stripped, bagged and vacuumed approx. 60 feet of line at #2 dock.
1-24-87	Personal/ P. K. Snodgrass	5hr 43min	<.005	<.004	Stripped, bagged and vacuumed approx. 60 feet of line at #2 dock.
1-24-87	AREA	5hr 44min	<.005	<.004	1-foot east of barricade, breathing zone at #2 dock.
1-27-87	Personal/ P. K. Snodgrass	6hr 55min	0.148	0.128	Stripped, bagged and vacuumed approx. 100 feet of line at #2 dock.
1-27-87	Personal/ S. R. Erskine	6hr 56min	0.254	0.220	Stripped, bagged and vacuumed approx. 100 feet of line at #2 dock.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location
Area

Date June 12, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
J. W. Barna - 2009/6
W. L. Browning - 2009
R. E. Coyner - 2009
C. P. Maxwell - 701/2
B. R. McMakin - 2009

Attached are the results of asbestos exposure monitoring for three days on insulators at the Institute Plant while removing asbestos on a 3-inch steam line and a 4-inch product line at the #1 dock area in an enclosure. The area enclosed was 5.5 x 6.5 x 200 feet or 7150 ft³. HEPA exhaust was 120,000 ft³ per hour which is equivalent to 16 air changes per hour. The area enclosed was along the roadway and the dike wall between the #1 and #2 docks. The area was barricaded while enclosure was in place.

Seven out of eight personal exposure samples exceeded the 0.2 fiber/cc permissible exposure level standard and the eighth exceeded the 0.1 fiber/cc action level standard. We encourage you to use supplied air respirators as much as possible in the asbestos abatement procedures. Please communicate to your employees the need for the utmost care and precaution while removing asbestos.

Employees wore two pair of coveralls, headcovers, boots, gloves and AO R57-A half-face HEPA cartridge respirators. No street clothes were worn. They showered before lunch and at the end of the workday before leaving plant.

UCC 024443

June 12, 1987

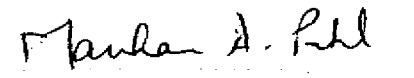
Please inform S. R. Erskine, B. J. Agosti, P. K. Snodgrass and C. B. Clendenin of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have any questions or if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover & H. J. Kimble


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2384P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sample Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
5-6-87	Personal/ B. J. Agosti	7hr 1min	0.495	0.433	Stripped, bagged and vacuumed appx. 200 feet of 3 and 4-inch lines in enclosure at #1 Dock area.
5-6-87	Personal/ P. K. Snodgrass	7hr 0min	0.547	0.478	Stripped, bagged and vacuumed appx. 200 feet of 3 and 4-inch lines in enclosure at #1 Dock area.
5-7-87	Personal/ B. J. Agosti	7hr 4min	0.402	0.355	Stripped, bagged and vacuumed appx. 120 feet of 3 and 4-inch lines in enclosure at #1 Dock area.
5-7-87	Personal/ S. R. Erskine	6hr 58min	0.496	0.432	Stripped, bagged and vacuumed appx. 120 feet of 3 and 4-inch lines in enclosure at #1 Dock area.
5-7-87	Personal/ P. K. Snodgrass	6hr 58min	0.231	0.201	Stripped, bagged and vacuumed appx. 120 feet of 3 and 4-inch lines in enclosure at #1 Dock area.
5-7-87	Personal/ C. B. Clendenin	7hr 1min	0.280	0.246	Stripped, bagged and vacuumed appx. 120 feet of 3 and 4-inch lines in enclosure at #1 Dock area.
5-8-87	Personal/ C. B. Clendenin	6hr 46min	0.157	0.132	Stripped, bagged and vacuumed approx. 80 feet of 3 and 4-inch lines in enclosure then cleaned lines at #1 Dock area.
5-8-87	Personal/ S. R. Erskine	6hr 43min	0.503	0.422	Stripped, bagged and vacuumed approx. 80 feet of 3 and 4-inch lines in enclosure then cleaned lines at #1 Dock area.

Comp. Ref. W2216
W2217
W2218

ASBESTOS EXPOSURE MONITORING
(Continued)

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sample Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
5-8-87	AREA	6 hr 32min	0.003	0.003	Inlet to HEPA Filtering system for enclosure at #1 Dock area.
5-8-87	AREA	6 hr 43min	0.009	0.007	Outlet to HEPA Filtering exhaust for enclosure at #1 Dock area.

1389P

UCC 024446



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location
Area

Date May 4, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia - 512/23
J. W. Barna - 2009/6
W. L. Browning - 2009
J. E. Llana - 740/2320
C. P. Maxwell - 701/2
B. R. McMakin - 2009
F. R. Sunderland - 2009

Attached are the results of asbestos exposure monitoring for three days on insulators at the Institute Plant doing asbestos removal on lines in the #1 and #2 dock areas. A 3-inch steam line and two 3-inch product lines were stripped from the river to the top of the river bank and the risers across the road was stripped. Glove bags and enclosures were not used because it was not feasible according to the construction department and the 512 Plant Industrial Hygiene department. Employees used a powered man-basket to reach lines that were overhead.

All personal exposure samples were below the 2.0 fiber/cc level which permits the use of half-face HEPA cartridge respirators while employees are being monitored per OSHA asbestos standard 29CFR 1926.58. One personal exposure sample exceeded the 0.2 fiber/cc permissible exposure level standard and four exceeded the 0.1 fiber/cc action level standard. Exposure monitoring may not be required in some instances where supplied air respirators in a positive pressure mode are being used while stripping and removing asbestos insulation. We encourage you to use supplied air respirators as much as possible in the asbestos abatement procedures.

Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R57-A half-face HEPA cartridge respirators. They showered before lunch and at the end of the workday before leaving plant.

UCC 024447

Comp ref. W2187
W2188
W2189

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
4-21-87	Personal/ S. R. Erskine	6hr 36min	0.209	0.172	Stripped, bagged and vacuumed approx. 90 feet of line at #1 dock.
4-21-87	Personal/ B. J. Agosti	6hr 38min	0.142	0.118	Stripped, bagged and vacuumed approx. 90 feet of line at #1 dock.
4-21-87	Personal/ P. K. Snodgrass	6hr 33min	0.003	0.003	Stripped, bagged and vacuumed approx. 90 feet of line at #1 dock.
4-22-87	Personal/ S. R. Erskine	7hr 4min	0.239	0.211	Stripped, bagged and vacuumed approx. 100 feet of line at #1 dock.
4-22-87	Personal/ P. K. Snodgrass	7hr 2min	0.002	0.001	Stripped, bagged and vacuumed approx. 100 feet of line at #1 dock.
4-22-87	Personal/ C. B. Clendenin	7hr 3min	0.052	0.046	Stripped, bagged and vacuumed approx. 100 feet of line at #1 dock.
4-23-87	Personal/ P. K. Snodgrass	7hr 6min	0.157	0.139	Stripped, bagged and vacuumed approx. 130 feet of line at #1 and #2 docks.
4-23-87	Personal/ C. B. Clendenin	7hr 5min	0.046	0.041	Stripped, bagged and vacuumed approx. 130 feet of line at #1 and #2 docks.
4-23-87	Personal/ S. R. Erskine	7hr 4min	0.129	0.113	Stripped, bagged and vacuumed approx. 130 feet of line at #1 and #2 docks.

2289P

UCC 024448

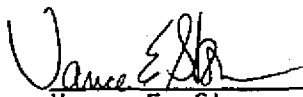
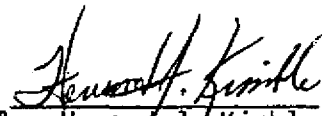
May 4, 1987

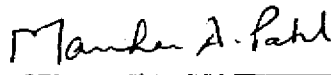
Please inform S. R. Erskine, B. J. Agosti, P. K. Snodgrass and C. B. Clendenin of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have any questions or if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:

 
Vance E. Stover & Howard J. Kimble


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2289P

AUDIT REPORT NO. WV-0039

FILE NO. 6

A T T E N T I O N

This document has been identified as one which may relate to the manufacture, use, sale or health effects of asbestos or asbestos-containing products in connection with Union Carbide's defense of asbestos litigation. The document may be reproduced as needed, but should not be destroyed. If it is judged to be of no further value to this file, the document should be sent to the Danbury office, attention of S. D. Conner. The File No. and Audit Report No. must accompany the document

Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.

**UNION
CARBIDE**

**INTERNAL
CORRESPONDENCE**

IH FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location 511
Area

Date April 29, 1987

Originating Dept. EM&TS - HS&EA.

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
J. W. Barna - 2009
W. L. Browning - 2009
C. P. Maxwell - 701/2
B. R. McMakin - 2009
F. R. Sunderland - 2009

Attached are the results of the asbestos exposure monitoring for one day on insulators at the Institute Plant while loading bagged asbestos for disposal and patching a line at Building 2009.

Both personal exposure samples show levels below the 0.1 f/cc action level standard established by OSHA. Employees should be commended for performing their jobs in a safe manner.

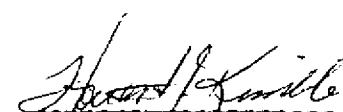
Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R57A half-face respirators equipped with HEPA filters. They showered before lunch and at the end of the workday before leaving the plant.

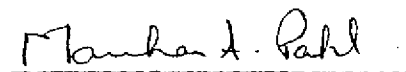
Please inform S. R. Erskine and P. K. Snodgrass of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have any questions of if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover & 
Howard J. Kimble


Manhar A. Patel

Attachment
VES:HJK:MAP:rab
2271P

UCC 024451

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
4-20-87	Personal/ S. R. Erskine	6hrs 42min	0.004	0.003	Loaded bagged asbestos for disposal and patched insulated line.
4-20-87	Personal/ P. K. Snodgrass	6hrs 40min	0.013	0.010	Loaded bagged asbestos for disposal and patched insulated line.

2271P



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location
Area

Date April 27, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
J. W. Barna - 2009/6
W. L. Browning - 2009
C. P. Maxwell - 701/2
B. R. McMakin - 2009
F. R. Sunderland - 2009

Attached are the results of the asbestos exposure monitoring for three days on insulators at the Institute Plant while stripping a 3-inch dowtherm line with a live 1-inch steam tracer. The lines are located in the overhead piperack south of Building 9 and north of Street B. Glove bags were not used because of the live steam line and the pipes were not enclosed for this asbestos removal project because it was not feasible to enclose according to the Construction Department and the 512 Plant Industrial Hygiene Department. Employees used a powered man-basket to reach the lines being stripped.

All personal exposure samples, except one, show levels below 0.1 f/cc Action Level standard established by OSHA. A statistical analysis of the TWAg data proves the 0.14 f/cc result on 4-15-87 (Action Level is 0.1 f/cc) is not an outlier at the 99, 95 and 90% confidence levels, thus employees have to be monitored while Asbestos stripping without glovebags and/or enclosures and wearing half-face HEPA cartridge respirators. However, the exposure monitoring may not be required in some instances where supplied air respirator in a positive pressure mode is used while stripping asbestos insulation.

Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AOR57A half-face respirators equipped with HEPA filters. They showered before lunch and at the end of the workday before leaving plant.

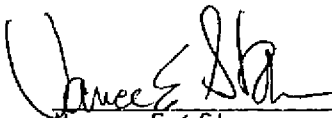
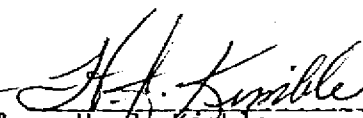
April 27, 1987

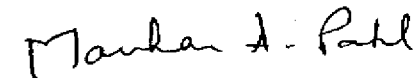
Please inform P. K. Snodgrass, B. J. Agosti, C. B. Clendenin and S. R. Erskine of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have questions or if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover & 
H. J. Kinble


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2263P

Comp. Ref. W-2177
W-2178
W-2179

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWA₈ fibers/cc</u>	<u>COMMENTS</u>
4-14-87	Personal/ P. K. Snodgrass	6hrs 57min	0.087	0.076	Groundman, collected and vacuumed bags. Approx. 70 feet of line stripped.
4-14-87	Personal/ B. J. Agosti	6hrs 57min	0.079	0.068	Used man-basket to reach and strip approx. 70 feet of line.
4-14-87	Personal/ C. B. Clendenin	6hrs 55min	0.044	0.038	Used man-basket to reach and strip approx. 70 feet of line.
4-15-87	Personal/ B. J. Agosti	6hrs 41min	0.015	0.012	Groundman, collected and vacuumed bags. Approx. 25 feet of line stripped.
4-15-87	Personal/ S. R. Erskine	6hrs 35min	0.171	0.140	Used man-basket to reach and strip approx. 25 feet of line.
4-16-87	Personal/ S. R. Erskine	6hrs 14min	0.114	0.089	Used man-basket to reach and strip approx. 20 feet of line.
4-16-87	Personal/ P. K. Snodgrass	6hrs 10min	0.054	0.042	Used man-basket to reach and strip approx. 20 feet of line.
4-16-87	Personal/ C. B. Clendenin	6hrs 7min	0.014	0.011	Used man-basket to reach and strip approx. 20 feet of line.

2263P

UCC 024455



INTERNAL
CORRESPONDENCE

IN FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location 511
Area

Date April 29, 1987

Originating Dept. EM&TS - HS&EA.

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
J. W. Barna - 2009
W. L. Browning - 2009
C. P. Maxwell - 701/2
B. R. McMakin - 2009
F. R. Sunderland - 2009

Attached are the results of the asbestos exposure monitoring for one day on insulators at the Institute Plant while loading bagged asbestos for disposal and patching a line at Building 2009.

Both personal exposure samples show levels below the 0.1 f/cc action level standard established by OSHA. Employees should be commended for performing their jobs in a safe manner.

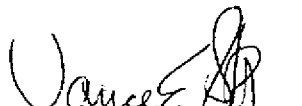
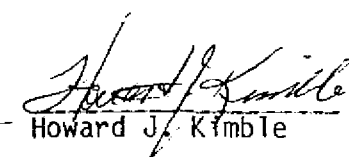
Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R57A half-face respirators equipped with HEPA filters. They showered before lunch and at the end of the workday before leaving the plant.

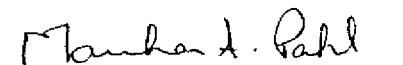
Please inform S. R. Erskine and P. K. Snodgrass of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have any questions of if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover & 
Howard J. Kimble


Manhar A. Patel

Attachment
VES:HJK:MAP:rab
2271P

UCC 024456

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
4-20-87	Personal/ S. R. Erskine	6hrs 42min	0.004	0.003	Loaded bagged asbestos for disposal and patched insulated line.
4-20-87	Personal/ P. K. Snodgrass	6hrs 40min	0.013	0.010	Loaded bagged asbestos for disposal and patched insulated line.

2271P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location
Area

Date April 27, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
J. W. Barna - 2009/6
W. L. Browning - 2009
C. P. Maxwell - 701/2
B. R. McMakin - 2009
F. R. Sunderland - 2009

Attached are the results of the asbestos exposure monitoring for three days on insulators at the Institute Plant while stripping a 3-inch dowtherm line with a live 1-inch steam tracer. The lines are located in the overhead piperack south of Building 9 and north of Street B. Glove bags were not used because of the live steam line and the pipes were not enclosed for this asbestos removal project because it was not feasible to enclose according to the Construction Department and the 512 Plant Industrial Hygiene Department. Employees used a powered man-basket to reach the lines being stripped.

All personal exposure samples, except one, show levels below 0.1 f/cc Action Level standard established by OSHA. A statistical analysis of the TWAg data proves the 0.14 f/cc result on 4-15-87 (Action Level is 0.1 f/cc) is not an outlier at the 99, 95 and 90% confidence levels, thus employees have to be monitored while Asbestos stripping without glovebags and/or enclosures and wearing half-face HEPA cartridge respirators. However, the exposure monitoring may not be required in some instances where supplied air respirator in a positive pressure mode is used while stripping asbestos insulation.

Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AOR57A half-face respirators equipped with HEPA filters. They showered before lunch and at the end of the workday before leaving plant.

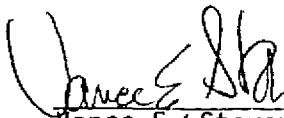
April 27, 1987

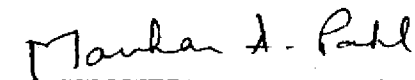
Please inform P. K. Snodgrass, B. J. Agosti, C. B. Clendenin and S. R. Erskine of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have questions or if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:

 
Vance E. Stover & H. J. Kimble


Manhar A. Patel

Attachment

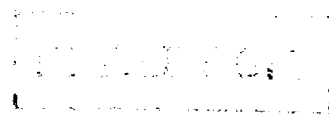
VES:HJK:MAP:rab
2263P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
4-14-87	Personal/ P. K. Snodgrass	6hrs 57min	0.087	0.076	Groundman, collected and vacuumed bags. Approx. 70 feet of line stripped.
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4-16-87	Personal/ S. R. Erskine	6hrs 14min	0.114	0.089	Used man-basket to reach and strip approx. 20 feet of line.
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4-16-87	Personal/ C. B. Clendenin	6hrs 7min	0.014	0.011	Used man-basket to reach and strip approx. 20 feet of line.



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8187 SOUTH CHARLESTON, W. VA. 25303

To (Name)	R. W. Gilbert	Date	October 7, 1986
From	2002-1		
Location	512	Subject	HS&EA
			Industrial Hygiene
Copies to	B. H. Avashia, M.D. W. L. Browning C. P. Maxwell B. R. McMakin C. W. Ware	Subject	<u>Asbestos Exposure Monitoring</u> <u>- Construction Storeroom</u>

Attached are the results of the Asbestos monitoring performed in the Construction Storeroom, Building 2002, at Institute on August 19 and 26, 1986. The initial monitoring was done on August 19, 1986 and the follow-up on August 26, 1986. R. W. Cutlip and M. V. Burdette were monitored while dispensing asbestos gaskets to be used in field applications.

R. W. Cutlip and M. V. Burdette were equipped with Half-face respirators containing HEPA filters while pulling gaskets. This would indicate that their actual inhalation exposures were lower than the reported concentrations.

The exposure monitoring that was performed on August 19, 1986 on R. W. Cutlip indicated levels that would be considered high if this many gaskets (80-100 per hour) were dispensed over several hours. A Time Weighted Average was not determined because R. W. Cutlip was involved with dusting and cleaning out bins the remainder of the day, which could have caused exposure.

The samples collected on August 26, 1986 on M. V. Burdette as a follow-up for long term sampling, show that the air concentration of Asbestos was below the 0.1 fiber/cc action level, but also note that she only pulled 14 gaskets.

It is recommended that the gasket bins be cleaned once a month with a vacuum cleaner equipped with a HEPA filter and that the gaskets be vacuum cleaned before placing in the bins. This would considerably eliminate exposure potential to asbestos fibers. When the job is expected to last for several hours the employee must wear recommended protective equipment for asbestos and take a shower at the end of the day. We also recommend that the asbestos gasket pulling job should be assigned to only those personnel who have been trained, in the OSHA asbestos standard, and know the hazards of the material.

October 7, 1986

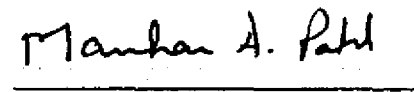
Please notify R. W. Cutlip and M. V. Burdette of their monitoring results as soon as possible. Please have them sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
1777P

ASBESTOS EXPOSURE MONITORINGComp. ref. W2010
W2019

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
8-19-86	Personal/ R. W. Cutlip	29 mins.	0.76	-	Collected while pulling 40-50 gaskets from bins for dispensing to job site.
8-19-86	Area	5 hrs 3 min.	0.013	-	Collected on the right - on the shelf opposite gasket bins - near aisleway.
8-19-86	Area	5 hrs 8 min.	0.011	-	Collected on the left - on the shelf opposite gasket bins.
8-26-86	Personal/ M. V. Burdette	7 hrs 11 min.	0.045	0.040	Collected while pulling 14 gaskets from bins for dispensing to the job site.
8-26-86	Area	7 hrs 12 min.	0.015	-	Collected in the center of the shelves directly across from the gasket bins.
8-26-86	Area	7 hrs 11 min.	0.023	-	Collected on the right - in shelves opposite gasket bins.

ASBESTOSPermissible Exposure Level

TWAg 0.2 fibers/cc OSHA

1777P



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) F. R. Sunderland
Division
Location
Area

Date June 19, 1986

Originating Dept HS&EA

Area Industrial Hygiene

Copy to B. H. Avashia, M.D.
J. W. Barna
W. L. Browning
M. R. Gandee
C. P. Maxwell
B. R. McMakin
B. J. Weaver

Subject Asbestos Exposure Monitoring

Attached are the results of the Asbestos exposure monitoring done on Insulators at the Institute Plant, Building 20. The monitoring was done on June 4, 1986 while they removed 60 linear feet of Asbestos from a 6 inch line and while being in the same trench replacing the insulation with Kaylo.

It should be noted that two insulators removed their monitoring pumps at noon eventhough you were instructed specifically that they were to wear sampling pumps until the end of the day. It was important that the insulators wore sampling pumps the entire day because they worked in the same trench, where the Asbestos had been removed, therefore the potential for exposure still existed. (These samples cannot be reported because of inadequate information for analyses.)

The Insulators were equipped with boots, disposable coveralls, headsock, gloves and a half-face dust respirator. The area was barricaded and signs were posted for the Asbestos hazards.

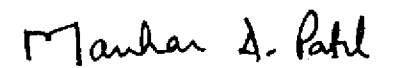
The sample results indicate that the exposures were below the Permissible Exposure Level of 2 fibers per cc of air, established by OSHA for an 8-hour day (TWA₈).

Please notify the employees of their exposure monitoring results and if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment
VES:MAP:rab
1401P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc fibers/cc Air</u>	<u>TWAg fibers/cc Air</u>	<u>COMMENTS</u>
6-4-86	Personal/ P. K. Snodgrass	--	--	--	Removed monitoring pump at approx. 1330. <u>Cannot be reported.</u>
6-4-86	Personal/ C. B. Clendinin	6 hrs 37 min	0.598	0.495	Collected while stripping approx. 60 linear feet from a 6 inch line and while working in the same trench replacing with Kaylo.
6-4-86	Personal/ R. O. Bowles	--	--	--	Removed monitoring pump at approx. 1200. <u>Cannot be reported.</u>
6-4-86	Personal/ D. R. Smith	6 hrs 30 min	0.625	0.508	Collected while stripping approx. 60 linear feet of Asbestos from a 6 inch line and while working in the same trench replacing with Kaylo.

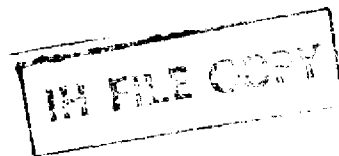
ASBESTOSPermissible Exposure Level

TWAg	<u>2 fibers/cc</u>	OSHA & UCC
Ceiling	<u>10 fibers/cc</u>	

1401P
rab



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361 SOUTH CHARLESTON, WV 25303

To (Name) F. E. Sunderland
Division
Location
Area

Date May 20, 1986

Originating Dept HS&EA

Project Industrial Hygiene

Copy to
B. H. Avashia, M.D.
J. W. Barna
W. L. Browning
M. R. Gandee
C. P. Maxwell
B. R. McMakin
B. J. Weaver

Subject Asbestos Exposure Monitoring

Attached are the results of the Asbestos monitoring done on three insulators and one laborer near Building 9, Institute Plant. There were 3 insulators and 3 laborers on the job. The monitoring was done while they stripped Asbestos from the bottom half of tank No. 1037. The area was barricaded and posted for the Asbestos hazards. Plastic sheeting was placed on the ground below and water was used to wet the insulation.

All workers were equipped with a half-face dust cartridge respirator, disposable coveralls, head sock, gloves, and boots. The protective equipment was removed and disposed when leaving the area and new equipment was used upon returning to the job.

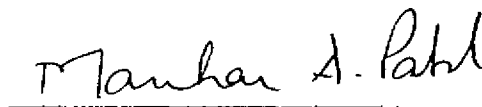
The sample results indicate that the exposures, of all who were monitored, were well below the permissible exposure level of 2 fibers per cc of air, established by OSHA.

Please inform the employees of their exposure results and if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment
VES:MAP:rab
1315P

ASBESTOS MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
5-12-86	Personal: J. F. Sampson	6 hrs 34 min.	0.354	0.291	Monitored while stripping approx. 200 ft ² of Asbestos from Tank No. 1037, near building 9, Institute Bldg. 9.
5-12-86	Personal: J. R. Chandler	6 hrs 36 min.	0.345	0.285	Monitored while stripping approx. 200 ft ² of Asbestos from Tank 1037 near building 9.
5-12-86	Personal: R. O. Bowles	6 hrs 38 min.	0.296	0.245	Monitored while stripping approx. 200 ft ² of Asbestos from Tank 1037 near building 9.
5-12-86	Personal: P. Y. Comstock	6 hrs 42 min.	0.341	0.286	Monitored while helping 2 other laborers clean up and bagging the stripped Asbestos.

ASBESTOS

<u>Permissible Exposure Limit</u>	
TWAg	2 fibers/cc
Ceiling	10 fibers/cc
	OSHA

AUDIT REPORT NO. WV-0039

FILE NO. 14

A T T E N T I O N

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Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) F. Sunderland

Date April 18, 1986

Division

Originating Dept HS&EA

Location

Area Industrial Hygiene

Area

Copy to B. H. Avashia, M.D.

Subject Asbestos Exposure
Monitoring

J. H. Barna
W. L. Browning
M. R. Gandee
C. P. Maxwell
B. R. McMakin

Attached are the results of the Asbestos monitoring performed on two insulators and one laborer just outside Building 9 at the Institute plant. There were four insulators and three laborers working on this job, stripping approximately 100 ft of 6 inch line.

All employees were equipped with disposable coveralls, headsock, boots, gloves and a cartridge respirator designed for dusts and mists. The disposable equipment was discarded before leaving the barricaded area and new equipment worn upon returning. The area was well posted for the Asbestos hazards.

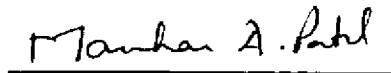
The sample results indicate that all of the exposure levels were below the permissible level of 2 fibers per cc of air. However, we continue to stress the importance of the required usage of excess water to control the airborne fibers and personal protective equipment.

Please inform all employees of their exposure results and if we can be of further assistance, please feel free to call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
1220P

UCC 024469

Comp. Ref. W1942

ASBESTOS EXPOSURE MONITORING

Date	Employee Name	Sampling Time	Air Conc. fibers/cc	TWA8 fibers/cc	COMMENTS
4-10-86	R. L. Hilverding	6 hrs 58 min	0.576	0.502	Personal sample - collected while stripping asbestos from 100 feet of 6 inch line.
4-10-86	R. O. Bowles	6 hrs 56 min	0.591	0.512	Personal sample - collected while stripping asbestos from 100 feet of 6 inch line.
4-10-86	W. A. Rhodes	6 hrs 52 min	0.372	0.319	Personal sample - collected while cleaning up the Asbestos, stripped by the insulators, and bagging for disposal.

ASBESTOS
Permissible Exposure
 TWA8 2 fibers/cc OSHA
 Ceiling 10 fibers/cc

1220P.



INTERNAL
CORRESPONDENCE

IN FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 26303

To: G. W. Phares
From: 512
Subject:

Date: October 9, 1985

Project: HS&EA

Area: Industrial Hygiene

Project: Asbestos Monitoring at
Institute Plant

To: B. H. Avashia, M.D.
J. W. Barna
T. L. Collins
C. P. Maxwell
M. L. Mills
L. R. Noble
D. R. Paugh
Franklin Sunderland

Attached are the results of asbestos exposure monitoring conducted on September 27, 1985 while construction employees stripped approximately 200' of insulation from an 8" water line at the west end of the polyols unit near building 8354.

The stripping was done using two Insulators and cleanup was done by two laborers. A spray of water was used to wet down the insulation and to minimize dust. The area was barricaded and signs were posted designating the area as a potential asbestos hazard. All four employees wore disposable respirators, face masks, coveralls, rubber boots and solvex gloves. Employees removed and disposed of their contaminated protective equipment when leaving the barricaded area and used new disposable protective equipment when returning.

All samples were found to contain asbestos fibers below the permissible exposure level of 2.0 fibers per cc of air. The sample collected on B. J. Day was at a higher level than what we normally collect and was just below the action level of 1.0 fiber per cc of air. None of the employees involved did any asbestos related work either before the start or after the completion of the job. It was therefore possible to compute the time weighted average (TWA) exposures for the entire eight hour work day.

It is recommended that the asbestos be bagged at the point of removal and not dropped to ground level, piece by piece, thus reducing the amount of airborne dust.

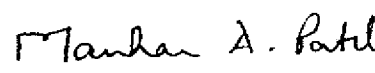
October 9, 1985

Please notify all employees of their exposure results. If we can be of further assistance, please contact us on extension 4779 or extension 3750.

Work By:


Vance Stover

Approved By:


Manhar A. Patel

Computer Reference: W1833

Personal Exposure Monitoring For Asbestos At Institute Plant

Sample #	Date	Employee Name	Sampling Time	Air Conc fibers/cc	TWA fibers/cc	Comments
1	9-27-85	J. H. Johnston	-	-	-	Employee lost filter cassette used for collection.
2	9-27-85	B. J. Day	6 hrs. 5 min.	1.032	0.785	Insulator: Stripped insulation.
3	9-27-85	G. R. Foreman	6 hrs. 6 min.	0.316	0.241	Laborer: Bagged and cleaned up insulation.
4	9-27-85	R. A. Edwards	6 hrs. 12 min.	0.093	0.072	Laborer: Bagged and cleaned up insulation.

0629p



INTERNAL
CORRESPONDENCE



IH FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX B361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	July 24, 1985
Division		Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	Asbestos Monitoring at <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 T. L. Collins, 740-2 C. E. Cunningham, 512/5518 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512		

Attached are the results of asbestos monitoring conducted on 6/26/85 while construction employees worked to strip approximately 1000 ft² of old insulation from tank no. 5307 at the Alkylbenzene Unit.

Seven construction employees were used on the job with six insulators assigned to strip the insulation and one laborer to clean up and bag the insulation. The insulators also assisted during the clean up portion of the job. All employees were protected by usage of cartridge respirators, coveralls, gloves, and boots. The work area was well barricaded with asbestos hazard signs posted. A water hose was used to wet down the insulation prior to and during stripping.

All samples were found to contain levels of asbestos fibers well below the permissible exposure level of 2.0 fibers per c.c. of air. Monitoring was conducted throughout the entire period of time necessary for completion of the job. None of the employees involved did any work involving asbestos either before the start or after completion of the job. It was therefore possible to compute the time weighted average (TWA) exposures for the entire eight hour work day.

Please notify all employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY: Mario F. Stowers
Mario F. Stowers

MFS:rfp
0438P

APPROVED BY: Manhar A. Patel
Manhar A. Patel

Attachment

UCC 024474

Computer Reference: W1812



PERSONAL EXPOSURE MONITORING FOR ASBESTOS AT INSTITUTE PLANT
ALKYL BENZENE UNIT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>TWAg (fibers/cc)</u>	<u>Comments</u>
1	6-26-85	D. R. Smith	4 hrs. 49 min.	0.14	0.08	Insulator; stripped insulation; also helped clean up.
2	6-26-85	P. K. Snodgrass	4 hrs. 47 min.	0.23	0.14	Insulator; stripped insulation; also helped clean up.
3	6-26-85	R. O. Bowles	-	-	-	Sample discarded due to pump malfunction.
4	6-26-85	B. J. Agosti	4 hrs. 44 min.	0.15	0.09	Insulator; stripped insulation; also helped clean up.
5	6-26-85	C. B. Clendenin	4 hrs. 50 min.	0.14	0.08	Insulator; stripped insulation; also helped clean up.
6	6-26-85	L. R. Shaffer	4 hrs. 50 min.	0.17	0.10	Insulator; stripped insulation; also helped clean up.
7	6-26-85	C. D. Meyers	4 hrs. 50 min.	0.09	0.05	Laborer; bagged and cleaned up stripped insulation.

AUDIT REPORT NO. WU-0039

FILE NO. 19

A T T E N T I O N

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Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) R. S. Howell
Division Construction Trailer 55042
Location 512
Area

Date May 16, 1985
Originating Dept. HS&EA
Area Industrial Hygiene
Subject Asbestos Monitoring at
Institute Plant

Copy to B. H. Avashia, M.D., 512
J. W. Barna, 512
J. R. Bryant, 512
T. L. Collins, 740-2
C. P. Maxwell, 725
M. L. Mills, 512
L. R. Noble, 725
D. R. Paugh, 512
R. C. Proffit, 512/2009-12

Attached are the results of asbestos monitoring conducted on May 7, 1985 while construction employees stripped approximately 200 ft. of insulation from 3 inch process lines at an area just west of the Pesticide B Unit where the lines had been laid out on the ground on top of plastic sheets.

Four construction employees were used on the job with two insulators to strip the insulation and two laborers to clean up and bag the stripped insulation. All employees were protected by usage of cartridge respirators, coveralls, gloves, and boots. A barricade with asbestos hazard signs was erected around the work area and a water hose was used to keep the insulation saturated during stripping and clean up. The plastic sheets on which the process lines were laid were also disposed of by rolling up and placing in bags.

All samples were found to contain levels of asbestos fibers well below the permissible exposure limit of 2.0 fibers per c.c. of air. Please notify all employees of the exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY: Mario F. Stowers
Mario F. Stowers

MFS:rfp
0307P

APPROVED BY: Manhar A. Patel
Manhar A. Patel

Attachment

Computer Reference: W1781

ASBESTOS EXPOSURE MONITORING RESULTS

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	5-7-85	R. D. Deweese	35 min.	0.27	Insulator; stripped insulation.
2	5-7-85	R. O. Bowles	35 min.	0.15	Insulator; stripped insulation.
3	5-7-85	T. L. Jividen	1 hr. 35 min.	0.24	Laborer; cleaned up and bagged stripped insulation.
4	5-7-85	R. O. Smith	1 hr. 35 min.	0.20	Laborer; cleaned up and bagged stripped insulation.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	April 29, 1985
Division	512	Originating Dept.	HS&EA
Location		Area	Industrial Hygiene
Area		Subject	Asbestos Monitoring at <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 T. L. Collins, 740-2 C. E. Cunningham, 512/Bldg. 5518 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512		

Attached are the results of asbestos exposure monitoring conducted on April 23, 1985 while construction employees stripped approximately 200 ft. of old insulation from an assortment of different size steam lines which had been removed from a large caustic reservoir at the MIC unit.

The lines were laid out on the ground for ease in stripping and the surrounding area was barricaded and signs posted designating the potential asbestos hazard. Four construction employees were used on the job with two insulators to do the stripping and two laborers to wet down the insulation and to clean up. All employees wore disposable respirators, coveralls, boots, gloves, and face masks while working on the job.

All samples were found to contain levels of asbestos fibers well below the permissible exposure level of 2.0 fibers per c.c. of air. Please notify all employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY:

M. F. Stowers
M. F. Stowers

APPROVED BY:

Manhar A. Patel
Manhar A. Patel

MFS:rfp
0266P

Attachment

UCC 024479

Computer Reference: W1775

PERSONAL EXPOSURE MONITORING FOR ASBESTOS AT INSTITUTE PLANT

MIC UNIT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	4-23-85	B. J. Agosti	3 hrs. 13 min.	0.18	Insulator; monitored while stripping insulation.
2	4-23-85	T. J. Kennedy	3 hrs. 13 min.	0.16	Insulator; monitored while stripping insulation.
3	4-23-85	R. R. Burgess	3 hrs. 15 min.	0.02	Laborer; monitored while manning water hose and assisting with clean up.
4	4-23-85	R. A. Edwards	3 hrs. 15 min.	0.16	Laborer; monitored while bagging and cleaning up stripped insulation.



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CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	April 17, 1985
Division	Bldg. 5518	Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	Asbestos Monitoring at <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 T. L. Collins, 740-2 C. E. Cunningham, 512/Bldg. 5518 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512		

Attached are the results of asbestos exposure monitoring conducted on April 16, 1985 while construction employees stripped approximately 20 ft. of old insulation from a six inch steam line at the SEVIN unit.

Two insulators were used on the job with one manning the water hose and the other stripping. Both cleaned up the stripped insulation and placed it in bags. The steam line had been laid out on the ground and surrounded with a barricade and signs indicating potential asbestos hazard. Both employees wore cartridge respirators, coveralls, gloves, and boots while working on the job.

Both samples were found to contain levels of asbestos fibers well below the permissible exposure limit of 2.0 fibers per c.c. of air. Please notify the employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY:

M. F. Stowers
M. F. Stowers

APPROVED BY:

Manhar A. Patel
Manhar A. Patel

MFS:rfp
0242P/0009P

Attachment

AUDIT REPORT NO. WW-0037

FILE NO. 23

A T T E N T I O N

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Computer Reference: W1766

PERSONAL EXPOSURE MONITORING AT INSTITUTE SEVIN UNIT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	4-16-85	S. R. Erskin	20 min.	<0.03	Insulator; stripped and cleaned up insulation.
2	4-16-85	C. B. Clendenin	20 min.	<0.03	Insulator; manned water hose and cleaned up stripped insulation.

**UNION
CARBIDE**

**INTERNAL
CORRESPONDENCE**

RE FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

Name: G. W. Phares

Date: April 12, 1985

512

Originating Dept.: HS&EA

Area: Industrial Hygiene

Subject: Asbestos Monitoring at
Institute Plant

B. H. Avashia, M.D., 512
J. W. Barna, 512
T. L. Collins, 740-2318
C. E. Cunningham, 512
C. P. Maxwell, 725
M. L. Mills, 512
L. R. Noble, 725
D. R. Paugh, 512

Attached are the results of asbestos exposure monitoring conducted on April 9, 1985 while construction employees stripped approximately 20 ft. of old insulation from a 6 inch steam line at the SEVIN unit.

Two insulators were used on the job with both employees stripping and bagging the insulation material. Both employees wore cartridge respirators, coveralls, gloves, and boots. The area was barricaded, signs placed, and water spray used to wet the insulation prior to stripping.

Both samples were found to contain levels of asbestos fibers less than the permissible exposure level of 2.0 fibers per c.c. of air. Please notify the employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY:

M. F. Stowers
M. F. Stowers

APPROVED BY:

Manhar A. Patel
Manhar A. Patel

MFS:rfp
0228P/0009P

Attachment

UCC 024484

Computer Reference: W1763

PERSONAL EXPOSURE MONITORING FOR ASBESTOS AT INSTITUTE SEVIN UNIT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	4-9-85	D. R. Smith	26 min.	0.10	Insulator; stripped and cleaned up insulation.
2	4-9-85	T. A. Crouch	26 min.	0.20	Insulator; stripped and cleaned up insulation.



INTERNAL
CORRESPONDENCE

1H FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	April 2, 1985
Division	512	Originating Dept.	HS&EA
Location		Area	Industrial Hygiene
Area		Subject	<u>Asbestos Monitoring at Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 V. L. Bird, 512 J. R. Bryant, 512 T. L. Collins, 740-2 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512		

Attached are the results of asbestos exposure monitoring conducted on March 5, 1985 while construction employees stripped approximately 200 ft. of old insulation material from conduit lines inside the No. 2 Powerhouse.

Five construction employees were used to complete the job with four insulators to strip the insulation and one laborer to clean up and bag the stripped insulation. All employees wore disposable dust respirators, coveralls, gloves, and boots. The area in which the work was done was a fairly high traffic area; therefore, well placed barricades and signs were set up to prevent passage through the area while stripping was being done. Water spray was used to wet the insulation material prior to stripping.

All samples were found to contain levels of asbestos fibers below the permissible level of 2.0 fibers per c.c. of air. Monitoring was conducted throughout the entire period of time in which the work was done. None of the employees did any work involving asbestos either prior or subsequent to the monitoring period; therefore, it was possible to compute the time weighted average (TWA) exposures for the entire 8 hour work day.

Please notify all employees of their exposure results. If we can be of further assistance, please contact us on Extension 3750 or Extension 5904.

WORK BY:

M. F. Stowers
M. F. Stowers

MFS:rfp
0214P
Attachment

APPROVED BY:

Manhar A. Patel
Manhar A. Patel

Computer Ref.: W1757

PERSONAL EXPOSURE MONITORING FOR ASBESTOS

AT INSTITUTE PLANT - NO. 2 POWERHOUSE

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>TWA (fibers/cc)</u>	<u>Comments</u>
1	3-5-85	S. M. Barker	6 hrs. 55 min.	0.20	0.17	Insulator; stripped insulation.
2	3-5-85	R. E. Coyner	6 hrs. 53 min.	0.36	0.31	Insulator; stripped insulation.
3	3-5-85	J. C. Coyner	6 hrs. 55 min.	0.026	0.022	Insulator; stripped insulation.
4	3-5-85	R. O. Bowles	6 hrs. 52 min.	0.04	0.034	Insulator; stripped insulation.
5	3-5-85	E. L. Mitchell	6 hrs. 50 min.	0.12	0.10	Laborer; cleaned up and bagged insulation.



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UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

(Name) Design Location Area cc to	K. H. Leaptrot 512 J. R. Allen, 512 B. H. Avashia, M.D., 512 J. W. Barna, 512 B. E. Bess, 512 J. A. Byrd, 512 T. L. Collins, 740-2318 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512	Date April 12, 1985 Originating Dept. HS&EA Area Industrial Hygiene Subject <u>Asbestos Monitoring at Institute Plant</u>
---	--	--

Attached are the results of asbestos exposure monitoring conducted on April 9, 1985 while construction employees stripped approximately 150 ft. of old insulation material from process lines and a feed pot at the ENB unit.

Three construction employees were used on the job with two insulators to strip the insulation and one laborer to bag and clean up the stripped insulation. All employees wore cartridge respirators, coveralls, gloves, and boots. The area was barricaded, signs placed, and a water spray was used to wet the insulation prior to stripping.

All samples were found to contain levels of asbestos fibers below the permissible level of 2.0 fibers per c.c. of air. Please notify all employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY:

M. F. Stowers
M. F. Stowers

MFS:rfp
0227P/0009P

APPROVED BY:

Manhar A. Patel
Manhar A. Patel

Attachment

UCC 024488

Computer Reference: W1762

PERSONAL EXPOSURE MONITORING FOR ASBESTOS AT INSTITUTE PLANT ENB UNIT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	4-9-85	M. L. Wallace	1 hr. 15 min.	0.06	Insulator; stripped insulation.
2	4-9-85	R. J. Smith	1 hr. 15 min.	0.04	Insulator; stripped insulation.
3	4-9-85	P. D. Coyner	1 hr. 15 min.	0.5	Laborer; bagged and cleaned up stripped insulation.

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CARBIDE****INTERNAL
CORRESPONDENCE**

FILED

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	March 27, 1985
Division		Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	<u>Asbestos Monitoring at Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 E. C. Chapman, 512 T. L. Collins, 740-2 C. P. Maxwell, 725 L. R. Noble, 725 R. F. Painter, 512 D. R. Paugh, 512		

Attached are the results of exposure monitoring conducted on February 27, 1985 while construction employees stripped approximately 40 feet of old insulation from steam lines at the MIC unit.

Two construction employees were used on the job with one insulator to strip the insulation and one laborer to man the water hose and help with clean up. Both employees were protected by the use of cartridge respirators, coveralls, gloves, and boots. The area was barricaded and a water spray was used to wet the insulation material. The majority of time spent on the job involved cleaning up of the stripped insulation.

Both samples were found to contain levels of asbestos fibers well below the permissible exposure level of 2.0 fibers/cc of air.

Please notify the employees of their exposure results. If we can be of further assistance, please contact us on Extension 3750 or Extension 5904.

WORK BY:

Mario F. Stowers
M. F. Stowers

APPROVED BY:

Manhar A. Patel
Manhar A. Patel

MFS:rfp
Attachment
0201P/0009P

UCC 024490

Computer Reference: W1755

PERSONAL EXPOSURE MONITORING AT INSTITUTE PLANT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	2-27-85	W. A. Johnson	2 hrs. 40 min.	0.05	Insulator; stripped insulation; also helped with clean up.
2	2-27-85	C. E. Porter	2 hrs. 40 min.	0.03	Laborer; manned hose to wet insulation; cleaned up stripped insulation.

AUDIT REPORT NO. WV-0039

FILE NO. 29

A T T E N T I O N

This document has been identified as one which may relate to the manufacture, use, sale or health effects of asbestos or asbestos-containing products in connection with Union Carbide's defense of asbestos litigation. The document may be reproduced as needed, but should not be destroyed. If it is judged to be of no further value to this file, the document should be sent to the Danbury office, attention of S. D. Conner. The File No. and Audit Report No. must accompany the document

Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.



INTERNAL
CORRESPONDENCE

1H FILE COPY

UNION CARBIDE CORPORATION P. O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	February 19, 1985
Division		Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	Asbestos Monitoring at <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 J. R. Bryant, 512 T. L. Collins, 740-2 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512		

Attached are the results of asbestos exposure monitoring conducted on February 6, 1985 while construction employees stripped approximately 250 ft³ of old insulation material from the 201 still column at the Cellosize Unit (Bldg. 160).

Three construction employees were used on the job with two insulators to strip the insulation and one laborer to clean up and bag the stripped insulation. All employees were protected by usage of cartridge respirators, coveralls, gloves, and boots. The work area was barricaded, signs posted, and a water spray used to wet the insulation prior to stripping. Use of the water spray was emphasized even though most of the insulation was found to be frozen due to cold weather.

All samples were found to contain levels of asbestos fibers below the permissible exposure level of 2.0 fibers per c.c. of air. Monitoring was conducted throughout the entire period of time necessary for completion of the job. None of the employees involved with the job did any further work involving asbestos after completion of the job, therefore, it was possible to compute the time weighted average (TWA) exposures for the entire eight hour work day.

Please notify employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY:

Mario F. Stowers
M. F. Stowers

MFS:rfp
Attachment
0129P/0009P

APPROVED BY:

Manhar A. Patel
Manhar A. Patel

UCC 024493

Computer Reference: W1721

PERSONAL EXPOSURE MONITORING AT INSTITUTE PLANT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>TWA (fibers/cc)</u>	<u>Comments</u>
1	2-6-85	C. B. Clendenin	4 hrs. 20 min.	0.33	0.18	Insulator; stripped insulation
2	2-6-85	W. A. Johnson	4 hrs. 17 min.	0.31	0.17	Insulator; stripped insulation
3	2-6-85	H. L. Moles	4 hrs. 20 min.	0.11	0.06	Laborer; cleaned up and bagged insulation



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION P. O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	February 18, 1985
Division		Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	Asbestos Monitoring at <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 T. L. Collins, 740-2 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 R. F. Painter, 512 D. R. Paugh, 512		

Attached are the results of asbestos exposure monitoring conducted on January 4 and 8, 1985 while construction employees stripped a total of approximately 300 ft. of asbestos containing insulation from steam lines on the pipe rack just south of Bldg. 6.

Six construction employees were used on the job with three insulators to strip the insulation and three laborers to bag and clean up the stripped insulation. All employees were protected by usage of cartridge respirators, coveralls, gloves, and boots. The work area was barricaded, signs posted, and a water spray was used. Use of the water spray was mandated in spite of the fact that the weather was rainy.

All samples were found to contain levels of asbestos below the present permissible exposure limit of 2.0 fibers per c.c. of air. Several of the samples were found to contain higher levels of asbestos fibers than would have been expected. If the work had been performed over a longer period of time, it is likely that the fiber levels would have been proportionally greater. Although none of the samples exceeded the allowable limit, there could potentially be a problem if OSHA reduces the limit to 0.5 fibers per c.c. of air. It is possible that the water spray was not used as effectively as it could have been due to the assumption that the rain had already sufficiently soaked the insulation material.

Please notify all employees involved with the job of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY: Marie F. Stowers
M. F. Stowers

MFS:rfp
Attachment
0130P/0009P

APPROVED BY: m. a. Patel
Manhar A. Patel /rfp

Computer Reference: W1719
W1720

PERSONAL EXPOSURE MONITORING AT INSTITUTE PLANT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	1-4-85	S. R. Erskin	2 hrs. 10 min. (130 min.)	0.44	Insulator; stripped insulation
2	1-8-85	S. R. Erskin	35 min.	0.06	Insulator; stripped insulation
3	1-4-85	G. R. Briscoe	2 hrs. 5 min. (125 min.)	0.01	Laborer; cleaned up and bagged insulation
4	1-8-85	G. R. Briscoe	1 hr. 20 min. (80 min.)	0.40	Laborer; cleaned up and bagged insulation
5	1-4-85	L. M. Moore	2 hrs. 5 min. (125 min.)	0.06	Laborer; cleaned up and bagged insulation
6	1-4-85	R. O. Bowles	2 hrs. (120 min.)	0.21	Insulator; stripped insulation
7	1-8-85	B. J. Agosti	1 hr. 15 min. (75 min.)	0.94	Insulator; stripped insulation
8	1-8-85	A. L. Spurlock	35 min.	0.13	Laborer; cleaned up and bagged insulation

Note: Sampling time does not reflect entire work day or overall exposure.



INTERNAL
CORRESPONDENCE

IN FILE COPY

UNION CARBIDE CORPORATION P. O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	December 12, 1984
Division		Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	Asbestos Monitoring at <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 T. L. Collins, 740-2 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 R. F. Painter, 512 D. R. Paugh, 512		

Attached are the results of asbestos exposure monitoring conducted on November 13, 1984 while construction employees stripped approximately 100 ft. of asbestos containing insulation from steam lines up on the pipe rack just North of the No. 1 powerhouse.

Four construction employees were used on the job with two insulators to strip the insulation and two laborers to bag and clean up the stripped insulation. All employees were protected by the use of cartridge respirators, coveralls, gloves, and boots. The area was barricaded and a water spray was used to wet the insulation thoroughly before stripping.

All samples were found to contain levels of asbestos fibers well below the present permissible exposure limit of 2.0 fibers per c.c. of air. Please notify all employees involved with the job of their exposure results. If we can be of further assistance please contact us on extension 3750.

Work By:

Mario F. Stowers
Mario F. Stowers

Approved By:

Manhar A. Patel
Manhar A. Patel

MFS:rfp
Attachment

UCC 024498

Computer Reference: W1700

Personal Exposure Monitoring for Asbestos
at Institute Plant

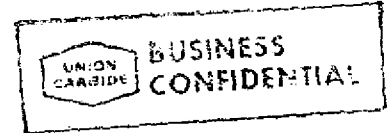
<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	11-13-84	B. J. Agosti	2 hrs. 35 min. (155 min.)	0.03	Insulator; stripped insulation
2	11-13-84	P. K. Snodgrass	2 hrs. 35 min. (155 min.)	0.04	Insulator; stripped insulation
3	11-13-84	S. E. Painter	2 hrs. 40 min. (160 min.)	0.01	Laborer; bagged stripped insulation
4	11-13-84	G. R. Briscoe	2 hrs. 33 min. (153 min.)	0.03	Laborer; bagged stripped insulation

TECHNICAL CENTER SERVICES
UNION CARBIDE CORPORATION
ENGINEERING AND TECHNOLOGY SERVICES
SOUTH CHARLESTON, WEST VIRGINIA

FILE COPY

MEMORANDUM

February 1, 1984



To: J. W. Karn
Sistersville Plant

cc: J. W. Barna D. R. Paugh
M. E. Bell R. E. Peele
M. W. Bosserman H. H. Price
C. P. Maxwell B. H. Avashia, M.D.
M. L. Mills R. G. Rowe, M.D.
R. L. Noble

From: M. A. Patel

Subject: Asbestos Monitoring of Construction Employees at
the Sistersville Plant

On January 12, 1984, Mark Bell and this writer of the Technical Center Industrial Hygiene group visited the Sistersville Plant to conduct personal exposure monitoring for asbestos fibers while Construction Department employees stripped asbestos-containing insulation from pipes at the Steam Plant.

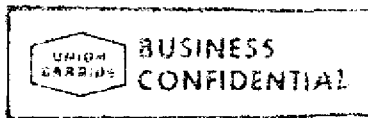
The monitoring was done during the entire stripping operation for that day. The balance of the day when there was no monitoring done, the insulators used that time to insulate the stripped pipes with non-asbestos insulation. The results of monitoring are shown in the attachment which show that all the employees who were monitored worked in the area where the potential for exposure to asbestos was below the current Federal OSHA standard of 0.5 fibers per cc of air. All employees involved in the stripping operation wore full body hooded coveralls, gloves, safety glasses and respirator approved for use for asbestos. The area was properly barricaded, insulation was wetted down while stripping and the grating was covered to collect any insulation which might fall down.

Please notify all monitored employees of their exposure results.

Mark A. Patel

MAP/sc
Attachment

UCC 024500



PERSONAL EXPOSURE MONITORING FOR ASBESTOS

AT THE SISTERSVILLE PLANT

January 12, 1984

<u>NO.</u>	<u>NAME</u>	<u>CRAFT</u>	<u>SAMPLING TIME/MIN</u>	<u>EXPOSURE LEVEL Fibers/cc</u>
1	R.L. Pauley	Insulator	89	.27
2	B.E. Kelly	Laborer	82	.08
3	H.P. Stewart	Insulator	88	.15
4	R.L. Hilverding	Insulator	88	.24
5	L.R. Shaffer	Insulator	86	.17



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UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

FILE COPY

R. C. Proffitt
511-2009
512

Date June 21, 1983

Originating Dept 511 Industrial Hygiene/
Environmental Protection

Area

M. E. Bell
C. W. Maxwell
M. L. Mills
L. R. Noble
D. R. Paugh
R. E. Peele
A. L. Postlethwait
W. F. Williams

Subject Asbestos Monitoring in
Storeroom, 511 Construction
Department

Dear Mr. Proffitt:

On May 9, 1983, the Technical Center Industrial Hygiene group conducted a monitoring survey for determining the exposure of employees to asbestos dust particles while handling asbestos containing gaskets in the storeroom at the 512 Construction Department. This work was done by M. E. Bell of our group.

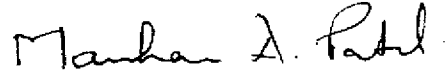
Mr. J. H. White was monitored for asbestos exposure when he received one hundred asbestos spiral-wound gaskets in three bundles. During the monitoring period, Mr. White removed these gaskets from the box, counted and placed them in a storage bin in the storeroom. Mr. White wore a dust respirator approved for asbestos while performing the job. In addition to the personal sample, an area sample was also collected. The results of monitoring shown in the attachment indicate that exposure to asbestos fibers above the permissible exposure limit of 2 fiber/cc are unlikely.

It is our observation that while unpacking and placing gaskets in the bin the probability of exposure is minute; however, it is believed that once the gaskets are stored in the bin some dust will become loose due to friction and may build up over a period of time. We recommend that the gasket storage bin be cleaned once every month. The person cleaning the bin should wear a dust respirator. The method of cleaning the bin should be wet. The easiest way would be to rinse the bin with water in the sink.

Please notify Mr. White of his exposure results. If we can

be of further assistance, please call us at extension 3750.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Manhar A. Patel".

Manhar A. Patel

MAP/sc

Attachment



ASBESTOS SAMPLING

May 9, 1983

<u>Name or Location</u>	<u>Sampling Time (Mins)</u>	<u>Concentration Fibers/cc</u>
1. J. H. White	10	0
2. Area Sample	9	< .07

The permissible exposure limit is 2 fibers > 5 μ m/cc of air

ATTACHMENT A

ASBESTOS INSULATION REMOVAL AND DISPOSAL
SUPERVISOR'S REPORT

1. LOCATION OF JOB: North End Bldg 151
2. DATE(S) JOB PERFORMED: 2-19-82 to _____
3. DESCRIPTION OF JOB: Striped Asbestos lns. from Valve, Check Valve, + App. 4' pipe (6" pipe)
4. AMOUNT OF ASBESTOS INSULATION INVOLVED: APP. 12 Bags.
5. LOCATION ASBESTOS INSULATION DISPOSED - To Dump.
6. EMPLOYEES INVOLVED: (If more spaces are needed use back of page)
- G.W. Wheeler - 33-07836
- B.J. Agostini - 33-07850
- P.L. Jones - 39-07879
7. TYPE OF RESPIRATORY EQUIPMENT USED: 3M - No. ⁸⁷¹⁰~~7879~~
8. CHECK IF INSULATION NOT WETTED DOWN: ☐

SUPERVISOR: J. R. HallDATE: 2-22-82



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To: W. L. Browning
J. W. Perry, Jr.
Institute Plant

Date: October 23, 1981

Originating Dept: IH/EP

Area:

C. W. Carman
M. L. Mills
L. R. Noble
D. R. Paugh
R. E. Peele
H. H. Frazier
R. J. Sexton, M.D.
F. Williams

Subject: Asbestos Monitoring in Gasket
Shop, 512 Construction

Gentlemen:

In my letter of October 20, 1981, concerning asbestos monitoring in the Gasket Shop - 512 Construction, an error was made due to misinterpretation of the data we received from the 512 Industrial Hygiene group. Please replace the letter dated October 20, 1981 from your file with the one attached to this note.

Very truly yours,

Manhar A. Patel

MAP/sc

Attachment



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	W. L. Browning	Date	October 23, 1981
Division	J. W. Perry, Jr.	Originating Dept.	IH/EP
Location	<u>Institute Plant</u>	Area	
Copy to	C. W. Carman	Subject	<u>Asbestos Monitoring in Gasket Shop, 512 Construction</u>
	M. L. Mills		
	L. R. Noble		
	D. R. Paugh		
	R. E. Peele		
	H. H. Frazier		
	R. J. Sexton, M.D.		
	<u>F. Williams</u>		

(Replaces letter of October 20, 1981 - front page only.)

Gentlemen:

Attached are the results of the area and personal exposure monitoring done for asbestos in the Gasket Shop - laundry, Building 3 of the Construction Department, Institute Plant. This monitoring was done by the Institute Plant Industrial Hygiene group on October 2, and 9, 1981.

The gasket cutting is done infrequently and it would generally last for a short period of time. The results of the survey indicate that the asbestos exposure in excess of the permissible limit of 2 fibers per centimeter cube of air did not occur.

The workers did not wear a respiratory protective device while working with the gasket material. It is emphasized that all workers wear a disposable 3M #8710 dust respirator which is approved by NIOSH for protection from asbestos exposure. Please notify the monitored workers of their exposure results.

If I can be of further assistance, please give me a call at extension 3750.

Very truly yours,

Manhar A. Patel

Manhar A. Patel

MAP/sc
Attachment

UCC 024507

ASBESTOS MONITORING CONSTRUCTION GASKET SHOPINSTITUTE PLANT

<u>#</u>	<u>Name/Area Monitored</u>	<u>Date</u>	<u>Sampling Time Minutes</u>	<u>Asbestos Conc. Fibers >5 μm/cm³</u>
1	F. M. Hatfield	10/2/81	18	< 0.1
2	3 Feet from cutting blade	10/2/81	17	< 0.1
3	F. M. Hatfield	10/9/81	15	0.4
4	3 Feet from cutting blade	10/9/81	15	0.2



INTERNAL
CORRESPONDENCE

FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) W. L. Browning
Division J. W. Perry, Jr.
Location Institute Plant
Area

Date October 20, 1981

Originating Dept. IH/EP

Area

Copy to C. W. Carman
M. L. Mills
L. R. Noble
D. R. Paugh
R. E. Peele
H. H. Frazier
R. J. Sexton, M.D.
F. Williams

Subject Asbestos Monitoring in Gasket Shop, 512 Construction

Gentlemen:

Attached are the results of the area and personal exposure monitoring done for asbestos in the Gasket Shop - laundry, Building 3 of the Construction Department, Institute Plant. This monitoring was done by the Institute Plant Industrial Hygiene group on October 2, and 9, 1981.

The gasket cutting is done infrequently and it would generally last for a short period of time. The results of the survey indicate that the asbestos exposure in excess of the permissible limit of 2 fibers per centimeter cube of air did not occur.

The workers wore a respiratory protective device while working with the gasket material. It is emphasized that all workers continue to follow this practice while working in the area during gasket cutting. Please notify the monitored workers of their exposure results.

If I can be of further assistance, please give me a call at extension 3750.

Very truly yours,

Manhar A. Patel

MAP/sc

Attachment

UCC 024509

ASBESTOS MONITORING CONSTRUCTION GASKET SHOP

INSTITUTE PLANT

<u>#</u>	<u>Name/Area Monitored</u>	<u>Date</u>	<u>Sampling Time Minutes</u>	<u>Asbestos Conc. Fibers >5 $\mu\text{m}/\text{cm}^3$</u>
1	F. M. Hatfield	10/2/81	18	< 0.1
2	3 Feet from cutting blade	10/2/81	17	< 0.1
3	F. M. Hatfield	10/9/81	15	0.4
4	3 Feet from cutting blade	10/9/81	15	0.2

AUDIT REPORT NO. WW-0039

FILE NO. 40

A T T E N T I O N

This document has been identified as one which may relate to the manufacture, use, sale or health effects of asbestos or asbestos-containing products in connection with Union Carbide's defense of asbestos litigation. The document may be reproduced as needed, but should not be destroyed. If it is judged to be of no further value to this file, the document should be sent to the Danbury office, attention of S. D. Conner. The File No. and Audit Report No. must accompany the document

Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.



INTERNAL CORRESPONDENCE

MAF
DRC

AGRICULTURAL PRODUCTS COMPANY, INC.

P.O. BOX 2831, CHARLESTON, WEST VIRGINIA 25330

INSTITUTE PLANT

To (Name) Mr. G. F. Hurley
Division Building 701/334
Location Technical Center
Floor Number

Date January 5, 1981

Originating Dept. Industrial Hygiene

Floor Number

Copy to Mr. A. S. Howard
Mr. L. R. Noble
Mr. H. L. Robinson
Dr. R. J. Sexton
Mr. E. C. Shipley
Mr. F. Williams

Answering letter date

Subject Asbestos Exposure Monitoring

Monitoring for personal exposure to asbestos at the No. 1 Steam Plant on December 12, 1980, showed a maximum airborne level of 4.1 fibers per cc of air.

Twelve 511 Construction insulators and laborers were measured for 15 minute sample periods over a time period of 150 minutes. Two results (see attached data sheet) were at or above the present OSHA standard of 2.0 fibers per cc of workplace air.

This monitoring occasion was scheduled during peak activity of demolition of asbestos material from No. 6 boiler at operating floor level. A minimum number of Plant 512 employees were in the area at the time work was in progress. The area was properly barricaded, signs in place and Construction employees involved in the demolition process wore MSA Dust Foe 77 or 3M Model 8710 dust masks. Material being demolished was generally wet down but some dust was generated from the interior surfaces. Laborers bagged the material for disposal as the project progressed.

This demolition of asbestos material was carried out according to acceptable guidelines and airborne material was maintained generally at permissible levels. Future jobs of similar nature need to be performed in a like manner and continued use of respiratory protection be required.

Please inform the above participating employees of their individual monitoring results.

H. H. Frazier

HHF:mc
Attachment

TECHNICAL CENTER

1-7-81
INDUSTRIAL HYGIENE DEPT.

INDUSTRIAL HYGIENE SAMPLING

WORKPLACE LOCATION: No. 1 Steam Plant

BUILDING: 5

CONTAMINANT: Asbestos

OSHA TLV 2 f/cc

DATE: 12/29/80

NAME: J. L. Miller

XXXX
XXXX
XXXX

Record Number	Sample Date	Sample Type/Name	Sample Time Min.	Results, ppm f/cc		Comments Location/Job Task
				Air Conc.	TWA ₈ *	
W-2306-7	12/12/80	G. W. Bradley, Jr.	15	0.4		Cleaning up asbestos insulation and loading it into plastic bags from the operating level floor.
W-2306-8	"	D. W. Price	15	0.1		"
W-2306-9	"	M. E. Drake	15	0.6		"
W-2306-10	"	S. L. Barnette	15	0.9		"
W-2306-11	"	G. D. White	15	1.5		"
W-2306-12	"	T. H. Hinzman, Sr.	15	<0.1		"
W-2305-1	12/12/80	G. H. Landers	15	4.1		Insulator, wetting down and removing insulation from No. 6 boiler at the operating level.
W-2305-2	"	M. L. Finney	15	0.1		"
W-2305-3	"	G. F. Sowards	15	0.8		"
W-2305-4	"	M. L. Wallace	15	2.0		"
W-2305-5	"	C. C. Bragg	15	<0.1		"
W-2305-6	"	R. M. Dunlap	15	0.3		"

*TWA₈ applicable to personal samples only.

FILE COPY

TECHNICAL DEPT. 511

NO. 378341, SOUTH CHARLESTON WEST VIRGINIA 24301

B. E. Bess, 514
P. W. Young, 512

September 12, 1980

IH/EP

Asbestos Exposure Monitoring

L. R. Noble, 512
H. L. Robinson, 511
E. C. Shipley, 512
F. Williams, 512

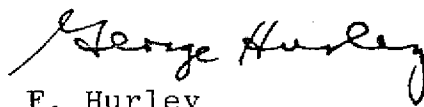
Gentlemen:

Asbestos monitoring in the SEVIN operations area on September 3, 1980 showed an air concentration of 0.1 fiber per cc which is well below the present OSHA standard.

Six samples of breathing zone air were taken on Messrs. D. R. Smith, J. F. Sampson and P. D. Coyner. Due to an error in analytical procedure only one valid sample, that for Mr. Smith, was obtained. Since all the recommended procedures for stripping asbestos-containing insulation were followed it is felt that the 0.1 result obtained represents the breathing air concentration in the ambient air.

Please give the people sampled the results. The actual sampling was done by members of Fred William's Industrial Hygiene group at Institute.

Very truly yours,


G. F. Hurley

GFH/sc



INTERNAL CORRESPONDENCE

AGRICULTURAL PRODUCTS COMPANY, INC.

P.O. BOX 2831, CHARLESTON, WEST VIRGINIA 25303

INSTITUTE PLANT

To (Name) Mr. G. F. Hurley
 Division Building 701, 334
 Location Technical Center
 Floor Number

Date July 25, 1980

Originating Dept. Industrial Hygiene

Floor Number

Copy to Mr. K. B. Drake
 Mr. S. E. Illikainen
 Mr. A. S. Howard
 Mr. S. W. Jensen
 Mr. L. R. Noble
 Dr. R. J. Sexton
 Mr. E. C. Shipley
 Mr. Fred Williams

Answering letter date

Subject Asbestos Exposure Potential,
Precipitators, No. 1 Steam Plant

RECEIVED
 JUL 27 1980
 G. F. HURLEY

Concern has been expressed on various occasions relative to the condition of protective covering over asbestos containing insulation on the south side of the No. 1 Steam Plant precipitators. A recent storm apparently caused large sections of the protective cover to be torn from the precipitators, leaving some sections free to move according to wind direction and velocity.

Industrial Hygiene was requested to evaluate the existing conditions in terms of personal exposure potential of personnel involved in the 511 Construction Project of retubing the boilers. By observation, the condition appeared to have serious potential and it was suggested to Mr. Jensen that "free-hanging" protective cover be removed and consideration be given to application of a binder material to the exposed insulation. Sampling at appropriate locations and personal sampling of selected workers for asbestos exposure was initiated to determine the degree of the apparent problem.

The current OSHA Standard for asbestos sets an eight-hour time-weighted average airborne concentration to which any employee may be exposed not to exceed two fibers, longer than 5 micrometers, per cubic centimeter of air. A ceiling concentration of 10 fibers has been established which is not to be exceeded for any time period.

Samples collected at this location on July 21, 1980, show results as follows:

<u>Name/Type Sample</u>	<u>Fibers/cm³</u>	<u>Job Task/Location</u>
D. R. Stephens	1.8 1.07	Rigger inserting piping in tube sheet. 3rd level.
W. P. Gilmore	0.08	Rigger guiding tubes into tube sheet. 4th level.
S. J. Edens	0.09	Rigger guiding tubes into tube sheet. 4th level.

UCC 024515

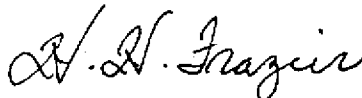
<u>Name/Type Sample</u>	<u>Fibers/cm³</u>	<u>Job Task/Location</u>
B. J. Wehrle	0.05	Rigger inserting piping in tube sheet. 3rd level.
Area	0.05	Face level No. 3 boiler (upwind) while pipe was inserted.
Area	0.09	Face level No. 3 boiler (downwind) while piping was inserted.
Area	None detected	South of No. 6 precipitator at source - undisturbed by workers.
Area	None detected	South of No. 4 precipitator at source - undisturbed by workers.
Area	None detected	South of No. 1 boiler while scaffold was erected at No. 3 (downwind).
Area	0.05	South of No. 2 boiler while scaffold was erected at No. 3 (downwind).

These data indicate that exposure potential to airborne asbestos is minimal from the large areas of exposed insulation material on the south side of the precipitators when the material is undisturbed. The four personal samples were collected during a time period when tubes were being inserted into the north side of the tube sheet and local disturbance of the insulation material was near a maximum. The extreme north tubes require manipulation of the piping against the insulation and it was observed that pieces of insulation up to half inch diameter were being released into the work area. Individual fibers, which are the real hazard, were not being released at the expected rate nor at an excessive degree.

Industrial Hygiene, therefore, recommends the following:

1. Energy Systems follow-up on a Maintenance request to remove all "free-hanging" protective covering which can be safely removed without scaffolding. Personnel involved should wear a 3M dust mask and the insulation side of the removed covering should be wet down for immediate disposal.
2. Plant 511 Construction personnel should continue to wear 3M dust masks while inserting tubes in the north side of the respective tube sheets and/or while raw insulation is being disturbed.
3. At the discretion of the Construction supervision, a sealer may be applied at local areas of exposed insulation proximal to where work is to be performed and insulation is likely to be disturbed.

Should there be questions or need for additional monitoring, please call me at 6161.


H. H. Frazier

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

FILE COPY

TO: D. L. Johnson, 511-5518

Computer Ref. W-1043

CC: C. W. Carman, 725-105
 G. F. Hurley, 701-334
 C. R. Johnson, 511-2009
 L. R. Noble, 511-2149

P. A. Perry, 511-5583
 D. R. Paugh, 511-2009
 H. L. Robinson, 701-401
 E. C. Shipley, 511-2009

PERSON MONITORED F. E. CobbLocation #1 Powerhouse - Institute Date 4/28/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > 5 $\mu\text{m}/\text{cm}^3$.15	63 minutes	A.M. - Stripping insulation
2	.37 "	108 minutes	A.M. - Stripping insulation
3	.06 "	30 minutes	P.M. - Stripping insulation
4	.52 "	45 minutes	P.M. - Stripping insulation
5			
6			

Time-Weighted Average Concentration (TWA) .14 fibers > 5 $\mu\text{m}/\text{cm}^3$
 Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
 Ceiling _____ OSHA UCC Other

COMMENTS

Stripping insulation from several steam lines on #1 boiler on the first level of #1 Powerhouse at Institute. Mr. Cobb wore a disposable dust respirator and disposable coveralls during the stripping.

Even though part of the insulation being stripped did not contain asbestos, the insulation should be well watered to help control the dust.

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

TO: D. L. Johnson, 511-5518

Computer Ref. W-1043CC: C. W. Carman, 725-105
G. F. Hurley, 701-334
C. R. Johnson, 511-2009
L. R. Noble, 511-2149P. A. Perry, 511-5583
D. R. Paugh, 511-2009
H. L. Robinson, 701-401
E. C. Shipley, 511-2009PERSON MONITORED T. G. GrantLocation #1 Powerhouse - Institute Date 4/28/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .43 5 $\mu\text{m}/\text{cm}^3$	58 minutes	A.M. - Bagging insulation
2	.64 "	116 minutes	A.M. - Bagging insulation
3	.34 "	89 minutes	P.M. - Bagging insulation
4			
5			
6			

Time-Weighted Average Concentration (TWA) .27 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Bagging insulation that had been stripped from several steam lines on #1 boiler on the first level of #1 Powerhouse at Institute. The stripped insulation was placed in plastic bags tagged and placed in a dumpster for proper disposal. Mr. Grant wore a disposable dust respirator and disposable coveralls.

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

TO: D. L. Johnson, 511-5518

Computer Ref. W-1043

CC: C. W. Carman, 725-105
 G. F. Hurley, 701-334
 C. R. Johnson, 511-2009
 L. R. Noble, 511-2149

D. R. Paugh, 511-2009
 P. A. Perry, 511-5583
 H. L. Robinson, 701-401
 E. C. Shipley, 511-2009

PERSON MONITORED T. L. JividenLocation #1 Powerhouse - Institute Date 4/28/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .52 5 $\mu\text{m}/\text{cm}^3$	57 minutes	A.M. - Stripping insulation
2	.62 "	111 minutes	A.M. Stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not monitored long enough to
 Ceiling Concentration calculate TWA

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$
 Ceiling _____

OSHA
 OSHA

UCC Other
 UCC Other

COMMENTS

Stripping insulation from several steam lines on #1 boiler on the first level of #1 Powerhouse at Institute. Sometime during the afternoon, the filter cassette worn by Mr. Jividen was lost so a TWA was not calculated. During the stripping he wore a disposable dust respirator and disposable coveralls.

Even insulation that does not contain asbestos should be watered to help control the dust.

WORK BY

Ruth Cise

APPROVED BY

G. Hurley

TO: D. L. Johnson, 511-5518

Computer Ref. W-1041CC: C. W. Carman, 725-105
G. F. Hurley, 701-334
C. R. Johnson, 511-2009
D. R. Paugh, 511-2009P. A. Perry, 511-5583
C. E. Richardson, 511-2149
H. L. Robinson, 701-401
E. C. Shipley, 511-2009PERSON MONITORED D. K. MilanLocation #1 Powerhouse - Institute Date 4/11/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .69 5 $\mu\text{m}/\text{cm}^3$	68 minutes	P.M. - Stripping insulation
2	fibers > 2.72 5 $\mu\text{m}/\text{cm}^3$	27 minutes	P.M. - Stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not monitored long enough
Ceiling Concentration to calculate TWA.

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping insulation from #2 boiler front and boiler front duct on second level of #1 Powerhouse at Institute. Mr. Milan wore a disposable Norton dust respirator and disposable coveralls during the stripping. The insulators got in a hurry toward the end of the day and didn't keep the insulation well wetted. This resulted in the last value being higher.

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

TO: D. L. Johnson, 511-5518

Computer Ref. W-1040CC: C. W. Carman, 725-105
G. F. Hurley, 701-334
C. R. Johnson, 511-2009
D. R. Paugh, 511-2009P. A. Perry, 511-5583
C. E. Richardson, 511-2149
H. L. Robinson, 701-401
E. C. Shipley, 511-2009PERSON MONITORED B. M. BeckettLocation #1 Powerhouse -
InstituteDate 4/11/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .48 5 $\mu\text{m}/\text{cm}^3$	60 minutes	A.M. - Stripping insulation
2	fibers > 1.24 5 $\mu\text{m}/\text{cm}^3$	84 minutes	A.M. - Stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not monitored long enough
Ceiling Concentration to calculate TWA.

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping suspected asbestos containing insulation from #2 boiler front and boiler front duct on second level of #1 Powerhouse at Institute. Mr. Beckett was not monitored in the afternoon because he was transferred to another job. During the stripping he wore a disposable Norton dust respirator and disposable coveralls.

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

TO: D. L. Johnson, 511-5518

Computer Ref. W-1040

CC: C. W. Carman, 725-105 P. A. Perry, 511-5583
 G. F. Hurley, 701-334 C. E. Richardson, 511-2149
 C. R. Johnson, 511-2009 H. L. Robinson, 701-401
 D. R. Paugh, 511-2009 E. C. Shipley, 511-2009

PERSON MONITORED G. H. LandersLocation #1 Powerhouse - Institute Date 4/11/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .35 5 $\mu\text{m}/\text{cm}^3$	60 minutes	A.M. - Stripping insulation
2	fibers > .42 5 $\mu\text{m}/\text{cm}^3$	105 minutes	A.M. - Stripping insulation
3	fibers > .09 5 $\mu\text{m}/\text{cm}^3$	80 minutes	P.M. - Stripping insulation
4	fibers > .65 5 $\mu\text{m}/\text{cm}^3$	38 minutes	P.M. - Stripping insulation and cleaning area.
5			
6			

Time-Weighted Average Concentration (TWA) 0.2 fibers > 5 $\mu\text{m}/\text{cm}^3$

Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
 Ceiling _____ OSHA UCC Other

COMMENTS

Stripping suspected asbestos containing insulation from #2 boiler front and boiler front duct on second level of #1 Powerhouse at Institute. The last sample of the day was the highest concentration found. This may be attributed to the fact that they got in a hurry and didn't keep the insulation well wetted. Mr. Landers wore a disposable Norton dust respirator, and disposable coveralls during the stripping.

WORK BY Ruth CliseAPPROVED BY G. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: D. L. Johnson, 511-5518

Computer Ref. W-1040

CC: C. W. Carman, 725-105 P. A. Perry, 511-5583
 G. F. Hurley, 701-334 C. E. Richardson, 511-2149
 C. R. Johnson, 511-2009 H. L. Robinson, 701-401
 D. R. Paugh, 511-2009 E. C. Shipley, 511-2009

PERSON MONITORED D. K. Naylor

Location #1 Powerhouse - Date 4/11/80
Institute

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers .35 5 $\mu\text{m}/\text{cm}^3$	60 minutes	A.M. - Bagging insulation
2	fibers .81 5 $\mu\text{m}/\text{cm}^3$	105 minutes	A.M. - Bagging insulation
3	fibers .18 5 $\mu\text{m}/\text{cm}^3$	87 minutes	P.M. - Bagging insulation
4	fibers .06 5 $\mu\text{m}/\text{cm}^3$	49 minutes	P.M. - Bagging insulation and cleaning area
5			
6			

Time-Weighted Average Concentration (TWA) 0.3 fibers > 5 $\mu\text{m}/\text{cm}^3$
 Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
 Ceiling _____ OSHA UCC Other

COMMENTS

Bagging insulation that had been stripped from #2 boiler front and boiler front duct on second level of #1 Powerhouse at Institute. Mr. Naylor wore a disposable Norton dust respiratory and disposable coveralls during the bagging and cleanup. The insulation was placed in plastic bags for disposal and dropped from the second level to a truck below. At this point the full bags should be handled carefully. It is suggested that they could be lowered on a rope to prevent the bags from splitting.

WORK BY Ruth CliseAPPROVED BY G. Hurley



INTERNAL CORRESPONDENCE

FILE COPY

CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

(Name) Mr. D. L. Johnson
Vision 511-5518 - Institute Plant
ration

Date April 9, 1980

Originating Dept. Technical Center IH/EP

Copy to Mr. G. F. Hurley
Mr. L. R. Noble
Mr. H. L. Robinson
Mr. E. C. Shipley
Mr. E. J. TawneySubject Asbestos Monitoring at
Institute #1 PowerhousePROJECT

Monitor employee exposure to airborne asbestos fibers during removal of insulation from the #2 boiler in the #1 Powerhouse at Institute.

DATE OF SURVEY

April 3, 1980

DISCUSSION

Four Construction employees, three insulators and one laborer, removed insulation from boiler #2 on the third level in the Institute #1 Powerhouse. All employees wore disposable coveralls, gloves and respirators. The insulation was wetted before and during removal and the area was barricaded. An insulator, Mr. B. M. Beckett, and a laborer, Mr. R. D. Ward, wore personal samplers during the removal and bagging operations.

The air concentrations of the four samples taken ranged from 0.17 to 0.41 fibers per cubic centimeter of air (f/cc). Since there was no other exposure to asbestos the rest of the day, the eight-hour time-weighted average (TWA) exposures were 0.06 and 0.07 f/cc. The OSHA permissible exposure limit for an eight-hour TWA is 2 f/cc.

DATA

(Continued on next page)

UCC 024524

4/9/80

<u>DATE</u>	<u>SAMPLE</u>	<u>SAMPLING TIME</u>	<u>AIR CONC. (f/cc)</u>	<u>TWA (f/cc)</u>
3/3/80	B.M. Beckett	0825-0945	0.23	-
3/3/80	B.M. Beckett	1010-1053	0.41	0.07
3/3/80	R.D. Ward	0825-0945	0.17	-
3/3/80	R.D. Ward	1010-1110	0.26	0.06

REPORT PREPARED BY

W. F. Blythe Jr.

W. F. Blythe, Jr.

WFB Jr/sc



INTERNAL CORRESPONDENCE

FILE COPY

CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

to (Name)	Mr. D. L. Johnson	Date	March 3, 1980
Division	Mr. L. R. Noble		
Location	Mr. H. L. Robinson	Originating Dept.	Technical Center IH/EP
	Mr. E. C. Shipley		
Copy to	Mr. E. J. Tawney	Subject	Asbestos Monitoring at <u>Institute #2 Powerhouse</u>

PROJECT

Monitor exposure of employees to airborne asbestos fibers during the removal of insulation from a boiler at the #2 Powerhouse at Institute.

DATE OF SURVEY

February 20, 1980

DISCUSSION

Construction insulators and laborers wore personal samplers during the removal of insulation from the third level of the easternmost boiler in the #2 Powerhouse. All employees involved wore disposable coveralls and respirators. The insulation was adequately wetted with water during removal. The first set of samples was taken while the insulation was being removed from the front of the boiler and placed in plastic bags. The second set of samples was taken while insulation was being removed from a horizontal section of the boiler and shoveled into plastic bags.

The personal air samples indicated concentration from 0.2 to 0.8 f/cc. The OSHA standard sets a permissible exposure limit of 2 f/cc for an eight-hour time-weighted average exposure and a ceiling limit for a fifteen minute exposure of 10 f/cc. Continued use of the prescribed work procedures - use of water to wet insulation, respirators, barricading the area, etc. - should aid in keeping exposures below the OSHA standard.

DATA

See page 2.

3/3/80

<u>DATE</u>	<u>SAMPLE</u>	<u>SAMPLING TIME</u>	<u>AIR CONC. (f/cc)</u>
2/20/80	G.H. Landers	0905 - 0935	0.2
↑	"	1010 - 1145	0.4
	J.H. Johnston	0906 - 0935	0.1
	J.H. Johnston	0935 - 1058	0.3
	C.N. Cunningham	0911 - 0935	0.7
↓	T.G. Grant	1045 - 1145	0.8

REPORT PREPARED BY

W. F. Blythe, Jr.
Technical Center Industrial Hygiene Group

W. F. Blythe Jr.

APPROVED BY

G. F. Hurley

WFB Jr/sc



CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

To (Name) Mr. D. L. Johnson
Division 511-5518
Location Institute Plant

Date January 22, 1980

Originating Dept. Technical Center IH/EP

Copy to Mr. C. W. Carman
Mr. G. F. Hurley
Mr. C. R. Johnson
Mr. L. R. Noble
Mr. D. R. Paugh
Mr. P. A. Perry
Mr. H. L. Robinson
Mr. E. C. Shipley

Subject Asbestos Monitoring - No. 1
Powerhouse, Institute Plant

PROJECT

Determine the exposure of Construction employees to asbestos during the stripping of old insulation from #1 boiler at the #1 Powerhouse, Location 512.

DATE OF SURVEY

January 15, 1980

SUMMARY

Although asbestos exposures to employees were higher than normal, the use of approved respirators and protective clothing as well as proper stripping and disposal procedures protected the workers from a potentially hazardous situation.

DISCUSSION

Construction insulators are in the process of stripping several thousand feet of old asbestos type insulation from the steam boilers at the #1 Powerhouse, Location 512. The job will be in progress for the next two years and will involve many crafts before completion.

The area to be stripped was barricaded, labeled and persons doing the work were protected by the use of approved respirators, disposable coveralls and gloves. They are required to wear hard hats while in this area.

Four personal samples were collected as well as area samples on the first three floors of #1 boiler, north side. The results are listed in the attached "RESULTS". Although the results of two personal samples are greater than the OSHA standard of 2 fibers, the workers were protected.

RECOMMENDATIONS

1. Bags of stripped insulation should be handled carefully, not dropped from one level to another.
2. Cleanup should be thorough and inspected by Construction supervisor for completeness. Complaints can be easily generated by powerhouse employees or other workers in the area.
3. Protective clothing should be discarded in plastic bags along with the insulation.

REFERENCES

Volume 38C-29X4-R1a Asbestos, Dust Determination by Membrane Filter Technique Using Phase Contrast Microscopy

REPORT PREPARED BY

G. W. Bott
Technical Center Industrial Hygiene Group

G. W. Bott

APPROVED BY

George Hurley
G. F. Hurley

GWB/sc

Attachment

RESULTS

<u>DATE</u>	<u>SAMPLE TYPE</u>	<u>TIME (MIN.)</u>	<u>ASBESTOS FIBERS FOUND</u>	<u>TWA</u>	<u>REMARKS</u>
1/15/80	G.H. Landers	60	4.4	3.3	Stripping insulation
1/15/80	M.E. Drake	60	3.2	2.4	Laborer
1/15/80	J.F. Chandler	60	1.5	1.1	Stripping insulation
1/15/80	T.G. Grant	45	1.6	1.2	Laborer
1/15/80	Third Level	70	0.4	-	Directly above work area
1/15/80	Second Level	60	0.8	-	Center of work area
1/15/80	First Level	72	0.03	-	Directly below work area

TWA was calculated assuming that stripping was done for six hours out of eight.

INTERNAL CORRESPONDENCE

MINOR AND PLASTICS

P. O. BOX 6361, SOUTH CHARLESTON, WEST VIRGINIA 25303

Mr. J. Byrd
Mr. G. F. Hurley
Mr. L. R. Noble
Mr. H. L. Reveal
Mr. H. L. Robinson

Date February 6, 1979
Originating Dept. Technical Center IH/EP
Subject Asbestos Monitoring at Sevin Shipping

INTRODUCTION On January 22, 1979, Messrs. C. C. Bragg and C. R. Lanier were monitored for exposure to asbestos during the removal of insulation from the flanges of a pipe line in Building 233, the Sevin Shipping area.

SUMMARY AND

CONCLUSIONS The asbestos concentrations in the breathing zones of the insulators were 7.75 and 5.37 fibers/cc while an area sample indicated a concentration of 0.3 fibers/cc. Both men wore respirators during the entire operation, but facial hair on each man possibly prevents an adequate seal. The OSHA ceiling limit for asbestos is 10 fibers/cc. The OSHA standard for an eight-hour time-weighted exposure is 2 fibers/cc. Due to the short exposure time (25 minutes), the insulators' TWAs would not exceed the OSHA standard without further exposure. However, in future operations where large amounts of water cannot be used to reduce emission of airborne asbestos fibers, a garden sprayer might be used since a finer spray and smaller volumes of water can be used.

DISCUSSION Mr. C. C. Bragg and Mr. C. R. Lanier wore personal samplers while removing insulation from the flanges of a pipe line in Building 233. Due to the storage of Sevin directly under the pipe line being worked on, the insulation could not be watered down during removal. Both men wore respirators. One man stripped the insulation while the other held a plastic bag directly under the flange to catch the insulation. The effectiveness of this procedure in keeping down airborne asbestos dust in the surrounding area was indicated by a sample taken eight feet below the first flange which showed a concentration of 0.3 fibers/cc. The personal samples indicated concentrations of 7.75 fibers/cc and 5.37 fibers/cc for a twenty-five-minute exposure. Further exposure was minimal since the pipe was to be

dismantled at the flanges and taken outside where it could be wetted with water before, during, and after removal.

DATA

<u>Date</u>	<u>Sample</u>	<u>Sampling Time</u>	<u>Air Conc. Fibers/cc</u>
01/22/79	C. C. Bragg	0855 - 0920	7.75
01/22/79	C. R. Lanier	0855 - 0920	5.30
01/22/79	Area Sample below first flange	0855 - 0920	0.30

REFERENCES

- (1) UCC C/P Industrial Hygiene Method 38C-29X4-R1a
- (2) 29 CFR 1910.1001

REPORT

PREPARED BY

W. F. Blythe, Jr.
Technical Center Industrial Hygiene Group



W. F. Blythe, Jr.

WFBjr/sc



INTERNAL CORRESPONDENCE

FILE COPY

CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

To (Name) Mr. P. W. Young
Division Building 2027
Location Institute Plant

Copy to Mr. G. F. Hurley
Mr. H. L. Robinson
Mr. E. C. Shipley
Mr. E. J. Tawney

Date July 6, 1979

Originating Dept. Technical Center IH/EP

Subject Asbestos - Stripping
Old Insulation

PROJECT

Survey for asbestos exposure of insulators stripping insulation from #3 turbine and approximately thirty feet of four-inch pipe in the basement of Building 17, Institute Plant.

DATE OF SURVEY

July 2, 1979

SUMMARY

Exposures were higher than expected for this demolition job; 0.50 and 1.0 fibers/cc for G. H. Landers and T. A. Crouch respectively. The job was completed within one hour so that sufficient data was not available for determining TWA's.

DISCUSSION

Construction insulators were asked to remove asbestos insulation from #3 turbine and approximately thirty feet of four-inch pipe in the basement of the water treatment plant for the #1 powerhouse. The building designation is Number 17.

The insulation was wet down with water as much as possible and every precaution to reduce asbestos exposure to employees was followed. The precautions included; wearing approved disposable dust respirators, coveralls, gloves and bagging and labeling of stripped insulation for landfill.

RECOMMENDATION

The best control for asbestos exposure is wetting the material down before demolition starts and to follow the outline prescribed in the Construction Department Safety Procedure Manual, Section VIII, Procedure #22.

RESULTS

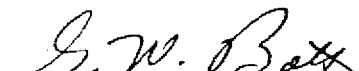
<u>Date</u>	<u>Personnel</u>	<u>Time</u>	<u>Liters of Air</u>	<u>Exposure Fibers/cc</u>
07/02/79	G.H. Landers	0822-0922	120	0.50
07/02/79	T.A. Crouch	0822-0922	120	0.98

REFERENCES

Volume 38C-29X4-R1a Asbestos, Dust Determination By Membrane
Filter Technique Using Phase Contrast Microscopy

REPORT PREPARED BY

G. W. Bott
Technical Center Industrial Hygiene Group


G. W. Bott

APPROVED BY


G. F. Hurley

GWB/sc



INTERNAL CORRESPONDENCE

FILE COPY

CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

to (Name)	Mr. D. L. Johnson	Date	June 4, 1979
Division	Mr. E. C. Shipley	Originating Dep:	Technical Center IH/EP
Location	Mr. E. J. Tawney		
Copy to	Mr. L. R. Noble	Subject	Asbestos Monitoring

PROJECT

Monitor employee exposure to asbestos during the removal of insulation in Building 5 at Institute.

DATE OF SURVEY

April 30, 1979

DISCUSSION

Personal samplers were worn by Mr. K. A. Neal and Ms. H. F. Beaver while removing insulation from piping in the east end of the first level of Building 5. All the insulators on this job wore Norton 7170 respirators. The insulation had a layer of dust sitting on it. Although some water was used to wet the insulation during removal, enough dust was generated to interfere in the analysis of asbestos. The sample worn by Ms. Beaver was voided while the one on Mr. Neal indicated an asbestos concentration of 1.85 fibers/cc. The OSHA permissible exposure limit for an eight-hour time-weighted average (TWA) exposure is 2 fibers/cc.

CONCLUSION

Since this job did not take eight hours, Mr. Neal's TWA would be less than 1.85 fibers/cc and below the OSHA limit. However, the amount of dust and asbestos in the air indicates the need to use more water before, during and after the stripping of insulation.

REFERENCES

UCC C&P Industrial Hygiene #38C-29X4-R1A
29 CFR 1910.1001

UCC 024535

6/4/79

REPORT PREPARED BY

W. F. Blythe, Jr.
Technical Center Industrial Hygiene Group

W. F. Blythe Jr.

W. F. Blythe, Jr.

APPROVED BY

George Harley
G. F. Harley

WFB Jr/sc

file asbestos - Construction
MEMO

(JAN) FEB. MAR. APR. MAY JUN. JUL. AUG. SEP. OCT. NOV. DEC.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

TO _____

FROM John J. A. Byrd

SUBJECT asbestos & Construction



150 ft. asbestos stripping $\frac{3}{4}$ " line
1 hour time

Levin Shipping

outside

1-29-79

will wet down

provide masks

properly bag



CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

Name:	Mr. D. L. Johnson	Date	March 29, 1979
Sign	Mr. E. C. Shipley	Originating Dept.	Technical Center IH/EP
ation	Mr. E. J. Tawney		
by to	Mr. L. R. Noble	Subject	Asbestos Monitoring at Institute
	Mr. H. L. Robinson		

PROJECT

Monitor exposure of insulators to asbestos during the removal of insulation from a 3" steam line in East Area Complex Six.

DATE OF SURVEY

March 17 and 19, 1979

DISCUSSION

Construction insulators J. F. Sampson and G. P. Hall wore personal samplers while removing sections of insulation from a 3" steam line which crossed the road approximately 15 feet above the ground. The area below the insulators was evacuated initially with some walk-through traffic later. The insulators wore respirators during the entire operation. The insulation was not wetted with water during removal. The personal samples indicated asbestos concentrations of 3.4 and 1.7 fibers/cc. When it was determined that another section of insulation needed removed, more personal samples were taken. This time the air concentrations were 2.9 fibers/cc and 0.7 fibers/cc.

On March 19, 1979, Mr. J. F. Sampson and Mr. D. L. Carpenter wore respirators and personal samplers while removing insulation from the steam line which was taken down on the 17th of March. The insulation was wetted with water before and during removal. The air concentration indicated by the samplers were 0.2 fibers/cc and 0.4 fibers/cc. An area sample twenty feet downwind from the operation showed a concentration of 0.01 fibers/cc. The OSHA standard sets a ceiling limit for a 15-minute exposure of 10 fibers/cc and a limit of 2 fibers/cc for an eight-hour time-weighted average exposure.

3/29/79

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The exposures of the insulators were below the OSHA permissible exposure limits. Exposure requirements of the OSHA standard may be more easily satisfied by the use of wet methods to prevent emission of airborne asbestos fibers. One way to do this is the use of garden sprayers to wet asbestos-containing insulation in locations inaccessible to water hoses.

Also, in order to better protect other employees in the area from exposure to excessive concentrations of airborne asbestos fibers, barricade tape and warnings signs should be posted around every asbestos job. It may be useful to have stands made to which the tape and signs could be fastened.

DATA

<u>Date</u>	<u>Sample</u>	<u>Sampling Time</u>	<u>Air Conc. (F/cc)</u>
3/17/79	J. F. Sampson	0830 - 0940	3.4
3/17/79	J. F. Sampson	1023 - 1038	1.7
3/17/79	G. P. Hall	0830 - 0940	0.7
3/17/79	G. P. Hall	1021 - 1038	2.9
3/17/79	Area	0835 - 1040	0.3
3/19/79	J. F. Sampson	0850 - 0938	0.2
3/19/79	D. L. Carpenter	0850 - 0938	0.4
3/19/79	Area	0853 - 0940	0.01

REFERENCES

UCC C/P Industrial Hygiene #38C-29X4 - R1A
OSHA 29 CFR 1910.1001

REPORT PREPARED BY

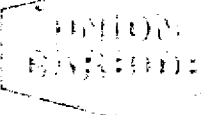
W. F. Blythe, Jr.
Technical Center Industrial Hygiene Group

W. F. Blythe Jr.

W. F. Blythe, Jr.

APPROVED BY

George Hurley
G. F. Hurley



INTERNAL CORRESPONDENCE

FILE COPY

CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

To (Name) Mr. J. R. Hall
Division Building 202 (514)
Location

Date March 27, 1980

Originating Dept. Technical Center IH/EP

Copy to Mr. G. F. Hurley
Mr. B. Y. Lett
Mr. H. L. Reveal
Mr. C. E. Richardson
Mr. H. L. RobinsonSubject Asbestos Monitoring, South
Charleston PlantPROJECT

Monitor Construction employees for exposure to asbestos.

DATE OF SURVEY

March 20, 1980

DISCUSSION

Two Construction insulators and two laborers removed asbestos insulation from approximately sixty feet of pipe in a rack south of Building 103. One insulator, Mr. M. L. Finney, and one laborer, Mr. D. W. Barnett, wore personal samplers. Both insulators and one of the laborers wore respirators. The insulation was wetted before and during removal and dropped to the ground where it was bagged up by the laborers. Mr. Finney's exposure was 0.6 fibers/cubic centimeters (cc) for the eighty-four minute duration of the job which would give a 0.1 f/cc eight-hour time-weighted average (TWA). Mr. Barnett's exposure and TWA was less than 0.1 f/cc. These exposures are below the OSHA permissible exposure limit of 2 f/cc for an eight-hour TWA.

To best control emissions of asbestos fibers the insulation should be bagged as close to the removal site as possible. It is not good practice to drop insulation to the ground from any height.

REPORT PREPARED BY

W. F. Blythe, Jr.

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

FILE COPY

TO: J. R. Hall, 202-1

Computer Ref. W-1042CC: K. O. Hopkins, 400-1
G. F. Hurley, 701-334
B. Y. Lett, 202-1H. L. Reveal, 202-1
C. E. Richardson, 400
H. L. Robinson, 701-401PERSON MONITORED T. J. KennedyLocation Northeast of Bldg. 36 on Date 4/16/80
Pipe Rack, So. Charleston Plant

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > 5 $\mu\text{m}/\text{cm}^3$ 1.34 5 $\mu\text{m}/\text{cm}^3$	150 minutes	A.M. - Stripping and bagging insulation
2	fibers > 5 $\mu\text{m}/\text{cm}^3$.42 5 $\mu\text{m}/\text{cm}^3$	125 minutes	P.M. - Stripping and bagging insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) 0.5 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping and bagging approximately 200 feet Unibestos on pipe rack northeast of Building 36 at South Charleston Plant. Mr. Kennedy wore coveralls, gloves, and a disposable Norton dust respirator during the stripping. A Hudson garden sprayer was used to wet the insulation but it didn't seem adequate for such a large stripping job.

WORK BY

Ruth Clise

APPROVED BY

G. F. Hurley

UCC 024541

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS**FILE COPY**

TO: J. R. Hall, 202-1

Computer Ref. W-1042CC: K. O. Hopkins, 400-1
G. F. Hurley, 701-334
B. Y. Lett, 202-1H. L. Reveal, 202-1
C. E. Richardson, 400
H. L. Robinson, 701-401PERSON MONITORED M. SmithLocation Northeast of Bldg. 36 on Date 4/16/80
Pipe Rack, So. Charleston Plant

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers .13 5 $\mu\text{m}/\text{cm}^3$	155 minutes	A.M. - Bagging insulation and cleaning area
2	fibers .07 5 $\mu\text{m}/\text{cm}^3$	125 minutes	P.M. - Bagging insulation and cleaning area
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) 0.06 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Bagging insulation in plastic bags and cleaning up the area. Bagged insulation was loaded on a truck for disposal at the landfill. Ms. Smith wore coveralls, gloves, and a disposable Norton dust respirator during the bagging.

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

UCC 024542

INDUSTRIAL HYGIENE MONITORING FOR

ASBESTOS

FILE

TO: J. R. Hall, 202-1

Computer Ref. W-1042CC: K. O. Hopkins, 400-1
G. F. Hurley, 701-334
B. Y. Lett, 202-1H. L. Reveal, 202-1
C. E. Richardson, 400
H. L. Robinson, 701-401PERSON MONITORED M. L. FinneyLocation Northeast of Bldg. 36 on Date 4/16/80
Pipe Rack, So. Charleston Plant

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .48 5 $\mu\text{m}/\text{cm}^3$	157 minutes	A.M. - Stripping & bagging insulation
2	fibers > .33 5 $\mu\text{m}/\text{cm}^3$	130 minutes	P.M. - Stripping & bagging insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) 0.2 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping and bagging approximately 200 feet Unibestos on pipe rack north-east of Building 36 at South Charleston Plant. Mr. Finney wore coveralls, gloves, and a disposable Norton dust respirator during the stripping. A Hudson garden sprayer was used to wet the insulation but it didn't seem adequate for such a large stripping job.

WORK BY

Ruth Clise

APPROVED BY

G. F. Hurley

UCC 024543



514 SAFETY DEPT.

Asbestos

#2 = 634 LT. — 10-1-79

1 = 762 LT. — 10-2-79

2 = 760 LT. — 10-2-79

3 = 764 LT. — 10-2-79

Asbestos

PLANT 514

<u>DATE Collected</u>	<u>SAMPLE No#</u>	<u>Liters of Air</u>	<u>Count</u>	<u>Date Counted</u>	<u>Counted by</u>
10-1-79	# 2	634 liters	108 fibers/ 100 fields	10/4/79	DR Clise
10-2-79	# 1	762 liters	110 fibers/ 100 fields	10/4/79	DR Clise
10-2-79	# 2	760 liters	75 fibers/ 100 fields	10/4/79	Clise
10-2-79	# 3	764 liters	133 fibers/ 100 fields	10/4/79	Clise

$$\begin{aligned} 10-1-79 - \# 2 & \quad \frac{1.08 \times 855}{6.24 \times 634} = 0.2 \text{ fibers } 75 \mu\text{m}/\text{cm}^3 \\ 10-2-79 - \# 1 & \quad \frac{1.1 \times 855}{6.24 \times 762} = 0.2 \text{ fibers } 75 \mu\text{m}/\text{cm}^3 \\ 10-2-79 - \# 2 & \quad \frac{.75 \times 855}{6.24 \times 760} = 0.1 \text{ fibers } 75 \mu\text{m}/\text{cm}^3 \\ 10-2-79 - \# 3 & \quad \frac{1.33 \times 855}{6.24 \times 764} = 0.2 \text{ fibers } 75 \mu\text{m}/\text{cm}^3 \end{aligned}$$

AUDIT REPORT NO. WU-0089

FILE NO. 68

A T T E N T I O N

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Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.



FROM THE DESK OF
W. C. "Bill" Young
X-2434



To : Bill Bett

9/10/79

Re : asbestos sps / Plant 514

#1 - 3¹/₄ Liters Air = 0.67 fibers

#2 - 66 Liters Air = 0.32



Thanks,
Wey

Asbestos

<u>Collected</u>	<u>Liters of Air</u>	<u>Analyzed</u>	<u>Clise</u>	<u>Bott</u>
9-10-79 (1)	34 L.	9-11-79	52 fibers/100 counts	118/100
9-10-79 (2)	66 L.	9-11-79	76 fibers/100 counts	80/100
9-10-79 (B)	BLANK	9-11-79	1 fiber/100 counts	0

9-10-79 -1 $52 + 118 = \frac{170}{2} = 85$ $\frac{85}{100} = .85$ fibers

#1 $\frac{.85 \times 855}{.0318 \times 34 \times 1000} = .67$ fibers/mL > 5 cf

#2 $76 + 80 = \frac{156}{2} = 78$ $\frac{78}{100} = .78$

$\frac{.78 \times 855}{.0318 \times 66 \times 1000} = .52$ fibers/mL > 5 cf



FROM THE DESK OF
W. C. "Bill" Young
X-2434



LOC. 514 Asbestos Samples - 9/11/79

No. 1 - 160 Liters of Air

No. 2 - 160 "

No. 3 - 360 "

No. 4 - 360 "



Asbestos - 514

<u>Collected</u>	<u>Liters of Air</u>	<u>Analyzed</u>	<u>Clise</u>	<u>Bott</u>
9-11-79 #1	160	9-12-79	46 fibers/100 count	70/100
9-11-79 #2	160	9-12-79	25 fibers/100 fields	40/100
9-11-79 #3	360	9-12-79	125 fibers/100 fields	110/100
9-11-79 #4	360	9-12-79	136 fibers/100 fields	162/100

$$\#1 \quad \frac{46+70}{2} = 58 \div 100 = \frac{0.58 \times 855}{.0318 \times 160 \times 1000} = 0.1 \text{ fibers/ml} > 5 \mu$$

$$\#2 \quad \frac{25+40}{2} = 32.5 \div 100 = \frac{0.32 \times 855}{.0318 \times 160 \times 1000} = 0.05 \text{ fibers/ml} > 5 \mu$$

$$\#3 \quad \frac{125+110}{2} = 117.5 \div 100 = \frac{1.17 \times 855}{.0318 \times 360 \times 1000} = 0.09 \text{ fibers/ml} > 5 \mu$$

$$\#4 \quad \frac{136+162}{2} = 149 \div 100 = \frac{1.49 \times 855}{.0318 \times 360 \times 1000} = 0.11 \text{ fibers/ml} > 5 \mu$$

AUDIT REPORT NO. WV 0594

FILE NO. 67

A T T E N T I O N

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Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.



514 SAFETY DEPT.



Asbestos Samples 9-18-79

- 1- 654 LITERS
- 2- 650 "
- 3- 630 "
- 4- 630 "
- 5- 628 "
- 6- 520 "

Asbestos Plant 514

DATE	SAMPLE No.	Liters of Air	DATE ANALYZED	CLUSE	NOTE
9-18-79	# 1	654	9-20-79	101 fibers/39 fields = 259 fibers/100 fields	
9-18-79	# 2	650	9-20-79	70 fibers/100 fields	
9-18-79	# 3	630	9-20-79	59 fibers/100 fields	
9-18-79	# 4	630	9-20-79	2 fibers/100 fields	
9-18-79	# 5	628	9-20-79	48 fibers/100 fields	
9-18-79	# 6	520	9-20-79	1 fiber/100 fields	

$$\#1 \quad \frac{2.59 \cdot 855}{6.24 \cdot 654} = 0.5 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

$$\#2 \quad \frac{.7 \cdot 855}{6.24 \cdot 650} = 0.1 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

$$3 \quad \frac{.59 \cdot 855}{6.24 \cdot 630} = 0.1 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

$$4 \quad \frac{.02 \cdot 855}{6.24 \cdot 630} = < 0.01 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

$$5 \quad \frac{.48 \cdot 855}{6.24 \cdot 628} = 0.1 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

$$6 \quad \frac{.01 \cdot 855}{6.24 \cdot 520} = < 0.01 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$



CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

(Name)	Mr. D. R. Paugh	Date	August 25, 1977
ision	Mr. H. H. Price	Originating Dept.	IH/EP
ation	Mr. W. V. Filipek		
by to	Mr. J. W. Biddle	Subject	Asbestos Monitoring at the
	Mr. G. F. Hurley		South Charleston Plant
	Mr. W. C. Young		

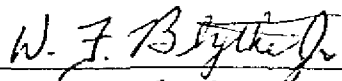
Gentlemen:

On August 8, 1977, air samples were taken during the removal of insulation (possibly containing asbestos) on top of a furnace at the mainland powerhouse. The insulation was wet, which should significantly reduce emission of airborne dust. During the operation, Mr. C. C. Bragg and Mr. C. N. Cunningham wore personal sampling pumps and an area sample was also taken. All the men on the job wore respiratory protective equipment.

The sample results, attached, show that the concentration of asbestos fibers complies with the current OSHA eight-hour, time-weighted average of two fibers, longer than five micrometers, per cubic centimeter of air and also complies with the ceiling concentration of ten fibers per cubic centimeter of air.

The above air samples were sampled and analyzed by phase-contrast microscopy using Union Carbide Corporation, Chemicals and Plastics Industrial Hygiene Handbook Method Number 38C-29X4-R1a. This method is identical to the procedures used by NIOSH, the organization responsible for developing methods specified by OSHA.

If we can provide additional assistance, please contact us.


W. F. Blythe, Jr.

WFB Jr/mac

Attachment

DATE	EMPLOYEE	SAMPLING TIME (MIN)	CONCENTRATION (FIBERS/CC)	TWA (FIBERS/CC)
08/08/77	J. N. Cunningham	0842 - 0955 (73)	0.34	0.25
08/08/77	C. C. Bragg	0838 - 0955 (75)	1.55	1.16
08/08/77	Area Sample	0845 - 0955 (70)	0.22	---



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 2009
Location 512
Area

Date August 25, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. J. Agosti - 2009/512
B. H. Avashia, M.D. - 23/512
W. L. Browning - 2009/512
R. E. Coyner - 2009/512
C. M. Hutsenpillir, Jr. - 77/512
S. E. Illikainen - 2-228/512
C. P. Maxwell - 701/2
B. R. McMakin - 2009/512
R. J. Romagnoli - 303/101

Attached are the results of asbestos monitoring for three days at the Cellosize Unit (Bldgs. 79 and 77) after the contamination of asbestos caused by a Heist blasting operation in the area south of building 77. All samples are well below the action level of 0.1 fiber/cc except the maintenance lunchroom area sample of building 77, collected on July 30, 1987. This sample was suspected of being "contaminated" as no other samples showed high levels of asbestos. In addition, two samples of dust collected off the air conditioner ledge and filter (approx. 3 feet from where the air sample was taken) were reported as nil for asbestos content as reported to this writer by the Institute Plant maintenance coordinator. The air conditioner was operating all day.

The personal exposure samples were below the 0.2 fiber/cc permissible exposure level standard per OSHA 29CFR 1926.58 and the action level of 0.1 fiber/cc as per the same standard.

Employees wore no street clothes, two pair of coveralls, headcover, boots, gloves and an AO R57-A HEPA half-face cartridge respirator. They showered before lunch and at the end of the workday before leaving plant.

August 25, 1987

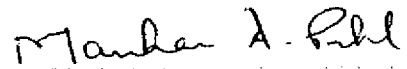
Please inform C. E. Rose, D. W. Brogan and R. J. Smith of their exposure monitoring results as soon as possible. Have them sign and date this report and return it to M. A. Patel at Building 701-330.

If you have any questions or we can be of further assistance call us on extension 6485 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover & H. J. Kimble


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2632P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TwAg fibers/cc</u>	<u>COMMENTS</u>
7/30/87	AREA	6hrs 17min	0.011		30 feet west of southwest corner of Bldg. 77 at barricade at breathing zone level.
7/30/87	AREA	6hrs 20min	> *0.886		In maintenance lunch room of Bldg. 77 on refrigerator at breathing zone level.
7/30/87	AREA	6hrs 13min	0.004		Under Cellosize Unit pipe half way on the east-west run at cooler on north side at breathing zone level.
7/31/87	AREA	9hrs 8min	0.022		In lunchroom of Bldg. 77 on refrigerator at breathing zone level.
7/31/87	AREA	3hrs 1min	0.007		30 feet west of southwest corner of Bldg. 77 at barricade at breathing zone level.
7/31/87	AREA	8hrs 40min	0.004		At doghouse (unloading shack) on south side of Bldg. 77 1 foot east of barricade at breathing zone level.
7/31/87	Personal/ C. E. Rose	5hrs 12min	0.010	0.006	Insulator was HEPA vacuuming equipment and structure in toolroom of Bldg. 77 and shop area.
8/1/87	Personal/ D. W. Brogan	7hrs 40min	0.008	0.009	Insulator was HEPA vacuuming equipment and structure in toolroom of Bldg. 77 and shop area.
8/1/87	Personal/ R. J. Smith	13hrs 16min	0.008	0.013	Insulator was HEPA vacuuming equipment and structure in toolroom of Bldg. 77 and shop area.
8/1/87	AREA	13hrs 17min	0.003		At barricade outside door to maintenance toolroom in Bldg. 77 shop area.

*See note in cover letter.

2632P



INTERNAL
CORRESPONDENCE

IH FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To: H. E. Rucker
Division: 512
Location: 2009
Area:

Date: September 18, 1987

Originating Dept: EM&TS - HS&EA

Area: Industrial Hygiene

Subject: Asbestos Exposure Monitoring

Copy to:
B. H. Avashia, M.D. - 512/23
W. L. Browning - 512/2149
R. E. Coyner - 512/2009
C. M. Huttenpillir, Jr. - 512/77
S. E. Illikainen - 512/2
C. P. Maxwell - 511/701-2
B. R. McMakin - 512/2009
R. J. Romagnoli - 512/303

Attached are the results of the seven days of asbestos monitoring, while completing the cleanup at Cellosize Building 77. This included the storeroom, maintenance shop, equipment and tools, maintenance lunchroom, the backroom off of the shop, the electrical switchrack room, the mezzanine and the outside area south of building 77. The rooms inside the building were sealed as much as possible and air was continuously exhausted through HEPA filters.

All area and personal samples for the final seven days of monitoring were below the 0.2 fiber/cc permissible exposure level standard per OSHA asbestos standard 29CFR 1926.58 and were below the 0.1 fiber/cc action level per the same standard.

Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R57-A HEPA half-face cartridge respirators. They showered before meals and at the end of the workday before leaving plant.

Please inform G. F. Sowards, J. C. Coyner, S. R. Erskine, D. W. Brogan and M. L. Wallace of their exposure monitoring results as soon as possible. Have them sign and date this report and return it to M. A. Patel at Building 701-330.

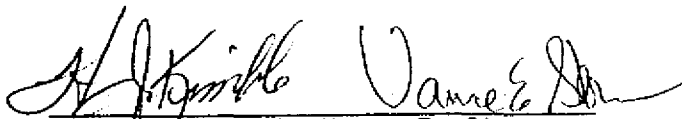
September 18, 1987

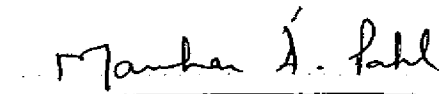
Please commend all the employees involved in this job for an outstanding performance under difficult conditions.

If you have any questions or we can be of further assistance, call us on extension 3750 or 6485.

WORK BY:

APPROVED BY:


H. J. Kimble & Vance E. Stover


Manhar A. Patel

Attachment

HJK:VES:MAP:rab
2699P

Comp. Ref:
W2286 W2287
W2288 W2289
W2290 W2291
W2292

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
8-2-87	Personal/ G. F. Sowards	542 min	0.013	0.015	Cleaning Building 77 Storeroom and equipment.
8-2-87	Area	541 min	0.013	-	Building 77 - Four feet from east wall of maintenance shop at breathing level.
8-2-87	Area	540 min	0.009	-	Building 77 - On south wall by double doors at entrance to maintenance shop.
8-3-87	Personal/ J. C. Coyner	447 min	0.018	0.017	Cleaning Building 77 Storeroom and equipment.
8-3-87	Area	440 min	0.016	-	Building 77 - Breathing zone level at entrance to decontamination chamber shop.
8-3-87	Area	438 min	0.014	-	Four feet from east wall of maintenance shop of Building 77 - breathing zone level.
8-4-87	Personal/ S. R. Erskine	451 min	0.020	0.019	Cleaning beam and overhead ledges in Building 77 maintenance shop.
8-4-87	Area	452 min	0.012	-	Four feet from east wall of maintenance shop of Building 77 - breathing zone level.
8-4-87	Area	332 min	0.010	-	Building 77 Shop - Breathing zone level at entrance to decontamination chamber.
8-4-87	Area	121 min	0.008	-	Building 77 - Breathing zone level in #5 switchrack Electrical Room over 508 transformer after room was cleaned and vacuumed.

Comp. Ref:
W2286 W2287
W2288 W2289
W2290 W2291
W2292

ASBESTOS EXPOSURE MONITORING

(continued)

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
8-5-87	Area	437 min	0.069	-	Building 77 - At entrance to decontamination chamber, breathing zone level.
8-5-87	Area	453 min	0.069	-	At breathing zone level in toolroom shop of Building 77 by door.
8-5-87	Personal/ D. W. Brogan	458 min	0.062	0.059	Cleaning toolroom shop of Building 77.
8-10-87	Personal/ M. L. Wallace	365 min	0.065	0.042	Final cleaning in toolroom and shop area of Building 77, wire brushing and vacuuming.
8-10-87	Area	365 min	0.064	-	Backroom of Building 77 shop area at outside wall, breathing zone level.
8-10-87	Area	366 min	0.067	-	Breathing zone level at east wall of main shop area of Building 77.
8-13-87	Personal/ M. L. Wallace	444 min	0.034	0.032	Cleaning area and equipment in Mezzanine of Building 77.
8-13-87	Personal/ D. W. Brogan	445 min	0.037	0.035	Cleaning area and equipment in Mezzanine of Building 77.
8-13-87	Area	446 min	0.015	-	At inlet to HEPA exhaust in Mezzanine of Building 77.
8-20-87	Personal/ J. C. Coyner	440 min	0.012	0.011	Cleaning up slag south of Building 77 and putting in fiber paks.
8-20-87	Area	445 min	0.008	-	At breathing zone level at southwest corner of regulated area while cleaning up slag south of Building 77.

2699P

UCC 024562

AUDIT REPORT NO. WM-0039

FILE NO. 74

A T T E N T I O N

This document has been identified as one which may relate to the manufacture, use, sale or health effects of asbestos or asbestos-containing products in connection with Union Carbide's defense of asbestos litigation. The document may be reproduced as needed, but should not be destroyed. If it is judged to be of no further value to this file, the document should be sent to the Danbury office, attention of S. D. Conner. The File No. and Audit Report No. must accompany the document

Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location
Area

Date April 3, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/33
J. W. Barna - 2009/6
W. L. Browning - 2009
R. E. Coyner - 2009
T. L. Grittie - 380
C. P. Maxwell - 701/2
B. R. McMakin - 2009

Attached are the results of the asbestos exposure monitoring performed on construction employees by the site IH personnel at the Sistersville Plant. Employees were monitored over a three day period while repairing and covering asbestos insulation on the stills in the rectification area of the Sistersville Plant.

Employees were equipped with coveralls, boots, gloves, and head cover. In addition employees were supplied air respirator on the first day and HEPA cartridge equipped respirator for rest of the period during the repair work.

The monitoring results indicate that the exposure levels were well below the 0.1 fiber/cc Action Level standard established by OSHA.

Please inform the monitored employees of their exposure monitoring results as soon as possible. Also, have all monitored employees to sign and date this report and return to M. A. Patel, Building 701-330, Technical Center.

If you have questions, please feel free to call me at extension 3750.


Manhar A. Patel

Attachment
MAP:rab
2214P

UCC 024564

ASBESTOS EXPOSURE MONITORING

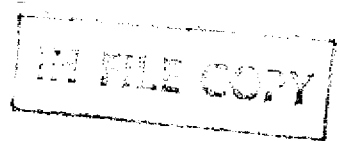
SISTERSVILLE PLANT

<u>Date</u>	<u>Sample Type Employee Name</u>	<u>Sampling Time - Min.</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
1-9-87	C. E. Rose	55	<0.02	-	Repairing/covering insulation on the stills in the Rectification area.
1-9-87	D. R. Samples	53	0.01	-	Repairing/covering insulation on the stills in the Rectification area.
1-12-87	J. C. Hubbard	201	0.002	-	Repairing/covering insulation on the stills in the Rectification area.
1-13-87	T. K. Miller	290	0.03	-	Repairing/covering insulation on the stills in the Rectification area.
1-13-87	J. A. Casto	294	0.04	-	Repairing/covering insulation on the stills in the Rectification area.

2214P

UCC 024565

UNION CARBIDE CORPORATION
TECHNICAL CENTER
SOUTH CHARLESTON, WEST VIRGINIA



MEMORANDUM

November 26, 1984

TO: J. W. Karn
Sistersville Plant

COPY: B. H. Avashia, M.D.
J. W. Barna
C. P. Maxwell
R. L. Noble
D. R. Paugh
M. A. Patel
H. H. Price
R. G. Rowe, M.D.
K. E. Williams

FROM: M. F. Stowers/R. E. Peele

SUBJECT: Asbestos Monitoring at Sistersville Plant

Attached are the results of asbestos exposure monitoring conducted on May 23, 1984 while construction employees stripped approximately 1600 ft.² of insulation from a boiler at the Powerhouse.

Sampling was done during both morning and afternoon work sessions. A heavy rain fell during the first hour of morning sampling (9:30 a.m. - 10:30 a.m.). During the second hour the rain gradually tapered off until it finally stopped and the sun came out at the end of the morning work period (11:30 a.m.). The weather continued to be warm and sunny throughout the afternoon work session which was begun following the lunch break.

All samples were found to contain levels of asbestos fibers below the present permissible exposure limit of 2.0 fibers per c.c. of air. It may be noticed that fiber concentrations in the afternoon samples are considerably higher than in the morning samples. This is undoubtedly due to the heavy rain experienced during the morning work session. During the afternoon session, portable sprayers were used to wet the insulation. All employees were protected by the use of respirators, gloves, and coveralls during both work sessions. Although all samples were below the present permissible exposure limit (two fibers/c.c.), it is possible that a new OSHA standard may be issued which would reduce the permissible exposure limit to 0.2 or 0.5 fibers per c.c. of air. If this were the case, then all but one of the afternoon samples would be in excess of permissible exposure. It would be advisable to attempt reduction of exposure as much as possible in anticipation of the new standard.

Please notify all employees involved with the job of their exposure results. If we can be of further assistance please contact us on extension 5129.

Work by: Mario F. Stowers
Mario F. Stowers

Approved by: R. E. Peele
R. E. Peele

UNION CARBIDE CORPORATION
TECHNICAL CENTER
SOUTH CHARLESTON, WEST VIRGINIA



MEMORANDUM

June 20, 1984

FILE COPY

TO: J. W. Karn
Sistersville Plant

COPY TO: B. H. Avashia, M.D.
J. W. Barna
M. W. Bosserman
C. P. Maxwell
R. L. Noble
D. R. Paugh
R. E. Peele
H. H. Price
R. G. Rowe, M.D.

FROM: M. A. Patel

SUBJECT: Asbestos Monitoring at Sistersville Plant

Dear Jack:

Attached are the results of asbestos exposure monitoring conducted in the Steam Plant, third level and in Polymer 2, Building 48, at the Sistersville Plant, while the Construction Department employees stripped insulation on April 2 and 25, 1984. The monitoring part of the survey was done by the Sistersville Plant Industrial Hygiene group and the analysis of the samples were done in our group at the Technical Center.

The monitoring results for Building 48 show rather high levels of asbestos fibers in the work environment. Since the employees were adequately protected by respirators, gloves, and coveralls, the actual exposure of employees did not occur. However, we must do all we can to reduce the level of asbestos fibers in air to well below the permissible exposure level. At present we have 2.0 fibers per c.c. of air as a permissible exposure level. OSHA is working on a standard which would require us to reduce the exposure levels to either 0.2 or 0.5 fibers per c.c. of air. While it cannot be ascertained what caused high levels in the air, we recommend a closer look at the asbestos wetting technique and repeat monitoring as soon as we can.

Please communicate the exposure results to all employees working on the job and if I can be of further assistance, feel free to give me a call on extension 3750.

A handwritten signature in dark ink, appearing to read "Manhar A. Patel". The signature is written in a cursive, flowing style.

Manhar A. Patel

MAP:nt
3438A

UCC 024568

Personal Exposure Monitoring for Asbestos

at Sistersville Plant

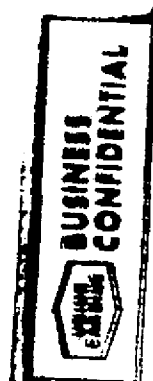
<u>Sample No.</u>	<u>Date</u>	<u>Name/Location</u>	<u>Sampling Time</u>	<u>Fibers/c.c.</u>	<u>Comments</u>
1	5-23-84	R. D. Deweese Powerhouse; Scaffold level	2 hrs. 5 min. (125 min.)	0.17	Insulator; stripped insulation from boiler; morning sample.
2	5-23-84	R. D. Deweese Powerhouse; Scaffold level	2 hrs. 10 min. (130 min.)	0.98	Insulator; stripped insulation from boiler; afternoon sample.
3	5-23-84	C. H. Fox Powerhouse; Scaffold level	2 hrs. 5 min. (125 min.)	0.08	Laborer; Bagged insulation as soon as stripped; morning sample
4	5-23-84	C. H. Fox Powerhouse; Scaffold level	2 hrs. 40 min. (160 min.)	0.45	Laborer; Bagged insulation as soon as stripped; afternoon sample
5	5-23-84	H. P. Stewart Powerhouse; Scaffold level	2 hrs. 10 min. (130 min.)	0.15	Insulator; Stripped insulation from boiler; morning sample
6	5-23-84	H. P. Stewart Powerhouse; Scaffold level	1 hr. 30 min. (90 min.)	0.67	Insulator; Stripped insulation from boiler; afternoon sample
7	5-23-84	R. L. Pauley Powerhouse; Scaffold level	-	-	Insulator; Sample lost during morning work period.
8	5-23-84	L. R. Shaffer Powerhouse; Scaffold level	1 hr. 30 min. (90 min.)	0.60	Insulator; Stripped insulation from boiler; afternoon sample

Note: R. L. Pauley was replaced by L. R. Shaffer for the afternoon work period. Pauley took 1/2 day vacation and was not available for monitoring in the afternoon.

AREA AND PERSONAL EXPOSURE MONITORING FOR ASBESTOS

AT THE SISTERSVILLE PLANT

No.	Date	Name/Location	Sampling Time Minutes	Air. Conc. Fibers/c.c.	Comments
1	4/2/84	R. L. Pauley Steam Plant	66	0.48	Stripping Insulation 3rd Level
2	4/2/84	Area Steam Plant	65	0.36	3rd Level
3	4/25/84	L. R. Shaffer Polymers 2 Building 48	35	1.86	Stripping Insulation Ground Level SW Corner
4	4/25/84	H. D. Anderson Building 48	34	3.31	Bagging Insulation at Ground Level SW Corner



INTERNAL
CORRESPONDENCE

FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 5361, SOUTH CHARLESTON, WV 25303

A. G. Olds
Sistersville Plant

DATE July 12, 1982

TO: 511 Industrial Hygiene/
Environmental Protection

R. E. Peele (letter only)

RE: Asbestos Analysis
for Loc. 380

Dear Mr. Olds:

Attached are the computer data sheets filled out for the analyses of three filter cassettes you submitted to us for asbestos analysis on June 17, 1982.

If I can be of further assistance, please give me a call on extension 3750.

Very truly yours,

Manhar A. Patel

Manhar A. Patel

MAP/sc

Attachment

UCC 024571

See inside cover for instructions

INDUSTRIAL HYGIENE PUNCH CARD

DATA SHEET NO.	PLANT	MO. DAY YR.	SAMPLER	PROCESS NO.	BLDG. OR ZONE	ROOM OR LEVEL	ADD'L. QUALIFICATIONS
1	5380061082 HGR	9 10 19	15 16	24 AIDS NO. 29 30 31	55 56	61 62	75 77 78 79 80
W	RECTIFICATION AREA	RECTIFICATION AREA	RECTIFICATION AREA	RECTIFICATION AREA	RECTIFICATION AREA	RECTIFICATION AREA	RECTIFICATION AREA

TEMPERATURE AM	70	BAROM. PRESS. AM	RELATIVE HUMIDITY	WEATHER CONDITIONS	77 78 79 80
PM		PM		cloudy	1 1 1 0

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PERSONNEL DATA										ANALYTICAL DATA																
LAST					NAME					CONTAMINANT					REFERENCE											
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INDUSTRIAL HYGIENE WORKPLACE SAMPLING SUPPLEMENTAL COMMENTS

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Z-3732
Z-3733
Z-3734

LINE NO.												UPDATE																																																																																																								
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MAINTENANCE													INSULATOR													WORE COMFO													INSULATOR													W/TYPE													H. ULTRA FILTER													201																																						
COLUMN NEAR													TOP IN													RECTIFICATION													TOWER													ASBESTOS													INSULATION													OFA													S-15													101												
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SAMPLED													10 FT													NORTH OF													S-15													COLUMN/WIND													TO NORTH.													221																																						

SIGNATURE												DATE
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USED MILLIPORE FIELD MONITORS

PORE SIZE 0.8μ

LOT HOD62302A

AVERAGE BACKGROUND COUNT

5-25 μ	>25 μ	FIBERS
9	2	0



INTERNAL
CORRESPONDENCE

IH FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) W. V. Filipek
Division 514-5516
Location
Area

Date July 23, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia - 512/23
W. L. Browning - 2009
C. N. Cunningham - 2009
K. O. Hopkins - 5516
C. P. Maxwell - 701/2
B. R. McMakin - 2009

Attached are the results of asbestos monitoring for one day at the South Charleston Plant while removing asbestos from a line in pipe rack north of Building 250. Approximately 44 feet of line was stripped from a 4-inch product line. A mini-enclosure was used on a valve and 8 feet of line at ground level. Amended water was used throughout the abatement project.

Both personal exposure samples were below 0.2 fiber/cc permissible exposure level standard per OSHA asbestos standard 29CFR 1926.58. One personal sample was above the action level of 0.1 fiber/cc. Exposure monitoring may not be required in some instances where supplied air respirators in positive pressure mode are being used for asbestos abatement projects. We encourage use of supplied air respirators whenever possible.

The area sample just outside the barricaded area showed less than a measurable amount of asbestos.

Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R57-A HEPA half-face cartridge respirators. They showered before lunch and at the end of the workday before leaving plant.

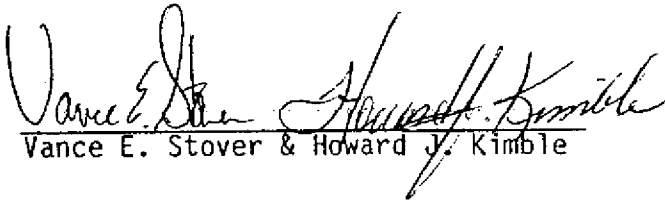
Please inform S. M. Barker and J. R. Chandler of their exposure monitoring results as soon as possible. Have them sign and date this report and return it to M. A. Patel at Building 701-330.

July 23, 1987

If you have any questions or we can be of further assistance call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover & Howard J. Kimble


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2523P

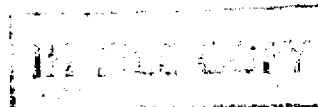
ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWA₈ fibers/cc</u>	<u>COMMENTS</u>
5-19-86	Personal/ S. M. Barker	6hrs 10min	0.174	0.134	Stripped, bagged and vacuumed approx. 44 feet of line north of Bldg. 250.
5-19-86	Personal/ J. R. Chandler	6hrs 9min	0.061	0.047	Stripped, bagged and vacuumed approx. 44 feet of line north of Bldg. 250.
5-19-86	AREA	6hrs 7min	<.007	<.005	At northeast corner of barricade (downwind) at breathing zone level.

2523P



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	H. E. Rucker	Date	March 19, 1987
Division	512/2009	Originating Dept.	EM&TS - HS&EA
Location		Area	Industrial Hygiene
Area		Subject	<u>Asbestos Exposure Monitoring</u>
Copy to	B. H. Avashia, M.D. - 512/23 J. W. Barna - 2009/6 W. L. Browning - 2009 W. V. Filipek - 5515 C. P. Maxwell - 701/2 B. R. McMakin - 2009 J. H. Parsons - 2281 W. J. Vincent - 514/109		

Attached are the results of the Asbestos exposure monitoring performed on insulators in the South Charleston Plant, Building 106. They were monitored over a 3 day period while using glove bags to remove asbestos from several lines, horizontal and vertical.

Employees were equipped with 2 pair of coveralls, no street clothes, boots, gloves, head cover and either an AOR57A or Willson R12 Half-face, HEPA filter, respirator. The employees showered each day, before leaving the plant.

The monitoring results indicate that the exposure levels were well below the 0.1 fiber/cc Action Level, established by OSHA for an 8-hour workday (TWAg). We feel that the glove bag method is a very good way of controlling airborne fibers. However, we must be sure that the procedure is followed closely by each insulator using a Glove Bag.

Please inform J. R. Chandler, R. E. Coyner and S. M. Barker of their exposure monitoring results, as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

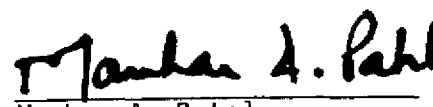
UCC 024578

If you have any questions or if we can be of further assistance,
please feel free to call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
2180P

Comp. Ref. W2158
W2160
W2161

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
3-11-87	Personal/ J. R. Chandler	6hrs 57min	0.0314	0.0273	Collected while stripping, along with 2 others, 40 feet of asbestos using glove bags.
3-12-87	Personal/ R. E. Coyner	7hrs 26min	0.034	0.0317	Collected while using glove bags to strip approx. 50 feet of asbestos, with 1 other insulator.
3-12-87	Personal/ S. M. Barker	7hrs 15min	0.0571	0.0531	Collected while using glove bags to strip approx. 50 feet of asbestos, with 1 other insulator.
3-12-87	Personal/ J. R. Chandler	7hrs 15min	0.0066	0.00598	Collected while retrieving bags and helping with vacuum - ground man.
3-13-87	Personal/ S. M. Barker	7hrs 9min	0.041	0.0366	Collected while stripping approx. 12 feet of asbestos using glove bags. Opened vacuum cleaner to change HEPA filter - had a few problems.

ASBESTOS

Permissible Exposure Level

TWAg	0.2	fibers/cc	OSHA
Action Level	0.1	fibers/cc	

2180P
rab

UCC 024580

AUDIT REPORT NO. WV-0041

FILE NO. 2

A T T E N T I O N

This document has been identified as one which may relate to the manufacture, use, sale or health effects of asbestos or asbestos-containing products in connection with Union Carbide's defense of asbestos litigation. The document may be reproduced as needed, but should not be destroyed. If it is judged to be of no further value to this file, the document should be sent to the Danbury office, attention of S. D. Conner. The File No. and Audit Report No. must accompany the document

Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8881 SOUTH CHARLESTON, W.V. 26061

To: J. M. Harbert

October 6, 1986

From:

Subject:

Re:

Reference:

HS&EA

Topic:

Industrial Hygiene

Copy to:

B. H. Avashia, M.D.

J. W. Barna

W. L. Browning

W. V. Filipek

K. O. Hopkins

C. P. Maxwell

Subject:

Asbestos Exposure Monitoring

- So. Chas. - 309

Attached are the results of the Asbestos exposure monitoring performed on R. G. Salisbury and D. M. Bourn on September 9, 1986 at the South Charleston plant's Building 309. The employees were monitored while stripping and bagging approximately 12-15 feet of Asbestos from a 1 inch line.

The employees were equipped with cloth coveralls and Tyvek disposable coveralls, boots, gloves, and a half-face respirator equipped with Willson R-12 HEPA filter cartridges. The Tyvek coveralls were removed and discarded before leaving the barricaded area and the employees showered upon completion of the job. They had no Asbestos exposure before or after this monitoring job on this day.

The monitoring results indicate that the levels were below the 0.2 fiber/cc Permissible Exposure Level (PEL), established by OSHA for an 8-hour workday (TWA₈). However, the levels were so close to the action level, 0.1 fiber/cc, that statistically the action level may or may not have been exceeded. Therefore, we must assume that the action level has been exceeded and take appropriate action to lower the exposure levels.

We recommend that more water be used (when possible) and extra care taken in bagging and cleaning the Asbestos.

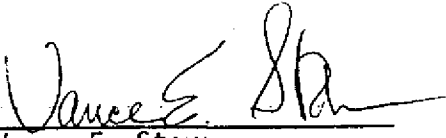
October 6, 1986

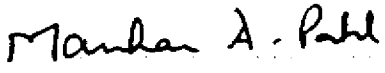
Please notify R. G. Salisbury and D. M. Bourn of their exposure monitoring results as soon as possible. Please have them sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please call us at extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
1780P

ASBESTOS EXPOSURE MONITORING

Corp. ref. W2029

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Job Title</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
9-9-86	Personal/ R. G. Salisbury	Laborer	1 hr 27 min.	0.526	0.095	Collected while spraying water behind the cutting knife and while bagging and cleaning up the Asbestos. Please note that this work was done inside of the building with all ventilation shut off.
9-9-86	Personal/ D. M. Bourn	Insulator	1 hr 26 min.	0.553	0.0991	Collected while stripping the 12-15 linear feet of Asbestos and helping with the clean up.
9-9-86	Area		1 hr 27 min.	0.0757	-	Collected inside of Building 309 locker room approximately 8-10 feet from where the Asbestos was stripped.

ASBESTOSPermissible Exposure LevelTWAg 0.2 fibers/cc OSHA

1780P



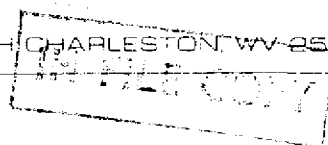
INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION

TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303



To (Name) G. W. Phares

Date November 22, 1985

Division

Originating Dept. HS&EA

Location

Area Industrial Hygiene

Area

Copy to B. H. Avashia, M.D.

Subject Asbestos Monitoring at
South Charleston Plant

J. H. Barna

J. A. Byrd

T. L. Collins

W. V. Filipek

C. P. Maxwell

M. L. Mills

L. R. Noble

D. R. Paugh

Attached are the results of asbestos exposure monitoring conducted on November 18, 1985 at the South Charleston polyols unit near Building 103. Construction employees stripped the insulation from a tank 13 feet in diameter and 30 feet tall.

The stripping and bagging was done by eight men, four were monitored. One man was monitored at the base of the tank while receiving and removing the bags of asbestos as they were lowered from the scaffold. A spray of water was used to wet the insulation and minimize dust. The area was barricaded and well posted for the asbestos hazard. All nine employees wore disposable respirators, disposable head covers, disposable coveralls, boots and solvex gloves. The protective equipment was removed upon leaving the barricaded area and used new equipment upon returning.

All samples were found to be well below the allowable exposure level of 2 fibers/cm³. This indicates that a good job is being done of controlling the amount of airborne dust by water spray, and bagging at the point of removal.

Please notify all employees of their exposure results. If we can be of further assistance, please contact us on extension 4779 or 3750.

WORK BY:

Vance Stover
Vance Stover

APPROVED BY:

Manhar A. Patel
Manhar A. Patel

0763P

UCC 024585

ASBESTOS MONITORING AT SOUTH CHARLESTON PLANT

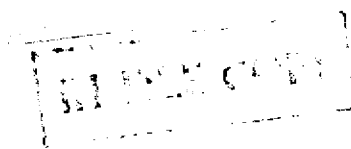
Date	Name/Location	Sampling Time Minutes	Air Conc. (Fibers/cc)	8 Hr-TWA (Fibers/cc)	Comments
11-18-85	R. L. Pauley	445	0.055	0.051	Monitored while stripping and bagging asbestos insulation.
11-18-85	K. A. Neal	448	0.112	0.105	"
11-18-85	J. C. Teetor	442	0.233	0.215	"
11-18-85	T. W. King	436	0.252	0.229	"
11-18-85	C. R. Brown	443	0.083	0.077	Monitored while receiving and removing bags after being lowered from scaffold.

Computer reference W 1856

0763P



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) R. W. Scoular
Division 701-400
Location 511
Area

Date July 20, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos - Background
Monitoring

Copy to
R. Brabbin - 701/1
P. D. Gossage - 701/4
J. E. Llana - 740/2
C. P. Maxwell - 701/2
R. E. McElowney - 770/2
R. G. Rowe, M.D. - 791
R. E. Sergeant - 725/1
P. D. Sherman - 701/2

Attached are the results of background Asbestos monitoring done in various buildings. Most samples were collected overnight, although a couple were collected for a specific reason - see comments.

The only regulation that applies to our facilities is the OSHA standard of 0.1 fiber/cc Action Level. However, the generally accepted level for background Asbestos is 0.01 fiber/cc. We are below the 0.01 fiber/cc level, even in some unusual situations.

If we can be of further assistance, please feel free to call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
2504P

AREA ASBESTOS MONITORING*

<u>Date</u>	<u>Sampling Time</u>	<u>Air Conc* Fibers/cc</u>	<u>Building</u>	<u>COMMENTS</u>
1-26-87	17hrs 12min	<.00087	701	East end of basement hallway near caged area - under pipe chase.
1-26-87	15hrs 20min	<.0010	701	West end of basement in hallway near caged area.
1-21-87	7hrs 9min	.005	704	Collected near the No. 3 boiler where powerhouse operators spend most of their time.
1-29-87	17hrs 2min	<.0009	740	Collected near the bins in the storeroom under the South wing service shaft.
1-29-87	14hrs 38min	<.0011	740/1128	Collected in Room 1128 - Instrument Shop - under the service shaft.
2-5-87	17hrs 24min	<.0010	770/237	Collected in the autoclave lab hanging between Autoclaves 14 and 17.
2-5-87	15hrs 38min	<.0010	770/110	Collected in the fan room under service shaft.
2-5-87	17hrs 2min	<.0008	770/164	Collected in Service room near the doorway.
6-4-87	2hrs 4min	<.0076	701-Basement	Collected in basement near where insulators were repairing and cleaning up Asbestos in pipe chase above.
6-24-87	7hrs 26min	.0074	701/3rd Floor Hallway	Collected in hall the day after extensive cleaning was done the evening before. Also, employees worked in this end approx. 4 hours on this day.
6-25-87	8hrs 57min	<.0017	705-Hallway	Collected in the operating area hall between Cells 12 and 13.
6-25-87	10hrs 41min	<.0015	705-Hallway	Collected in the operating area hall between Cells 4 and 5.

*Total Fibers - No differential counting.

2504P

REPORT RC01

ASBESTOS MONITORING

11/19/79 PAGE 1

May - Sept

DATE	CONTAMINANT NAME	BUILDING LEVEL	AIR CONC	THRESHOLD LIMIT VALUE	8-HOUR EXP T.W.A. HRS	EXP MINS	SAMPLE TYPE	PERSONNEL NAME
05/29/79	ASBESTOS	701 B33	.0100F/CC	2.000			AREA	
AREA SAMPLES COLLECT IN ROOM B33. BREATHING ZONE HEIGHT								
SAMPLES COLLECTED IN THE MORNING AND AFTERNOON WHILE PAINTERS WERE FINISHING PLASTER BOARD WITH SPACKLING COMPOUND, SANDING BY HAND.								
05/29/79	ASBESTOS	701 B33	.0100F/CC	2.000			AREA	
05/29/79	ASBESTOS	701 B33	.0100F/CC	2.000			AREA	
05/29/79	ASBESTOS	701 B33	.0200F/CC	2.000			AREA	
08/01/79	ASBESTOS	704 1	.1100F/CC	2.000	1	35	BREATH Z	PRIDDY P. K.
CUTTING TRANSITE ON AMERICAN PACEMAKER LATHE IN 704 SHOP.								
ROUGH-OUT FRAMES FOR HOT STAGE ON DO-ALL SAW AND CUT OD ON LATHE.								
08/01/79	ASBESTOS	704 1	.0100F/CC	2.000	1	5	BREATH Z	PRIDDY P. K.
08/01/79	ASBESTOS	704 1	.0700F/CC	2.000			AREA	
OPPOSITE OPERATOR WORK STATION-USING VAC. CLEANER-DUST COLL.								

DATE CONTAMINANT NAME BUILDING LEVEL OR ZONE OR ROOM AIR CONC THRESHOLD LIMIT VALUE 8-HOUR EXP T.M.A. HRS MINS SAMPLE PERSONNEL NAME TYPE

08/01/79 ASBESTOS 704 1 .0100F/CC 2.000 AREA

NEAR OPERATOR WORK STATION-LEFT SIDE NEAR LATHE HEAD.

08/01/79 ASBESTOS 704 1 .0200F/CC 2.000 AREA

OPPOSITE OPERATOR WORK STATION.

05/04/79 ASBESTOS 720 .5100F/CC 2.000 50 BREATH Z RAINES R. E.

STRIPPING INSULATION FROM 4 INCH STEAM LINE IN SERVICE PIT
LOCATED ON SOUTH SIDE OF HLOG. 720.

07/02/79 ASBESTOS 17 BASE .5000F/CC 2.000 60 BREATH Z LANDERS G. H.

CONSTRUCTION INSULATORS STRIPPING ASBESTOS INSULATION FROM
#3 TURBINE AND APPROX. 30FT. OF 4 INCH PIPE.

07/02/79 ASBESTOS 17 BASE .9800F/CC 2.000 60 BREATH Z CROUCH T. A.

05/31/79 ASBESTOS 701 H33 .1800F/CC 2.000 34 BREATH Z VANCE RAYMOND

SANDING AND FINISHING SPACKLING COMPOUND

07/30/79 ASBESTOS 704 1 .2400F/CC 2.000 1 14 BREATH Z SCHNEIDER B. L.

PERSONNEL NAME	SAMPLE TYPE	EXP	MIN	RRS	EXP	MIN	RRS
1. J. A. C.							

ASACILLIN ASBESTOS FIBER SEALS ON THE 15-72 CRYSTALLINE LATTICE.

07/80/79	ASBESTOS	1	.1200F/C	2,000	3	BREATH Z	SCHNIDER B. L.
704							

DATE	SYSTEMS	704	1	.0100E/CC	2.000	AREA
07/30/79	SYSTEMS	704	1	.0100E/CC	2.000	

NORTH SIDE OF LATHE APPROX 3 FT FROM LATHE HEAD.

Model	ASR4-STUS	704	1	0100F/CC	2,000	ARF4
07/30/19						

EAST END OF LATHE APPROX. 3FT FROM LATH HEAD.

DATE	ASHFALLS	704	1	.0100F/CC	2.000	AREA
07/30/79	ASHFALLS	704	1	.0100F/CC	2.000	AREA

RIGHT SIDE OF LATHE IN WALKWAY AREA APPROX. 3 FT. FROM LATHE.

DATE	ASPH STUS	704	1	.0100F/CC	2.000	AREA
07/30/79						

CENTER OF SHOP AREA NEAR TELEPHONE 20 FT FROM LATHE.

[illegible]

OPERATING HEADSMILL MILLING MACHINE, CUTTING INSIDE RADIUS OF
THIRTY-FOUR INCHES, FOR HOT STAGE.

DATE	ASSETS	LIABILITIES	NET WORTH
12/31/79	1000000	500000	500000
12/31/80	1100000	550000	550000
12/31/81	1200000	600000	600000
12/31/82	1300000	650000	650000
12/31/83	1400000	700000	700000
12/31/84	1500000	750000	750000
12/31/85	1600000	800000	800000
12/31/86	1700000	850000	850000
12/31/87	1800000	900000	900000
12/31/88	1900000	950000	950000
12/31/89	2000000	1000000	1000000
12/31/90	2100000	1050000	1050000
12/31/91	2200000	1100000	1100000
12/31/92	2300000	1150000	1150000
12/31/93	2400000	1200000	1200000
12/31/94	2500000	1250000	1250000
12/31/95	2600000	1300000	1300000
12/31/96	2700000	1350000	1350000
12/31/97	2800000	1400000	1400000
12/31/98	2900000	1450000	1450000
12/31/99	3000000	1500000	1500000
12/31/00	3100000	1550000	1550000
12/31/01	3200000	1600000	1600000
12/31/02	3300000	1650000	1650000
12/31/03	3400000	1700000	1700000
12/31/04	3500000	1750000	1750000
12/31/05	3600000	1800000	1800000
12/31/06	3700000	1850000	1850000
12/31/07	3800000	1900000	1900000
12/31/08	3900000	1950000	1950000
12/31/09	4000000	2000000	2000000
12/31/10	4100000	2050000	2050000
12/31/11	4200000	2100000	2100000
12/31/12	4300000	2150000	2150000
12/31/13	4400000	2200000	2200000
12/31/14	4500000	2250000	2250000
12/31/15	4600000	2300000	2300000
12/31/16	4700000	2350000	2350000
12/31/17	4800000	2400000	2400000
12/31/18	4900000	2450000	2450000
12/31/19	5000000	2500000	2500000
12/31/20	5100000	2550000	2550000
12/31/21	5200000	2600000	2600000
12/31/22	5300000	2650000	2650000
12/31/23	5400000	2700000	2700000
12/31/24	5500000	2750000	2750000
12/31/25	5600000	2800000	2800000
12/31/26	5700000	2850000	2850000
12/31/27	5800000	2900000	2900000
12/31/28	5900000	2950000	2950000
12/31/29	6000000	3000000	3000000
12/31/30	6100000	3050000	3050000
12/31/31	6200000	3100000	3100000
12/31/32	6300000	3150000	3150000
12/31/33	6400000	3200000	3200000
12/31/34	6500000	3250000	3250000
12/31/35	6600000	3300000	3300000
12/31/36	6700000	3350000	3350000
12/31/37	6800000	3400000	3400000
12/31/38	6900000	3450000	3450000
12/31/39	7000000	3500000	3500000
12/31/40	7100000	3550000	3550000
12/31/41	7200000	3600000	3600000
12/31/42	7300000	3650000	3650000
12/31/43	7400000	3700000	3700000
12/31/44	7500000	3750000	3750000
12/31/45	7600000	3800000	3800000
12/31/46	7700000	3850000</	

DATE CONTAMINANT NAME BUILDING LEVEL AIR THRESHOLD R-HOUR EXP EXP SAMPLE PERSONNEL NAME
 OR ZONE OR ROOM CONC LIMIT T.W.A. HRS MINS TYPE
 VALUE

WEST SIDE OF MILLING MACHINE APPROX. 6 FT. FROM MACHINE.

08/04/79 ASBESTOS 704 1 .0100F/CC 2.000 AREA

EAST SIDE OF MILLING MACHINE

08/04/79 ASBESTOS 704 1 .0100F/CC 2.000 AREA

SOUTH SIDE OF MILLING MACHINE ON BED OF CINN. SHAPER

05/09/79 ASBESTOS 707 1 .0900F/CC 2.000 44 BREATH Z RAINES R. E.

INSULATOR HELPER STRIPPING 10 FT OF 1 IN. STEAM LINE.

05/09/79 ASBESTOS 707 1 .0300F/CC 2.000 44 BREATH Z DAVIS E.

INSULATOR SUPERVISING STRIPPING OF LINE IN 707 SERVICE ROOM.

05/09/79 ASBESTOS 707 1 .1200F/CC 2.000 AREA

AREA SAMPLE IN STRIPPING AREA.

05/15/79 ASBESTOS 707 11 4.0000F/CC 2.000 1 25 BREATH Z FINNEY M.

INSULATOR STRIPPING ASBESTOS TYPE INSULATION FROM STILL COL.

DATE	CONTAMINANT NAME	BUILDING LEVEL OR ZONE OR ROOM	ATM CONC	THRESHOLD LIMIT VALUE	8-HOUR T.W.A. CONC.	EXP HRS	EXP MINS	SAMPLE TYPE	PERSONNEL NAME
05/15/79	ASBESTOS	707	11	6.1000F/CC	2.000	2		BREATH Z	FINNEY M.
05/15/79	ASBESTOS	707	11	2.0000F/CC	2.000	1	25	BREATH Z	MILLER C.
05/15/79	ASBESTOS	707	11	2.1000F/CC	2.000	2		BREATH Z	MILLER C.

TOTAL NUMBER OF ITEMS RETRIEVED 59



CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

To (Name) Mr. W. T. Shelton
Division Building 704 Shop

Location

Date March 1, 1978

Originating Dept. Technical Center IH/EP

Copy to Mr. G. F. Hurley
Mr. M. E. Perry
Mr. H. L. Robinson

Subject Asbestos Monitoring in 1977

PROJECT

Asbestos monitoring during removal of asbestos-containing insulation at the Technical Center in 1977.

SUMMARY AND CONCLUSIONS

In 1977, 48 air samples, 30 personal, and 18 area samples were taken and analyzed for asbestos during various insulation removal operations. During these operations, respiratory protection was worn by all employees involved. The OSHA Threshold Limit Value (TLV) of two fibers per cubic centimeters of air (f/cc) for an eight-hour Time Weighted Average (TWA) was not exceeded, but we did have two excursions above the Ceiling Limit of 10 f/cc. These excursions can be controlled by stringent adherence to adopted work procedures.

DISCUSSION

On April 25, 1977, water was not used to wet insulation before or during removal in Building 705 and employee exposures were 7.4 and 6.5 f/cc. On October 11, 1977, insulation was removed from Boiler #4 in the 704 Powerhouse. Water was used sparingly and an air hose was used to blow insulation from a crevice resulting in personal exposures of 14.7 and 15.1 f/cc. The latter operation was the only one in which the OSHA Ceiling Limit was exceeded. Due to a short exposure time, the OSHA TLV was not exceeded.

All other operations that were monitored were well within the exposure limits. This emphasizes the importance of using work practices established in the following excerpt from the OSHA standard:

3/1/77

"Wet Methods. Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airbourne fibers in excess of the exposure limits."

Due to limited manpower, we have been unable to monitor all operations involving asbestos. However, we should be notified, as far in advance as possible, before every job in which asbestos containing insulation is removed.

REFERENCES

- (1) UCC C & P Industrial Hygiene Method #38C-29X4-R1A
- (2) 29 CFR 1910.1001

REPORT PREPARED BY

W. F. Blythe, Jr.
Technical Center Industrial Hygiene Department



W. F. Blythe, Jr.

WFB Jr/sc

Attachment

03/05/79 PAGE 1

ASBESTOS MONITORING DURING INSULATION REMOVAL IN 1977

REPORT 4422

DATE	BUILDING LEVEL OR ZONE	PERSONNEL NAME	AIR CONC	8-HOUR AIR T.A.A. CONC	SAMP SAMP SAMP	TIME STOP TIME
05/09/77	702	1 DAVIS E. H.	2.59	.10	F/CC	956 956 20
05/09/77	1	AREA	2.12		F/CC	930 956 20
09/29/77		DAVIS E. H.	.14	.01	F/CC	930 1000 30
09/29/77		AREA	.05		F/CC	930 1000 30
04/01/77	704	MININ J. R.	.26	.02	F/CC	1009 1000 31
04/20/77		DAVIS E. H.	.19		F/CC	1250 1321 31
04/20/77		AREA	.20		F/CC	1250 1302 12
04/28/77		AREA	.05		F/CC	1333 1400 27
04/28/77		DAVIS E. H.	.24	.00	F/CC	1333 1400 27
06/24/77	3	DAVIS E. H.	.03	.07	F/CC	907 930 45
06/28/77	3	AREA	.00		F/CC	809 910 21
08/24/77	3	AREA	.15		F/CC	911 950 13
10/11/77	2	DAVIS E. H.	3.14		F/CC	907 1027 107
10/11/77	2	HACKNEY J. E.	2.76		F/CC	907 1024 104
10/11/77	2	AREA	9.28		F/CC	1025 1051 26
10/11/77	2	DAVIS E. H.	14.79		F/CC	1027 1051 24
10/11/77	2	HACKNEY J. E.	15.06		F/CC	1024 1059 26
10/11/77	2	AREA	2.94		F/CC	1051 1105 14
10/11/77	2	DAVIS E. H.	2.10	1.09	F/CC	1051 1105 14
10/11/77	2	HACKNEY J. E.	1.32	1.45	F/CC	1051 1105 14
10/28/77	2	DAVIS E. H.	1.42	.13	F/CC	956 1040 44
10/28/77	2	RATNES R. E.	2.11	.19	F/CC	956 1040 44
10/28/77	2	AREA	1.52		F/CC	958 1040 42
10/28/77	2	AREA	.00		F/CC	959 1046 47
12/01/77	1	DAVIS E. H.	.26	.01	F/CC	1336 1402 26
12/01/77	1	RATNES R. E.	.08	.00	F/CC	1336 1402 26
12/01/77	1	AREA	.04		F/CC	1336 1402 26
04/28/77	705	DAVIS E. H.	7.00	1.02	F/CC	1412 1447 35
04/28/77	1	RATNES R. E.	6.50	.94	F/CC	1412 1447 35
04/28/77	1	AREA	1.60		F/CC	1412 1447 35
11/29/77	113	HACKNEY J. E.	1.88	.14	F/CC	930 905 35
11/29/77	113	AREA	.43		F/CC	930 900 30
11/29/77	113	AREA	6.55		F/CC	900 905 5
05/03/77	707	DAVIS E. H.	.03	.01	F/CC	900 916 16
06/16/77	712	DAVIS E. H.	.21		F/CC	907 1030 103
06/16/77	1	HACKNEY J. E.	.19		F/CC	907 1030 103
06/16/77	1	AREA	.00		F/CC	907 1120 153
06/16/77	1	DAVIS E. H.	.33	.09	F/CC	1245 1403 75
06/16/77	1	HACKNEY J. E.	.26	.04	F/CC	1245 1406 75
06/16/77	30	DAVIS E. H.	1.50		F/CC	1335 1400 25
05/03/77	150	MININ J. R.	.13	.01	F/CC	1320 1400 40
05/03/77	150	AREA	.17		F/CC	1320 1400 20
05/03/77	150	AREA	.04		F/CC	1046 1103 22
05/03/77	150	RATNES R. E.	.34	.01	F/CC	956 1000 73

UCC 024596

DATE	BUILDING OR ZONE	LEVEL OR ROOM	PERSONNEL NAME	AIR CONC	8-HOUR AVE T.W.A. CONC	SAVE STOP TOTL TIME	SAVE STOP TOTL TIME
06/06/77	771	104	MONTE J R	.08	.01 F/CC	450	1000 70
01/10/77	773	2	MONTE J R	.54	F/CC	1007	1035 28
01/10/77	778	2	RAINES P E	.27	F/CC	1007	1035 28
04/07/77	778	001	MONTE J R	.06	.00 F/CC	1336	1350 12
TOTAL NUMBER OF ITEMS RETRIEVED				48			



UNION CARBIDE CORPORATION
CHEMICALS AND PLASTICS
P. O. BOX 471, TEXAS CITY, TEXAS 77590

RECEIVED

JUN 27 1977

SAFETY DEPT.

June 23, 1977

TO: Mr. Dave Leach - Johns-Manville
Mr. C. D. Matthews - Johns-Manville
Mr. G. M. Parrish - United Engineers

COPY: Mr. E. L. Agnew
~~Mr. C. W. Carman~~
Mr. D. E. Deese
Mr. T. V. Griffith - United Engineers
Mr. J. B. Leverton
Mr. B. W. Lloyd
Mr. R. P. Melton
Mr. J. H. Rapp
Mr. R. J. Taylor
Mr. W. D. Weber
Mr. L. L. Wilcox

FROM: J. L. Rosenberger

SUBJECT: Industrial Hygiene Department Monitor Report
Removal of Asbestos on the Ethylenamines Shutdown 6-21-77

Please find attached a report from the Industrial Hygiene Department of the Construction exposure to asbestos during the subject project. Note that at no time did the exposure exceed the permissible exposure per OSHA Procedures. Congratulations to all of you for a job well done.

The extra effort required, in my opinion, to accomplish the OSHA standards and to maintain the exposure below the permissible limits was minimum compared to the overall job and definitely minor compared to the benefit of preventing our people from being exposed to asbestos. Obviously, the procedure that we have established is valid and will be followed for all future work at Texas City.

Again, thank you for a job well done.


Construction Manager

JLR:rjj
Attachment

Industrial Hygiene Department PRELIMINARY REPORT	TEXAS CITY Date: 6-21-77	DISTRIBUTION: TO: J. L. Rosenberger COPIES: R. P. Melton D. H. Glenn, M.D. J. B. Leverton
SUMMARY: Monitor for asbestos fiber exposure during tear-out of old Kaylo insulation at Bldg. 51. Requested by J. L. Rosenberger		

PROCEDURE: Samples were collected on filter membranes by UCC Method 38C-29X4-R1 and analyzed by phase contrast microscopy.	RECEIVED JUN 22 1977
---	-----------------------------

RESULTS:		SAMPLED 6-19-77		
Name	S. S. No.	Craft	Fibers/cc > 5 μ	Company
Matthews, D.M.	466-76-8311	Insulator	0.13	Johns-Manville
Brummerhop, H.A.	464-34-9440	Insulator	0.06	Johns-Manville
Botkin, D.H.	462-60-4421	Insulator	0.11	Johns-Manville
Smith, E.	453-66-9124	Laborer	0.07	Johns-Manville
Dunten, W.H.	446-16-3630	Operator	0.00	Union Carbide
Area Sample	Downwind at NO. 1 Fletcher		0.01	
TLV - 8 Hr Time-Weighted Average - 2 Fibers/cc > 5 μ				

CONCLUSIONS/Recommendations All precautions required by OSHA Chapter IVII, Part 1910.93a were carefully followed by the personnel involved in the tear-out. All results show exposures well below the allowable levels.

Surveyed By:

C. W. Perry

Approved By:

T. K. Campbell
T. K. Campbell

CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

Mr. J. W. Biddle
Mr. G. F. Hurley ✓
Mr. M. E. Perry
Mr. W. Shelton

Date February 2, 1977

Originating Dept. IH/EP

Subject

Gentlemen:

On December 10, 13, 15, 27 and January 10, air samples were taken during various stripping operations of insulation possibly containing asbestos to determine employee exposure to asbestos. On December 10, Mr. J. R. Monin and Mr. R. E. Raines removed insulation from piping in Building 787. Insulation was adequately wetted before removal. On December 13, Mr. E. H. Davis and Mr. R. E. Raines removed insulation from piping on the second level cell area of Building 706. On December 15, Mr. C. H. Fox cut a Perlite bench top while Mr. C. E. Stone held it. This operation was located outside of Building 701. On December 27, Mr. D. H. Snyder removed old insulation from pipes outside of Building 712. On January 10, in Building 773 on the second level operating area, Mr. J. R. Monin and Mr. R. E. Raines removed the insulation from a leaking steam line. The insulation was thoroughly soaked due to the leak. In all of the above operations, all the men wore respirators.

The sample results, attached, show that the concentration of asbestos fibers complies with the current OSHA eight-hour time-weighted average of two fibers, longer than five micrometers, per cubic centimeter of air and also complies with the ceiling concentration of ten fibers per cubic centimeter of air.

The above air samples were sampled and analyzed by phase-contrast microscopy using Union Carbide Chemicals and Plastics Industrial Hygiene Handbook Method Number 38C-29X4-R1a. This method is identical to the procedures used by NIOSH, the organization responsible for developing methods specified by OSHA.

If we can provide additional assistance, please contact us.

Very truly yours,

W. F. Blythe Jr.

W. F. Blythe, Jr.

WFB Jr/mar

Attachment

A S B E S T O S

<u>DATE</u>	<u>EMPLOYEE</u>	<u>LOCATION</u>	<u>SAMPLE TIME (MIN)</u>	<u>CONCENTRATION (FIBERS/CC)</u>	<u>TWA (FIBERS/CC)</u>
12/10/77	J.R. Monin	787	13	0.73	0.02
12/10/77	R.E. Raines	787	13	0.42	0.01
12/13/77	E.H. Davis	706 2nd Level	48	0.17	0.02
12/13/77	R.E. Raines	706 2nd Level	48	0.14	0.01
12/15/77	C.H. Fox	701 Outside	23	0.36	0.02
12/15/77	C.E. Stone	701 Outside	23	1.20	0.06
12/15/77	Area	701 Outside	23	0.53	0.03
12/27/77	D.H. Snyder	712 Outside	14	0.49	0.01
12/27/77	Area	712 Outside	14	1.75	0.05
1/10/77	J.R. Monin	773 2nd Level	28	0.54	0.03
1/10/77	R.E. Raines	773 2nd Level	28	0.27	0.02

TO

R. N. Steinberg

The attached is a good summation about asbestos in insulation.

Also, attached is a copy of Asbestos results from air sampling that was done by Harold Frozier (Institute I.H.) in your area last year.

I need to discuss a program with you and your key supervisors. If you will let me know when such a meeting can be scheduled, I will present the program that will put us in compliance with OSHA.

We will definitely have to improve dust removal from the collector and while placing blocks in cartons.

914-465-D

+ DO IT THE SAFE WAY +

SIGNED

Fred Williams
ph. 5129

✓ 512-HHF-01	3-8-72	15	Too heavy to count	S. E. Painter - Dust collection removal for disposal.
✓ 512-HHF-02	3-8-72	5	61.5 ✓	S. E. Painter - Dust collector wearing JOB DONE ONCE EVERY TWO OR THREE MIN. respirator.
✓ 512-HHF-03	3-8-72	15	24.5 min. ✓	S. E. Painter - End of dust removal job.
✓ 512-HHF-04	11-21-72	6	4.1	L. I. Mitchell - Butt sawing.
✓ 512-HHF-05	11-21-72	6	23.4 ✓	L. I. Mitchell - Placing pairs of sawed blocks in cartons.
✓ 512-HHF-06	11-21-72	9	4.1	H. Stanley - Janitor broom sweeping.
✓ 512-HHF-07	11-21-72	15	3.9	H. E. Samples - Cementing pre-formed blocks.
✓ 512-HHF-08	12-4-72	15	0.05	L. I. Mitchell - Off bearing south saw 1st cut.
✓ 512-HHF-09	12-4-72	15	5.3	H. E. Witt - Separate sawed block - apply glue.
512-HHF-10	12-4-72	9	-	Bad filter - not counted.
✓ 512-HHF-11	12-4-72	15	11.8 min. ✓	H. E. Samples - Removing glued blocks from stack-edging.
✓ 512-HHF-12	12-4-72	4	27.8 ✓	H. E. Samples - Sawing block.
✓ 512-HHF-13	12-4-72	13	6.5	L. I. Mitchell - Off bearing second cut - placing in carton.
✓ 512-HHF-14	12-4-72	1½	9.8	L. I. Mitchell - Unpacking a single carton - sawed 22 pcs.
✓ 512-HHF-15	12-4-72	1½	48.3 ✓	L. I. Mitchell - Filling carton with sawed blocks.



INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS

INSTITUTE PLANT P. O. BOX 2831, CHARLESTON, WEST VIRGINIA 25330

To (Name) ✓ Mr. Fred Williams

Division

Location

Date January 24, 1973

Originating Dept. Employee Relations
Hygiene/Safety

Answering letter date

Copy to Mr. R. O. Midkiff
Mr. R. E. PeeleSubject Asbestos Sampling Values
511 Insulation Fabrication Shop

Asbestos fiber counts for samples we have collected at the Plant 511 Insulation Fabrication Shop are submitted for your information. They may serve as guidance for any sampling program you may initiate and they should be valid as part of a records program.

Sample No.	Date	Sampling Time, min	Fiber Count/ml	Sample-Job Description
✓ 512-HHF-01	3-8-72	15	Too heavy to count	S. E. Painter - Dust collection removal for disposal.
✓ 512-HHF-02	3-8-72	5	61.5 ✓	S. E. Painter - Dust collector <u>wearing</u> <i>Job Done Once EVERY TIME HE TAKES A BREATH</i> respirator.
✓ 512-HHF-03	3-8-72	15	24.5 min. ✓	S. E. Painter - End of dust removal job.
✓ 512-HHF-04	11-21-72	6	4.1	L. I. Mitchell - Butt sawing.
✓ 512-HHF-05	11-21-72	6	23.4 ✓	L. I. Mitchell - Placing pairs of sawed blocks in cartons.
✓ 512-HHF-06	11-21-72	9	4.1	H. Stanley - Janitor broom sweeping.
✓ 512-HHF-07	11-21-72	15	3.9	H. E. Samples - Cementing pre-formed blocks.
✓ 512-HHF-08	12-4-72	15	0.05	L. I. Mitchell - Off bearing south saw 1st cut.
✓ 512-HHF-09	12-4-72	15	5.3	H. E. Witt - Separate sawed block - apply glue.
512-HHF-10	12-4-72	9	-	Bad filter - not counted.
✓ 512-HHF-11	12-4-72	15	11.8 min. ✓	H. E. Samples - Removing glued blocks from stack-edging.
✓ 512-HHF-12	12-4-72	4	27.8 ✓	H. E. Samples - Sawing block.
✓ 512-HHF-13	12-4-72	13	6.5	L. I. Mitchell - Off bearing second cut - placing in carton.
✓ 512-HHF-14	12-4-72	1½	9.8	L. I. Mitchell - Unpacking a single carton - sawed 22 pcs.
✓ 512-HHF-15	12-4-72	1½	48.3 ✓	L. I. Mitchell - Filling carton with sawed blocks.

January 24, 1973

All samples were collected on the person of the employee and each of them represents a peak exposure for the various work tasks. All work was involved with asbestos containing KAYLO block materials.

The problem area most deserving corrective measures is obviously the dumping procedure of the shop dust collecting facility. Excessive exposures are encountered in the handling, especially packing, of sawed block material.

Exposure values have not been reported to the employees nor to shop supervision.

Very truly yours,

A handwritten signature in cursive script, appearing to read "H. H. Frazier".

H. H. Frazier

HHF:11h

Activities Log

DATE	NAME	FEET, ml	JOB
3-8-72	S. G. Painter	TOOTHENY 15' CONT	Removing dust from Collection
3-8-72	" "	61.5	" " " " wearing respirator
3-8-72	" "	24.5	" " " "
11-21-72	L. J. Mitchell	4.1	Butt sawing
11-21-72	" "	23.4	Placing pairs of sawed blocks in position
12-4-72	" "	6.5	Off bearing second cut - placing in position
12-4-72	" "	9.8	Unpacking single carton - sawed 22 pcs.
12-4-72	" "	48.3	Filling carton with sawed blocks
12-4-72	" "	5.05	Off bearing south saw, 1st cut.
11-21-72	A. Stoner	4.1	Ganite, from sweeping
11-21-72	M. E. Douglas	3.9	Cementing pre-formed blocks.
12-4-72	" "	11.8	Removing glued blocks from slab drying
12-4-72	" "	27.8	Sawing block
12-4-72	M. E. Douglas	5.3	Separate small block. apply glue.

June 1, 1972

To: Mr. D. E. Deese (515)
Mr. N. H. Ketcham (511)
Mr. J. E. Neff (511)
Mr. R. E. Peele (512)
Mr. Fred Williams (511) ✓

Copies: Mr. R. G. Lilley
Mr. R. J. Murphy

From: B. L. Murray

Subject: Report Form for Asbestos Air Sampling and Counting

Presently, we are using the attached form for use in recording general air sampling results. To show its application, a typical asbestos dust study is reported. Generally, this form is used as a field sheet and with an appropriate cover letter provides the necessary sampling data for determining and reporting exposure concentrations in the working environment.

If possible, we would like to retain one form for reporting air sampling facts.

Your review and comments relating to use of this form for reporting asbestos exposures will be appreciated.

/ld
Attachment

INDUSTRIAL HYGIENE EVALUATION AND SURVEYDate 5/3/72 Time See below Project Asbestos Dust in AirDepartment Maintenance Location Acetaldehyde Unit Bldg. No. 136-3Requested by E. O. Harrah Reason Breathing Level ExposuresGeneral Conditions: In doors - operating area -Temperature - 70°FRelative Humidity - 50%Barometric Pressure - 29.29 mm HgSampling Method and Equipment Membrane filter with portable pump sampler.Shift: Day 1 Eve. Mid No. Employees 3 Sampled by HHW/WCY

L/Min

Sample Number	Zone	Sampling Time-Min.	Flow Rate	CONCENTRATION		
				Fibers/ml	>5	μ
1	A	15	2.0		8.1	
2	A	15	2.0		8.0	
3	B	15	2.0		9.5	

Special Conditions

John Atkins cut, fit and secured Kaylo insulation to vessel - 10:30 a.m. - 10:40 a.m.

Mixed mud 10:45-10:50 a.m.

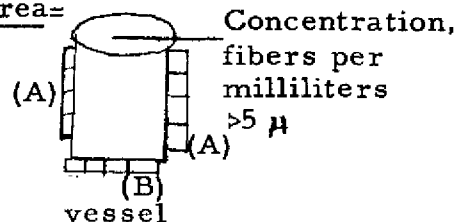
Henry Taylor cut, fit and secured Kaylo insulation to vessel 10:50 - 11:00 a.m.

Mixed mud 11-11:05 a.m.

Hal Bids and Harry Smith cut, fit and secured Kaylo insulation to vessel 1:25-1:40 p.m.

Calculation:
$$\frac{(\text{Avg. Fiber Count} - \text{Avg. Blank Count}) \text{ Total Filter Area}}{(\text{Counting Area}) (\text{Vol. Air-Liters}) (1000)}$$

Remarks: Employees' exposure time - 8 hrs/day

Sketch . See Reverse Side. Reference No. 9-JEN Analyzed by CEW Date 5/3/72

Data Sheet for Asbestos Sampling		Index No: <u>8069-S</u>	
Plot 512	Location: <u>SEW Piping</u>	Building: <u>-</u>	
Date: <u>6-28-82</u>	Time: <u>1343</u>	Sampling Period, Minutes	<u>5</u> (15)
Sampling Rate, Ml/Min: <u>1950</u>	Total Vol. Sampled, Ml: <u>29 750</u>		

Temperature °C _____
 Dry/Wet Bulb Temperature °C _____
 Barometric Pressure, mm Hg. _____
 Corrected Barometric Pressure, mm Hg. _____

Sample Volume, Ml Standard Conditions _____

Type Sample
 Personal ☒ Environmental ☐
 Comment: _____

Insulators Name Mr R FISHER

Job Assignment Field ☐ Shop ☐ Other ☒
 Comment: Demolition

Type of Insulation Double Layer
 Kaylo ☒ CA Silicate ☐ Tape ☐ Mud ☐ Other ☐

Type of Insulating Operation
 Inside ☐ Outside ☒
 Unpacking ☐ Forming ☐ Installation ☐ Stripping ☒ Other ☐
 Comment: _____

<u>Forming</u>	<u>Installation</u>	<u>Stripping</u>
Sawing _____	Dry Type Block _____	Blocks _____
Hand _____ Power _____	Assembly _____	Tape _____
Mud Preparation _____	Covering _____	Sleeves _____
Cleanup _____	Mud App _____	Mud _____
Transporting _____	Dry Type Tape _____	Cleanup _____
	Dry Type Sleeve _____	
	Wet Application _____	
	Mud _____	
	Spray _____	
	Cleanup _____	

Disposal: _____

Picture Taken: Yes ☐ No ☐

Analyzed by: Ruth Clise Thomas Date: July 21, 1982 Fiber Count/Ml: 1.4

30 fibers/100 field = .3 fibers/field
• 3 x 855

6.24 x 29.25 = 1.4 fibers 7.5 mm/d, ... 3 UCC 024608

Data Sheet for Asbestos Sampling		Index No: 3069-4	
Sheet 512	Location: SEVIN PILING	Building: -	
Date: 6-28-82	Time: 1343	Sampling Period, Minutes	5 (15)
Sampling Rate, Ml/Min: 1950		Total Vol. Sampled, Ml: 29.250	

Temperature °C _____
Dry/Wet Bulb Temperature °C _____
Barometric Pressure, mm Hg. _____
Corrected Barometric Pressure, mm Hg. _____

Sample Volume, Ml Standard Conditions _____

Type Sample
Personal ☒ Environmental ☐
Comment: _____

Insulators Name T R KUEEL

Job Assignment Field ☐ Shop ☐ Other ☒
Comment: simulated

Type of Insulation
Kaylo ☐ CA Silicate ☐ Tape ☐ Mud ☐ Other ☐
Duck LAYTR

Type of Insulating Operation
Inside ☐ Outside ☒
Unpacking ☐ Forming ☐ Installation ☐ Stripping ☒ Other ☐
Comment: _____

Forming	Installation	Stripping
Sawing _____	Dry Type Block _____	Blocks _____
Hand _____ Power _____	Assembly _____	Tape _____
Mud Preparation _____	Covering _____	Sleeves _____
Cleanup _____	Mud App _____	Mud _____
Transporting _____	Dry Type Tape _____	Cleanup _____
	Dry Type Sleeve _____	
	Wet Application _____	
	Mud _____	
	Spray _____	
	Cleanup _____	

Disposal: _____

Picture Taken: Yes ☐ No ☐

Analyzed by: Ruth Clise Thomas Date: July 21, 1982 Fiber Count/Ml < .1
fibers/100 fields = .02 fibers/field

UCC 024609

.02Y 855

1.01 7.14 1 3

Data Sheet for Asbestos Sampling		Index No: <u>3000-5</u>	
Sheet 512	Location: <u>SEVIN Piping</u>	Building: <u> </u>	
Date: <u>7-1-82</u>	Time: <u>0506</u>	Sampling Period, Minutes	<u>5</u> (<u>15</u>)
Sampling Rate, Ml/Min: <u>2000</u>		Total Vol. Sampled, Ml: <u>10000</u>	

Temperature °C _____
Dry/Wet Bulb Temperature °C _____
Barometric Pressure, mm Hg. _____
Corrected Barometric Pressure, mm Hg. _____

Sample Volume, Ml Standard Conditions _____

Type Sample

Personal ☒ Environmental ☐
Comment: _____

Insulators Name

J L VATEN

Job Assignment Field ☐ Shop ☐ Other ☒
Comment: _____

Type of Insulation

Double Layer
Kaylo ☒ CA Silicate ☐ Tape ☐ Mud ☐ Other ☐

Type of Insulating Operation

Inside ☐ Outside ☐

Unpacking ☐ Forming ☐ Installation ☐ Stripping ☒ Other ☐

Comment: _____

Forming

Installation

Stripping

Sawing _____	Dry Type Block _____	Blocks _____
Hand _____ Power _____	Assembly _____	Tape _____
Mud Preparation _____	Covering _____	Sleeves _____
Cleanup _____	Mud App _____	Mud _____
Transporting _____	Dry Type Tape _____	Cleanup _____
	Dry Type Sleeve _____	
	Wet Application _____	
	Mud _____	
	Spray _____	
	Cleanup _____	

Disposal: _____

Picture Taken: Yes ☐ No ☐

Analyzed by: Ruth Clise Thomas Date: July 21, 1982 Fiber Count/Ml = <.1
fibers/100 fields = .02 fibers/field
.02 x 855
UCC 024610

Data Sheet for Asbestos Sampling Index No: 3074-6

Plant 512 Location: SEVIN PIPING Building: -

Date: 7-1-82 Time: 0806 Sampling Period, Minutes 5 (15)

Sampling Rate, Ml/Min: 2000 Total Vol. Sampled, Ml: 30000

Temperature °C
Dry/Wet Bulb Temperature °C
Barometric Pressure, mm Hg.
Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample
Personal ☒ Environmental ☐
Comment:

Insulators Name M R Fisher

Job Assignment Field ☐ Shop ☐ Other ☒
Comment: Demolition

Type of Insulation Double Layer
Kaylo ☒ CA Silicate ☐ Tape ☐ Mud ☐ Other ☐

Type of Insulating Operation
Inside ☐ Outside ☒

Unpacking ☐ Forming ☐ Installation ☐ Stripping ☒ Other ☐
Comment:

Forming	Installation	Stripping
Sawing ☐	Dry Type Block ☐	Blocks ☐
Hand ☐ Power ☐	Assembly ☐	Tape ☐
Mud Preparation ☐	Covering ☐	Sleeves ☐
Cleanup ☐	Mud App ☐	Mud ☐
Transporting ☐	Dry Type Tape ☐	Cleanup ☐
	Dry Type Sleeve ☐	
	Wet Application ☐	
	Mud ☐	
	Spray ☐	
	Cleanup ☐	

Disposal:

Picture Taken: Yes No

Analyzed by: Keith Chase Thomas Date: July 21, 1982 Fiber Count/Ml = .2

5 fibers/100 fields = .05 fiber/field
.05 x 855 = 42.75
UCC 024611

Data Sheet for Asbestos Sampling		Index No: 3025-7	
Plant 512	Location: SEVIN Piping	Building: -	
Date: 7-1-82	Time: 1451	Sampling Period, Minutes	5 (15)
Sampling Rate, Ml/Min: 1950		Total Vol. Sampled, Ml: 29, 750	

Temperature °C _____
 Dry/Wet Bulb Temperature °C _____
 Barometric Pressure, mm Hg. _____
 Corrected Barometric Pressure, mm Hg. _____

Sample Volume, Ml Standard Conditions _____

Type Sample
 Personal ☒ Environmental ☐
 Comment: _____

Insulators Name T C WHITE

Job Assignment Field ☐ Shop ☐ Other ☒
 Comment: *Remediation*

Type of Insulation *Double Layer*
 Kaylo ☐ CA Silicate ☐ Tape ☐ Mud ☐ Other ☐

Type of Insulating Operation
 Inside ☐ Outside ☒
 Unpacking ☐ Forming ☐ Installation ☐ Stripping ☒ Other ☐
 Comment: _____

Forming	Installation	Stripping
Sawing _____	Dry Type Block _____	Blocks _____
Hand _____ Power _____	Assembly _____	Tape _____
Mud Preparation _____	Covering _____	Sleeves _____
Cleanup _____	Mud App _____	Mud _____
Transporting _____	Dry Type Tape _____	Cleanup _____
	Dry Type Sleeve _____	
	Wet Application _____	
	Mud _____	
	Spray _____	
	Cleanup _____	

Disposal: _____

Picture Taken: Yes ☐ No ☐

Analyzed by: Ruth Clise Thomas Date: July 21, 1982 Fiber Count/Ml 9

20 fibers/100 fields
 2 fibers/field
 2 x 855

0.1.1. 75 Wm Sam. 3 UCC 024612

Data Sheet for Asbestos Sampling		Index No: 3075-8	
Plant 512	Location: SEVEN PIPING	Building: -	
Date: 7-1-82	Time: 1451	Sampling Period, Minutes	5 (15)
Sampling Rate, Ml/Min: 1950		Total Vol. Sampled, Ml: 29 750	

Temperature °C _____
 Dry/Wet Bulb Temperature °C _____
 Barometric Pressure, mm Hg. _____
 Corrected Barometric Pressure, mm Hg. _____

Sample Volume, Ml Standard Conditions _____

Type Sample

Personal ☒ Environmental ☐

Comment: _____

Insulators Name ?? E. Johnson

Job Assignment Field ☐ Shop ☐ Other ☒

Comment: Bracing listed material

Type of Insulation

Kaylo ☒ CA Silicate ☐ Tape ☐ Mud ☐ Other ☐

Type of Insulating Operation

Inside ☐ Outside ☒

Unpacking ☐ Forming ☐ Installation ☐ Stripping ☐ Other ☒

Comment: _____

Forming	Installation	Stripping
Sawing _____	Dry Type Block _____	Blocks _____
Hand _____ Power _____	Assembly _____	Tape _____
Mud Preparation _____	Covering _____	Sleeves _____
Cleanup _____	Mud App _____	Mud _____
Transporting _____	Dry Type Tape _____	Cleanup ☒
	Dry Type Sleeve _____	
	Wet Application _____	
	Mud _____	
	Spray _____	
	Cleanup _____	

Disposal: _____

Picture Taken: Yes ☐ No ☐

Analyzed by: Lueth Clise Thomas Date: July 21, 1982 Fiber Count/Ml <.1 fiber

1 fiber/100 fields = .01 fiber/field

.01 X 855

Data Sheet for Asbestos Sampling		Index No: 3079-9	
Plant 512	Location: SEVEN PILING	Building: -	
Date: 7-2-82	Time: 10:37	Sampling Period, Minutes	5 (15)
Sampling Rate, Ml/Min: 2000		Total Vol. Sampled, Ml: 30,000	

Temperature °C _____
 Dry/Wet Bulb Temperature °C _____
 Barometric Pressure, mm Hg. _____
 Corrected Barometric Pressure, mm Hg. _____

Sample Volume, Ml Standard Conditions _____

Type Sample
 Personal ☒ Environmental _____
 Comment: _____

Insulators Name T C WHITE

Job Assignment Field _____ Shop _____ Other ☒
 Comment: Demolition

Type of Insulation Double Layer
 Kaylo ☒ CA Silicate _____ Tape _____ Mud _____ Other _____

Type of Insulating Operation
 Inside _____ Outside ☒

Unpacking _____ Forming _____ Installation _____ Stripping _____ Other ☒
 Comment: _____

Forming	Installation	Stripping
Sawing _____	Dry Type Block _____	Blocks _____
Hand _____ Power _____	Assembly _____	Tape _____
Mud Preparation _____	Covering _____	Sleeves _____
Cleanup _____	Mud App _____	Mud _____
Transporting _____	Dry Type Tape _____	Cleanup _____
	Dry Type Sleeve _____	
	Wet Application _____	
	Mud _____	
	Spray _____	
	Cleanup _____	

Disposal: _____

Picture Taken: Yes No

Analyzed by: Ruth Clise Thomas Date: July 21, 1982 Fiber Count/Ml = .3 fibers
 7 fibers/100 fields = .07 fiber/field
 .07 x 855

UCC 024614

Data Sheet for Asbestos Sampling

Index No:

3079-10

Plant 512

Location:

SEVIN PIPING

Building:

Date:

7-2-82

Time: 1030

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min:

2000

Total Vol. Sampled, Ml:

30 000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal

Environmental

Comment:

Insulators Name

L. H. VATER

Job Assignment

Field

Shop

Other

Comment:

Type of Insulation

Double Layer

Kaylo

CA Silicate

Tape

Mud

Other

Type of Insulating Operation

Inside

Outside

Unpacking

Forming

Installation

Stripping

Other

Comment:

Forming

Installation

Stripping

Sawing

Dry Type Block

Blocks

Hand Power

Assembly

Tape

Mud Preparation

Covering

Sleeves

Cleanup

Mud App

Mud

Transporting

Dry Type Tape

Cleanup

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by: Ruth Thomas

Date:

July 22, 1982

Fiber Count/Ml =

1.7 fibers

37 fibers/100 fields = .37 fibers/field

.37 x 855

UCC 024615

Data Sheet for Asbestos Sampling		Index No: 3078-11	
Plant 512	Location: Mohul CHERRADATE	Building: 244	
Date: 7-2-82	Time: 1234	Sampling Period, Minutes	5 (15)
Sampling Rate, Ml/Min: 2000		Total Vol. Sampled, Ml: 30 000	

Temperature °C _____
Dry/Wet Bulb Temperature °C _____
Barometric Pressure, mm Hg. _____
Corrected Barometric Pressure, mm Hg. _____

Sample Volume, Ml Standard Conditions _____

Type Sample
Personal _____ Environmental ☒
Comment: _____

Insulators Name _____

Job Assignment Field _____ Shop _____ Other ☒
Comment: MAINTENANCE P. DE LITER

Type of Insulation
Kaylo ☒ CA Silicate _____ Tape _____ Mud _____ Other _____

Type of Insulating Operation
Inside _____ Outside ☒

Unpacking _____ Forming _____ Installation _____ Stripping _____ Other ☒
Comment: _____

Forming	Installation	Stripping
Sawing _____	Dry Type Block _____	Blocks _____
Hand _____ Power _____	Assembly _____	Tape _____
Mud Preparation _____	Covering _____	Sleeves _____
Cleanup _____	Mud App _____	Mud _____
Transporting _____	Dry Type Tape _____	Cleanup _____
	Dry Type Sleeve _____	
	Wet Application _____	
	Mud _____	
	Spray _____	
	Cleanup _____	

Disposal: _____

Picture Taken: Yes _____ No _____

Analyzed by: Ruth Thomas Date: July 22, 1982 Fiber Count/Ml

No Filter except backup pad in cassette.

UCC 024616

Data Sheet for Asbestos Sampling		Index No: <u>3078-12</u>	
Plot 512	Location: <u>Methu, CARRAMETE</u>	Building: <u>244</u>	
Date: <u>7-2-82</u>	Time: <u>1245</u>	Sampling Period, Minutes <u>5</u>	(<u>15</u>)
Sampling Rate, Ml/Min: <u>2000</u>		Total Vol. Sampled, Ml: <u>30000</u>	

Temperature °C _____
 Dry/Wet Bulb Temperature °C _____
 Barometric Pressure, mm Hg. _____
 Corrected Barometric Pressure, mm Hg. _____

Sample Volume, Ml Standard Conditions _____

Type Sample

Personal _____ Environmental ☒
 Comment: _____

Insulators Name _____

Job Assignment Field _____ Shop _____ Other ☒
 Comment: MAINTENANCE Pipe Fitter

Type of Insulation

Kaylo ☒ CA Silicate _____ Tape _____ Mud _____ Other _____

Type of Insulating Operation

Inside _____ Outside ☒
 Unpacking _____ Forming _____ Installation _____ Stripping _____ Other ☒
 Comment: _____

<u>Forming</u>	<u>Installation</u>	<u>Stripping</u>
Sawing _____	Dry Type Block _____	Blocks _____
Hand _____ Power _____	Assembly _____	Tape _____
Mud Preparation _____	Covering _____	Sleeves _____
Cleanup _____	Mud App _____	Mud _____
Transporting _____	Dry Type Tape _____	Cleanup _____
	Dry Type Sleeve _____	
	Wet Application _____	
	Mud _____	
	Spray _____	
	Cleanup _____	

Disposal: _____

Picture Taken: Yes _____ No _____

Analyzed by: Lueth Thomas Date: July 22, 1982 Fiber Count/Ml = <.1 fiber

1 fiber/100 fields = .01 fiber/field
.01 x 855 = <.1 fiber> 5µm/cm 3 UCC 024617

Bldg. 720-137 - Asbestos

7-24-81

#1 J. W. Greelee - 2 LPM

SS# 234-88-0774

smoke? no Insulators

Wilson Shelton

60 ft. of 1/2 inch steam line

stop 9 80
7 20

start 0928

52 Minutes

104 Liters

#2 J. R. Monin - 2-LPM - Insulator

SS# - 234-24-8772

smoke? no

Wilson Shelton

stop 9 80
7 20

start 0929

51 Minutes

102 Liters

#3-

ASBESTOS - Calculations

7-29-81

#1 - J.W. Greenlee

26 fibers/100 fields

.26 fibers/field

.26 x 855

$$6.24 \times 10^4 = .3 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

#2 - J.R. Monin

49 fibers/100 fields

.49 fibers/field

.49 x 855

$$6.24 \times 10^4 = .7 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

ASBESTOS

7-10-81

#1. J.F. Chandler - AM - 2LPM

stop ^{10 71} ~~11 11~~

120
+40

S.S. # - 236-36-7156

start 08:31

160 Minutes

320 LITERS

smoke }
chew } no
Ralph Painter

starting
at 777

2' 40'

Stripping 450 ft. ^{4 inch} steam line - Start at west

93642 end of 777 goes behind 778, across parking lot to west end of 774.

#2. M.D. Coleman - AM

stop ^{10 73} ~~11 13~~

S.S. # - 236-86-6261

start 0834

120
+39

smoke }
chew } no

2' 39"

159 Minutes

93639 ? Laborer

318 LITERS

#3. B.J. Agosti - AM - 2LPM

stop ^{10 74} ~~11 14~~

120

S.S. # - 232-90-8749

start 0845

+19

smoke }
chew } no

started

2' 29"

149 Minutes

³³ 93642 - Insulator at 774

298
~~298~~ LITERS

#4. R.E. Templeton - AM - 2LPM

stop ^{10 76} ~~11 16~~

120

S.S. # - 236-56-8365

start 0848

+28

smoke - no
chew - yes

2' 28"

148 Minutes

93639 - Laborer

296 LITERS

7-10-81 90
 #5 - J.F. Chandler - PM
 2 LPM
 STOP 15:30 120
 START 12:46 +44 164 Minutes
 2' 44" 328 LITERS

14 90
 #6 - M.D. Coleman - PM
 2 LPM
 stop 15:30 120
 start 12:58 +32 152 Minutes
 2' 32" 304 Liters

14 90
 #7 - B.J. Agosti - PM
 2 - LPM
 stop 15:30 120
 start 12:54 +36 156 Minutes
 2' 36" 312 Liters

14 90
 #8 R.E. Templeton - PM
 2 - LPM
 stop 15:30 120
 start 12:55 +35 155 Minutes
 2' 35" 310 Liters

Job was not completed at the time sampling was stopped. They were waiting for Painter to find ~~out~~ ^{out} if overtime would be allowed to finish the work. I did not think he would allow overtime as ~~to~~ rain was about to fall any minute. Chet with Ralph if he allowed overtime. Mara

Calculations - ASBESTOS

7-15-81

#1 - 87 fibers/100 field

.87 fibers / field

$$.87 \times 855$$

$$6.24 \times 320 = .4 \text{ fibers } > 5 \mu\text{m/cm}^3$$

#2 - 80 fibers/100 fields

.8 fibers / field

$$.8 \times 855$$

$$6.24 \times 318$$

$$= .3 \text{ fibers } > 5 \mu\text{m/cm}^3$$

#3 - 107 fibers/100 field

1.07 fibers / field

$$1.07 \times 855$$

$$6.24 \times 298 =$$

$$.5 \text{ fibers } > 5 \mu\text{m/cm}^3$$

#4 - 50 fibers/100 field

.5 fibers / field

$$.5 \times 855$$

$$6.24 \times 296 =$$

$$.2 \text{ fibers } > 5 \mu\text{m/cm}^3$$

Calculations - ASBESTOS

7-15-81

#5 - 16 fibers/100 fields

.16 fibers/field

$$.16 \times 855$$

$$6.24 \times 328 = .1 \text{ fibers} > 5 \mu\text{m/cm}^3$$

$$\text{TWA - J.F. Chandler} = \frac{(.4 \times 160) + (.1 \times 164)}{480} = \frac{64 + 16.4}{480} = .2$$

fibers $> 5 \mu\text{m/cm}^3$

#6 - 70 fibers/100 fields

.7 fibers/field

$$.7 \times 855$$

$$6.24 \times 304 = .3 \text{ fibers} > 5 \mu\text{m/cm}^3$$

$$\text{TWA - M.D. Coleman} = \frac{(.3 \times 159) + (.3 \times 152)}{480} = \frac{47.7 + 45.6}{480} = .2$$

fibers $> 5 \mu\text{m/cm}^3$

#7 - 80 fibers/100 fields

.8 fibers/field

$$.8 \times 855$$

$$6.24 \times 312 = .4 \text{ fibers} > 5 \mu\text{m/cm}^3$$

$$\text{TWA - B.J. Agosti} = \frac{(.5 \times 149) + (.4 \times 156)}{480} = \frac{74.5 + 62.4}{480} = .3$$

fibers $> 5 \mu\text{m/cm}^3$

#8 - 40 fibers/100 fields or .4 fibers/field

$$.4 \times 855$$

$$6.24 \times 310 = .2 \text{ fibers} > 5 \mu\text{m/cm}^3$$

$$\text{TWA - R.E. Templeton} = \frac{(.2 \times 148) + (.2 \times 155)}{480} = \frac{29.6 + 31}{480} = \frac{60.6}{480} = .1 \text{ fibers} > 5 \mu\text{m/cm}^3$$

R.R. Fainter

Bldg. 723

ASBESTOS

4-20-81

#1 - D.C. Shamblin - 2 LPM

SS# - ~~233-80~~ - 233-38-0292

Dept. 93642

smoke }
chew } yes

stop ^{10 72}
~~1112~~

start 0947

1' 25" ⁶⁰
~~125~~
85 Minutes
170 Liters

Stripping - 100 ft - 1 1/2 inch pipe of
suspected asbestos insulation at the
tank pad outside west end of Bldg. 723

#2 J.F. Chandler - 2 LPM

SS# 236-36-7156

Dept - 93642

smoke }
chew } No

stop ^{10 70}
~~1110~~

start 0952

1 18 = 78 Minutes
156 Liters

#2 D.C. Shamblin - 2 LPM

P.M.

stop 1444

start 1241

2 03 = 123 Minutes
276 Liters

#4 J.F. Chandler - 2 LPM

P.M.

stop 1443

start 1238

2' 05" = 125 Minutes
250 Liters

ASBESTOS - CALCULATIONS

4-21-81

#1 - 16 fibers / 100 fields

.16 fibers / field

$$\frac{.16 \times 855}{6.24 \times 170} = .1 \text{ fiber } 75 \mu\text{m}/\text{cm}^3$$

#2 - 6 fibers / 100 fields

.06 fibers / field

$$\frac{.06 \times 855}{6.24 \times 156} =$$

$$< .1 \text{ fiber } 75 \mu\text{m}/\text{cm}^3$$

#2 - 40 fibers / 100 fields

.4 fibers / field

$$\frac{.4 \times 855}{6.24 \times 246} =$$

$$.2 \text{ fibers } 75 \mu\text{m}/\text{cm}^3$$

#4 - 8 fibers / 100 fields

.08 fibers / field

$$\frac{.08 \times 855}{6.24 \times 250} =$$

$$< .1 \text{ fiber } 75 \mu\text{m}/\text{cm}^3$$

70-76-50

#1 R. P. Hess

stop 0945

SS# 233-80-7813

start 0845

Dept. # 49 Insulation
smoke }
chew } No1 hr
60 minutes

120 tiles

Stripping insulation off
system
Dowtherm ~~tile~~ - outside
behind Bldg. 702From 707 - Cell 3 - going to ^{salvage} ~~sample~~
wore respirator - Watered

JNQ

#2 J E Hackney

stop 0945

SS# 236-30-5871

start 0848

Dept. # 49
smoke - yes
chew - no

HNZ

57 minutes

114 tiles

#1 - 112 ft² / 100 ft² = 1.12 ft² / ft²1.12 x 556.24 x 120 = 1.3 ft² > 5 ft² / 100 ft² 3#2 101 ft² / 40 ft² = 2.53 ft² / ft²2.53 x 8556.24 x 114 = 3.04 ft² > 5 ft² / 100 ft² 3

Data Sheet for Asbestos Sampling

Index No: HHF - 125

Plant 512

Location: OPERATIONS - SEVINBuilding: 236Date: 9/3/80Time: 8²⁵852

Sampling Period, Minutes

515 (27)Sampling Rate, Ml/Min: 2000Total Vol. Sampled, Ml: 54,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒Environmental ☐

Comment:

Insulators Name

D. R. SMITH232-78-5728

Job Assignment

Field ☒Shop ☐Other ☐Comment: CUTTING + STRIPPING ON HIGH LINE

Type of Insulation

Kaylo ☐CA Silicate ☐Tape ☐Mud ☒Other ☐

Type of Insulating Operation

Inside ☐Outside ☒Unpacking ☐Forming ☐Installation ☐Stripping ☒Other ☐

Comment:

FormingInstallationStripping

Sawing

Hand ☐ Power ☐

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud ☒

Cleanup

Disposal:

Picture Taken:

Yes ☐No ☐

Analyzed by:

Ruth Clise (JRC)Date: 9-4-80

Fiber Count/Ml

5 fibers/100 fields.05 x 85505 fibers/field6.24 x 54= .1 fibers > 5 μm/cm³

UCC 024627

Data Sheet for Asbestos Sampling

Index No: *HHF-118*

Plant 512

Location: #1 *POWERHOUSE*Building: *5*Date: *8/26/80*Time: *9⁵⁹ 10¹⁴*Sampling Period, Minutes *5*

(15)

Sampling Rate, Ml/Min: *1800*Total Vol. Sampled, Ml: *27,000*

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒ Environmental

Comment:

LABORER

Insulators Name *M.E. DRAKE**235-82-7121*Job Assignment Field ☐ Shop ☐ Other ☒Comment: *HOLDING + LOADING BAGS*

Type of Insulation

Kaylo ☐ CA Silicate ☐ Tape ☐ Mud ☒ Other ☐

Type of Insulating Operation

Inside ☐ Outside ☒Unpacking ☐ Forming ☐ Installation ☐ Stripping ☒ Other ☐

Comment:

FormingInstallationStrippingSawing ☐Hand ☐ Power ☐Mud Preparation ☐Cleanup ☐Transporting ☐Dry Type Block ☐Assembly ☐Covering ☐Mud App ☐Dry Type Tape ☐Dry Type Sleeve ☐Wet Application ☐Mud ☐Spray ☐Cleanup ☐Blocks ☐Tape ☐Sleeves ☐Mud ☐Cleanup ☐

Disposal:

Picture Taken: Yes ☐No ☐Analyzed by: *Ruth Clise (DRC)*Date: *8-28-80*

Fiber Count/Ml

.3 fibers > 5 μ m/cm³

Data Sheet for Asbestos Sampling

Index No: HHF-119

Plant 512

Location: #1 POWER HOUSEBuilding: 5Date: 8/26/80Time: 9⁵⁵ 10¹⁴

Sampling Period, Minutes

5(15)

Sampling Rate, Ml/Min:

1800Total Vol. Sampled, Ml: 27,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒

Environmental

Comment:

Insulators Name D. W. BROGAN236-80-4788

Job Assignment

Field

Shop

Other ☒Comment: CUTTING AND STRIPPING OFF INSULATION

Type of Insulation

Kaylo

CA Silicate

Tape

Mud ☒

Other

Type of Insulating Operation

Inside

Outside ☒

Unpacking

Forming

Installation

Stripping ☒

Other

Comment:

FormingInstallationStripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by:

Luth Clise (DRC)Date: 8-28-80

Fiber Count/Ml

1.0 fibers/75µm/cm³

Data Sheet for Asbestos Sampling

Index No: HHF-120

Plant 512

Location: #1 POWERHOUSEBuilding: 5Date: 8/26/80Time: ¹⁰⁴⁰1055

Sampling Period, Minutes

5(15)

Sampling Rate, Ml/Min:

1900

Total Vol. Sampled, Ml:

28,500

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒Environmental ☐

Comment:

LABORERInsulators Name W.F. SMITH235-90-7834

Job Assignment

Field ☐Shop ☐Other ☒Comment: HOLDING + LOADING BAGS

Type of Insulation

Kaylo ☐CA Silicate ☐Tape ☐Mud ☒Other ☐

Type of Insulating Operation

Inside ☐Outside ☒Unpacking ☐Forming ☐Installation ☐Stripping ☒Other ☐

Comment:

FormingInstallationStrippingSawing ☐Hand ☐ Power ☐Mud Preparation ☐Cleanup ☐Transporting ☐Dry Type Block ☐Assembly ☐Covering ☐Mud App ☐Dry Type Tape ☐Dry Type Sleeve ☐Wet Application ☐Mud ☐Spray ☐Cleanup ☐Blocks ☐Tape ☐Sleeves ☐Mud ☐Cleanup ☐

Disposal:

Picture Taken:

Yes ☐No ☐

Analyzed by:

Ruth Clise (DRC)Date: 8-28-80

Fiber Count/Ml

6.0 fibers/75 µm/cm

Data Sheet for Asbestos Sampling

Index No: HAF-121

Plant 512

Location: #1 POWERHOUSEBuilding: 5Date: 8/26/80Time: 10¹² 10³²Sampling Period, Minutes 5

(15)

Sampling Rate, Ml/Min: 1700Total Vol. Sampled, Ml: 25,500

Temperature °C _____

Dry/Wet Bulb Temperature °C _____

Barometric Pressure, mm Hg. _____

Corrected Barometric Pressure, mm Hg. _____

Sample Volume, Ml Standard Conditions _____

Type Sample

Personal _____

Environmental ☒Comment: AREA 12 FT DOWN WIND BARRIER TAPE

Insulators Name _____

Job Assignment

Field _____

Shop _____

Other _____

Comment: _____

Type of Insulation

Kaylo _____

CA Silicate _____

Tape _____

Mud ☒

Other _____

Type of Insulating Operation

Inside _____

Outside ☒

Unpacking _____

Forming _____

Installation _____

Stripping ☒

Other _____

Comment: _____

FormingInstallationStripping

Sawing _____

Hand _____ Power _____

Mud Preparation _____

Cleanup _____

Transporting _____

Dry Type Block _____

Assembly _____

Covering _____

Mud App _____

Dry Type Tape _____

Dry Type Sleeve _____

Wet Application _____

Mud _____

Spray _____

Cleanup _____

Blocks _____

Tape _____

Sleeves _____

Mud _____

Cleanup _____

Disposal: _____

Picture Taken:

Yes _____

No _____

Analyzed by: _____

Date: _____

Fiber Count/Ml _____

Data Sheet for Asbestos Sampling

Index No: HHF-122

Plant 512

Location: #1 POWERHOUSEBuilding: 5Date: 8/26/80Time: 13¹⁸
13³³

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min:

1925

Total Vol. Sampled, Ml:

28,875

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒

Environmental

Comment:

Insulators Name

D. W. BROGAN236-80-4788

Job Assignment

Field

Shop

Other ☒

Comment:

Type of Insulation

Kaylo

CA Silicate

Tape

Mud ☒

Other

Type of Insulating Operation

Inside

Outside ☒

Unpacking

Forming

Installation

Stripping ☒

Other

Comment:

Forming

Installation

Stripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by:

Ruth Clise (DRC)

Date:

8-28-80

Fiber Count/Ml

0.2 fibers/5cm

Data Sheet for Asbestos Sampling

Index No: HHF-123

Plant 512

Location: #1 POWER HOUSEBuilding: 5Date: 8/26/80Time: 13¹⁵

Sampling Period, Minutes

5(15)

Sampling Rate, Ml/Min:

1915Total Vol. Sampled, Ml: 28,725

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒

Environmental

Comment:

LABORER
Insulators NameJ. C. HUBBARD JR234-86-6432

Job Assignment

Field

Shop

Other ☒

Comment:

Type of Insulation

Kaylo

CA Silicate

Tape

Mud

☒ Other

Type of Insulating Operation

Inside

Outside

Unpacking

Forming

Installation

Stripping ☒

Other

Comment:

Forming

Installation

Stripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by:

Ruth Clise (DRC)Date: 8-28-80

Fiber Count/Ml

1.3 fibers 75µm/pc³

Data Sheet for Asbestos Sampling

Index No: HHF-124

Plant 512

Location: #1 POWERHOUSEBuilding: 5Date: 8/26/80Time: 13³⁰

Sampling Period, Minutes

5(15)Sampling Rate, Ml/Min: 1925Total Vol. Sampled, Ml: 28,875

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal

Environmental ☒Comment: 12 FT NORTH #3 PRECIPITATOR - AREA

Insulators Name

Job Assignment

Field

Shop

Other

Comment:

Type of Insulation

Kaylo

CA Silicate

Tape

Mud ☒

Other

Type of Insulating Operation

Inside

Outside

Unpacking

Forming

Installation

Stripping ☒

Other

Comment:

Forming

Installation

Stripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by:

Ruth Clive (DRC)Date: 8-28-80

Fiber Count/Ml

0.1 fibers/500 ml/cm³

Asbestos #1 Powerhouse Institute Analyzed
8-28-80
by Ruth Clise (DRC)

#1 - H#F-118 5 fibers/100 fields
.05 fibers/field

$$.05 \times 855$$

$$6.24 \times 27 =$$

$$.3 \text{ fibers } > 5 \mu\text{m/cm}^3$$

#2 - H#F-119 20 fibers/100 fields
.2 fibers/field

$$.2 \times 855$$

$$6.24 \times 27 =$$

$$1.0 \text{ fibers } > 5 \mu\text{m/cm}^3$$

#3 - H#F-120 101 fibers/81 fields
1.25 fibers/field

$$1.25 \times 855$$

$$6.24 \times 28.5 =$$

$$6.0 \text{ fibers } > 5 \mu\text{m/cm}^3$$

#4 - H#F-121 2 fibers/100 fields
.02 fiber/field

$$.02 \times 855$$

$$6.24 \times 25.5 =$$

$$.1 \text{ fiber } > 5 \mu\text{m/cm}^3$$

#5 HHF-122

4 fibers/100 fields
.04 fibers/field

$$.04 \times 855$$

$$6.34 \times 28.9 = \underline{.2 \text{ fibers } 75 \mu\text{m}/\text{cm}^3}$$

#7 HHF-123

27 fibers/100 fields
.27 fibers/field

$$.27 \times 855$$

$$6.34 \times 28.7 = \underline{1.3 \text{ fibers } 75 \mu\text{m}/\text{cm}^3}$$

#8 HHF-124

2 fibers/100 fields
.02 fibers/field

$$.02 \times 855$$

$$6.24 \times 28.9 = \underline{.1 \text{ fibers } 75 \mu\text{m}/\text{cm}^3}$$

Bldg. 777 - ACK

8-25-80

#1 C. Miller - 2 LPM

stop 1117

SS #

start 1003

Dept. #

Smoke no
Chew - yes

1' 14'

74 minutes
148 liter

Outside ACK ^{freeway} between east end of ACK Unit and
devalering shed. Remove insulation from lines on elevator
shaft.

#2 D. C. Shambler 2 LPM

stop 1116

SS #

start 1005

Dept #

Smoke
Chew 3 yes

1 11

71 minutes

142 liters

#3 R. E. Templeton - 2 LPM

SS #

stop 1115

Dept #

start 1007

Smoke - no
Chew - yes

1 08

68 minutes

136 liters

~~1117
1003
1116
1005
1115
1007~~

8/25/80

#4 C Miller

stop - 1357

start 1254

1 03

63 minutes

126 liters

#5 D.C. Shamblin

stop ^{13 61}
~~13 51~~

start 1257

1 04

64 minutes

128 liters

#6 R.E. Templeton

stop ^{13 69}
~~13 59~~

start 1256

1 13

73 minutes

146 liters

Tubing pulled
off pump.

Asbestos

Analysis

8-26-80

#1 C. Miller - A.M. 11 fibers/100 fields
.11 fiber/field

$$.11 \times 855$$

$$6.24 \times 148$$

$$= 0.1 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

#2 D.C. Shamblin - A.M. 15 fibers/100 field
.15 fiber/field

$$.15 \times 855$$

$$6.24 \times 142 =$$

$$0.1 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

#3 R.E. Templeton - A.M. 15 fibers/100 fields
.15 fibers/field

$$.15 \times 855$$

$$6.24 \times 136 =$$

$$0.2 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

#4 C. Miller - P.M. 2 fibers/100 fields
.02 fibers/field

$$.02 \times 855$$

$$6.24 \times 126 =$$

$$< 0.1 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

Asbestos Analysis 8-26-80

#5 D.C. Shamblin - P.M. - 15 fibers/100 fields
.15 fibers/field

$$\frac{.15 \times 855}{6.24 \times 128} =$$

$$0.2 \text{ fibers} > 5 \mu\text{m}/\text{cm}^3$$

#6 R.E. Templeton - P.M. 6 fibers/100 fields
.06 fibers/field

$$\frac{.06 \times 855}{6.24 \times 146}$$

$$6.24 \times 146$$

$$< 0.1 \text{ fibers} > 5 \mu\text{m}/\text{cm}^3$$

ASBESTOS

Second and

Bldg 706 - Third Level

8-19-80

Shipping ~~to~~ 101 Autoclave and associated lines

#1 RE Raines - ^{AM} (HNZI)

SS# 233-80-7970

Dept 32749

Smoke } - Yes
Chew }

stop 1055 60
start 0922 33
93

1 3 3

93 minutes

186 liters

#2 JW Greenlee ^{AM} (HNZI)

SS# 234-88-0772

Dept 32749

2 LPM

Smoke } - No
Chew }

stop 1055 60
start 0920 35
95

1 3 5

95 minutes

190 liters

Asbestos Calculations

Bldg. 706

8-20-80

#1 R.E. Raines - AM

11 fibers/100 fields

11 fibers/field

$$\frac{.11 \times 855}{6.24 \times 186} = .1$$

.1

108 fibers $> 5 \mu\text{m}/\text{cm}^3$

#2 J.W. Greenlee - AM

40 fibers/100 fields

40 fibers/field

$$\frac{.4 \times 855}{6.24 \times 190} = .3$$

.3

29 fibers $> 5 \mu\text{m}/\text{cm}^3$

Bldg 777-ACR

8-19-80

#1 D.C. Shamblin - PM (HQZ)

SS# 233-38-0292

Dept. # 93642

smoke } yes
chew }

stop 1505

start 1300

2 05

125 minutes

250 liters

#2 R.E. Templeton - PM (KBZ2)

S.S.# 236-56-0836

Dept. 93639

8365

stop

start

14 71

~~1511~~

~~1113~~ 1313

1 58

118 minutes

236 liters

60
58
118

Asbestos Calculation Bldg. 177 8-20-80

1 - D.C. Shamblin - P.M.

~~120 fibers/4 fields~~

237 fibers/9 fields

26.33 fibers/field

$$26.33 \times 855$$

$$6.24 \times 250 =$$

$$14.4 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

TWA = ^{3.8}
~~3.75~~ fibers $> 5 \mu\text{m}/\text{cm}^3$
assuming no other exposure

2

R.E. Templeton - P.M.

~~112 fibers/6 fields~~

208 fibers/12 field

17.33 fibers/field

$$17.33 \times 855$$

$$6.24 \times 236 =$$

$$10.1 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

TWA = 2.5 fibers $> 5 \mu\text{m}/\text{cm}^3$

HHE-113

Data Sheet for Asbestos Sampling

Index No: 671

Plant 512

Location: #1 POWERHOUSE

I-512

Building: 5

Date: 8/18/80

Time: 10:31

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min:

2000

Total Vol. Sampled, Ml:

30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒Environmental ☐

Comment:

LABORER

Insulators Name BROGAN D.W.

236804788

DEPT 93633

Job Assignment

Field ☐Shop ☐Other ☒

Comment: WORKING AS LABORER

Type of Insulation

Kaylo ☐CA Silicate ☐Tape ☒Mud ☒Other ☐

Type of Insulating Operation

Inside ☐Outside ☒Unpacking ☐Forming ☐Installation ☐Stripping ☐Other ☒

Comment: CUTTING PROTECTIVE COVERING ON #3 BOILER

Forming

Installation

Stripping

Sawing

Hand ☐ Power ☐

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape ☒

Sleeves

Mud ☒

Cleanup

Disposal:

Picture Taken: Yes ☐No ☐

Analyzed by:

Ruth Clise

Date: 8-21-80

Fiber Count/Ml 1.0 fiber

754/pc

UCC 024645

HF-114

Data Sheet for Asbestos Sampling

Index No: 671

Plant 512

Location: #1 POWERHOUSE I 512

Building: 5

Date: 8/18/80

Time: 1014 1029

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min: 2000

Total Vol. Sampled, Ml: 30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒ Environmental ☐

Comment:

LABORER

Insulators Name SMITH W.F.

235 907834

DEPT 93653

Job Assignment Field ☐ Shop ☐ Other ☒

Comment: WORKING AS LABORER

Type of Insulation

Kaylo ☐ CA Silicate ☐ Tape ☒ Mud ☒ Other ☐

Type of Insulating Operation

Inside ☐ Outside ☒Unpacking ☐ Forming ☐ Installation ☐ Stripping ☒ Other ☐

Comment: STRIPPING COVERING AND INSULATION OFF #3 BOILER

Forming

Installation

Stripping

Sawing ☐Hand ☐ Power ☐Mud Preparation ☐Cleanup ☐Transporting ☐

Dry Type Block

Assembly ☐Covering ☐Mud App ☐Dry Type Tape ☐Dry Type Sleeve ☐Wet Application ☐Mud ☐Spray ☐Cleanup ☐Blocks ☐Tape ☒Sleeves ☐Mud ☒Cleanup ☐

Disposal:

Picture Taken: Yes ☐No ☐

Analyzed by: Ruth Clise

Date: 8-21-80

Fiber Count/Ml 0.5 fiber

7500 f/cm³

HNF-115

Data Sheet for Asbestos Sampling

Index No: 671

Plant 512

Location: #1 POWERHOUSE IS12

Building: 5

Date: 8/18/80

Time: 1017
1032

Sampling Period, Minutes 5

(15)

Sampling Rate, Ml/Min: 2000

Total Vol. Sampled, Ml: 30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒ Environmental ☐

Comment:

LABORER
Insulators Name JIVIDEN T. L.

23502 9777 DEPT 93639

Job Assignment Field ☐ Shop ☐ Other ☒

Comment: WORKING AS LABORER

Type of Insulation

Kaylo ☐ CA Silicate ☐ Tape ☒ Mud ☒ Other ☐

Type of Insulating Operation

Inside ☐ Outside ☒Unpacking ☐ Forming ☐ Installation ☐ Stripping ☒ Other ☐

Comment: HOLE WATCHER

Forming

Installation

Stripping

Sawing ☐Dry Type Block ☐Blocks ☐Hand ☐ Power ☐Assembly ☐Tape ☒Mud Preparation ☐Covering ☐Sleeves ☐Cleanup ☐Mud App ☐Mud ☒Transporting ☐Dry Type Tape ☐Cleanup ☐Dry Type Sleeve ☐Wet Application ☐Mud ☐Spray ☐Cleanup ☐

Disposal:

Picture Taken: Yes

No

Analyzed by: Ruth Clise

Date: 8-21-80

Fiber Count/Ml 0.6 fibers

7500 m/cm³

UCC 024647

HAF-116

Data Sheet for Asbestos Sampling

Index No: 671

Plant 512

Location: #1 POWERHOUSE I512

Building: 5

Date: 8/18/80

Time: 1018
1025

Sampling Period, Minutes

5

15 (17)

Sampling Rate, Ml/Min: 2000

Total Vol. Sampled, Ml: 34000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒ Environmental ☐

Comment:

LABORER

Insulators Name: DRAKE M.E.

235827121

DEPT 93639

Job Assignment Field ☐ Shop ☐ Other ☒

Comment: WORKING AS LABORER.

Type of Insulation

Kaylo ☐ CA Silicate ☐ Tape ☒ Mud ☒ Other ☐

Type of Insulating Operation

Inside ☐ Outside ☒Unpacking ☐ Forming ☐ Installation ☐ Stripping ☐ Other ☒

Comment: HOLDING BAG AND FILLING WITH STRIPPED OFF INSULATION

Forming

Installation

Stripping

Sawing ☐Hand ☐ Power ☐Mud Preparation ☐Cleanup ☐Transporting ☐Dry Type Block ☐Assembly ☐Covering ☐Mud App ☐Dry Type Tape ☐Dry Type Sleeve ☐Wet Application ☐Mud ☐Spray ☐Cleanup ☐Blocks ☐Tape ☐Sleeves ☐Mud ☐Cleanup ☒ Collection in
DISPOSAL BAGDisposal: ☐Picture Taken: Yes ☐ No ☐

Analyzed by: Ruth Cise

Date: 8-21-80

Fiber Count/Ml <0.1 fiber

>75 $\mu\text{m}/\text{cm}^3$

UCC 024648

HHF-117

Data Sheet for Asbestos Sampling

Index No:

Plant 512

Location: #1 POWER HOUSE I-512

Building: 5

Date: 8/18/80

Time: 10²³ 1038

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min: 2000

Total Vol. Sampled, Ml: 30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒

Environmental

Comment:

Insulators Name HUBBARD J.C. JR.

234866432

DEPT 93633

Job Assignment

Field

Shop

Other ☒

Comment: WORKING AS LABORER

Type of Insulation

Kaylo

CA Silicate

Tape ☒Mud ☒

Other

Type of Insulating Operation

Inside

Outside ☒

Unpacking

Forming

Installation

Stripping ☒

Other

Comment: STRIPPING COVERING AND INSULATION OFF #3 BOILER

Forming

Installation

Stripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape ☒

Sleeves

Mud ☒

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by: Ruth Clise

Date: 8-21-80

Fiber Count/Ml 45.7 fibers

75000/cm³

UCC 024649

Asbestos Institute

Analyzed
~~Calculated~~ 8-21-80

by Ruth Chase (DRC)

H#F-113

21 fibers/100 fields
.21 fibers/field

$$\frac{.21 \times 855}{6.24 \times 30} = \underline{1.0 \text{ fiber } > 5 \mu\text{m/cm}^3}$$

H#F-114

11 fibers/100 fields
.11 fibers/field

$$\frac{.11 \times 855}{6.24 \times 30} = \underline{.5 \text{ fiber } > 5 \mu\text{m/cm}^3}$$

H#F-115

14 fibers/100 fields
.14 fiber/field

$$\frac{.14 \times 855}{6.24 \times 30} = \underline{.6 \text{ fibers } > 5 \mu\text{m/cm}^3}$$

HHF-116

2 fibers/100 fields
.02 fibers/field

.02 x 855

6.24 x 34 =

< .1 fiber > 5 μ m / cm³

HHF-116

108 fibers/~~100~~¹² fields
200 fibers/20 fields
~~200~~¹⁰ fibers/field

10 x 855

6.24 x 30 =

45.7 fibers > 5 μ m / cm³

~~Book # 222~~

Asbestos

Bldg. 777

8-18-80

sleepy

#1 D.C. Shamblin Insulator (HQZ)

SS# 233-38-0292

stop

10 77

~~117~~

Dept. # 936 42

2 LPM

start

1036

Smoke }
Chew } Yes

41 minutes

82 liters

Stripping 2 asbestos covered lines in Room 111 - ACR

#2 R.E. Templeton (KBZ2)

S.S# 236-56-~~0836~~

stop

10 80

~~110~~

Dept. 936 35

start

1038

Smoke - no

42 minutes

Chew - Yes

84 liters

Wetted and bagged ^{insulation} stripped insulation.

#3 D.C. Shamblin

2 LPM

Stripped

stop

13 113

~~153~~

start

1255

1' 58"

118 minutes

236 liters

#4 R.E. Templeton

2 LPM

stop

15 77

start

1248

2 29

149 minutes

298 liters

Bagged and cleaned area

Asbestos 777-ACR

Calculated 8-19-86

4# R.E. Templeton - P.M.

~~100%~~ 102 fibers / 12 fields
8.5 fibers / field

$$8.5 \times 855$$

$$6.24 \times 298 = \frac{3.9}{3.9} \text{ fibers } > 5 \mu\text{m/cm}^3$$

$$\text{TWA - Templeton} = \frac{\left(\frac{6.3}{6.28} \times 118 \right) + \left(\frac{3.9}{3.93} \times 149 \right)}{480} =$$

$$\frac{743.4 + 581.1}{744.4 + 585.57} = \frac{1324.5}{1329.97} = 2.76 \text{ fibers } > 5 \mu\text{m/cm}^3$$

D.C. Shamblin - A.M. - 15.4 fibers $> 5 \mu\text{m/cm}^3$ P.M. 11.3 fibers $> 5 \mu\text{m/cm}^3$

$$\text{TWA} = 4.1 \text{ fibers } > 5 \mu\text{m/cm}^3$$

R.E. Templeton - A.M. - $\frac{6.3}{6.28}$ fibers $> 5 \mu\text{m/cm}^3$ 3.9 fibers $> 5 \mu\text{m/cm}^3$

$$\text{TWA} = 2.8 \text{ fibers } > 5 \mu\text{m/cm}^3$$

Asbestos 777-ACR

Calculated 8-19-80

#1 - D.C. Shamblin - ^{A.M.} ~~8-18-80~~
8-18-80

~~203~~
203 fibers / 22 fields
~~90.9~~ fibers
9.23 fibers / field

$$9.23 \times 855$$

$$6.24 \times 82 = 15.4 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

#2 - R.E. Templeton - A.M.
(8-18-80)

104 fibers / 27 fields
3.85 fibers / field

$$3.85 \times 855$$

$$6.24 \times 84 = 6.3 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

#3 D.C. Shamblin - P.M.
8-18-80

116 fibers / 6 fields
196 fibers / 10 fields
19.6 fibers / field

$$19.6 \times 855$$

$$6.24 \times 236 = 11.3 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

$$TWA = \frac{(15.4 \times 41) + (11.3 \times 118)}{480} = \frac{631.4 + 1333.4}{480} = 4.1 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

Fourth

Bldg. 707- Cell 11 - ~~Third~~ Level

8-5-80

2 LPM

#1 Raines, RE (HNZI) Stop 0958

233-80-7970

Start 0839

Dept. 32749

1' 19'

79 minutes

Smoke } YES
Chew }

158 liters

Stripping and Bagging

2 LPM

#2 Greenlee, JW (HNZI) Stop 0959

55# 234-88-0774

Start 0841

78 minutes

Dept 32749

1' 18

156

Smoke } NO
Chew }

Stripping & Bagging

Slapping 50. ft 1/2" zinc steam line
into 2 sections. Dilled with garden sprayer

Didn't wear gloves

Asbestos

Calculations - Bldg. 707, Fourth Level, Cell 11

8-5-80 by DEC

#1 R.E. Raines 2.13 fibers/100 fields
 2.13 fibers/field

$$\frac{2.13 \times 855}{6.24 \times 158} =$$

$$1.85 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

#2 J.W. Greenlee

1.05 fibers/100 field
 1.05 fibers/field

$$\frac{1.05 \times 855}{6.24 \times 156} =$$

$$.92 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

Data Sheet for Asbestos Sampling

Index No: 512 - HHF - 101

Plant 512

Location: #1 POWERHOUSE

Building: 5

Date: 7-21-80

Time: 10:36
11:01

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min: 2000

Total Vol. Sampled, Ml: 30000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒Environmental ☐

Comment:

Insulators Name

D.R. STEPHENS

408-11-8059

Job Assignment

Field ☒Shop ☐Other ☐

Comment: 3RD Level - INSERTING PIPING IN Tube Sheet

Type of Insulation

Kaylo ☐CA Silicate ☐Tape ☐Mud ☒Other ☒

Type of Insulating Operation

Inside ☐Outside ☒Unpacking ☐Forming ☐Installation ☐Stripping ☐Other ☒

Comment:

Forming

Installation

Stripping

Sawing

Hand ☐ Power ☐

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken:

Yes ☐No ☐

Analyzed by:

Luth Clise (DRC)

Date: 7-24-80

Fiber Count/Ml

39 fibers/100 fields = .39 fibers/field

.39 x 855

UCC 024657

Data Sheet for Asbestos Sampling

Index No: 512-HHF-102

Plant 512

Location: #1 POWERHOUSE

Building: 5

Date: 7-21-80

Time: 10³⁰ 10⁵¹

Sampling Period, Minutes

5

1818

Sampling Rate, ML/Min: 2000

Total Vol. Sampled, ML:

36,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, ML Standard Conditions

Type Sample

Personal ☒Environmental ☐

Comment:

Insulators Name

W. P. GILMORE

237-34-3955

Job Assignment

Field ☒Shop ☐Other ☐

Comment: RIGGIR GUIDING TUBES INTO TUBE SHEET

Type of Insulation

Kaylo ☐CA Silicate ☐Tape ☐Mud ☒Other ☒

Type of Insulating Operation

Inside ☐Outside ☒Unpacking ☐Forming ☐Installation ☐Stripping ☐Other ☒

Comment:

Forming

Sawing ☐Hand ☐ Power ☐Mud Preparation ☐Cleanup ☐Transporting ☐

Installation

Dry Type Block ☐Assembly ☐Covering ☐Mud App ☐Dry Type Tape ☐Dry Type Sleeve ☐Wet Application ☐Mud ☐Spray ☐Cleanup ☐

Stripping

Blocks ☐Tape ☐Sleeves ☐Mud ☐Cleanup ☐

Disposal:

Picture Taken:

Yes ☐No ☐

Analyzed by: Ruth Clise (DRC)

Date: 7-24-80

Fiber Count/ML

2 fibers/100 fields = .02 fibers/field

.02 X 855

UCC 024658

2

Data Sheet for Asbestos Sampling

Index No: 512-HHF-103

Plant 512

Location: POWER HOUSE

Building: 5

Date: 7-21-80

Time: 10⁴⁰ SE

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min:

2000

Total Vol. Sampled, Ml:

30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒Environmental ☐

Comment:

Insulators Name

S. J. EDENS

Job Assignment

Field ☒Shop ☐Other ☐Comment: RIGGERS AT 4TH LEVEL GUIDING RIGGS INTO TUBE
SHEET

Type of Insulation

Kaylo ☐CA Silicate ☐Tape ☐Mud ☒Other ☒

Type of Insulating Operation

Inside ☐Outside ☒Unpacking ☐Forming ☐Installation ☐Stripping ☐Other ☒

Comment:

Forming

Sawing

Hand ☐ Power ☐

Mud Preparation

Cleanup

Transporting

Installation

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Stripping

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken:

Yes ☐No ☐

Analyzed by:

Ruth Clise

(DRC)

Date: 7-24-80

Fiber Count/Ml

2 fibers/100 fields = .02 fibers/field

.02 x 855

as fibers > 5 microns

UCC 024659

Data Sheet for Asbestos Sampling

Index No: 512-HHF-104

Plant 512

Location: #1 POWERHOUSE

Building: 5

Date:

Time: 10⁴⁵/_{11⁰⁰}

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min:

2000

Total Vol. Sampled, Ml:

30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal ☒Environmental ☐

Comment:

Insulators Name

D. J. WEHRLE

236-86-7067

Job Assignment

Field ☒Shop ☐Other ☐Comment: RISK AT 3RD Level GUIDING PIPE INTO
TUBE SHEET.

Type of Insulation

Kaylo ☐CA Silicate ☐Tape ☐Mud ☒Other ☒

Type of Insulating Operation

Inside ☐Outside ☒Unpacking ☐Forming ☐Installation ☐Stripping ☐Other ☒

Comment:

Forming

Sawing ☐Hand ☐ Power ☐Mud Preparation ☐Cleanup ☐Transporting ☐

Installation

Dry Type Block ☐Assembly ☐Covering ☐Mud App ☐Dry Type Tape ☐Dry Type Sleeve ☐Wet Application ☐Mud ☐Spray ☐Cleanup ☐

Stripping

Blocks ☐Tape ☐Sleeves ☐Mud ☐Cleanup ☐

Disposal:

Picture Taken:

Yes ☐No ☐

Analyzed by:

Ruth Clise (DRC)

Date: 7-24-80

Fiber Count/Ml

1 fiber/100 fields = .01 fiber/field

.01 X 855

UCC 024660

Data Sheet for Asbestos Sampling

Index No: 512-HHF-105

Plant 512

Location: POWERHOUSE

Building: 5

Date: 7-21-80

Time: 10⁵⁰
11⁰⁵

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min: 2000

Total Vol. Sampled, Ml:

30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal

Environmental

Comment:

Face level on beam near
#3 boiler while piping
was being inserted - west
side of job area

Insulators Name

Job Assignment

Field

Shop

Other

Comment:

Type of Insulation

Kaylo

CA Silicate

Tape

Mud

Other

Type of Insulating Operation

Inside

Outside

Unpacking

Forming

Installation

Stripping

Other

Comment:

FormingInstallationStripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by:

Ruth Chase (DRC)

Date: 7-24-80

Fiber Count/Ml

1 fiber/100 fields = .01 fibers/field
.01 X 855 = 8.55

UCC 024661

Data Sheet for Asbestos Sampling

Index No: 512-HHF-106

Plant 512

Location: #1 POWER HOUSE

Building: 5

Date: 7-21-80

Time: 10⁵²
11⁰⁷

Sampling Period, Minutes 5

(15)

Sampling Rate, Ml/Min: 2,000

Total Vol. Sampled, Ml: 30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal

Environmental

✓

Comment:

FAC Locat on beam
near #3 Boiler while
Piping was being inserted
on east side

Insulators Name

Job Assignment

Field

✓

Shop

Other

Comment:

Type of Insulation

Kaylo

CA Silicate

Tape

Mud

✓

Other

✓

Type of Insulating Operation

Inside

Outside

✓

Unpacking

Forming

Installation

Stripping

Other

Comment:

Forming

Installation

Stripping

Sawing

Dry Type Block

Blocks

Hand Power

Assembly

Tape

Mud Preparation

Covering

Sleeves

Cleanup

Mud App

Mud

Transporting

Dry Type Tape

Cleanup

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by: Ruth Chase (DRC)

Date: 7-24-80

Fiber Count/Ml

2 fibers/100 fields = .02 fibers/field
.02 x 855 =

UCC 024662

Data Sheet for Asbestos Sampling

Index No: 512-HHF-109

Plant 512

Location: POWERHOUSE

Building: 5

Date: 7-21-80

Time: 1:30
1:45

Sampling Period, Minutes 5

(15)

Sampling Rate, Ml/Min: 2000

Total Vol. Sampled, Ml: 30 000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal

Environmental

✓

Comment:

non operational and undisturbed by workers

South of #6 Precipitator
on the top level

Insulators Name

Job Assignment

Field

Shop

Other

Comment:

Type of Insulation

Kaylo

CA Silicate

Tape

Mud

✓ Other

✓

Type of Insulating Operation

Inside

Outside

✓

Comment:

Unpacking

Forming

Installation

Stripping

Other ✓

Forming

Installation

Stripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken: Yes

No

Analyzed by:

Ruth Chase (DRC)

Date: 7-24-80

Fiber Count/Ml

No Fibers Seen (Or Dust)

UCC 024663

Data Sheet for Asbestos Sampling

Index No: 512-NHF-110

Plant 512

Location: POWER HOUSE

Building: 5

Date: 7-21-80

Time: 1:35

Sampling Period, Minutes

5

(15)

Sampling Rate, Ml/Min:

2000

Total Vol. Sampled, Ml:

30000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal

Environmental

Comment: non-operational & undisturbed by workers.

South of #4 Precipitator at 2
top level. 1 ft from Exposed
Insulation.

Insulators Name

Job Assignment

Field

Shop

Other

Comment:

Type of Insulation

Kaylo

CA Silicate

Tape

Mud

Other

Type of Insulating Operation

Inside

Outside

Unpacking

Forming

Installation

Stripping

Other

Comment:

Forming

Installation

Stripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by:

Kath Clise (DRC)

Date: 7-24-80

Fiber Count/Ml

No Fibers Seen

UCC 024664

Data Sheet for Asbestos Sampling

Index No: 512 - HAF - 111

Plant 512

Location: POWERHOUSE

Building: 5

Date: 7-21-80

Time: 1:53¹³⁵

Sampling Period, Minutes 5

(15)

Sampling Rate, MI/Min: 2000

Total Vol. Sampled, MI: 30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, MI Standard Conditions

Type Sample

Personal

Environmental ☒Comment: CARPENTERS Building Scaffold #2 Boiler -
UPWIND of SAMPLERSouth of #1 Boiler
Face Level

Insulators Name

Job Assignment

Field

Shop

Other

Comment:

Type of Insulation

Kaylo

CA Silicate

Tape

Mud

Other ☒

Type of Insulating Operation

Inside

Outside ☒

Unpacking

Forming

Installation

Stripping

Other ☒

Comment:

Forming

Installation

Stripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken: Yes

No

Analyzed by:

Kath Clise (DRC)

Date: 7-24-80

Fiber Count/MI

No Fibers Seen

UCC 024665

Data Sheet for Asbestos Sampling

Index No: 512-HHF-112

Plant 512

Location: POWERHOUSE

Building: 5

Date: 7-21-80

Time: 1³⁰/₁₅₅

Sampling Period, Minutes 5

(15)

Sampling Rate, Ml/Min: 2000

Total Vol. Sampled, Ml: 30,000

Temperature °C

Dry/Wet Bulb Temperature °C

Barometric Pressure, mm Hg.

Corrected Barometric Pressure, mm Hg.

Sample Volume, Ml Standard Conditions

Type Sample

Personal

Environmental

Comment: CARPENTERS building scaffolds #2 boiler - upwind of sampler

Insulators Name

Job Assignment

Field

Shop

Other

Comment:

Type of Insulation

Kaylo

CA Silicate

Tape

Mud

Other

Type of Insulating Operation

Inside

Outside

Unpacking

Forming

Installation

Stripping

Other

Comment:

Forming

Installation

Stripping

Sawing

Hand Power

Mud Preparation

Cleanup

Transporting

Dry Type Block

Assembly

Covering

Mud App

Dry Type Tape

Dry Type Sleeve

Wet Application

Mud

Spray

Cleanup

Blocks

Tape

Sleeves

Mud

Cleanup

Disposal:

Picture Taken:

Yes

No

Analyzed by:

Ruth Clise (DRC) Date: 7-24-80

Fiber Count/Ml

1 fiber/100 fields .01 fiber/field

.01 X 855

- 25 fibers/field

UCC 024666

Ralph Painter
Red Monday

#1

7-3-80

D.C. Shamblin - Insulator

SS# 233-38-0292

Dept# 93642

Smoke - Yes

Chew - Yes

STOP

10 83

~~11 23~~

START

0935

1' 48

60
48

108 minutes
216 fitters

appx 200ft - Only fittings asbestos, most of the line is fiberglass
stripping insulation from cycle water lines
on pumps in basement of cooling tower (Bldg. 789)

#2 C. Miller - Insulator

SS# 234-24-8836

Dept. # 93642

Smoke - No

Chew - Yes

STOP

10 83

~~11 23~~

START

0935

1 48

60
48

108 minutes
216 fitters

#3 R.R. Burgess -

SS# 236-80-4155

Dept # 93639

Smoke - no

Chew - no

STOP

10 85

~~11 25~~

START

0955

1 30

60
30

90 minutes

180 fitters

#4 D.C. Shamblin - P.M.

STOP 1510

START 1255

#5 C~~E~~ Miller - P.M.

STOP 1510

START 1250

#6 R.R. Burgess - PM

STOP 1510

START 1303

Asbestos Calculations

7-7-80

#1 D.C. Shamblin - 7-3-80

$$109 \text{ fibers}/100 \text{ fields} = 1.09 \text{ fibers/field}$$

$$\frac{1.09 \times 855}{6.24 \times 216} = .7 \text{ fibers } 75 \mu\text{m}/\text{cm}^3$$

#2 C. Miller - 7-3-80

$$50 \text{ fibers}/100 \text{ fields} = .5 \text{ fibers/field}$$

$$\frac{.5 \times 855}{6.24 \times 216} = .3 \text{ fibers } 75 \mu\text{m}/\text{cm}^3$$

#3 RR Burgess - 7-3-80

$$43 \text{ fibers}/100 \text{ fields} = .43 \text{ fibers/field}$$

$$\frac{.43 \times 855}{6.24 \times 180} = .3 \text{ fibers } 75 \mu\text{m}/\text{cm}^3$$

Calculations - Asbestos

4-29-80

1 F.E. Cobb - Insulator

14 fibers/100 field

.14 fibers/field

$$.14 \times 855$$

$$6.24 \times 126 = .15 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

4 F.E. Cobb - Insulator

58 fibers/100 field

.58 fibers/field

$$.58 \times 855$$

$$6.24 \times 216 = .37 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

7 F.E. Cobb - Insulator -

21 fibers/100 fields

.21 fibers/field

$$.21 \times 855$$

$$6.24 \times 60 = .48 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

10 F.E. Cobb - Insulator

4 fibers/100 field

.04 fibers/field

$$.04 \times 855$$

$$6.24 \times 90 = .06 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

$$\text{TWA - F.E. Cobb} = (.15 \times 63) + (.37 \times 108) + (.48 \times 30) +$$

$$= 9.45 + 39.96 + 14.4 + 2.7$$

$$= 66.51 / 480 = .14 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

TWA

UCC 024670

Calculations - Asbestos

4-29-80

#2 T.L. Jividen - Tinsmith

43 fibers/100 fields

.43 fibers/field

$$.43 \times 855$$

$$6.24 \times 114$$

$$= \underline{0.52 \text{ fibers } 75 \mu\text{m} / \text{cm}^3}$$

#5 T.L. Jividen - Tinsmith

100 fibers/100 fields

1 fiber/field

$$1 \times 855$$

$$6.24 \times 222$$

$$= \underline{0.62 \text{ fibers } 75 \mu\text{m} / \text{cm}^3}$$

#8 T.L. Jividen -

Calculations - ASBESTOS

4-29-80

3 T.G. Grant - laborer 36 fibers/100 field
36 fiber/field

$$\frac{.36 \times 855}{6.24 \times 116} = .43 \text{ fibers} > 5 \mu\text{m/cm}^3$$

#6 T.G. Grant - laborer 108 felers/100 field
1.08 felers/field

$$\frac{1.08 \times 855}{6.24 \times 232} = 0.64 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

#9 - T.G. Grant - laborer 44 fibers/100 fields
44 fibers/field

$$6.24 \times 178 = 0.34 \text{ fibers } 75 \mu\text{m}/\text{cm}^3$$

$$\begin{aligned} TWA - T.G. \text{ Grant} &= (.43 \times 58) + (.64 \times 116) + (.34 \times 89) \\ &= 24.94 + 74.24 + 30.26 \\ &= 129.44 / 480 = .27 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3 \end{aligned}$$

Calculations - Asbestos

4-29-80

#2 T.L. Jividen - Tinsmith

43 fibers/100 fields

.43 fibers/field

$$.43 \times 855$$

$$6.24 \times 114$$

$$= \underline{0.52 \text{ fibers } 7.5 \text{ ml/cm}^3}$$

#5 T.L. Jividen - Tinsmith

100 fibers/100 fields

1 fiber/field

$$1 \times 855$$

$$6.24 \times 222$$

$$= \underline{0.62 \text{ fibers } 7.5 \text{ ml/cm}^3}$$

#8 T.L. Jividen -

Calculations - ASBESTOS

4-29-80

3 T.G. Grant - laborer 36 fibers/100 field
36 fibers/field

$$6.24 \times 116 = .43 \text{ fibers} > 5 \mu\text{m/cm}^3$$

6 T.G. Grant - laborer 108 feters / 100 field
1.08 feters / field

$$\frac{1.08 \times 855}{6.24 \times 232} = 0.64 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

#9 - T.G. Grant - laborer 44 fibers/100 fields
44 fibers/field

$$\frac{0.44 \times 855}{6.24 \times 178} = 0.34 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

$$\begin{aligned} TWA - T.G. \text{ Grant} &= (.43 \times 58) + (.64 \times 116) + (.34 \times 89) \\ &= 24.94 + 74.24 + 30.26 \\ &= 129.44 / 480 = .27 \text{ fibers} / 5 \mu\text{m} / \text{cm}^3 \end{aligned}$$

Asbestos - So. Chas.

4-16-80

Construction - So. Chas. Plant

Stripping approx 200ft Unclustos

Northeast of

West of Bldg 71 on pipe rack

Bldg. 36

Wore coveralls, gloves, Norton disposable masks
Used Hudson garden sprayer to wet down

AM

#1 M. L. Finney Ins "Mike"

stop - ^{10 77}
~~10 77~~

SS# 234-02-7947

start - 0840

Dept # ~~93~~ 93633

2' 37"

¹²⁰
+37

157 minutes

Smoke }
Chew } no

314 liters

AM

#2 T. J. Kennedy Ins Joe

stop - ^{10 75}
~~10 75~~

SS# 233-92-6557

start - 0845

Dept 93633

2 30 "

¹²⁰
+30

150 minutes

Smoke - yes
Chew - no

300 liters

AM

#3 M. Smith Marcie Leborer

stop - ^{10 80}
~~10 20~~

SS# 234-40-8153

start - 0845

Dept. 936 ³⁹ ~~4~~ ?

2' 35"

¹²⁰
35

155 minutes

Smoke - yes
Chew - no

310 liters

Shipping Insulation - South Charleston Const. 4-16-80

4 ML Finney - PM - Ins.

stop 1515

start 1305

2' 10"

$\begin{array}{r} 120 \\ +16 \\ \hline 136 \end{array}$

130 minutes

260 liters

5 TJ Kennedy - PM - Ins

stop 1515

start 1310

2 05 = 125 minutes

250 liters

6 M. Smith - PM - Laborer

stop 1515

start 1310

2 05 = 125 minutes

250 liters

4-17-80

1 M.L. Finney - A.M. - Insulator - 109 fibers/100 field
1.09 fibers/field

$$\frac{1.09 \times 855}{6.24 \times 314} = 0.48 \text{ fibers} \rightarrow 5 \mu\text{m}/\text{cm}^3$$

2 T.J. Kennedy - A.M. Insulator 293 fibers/100 fields
2.93 fibers/field

$$\frac{2.93 \times 855}{6.24 \times 300} = 1.34 \text{ fibers} > 5 \mu\text{m}/\text{cm}^3$$

3 M. Smith - A.M. Laborer 30 fibers/100-field
.3 fibers/field

$$\frac{.3 \times 855}{6.24 \times 310} = .13 \text{ fibers} > 5 \mu\text{m}/\text{cm}^3$$

4 M.L. Finney - P.M. - Insulator 63 fibers/100 field
.63 fibers/field

$$\frac{.63 \times 855}{6.24 \times 260} = .33 \text{ fibers} > 5 \mu\text{m}/\text{cm}^3$$

5 T.J. Kennedy - P.M. - Insulator 77 fibers/100 fields
.77 fibers/field

$$\frac{.77 \times 855}{6.24 \times 250} = .42 \text{ fibers} > 5 \mu\text{m}/\text{cm}^3$$

6 M. Smith - Laborer - PM 12 fibers/100 fields
.12 fibers/field

$$\frac{.12 \times 855}{6.24 \times 250} = .07 \text{ fibers} > 5 \mu\text{m}/\text{cm}^3$$

$$M.L. Finney - TWA = \begin{pmatrix} .48 \times 157 \\ (.33 \times 130) \end{pmatrix} = \begin{matrix} 75.36 \\ + 42.9 \end{matrix}$$

$$118.26 / 480 = .2 \text{ fibers} / 5 \mu\text{m}/\text{cm}^3$$

$$T.J. Kennedy - TWA = \begin{pmatrix} 1.34 \times 150 \\ (.42 \times 125) \end{pmatrix} = \begin{matrix} 201 \\ + 52.5 \end{matrix}$$

$$253.5 / 480 = .5 \text{ fibers} / 5 \mu\text{m}/\text{cm}^3$$

$$M. Smith - TWA = \begin{pmatrix} .13 \times 155 \\ (.07 \times 125) \end{pmatrix} = \begin{matrix} 20.15 \\ 8.75 \end{matrix}$$

$$28.9 / 480 = .06 \text{ fibers} / 5 \mu\text{m}/\text{cm}^3$$

4349 4-
Bell Blythe

Boiler front
Stripping Exhaust Duct
and Boiler front

#1 Powerhou

#2 Boiler second level

Stop 0930

#1 G.H. Landers - Insulator

start 0830

2-LPM

1 hr - 60 minutes

120 liters

#2 D.K. Naylor - Laborer

stop 0930

S.S.# 236860431

start 0830

Dept. #

1 hr = 60 minutes

2-LPM

120 liters

#3 B.M. Beckett -- Insulator

stop 0930

2-LPM

start 0830

1 hr = 60 minutes

120 liters

Boiler shut down and Cool.

Calculations

4-15-80

#1 Lowerhouse Institute

#1 G.H. Landers - ins. 31 fibers/100 fields

SS #

.31 fibers/field

Dept. #

$$\frac{.31 \cdot 855}{6.24 \cdot 120}$$

$$= .35 \text{ fibers } > 5\mu\text{m}/\text{cm}^3$$

→

#2 D.K. Naylor laborer

31 fibers/100 fields

SS #

.31 fibers/field

Dept. #

$$\frac{.31 \times 855}{6.24 \times 120}$$

$$= .35 \text{ fibers } > 5\mu\text{m}/\text{cm}^3$$

#3 B.M. Beckett - ins.

42 fibers/100 fields

SS #

.42 fibers/field

Dept. #

$$\frac{.42 \times 855}{6.24 \times 120}$$

$$= .48 \text{ fibers } > 5\mu\text{m}/\text{cm}^3$$

1 " "

10 G.H. Landers - Insulator
2 LPM

stop ^{14 83}~~1523~~
start 1445

38 minutes
76 liters

11 D.K. Naylor - Laborex

stop ^{14 107}~~1547~~
start 1458

49 minutes
98 liters

12 D.K. Milan - Insulator

stop ^{14 84}~~1524~~
start 1457

27 minutes
54 liters

ASBESTOS

4-1-80

BLDG 173

48 ft of 3 inch line of condensate line
first floor north ^{side of bldg. along} of operating area.

#1 John Greenlee - coat mec	stop	10 60 7100
2 LPM	start	0935
stripping		1' 25"
Wore coveralls and respirator		85 minutes
Watered good		170 liters

#2 Ronnie Raines - coat mec	stop	10 61 7101
Bagging - wore respirator	start	0935
Bagged in plastic bags		1' 26"
		86 minutes
		172 liters

Coat mecs didn't bring Barriers and Warning signs
Didn't bring Broom

#3 John Greenlee

2-LP/M

Stop

Start

14 65
~~15 05~~

1240

2' 25"

13 95
~~14 35~~

1240

1' 55"

115 minutes

230 liters

#4 Ronnie Raines

stop

start

14 65
~~15 05~~

1245

2' 20"

13 95
~~14 35~~

1245

1' 50"

110 minutes

220 liters

Asbestos

Counted 4-2-80

#1 - John Greenlee - A.M. 54 fibers/100 fields 170 liters
4-1-80 .54 fibers/field

$$\frac{.54 \times 855}{6.24 \times 170} = 0.4 \text{ fibers } > 5 \mu\text{m/cm}^3$$

#2 - Ronnie Raines - A.M. 28 fibers/100 field 172 liters
.28 fibers/field

$$\frac{.28 \times 855}{6.24 \times 172} = 0.2 \text{ fibers } > 5 \mu\text{m/cm}^3$$

#3 John Greenlee - P.M. - 31 fibers/100 fields 230 liter
.31 fibers/field

$$\frac{.31 \times 855}{6.24 \times 230} = 0.2 \text{ fiber } > 5 \mu\text{m/cm}^3$$

#4 Ronnie Raines - P.M. 19 fibers/100 field 220 liter
.19 fibers/field

$$\frac{.19 \times 855}{6.24 \times 220} = 0.1 \text{ fiber } > 5 \mu\text{m/cm}^3$$

704- Powerhouse -2nd level

11-26-79

#1 S.M. Barker, insulator

SS.# 232-92-1527

Dept. 93633 2-LPM

Smoke - yes

Chew - no

boiler cool

stop

08 90

0936

start

0843

47 minutes

94 liters

appt ¹⁵ ft duct - of 4 ft. diameter

Stripping ~~#1~~ Exhaust duct to #4 boiler 6x6 duct - ~~14~~ ft. tall
on second level, very well wetted, bagged on site.

Wore coveralls, gloves, Norton mask

#2 G.H. Landers, insulator

SS.# 233-32-4607

Dept. ~~93633~~ ⁹³⁶⁴² 2-LPM

Smoke ~~yes~~ no

Chew ~~yes~~ yes

stop

08 90

0930

start

0843

47 minutes

94 liters

#3 P.M. Brown, laborer

SS.# 236-92-1620

Dept. 93639 2-LPM

Smoke - no

Chew - yes

stop

8 90

0930

start

0843

47 minutes

94 liters

#4 DR Powell laborer

SS# 234-76-6854

Dept 93639 2-LPM

Smoke } no
Chew }

stop

8 90

0930

start

0843

47 minutes

94 liters

704 Powerhouse (cont'd)

11-26-79

#5 S.M. Barker

stop

1140

2-LPM insulator

start

1008

2-LPM

Continued stripping after break

1' 32"

92 minutes

184 liters

#6 F.H. Landors

stop

1140

insulator

start

1009

2-LPM

Continued stripping after break

1' 31"

#7 P.M. Brown

stop

1145

laborer

start

1000

2-LPM

2-LPM

$\frac{45}{105}$

1' 45"

Cleaning & bagging after break 105 minutes

#8 D.R. Powell

stop

10 105

X 45

laborer

start

0956

2-LPM

2-LPM

$\frac{1049}{109}$

1' 49'

Cleaning & bagging after break.

109 minutes

704 Fawerhouse - 2nd level

11-26-79

9 S.M. Barker

stop

1407

start

1303

2-LPM

Stripping back side of 15 ft tall -
6 ft diameter duct and cleaning
area

1' 04"

64 minutes

128 liters

#10 B.H. Sanders

stop

1368

~~1408~~

start

1258

2-LPM

1' 10"

#11 P.M. Brown

stop

1425

start

1305

2-LPM

1' 20"

80 minutes

#12 D.R. Powell

stop

1423

start

1300

2-LPM

$\frac{60}{23} \div 3$

1' 23"

83 minutes

13 P.M. Brown

stop

1560

~~1600~~

start

1452

1' 08" = 68 minutes

Clean-up

#14 D.R. Powell

stop

1556

1450

start

1' 06"

66 minutes

Clean-up

UCC 024687

<u>Asbestos</u>	<u>SAMPLE</u>	<u>Time</u>	<u>Asbestos Fibers</u>	<u>Time</u>	<u>Date</u>
<u>DATE</u>	<u>TYPE</u>	<u>(Minutes)</u>	<u>(Fibers $> 5 \mu\text{m}/\text{cm}^3$)</u>	<u>Weighted Average</u>	<u>Analyzed</u>
11-26-79	#1 S.M. Barker	47 (0843-0930)	2.04	0.7	11-27-79
11-26-79	#5 S.M. Barker	92 (1008-1140)	1.83		11-27-79
11-26-79	#9 S.M. Barker	64 (1303-1407)	0.94		11-27-79
11-26-79	#2 G.H. Landers	47 (0843-0930)	1.34	0.5	11-28-79
11-26-79	#6 G.H. Landers	91 (1009-1140)	0.95		11-28-79
11-26-79	#10 G.H. Landers	70 (1258-1408)	0.85		11-28-79
11-26-79	#3 P.M. Brown	47 (0843-0930)	2.03	0.7	11-28-79
11-26-79	#7 P.M. Brown	105 (1000-1145)	0.95		11-28-79
11-26-79	#11 P.M. Brown	80 (1305-1425)	0.46		11-28-79
11-26-79	#13 P.M. Brown	68 (1452-1600)	1.44		11-28-79

<u>Asbestos</u>		<u>Asbestos Fibers</u>		<u>Time</u>	<u>DATE</u>
<u>DATE</u>	<u>SAMPLE TYPE</u>	<u>Time (Minutes)</u>	<u>(Fibers) $> 5 \mu m / cm^3$</u>	<u>Weighted Average</u>	<u>ANALYZED</u>
11-26-79	#4-D.R. Powell	47	0.9	0.5	11-28-79
	(0843-0930)				
11-26-79	#8-D.R. Powell	109	0.47		11-28-79
	(0956-1145)				
11-26-79	#12 D.R. Powell	83	0.36	0.5	11-28-79
	(1300-1423)				
11-26-79	#14 D.R. Powell	66	2.03		11-28-79
	(1450-1556)				

Asbestos Calculations

12 D.R. Powell 11-26-79 44 fibers/100 fields (analyzed 11-28-79)
$$\frac{.44 \times 855}{6.24 \times 166} = 0.36 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

14 D.R. Powell 11-26-79 196 fibers/100 fields (analyzed 11-28-79)
$$\frac{1.96 \times 855}{6.24 \times 132} = 2.03 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

704- Powerhouse - 3rd level

11-27-79

#3 boiler - exhaust duct

appt 8x4 duct x 10 feet I.D. fan

all wore Norton masks, coveralls, gloves, wetted well with hose

#1- C.M. Cunningham - insulator

S.S.# - 236-52-5385

stop ^{08 92}
~~0832~~

Dept. # 93642

start 0838

2-LPM

smoke }
chew } yes

54 minutes
108 liters

#2 J.F. Chandler, insulator

stop ^{08 94}
~~0834~~

S.S.# 236-36-7156

start 0840

2-LPM

Dept 93642

54 minutes

smoke }
chew } no

108 liters

#3 P.M. Brown, laborer

S.S.# 236-92-¹⁶²⁰~~1620~~

stop ^{08 96}
~~0836~~

Dept 93639

start 0855

2-LPM

smoke - no
chew - yes

41 minutes
82 liters

#4 D.R. Powell, laborer

stop ^{08 95}
~~0835~~

S.S.# 234-76-6854

start 0857

2-LPM

Dept 93639

38 minutes

smoke }
chew } no

76 liters

<u>Asbestos</u>	<u>SAMPLE</u>	<u>Time</u>	<u>Asbestos Fibers</u>	<u>DATE ANALYZED</u>
<u>DATE</u>	<u>Type</u>	<u>(Minutes)</u>	<u>(Fibers/5cm/cm³)</u>	

1-27-79	#1 C. Cunningham	54 (0838-0932)	0.49	11-28-79
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1-27-79	#2 J.F. Chandler	54 (0840-0934)	0.62	11-29-79
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1-27-79	#3 P.M. Brown	41 (0855-0936)	0.62	11-29-79
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1-27-79	#4 D.R. Powell	38 (0857-0935)	1.86	11-29-79
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Asbestos Calculations

1 - C.M. Cunningham 39 fibers/100 fields (analyzed 11-28-79)

$$\frac{.39 \times 855}{6.24 \times 108} = 0.49 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

2 - J.F. Chandler 49 fibers/100 fields (analyzed 11-29-79)

$$\frac{.49 \times 855}{6.24 \times 108} = 0.62 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

3 - P.M. Brown 37 fibers/100 field (analyzed 11-29-79)

$$\frac{.37 \times 855}{6.24 \times 82} = 0.62 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

4 - D.R. Powell 103 fibers/100 field (analyzed 11-29-79)

$$\frac{1.03 \times 855}{6.24 \times 76} = 1.86 \text{ fibers } > 5 \mu\text{m}/\text{cm}^3$$

2 LPM = 10.1 Rotometer.

Day Shift Supervisor
Power House
Ken Pyles

Asbestos 704 Power House 10-26-79

#1 - MSA Pump 2 LPM

stop

~~0903~~ 1015

J.C. Erwin - Insulator

start

~~0900~~ 0909

SS. #

Smoke - no

Dept. No. - 93642

2 MSA Pump 2 LPM

J.F. Chandley - Insulator

stop 1015

S.S.# 236-36-7156

Smoke or Chew no

Dept 93642

start 0908

3 MSA Pump 2 LPM

stop 1015

S.M. Barker - Insulator

start 0909

SS 232-92-1527

Smoke yes

Chew no

Dept. 93642

#4 MSA Pump - 2 LPM

stop 1015

D.R. Powell - Laborer

start 0908

S.S. 234-76-6854

Smoke or Chew - no

Dept 93639

Asbestos

10-26-79

#5 MSA - 2 LPM

stop 1015

~~P.M.~~ P. M. Brown

start 0909

S.S. # - 236-92-1620

Smoke - no

Chew - yes

Dept. 93635

C. N. Cunningham

S.S. -

Insulator

Insulation should be wetted more and aduenced to bag on site instead
Second level and first level ^{out} 704 Power House } of throwing to
stripping ^{exhaust} duct coming ~~out~~ #3 boiler } floor.
15 ft tall x 8 ft across x 6 feet deep
workmen

Everyone in power house operating area wore 3-M Disposable Masks

Those stripping & cleaning up wore 3 masks, gloves, and coveralls

#6 ~~1st~~ 2-LPM AREA - Level First Stop 1140
North Side Start 1108
between wall and
stack 32 minutes = 64 liters

#7 2-LPM AREA First Level Stop 1141
South side Start 1114
of stack 27 minutes = 54 liters

#8 ~~Barker~~ Stop
Start ~~1015~~

#9 D.R. Powell - Cleaning stop 1120
Start 1105 #20
15 minutes = 30 liters

#10 P.M. Brown Cleaning stop 1120
Start 1105
15 minutes = 30 liter

Asbestos - P.M.

10/26/79

# 11	Area North Side of Stack 2 LPM - First Level	stop start	$\begin{array}{r} 13.62 \\ \cancel{14.02} \\ \hline 13.11 \end{array}$	51 minutes	102 liters
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# 12	Area - South Side of Stack 2 LPM - First Level	stop start	$\begin{array}{r} 13.65 \\ \cancel{14.05} \\ \hline 13.10 \end{array}$	55 minutes	110 liters
------	---	---------------	--	------------	---------------

# 13	West Wall on Area - North Side of Stack near Stairs 2 LPM - Second Level Hung at breathing zone level	stop start	$\begin{array}{r} 13.68 \\ \cancel{14.08} \\ \hline 13.20 \end{array}$	48 minutes	96 liters
------	---	---------------	--	------------	-----------

14

15

ASBESTOS - 704 Power House (for Construction)

<u>DATE SAMPLED</u>	<u>TYPE SAMPLE</u>	<u>Count</u>	<u>DATE ANALYZED</u>
10-26-79	J.C. Erwin - Ins	First 5 personal samples not analyzed because dust and debris was too heavy to count Asbestos fibers.	
10-26-79	J.F. Chandler - Ins		
10-26-79	S.M. Barker - Ins		
10-26-79	D.R. Powell - Laborer		
10-26-79	P.M. Brown - Laborer		
10-26-79	#6 Area - First Level - North side of Stack 2-LPM	13 fibers/ 100 counts	10-29-79
10-26-79	#7 Area - First Level - South Side of Stack 2 LPM	20 fibers/100 counts	10-29-79
10-26-79	#9 D.R. Powell 2 LPM - Cleaning	86 fibers/100 counts	10-30-79
10-26-79	#10 P.M. Brown 2 LPM - Cleaning	65 fibers/100 counts	10-30-79

<u>DATE</u> <u>SAMPLED</u>	<u>Type</u> <u>SAMPLE</u>	<u>Count</u>	<u>DATE</u> <u>ANALYZED</u>
10-26-79	#11 - AREA - North of Stack 2 LPM First Level	75 fibers/100 fields	10/31/79
10-26-79	#12 AREA - South of Stack 2 LPM First Level	72 fibers/100 fields	10/31/79
10-26-79	#13 AREA - North Side of Stack 2 LPM Second Level	81 fibers/100 fields	10/31/79

CALCULATIONS

6 - Area (analyzed 10-29-79)

$$\frac{.13 \times 855}{6.24 \times 64} = 0.28 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

7 - Area (analyzed 10-29-79)

$$\frac{.2 \times 855}{6.24 \times 54} = 0.51 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

9 - D.R. Powell (analyzed 10-30-79)

$$\frac{.86 \times 855}{6.24 \times 30} = 3.93 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

10 - P.M. Brown (analyzed 10-30-79)

$$\frac{.65 \times 855}{6.24 \times 30} = 2.97 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

11 - AREA - ^{First Level} North of Stack - (analyzed 10-31-79)

$$\frac{.75 \times 855}{6.24 \times 102} = 1.01 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

12 - AREA - ^{First Level} South of Stack (analyzed 10-31-79)

$$\frac{.72 \times 855}{6.24 \times 110} = .9 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

13 - AREA - Second Level
North of Stack (analyzed 10/31/79)

$$\frac{.81 \times 855}{6.24 \times 96} =$$

1.16 fibers $> 5 \mu\text{m} / \text{cm}^3$

Stripping and Cleaning

704- 3RD LEVEL - Appt 2 ft - 8 inch 10-23-79

steam motor valves to ~~the~~ exhaust fan
on #1 boiler

#1 - MSA-2LPM -

Norma J. Dean

stop ^{8 80} 0920

SS # 232-46-9974

start 0852

Smoke } Yes

Chew } No

Dept. No. 327200

28"

#2 - MSA-2LPM

Ronald E. Raines

SS # 233-80-7970

OF 80

stop 0920

Smoke } Yes

Chew } No

Dept. No. 327200

start 0852

28 minutes

Ronnie and Norma wore gloves

" " " did not wear coveralls - Too Hot!

Portable fan running

Stripping three more feet, then cleaning

- Turned off fan
Wore gloves
Coveralls.

#3 Norma J. Dean

stop ^{12 82} 1322

MSA - 2LPM

start 1245

37'

#4 Ronald E. Raines

stop ^{12 84} 1324

MSA-2LPM

start 1245

39'

Asbestos Calculation

Analyzed 10/25/79

1 Norma J. Dean - A.M. 4 fibers/100 counts
(10-23-79)

$$\frac{.04 \times 855}{6.24 \times 56} = 0.1 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

2 Ronald E. Raines - A.M. 5 fibers/100-fields
(10-23-79)

$$\frac{.05 \times 855}{6.24 \times 56} = 0.1 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

3 Norma J. Dean - P.M. - 12 fibers/100 fields

$$\frac{.12 \times 855}{6.24 \times 74} = 0.2 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

4 Ronald E. Raines - P.M. - 114 fibers/100 fields

$$\frac{1.29 \times 855}{6.24 \times 78} = 2.3 \text{ fibers } 75 \mu\text{m} / \text{cm}^3$$

144 fibers/100 fields
258 (129 fibers/100 fields)

Barriers
Groups

Wilson Shelton

ASBESTOS

9-19-79

Bldg. 720 - Basement - Service Area

#1 J.R. Monin - ^{tapping} toft of asbestos insulation from stop 1421

ss# 234-24-8772 steamline 5-6 ^{Precipitron} ~~precipitron~~ start 1313

smoke or chew } No Dept# 32749 1 08

2-LPM - ^{MSA} ~~MSA~~ Pump 68 minutes

Wore Respirators and Coveralls 136 liters

Insulation wetted down ^{during the stripping} and

put in plastic bags for disposal

#2 J.W. Greenlee

ss# 234-88-0774 stop 1422

smoke or chew } No Dept# 32749 start 1310

2-LPM ^{MSA} ~~MSA~~ Pump 1' 12"

72 minutes

Wore Respirators and Coveralls 144 liters

Insulation wetted down ^{during the stripping} and

put in plastic bags for disposal.

Analyzed SAMPLE B

#1 9-20-79 9-19-79 28 fibers/100 fields

#2 9-20-79 9-20-79 43 fibers/100 fields

CALCULATIONS

$$\# 1 \quad \frac{.28 \cdot 855}{6.24 \cdot 136} = 0.3 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

$$\# 2 \quad \frac{.48 \cdot 855}{6.24 \cdot 144} = 0.5 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

$$\# 1 - \text{TWA} \quad \frac{0.3 \cdot 68}{480} = .04 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

$$\# 2 - \text{TWA} \quad \frac{0.5 \cdot 72}{480} = .08 \text{ fibers } > 5 \mu\text{m} / \text{cm}^3$$

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: W. T. Shelton, 704 Shop

Computer Ref. W-1106CC: G. F. Hurley
H. L. RobinsonPERSON MONITORED J. E. HackneyLocation Bldg. 702 - Outside Date 10/20/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	3.04 fibers	57 minutes	Stripping and bagging insulation from Dowtherm System
2	> 5 $\mu\text{m}/\text{cm}^3$		
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not Calculated
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Mr. Hackney wore a disposable dust respirator during the stripping. The piece of equipment to be stripped was well wetted before and during the stripping.

WORK BY

Ruth Clise

APPROVED BY

Maulan A. Patel

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: W. T. Shelton, 704 Shop

Computer Ref. W-1106CC: G. F. Hurley
H. L. RobinsonPERSON MONITORED R. P. HessLocation Bldg. 702 - Outside Date 10/20/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	1.3 fibers > 5 $\mu\text{m}/\text{cm}^3$	60 minutes	Stripping and bagging insulation off Dowtherm System
2			
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not Calculated
Ceiling Concentration

ALLOWABLE EXPOSURE

TWA	2 fibers > 5 $\mu\text{m}/\text{cm}^3$	<u>OSHA</u>	UCC	Other
Ceiling	<u> </u>	OSHA	UCC	Other

COMMENTS

The piece of equipment to be stripped was properly wetted before stripping. Mr. Hess wore a disposable dust respirator.

WORK BY

Ruth Clise

APPROVED BY

Maulan A. Patel

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: R. F. Painter, 5583 (511)

Computer Ref. W-1078

CC: C. W. Carman, 725-105 D. R. Paugh, 511-2009 E. J. Tawney, 5583
G. F. Hurley, 701-334 H. L. Robinson, 701-401
L. R. Noble, 511-2149 E. C. Shipley, 511-2009

PERSON MONITORED C. MillerLocation Bldg. 777 - Between eastern Date 8/25/80of ACR Unit and Dewatering ShedEXPOSURE RESULTS on second level of elevator shaft

	Conc.	Sampling Time	Comments
Sample 1	fibers > 5 0.1 $\mu\text{m}/\text{cm}^3$	74 minutes	A.M. Sample - Stripping
2	< 0.1 "	63 minutes	Insulation
3			P.M. Sample - Stripping
4			Insulation
5			
6			

Time-Weighted Average Concentration (TWA) < 0.1 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping was done outside and it was very well wetted by rain.

WORK BY

Ruth Clise

APPROVED BY

George Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: R. F. Painter, 5583 (511)

Computer Ref. W-1078

CC: C. W. Carman, 725-105 D. R. Paugh, 511-2009 E. J. Tawney, 5583
 G. F. Hurley, 701-334 H. L. Robinson, 701-401
 L. R. Noble, 511-2149 E. C. Shipley, 511-2009

PERSON MONITORED D. C. Shamblin

Location Bldg. 777 - Between easten Date 8/25/80

of ACR Unit and Dewatering Shed
on second level of elevator shaft

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > 5 0.1 $\mu\text{m}/\text{cm}^3$	71 minutes	A.M. - Stripping insulation
2	0.2 "	64 minutes	P.M. - Stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) <0.1 fibers > 5 $\mu\text{m}/\text{cm}^3$
 Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
 Ceiling _____ OSHA UCC Other

COMMENTS

Stripping was done outside and it was very well wetted by rain.

WORK BY

Ruth Clise

APPROVED BY

George Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: R. F. Painter, 5583 (511)

Computer Ref. W-1078

CC: C. W. Carman, 725-105 D. R. Paugh, 511-2009 E. J. Tawney, 5583
G. F. Hurley, 701-334 H. L. Robinson, 701-401
L. R. Noble, 511-2149 E. C. Shipley, 511-2009

PERSON MONITORED R. E. TempletonLocation Bldg. 777 - Between eastern date 8/25/80of ACR Unit and Dewatering Shed
on second level of elevator shaft

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	0.2 ^{fibers > 5} $\mu\text{m}/\text{cm}^3$	68 minutes	A.M. Sample - Bagging
2	<0.1 "	73 minutes	Insulation
3			P.M. Sample - Bagging
4			insulation and
5			cleaning area
6			

Time-Weighted Average Concentration (TWA) <0.1 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping was done outside and it was very well wetted by rain.

WORK BY

Ruth Clise

APPROVED BY

George Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: W. T. Shelton, 704

Computer Ref. 1070CC: G. F. Hurley
H. L. Robinson
R. G. Rowe, M.D.PERSON MONITORED Greenlee, J. W.Location Bldg. 707, Fourth Level, Date 8/5/80
Cell 11

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .92 5 $\mu\text{m}/\text{cm}^3$	78 mins.	Stripping and bagging sus- pected asbestos containing insulation from approximately 50 feet of 1/2-2" steam line.
2			
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) _____

Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA	2 fibers > 5 $\mu\text{m}/\text{cm}^3$	<u>OSHA</u>	UCC	Other
Ceiling	_____	OSHA	UCC	Other

COMMENTS

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

UCC 024710

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: W. T. Shelton, 704

Computer Ref. 1070CC: G. F. Hurley
H. L. Robinson
R. G. Rowe, M.D.PERSON MONITORED Raines, R. E.Location Bldg. 707, Fourth Level, Date 8/5/80
Cell 11

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers 1.85 >5 $\mu\text{m}/\text{cm}^3$	79 mins.	Stripping and bagging
2			suspected asbestos contain-
3			ing insulation from approxi-
4			mately 50 feet of 1/2 - 2 inch
5			steam line.
6			

Time-Weighted Average Concentration (TWA) _____

Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Even though the exposure concentration is near the allowable exposure, Mr. Raines wore a disposable 3M dust respirator which would give him further protection.

WORK BY Ruth CliseAPPROVED BY G. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: W. T. Shelton, 704

Computer Ref. W-1077CC: G. F. Hurley
H. L. RobinsonPERSON MONITORED R. E. RainesLocation Bldg. 706 - West End, Date 8/19/80
Second and Third Level

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers $\geq$ 0.1 5 $\mu\text{m}/\text{cm}^3$	93 minutes	Stripping and bagging
2			insulation on G-101
3			autoclave and adjacent
4			lines.
5			
6			

Time-Weighted Average Concentration (TWA) Not enough time to calculate
Ceiling Concentration TWA

ALLOWABLE EXPOSURE

TWA 2 fibers $>$ 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: W. T. Shelton, 704

Computer Ref. W-1077CC: G. F. Hurley
H. L. RobinsonPERSON MONITORED J. W. GreenleeLocation Bldg. 706 - West End, Date 8/19/80
Second and Third Level

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	0.3 fibers > 5 $\mu\text{m}/\text{cm}^3$	95 minutes	Stripping and bagging
2			insulation on G-101 auto-clave and adjacent lines.
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not Calculated
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA	2 fibers > 5 $\mu\text{m}/\text{cm}^3$	<u>OSHA</u>	UCC	Other
Ceiling	_____	OSHA	UCC	Other

COMMENTS

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: R. F. Painter, 5583 (511)

Computer Ref. 1064

CC: C. W. Carman, 725-105 L. R. Noble, 511-2149 E. C. Shipley, 512
D. H. Cook, 5583 (511) D. R. Paugh, 511-2009
G. F. Hurley, 701-334 H. L. Robinson, 701-401

PERSON MONITORED C. Miller

Location Basement of Bldg. 789 Date 7/3/80
(Cooling Tower)

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	^{fibers > 5} .3 $\mu\text{m}/\text{cm}^3$	108 minutes	A.M. Sample - Stripping Insulation
2			
3	*		P.M. Sample - Stripping Insulation
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not Calculated
Ceiling Concentration

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling OSHA UCC Other

COMMENTS

Because part of the insulation being stripped was believed to contain asbestos, the workers in the area still are required to wear disposable dust masks and keep the insulation to be stripped well wetted. Barricades and signs must be present to warn others in the area of the potential hazard. In the future, when there is doubt about the insulation containing asbestos, either full precautions for handling asbestos will be observed or a sample of the insulation will be tested for asbestos content prior to starting the job.

WORK BY Ruth CliseAPPROVED BY G. F. Hurley

*The P.M. sample could not be analyzed because it got wet.

UCC 024714

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: R. F. Painter, 5583 (511)

Computer Ref. 1064CC: C. W. Carman, 725-105
D. H. Cook, 5583 (511)
G. F. Hurley, 701-334L. R. Noble, 511-2149
D. R. Paugh, 511-2009
H. L. Robinson, 701-401

E. C. Shipley, 512

PERSON MONITORED D. C. ShamblinLocation Basement of Bldg. 789 Date 7/3/80
(Cooling Tower)

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > 5 .7 $\mu\text{m}/\text{cm}^3$	108 minutes	A.M. Sample - Stripping Insulation
2			
3	*		P.M. Sample - Stripping Insulation
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not Calculated
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Because part of the insulation being stripped was believed to contain asbestos, the workers in the area still are required to wear disposable dust masks and keep the insulation to be stripped well wetted. Barricades and signs must be present to warn others in the area of the potential hazard. In the future, when there is doubt about the insulation containing asbestos, either full precautions for handling asbestos will be observed or a sample of the insulation will be tested for asbestos content prior to starting the job.

WORK BY Ruth CliseAPPROVED BY G. F. Hurley

*The P.M. sample could not be analyzed because it got wet.

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: R. F. Painter, 5583 (511)

Computer Ref. 1064

CC: C. W. Carman, 725-105 L. R. Noble, 511-2149 E. C. Shipley, 512
D. H. Cook, 5583 (511) D. R. Paugh, 511-2009
G. F. Hurley, 701-334 H. L. Robinson, 701-401

PERSON MONITORED R. R. BurgessLocation Basement of Bldg. 789 Date 7/3/80
(Cooling Tower)

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > 5 .3 $\mu\text{m}/\text{cm}^3$	90 minutes	A.M. Sample - Bagging Stripped Insulation
2			
3	*		P.M. Sample - Bagging Stripped Insulation
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not Calculated
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA	2 fibers > 5 $\mu\text{m}/\text{cm}^3$	<u>OSHA</u>	UCC	Other
Ceiling	_____	OSHA	UCC	Other

COMMENTS

Because part of the insulation being stripped was believed to contain asbestos, the workers in the area still are required to wear disposable dust masks and keep the insulation to be stripped well wetted. Barricades and signs must be present to warn others in the area of the potential hazard. In the future, when there is doubt about the insulation containing asbestos, either full precautions for handling asbestos will be observed or a sample of the insulation will be tested for asbestos content prior to starting the job.

WORK BY Ruth CliseAPPROVED BY G. F. Hurley

*The P.M. sample could not be analyzed because it got wet.

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: D. L. Johnson, 511-5518

Computer Ref. W-1043CC: C. W. Carman, 725-105
G. F. Hurley, 701-334
C. R. Johnson, 511-2009
L. R. Noble, 511-2149D. R. Paugh, 511-2009
P. A. Perry, 511-5583
H. L. Robinson, 701-401
E. C. Shipley, 511-2009PERSON MONITORED T. L. JividenLocation #1 Powerhouse - Institute Date 4/28/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers .52 5 $\mu\text{m}/\text{cm}^3$	57 minutes	A.M. - Stripping insulation
2	.62 "	111 minutes	A.M. - Stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not monitored long enough to
Ceiling Concentration calculate TWA

ALLOWABLE EXPOSURE

TWA 2 fibers $> 5 \mu\text{m}/\text{cm}^3$
Ceiling _____OSHA
OSHAUCC Other
UCC Other

COMMENTS

Stripping insulation from several steam lines on #1 boiler on the first level of #1 Powerhouse at Institute. Sometime during the afternoon, the filter cassette worn by Mr. Jividen was lost so a TWA was not calculated. During the stripping he wore a disposable dust respirator and disposable coveralls.

Even insulation that does not contain asbestos should be watered to help control the dust.

WORK BY

Ruth Cline

APPROVED BY

G. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: D. L. Johnson, 511-5518

Computer Ref. W-1043CC: C. W. Carman, 725-105
G. F. Hurley, 701-334
C. R. Johnson, 511-2009
L. R. Noble, 511-2149P. A. Perry, 511-5583
D. R. Paugh, 511-2009
H. L. Robinson, 701-401
E. C. Shipley, 511-2009PERSON MONITORED F. E. CobbLocation #1 Powerhouse - Institute Date 4/28/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .15 5 $\mu\text{m}/\text{cm}^3$	63 minutes	A.M. - Stripping insulation
2	.37 "	108 minutes	A.M. - Stripping insulation
3	.06 "	30 minutes	P.M. - Stripping insulation
4	.52 "	45 minutes	P.M. - Stripping insulation
5			
6			

Time-Weighted Average Concentration (TWA) .14 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping insulation from several steam lines on #1 boiler on the first level of #1 Powerhouse at Institute. Mr. Cobb wore a disposable dust respirator and disposable coveralls during the stripping.

Even though part of the insulation being stripped did not contain asbestos, the insulation should be well watered to help control the dust.

WORK BY Ruth CliseAPPROVED BY G. Hurley

TO: D. L. Johnson, 511-5518

Computer Ref. W-1043CC: C. W. Carman, 725-105
G. F. Hurley, 701-334
C. R. Johnson, 511-2009
L. R. Noble, 511-2149P. A. Perry, 511-5583
D. R. Paugh, 511-2009
H. L. Robinson, 701-401
E. C. Shipley, 511-2009PERSON MONITORED T. G. GrantLocation #1 Powerhouse - Institute Date 4/28/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .43 5 $\mu\text{m}/\text{cm}^3$	58 minutes	A.M. - Bagging insulation
2	.64 "	116 minutes	A.M. - Bagging insulation
3	.34 "	89 minutes	P.M. - Bagging insulation
4			
5			
6			

Time-Weighted Average Concentration (TWA) .27 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Bagging insulation that had been stripped from several steam lines on #1 boiler on the first level of #1 Powerhouse at Institute. The stripped insulation was placed in plastic bags tagged and placed in a dumpster for proper disposal. Mr. Grant wore a disposable dust respirator and disposable coveralls.

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: D. L. Johnson, 511-5518

Computer Ref. W-1040CC: C. W. Carman, 725-105
G. F. Hurley, 701-334
C. R. Johnson, 511-2009
D. R. Paugh, 511-2009P. A. Perry, 511-5583
C. E. Richardson, 511-2149
H. L. Robinson, 701-401
E. C. Shipley, 511-2009PERSON MONITORED G. H. LandersLocation #1 Powerhouse - Institute Date 4/11/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .35 5 $\mu\text{m}/\text{cm}^3$	60 minutes	A.M. - Stripping insulation
2	fibers > .42 5 $\mu\text{m}/\text{cm}^3$	105 minutes	A.M. - Stripping insulation
3	fibers > .09 5 $\mu\text{m}/\text{cm}^3$	80 minutes	P.M. - Stripping insulation
4	fibers > .65 5 $\mu\text{m}/\text{cm}^3$	38 minutes	P.M. - Stripping insulation and cleaning area.
5			
6			

Time-Weighted Average Concentration (TWA) 0.2 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping suspected asbestos containing insulation from #2 boiler front and boiler front duct on second level of #1 Powerhouse at Institute. The last sample of the day was the highest concentration found. This may be attributed to the fact that they got in a hurry and didn't keep the insulation well wetted. Mr. Landers wore a disposable Norton dust respirator, and disposable coveralls during the stripping.

WORK BY Ruth CliseAPPROVED BY G. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: D. L. Johnson, 511-5518

Computer Ref. W-1040

CC: C. W. Carman, 725-105
G. F. Hurley, 701-334
C. R. Johnson, 511-2009
D. R. Paugh, 511-2009

P. A. Perry, 511-5583
C. E. Richardson, 511-2149
H. L. Robinson, 701-401
E. C. Shipley, 511-2009

PERSON MONITORED D. K. Naylor

Location #1 Powerhouse -
Institute

Date 4/11/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	.35 5 $\mu\text{m}/\text{cm}^3$ fibers	60 minutes	A.M. - Bagging insulation
2	.81 5 $\mu\text{m}/\text{cm}^3$ fibers	105 minutes	A.M. - Bagging insulation
3	.18 5 $\mu\text{m}/\text{cm}^3$ fibers	87 minutes	P.M. - Bagging insulation
4	.06 5 $\mu\text{m}/\text{cm}^3$ fibers	49 minutes	P.M. - Bagging insulation and cleaning area
5			
6			

Time-Weighted Average Concentration (TWA) 0.3 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Bagging insulation that had been stripped from #2 boiler front and boiler front duct on second level of #1 Powerhouse at Institute. Mr. Naylor wore a disposable Norton dust respiratory and disposable coveralls during the bagging and cleanup. The insulation was placed in plastic bags for disposal and dropped from the second level to a truck below. At this point the full bags should be handled carefully. It is suggested that they could be lowered on a rope to prevent the bags from splitting.

WORK BY Ruth Clise

APPROVED BY G. Hurley

ASBESTOS

Computer Ref. W-1040

P. A. Perry, 511-5583
C. E. Richardson, 511-2149
H. L. Robinson, 701-401
E. C. Shipley, 511-2009

B. M. Beckett

Date 4/11/80

Institute

Conc.

Sampling
Time

Comments

Sample 1

	fibers
.48	5 $\mu\text{m}/\text{cm}$

60 minutes

A.M. - Stripping insulation

2

	fibers
1.24	5 $\mu\text{m}/\text{cm}$

84 minutes

A.M. - Stripping insulation

3

4

5

6

Not monitored long enough

Ceiling Concentration to calculate TWA.

TWA 2 fibers $> 5 \mu\text{m}/\text{cm}^3$

OSHA

UCC	Other
-----	-------

Ceiling

OSHA

UCC

Other

Stripping suspected asbestos containing insulation from #2 boiler front and boiler front duct on second level of #1 Powerhouse at Institute. Mr. Beckett was not monitored in the afternoon because he was transferred to another job. During the stripping he wore a disposable Norton dust respirator and disposable coveralls.

WORK BY

Ruth Clise

APPROVED BY

G. Hussey

INDUSTRIAL HYGIENE MONITORING FOR

ASBESTOS

TO: D. L. Johnson, 511-5518

Computer Ref. W-1041

CC: C. W. Carman, 725-105
 G. F. Hurley, 701-334
 C. R. Johnson, 511-2009
 D. R. Paugh, 511-2009

P. A. Perry, 511-5583
 C. E. Richardson, 511-2149
 H. L. Robinson, 701-401
 E. C. Shipley, 511-2009

PERSON MONITORED D. K. MilanLocation #1 Powerhouse - Institute Date 4/11/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .69 5 $\mu\text{m}/\text{cm}^3$	68 minutes	P.M. - Stripping insulation
2	fibers > 2.72 5 $\mu\text{m}/\text{cm}^3$	27 minutes	P.M. - Stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) Not monitored long enough
 Ceiling Concentration to calculate TWA.

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
 Ceiling OSHA UCC Other

COMMENTS

Stripping insulation from #2 boiler front and boiler front duct on second level of #1 Powerhouse at Institute. Mr. Milan wore a disposable Norton dust respirator and disposable coveralls during the stripping. The insulators got in a hurry toward the end of the day and didn't keep the insulation well wetted. This resulted in the last value being higher.

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

UCC 024723

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: J. R. Hall, 202-1

Computer Ref. W-1042CC: K. O. Hopkins, 400-1
G. F. Hurley, 701-334
B. Y. Lett, 202-1H. L. Reveal, 202-1
C. E. Richardson, 400
H. L. Robinson, 701-401PERSON MONITORED M. L. FinneyLocation Northeast of Bldg. 36 on Date 4/16/80
Pipe Rack, So. Charleston Plant

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .48 5 $\mu\text{m}/\text{cm}^3$	157 minutes	A.M. - Stripping & bagging
2	fibers > .33 5 $\mu\text{m}/\text{cm}^3$	130 minutes	insulation P.M. - Stripping & bagging
3			insulation
4			
5			
6			

Time-Weighted Average Concentration (TWA) 0.2 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping and bagging approximately 200 feet Unibestos on pipe rack north-east of Building 36 at South Charleston Plant. Mr. Finney wore coveralls, gloves, and a disposable Norton dust respirator during the stripping. A Hudson garden sprayer was used to wet the insulation but it didn't seem adequate for such a large stripping job.

WORK BY Ruth CliseAPPROVED BY G. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: J. R. Hall, 202-1

Computer Ref. W-1042CC: K. O. Hopkins, 400-1
G. F. Hurley, 701-334
B. Y. Lett, 202-1H. L. Reveal, 202-1
C. E. Richardson, 400
H. L. Robinson, 701-401PERSON MONITORED T. J. KennedyLocation Northeast of Bldg. 36 on Date 4/16/80
Pipe Rack, So. Charleston Plant

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > 1.34 5 $\mu\text{m}/\text{cm}^3$	150 minutes	A.M. - Stripping and bagging insulation
2	fibers > .42 5 $\mu\text{m}/\text{cm}^3$	125 minutes	P.M. - Stripping and bagging insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) 0.5 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripping and bagging approximately 200 feet Unibestos on pipe rack northeast of Building 36 at South Charleston Plant. Mr. Kennedy wore coveralls, gloves, and a disposable Norton dust respirator during the stripping. A Hudson garden sprayer was used to wet the insulation but it didn't seem adequate for such a large stripping job.

WORK BY Ruth CliseAPPROVED BY G. F. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: J. R. Hall, 202-1

Computer Ref. W-1042CC: K. O. Hopkins, 400-1
G. F. Hurley, 701-334
B. Y. Lett, 202-1H. L. Reveal, 202-1
C. E. Richardson, 400
H. L. Robinson, 701-401PERSON MONITORED M. SmithLocation Northeast of Bldg. 36 on Date 4/16/80
Pipe Rack, So. Charleston Plant

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > .13 5 $\mu\text{m}/\text{cm}^3$	155 minutes	A.M. - Bagging insulation and cleaning area
2	fibers > .07 5 $\mu\text{m}/\text{cm}^3$	125 minutes	P.M. - Bagging insulation and cleaning area
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) 0.06 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Bagging insulation in plastic bags and cleaning up the area. Bagged insulation was loaded on a truck for disposal at the landfill. Ms. Smith wore coveralls, gloves, and a disposable Norton dust respirator during the bagging.

WORK BY

Ruth Clise

APPROVED BY

G. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: W. T. Shelton, 704

Computer Ref. 1033CC: G. F. Hurley
H. L. RobinsonPERSON MONITORED R. E. RainesLocation Bldg. 773 - Along north wall near operating area. Date 4/1/80

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	0.2 fibers	86 min.	A.M. - Stripping & bagging insulation
2	0.1 fibers	110 min.	P.M. - " "
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) 0.1 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Stripped 48 feet of 3-inch condensate line of suspected asbestos containing insulation which was well wetted. Mr. Raines wore a 3M disposable dust respirator during the stripping and bagging. The stripped insulation was placed in plastic bags for disposal.

WORK BY Ruth CliseAPPROVED BY G. F. Hurley

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: W. T. Shelton, 704

Computer Ref. 1033CC: G. F. Hurley
H. L. RobinsonPERSON MONITORED J. W. GreenleeLocation Bldg. 773 - First floor Date 4/1/80
along north wall
near operating area.

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	0.4	85 min.	A.M. - Stripping & bagging insula-
2	0.2	115 "	tion P.M. - " "
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) 0.1 fibers > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Approximately 48 feet of 3-inch condensate line was stripped of suspected asbestos containing insulation. The insulation was kept wet during the stripping. The insulator wore coveralls and a disposable 3M dust respirator. Stripped asbestos was placed in plastic bags for disposal.

WORK BY

Ruth Chase

APPROVED BY

George Hurley



INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

To (Name) Mr. D. L. Johnson
Division 511-5518 (512)
Location

Copy to Mr. C. W. Carman
Mr. G. F. Hurley
Mr. C. R. Johnson
Mr. D. R. Paugh
Mr. P. A. Perry
Mr. C. E. Richardson
Mr. H. L. Robinson
Mr. E. C. Shipley

Date December 10, 1979
Originating Dept. Technical Center, IH/EP
Subject Asbestos Monitoring
704 Powerhouse

PROJECT

Determine the exposure of Construction workers to asbestos fibers during insulation stripping in Building 704.

DATE OF SURVEY

November 26 and 27, 1979

DISCUSSION

On November 26 and 27, 1979, separate breathing zone samples were taken on Construction workers to determine their exposure to asbestos fibers while they were stripping and bagging suspected asbestos containing insulation from the exhaust ducts of Number 3 and Number 4 boilers in Building 704 - Powerhouse. During the stripping and clean-up procedure all Construction workers in the work area wore Norton disposable dust respirators, gloves, and coveralls. The boilers had been shut down so the insulation could be properly wetted before and during the stripping. Plastic was placed around the duct to prevent debris from the stripping from falling through the floor grating. Stripped insulation was placed in bags on site for disposal.

CONCLUSIONS

The results are given in the attached table. An 8-hour time-weighted average was calculated for November 26, 1979, since the

Construction workers were monitored during their total exposure for that day. The values are well below the OSHA standard of 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ on a time-weighted average for eight hours.

REFERENCES

Volume 38C-29X4-R1a Asbestos, Dust Determination By Membrane Filter Technique Using Phase Contrast Microscopy

RESULTS

See attachment.

REPORT PREPARED BY

Ruth Clise
Technical Center Industrial Hygiene Group

Ruth Clise

REPORT APPROVED BY

George Hurley
G.-F. Hurley

RC/sc

Attachment

(Attachment)

RESULTS

DATE	SAMPLE TYPE	TIME (Minutes)	ASBESTOS FIBERS (Fibers > 5 $\mu\text{m}/\text{cm}^3$)	TIME-WEIGHTED AVERAGE	REMARKS
11/26/79	S. M. Barker	45	2.04	----->0.7	Stripping - A.M.
	S. M. Barker	92	1.83		Stripping - A.M.
	S. M. Barker	64	.94		Stripping - P.M.
11/26/79	G. H. Landers	47	1.34	----->0.5	Stripping - A.M.
	G. H. Landers	91	.95		Stripping - A.M.
	G. H. Landers	70	.85		Stripping - P.M.
11/26/79	P. M. Brown	47	2.03	----->0.7	Cleaning and bagging - A.M.
	P. M. Brown	105	.95		Cleaning and bagging - A.M.
	P. M. Brown	80	.46		Cleaning and bagging - P.M.
	P. M. Brown	68	1.44		Cleaning and bagging - P.M.
11/26/79	D. R. Powell	47	.90	----->0.5	Cleaning and bagging - A.M.
	D. R. Powell	109	.47		Cleaning and bagging - A.M.
	D. R. Powell	83	.36		Cleaning and bagging - P.M.
	D. R. Powell	66	2.03		Cleaning and bagging - P.M.
11/27/79	C. N. Cunningham	54	0.49		Stripping
11/27/79	J. F. Chandler	54	0.62		Stripping
11/27/79	P. M. Brown	41	0.62		Bagging and cleaning
11/27/79	D. R. Powell	38	1.86		Bagging and cleaning



INTERNAL CORRESPONDENCE

CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

to (Name) Mr. W. T. Shelton
Division 704 Shop
Location

Date October 29, 1979

Originating Dept. Technical Center IH/EP

Copy to Mr. G. F. Hurley
Mr. H. L. Robinson

Subject Asbestos Monitoring
Building 704 - Third Level

PROJECT

Breathing zone samples were collected to determine the exposure of N. J. Dean and R. E. Raines to asbestos fibers.

DATE OF SURVEY

October 23, 1979

DISCUSSION

On October 23, 1979, separate breathing zone samples were collected on N. J. Dean and R. E. Raines to determine their exposure to asbestos fibers. They were stripping suspected asbestos insulation from an 8-inch line near the steam motor valve of the exhaust fan on #1 boiler on the third level of Building 704. During the stripping, both insulators wore 3M disposable dust masks and leather gloves. Before and during the stripping, the insulation was wetted. Stripped asbestos was placed in plastic bags for disposal.

CONCLUSIONS

The results are given in the attached table. The afternoon value on R. E. Raines may be explained by the fact he was so close to the insulation during the stripping. The location of the second piece of line was in a position that was difficult to keep wetted. OSHA Ceiling for asbestos is 10 fibers $> 5 \mu\text{m}/\text{cm}^3$ during any 15 minute period. Since the total exposure for each person was 67 minutes, the 8 hour time-weighted average is far below the OSHA limit of 2 fibers $> 5 \mu\text{m}/\text{cm}^3$ for an 8 hour working day.

10/29/79

REFERENCES

Volume 38C-29X4-R1a Asbestos, Dust Determination By Membrane
Filter Technique Using Phase Contrast Microscopy

RESULTS

<u>Date</u>	<u>Sample Type</u>	<u>Time (Minutes)</u>	<u>Asbestos Fibers (Fibers >5 $\mu\text{m}/\text{cm}^3$)</u>	<u>Time-Weighted Average</u>
10/25/79	N.J. Dean - A.M.	28/2 LPM	0.1	→ 0.02
10/25/79	N.J. Dean - P.M.	37/2 LPM	0.2	
10/25/79	R.E. Raines - A.M.	28/2 LPM	0.1	→ 0.2
10/25/79	R.E. Raines - P.M.	39/2 LPM	2.3	

REPORT PREPARED BY

Ruth Clise
Technical Center Industrial Hygiene Group

Ruth Clise

REPORT APPROVED BY

George Hurley
G. F. Hurley

RC/sc



CHEMICALS AND PLASTICS

P. O. BOX 8361, SOUTH CHARLESTON, WEST VIRGINIA 25303

To (Name)	Mr. W. T. Shelton	Date	October 2, 1979
Division	Building 704 Shop	Originating Dept.	Technical Center IH/EP
Location		Subject	Asbestos Monitoring
Copy to	Mr. G. F. Hurley Mr. H. L. Robinson		Building 720 - Basement <u>Equipment Area</u>

PROJECT

Breathing zone samples were collected to determine the exposure of J. R. Monin and J. W. Greenlee to asbestos fibers.

DATE OF SURVEY

September 19, 1979

DISCUSSION

On September 19, 1979, separate breathing zone samples were taken on J. R. Monin and J. W. Greenlee to determine their exposure to asbestos fibers while they were stripping approximately 40 feet of suspected asbestos insulation from a steamline running to S-6 Precipitron in the basement equipment area of Building 720. During the stripping both men wore 3M disposable dust masks and coveralls. Before stripping, the insulation was wetted. After the stripping, it was placed in plastic bags for landfill disposal.

CONCLUSIONS

The exposure of J. R. Monin and J. W. Greenlee were 0.3 and 0.5 fibers > 5 $\mu\text{m}/\text{cm}^3$ respectively. Both values are well below the OSHA standard of 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ on a time-weighted average for eight hours. See results below for exposure data.

REFERENCES

Volume 38C-29X4-R1a Asbestos, Dust Determination by Membrane Filter Technique Using Phase Contrast Microscopy

RESULTS

<u>Date</u>	<u>Sample Type</u>	<u>Time (Minutes)</u>	<u>Asbestos Exposure (Fibers > 5 $\mu\text{m}/\text{cm}^3$)</u>
9/19/79	J. R. Monin	68/2 LPM	0.3
9/19/79	J. W. Greenlee	72/2 LPM	0.5

REPORT PREPARED BY

Ruth Clise
Technical Center Industrial Hygiene Department

Ruth Clise

REPORT APPROVED BY

George Hurley
G. F. Hurley

RC/sc



BUSINESS
CONFIDENTIAL

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

Computer Ref. W-1207

Date July 30, 1981

TO: W. T. Shelton, 704 Shop

cc: R. E. Peele, 701-334
H. L. Robinson, 701-401

PERSON MONITORED J. W. Greenlee

Location Bldg. 770-137 Date 07/24/81

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers .3 > 5 $\mu\text{m}/\text{cm}^3$	52 Minutes	Insulator stripping approx. 60 feet of insulation from a 1/2-inch steamline.
2			
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) < .1 fibers > 5 $\mu\text{m}/\text{cm}^3$

Ceiling Concentration -

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ X OSHA UCC Other
Ceiling OSHA UCC Other

COMMENTS

The 52 minutes sampling time represents the total job.

WORK BY

Ruth Clise
Ruth Clise

APPROVED BY

Manhar A. Patel

Manhar A. Patel

UCC 024736



BUSINESS
CONFIDENTIAL

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

Computer Ref. W-1207

Date July 30, 1981

TO: W. T. Shelton, 704 Shop

cc: R. E. Peele, 701-334
H. L. Robinson, 701-401

PERSON MONITORED J. R. Monin

Location Bldg. 770-137 Date 07/24/81

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers .7 >5 $\mu\text{m}/\text{cm}^3$	51 Minutes	Insulator bagging stripped insula- tion.
2			
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) < .1 fibers > 5 $\mu\text{m}/\text{cm}^3$

Ceiling Concentration -

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$

Ceiling

X OSHA

OSHA

UCC

UCC

Other

Other

COMMENTS

The 51 minutes sampling job represents the complete job.

WORK BY

Ruth Clise

Ruth Clise

APPROVED BY

Manhar A. Patel

Manhar A. Patel

UCC 024737



BUSINESS
CONFIDENTIAL

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

Computer Ref. W-1198

Date July 17, 1981

TO: R. F. Painter, Trlr. 5583

cc: C. W. Carman, 725-105
L. R. Noble, 511-2149
D. R. Paugh, 511-2009
R. E. Peele, 701-334

H. L. Robinson, 701-401
E. C. Shipley, 511-2009
E. J. Tawney, Trlr. 5583

PERSON MONITORED J. F. Chandler

Location West end Bldg. 774 behind Date 07/10/81
parking lot to south end of parking lot

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers >5 .4 $\mu\text{m}/\text{cm}^3$	160 Minutes	A.M. sample - stripping insulation
2	fibers >5 .1 $\mu\text{m}/\text{cm}^3$	164 Minutes	P.M. sample - stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) _____

Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m}/\text{cm}^3$ X OSHA UCC Other
Ceiling OSHA UCC Other

COMMENTS

Stripping approximately 450 feet of 4-inch steam line which had been turned off so the line could cool.

WORK BY

Ruth Clise
Ruth Clise

APPROVED BY

Manhar A. Patel
Manhar A. Patel

UCC 024738



BUSINESS
CONFIDENTIAL

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: R. F. Painter, Trlr. 5583

Computer Ref. W-1198

Date July 17, 1981

cc: C. W. Carman, 725-105
L. R. Noble, 511-2149
D. R. Paugh, 511-2009
R. E. Peele, 701-334

H. L. Robinson, 701-401
E. C. Shipley, 511-2009
E. J. Tawney, Trlr. 5583

PERSON MONITORED M. D. Coleman

Location West end of Bldg. 774, behind Date 07/10/81
the parking lot to south end of
parking lot

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers .3 >5 $\mu\text{m}/\text{cm}^3$	159 Minutes	A.M. - bagging stripped insulation
2	fibers .3 >5 $\mu\text{m}/\text{cm}^3$	152 Minutes	P.M. - bagging stripped insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) _____

Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m}/\text{cm}^3$

X OSHA

 UCC

 Other

Ceiling

 OSHA

 UCC

 Other

COMMENTS

WORK BY

Ruth Clise

Ruth Clise

APPROVED BY

Manhar A. Patel

UCC 024739

Manhar A. Patel



BUSINESS
CONFIDENTIAL

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

Computer Ref. W-1198

Date July 17, 1981

TO: R. F. Painter, Trlr. 5583

cc: C. W. Carman, 725-105
L. R. Noble, 511-2149
D. R. Paugh, 511-2009
R. E. Peele, 701-334

H. L. Robinson, 701-401
E. C. Shipley, 511-2009
E. J. Tawney, Trlr. 5583

PERSON MONITORED B. J. Agosti

Location West end Bldg. 774 behind Date 07/10/81
parking lot to south end of
parking lot

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers .5 >5 $\mu\text{m}/\text{cm}^3$	149 Minutes	A.M. - stripping insulation
2	fibers .4 >5 $\mu\text{m}/\text{cm}^3$	156 Minutes	P.M. - stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) _____

Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m}/\text{cm}^3$

X OSHA

 UCC

 Other

Ceiling

 OSHA

 UCC

 Other

COMMENTS

WORK BY

Ruth Clise

Ruth Clise

APPROVED BY

Manhar A. Patel

Manhar A. Patel

UCC 024740



BUSINESS
CONFIDENTIAL

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

Computer Ref. W-1198

Date July 17, 1981

TO: R. F. Painter, Trlr. 5583

cc: C. W. Carman, 725-105
L. R. Noble, 511-2149
D. R. Paugh, 511-2009
R. E. Peele, 701-334

H. L. Robinson, 701-401
E. C. Shipley, 511-2009
E. J. Tawney, Trlr. 5583

PERSON MONITORED R. E. Templeton

Location West end Bldg. 774 behind Date 07/10/81
parking lot to south end of
parking lot

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers .2 >5 $\mu\text{m}/\text{cm}^3$	148 Minutes	A.M. - bagging insulation
2	fibers .2 >5 $\mu\text{m}/\text{cm}^3$	155 Minutes	P.M. - bagging insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) _____

Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m}/\text{cm}^3$ X OSHA UCC Other
Ceiling OSHA UCC Other

COMMENTS

WORK BY

Ruth Clise

Ruth Clise

APPROVED BY

Manhar A. Patel

UCC 024741

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: R. F. Painter, Trlr. 5583

Computer Ref. W1167
04/22/81

CC: C. W. Carman, 725-105 R. E. Peele, 701-334 E. J. Tawney, Trlr. 5583
L. R. Noble, 511-2149 H. L. Robinson, 701-401
D. R. Paugh, 511-2009 E. C. Shipley, 511-2009

PERSON MONITORED D. C. Shamblin

Location West end - Bldg. 773 Date 04/20/81
Outside at tank pad

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > 5 .1 $\mu\text{m}/\text{cm}^3$	85 minutes	A.M. - Stripping
2	fibers > 5 .2 $\mu\text{m}/\text{cm}^3$	123 minutes	P.M. - Stripping, bagging and cleanup
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) .1 Fiber > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 Fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

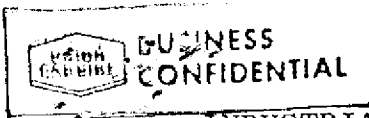
Insulator monitored while stripping approximately 100 feet of 1-1/2" pipe of suspected asbestos containing insulation. He wore coveralls and a disposable Norton dust respirator. The insulation was properly bagged and tagged for disposal at the landfill.

WORK BY

Ruth Clise

APPROVED BY

Manhan A. Patel

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

TO: R. F. Painter, Trlr. 5583

Computer Ref. W1167
04/22/81CC: C. W. Carman, 725-105 R. E. Peele, 701-334 E. J. Tawney, Trlr. 5583
L. R. Noble, 511-2149 H. L. Robinson, 701-401
D. R. Paugh, 511-2009 E. C. Shipley, 511-2009PERSON MONITORED J. F. ChandlerLocation West end - Bldg. 773 Date 04/20/81
Outside at tank pad

EXPOSURE RESULTS

	Conc.	Sampling Time	Comments
Sample 1	fibers > 5 <.1 $\mu\text{m}/\text{cm}^3$	78 minutes	A.M. - Stripping
2	fibers > 5 <.1 $\mu\text{m}/\text{cm}^3$	125 minutes	P.M. - Stripping, bagging and cleanup
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) <.1 Fiber > 5 $\mu\text{m}/\text{cm}^3$
Ceiling Concentration _____

ALLOWABLE EXPOSURE

TWA 2 Fibers > 5 $\mu\text{m}/\text{cm}^3$ OSHA UCC Other
Ceiling _____ OSHA UCC Other

COMMENTS

Insulator monitored while stripping approximately 100 feet of 1-1/2" pipe of suspected asbestos containing insulation. He wore coveralls and a disposable Norton dust respirator. The insulation was properly bagged and tagged for disposal at the landfill.

WORK BY Ruth CliseAPPROVED BY Marion A. Pahl

[illegible]

DATE	EMPLOYEE NAME	DEPT.	JOB TITLE	TW	ATR CONC	SAMP TIME	8-HOUR BUILDING T.W.A. OR CONC.	REC'D NUMBER	RESP WORN	RESP WORN	GLOVES WORN	PROTECT CLOTHING
08/15/77	ADAMS JR	NC	946420 LABORER	2.000	2.61F/CC	42		PARHSE 0669	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.44F/CC	33		PARHSE 0669	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.32F/CC	110		712 0670	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.28F/CC	110		712 0670	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.00F/CC	110		712 0670	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.15F/CC	180	.13	712 0670	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.12F/CC	180	.12	712 0670	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.21F/CC	103		712 0671	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.19F/CC	103		712 0671	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.00F/CC	153		712 0671	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.33F/CC	75	.09	712 0671	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.20F/CC	75	.08	712 0671	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.03F/CC	43	.07	704 0677	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.15F/CC	13		704 0677	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.23F/CC	8	.00	741 0686	NO	Z	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.00F/CC	14	.00	741 0686	NO	Z	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.24F/CC	12		741 0687	NO	Z	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.11F/CC	13		741 0688	NO	Z	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.14F/CC	30	.01	702 1032	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.05F/CC	30		704 0693	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.31F/CC	107		704 0693	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.27F/CC	26		704 0693	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.1470F/CC	24		704 0693	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.1570F/CC	26		704 0693	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.210F/CC	14	1.09	704 0693	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.132F/CC	44	1.05	704 0693	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.142F/CC	44	.13	704 0694	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.211F/CC	44	.19	704 0694	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.153F/CC	42		704 0694	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.00F/CC	47		704 0694	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.180F/CC	35	.14	705 0695	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.43F/CC	30		705 0695	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.654F/CC	5		705 0695	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.26F/CC	26	.01	704 0710	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.08F/CC	26	.00	704 0710	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.04F/CC	32	.02	722 0762	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.32F/CC	30	.21	773 0785	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.152F/CC	41	.13	773 0785	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.11F/CC	15	.00	701 0809	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.11F/CC	20	.00	701 0813	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.20F/CC	15		701 0813	YES	X	NO	NO
08/15/77	ADAMS JR	NC	527400 CRAT W/C	2.000	.10F/CC	15		701 0813	YES	X	NO	NO

DATE	PERSONNEL NAME	DEPT.	JOB TITLE	TRAC	TLW	ATH CONC	SNIP TOTL TIME	8-HOUR HOLDING CONC.	PCORD OR ZONE	RESPIR NUMBER	RESPIR WORN	GLOVES WORN	PROTECT CLOTHING
11/16/78	BAIDIS	JE	005000 COAT MFC		2.000	.40F/CC	53		707	0834	YES	X	NO
11/16/78	BAIDIS	JE	005000 COAT MFC		2.000	.61F/CC	40	.20	707	0834	YES	X	NO
12/12/78	FEISTE	JE	005020 PIPE FTR		2.000	2.40F/CC	48	2.30	773	0852	YES	X	NO
12/12/78	FEISTE	JE	005020 INSULATR		2.000	1.30F/CC	04	1.00	773	0852	YES	X	NO
12/13/78	of STEB	JE	005020 PIPE FTR		2.000	.40F/CC	15	.40	773	0853	YES	X	NO
12/13/78	of STEB	JE	005020 INSULATR		2.000	.30F/CC	15	.30	773	0853	YES	X	NO
01/22/79	BOZGO	CC	005020 LAMINATE		2.000	7.75F/CC	25		233	0865	YES	X	NO
01/22/79	BOZGO	CC	005020 PIPE FTR		2.000	5.37F/CC	25		233	0865	YES	X	NO
01/22/79	BOZGO	CC	005020 COAT MFC		2.000	.30F/CC	25	.00	770	0869	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	3.40F/CC	20		770	0882	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	1.70F/CC	15		770	0882	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.70F/CC	70		770	0882	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	2.90F/CC	17		770	0882	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.30F/CC	125		770	0882	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.20F/CC	48		770	0886	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.40F/CC	48		770	0886	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.01F/CC	47		770	0886	YES	X	NO
03/17/79	BAIDIS	JE	005020 COAT MFC		2.000	.30F/CC	47	.03	741	0901	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.40F/CC	47		741	0901	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	1.65F/CC	107		741	0911	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.19F/CC	67		704	0912	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.51F/CC	50		720	0906	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.09F/CC	44		707	0914	YES	X	NO
03/17/79	BAIDIS	JE	005020 COAT MFC		2.000	.03F/CC	44		707	0914	NO	Z	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.12F/CC	44		707	0914	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	4.00F/CC	45		707	0910	YES	X	YES
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	6.10F/CC	40	2.20	707	0910	YES	X	YES
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	2.00F/CC	85		707	0910	YES	X	YES
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	2.10F/CC	60	.90	707	0910	YES	X	YES
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.01F/CC	170		701	0926	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.01F/CC	170		701	0926	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.01F/CC	235		701	0926	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.16F/CC	34		701	0927	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.08F/CC	60		11	0933	YES	X	YES
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.98F/CC	60		11	0933	YES	X	YES
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.24F/CC	74		704	0943	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.12F/CC	123		704	0943	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.01F/CC	180		704	0943	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.01F/CC	180		704	0943	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.01F/CC	180		704	0943	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.11F/CC	95		704	0944	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.07F/CC	60		704	0944	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.01F/CC	140		704	0944	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.02F/CC	80		704	0944	YES	X	NO
03/17/79	BAIDIS	JE	005020 INSULATR		2.000	.01F/CC	157		704	0944	YES	X	NO

[illegible]

[illegible]

[illegible]



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

G. W. Phares
512

October 9, 1985

HS&EA

Industrial Hygiene

B. H. Avashia, M.D.
J. W. Barna
T. L. Collins
C. P. Maxwell
M. L. Mills
L. R. Noble
D. R. Paugh
Franklin Sunderland

Asbestos Monitoring at
Institute Plant

Attached are the results of asbestos exposure monitoring conducted on September 27, 1985 while construction employees stripped approximately 200' of insulation from an 8" water line at the west end of the polyols unit near building 8354.

The stripping was done using two Insulators and cleanup was done by two laborers. A spray of water was used to wet down the insulation and to minimize dust. The area was barricaded and signs were posted designating the area as a potential asbestos hazard. All four employees wore disposable respirators, face masks, coveralls, rubber boots and solvex gloves. Employees removed and disposed of their contaminated protective equipment when leaving the barricaded area and used new disposable protective equipment when returning.

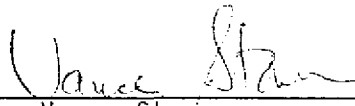
All samples were found to contain asbestos fibers below the permissible exposure level of 2.0 fibers per cc of air. The sample collected on B. J. Day was at a higher level than what we normally collect and was just below the action level of 1.0 fiber per cc of air. None of the employees involved did any asbestos related work either before the start or after the completion of the job. It was therefore possible to compute the time weighted average (TWA) exposures for the entire eight hour work day.

It is recommended that the asbestos be bagged at the point of removal and not dropped to ground level, piece by piece, thus reducing the amount of airborne dust.

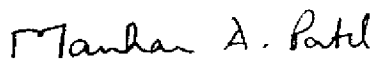
October 9, 1985

Please notify all employees of their exposure results. If we can be of further assistance, please contact us on extension 4779 or extension 3750.

Work By:


Vance Stover

Approved By:


Manhar A. Patel

Asbestos Monitoring (cont.)

-3-

October 9, 1985

Computer Reference: W1833

Personal Exposure Monitoring For Asbestos At Institute Plant

Sample #	Date	Employee Name	Sampling Time	Air Conc fibers/cc	TWA fibers/cc	Comments
1	9-27-85	J. H. Johnston	-	-	-	Employee lost filter cassette used for collection.
2	9-27-85	B. J. Day	6 hrs. 5 min.	1.032	0.785	Insulator: Stripped insulation.
3	9-27-85	G. R. Foreman	6 hrs. 6 min.	0.316	0.241	Laborer: Bagged and cleaned up insulation.
4	9-27-85	R. A. Edwards	6 hrs. 12 min.	0.093	0.072	Laborer: Bagged and cleaned up insulation.

0629P

UCC 024753

.0064

(Average Fiber Count - Blank Average Fiber Count) (Filter Area)

$$C = \frac{(.0064 \text{ Field Area}) (\text{Volume}) (1000)}{}$$

U.S. Stan

11-20-85

	Fibers	Folds
#1 Hess	116	15
#2 Raines	114	12
#3 Hess	106	27
#4 Raines	103	36

#1 Panteg	41	103
Blank - 11-18-85	7	100
#2 Brown	60	103
#3 Neil	81	104
#4 Teeton	110	70
#5 King	107	64
Blank 11-18-85	3	100

J. L. Linn
2-25-86

#1 Sampson
2-19-86

tibers
113

fields
17

#2 Snodgrass
2-19-86

108

31

#3 Hilverding
2-19-86

137

19

~~(137)~~
~~19~~ X 866
~~6.24.876~~

#4 Edwards
2-14-86

40

100

#1 Hilverding
2-20-86

111

15

#2 Edwards
2-20-86

106

83

Blank
2-19-86

4

100

CE Stan
2-26-80

#3 Snodgrass
2-20-86

Fibers

115

Folds

15

Blank 2-20-86

A1 Silvestring
2-21-86

131

18

#2 Edwards
2-21-86

101

63

Blank
2-20-86

3

100

Blank
2-21-86

2

101

#3 Snodgrass
2-21-86

116

16

J.E. Stamm
3-10-86

Tignor
3-5-86

Fibers Field
21 100

Blank
3-5-86

1 100



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To: Name J. A. Frame

Division

Location

Area

Date March 13, 1986

Originating Dept HS&EA

Area Industrial Hygiene

Copies to
J. R. Allen
B. H. Avashia, M.D.
W. L. Browning
C. P. Maxwell
B. R. McMakin

Subject Asbestos Monitoring

Attached are the results of the Asbestos monitoring conducted in the west end of Building 2056, Institute Plant. J. L. Tignor was monitored while cutting approximately 100 Garlok Asbestos gaskets and while cleaning up the Asbestos fibers that accumulated during cutting. Mr. Tignor was equipped with a disposable dust mask and disposable coveralls.

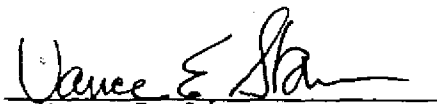
The results indicate that the exposure level was well below the permissible level of 2 fibers/cc for an 8-hour shift. J. L. Tignor had no exposure before or after the monitoring period.

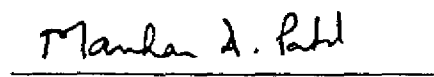
We are recommending that this area be restricted, with posting of Asbestos hazard signs, and no admittance of personnel who is not equipped with a dust mask. We are also requiring the use of disposable coveralls to eliminate fibers becoming attached to the person's clothing while leaning against the table and while using the small electric saw to cut the gaskets. We also require using a water spray to wet the loose Asbestos fibers on the table surface and a vacuum cleaner to cleanup at the end of each day.

Please advise the employee of his exposure results and if we can be of further assistance, please call us on extension 4779 or 3750.

Work By:

Approved By:


Vance E. Stover


Manhar A. Patel

VES:MAP:rab
1108P

ASBESTOS MONITORING

Computer Ref. W1907

Date	Employee Name	Sampling Time	Air Conc fibers/cc	TWAg fibers/cc	Comments
3-15-86	J. L. Tignor	61 min.	0.22	0.028	Personal sample collected while cutting approx. 100 gaskets and cleaning up scraps and loose Asbestos.

Permissible Exposure Limit: 2 fibers/cc OSHA and UCC

1108P
rab

Asbestos

4-15-86

[Signature]

#1 11/10/86

4-10-86

113 fibers in 3 fields

#2 Bowles 4-10-86

119 fibers in 3 fields

#3 Rhodes 4-10-86

119 fibers in 12 fields

#4 4-10-86

4 fibers in 100 fields



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	November 22, 1985
Division		Originating Dept.	HS&EA
Location		Area	Industrial Hygiene
Copy to	B. H. Avashia, M.D. J. H. Barna J. A. Byrd T. L. Collins W. V. Filipek C. P. Maxwell M. L. Mills L. R. Noble D. R. Paugh	Subject	<u>Asbestos Monitoring at South Charleston Plant</u>

Attached are the results of asbestos exposure monitoring conducted on November 18, 1985 at the South Charleston polyols unit near Building 103. Construction employees stripped the insulation from a tank 13 feet in diameter and 30 feet tall.

The stripping and bagging was done by eight men, four were monitored. One man was monitored at the base of the tank while receiving and removing the bags of asbestos as they were lowered from the scaffold. A spray of water was used to wet the insulation and minimize dust. The area was barricaded and well posted for the asbestos hazard. All nine employees wore disposable respirators, disposable head covers, disposable coveralls, boots and solvex gloves. The protective equipment was removed upon leaving the barricaded area and used new equipment upon returning.

All samples were found to be well below the allowable exposure level of 2 fibers/cm³. This indicates that a good job is being done of controlling the amount of airborne dust by water spray, and bagging at the point of removal.

Please notify all employees of their exposure results. If we can be of further assistance, please contact us on extension 4779 or 3750.

WORK BY: Vance Stover
Vance Stover

APPROVED BY: Manhar A. Patel
Manhar A. Patel

0763P

UCC 024761

ASBESTOS MONITORING AT SOUTH CHARLESTON PLANT

Date	Name/Location	Sampling Time Minutes	Air Conc. (Fibers/cc)	8 Hr-TWA (Fibers/cc)	Comments
11-18-85	R. L. Pauley	445	0.055	0.051	Monitored while stripping and bagging asbestos insulation.
11-18-85	K. A. Neal	448	0.112	0.105	"
11-18-85	J. C. Teetor	442	0.233	0.215	"
11-18-85	T. W. King	436	0.252	0.229	"
11-18-85	C. R. Brown	443	0.083	0.077	Monitored while receiving and removing bags after being lowered from scaffold.

Computer reference W 1856

0763P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To: F. Sunderland

Date: April 18, 1986

Division:

Location:

Area:

Originating Dept: HS&EA

Area: Industrial Hygiene

Copy to: B. H. Avashia, M.D.

Subject: Asbestos Exposure
Monitoring

J. H. Barna
W. L. Browning
M. R. Gandee
C. P. Maxwell
B. R. McMakin

Attached are the results of the Asbestos monitoring performed on two insulators and one laborer just outside Building 9 at the Institute plant. There were four insulators and three laborers working on this job, stripping approximately 100 ft of 6 inch line.

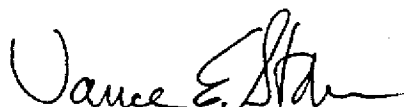
All employees were equipped with disposable coveralls, headsock, boots, gloves and a cartridge respirator designed for dusts and mists. The disposable equipment was discarded before leaving the barricaded area and new equipment worn upon returning. The area was well posted for the Asbestos hazards.

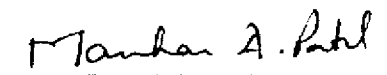
The sample results indicate that all of the exposure levels were below the permissible level of 2 fibers per cc of air. However, we continue to stress the importance of the required usage of excess water to control the airborne fibers and personal protective equipment.

Please inform all employees of their exposure results and if we can be of further assistance, please feel free to call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
1220P

AUDIT REPORT NO. W0098

FILE NO. 14

A T T E N T I O N

This document has been identified as one which may relate to the manufacture, use, sale or health effects of asbestos or asbestos-containing products in connection with Union Carbide's defense of asbestos litigation. The document may be reproduced as needed, but should not be destroyed. If it is judged to be of no further value to this file, the document should be sent to the Danbury office, attention of S. D. Conner. The File No. and Audit Report No. must accompany the document

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Comp. Ref. W1942

ASBESTOS EXPOSURE MONITORING

Date	Employee Name	Sampling Time	Air Conc. fibers/cc	TWAg fibers/cc	COMMENTS
4-10-86	R. L. Hilverding	6 hrs 58 min	0.576	0.502	Personal sample - collected while stripping asbestos from 100 feet of 6 inch line.
4-10-86	R. O. Bowles	6 hrs 56 min	0.591	0.512	Personal sample - collected while stripping asbestos from 100 feet of 6 inch line.
4-10-86	W. A. Rhodes	6 hrs 52 min	0.372	0.319	Personal sample - collected while cleaning up the Asbestos, stripped by the insulators, and bagging for disposal.

ASBESTOS
Permissible Exposure
 TWAg 2 fibers/cc OSHA
 Ceiling 10 fibers/cc

1220P

James [Signature]
5-5-86

~~10-40~~
~~8-40~~

#1 Creech 5-2-86

105 fibers in 60 fields

#2 Raynes 5-2-86

121 fibers in 22 fields

#3 Area

41 fibers in 103 fields

#4 Area

26 fibers in 101 fields

Blank

7 fibers in 102 fields

[Signature]

5-19-86

#1 Sampson 5-12-86

<u>Fibers</u>	<u>Fields</u>
104	49

#2 Chandler 5-12-86

<u>Fibers</u>	<u>Fields</u>
106	51

#3 Bowles 5-12-86

<u>Fibers</u>	<u>Fields</u>
104	58

#4 Comstock 5-12-86

<u>Fibers</u>	<u>Fields</u>
102	49

Blank

<u>Fibers</u>
3

5-12-86

<u>Fields</u>
101

5-19-86

E. S. R.

#1 Area 791-East 5-8-86

Fibers
16

Fields
101

#2 Area 791-East 5-8-86
Fibers 18 Fields 103

#3 Area 791-East 5-8-86
Fibers 7 Fields 104

Blank 5-8-86
Fibers 3 Fields 100

~~#1 Sampson 5-12-86~~



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8881 SOUTH CHARLESTON, WV 25302

To: Mr. A. F. Terry

Date: May 12, 1986

From:

Subject: HS&EA

Location:

Industrial Hygiene

Other:

Copy to:
R. Brabbin
R. G. Rowe, M.D.
C. L. Ruddle
R. E. Sergeant

Asbestos Exposure Monitoring

Attached are the results of the Asbestos monitoring done on F. R. Creech and R. E. Raines on May 2, 1986 in building 791. The Asbestos was removed from a duct overhead of a newly installed doorway in the east end of the building. After the Asbestos was removed, which was done after hours, the insulation was replaced with fiberglass which covered all of the duct that was exposed.

Mr. Creech and Mr. Raines were equipped with disposable dust mask, coveralls with headcover, and boots. Water was used to minimize airborne fibers, the area was barricaded and signs were posted for the asbestos hazards. Mr. Creech and Mr. Raines placed plastic and paper onto the floor and did a good job of cleaning up the area.

The sample results indicate that F. R. Creech's exposure level was well below the permissible exposure level of 2 fibers per cc of air, established by OSHA. However, the personal sample collected on R. E. Raines was very close to the action level, which is 1 fiber per cc of air, even though it was averaged over an 8 hour period. A Time Weighted Average (TWA₈) was established based on their knowledge that there was no exposure to Asbestos before or after the monitoring period. If this job had been done over a more extended period of time, overexposure may have occurred. From observations we think this occurred because Mr. Raines had to climb above the ceiling level, therefore he was in a very confined area.

The area samples, taken just outside of the barricaded areas during stripping and cleanup, shows that a very small amount of Asbestos fibers became airborne. More area sampling was done on May 8, 1986 in the same location and will be reported at a later date.

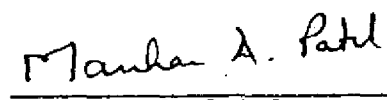
May 12, 1986

Please notify F. R. Creech and R. E. Raines of their exposure results and if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
1278P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
5-2-86	Personal/ F. R. Creech	2 hrs 32 min.	0.724	0.229	Monitored while stripping and cleaning up approx. 20 ft ² of Asbestos from duct. This time also included the placing of Fiberglas onto the duct.
5-2-86	Personal/ R. E. Raines	2 hrs 34 min.	2.34	0.751	Monitored while stripping and cleaning up approx. 20 ft ² of Asbestos. This monitoring period also includes the time spent overhead of the ceiling and the time needed to place Fiberglas insulation on duct.
5-2-86	Area	2 hrs 32 min.	0.14	-	Collected approx. 4 feet from the work area, in front of the electrical panel. Air flow was going toward this monitor.
5-2-86	Area	2 hrs 33 min.	0.081	-	Collected approx. 10 to 12 feet from the work area on a table in the eating area. Air flow was going away from this monitor.

ASBESTOS

Permissible Exposure Limit	OSHA
TWAg	2 fibers/cc
Ceiling	10 fibers/cc

AUDIT REPORT NO. WV-0098

FILE NO. 70

A T T E N T I O N

This document has been identified as one which may relate to the manufacture, use, sale or health effects of asbestos or asbestos-containing products in connection with Union Carbide's defense of asbestos litigation. The document may be reproduced as needed, but should not be destroyed. If it is judged to be of no further value to this file, the document should be sent to the Danbury office, attention of S. D. Conner. The File No. and Audit Report No. must accompany the document

Likewise, if the address of the document is changed, S. D. Conner should be notified. The File No. and Audit Report No. must be included in the correspondence.

Asbestos

JEH
6-12-86

#1 Snodgrass
6-4-86

Fibers	Fields
106	33

#2 Clendinning
6-4-86

Fibers	Fields
115	32

#3

6-4-86

Fibers	Fields
108	41

#4 Smith
6-4-86

Fibers	Fields
107	29

Blank
6-4-86

Fibers	Fields
4	100

Asbestos

6-11-80

CHIA

#1 Raines

6-13-80

Fibers Fields

80

100

#2 Area

Fibers Fields

103

85

#3 Area

C. E. Smith

6 7-2-86

#3 Area 170

6-23-86

44 files in 100 files

44 RE Smith

7-1-86

26 files in 100 files

Blank

7-1-86

26 files in 100 files



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) F. E. Sunderland
Division
Location
Area

Date May 20, 1986

Originating Dept HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to:
B. H. Avashia, M.D.
J. W. Barna
W. L. Browning
M. R. Gandee
C. P. Maxwell
B. R. McMakin
B. J. Weaver

Attached are the results of the Asbestos monitoring done on three insulators and one laborer near Building 9, Institute Plant. There were 3 insulators and 3 laborers on the job. The monitoring was done while they stripped Asbestos from the bottom half of tank No. 1037. The area was barricaded and posted for the Asbestos hazards. Plastic sheeting was placed on the ground below and water was used to wet the insulation.

All workers were equipped with a half-face dust cartridge respirator, disposable coveralls, head sock, gloves, and boots. The protective equipment was removed and disposed when leaving the area and new equipment was used upon returning to the job.

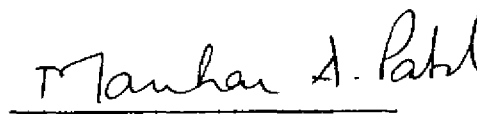
The sample results indicate that the exposures, of all who were monitored, were well below the permissible exposure level of 2 fibers per cc of air, established by OSHA.

Please inform the employees of their exposure results and if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment
VES:MAP:rab
1315P

ASBESTOS MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWA8 fibers/cc</u>	<u>COMMENTS</u>
5-12-86	Personal: J. F. Sampson	6 hrs 34 min.	0.354	0.291	Monitored while stripping approx. 200 ft ² of Asbestos from Tank No. 1037, near building 9, Institute Bldg. 9.
5-12-86	Personal: J. R. Chandler	6 hrs 36 min.	0.345	0.285	Monitored while stripping approx. 200 ft ² of Asbestos from Tank 1037 near building 9.
5-12-86	Personal: R. O. Bowles	6 hrs 38 min.	0.296	0.245	Monitored while stripping approx. 200 ft ² of Asbestos from Tank 1037 near building 9.
5-12-86	Personal: P. Y. Comstock	6 hrs 42 min.	0.341	0.286	Monitored while helping 2 other laborers clean up and bagging the stripped Asbestos.

ASBESTOS

Permissible Exposure Limit
 TWA8 _____ 2 fibers/cc _____ OSHA
 Ceiling _____ 10 fibers/cc _____

UCC 024777

1315P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION

BUSINESS CONFIDENTIAL

O. R. Hay
753
511

July 23, 1986

HS&EA

Industrial Hygiene

Asbestos Exposure Monitor

C. P. Maxwell
R. G. Rowe, M. D.
C. L. Ruddle
R. E. Sergent

Attached are the results of the Asbestos monitoring done on R. E. Smith in the 701 basement on July 1, 1986.

The monitoring was done at the request of R. E. Sergent because of some concern that loose Asbestos from the service shaft was lying on pipes the floor. R. E. Smith was monitored while shredding paper, she did not work with Asbestos and she does not wear protective clothing for shredding.

*0

The exposure monitoring results indicate that the levels are well below the 2 fibers/cc of air, established by OSHA guidelines, in effect at time of the monitoring. Based on the monitoring results, we see no need for special precautionary measures whenever doing this job. The problem of the loose insulation is being addressed by M. A. Patel and J. D. McCue.

Please advise R. E. Smith of her monitoring results and if we can of further assistance, please call us on extension 4779 or 3750.

WORK BY:

Vance E. Stover

APPROVED BY:

Manhar A. Pate

1517P

VES/jac
1517P

UCC 024778

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>Comments</u>
7-1-86	Personal/ R.E. Smith	7 hrs 47 mins	0.032	0.031	Monitored while shredding paper. Did not work with Asbestos but loose Asbestos is present in several different areas of the basement.

Asbestos

Permissible Exposure Level*

TWAg 2 fibers/cc OSHA
Ceiling 10 fibers/cc

*OSHA Guidelines in effect at the time of monitoring.

1517P

UCC 024779



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

BUSINESS CONFIDENTIAL

A. F. Terry
704 Shop
511

July 24, 1986

HS&EA

Industrial Hygiene

Asbestos Exposure Monitoring

C. P. Maxwell
R. G. Rowe, M.D.
C. L. Ruddie
R. E. Sergent

Attached are the results of the Asbestos monitoring done in Building 770 on June 23, 1986. R. E. Raines and R. P. Hess were monitored while they removed approximately 15 feet of Asbestos from a steam line inside of the S-5 air handler during off-hours. They were equipped with disposable coveralls, boots, disposable dust mask, gloves and head cover.

The air handler was shut down and the area was barricaded. Plastic was put on the floor, under the steam line, and excess water was used for wetting down the insulation. The Asbestos insulation, as well as the plastic was removed very diligently. The floor was flooded with water and vacuumed.

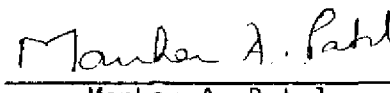
The sample results show that for the very short sampling time, the potential exposure to Asbestos was low. If it was averaged over an 8-hour period, it would be well below the permissible exposure level of 2 fiber/cc of air. An 8-hour average was not established because both R. E. Raines and R. P. Hess indicated that they worked with insulation, that may have contained Asbestos, earlier in the day before this job was done.

Please inform R. E. Raines and R. P. Hess of their exposure results and if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

VES/jac
1512P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>Comments</u>
6-23-86	Personal/ R.E. Raines	59 min	0.928	-----	Collected while removing and bagging 15 feet of Asbestos from 770-S-5 Air Handler
6-23-86	Personal/ R. P. Hess	58 min	1.35	-----	Collected while removing and bagging 15 feet of Asbestos from 770-S-5 Air Handler
6-23-86	Area	1 hr 3 min	0.420	-----	Collected inside of Air Handler about waist high setting on precipitron.

Asbestos

Permissible Exposure Levels*

TWAg 2 fibers/cc OSHA
 Ceiling 10 fibers/cc

* OSHA Guidelines in effect at time of monitoring.

1512P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8351, SCOUTS BLVD, WILMINGTON, WV 26104

To: Mr. Terry A. F. Terry

Date: October 7, 1986

Division:

Originating Dept: HS&EA

Location:

Subject: Industrial Hygiene

Address:

Copy to:
T. L. Collins
P. D. Gossage
C. P. Maxwell
R. G. Rowe, M.D.
C. L. Ruddle
R. E. Sergent

Subject: Asbestos Exposure Monitoring
- Building 726

Attached are the results of the Asbestos exposure monitoring performed on R. P. Hess and F. R. Creech on September 2, 1986 and September 3, 1986. They were monitored while stripping Asbestos from steam lines outside and inside of the Building 726 compressor room.

R. P. Hess and F. R. Creech were equipped with 2 pair of Tyvek disposable coveralls, boots, gloves and a half-face respirator equipped with Willson R-12 HEPA filter cartridges. The outer pair of coveralls was removed and disposed before leaving the barricaded area. They went directly to the shower (781), decontaminated, removed inner coveralls and showered (clean shower), before reapplying street clothes.

The monitoring results indicate that outside of the building, the level was below the Permissible Exposure Level (PEL) of 0.2 fibers/cc, established by OSHA for an 8-hour workday (TWA₈). However, inside of the compressor room the exposure levels exceeded the TWA₈ limit of 0.2 fiber/cc. An 8-hour TWA₈ was established because the employees had no exposure to asbestos before or after the monitoring periods on each day.

The high levels found inside of the building could be due to the hot surface of the steam line which may have precluded adequate wetting of the insulation. As we have recommended in the past, the steam lines should be shut off and allowed to cool when possible. When steam lines can not be shut off, it will require extra precautions in removing insulation to keep the asbestos levels down.

October 7, 1986

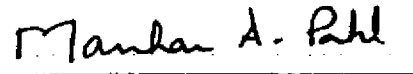
Please notify R. P. Hess and F. R. Creech of their monitoring results as soon as possible. Please have them sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance or if you have any questions, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
1778P

ASBESTOS EXPOSURE MONITORINGComp. ref. W2026
W2027

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
9-2-86	R. P. Hess	1 hr 12 min.	0.346	0.0519	Collected while stripping asbestos from steam line outside of 726 compressor room.
9-2-86	F. R. Creech	1 hr 9 min.	0.100	0.014	Collected while stripping asbestos from steam line outside of 726 compressor room.
9-3-86	F. R. Creech	1 hr 15 min.	1.428	0.223	Collected while stripping asbestos from steam line inside of 726 compressor room.
9-3-86	R. P. Hess	1 hr 15 min.	2.642	0.413	Collected while stripping asbestos from steam line inside of 726 compressor room.

ASBESTOSPermissible Exposure LevelTWAg 0.2 fibers/cc OSHA

1778P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361 SOUTH CHARLESTON, W. VA. 25389

To:	J. M. Harbert	Date:	October 6, 1986
From:		Department:	HS&EA
Subject:		Area:	Industrial Hygiene
Re:	B. H. Avashia, M.D. J. W. Barna W. L. Browning W. V. Filipek K. O. Hopkins C. P. Maxwell	Subject:	<u>Asbestos Exposure Monitoring</u> <u>- So. Chas. - 309</u>

Attached are the results of the Asbestos exposure monitoring performed on R. G. Salisbury and D. M. Bourn on September 9, 1986 at the South Charleston plant's Building 309. The employees were monitored while stripping and bagging approximately 12-15 feet of Asbestos from a 1 inch line.

The employees were equipped with cloth coveralls and Tyvek disposable coveralls, boots, gloves, and a half-face respirator equipped with Willson R-12 HEPA filter cartridges. The Tyvek coveralls were removed and discarded before leaving the barricaded area and the employees showered upon completion of the job. They had no Asbestos exposure before or after this monitoring job on this day.

The monitoring results indicate that the levels were below the 0.2 fiber/cc Permissible Exposure Level (PEL), established by OSHA for an 8-hour workday (TWAg). However, the levels were so close to the action level, 0.1 fiber/cc, that statistically the action level may or may not have been exceeded. Therefore, we must assume that the action level has been exceeded and take appropriate action to lower the exposure levels.

We recommend that more water be used (when possible) and extra care taken in bagging and cleaning the Asbestos.

October 6, 1986

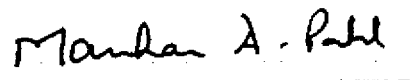
Please notify R. G. Salisbury and D. M. Bourn of their exposure monitoring results as soon as possible. Please have them sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please call us at extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
1780P

ASBESTOS EXPOSURE MONITORING

Comp. ref. W2029

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Job Title</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
9-9-86	Personal/ R. G. Salisbury	Laborer.	1 hr 27 min.	0.526	0.095	Collected while spraying water behind the cutting knife and while bagging and cleaning up the Asbestos. Please note that this work was done inside of the building with all ventilation shut off.
9-9-86	Personal/ D. M. Bourn	Insulator	1 hr 26 min.	0.553	0.0991	Collected while stripping the 12-15 linear feet of Asbestos and helping with the clean up.
9-9-86	Area		1 hr 27 min.	0.0757	-	Collected inside of Building 309 locker room approximately 8-10 feet from where the Asbestos was stripped.

ASBESTOSPermissible Exposure Level

TWAg 0.2 fibers/cc OSHA

1780P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 1000, SOUTH PLAINFIELD, NEW JERSEY 07080

To: R. W. Gilbert
From: 2002-1
Subject: 512

Date: October 7, 1986

Department: HS&EA

Division: Industrial Hygiene

Copy to: B. H. Avashia, M.D.
W. L. Browning
C. P. Maxwell
B. R. McMakin
C. W. Ware

Project: Asbestos Exposure Monitoring
- Construction Storeroom

Attached are the results of the Asbestos monitoring performed in the Construction Storeroom, Building 2002, at Institute on August 19 and 26, 1986. The initial monitoring was done on August 19, 1986 and the follow-up on August 26, 1986. R. W. Cutlip and M. V. Burdette were monitored while dispensing asbestos gaskets to be used in field applications.

R. W. Cutlip and M. V. Burdette were equipped with Half-face respirators containing HEPA filters while pulling gaskets. This would indicate that their actual inhalation exposures were lower than the reported concentrations.

The exposure monitoring that was performed on August 19, 1986 on R. W. Cutlip indicated levels that would be considered high if this many gaskets (80-100 per hour) were dispensed over several hours. A Time Weighted Average was not determined because R. W. Cutlip was involved with dusting and cleaning out bins the remainder of the day, which could have caused exposure.

The samples collected on August 26, 1986 on M. V. Burdette as a follow-up for long term sampling, show that the air concentration of Asbestos was below the 0.1 fiber/cc action level, but also note that she only pulled 14 gaskets.

It is recommended that the gasket bins be cleaned once a month with a vacuum cleaner equipped with a HEPA filter and that the gaskets be vacuum cleaned before placing in the bins. This would considerably eliminate exposure potential to asbestos fibers. When the job is expected to last for several hours the employee must wear recommended protective equipment for asbestos and take a shower at the end of the day. We also recommend that the asbestos gasket pulling job should be assigned to only those personnel who have been trained, in the OSHA asbestos standard, and know the hazards of the material.

October 7, 1986

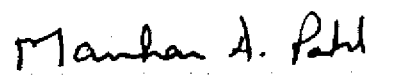
Please notify R. W. Cutlip and M. V. Burdette of their monitoring results as soon as possible. Please have them sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
1777P

ASBESTOS EXPOSURE MONITORING

Comp. ref. W2010
W2019

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
8-19-86	Personal/ R. W. Cutlip	29 mins.	0.76	-	Collected while pulling 40-50 gaskets from bins for dispensing to job site.
8-19-86	Area	5 hrs 3 min.	0.013	-	Collected on the right - on the shelf opposite gasket bins - near aisleway.
8-19-86	Area	5 hrs 8 min.	0.011	-	Collected on the left - on the shelf opposite gasket bins.
8-26-86	Personal/ M. V. Burdette	7 hrs 11 min.	0.045	0.040	Collected while pulling 14 gaskets from bins for dispensing to the job site.
8-26-86	Area	7 hrs 12 min.	0.015	-	Collected in the center of the shelves directly across from the gasket bins.
8-26-86	Area	7 hrs 11 min.	0.023	-	Collected on the right - in shelves opposite gasket bins.

ASBESTOS

Permissible Exposure Level

TWAg 0.2 fibers/cc OSHA

1777P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	F. R. Sunderland	Date	June 19, 1986
Division		Originating Dept	HS&EA
Location		Area	Industrial Hygiene
Area		Subject	<u>Asbestos Exposure Monitoring</u>
Copy to	B. H. Avashia, M.D. J. W. Barna W. L. Browning M. R. Gandee C. P. Maxwell B. R. McMakin B. J. Weaver		

Attached are the results of the Asbestos exposure monitoring done on Insulators at the Institute Plant, Building 20. The monitoring was done on June 4, 1986 while they removed 60 linear feet of Asbestos from a 6 inch line and while being in the same trench replacing the insulation with Kaylo.

It should be noted that two insulators removed their monitoring pumps at noon eventhough you were instructed specifically that they were to wear sampling pumps until the end of the day. It was important that the insulators wore sampling pumps the entire day because they worked in the same trench, where the Asbestos had been removed, therefore the potential for exposure still existed. (These samples cannot be reported because of inadequate information for analyses.)

The Insulators were equipped with boots, disposable coveralls, headsock, gloves and a half-face dust respirator. The area was barricaded and signs were posted for the Asbestos hazards.

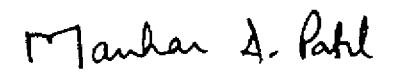
The sample results indicate that the exposures were below the Permissible Exposure Level of 2 fibers per cc of air, established by OSHA for an 8-hour day (TWA₈).

Please notify the employees of their exposure monitoring results and if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:


Vance E. Stover

APPROVED BY:


Manhar A. Patel

Attachment
VES:MAP:rab
1401P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc fibers/cc Air</u>	<u>TWAg fibers/cc Air</u>	<u>COMMENTS</u>
6-4-86	Personal/ P. K. Snodgrass	--	--	--	Removed monitoring pump at approx. 1330. <u>Cannot be reported.</u>
6-4-86	Personal/ C. B. Clendinin	6 hrs 37 min	0.598	0.495	Collected while stripping approx. 60 linear feet from a 6 inch line and while working in the same trench replacing with Kaylo.
6-4-86	Personal/ R. O. Bowles	--	--	--	Removed monitoring pump at approx. 1200. <u>Cannot be reported.</u>
6-4-86	Personal/ D. R. Smith	6 hrs 30 min	0.625	0.508	Collected while stripping approx. 60 linear feet of Asbestos from a 6 inch line and while working in the same trench replacing with Kaylo.

ASBESTOSPermissible Exposure Level

TWAg	2 fibers/cc	OSHA & UCC
Ceiling	10 fibers/cc	

1401P
rab



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 2009
Location 512
Area

Date January 7, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Copy to B. H. Avashia, M.D. - 23
J. W. Barna - 2009/6
W. L. Browning - 2009
C. P. Maxwell - 701/2
B. R. McMakin - 2009
F. R. Sunderland - 2009

Subject Asbestos Exposure
Monitoring

Attached are the results of the exposure monitoring performed on seven insulators and one laborer while stripping Asbestos from a two-inch pipe. The pipe was located in a pipe rack across the road from the #1 powerhouse inside the Institute plant.

All employees were equipped with either an AOR57A or Willson R12 half-face HEPA cartridge respirator. They were also equipped with 2 pair of coveralls, boots, headsock and gloves. Each employee indicated that they were wearing no street clothes under the coveralls, and that each showered or would shower before leaving the work place.

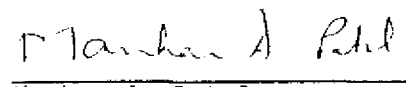
The OSHA established Permissible Exposure Level of 0.2 fibers/cc, for an 8-hour workday (TWAg), was not exceeded. However, the Action Level of 0.1 fiber/cc, also established by OSHA, was exceeded on 2 samples. The Area samples indicate no problem with airborne fibers getting outside of the barricaded area. We continue to urge strict adherence to the proper removal procedures and very careful handling, in order to keep the exposure potential at a minimum.

Please inform all employees of their exposure monitoring results as soon as possible. Please have each sign and date this report and return to M. A. Patel at Building 701-330. If you have any questions or if we can be of further assistance, please feel free to call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment
VES:MAP:rab
1993P

UCC 024793

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>Job Classi- fication</u>	<u>COMMENTS</u>
12-16-86	Personal/ W. S. Thompson	4hrs 24min	0.062	*	Insulator	Collected while removing approx. 4 feet of Asbestos using BWE 5000.
12-16-86	Personal/ S. R. Erskine	4hrs 23min	0.037	*	Insulator	Collected while removing approx. 4 feet of Asbestos using BWE 5000.
12-16-86	Personal/ C. B. Clendenin	-	-	*	Insulator	Voided - could not find respirator to fit - did not work on this job on this day.
12-16-86	Personal/ T. K. Miller	-	-	*	Insulator	Voided - Pump fell into trench containing water.
12-16-86	Personal/ R. A. Edwards	4hrs 7min	0.0164	*	Laborer	Collected while cleaning dropped Asbestos, retrieving bags, etc.
12-16-86	Area	4hrs 14min	< 0.0025	-	-	Collected downwind approx. 15-20 feet from the barricade tape - West end.
12-16-86	Area	4hrs 10min	< 0.0037	-	-	Collected approx. 15-20 feet from the East barrier - downwind.

*A TWAg was not calculated because it was not known if they had Asbestos exposure before this monitoring period.

ASBESTOSPermissible Exposure Level

TWAg	0.2	fibers/cc	OSHA
Action Level	0.1	fiber/cc	

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>Job Classi- fication</u>	<u>COMMENTS</u>
12-18-86*	Area	6hrs 31min	<0.0038	-	-	Collected on south side of barricade near roadway - wind swirling.
12-18-86	Area	6hrs 23min	<0.0038	-	-	Collected on north side of barricade near tank - wind swirling.
12-18-86	Personal/ T. K. Miller	6hrs 18min	0.078	0.061	Insulator	Collected while stripping approx. 125-150 feet of Asbestos from a 2 inch line.
12-18-86	Personal/ J. R. Menninger	6hrs 48min	0.040	0.034	Insulator	Same as previous sample.
12-18-86	Personal/ R. A. Edwards	6hrs 44min	0.056	0.047	Laborer	Cleaned and bagged Asbestos dropped to ground level under piperack.
12-18-86	Personal/ D. R. Samples	6hrs 36min	0.047	0.038	Insulator	Collected while stripping approx 150 feet of Asbestos.

*Water was used as wetting agent for entire day.

ASBESTOSPermissible Exposure Level

TWAg 0.2 fibers/cc OSHA
Action Level 0.1 fiber/cc

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>Job Classi- fication</u>	<u>COMMENTS</u>
12-17-86*	Area	6hrs 55min	<0.0028	-	-	Collected just downwind of the East barrier approx 10-15 feet from pipe rack.
12-17-86	Area	6hrs 58min	0.013	-	-	Collected downwind near the west barrier - but outside - pump was located on top of fire hose cabinet.
12-17-86	Personal/ W. S. Thompson	6hrs 39min	0.166	0.138	Insulator	Collected while stripping approx. 125-150 feet of Asbestos from a 2 inch line using BWE 5000 as wetting agent.
12-17-86	Personal/ C. B. Clendenin	6hrs 48min	0.0664	0.0564	Insulator	Same as previous comment.
12-17-86	Personal/ R. A. Edwards	6hrs 30min	0.0328	0.027	Laborer	Cleaned up and bagged Asbestos that dropped to the ground.
12-17-86	Personal/ M. S. Farmer	6hrs 29min	0.171	0.139	Insulator	Cleaned up and bagged Asbestos that dropped to the ground.

* BWE 5000 was used as wetting agent for entire day.

ASBESTOSPermissible Exposure Level

TWAg	0.2 fibers/cc	OSHA
Action Level	0.1 fiber/cc	

1993P
rab



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location 511
Area

Date April 29, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
J. W. Barna - 2009
W. L. Browning - 2009
C. P. Maxwell - 701/2
B. R. McMakin - 2009
F. R. Sunderland - 2009

Attached are the results of the asbestos exposure monitoring for one day on insulators at the Institute Plant while loading bagged asbestos for disposal and patching a line at Building 2009.

Both personal exposure samples show levels below the 0.1 f/cc action level standard established by OSHA. Employees should be commended for performing their jobs in a safe manner.

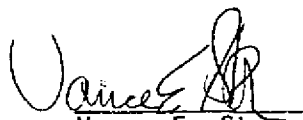
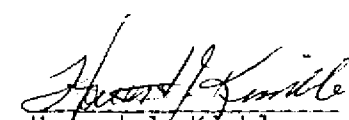
Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R57A half-face respirators equipped with HEPA filters. They showered before lunch and at the end of the workday before leaving the plant.

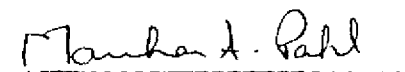
Please inform S. R. Erskine and P. K. Snodgrass of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have any questions of if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover & 
Howard J. Kimble


Manhar A. Patel

Attachment
VES:HJK:MAP:rab
2271P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
4-20-87	Personal/ S. R. Erskine	6hrs 42min	0.004	0.003	Loaded bagged asbestos for disposal and patched insulated line.
4-20-87	Personal/ P. K. Snodgrass	6hrs 40min	0.013	0.010	Loaded bagged asbestos for disposal and patched insulated line.

2271P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 512/2009
Location
Area

Date May 4, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia - 512/23
J. W. Barna - 2009/6
W. L. Browning - 2009
J. E. Llana - 740/2320
C. P. Maxwell - 701/2
B. R. McMakin - 2009
F. R. Sunderland - 2009

Attached are the results of asbestos exposure monitoring for three days on insulators at the Institute Plant doing asbestos removal on lines in the #1 and #2 dock areas. A 3-inch steam line and two 3-inch product lines were stripped from the river to the top of the river bank and the risers across the road was stripped. Glove bags and enclosures were not used because it was not feasible according to the construction department and the 512 Plant Industrial Hygiene department. Employees used a powered man-basket to reach lines that were overhead.

All personal exposure samples were below the 2.0 fiber/cc level which permits the use of half-face HEPA cartridge respirators while employees are being monitored per OSHA asbestos standard 29CFR 1926.58. One personal exposure sample exceeded the 0.2 fiber/cc permissible exposure level standard and four exceeded the 0.1 fiber/cc action level standard. Exposure monitoring may not be required in some instances where supplied air respirators in a positive pressure mode are being used while stripping and removing asbestos insulation. We encourage you to use supplied air respirators as much as possible in the asbestos abatement procedures.

Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R57-A half-face HEPA cartridge respirators. They showered before lunch and at the end of the workday before leaving plant.

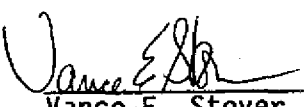
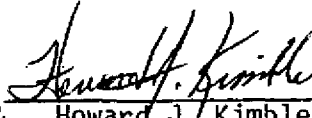
May 4, 1987

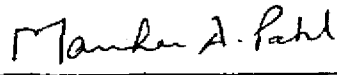
Please inform S. R. Erskine, B. J. Agosti, P. K. Snodgrass and C. B. Clendenin of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have any questions or if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:

 
Vance E. Stover & Howard J. Kimble


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2289P

Comp ref. W2187
W2188
W2189

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
4-21-87	Personal/ S. R. Erskine	6hr 36min	0.209	0.172	Stripped, bagged and vacuumed approx. 90 feet of line at #1 dock.
4-21-87	Personal/ B. J. Agosti	6hr 38min	0.142	0.118	Stripped, bagged and vacuumed approx. 90 feet of line at #1 dock.
4-21-87	Personal/ P. K. Snodgrass	6hr 33min	0.003	0.003	Stripped, bagged and vacuumed approx. 90 feet of line at #1 dock.
4-22-87	Personal/ S. R. Erskine	7hr 4min	0.239	0.211	Stripped, bagged and vacuumed approx. 100 feet of line at #1 dock.
4-22-87	Personal/ P. K. Snodgrass	7hr 2min	0.002	0.001	Stripped, bagged and vacuumed approx. 100 feet of line at #1 dock.
4-22-87	Personal/ C. B. Clendenin	7hr 3min	0.052	0.046	Stripped, bagged and vacuumed approx. 100 feet of line at #1 dock.
4-23-87	Personal/ P. K. Snodgrass	7hr 6min	0.157	0.139	Stripped, bagged and vacuumed approx. 130 feet of line at #1 and #2 docks.
4-23-87	Personal/ C. B. Clendenin	7hr 5min	0.046	0.041	Stripped, bagged and vacuumed approx. 130 feet of line at #1 and #2 docks.
4-23-87	Personal/ S. R. Erskine	7hr 4min	0.129	0.113	Stripped, bagged and vacuumed approx. 130 feet of line at #1 and #2 docks.

2289P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	H. E. Rucker	Date	March 19, 1987
Division	512/2009	Originating Dept.	EM&TS - HS&EA
Location		Area	Industrial Hygiene
Area		Subject	<u>Asbestos Exposure Monitoring</u>
Copy to	B. H. Avashia, M.D. - 512/23 J. W. Barna - 2009/6 W. L. Browning - 2009 W. V. Filipek - 5515 C. P. Maxwell - 701/2 B. R. McMakin - 2009 J. H. Parsons - 2281 W. J. Vincent - 514/109		

Attached are the results of the Asbestos exposure monitoring performed on insulators in the South Charleston Plant, Building 106. They were monitored over a 3 day period while using glove bags to remove asbestos from several lines, horizontal and vertical.

Employees were equipped with 2 pair of coveralls, no street clothes, boots, gloves, head cover and either an AOR57A or Willson R12 Half-face, HEPA filter, respirator. The employees showered each day, before leaving the plant.

The monitoring results indicate that the exposure levels were well below the 0.1 fiber/cc Action Level, established by OSHA for an 8-hour workday (TWA₈). We feel that the glove bag method is a very good way of controlling airborne fibers. However, we must be sure that the procedure is followed closely by each insulator using a Glove Bag.

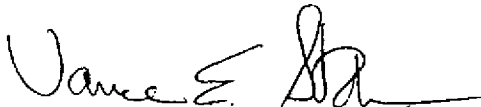
Please inform J. R. Chandler, R. E. Coyner and S. M. Barker of their exposure monitoring results, as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

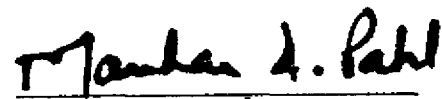
March 19, 1987

If you have any questions or if we can be of further assistance,
please feel free to call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
2180P

Comp. Ref. W2158
W2160
W2161

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
3-11-87	Personal/ J. R. Chandler	6hrs 57min	0.0314	0.0273	Collected while stripping, along with 2 others, 40 feet of asbestos using glove bags.
3-12-87	Personal/ R. E. Coyner	7hrs 26min	0.034	0.0317	Collected while using glove bags to strip approx. 50 feet of asbestos, with 1 other insulator.
3-12-87	Personal/ S. M. Barker	7hrs 15min	0.0571	0.0531	Collected while using glove bags to strip approx. 50 feet of asbestos, with 1 other insulator.
3-12-87	Personal/ J. R. Chandler	7hrs 15min	0.0066	0.00598	Collected while retrieving bags and helping with vacuum - ground man.
3-13-87	Personal/ S. M. Barker	7hrs 9min	0.041	0.0366	Collected while stripping approx. 12 feet of asbestos using glove bags. Opened vacuum cleaner to change HEPA filter - had a few problems.

ASBESTOS

Permissible Exposure Level

TWAg	<u>0.2</u>	fibers/cc	OSHA
Action Level	<u>0.1</u>	fibers/cc	

2180P
rab



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	J. H. Frazer	Date	February 18, 1987
Division	704	Originating Dept.	EM&TS - HS&EA
Location	511	Area	Industrial Hygiene
Area		Subject	<u>Asbestos Exposure Monitoring</u> <u>- Non Abatement</u>
Copy to	C. P. Maxwell - 701/2 R. G. Rowe, M.D. - 791 C. L. Ruddie - 704 R. E. Sergeant - 704		

Attached are the results of the Asbestos exposure monitoring performed while P. M. Chapman and P. L. Allison drilled 36 holes into transite. The holes were drilled to install a grid rack in a hood in Building 726-105. They used a HEPA filter vacuum cleaner to capture the dust, at the source, keeping it from becoming airborne.

They were both equipped with a Willson R12 HEPA filter cartridge respirator, disposable coveralls and booties.

The sample collected on P. M. Chapman was well below the 0.1 fiber/cc Action Level, established by OSHA for an 8-hour workday (TWAg). The sample collected on P. M. Allison was voided because the pump quit 1 hour and 34 minutes after the sampling started. Even though the levels were very low, we suggest adherence to the procedures, established for non-abatement type jobs.

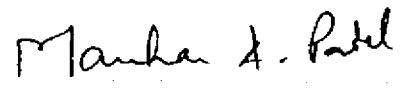
Please notify P. M. Chapman of his exposure monitoring results as soon as possible. Please have him sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment
VES:MAP:rab
2109P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
2-11-87	P. L. Allison	-	-	-	Voided - sampler quit 1 hour and 34 minutes into the day.
2-11-87	P. M. Chapman	7 hrs 43 min	0.0015	0.00145	Collected while, along with Allison, drilling 36 holes into transite for installing a grid rack inside of a hood in 726-105.

ASBESTOSPermissible Exposure Level

TWAg	0.2 fibers/cc	OSHA
Action Level	0.1 fibers/cc	



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	A. F. Terry	Date	February 18, 1987
Division	704	Originating Dept.	EM&TS - HS&EA
Location	511	Area	Industrial Hygiene
Area		Subject	<u>Asbestos Exposure Monitoring</u>
Copy to	C. P. Maxwell - 701/2 R. G. Rowe, M.D. - 791 C. L. Ruddie - 704 R. E. Sergeant - 704		

Attached are the results of the Asbestos exposure monitoring performed on F. R. Creech on February 10, 1987. He was monitored while stripping 2 Reactor Heaters from 770-237 Autoclave Lab using glove bags. The stripping was done in a designated room, located in Building 777. He also spent approximately 3 hours in Building 740 fan loft.

He was equipped with disposable coveralls and an AO R57-A HEPA filter, half-face cartridge respirator.

The exposure monitoring results indicate that the levels were well below the 0.1 fiber/cc Action Level, established by OSHA for an 8-hour workday (TWAg).

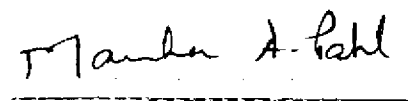
Please notify F. R. Creech of his exposure monitoring results as soon as possible. Please have him sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
2111P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
2-10-87	Personal/ F. R. Creech	7 hrs 33 min	0.011	0.0104	Collected while stripping 2 Autoclave heaters, from 770 Autoclave Lab, and while working approx. 3 hours in Building 740 fan loft.

ASBESTOSPermissible Exposure Level

TWAg	<u>0.2 fibers/cc</u>	OSHA
Action Level	<u>0.1 fibers/cc</u>	

2111P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) A. F. Terry
Division 704
Location 511
Area

Date April 3, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to C. P. Maxwell - 701/2
R. G. Rowe, M.D. - 791
C. L. Ruddle - 704
R. E. Sergeant - 704

Attached are the results of the Asbestos exposure monitoring performed on J. W. Greenlee on March 20, 1987. He was monitored while stripping approximately 10 feet of Asbestos from a line in the Building 740 basement. He also stripped Asbestos tape from miscellaneous lines in salvage piles near Buildings 771 and 773.

He was equipped with an AOR57A Half-face HEPA cartridge respirator, 2 pair of coveralls with headcover, boots and gloves. Mr. Greenlee showered before going home.

The exposure monitoring results indicate that the levels were well below the 0.1 fiber/cc Action Level, established by OSHA for an 8-hour workday (TWA₈). The low level indicates that the established procedures are adequate and that they were followed closely.

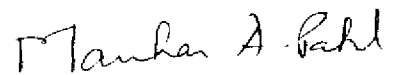
Please notify J. W. Greenlee of his exposure monitoring results as soon as possible. Please have him sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:


Vance E. Stover

APPROVED BY:


Manhar A. Patel

Attachment

VES:MAP:rab
2216P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
3-20-87	Personal/ J. W. Greenlee	7hrs 16min	0.036	0.0327	Collected while stripping 10 feet of asbestos from a line using Glove Bags. He also stripped asbestos tape from lines in salvage piles, near Buildings 771 and 773.

ASBESTOSPermissible Exposure Level

TWAg	0.2 Fiber/cc	OSHA
Action Level	<u>0.1 Fiber/cc</u>	

2216P
rab



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	A. F. Terry	Date	February 5, 1987
Division	704	Originating Dept.	EM&TS - HS&EA
Location	511	Area	Industrial Hygiene
Area		Subject	<u>Asbestos Exposure Monitoring</u> <u>- Non Abatement</u>
Copy to	C. P. Maxwell - 701/2 G. D. McClure - 704/2 R. G. Rowe, M.D. - 791 H. E. Rucker - 512/2009 C. L. Ruddie - 704/2 R. E. Sergeant - 704		

Attached are the results of the Asbestos exposure monitoring performed on P. K. Snodgrass on January 21, 1987. He was monitored while installing a metal vapor barrier on steam lines containing Asbestos insulation, in the basement of the 704 Powerhouse.

He was equipped with an AOR57-A half-face HEPA cartridge respirator and two pair of coveralls, the outer being disposable.

The exposure monitoring results indicate that the levels, for this non-abatement job, were well below the 0.1 fiber/cc Action Level, established by OSHA for an 8-hour workday (TWA₈). However, we recommend that the insulators continue to follow closely the established procedures for this type of work. We plan more monitoring upon notification from you that this job has been resumed.

Please notify P. K. Snodgrass of his exposure monitoring results as soon as possible. Please have him sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please feel free to call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment
VES:MAP:rab
2087P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Personnel Name</u>	<u>Sampling Time</u>	<u>Air Conc Fiber/cc</u>	<u>TWAg Fiber/cc</u>	<u>COMMENTS</u>
1-21-87	Personal/ P. K. Snodgrass	7 hrs 14 min	0.0071	0.0064	Collected while installing vapor barrier on steam lines containing Asbestos insulation.
1-21-87	Area	7 hrs 9 min	0.005	-	Collected near the No. 3 boiler - 704 1st level - in the area where the powerhouse operators spend most of their time.

ASBESTOSPermissible Exposure Level

TWAg	0.2 fiber/cc	OSHA
Action Level	0.1 fiber/cc	

**UNION
CARBIDE****INTERNAL
CORRESPONDENCE**

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	J. W. Perdue	Date	February 6, 1987
Division		Originating Dept.	EM&TS - HS&EA
Location	511	Area	Industrial Hygiene
Area		Subject	<u>Asbestos Exposure Monitoring</u> <u>- Non Abatement</u>
Copy to	C. P. Maxwell - 701/2 R. G. Rowe, M.D. - 791 C. L. Ruddle - 704 R. E. Sergeant - 704		

Attached are the results of the Asbestos exposure monitoring performed on two Tin Smiths on February 3, 1987 in Building 726-105. They were monitored while drilling 7 holes in transite, which was inside of a hood.

G. S. Boggs and D. C. Sayre were equipped with a Willson R12A half-face cartridge respirator, disposable coveralls and boots. They also used a vacuum cleaner equipped with a HEPA filter to contain dust generated, at the point of the drilling.

The sample results indicate that the Asbestos levels were well below the 0.1 fiber/cc Action Level, established by OSHA for an 8-hour workday (TWAg). However, we continue to stress the importance of closely following the procedures established for non abatement jobs.

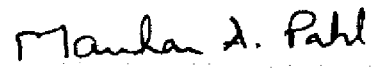
Please notify G. S. Boggs and D. C. Sayre of their exposure monitoring results as soon as possible. Please have them sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
2092P

UCC 024813

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
2-3-87	Personal/ G. S. Boggs	7hrs 14min	0.025	0.0226	Collected while drilling 7 holes in transite inside of a hood. This job lasted 30 minutes to completion. He worked in shop area and building 2000 carpenter shop the balance of the day.
2-3-87	Personal/ D. C. Sayre	7hrs 7min	0.0047	0.0042	Collected while assisting G. S. Boggs. He ran the HEPA vacuum cleaner to contain any airborne fibers at the source. He installed a heating coil in 770 and worked in the shop the balance of the day.

ASBESTOSPermissible Exposure Level

TWAg	<u>0.2 fiber/cc</u>	OSHA
Action Level	<u>0.1 fiber/cc</u>	



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**INTERNAL
CORRESPONDENCE**

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) **H. E. Rucker**
Division **512/2009**
Location
Area

Date **June 11, 1987**

Originating Dept. **EM&TS - HS&EA**

Area **Industrial Hygiene**

Subject **Asbestos Exposure Monitoring**

Copy to **B. H. Avashia, M.D. - 512/23**
J. W. Barna - 2009/6
W. L. Browning - 2009
R. E. Coyner - 2009
J. E. Llana - 740/2322
C. P. Maxwell - 701/2
B. R. McMakin - 2009

Attached are the results of asbestos exposure monitoring for two days on insulators at the Institute Plant while removing asbestos on lines at the #2 dock area. One area sample result is included in the data. A 3-inch steam line and two 3-inch product lines were stripped on the risers and the overhead piperack across the roadway. Glovebags and enclosures were not used because it was not feasible according to the Construction Department insulation craft representative (Asbestos Competent Person) and the 512 Plant Industrial Hygiene Department. Employees used a powered man-basket to reach lines that were overhead. Area was barricaded until removal of asbestos was completed.

Employees wore two pair of coveralls, headcovers, boots, gloves and AO R57-A half-face HEPA cartridge respirators. No street clothes were worn. They showered before lunch and at the end of the workday before leaving plant.

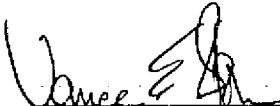
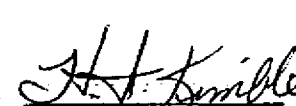
June 11, 1987

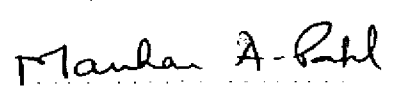
Please inform S. R. Erskine, P. K. Snodgrass and C. B. Clendenin of their exposure monitoring results as soon as possible. Have them sign and date this report and return to M. A. Patel at Building 701-330.

If you have any questions or if we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:

 
Vance E. Stover & H. J. Kimble


Manhar A. Patel

Attachment

VES:HJK:MAP:rab
2384P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sample Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
1-24-87	Personal/ C. B. Clendenin	5hr 46min	0.006	0.004	Stripped, bagged and vacuumed approx. 60 feet of line at #2 dock.
1-24-87	Personal/ P. K. Snodgrass	5hr 43min	<.005	<.004	Stripped, bagged and vacuumed approx. 60 feet of line at #2 dock.
1-24-87	AREA	5hr 44min	<.005	<.004	1-foot east of barricade, breathing zone at #2 dock.
1-27-87	Personal/ P. K. Snodgrass	6hr 55min	0.148	0.128	Stripped, bagged and vacuumed approx. 100 feet of line at #2 dock.
1-27-87	Personal/ S. R. Erskine	6hr 56min	0.254	0.220	Stripped, bagged and vacuumed approx. 100 feet of line at #2 dock.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) R. D. Oxley
Division 704
Location 511
Area

Date February 4, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Copy to C. P. Maxwell - 701/2
R. G. Rowe, M.D. - 791
C. L. Ruddle - 704
R. E. Sergeant - 704

Subject Asbestos Exposure Monitoring
- Non Abatement

Attached are the results of the Asbestos exposure monitoring performed on 4 pipefitters. These employees are not involved with Asbestos abatement, but were monitored to determine exposure levels during routine pipefitting, in areas where Asbestos is present.

The exposure monitoring results indicate that all samples were well below the 0.1 fibers/cc Action Level, established by OSHA for an 8-hour workday (TWA₈). However, all pipefitters must continue to follow established procedures closely.

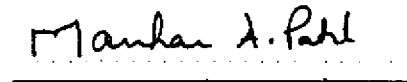
Please notify S. H. French, P. S. Shamblin, P. M. Wallace and L. C. Kinnard of their exposure monitoring results as soon as possible. Please have them sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment

VES:MAP:rab
2084P

Comp. ref. W2120
W2126
W2130

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. Fiber/cc</u>	<u>TWAg Fiber/cc</u>	<u>COMMENTS</u>
1-26-87	Personal/ S. H. French	7hrs 28min	0.029	0.0271	Collected while pipefitting in Building 707-Cell 9 most of the day.
1-27-87	Personal/ P. J. Sharblin	7hrs 35min	<0.0032	<0.0030	Collected while pipefitting approx. 3 hours in Building 707-Cell 9 and miscellaneous work the rest of the day.
1-27-87	Personal/ P. M. Wallace	7hrs 32min	0.0076	0.0072	Collected while pipefitting in Building 706-Cell 13 for approx. 2 hours and spent some time in the hall of Building 707.
1-27-87	Personal/ L. C. Kinnard	7hrs 21min	0.007	0.0064	Collected while pipefitting inside (repaired vacuum line) and the balance of the day outside (West end) of Building 773.

ASBESTOS

Permissible Exposure Level

TWAg	<u>0.2 fiber/cc</u>	OSHA
Action Level	<u>0.1 fiber/cc</u>	

2084P

INDUSTRIAL HYGIENE MONITORING FOR Asbestos

 Computer Ref. W1778

TO: W. T. Shelton, 704-Shop

 Date May 3, 1985

 cc: T. L. Collins, 740-2318
 C. P. Maxwell, 725

 R. G. Rowe, M.D., 791
 C. L. Ruddle, 704-202

 PERSONS MONITORED R. E. Raines, D. M. Lawrentz

 Location Bldg. 707 - 2nd Floor Operating Area Date 4-26-85

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	0.38 fibers/cc	35 min.	Personal sample: R. E. Raines - Collected on filter cassette.
2	0.27 fibers/cc	35 min.	Personal sample: D. M. Lawrentz - Collected on filter cassette.

 Time-Weighted Average Concentration (TWA) ---

 Ceiling Concentration --

ALLOWABLE EXPOSURE (8 Hr.)

TWA	<u>2 fibers/cc</u>	<u>X</u> OSHA	<u> </u> UCC	<u> </u> Other
Ceiling	<u>--</u>	<u> </u> OSHA	<u> </u> UCC	<u> </u> Other

COMMENTS

R. E. Raines and D. M. Lawrentz were monitored while working together to strip approximately 8 ft. of old insulation from a heliflo system in Bldg. 707. Both men wore disposable respirators, coveralls, gloves and boots while stripping and cleaning up. The stripped insulation was placed in plastic bags for disposal. A barricade was set up around the work area and signs were posted. A water spray was used to wet down the insulation.

Examination of the samples indicated levels of asbestos fibers well below the allowable exposure limit. Please notify employees of their exposure results.

WORK BY

M. F. Stowers
 M. F. Stowers

APPROVED BY

Manhar A. Patel
 Manhar A. Patel



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) H. E. Rucker
Division 2009
Location 512
Area

Date July 23, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
W. L. Browning - 2009
R. E. Coyner - 2009
D. B. Matthews - 2009
C. P. Maxwell - 701/2
B. R. McMakin - 2009

Attached are the results of asbestos monitoring for two days on insulators at the Institute Plant while removing asbestos from lines in the tank farm between number two and number three docks on the river bank. Approximately 195 feet of 3-inch steam line was stripped. Glove bags and enclosures were not used because of heat involved in stripping the steam line melting the plastic. Amended water was used to wet the asbestos as soon as it was pulled away from the hot pipe.

All personal exposure samples were below the 0.1 fiber/cc action level. Employees should be ammended for the professional manner that was employed in this asbestos removal project. Exposure monitoring may not be needed on a continuous basis if other monitoring levels remain below the action level. Monitoring may not be needed if supplied air respirators in a positive pressure mode are used in asbestos removal projects. We encourage the use of supplied air respirators as much as possible in the asbestos abatement procedures.

Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R-57-A half-face HEPA cartridge respirators. They showered before lunch and at the end of the workday before leaving the plant.

Please inform P. K. Snodgrass, B. J. Agosti, S. R. Erskine and C. B. Clendenin of their exposure monitoring results as soon as possible. Have them sign and date this report and return it to M. A. Patel at Building 701-330.

**UNION
CARBIDE**

INTERNAL
CORRESPONDENCE

IH FILE COPY

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) C. W. Wible
Division 770/162
Location 511
Area

Date July 15, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to P. D. Gossage - 701/4
C. P. Maxwell - 701/2
R. G. Rowe, M.D. - 791
— R. E. Sargent - 704

Attached are the results of the non-abatement asbestos exposure monitoring performed on J. A. Ingram and W. S. Ballingall while pulling computer cable above ceiling tile and through service shafts in Building 770. They were equipped with Half-face Willson R-12 HEPA filtered respirators.

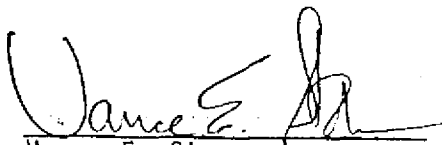
The exposure monitoring indicates that the levels were well below the 0.1 fiber/cc Action Level, established by OSHA for an 8-hour workday (TWAg). However, anyone working above or removing ceiling tile must continue to wear the protective equipment, mentioned above, until enough data is gathered to indicate a problem does not exist, whenever doing this type of work.

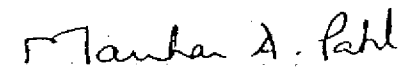
Please notify J. A. Ingram and W. S. Ballingall of their exposure monitoring results as soon as possible. Please have them sign and date this report and return to M. A. Patel at Building 701-330.

If we can be of further assistance, please feel free to call us on extension 4779 or 3750.

WORK BY:

APPROVED BY:


Vance E. Stover


Manhar A. Patel

Attachment
VES:MAP:rab
2488P

UCC 024822

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
7-2-87	Personal/ J. A. Ingram	7hrs 3 min	0.0375	0.033	Collected while pulling computer cable above ceiling tile and inside of service shafts in Building 770. Job took approx. 4 hours to complete.
7-2-87	Personal/ W. S. Ballingall	6hrs 56min	0.0148	0.0128	Collected while pulling computer cable above ceiling tile and inside of service shafts in Building 770. Job took approx. 4 hours to complete.

ASBESTOSPermissible Exposure Level

TWAg	<u>0.2</u>	fibers/cc	OSHA
Action Level	<u>0.1</u>	fibers/cc	



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) C. W. Wible
Division 770/162
Location
Area

Date August 17, 1987
Originating Dept. EM&TS - HS&EA
Area Industrial Hygiene

Copy to P. D. Gossage, 701/4
C. P. Maxwell, 701/256
R. G. Rowe, M.D., 791
— R. E. Sergeant, 725

Subject Asbestos Exposure
Monitoring

Attached are the results of the asbestos exposure monitoring performed on J. A. Ingram on July 8, 1987. He was monitored while pulling computer wire above ceiling tile and through pipe chases in Building 770. He was equipped with a Willson R12A Half-face HEPA Filter respirator. (Please note that he did not remove the ceiling tile. The tile was removed by the carpenters.)

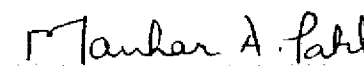
The exposure monitoring results indicate that the levels were well below the 0.1 fiber/cc Action Level, established by OSHA for an 8-hour work day (TWA₈). However these employees are required to wear the respiratory equipment, as mentioned above, whenever doing this job until enough data is collected to indicate that an exposure problem does not exist.

Please notify J. A. Ingram of his exposure monitoring results as soon as possible. Please have him sign and date this report and return to M. A. Patel at Building 701-330. If we can be of further assistance, please feel free to call us on extension 4779 or 3750.

Work By:

Approved By:


Vance E. Stover


Manhar A. Patel

VES:ab:rab
2611P

ASBESTOS EXPOSURE MONITORING

Comp. ref. W2256

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
7-8-87	Personal/ J. A. Ingram	7 hrs 34 min	0.023	0.022	Collected while pulling computer cable through pipe chases and above ceiling in Building 770.

ASBESTOS

<u>Permissible Exposure Level</u>		
<u>TWAg</u>	<u>0.2 Fiber/cc</u>	OSHA
<u>Action Level</u>	<u>0.1 Fiber/cc</u>	

2611P

UCC 024825

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. Fibers/cc</u>	<u>TWAg Fibers/cc</u>	<u>COMMENTS</u>
7-2-87	Personal/ J. A. Ingram	7hrs 3 min	0.0375	0.033	Collected while pulling computer cable above ceiling tile and inside of service shafts in Building 770. Job took approx. 4 hours to complete.
7-2-87	Personal/ W. S. Ballingall	6hrs 56min	0.0148	0.0128	Collected while pulling computer cable above ceiling tile and inside of service shafts in Building 770. Job took approx. 4 hours to complete.

ASBESTOSPermissible Exposure Level

	TWAg	0.2	fibers/cc	OSHA
Action Level		0.1	fibers/cc	



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	April 29, 1985
Division	512	Originating Dept.	HS&EA
Location		Area	Industrial Hygiene
Area		Subject	Asbestos Monitoring at <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 T. L. Collins, 740-2 C. E. Cunningham, 512/Bldg. 5518 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512		

Attached are the results of asbestos exposure monitoring conducted on April 23, 1985 while construction employees stripped approximately 200 ft. of old insulation from an assortment of different size steam lines which had been removed from a large caustic reservoir at the MIC unit.

The lines were laid out on the ground for ease in stripping and the surrounding area was barricaded and signs posted designating the potential asbestos hazard. Four construction employees were used on the job with two insulators to do the stripping and two laborers to wet down the insulation and to clean up. All employees wore disposable respirators, coveralls, boots, gloves, and face masks while working on the job.

All samples were found to contain levels of asbestos fibers well below the permissible exposure level of 2.0 fibers per c.c. of air. Please notify all employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY:

M. F. Stowers
M. F. Stowers

APPROVED BY:

Manhar A. Patel
Manhar A. Patel

MFS:rfp
0266P

Attachment

UCC 024827

Computer Reference: W1775

PERSONAL EXPOSURE MONITORING FOR ASBESTOS AT INSTITUTE PLANT

MIC UNIT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	4-23-85	B. J. Agosti	3 hrs. 13 min.	0.18	Insulator; monitored while stripping insulation.
2	4-23-85	T. J. Kennedy	3 hrs. 13 min.	0.16	Insulator; monitored while stripping insulation.
3	4-23-85	R. R. Burgess	3 hrs. 15 min.	0.02	Laborer; monitored while manning water hose and assisting with clean up.
4	4-23-85	R. A. Edwards	3 hrs. 15 min.	0.16	Laborer; monitored while bagging and cleaning up stripped insulation.



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	July 24, 1985
Division		Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	Asbestos Monitoring at <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 T. L. Collins, 740-2 C. E. Cunningham, 512/5518 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512		

Attached are the results of asbestos monitoring conducted on 6/26/85 while construction employees worked to strip approximately 1000 ft² of old insulation from tank no. 5307 at the Alkylbenzene Unit.

Seven construction employees were used on the job with six insulators assigned to strip the insulation and one laborer to clean up and bag the insulation. The insulators also assisted during the clean up portion of the job. All employees were protected by usage of cartridge respirators, coveralls, gloves, and boots. The work area was well barricaded with asbestos hazard signs posted. A water hose was used to wet down the insulation prior to and during stripping.

All samples were found to contain levels of asbestos fibers well below the permissible exposure level of 2.0 fibers per c.c. of air. Monitoring was conducted throughout the entire period of time necessary for completion of the job. None of the employees involved did any work involving asbestos either before the start or after completion of the job. It was therefore possible to compute the time weighted average (TWA) exposures for the entire eight hour work day.

Please notify all employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY: Mario F. Stowers
Mario F. Stowers

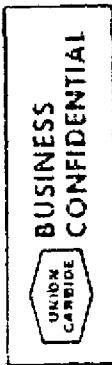
MFS:rfp
0438P

APPROVED BY: Manhar A. Patel
Manhar A. Patel

Attachment

UCC 024829

Computer Reference: W1812



PERSONAL EXPOSURE MONITORING FOR ASBESTOS AT INSTITUTE PLANT
ALKYLBENZENE UNIT

Sample No.	Date	Employee Name	Sampling Time	Air Conc. (fibers/cc)	TWAg (fibers/cc)	Comments
1	6-26-85	D. R. Smith	4 hrs. 49 min.	0.14	0.08	Insulator; stripped insulation; also helped clean up.
2	6-26-85	P. K. Snodgrass	4 hrs. 47 min.	0.23	0.14	Insulator; stripped insulation; also helped clean up.
3	6-26-85	R. O. Bowles	-	-	-	Sample discarded due to pump malfunction.
4	6-26-85	B. J. Agosti	4 hrs. 44 min.	0.15	0.09	Insulator; stripped insulation; also helped clean up.
5	6-26-85	C. B. Clendenin	4 hrs. 50 min.	0.14	0.08	Insulator; stripped insulation; also helped clean up.
6	6-26-85	L. R. Shaffer	4 hrs. 50 min.	0.17	0.10	Insulator; stripped insulation; also helped clean up.
7	6-26-85	C. D. Meyers	4 hrs. 50 min.	0.09	0.05	Laborer; bagged and cleaned up stripped insulation.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION P. O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	February 19, 1985
Division		Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	<u>Asbestos Monitoring at Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 J. R. Bryant, 512 T. L. Collins, 740-2 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512		

Attached are the results of asbestos exposure monitoring conducted on February 6, 1985 while construction employees stripped approximately 250 ft³ of old insulation material from the 201 still column at the Cellosize Unit (Bldg. 160).

Three construction employees were used on the job with two insulators to strip the insulation and one laborer to clean up and bag the stripped insulation. All employees were protected by usage of cartridge respirators, coveralls, gloves, and boots. The work area was barricaded, signs posted, and a water spray used to wet the insulation prior to stripping. Use of the water spray was emphasized even though most of the insulation was found to be frozen due to cold weather.

All samples were found to contain levels of asbestos fibers below the permissible exposure level of 2.0 fibers per c.c. of air. Monitoring was conducted throughout the entire period of time necessary for completion of the job. None of the employees involved with the job did any further work involving asbestos after completion of the job, therefore, it was possible to compute the time weighted average (TWA) exposures for the entire eight hour work day.

Please notify employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY: Mario F. Stowers
M. F. Stowers

MFS:rfp
Attachment
0129P/0009P

APPROVED BY: M. A. Patel /rfp
Manhar A. Patel

Computer Reference: W1721

PERSONAL EXPOSURE MONITORING AT INSTITUTE PLANT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>TWA (fibers/cc)</u>	<u>Comments</u>
1	2-6-85	C. B. Clendenin	4 hrs. 20 min.	0.33	0.18	Insulator; stripped insulation
2	2-6-85	W. A. Johnson	4 hrs. 17 min.	0.31	0.17	Insulator; stripped insulation
3	2-6-85	H. L. Moles	4 hrs. 20 min.	0.11	0.06	Laborer; cleaned up and bagged insulation



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	G. W. Phares	Date	April 17, 1985
Division	Bldg. 5518	Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	<u>Asbestos Monitoring at</u> <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 T. L. Collins, 740-2 C. E. Cunningham, 512/Bldg. 5518 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512		

Attached are the results of asbestos exposure monitoring conducted on April 16, 1985 while construction employees stripped approximately 20 ft. of old insulation from a six inch steam line at the SEVIN unit.

Two insulators were used on the job with one manning the water hose and the other stripping. Both cleaned up the stripped insulation and placed it in bags. The steam line had been laid out on the ground and surrounded with a barricade and signs indicating potential asbestos hazard. Both employees wore cartridge respirators, coveralls, gloves, and boots while working on the job.

Both samples were found to contain levels of asbestos fibers well below the permissible exposure limit of 2.0 fibers per c.c. of air. Please notify the employees of their exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY: M. F. Stowers
M. F. Stowers

APPROVED BY: Manhar A. Patel
Manhar A. Patel

MFS:rfp
0242P/0009P

Attachment

UCC 024833

Computer Reference: W1766

PERSONAL EXPOSURE MONITORING AT INSTITUTE SEVIN UNIT

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	4-16-85	S. R. Erskin	20 min.	<0.03	Insulator; stripped and cleaned up insulation.
2	4-16-85	C. B. Clendenin	20 min.	<0.03	Insulator; manned water hose and cleaned up stripped insulation.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	R. S. Howell	Date	May 16, 1985
Division	Construction Trailer 55042	Originating Dept.	HS&EA
Location	512	Area	Industrial Hygiene
Area		Subject	Asbestos Monitoring at <u>Institute Plant</u>
Copy to	B. H. Avashia, M.D., 512 J. W. Barna, 512 J. R. Bryant, 512 T. L. Collins, 740-2 C. P. Maxwell, 725 M. L. Mills, 512 L. R. Noble, 725 D. R. Paugh, 512 R. C. Proffit, 512/2009-12		

Attached are the results of asbestos monitoring conducted on May 7, 1985 while construction employees stripped approximately 200 ft. of insulation from 3 inch process lines at an area just west of the Pesticide B Unit where the lines had been laid out on the ground on top of plastic sheets.

Four construction employees were used on the job with two insulators to strip the insulation and two laborers to clean up and bag the stripped insulation. All employees were protected by usage of cartridge respirators, coveralls, gloves, and boots. A barricade with asbestos hazard signs was erected around the work area and a water hose was used to keep the insulation saturated during stripping and clean up. The plastic sheets on which the process lines were laid were also disposed of by rolling up and placing in bags.

All samples were found to contain levels of asbestos fibers well below the permissible exposure limit of 2.0 fibers per c.c. of air. Please notify all employees of the exposure results. If we can be of further assistance, please contact us on either extension 3750 or extension 5904.

WORK BY: Mario F. Stowers
Mario F. Stowers

MFS:rfp
0307P

APPROVED BY: Manhar A. Patel
Manhar A. Patel

Attachment

Computer Reference: W1781

ASBESTOS EXPOSURE MONITORING RESULTS

<u>Sample No.</u>	<u>Date</u>	<u>Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. (fibers/cc)</u>	<u>Comments</u>
1	5-7-85	R. D. Deweese	35 min.	0.27	Insulator; stripped insulation.
2	5-7-85	R. O. Bowles	35 min.	0.15	Insulator; stripped insulation.
3	5-7-85	T. L. Jividen	1 hr. 35 min.	0.24	Laborer; cleaned up and bagged stripped insulation.
4	5-7-85	R. D. Smith	1 hr. 35 min.	0.20	Laborer; cleaned up and bagged stripped insulation.



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To: Name H. E. Rucker
Division 512
Location 2009
Area

Date September 18, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to B. H. Avashia, M.D. - 512/23
W. L. Browning - 512/2149
R. E. Coyner - 512/2009
C. M. Huttenpillir, Jr. - 512/77
S. E. Illikainen - 512/2
C. P. Maxwell - 511/701-2
B. R. McMakin - 512/2009
R. J. Romagnoli - 512/303

Attached are the results of the seven days of asbestos monitoring, while completing the cleanup at Cellosize Building 77. This included the storeroom, maintenance shop, equipment and tools, maintenance lunchroom, the backroom off of the shop, the electrical switchrack room, the mezzanine and the outside area south of building 77. The rooms inside the building were sealed as much as possible and air was continuously exhausted through HEPA filters.

All area and personal samples for the final seven days of monitoring were below the 0.2 fiber/cc permissible exposure level standard per OSHA asbestos standard 29CFR 1926.58 and were below the 0.1 fiber/cc action level per the same standard.

Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R57-A HEPA half-face cartridge respirators. They showered before meals and at the end of the workday before leaving plant.

Please inform G. F. Sowards, J. C. Coyner, S. R. Erskine, D. W. Brogan and M. L. Wallace of their exposure monitoring results as soon as possible. Have them sign and date this report and return it to M. A. Patel at Building 701-330.

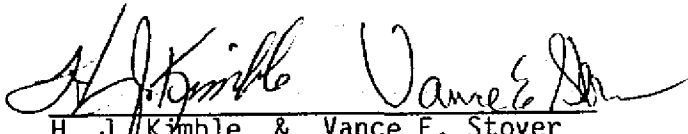
September 18, 1987

Please commend all the employees involved in this job for an outstanding performance under difficult conditions.

If you have any questions or we can be of further assistance, call us on extension 3750 or 6485.

WORK BY:

APPROVED BY:


H. J. Kimble & Vance E. Stover


Manhar A. Patel

Attachment

HJK:VES:MAP:rab
2699P

Comp. Ref:
W2286 W2287
W2288 W2289
W2290 W2291
W2292

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
8-2-87	Personal/ G. F. Sowards	542 min	0.013	0.015	Cleaning Building 77 Storeroom and equipment.
8-2-87	Area	541 min	0.013	-	Building 77 - Four feet from east wall of maintenance shop at breathing level.
8-2-87	Area	540 min	0.009	-	Building 77 - On south wall by double doors at entrance to maintenance shop.
8-3-87	Personal/ J. C. Coyner	447 min	0.018	0.017	Cleaning Building 77 Storeroom and equipment.
8-3-87	Area	440 min	0.016	-	Building 77 - Breathing zone level at entrance to decontamination chamber shop.
8-3-87	Area	438 min	0.014	-	Four feet from east wall of maintenance shop of Building 77 - breathing zone level.
8-4-87	Personal/ S. R. Erskine	451 min	0.020	0.019	Cleaning beam and overhead ledges in Building 77 maintenance shop.
8-4-87	Area	452 min	0.012	-	Four feet from east wall of maintenance shop of Building 77 - breathing zone level.
8-4-87	Area	332 min	0.010	-	Building 77 Shop - Breathing zone level at entrance to decontamination chamber.
8-4-87	Area	121 min	0.008	-	Building 77 - Breathing zone level in #5 switchrack Electrical Room over 508 transformer after room was cleaned and vacuumed.

Comp. Ref:
W2286 W2287
W2288 W2289
W2290 W2291
W2292

ASBESTOS EXPOSURE MONITORING

(continued)

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
8-5-87	Area	437 min	0.069	-	Building 77 - At entrance to decontamination chamber, breathing zone level.
8-5-87	Area	453 min	0.069	-	At breathing zone level in toolroom shop of Building 77 by door.
8-5-87	Personal/ D. W. Brogan	458 min	0.062	0.059	Cleaning toolroom shop of Building 77.
8-10-87	Personal/ M. L. Wallace	365 min	0.055	0.042	Final cleaning in toolroom and shop area of Building 77, wire brushing and vacuuming.
8-10-87	Area	365 min	0.064	-	Backroom of Building 77 shop area at outside wall, breathing zone level.
8-10-87	Area	366 min	0.067	-	Breathing zone level at east wall of main shop area of Building 77.
8-13-87	Personal/ M. L. Wallace	444 min	0.034	0.032	Cleaning area and equipment in Mezzanine of Building 77.
8-13-87	Personal/ D. W. Brogan	445 min	0.037	0.035	Cleaning area and equipment in Mezzanine of Building 77.
8-13-87	Area	446 min	0.015	-	At inlet to HEPA exhaust in Mezzanine of Building 77.
8-20-87	Personal/ J. C. Coyner	440 min	0.012	0.011	Cleaning up slag south of Building 77 and putting in fiber paks.
8-20-87	Area	445 min	0.008	-	At breathing zone level at southwest corner of regulated area while cleaning up slag south of Building 77.

2699P

UCC 024840



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name) K. M. Clendenin
Division 2009
Location 512
Area

Date September 28, 1987

Originating Dept. EM&TS - HS&EA

Area Industrial Hygiene

Subject Asbestos Exposure Monitoring

Copy to
B. H. Avashia - 512/23
W. L. Browning - 2009
J. A. Frame - 2009
R. W. Gilbert - 2002
C. P. Maxwell - 701/2
B. R. McMakin - 2009

Attached are the results of one day's monitoring at the Safety Supply Gasket Cutting Room (Building 2007) and the gasket storage aisle in Building 2002. All samples are below the action level of 0.1 fiber/cc of OSHA Standard 29 CFR 1926.58.

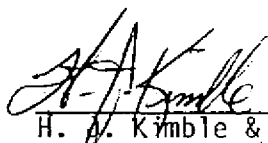
The toolroom mechanic cutting gaskets wore no street clothes, two pair of coveralls, headcover, gloves and an A0 R57-A half-face HEPA cartridge respirator.

Please inform S. M. Smallridge of his monitoring results as soon as possible. Have him sign and date this report and return it to M. A. Patel at Building 701-330.

If you have any questions or we can be of further assistance, call us on extension 3750 or 6485.

WORK BY:

APPROVED BY:


H. A. Kimble & V. E. Stover


Manhar A. Patel

Attachment

HJK:VES:MAP:rab
2711P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
9-1-87	Area	68 min	0.046	-	At breathing zone level by air conditioner on north wall of Building 2007 while gaskets were being cut.
9-1-87	Personal/ S. M. Smallridge	65 min	0.082	0.011	Monitored while cutting asbestos gaskets in Building 2007.
9-1-87	Area	371 min	0.007	-	At breathing zone level halfway down gasket storage aisle in Building 2002.

2711P



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION TECHNICAL CENTER
P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

To (Name)	H. E. Rucker	Date	September 28, 1987
Division	512/2009	Operating Dept.	EM&TS - HS&EA
Location		Area	Industrial Hygiene
Copy to	B. H. Avashia, M.D. - 512/23 J. W. Barna - 2009/6 W. L. Browning - 2009 R. E. Coyner - 2009 C. P. Maxwell - 701/2 B. R. McMakin - 2009	Subject	<u>Asbestos Exposure Monitoring</u>

Attached are the results of the asbestos exposure monitoring for two days on insulators at the Institute Plant while removing asbestos from steam and product lines in the pit and trench at building 25 near the #2 dock. An enclosure wasn't used because of line steam and product lines. The area was barricaded and amended water was used throughout the abatement process.

All five personal exposure samples were below the 0.2 fiber/cc permissible exposure standard per OSHA 29CFR 1926.58 and also were below the 0.1 fiber/cc action level per the same standard.

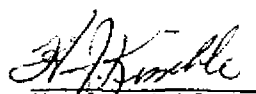
Employees wore no street clothes, two pair of coveralls, headcovers, boots, gloves and AO R57-A HEPA half-face cartridge respirators. They showered before meals and at the end of the workday before leaving plant.

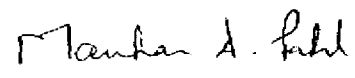
Please inform B. J. Agosti, P. K. Snodgrass, C. B. Clendenin and S. R. Erskine of their exposure monitoring results as soon as possible. Have them sign and date this report and return it to M. A. Patel at Building 701-330.

If you have any questions or we can be of further assistance call us on extension 3750 or 6485.

WORK BY:

APPROVED BY:


H. J. Kimble & V. E. Stover


Manhar A. Patel

Attachment
HJK:VES:MAP:rab
2710P

ASBESTOS EXPOSURE MONITORING

<u>Date</u>	<u>Sample Type/ Employee Name</u>	<u>Sampling Time</u>	<u>Air Conc. fibers/cc</u>	<u>TWAg fibers/cc</u>	<u>COMMENTS</u>
6-22-87	Personal/ B. J. Agosti	428 min	0.044	0.039	Stripped approximately 60 feet of asbestos in pits and trench at Building 25 by #2 Dock.
6-22-87	Personal/ P. K. Snodgrass	428 min	0.046	0.041	Stripped approximately 60 feet of asbestos in pits and trench at Building 25 by #2 Dock.
6-24-87	Personal/ P. K. Snodgrass	370 min	0.069	0.053	Stripped approximately 60 feet of asbestos in pits and trench at Building 25 by #2 Dock.
6-24-87	Personal/ C. B. Clendenin	371 min	0.053	0.041	Stripped approximately 60 feet of asbestos in pits and trench at Building 25 by #2 Dock.
6-24-87	Personal/ S. R. Erskine	371 min	0.055	0.043	Stripped approximately 60 feet of asbestos in pits and trench at Building 25 by #2 Dock.

2710P

WV-0116
#4

ENGINEERING, MANUFACTURING, AND TECHNOLOGY SERVICES
HEALTH, SAFETY, AND ENVIRONMENTAL AFFAIRS MONTHLY REPORT
JUNE, 1986

Safety Performance Summary

Listed below is a summary of the significant statistics for the month and year:

	MONTH		YTD		LIMIT	
	NO.	RATE	NO.	RATE	NO.	RATE
LOST WORKDAY CASE INJURIES	0	0.00	1	0.11	2	0.10
RECORDABLE INJURIES	1	0.66	9	1.00	18	0.92
OFF-THE-JOB DISABLING INJURIES	0	0.00	13	3.99	35	4.97
PROPERTY LOSS, \$M	0		0		0	

Outstanding Safety Performance

The Technical Center has completed another month without a serious occupational injury. We have now worked over seven months without a Recordable Injury and over two years without a Lost Workday Case Injury.

On The Job Injury/Illness Experience

The Department reported no Lost Workday Cases or Recordable Illnesses and one Recordable Injury during the month of June. The Department has a Lost Workday Case Incident Rate of 0.11 compared to a limit of 0.10 and a Recordable Injury Rate of 1.00 compared to a limit of 0.92. The following is a brief description of the one Recordable Injury:

June 11 - Construction - An insulator bent over to pick up a piece of insulation material and struck his right forearm against a roll of stainless steel weather barrier. He suffered a small laceration of his forearm that required two staples.

In the May report, the Construction Department was charged with one Recordable Injury. This injury involved an alleged embedded foreign body in an employee's eye. It was later determined that the employee did not have an embedded foreign body in his eye; therefore, this injury will be deducted from Construction's year-to-date performance.

Off-The-Job (OTJ) Injury Experience

The Department did not report any OTJ injuries in June. This is the first time this has happened since the OTJ Safety Committee was established in January, 1984, and our present injury reporting system was improved in May of the same year. Year-to-date the Department has reported 13 OTJ injuries which represents 293 days of work lost. The OTJ Disabling Injury Rate is 3.99 compared to a limit of 4.97.

Changes in UCC Injury and Illness Classification and Reporting System

Effective July 1, UCC adopted the new Bureau of Labor Statistics (BLS) Guidelines for classification of workplace injuries and illnesses in complying with OSHA reporting requirements. All injuries and illnesses that occurred from January through June of this year will be reviewed to determine if they must be reclassified to conform with the new BLS guidelines.

Safety Recognition Luncheon

On July 17, the Central Safety Committee will sponsor a luncheon for all Technical Center and Construction Safety and Health Committee members at the Technical Center cafeteria. The purpose of the luncheon is to recognize these employees for their dedicated service and to issue to the safety committee members, as representatives of all employees, the 1985 Technical Center National Safety Council (NSC) Award of Merit. Bob Perry, Vice President of EMTS, will be presenting this award to the committee members.

B. G. Perry's Safety Message-Videotape

A videotape has been prepared by Bob Perry for use by all Technical Center functions. It focuses primarily on human behavior and physical environment issues. The tape and an outline that provides a suggested format have been distributed to the various functional committees for implementation.

New Asbestos Standard

On June 20, 1986, OSHA published a final standard on occupational exposure to asbestos that will become effective on July 21, 1986. This standard establishes a permissible exposure limit of 0.2 fiber per cubic centimeter (f/cc) of air determined as an 8-hour time weighted average airborne concentration. This limit is ten times lower than the current limit of 2 f/cc. An action level standard of 0.1 f/cc will trigger worker training, medical surveillance, and other requirements. There is no ceiling value. The current standard has a ceiling of 10 f/cc.

NPDES Permitting

There ~~were~~^{was} no NPDES Permit violations in June. A meeting between representatives of the West Virginia Department of Natural Resources (WVDNR) and the Technical Center Environmental Protection Department (EPD) was conducted in an attempt to resolve the outstanding NPDES Permit appeal issues. The issues

were not resolved, and they will be presented before the Water Resources Board in the near future.

Best Management Practices (BMP) Plan

The BMP Plan was reviewed by legal counsel, presented to Site management, and submitted to the WVDNR on June 17, 1986. The Plan describes in detail the potential sources of spills or leaks of oils, hazardous or toxic materials, and the control measures to prevent the discharge of these materials to surface waters.

Incinerator Scrubber Water

Steps have been initiated to modify the NPDES Permit to allow the direct discharge of incinerator scrubber water into Davis Creek. This will require a major NPDES Permit modification, a sampling and analytical program, and a caustic addition system at the incinerator. If successful, this modification will improve incinerator on-line reliability in the future.

Part B Storage Permit Modifications

A second comment period was initiated by WVDNR due to EPA's claim that the initial comment activity was invalid due to the RCRA program reversion issued. Long construction delays for the new storage facility were imminent. Legal counsel, however, has resolved the issue; and the WVDNR, via written correspondence, has given permission to initiate construction of the new permitted storage facility.

Incinerator Trial Burn

A telephone conference between UCC, Region III EPA, and the West Virginia Air Pollution Control Commission (WVAPCC) personnel resolved many of the outstanding technical issues. UCC will update the trial burn plan and submit it to the USEPA and WVAPCC in July. The trial burn will most likely occur late 3Q or early 4Q 1986.

Incinerator

Gas supply to the waste incinerator was temporarily interrupted as a result of problems with the Logan supply line. The incinerator was shut down on June 9 and is not expected (pending the installation of a new line from the Mountaineer Gas line) to start up until July 1. While down, the incinerator underwent a thorough routine maintenance inspection. This inspection triggered the need for significant repairs to the chamber and a re-lining of the chamber's refractory. Efforts will be made in July to reduce the waste disposal back-log that has resulted from the incinerator outage.

CERCLA Continuous Reporting Request

The CERCLA Continuous Reporting Request was prepared. According to the Corporate guidelines, the Technical Center has two situations which require

reporting: (1) four boilers which were registered with the WVAPCC and are in compliance but are not "Federally Permitted" for NO₂ emissions and (2) 771 reactor vents and 770/771 analyzer vents of ethylene oxide.

Environmental Audits

The Phase I final report for the EP Department Internal Audit was issued from the Audit Team in June. An action plan addressing issues raised by the Audit Team will be issued by mid-July.

The Phase II Internal Audits of 772 Polyolefins (July 8), 704 Shops (July 15), and 704 Boilers (July 22) are scheduled with the remaining Technical Center areas to be audited (two areas per month) by December.

The Corporate HS&EA Audit group is scheduled to audit the Technical Center the week of July 28. In conjunction with the Corporate Audit, the Site's Location Environmental Inventory (LEI) will be completed by July 14.

Kanawha River Cooperative Monitoring Project

Organic priority pollutant results have been received from Technical Testing Laboratories, Inc., and were issued to the WVDNR and Kanawha Valley industry sponsors. The findings indicated that very few priority pollutants are present in the Kanawha River at very low (less than 10 ppb) concentrations. Metals and conventional pollutant analyses are being performed by WVDNR and are expected to be completed.

Regional Incinerator Work Group

The group met and reviewed preliminary cost estimates for a "grass roots" incinerator facility and a facility located at an existing Union Carbide location. Additional work is required by the various locations to better define the waste characteristics and waste contributions to a regional incinerator.

Budget Projections

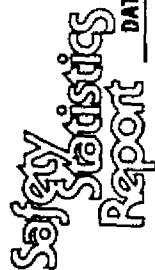
In the last week of June, the Site accounting group requested a quarterly projection of Department budget costs for the remaining 1986 quarters. The EPD budget is projected to underrun \$75,000 due to delayed requirements for groundwater monitoring under the Site's NPDES and RCRA permits.

Spills/Incidents

In June, no CERCLA, Agency, or Danbury reportable incidents occurred at the Technical Center. The EPD group was notified of seven spills or incidents involving one pound or more of chemicals.

July 7, 1986
1593w

1994



DATE: June, 1986

LOST WORKDAY INJURY EXPERIENCE

	ON THE JOB									OFF THE JOB							
	CURRENT MONTH			YEAR TO DATE						CURRENT MONTH			YEAR TO DATE				
	EXPOSURE, 000 HOURS	INCIDENTS, NUMBER	WORKDAYS LOST	EXPOSURE, 000 HOURS	INCIDENTS, NUMBER	WORKDAYS LOST	INCIDENCE RATE*	GOAL	EMPLOYEE HOURS SINCE LAST LOST WORKDAY CASE	EXPOSURE, 000 HOURS	LOST WORKDAY CASES	DAYS LOST	EXPOSURE, 000 HOURS	LOST WORKDAY CASES	DAYS LOST	FREQUENCY RATE**	GOAL
CENTRAL ENGINEERING	546	94		592				0.00	13,625,022	170			1,068	1	1	0.94	2.57
TECHNICAL CENTER SERVICES	260	45		262				0.00	1,431,717	81			473				5.34
CONSTRUCTION	609	105		618	1	47	0.32	0.25	612,522	190		52	1,115	9	189	8.07	7.32
RESEARCH AND DEVELOPMENT	240	42		250				0.00	3,516,349	75		42	450	3	103	6.66	4.45
DANBURY OFFICE AND OFF-SITE	10	2		9				0.00	213,144	3			17				0.00
EMPLOYEE RELATIONS	51	9		53				0.00	1,018,278	16			95				0.00
HS&EA	22	4		23				0.00	83,050	7			41				0.00
TOTAL EMTS	1,738	301	0	1,807	1	47	0.11	0.10	1,792,744	542	0	94	3,259	13	293	3.99	4.97

REFERENCE RATE - NUMBER OF LOST WORKDAY CASES X 200,000

EMPLOYEE HOURS EXPOSURE

$$\text{...FREQUENCY RATE} = \frac{\text{NUMBER OF LOST WORKDAY CASES} \times 1,000,000}{\text{EMPLOYEE HOURS EXPOSURE}}$$

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ENGINEERING, MANUFACTURING, AND TECHNOLOGY SERVICES

Safety Statistics Report

DATE: June, 1986

RECORDABLE INJURY/FIRE LOSS EXPERIENCE

	RECORDABLE INJURIES							FIRE LOSSES					
	CURRENT MONTH			YEAR TO DATE					CURRENT MONTH		YEAR TO DATE		
	EXPOSURE 000 HOURS	INCIDENTS, NUMBER	INCIDENT RATE	GOAL	EXPOSURE, 000 HOURS	INCIDENTS, NUMBER	INCIDENT RATE		GOAL	No.	\$000	No.	\$000
CENTRAL ENGINEERING	94			0.00	592	1	0.34	0.00	HOSTED LOCATIONS	0		0	
TECHNICAL CENTER SERVICES	45			0.77	262			0.77	TECHNICAL CENTER	0		0	
CONSTRUCTION	105	1	1.90	1.82	618	8	2.59	1.82					
RESEARCH AND DEVELOPMENT	42			0.80	250			0.80					
DANBURY OFFICE AND OFF-SITE	2			0.00	9			0.00					
EMPLOYEE RELATIONS	9			0.00	53			0.00					
HS&EA	4			0.00	23			0.00					
TOTAL EMTS	301	1	0.66	0.92	1,807	9	1.00	0.92					

*INCIDENT RATE = $\frac{\text{NUMBER OF LOST WORKDAY CASES} \times 200,000}{\text{EMPLOYEE HOURS EXPOSURE}}$

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UNION CARBIDE CORPORATION - SAFETY SUMMARY

MAY 1986

RECORDABLE INJURIES - DOMESTIC					
COMPONENT	NO.	RATE	NO.	YTD	1985
CARBON PROD. BUS. GRP.	1	1.60	8	0.94	1.02
International Petro.	0	0.00	0	0.00	0.00
Industrial Chemicals	1	0.70	3	0.44	0.26
Solv. & Coat. Mat.	3	1.30	9	0.77	0.57
Polyolefins	1	0.59	7	0.80	0.49
C&P Staff Departments	0	0.00	2	0.82	0.39
Eng. Mfg. & Tech. Serv.	1	0.69	9	1.19	0.92
Specialty Chemicals	7	3.14	15	1.37	1.00
Agricultural Products	12	4.44	23	1.74	1.04
Eng. Poly. & Comp.	0	0.00	6	2.17	1.10
TOTAL C&P BUS. GRP.	25	1.94	74	1.15	0.66
IND. GASES BUS. GRP.	6	1.13	30	1.11	0.88
Electronics	8	1.26	29	0.96	0.66
Catalysts & Services	2	1.10	14	1.24	0.77
TOTAL SPC.&SRV. BUS GRP	10	1.22	43	1.04	0.85
Corporate Dept.	0	0.00	1	0.18	0.15
Battery Products	0	0.00	8	0.37	0.70
Films-Packaging	3	1.37	9	0.84	0.70
Home & Automotive	1	1.66	5	1.76	1.70
Umetco - Domestic	46	1.26	181	0.97	0.78
TOTAL DOMESTIC					

INJURIES WITH DAYS AWAY FROM WORK - DOMESTIC					
COMPONENT	NO.	RATE	NO.	YTD	1985
CARBON PROD. BUS. GRP.	0	0.00	1	0.12	0.16
Eng. Poly. & Comp.	0	0.00	0	0.00	0.24
Industrial Chemicals	0	0.00	0	0.00	0.00
International Petro.	0	0.00	0	0.00	0.00
Polyolefins	0	0.00	0	0.00	0.09
Solv. & Coat. Mat.	0	0.00	0	0.00	0.03
Eng. Mfg. & Tech. Serv.	0	0.00	1	0.13	0.10
Specialty Chemicals	0	0.00	3	0.27	0.08
Agricultural Products	2	0.74	4(1)	0.30	0.13
C&P Staff Departments	0	0.00	1	0.41	0.00
TOTAL C&P BUS. GRP.	2	0.16	9(1)	0.14	0.07
IND. GASES BUS. GRP.	0	0.00	4	0.15	0.11
Electronics	2	0.31	3	0.10	0.07
Catalysts & Services	0	0.00	2	0.18	0.10
TOTAL SPC.&SRV. BUS GRP	2	0.24	5	0.12	0.08
Films-Packaging	0	0.00	0	0.00	0.00
Battery Products	0	0.00	0	0.00	0.03
Umetco - Domestic	0	0.00	0	0.00	0.28
Home & Automotive	0	0.00	1	0.09	0.08
Corporate Dept.	0	0.00	1	0.18	0.15
TOTAL DOMESTIC	4	0.110	21(1)	0.113	0.080

RECORDABLE INJURIES - INTERNATIONAL					
COMPONENT	NO.	RATE	NO.	YTD	1985
U.C. Eastern	11	0.74	25	0.34	0.45
U.C. Europe	1	0.22	10	0.42	0.31
U.C. Pan America	8	0.51	40	0.53	0.67
U.C. Africa Mid-East	0	0.00	7	0.68	0.81
U.C. Southern Africa	6	1.06	23	0.80	0.89
Umetco - Inter. Oper.	1	1.01	4	0.81	1.23
U.C. Canada Ltd.	5	1.50	16	0.97	1.13
Katalistika	0	0.00	3	5.14	
TOTAL INTERNATIONAL	32	0.74	128	0.59	0.48

INJURIES WITH DAYS AWAY FROM WORK - INTERNATIONAL					
COMPONENT	NO.	RATE	NO.	YTD	1985
Katalistika	0	0.00	0	0.00	0.00
U.C. Eastern	1	0.07	7	0.10	0.11
U.C. Canada Ltd.	1	0.30	2	0.12	0.16
U.C. Pan America	3	0.19	12	0.16	0.10
U.C. Europe	1	0.22	4	0.17	0.06
U.C. Southern Africa	1	0.18	5	0.17	0.17
Umetco - Inter. Oper.	0	0.00	1	0.20	0.10
U.C. Africa Mid-East	0	0.00	6	0.58	0.33
TOTAL INTERNATIONAL	7	0.16	37	0.172	0.098

RECORDABLE INJURIES - ALL UCC					
COMPONENT	NO.	RATE	NO.	YTD	1985
TOTAL UCC	78	0.94	309	0.74	0.61

INJURIES WITH DAYS AWAY FROM WORK - ALL UCC					
COMPONENT	NO.	RATE	NO.	YTD	1985
TOTAL UCC	11	0.132	58(1)	0.139	0.090

* Fatalities shown in ()

6/19/85

UCC CHEMICALS AND PLASTICS GROUP - SAFETY SUMMARY

RECORDABLE INJURIES - DOMESTIC						
COMPONENT	NO.	RATE	NO.	RATE	YTD	1985 ACTUAL
C&P Distribution	0	0.00	0	0.00	0.00	0.00
C&P Financial Control	0	0.00	0	0.00	0.00	0.00
International Petro.	0	0.00	0	0.00	0.00	0.00
EM&TS Excl. Const.	0	0.00	1	0.20	0.35	0.40
Industrial Chemicals	1	0.70	3	0.44	0.38	0.26
International Petro.	3	1.30	9	0.77	0.47	0.57
Solv. & Coat. Mat.	1	0.59	7	0.80	0.60	0.49
Polyolefins	7	3.14	15	1.37	0.75	1.00
Specialty Chemicals	12	4.44	23	1.74	0.94	1.04
Agricultural Products	0	0.00	6	2.17	1.10	1.10
Eng. Poly. & Comp.	0	0.00	2	2.60	0.00	0.66
C&P Administrative	1	1.20	8	3.12	1.82	1.41
EM&TS Const.	25	1.94	74	1.15	0.66	0.72
TOTAL DOMESTIC C&P	5	1.50	16	0.97	1.13	1.15
U.C. Canada Ltd.	30	1.85	90	1.11	0.77	0.80
TOTAL C&P						

1985 DOMESTIC C&P LIMIT = 0.80
1985 TOTAL C&P LIMIT = 0.89

UCC SAFETY/LOSS CONTROL SUMMARY

ACCIDENTAL PROPERTY LOSS (\$000)				
COMPONENT	MONTH	YTD	LIMIT	
Agricultural Products	5	45	200	
C&P Administrative	0	0	0	
C&P Distribution	0	0	25	
C&P Financial Control	0	0	0	
Eng. Poly. & Comp.	0	0	0	
EM&TS Const.	0	0	0	
EM&TS Excl. Const.	0	0	0	
Industrial Chemicals	0	0	200	
International Petro.	0	0	0	
Polyolefins	0	0	200	
Solvents & Coat. Mat.	0	0	350	
Specialty Chemicals	0	5	100	
TOTAL DOMESTIC C&P	5	50	1075	
U.C. Canada Ltd.	0	0	350	
TOTAL C&P	5	50	1425	

1985 DOMESTIC C&P LIMIT = 1085
1985 TOTAL C&P LIMIT = 1485

MAY 1986

INJURIES WITH DAYS AWAY FROM WORK - DOMESTIC									
COMPONENT	NO.	RATE	NO.	RATE	YTD	LIMIT	SEV.	ACTUAL	
C&P Distribution	0	0.00	0	0.00	0.00	0.00	0.00	0.00	
C&P Financial Control	0	0.00	0	0.00	0.00	0.00	0.00	0.00	
EM&TS Excl. Const.	0	0.00	0	0.00	0.00	0.00	0.00	0.00	
Industrial Chemicals	0	0.00	0	0.00	0.00	0.00	0.00	0.00	
International Petro.	0	0.00	0	0.00	0.00	0.00	0.00	0.00	
Eng. Poly. & Comp.	0	0.00	0	0.00	0.00	0.00	0.00	0.24	
Solv. & Coat. Mat.	0	0.00	0	0.00	0.03	0.00	0.00	0.03	
Polyolefins	0	0.00	0	0.00	0.05	0.00	0.00	0.09	
Specialty Chemicals	0	0.00	3	0.27	0.08	6.92	0.14	0.14	
Agricultural Products	2	0.74	4(1)	0.30	0.13	3.63	0.15	0.15	
EM&TS Const.	0	0.00	1	0.39	0.25	18.33	0.14	0.14	
C&P Administrative	0	0.00	1	1.30	0.00	1.30	0.66	0.66	
TOTAL DOMESTIC C&P	2	0.155	9(1)	0.140	0.066	2.67	0.092	0.092	
U.C. Canada Ltd.	1	0.300	2	0.121	0.16	3.14	0.19	0.19	
TOTAL C&P	3	0.185	11(1)	0.136	0.083	2.77	0.112	0.112	

*Fatalities shown in ()
1985 DOMESTIC C&P LIMIT = 0.087
1985 TOTAL C&P LIMIT = 6.103

OFF-THE-JOB DISABLING INJURIES C&P OPERATIONS									
COMPONENT	NO.	DIFR.	LIMIT	PAT.	DAFW	ACT.			
International Petro.	0	0.00	0.00	0	0	0.00			
EM&TS Excl. Const.	4	2.23	3.36	0	62	4.13			
Polyolefins	7	2.37	2.70	0	73	1.16			
C&P Distribution	1	2.89	4.85	0	19	0.00			
C&P Financial Control	1	3.02	0.00	0	8	0.00			
C&P Administrative	1	3.15	3.36	0	10	9.93			
Specialty Chemicals	14	3.55	4.57	0	143	4.13			
Solvents & Coat. Mat.	15	3.58	5.45	0	186	5.40			
Industrial Chemicals	9	3.85	4.94	1	144	4.97			
Eng. Poly. & Comp.	4	4.03	0	0	28	4.31			
Agricultural Products	28	5.68	6.09	0	240	6.95			
EM&TS Const.	9	9.73	7.32	0	137	10.20			
TOTAL DOMESTIC C&P	93	4.02	4.82	1	1050	4.87			
U.C. Canada Ltd.	37	5.69	7.50	0	399	4.92			
TOTAL C&P	130	4.38	5.40	1	1449	4.88			

1985 DOMESTIC C&P LIMIT = 6.02
1985 TOTAL C&P LIMIT = 6.56

DAFW = Days Away From Work

WV-0116
#5

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JUN 20 1986

R. J. ROMAGNOLI

EP FILE

ENVIRONMENTAL TECHNOLOGY
MONTHLY ACTIVITIES REPORT

MAY, 1986

HEALTH, SAFETY & ENVIRONMENTAL TECHNOLOGY
ENGINEERING, MANUFACTURING & TECHNOLOGY SERVICES

The Sistersville trial burn plan was completely revised in response to the regulatory agency's request to use toluene as a POHC. The agencies have repeatedly expressed that Best Engineering Judgment will not be used in setting the permit conditions. The test plan now covers five test conditions. (K. C. Lee)

Another source sampling study was conducted at the Institute Polyox Unit during the week of May 12 to collect emission data for a process vent (230-A) under a modified process operating condition. A separate study was also conducted in the same period for establishing the ethylene oxide and isopentane venting characteristics from two batch reactors. Data will be used by the Reaction Engineering group for optimizing the reaction steps for ethylene oxide emission reduction. (W. Y. Wang)

Progress was made in validating the analytical methods to be used for a process emission study at the Taft and Seadrift Oxide/Glycol Units. Emission data are required to address a key air quality issue. The field study is planned for the second week of June. (W. Y. Wang)

In supporting the Ethyleneamines business for the evaluation of AEEA/TETA recovery from EA-II heavies splitter tails at Texas City, a batch still residue sample was analyzed for ash, chlorine and sulfur content. A review of existing data supports the current plan to burn this residue in the Texas City residue boilers (in late July). Proper combustion of this residue can reduce the No_x emissions to an acceptable level. A field study during the initial burns was proposed. (W. T. Wang)

"LUWA" Project Texas City

The Outline of Project for the "LUWA" project in Texas City for Solvents and Coatings Materials Division was reviewed. Because of the preliminary nature of this project, two issues remain to be resolved:

1. An application for a Standard Exemption Number 106 to the Texas Air Control Board Regulation VI must be approved before construction begins.
2. Waste from process start-up and shut-down will probably be classified RCRA hazardous due to its high acetone content. A Notice of Registration must be submitted to the State of Texas to notify them that a new hazardous waste will be generated. (D. I. McCready)

The AICHE's Center for Chemical Process Safety has formed an advisory committee to formulate and oversee projects relating to dispersion modeling. Two projects are presently under consideration. One is preparation of a spill modeling manual. The other, a "source" model for dense vapor and two-phase jet mixing. (J. R. Foster)

Dispersion modeling was performed in support of the Kanawha Valley Ethylene Oxide Distribution Project to determine a minimum stack height required to prevent injury from an emergency ethylene oxide release. A graph of maximum ground level concentration vs. stack height was prepared. (J. R. Foster)

The field program to determine the extent of saline contamination began at Napoleanville, LA in late May. A field laboratory was established, monitor wells installed and initial soil samples were submitted for analysis. The geophysics survey provided a preliminary map of the saline "plume". (J. Bee, D. Cooper)

The Sistersville Dewatering project team met twice during the month to further define the scope of the dewatering project and to evaluate issues remaining before commencing the detailed process package. A time schedule and engineering estimate was developed for Division Engineering Management. The team's consensus is that two dewatering units will be installed in 1988 during the same time frame as the new hazardous waste landfill. A presentation will be made in June to the Project Steering committee concerning the status of the project. (D. Coffman)

An environmental audit package was prepared for use during the 511 Technical Center Intralocation audit. The audit was conducted during the week of May 19-23, 1986 and was a comprehensive environmental audit which evaluated the 511 EP Department's compliance with laws and regulations, Corporate Policies & Procedures, site permits (air, water, RCRA), and record keeping. Acted as the lead auditor for the audit and responsible for issuance of the final audit report. Final audit report will be issued in mid-June. (D. Coffman, A. Booth)

Proposed revisions to the Corporate Aquisition Checklists for environmental concerns were proposed based upon experiences during the Amerchol acquisition review and the previously submitted revisions to the Corporate CBP Checklists. (A. Booth)

A proposal has been received from Law Engineering Services (LES), to perform an ACL Demonstration for the industrial landfill at APC's Woodbine facility. The technical work will be monitored by CED EP personnel. A meeting with LES was held 5/29; critical issues were defined, an action plan developed, and review periods and target dates were established. The first "working meeting" review is scheduled for June 1986. (L. Scholl)

A soil sampling program designed at Taft to define the extent of PCB soil contamination has been completed. Six separate areas were sampled, both at Taft and Linde plants, all associated with acetylene flame arrestors which formerly held PCB - containing oils. Taft plant analytical and EP personnel have assumed responsibility for sample analyses. (L. Scholl)

The Phase I sludge collection and analysis program at the Holz Impoundment was completed. Results from this program will be used to decide if sludge delisting is possible. (S. Shah, D. Cooper)

Agency approval was received for the Feasibility Study Work Plan for the Marietta site investigation. The Remedial Investigation Report was re-reviewed and limited additional comments were reviewed. The March sampling data was received and a sampling plan for the June round of samples was proposed. (J. Vinzant, L. Scholl, A. Cheely)

A study continues at Taft to define sludge disposal alternatives. Design alternatives for accumulated sludge are being prepared for Taft's PSSB, Equalization Basin, and Emergency Basin assuming Taft's waste material is declared hazardous by EPA's impending definition for hazardous wastes through RCRA (due in November, 1986). In addition, the report will look at disposing of the WWTP make sludge under hazardous material classification, and determine whether the Equalization Basin and/or Emergency Basin can economically continue to operate. (D. Wang)

A two day meeting was held at the Marietta Plant to assist Plant EP personnel in preparing for the Comprehensive Monitoring Evaluation (CME) review to be conducted by US EPA, Ohio EPA and contract personnel on June 5-7, 1986 (A. Booth, J. Vinzant)

The following activities were completed in support of the ground water monitoring and closure plan development projects at Texas City:

Upon the submittal of the IPDA Part 1 Investigation Report, status reports describing the status of the compliance plan applications for the OPDA and Lake Rosie were issued.

A schedule for the development of the Compliance Plan Application for Lake Rosie was prepared and issued to In-Plant Distribution.

Critical issues relating to surface impoundment closures and ground water monitoring/corrective action were summarized in a memo and presented to J. B. Evans in a meeting at the Plant.

A draft ERT ground water quality assessment report for Lake Rosie was distributed to and discussed with personnel in In-Plant Distribution and EP Operations. A final draft was reviewed at ERT, Inc. offices in Houston prior to submittal to the TWC.

A novel technique for tracing a contaminant plume in ground water was critiqued in a meeting with In-Plant Distribution and the supplying subcontractor (Tracer Research). Plans were made for a mid-June trial of the technique at Lake Rosie. (J. Pastene)

The capital costs of corporate wide compliance with 1984 RCRA requirements were estimated to be approximately \$100MM through 1990. These costs could be reduced by an optimal combination of contract disposal, regional incinerators, and local waste incineration/treatment facilities, by at source reductions and by wastewater treatment plant modifications. (L. S. Magelssen)

A representative blending/stabilization scenario for UCCI dripolene and primary solids pond material, was defined for air emissions evaluation. Evaluation is proceeding based on the criteria of health effects and odor threshold in the nearest community, Playa de Guayanilla. (C. A. Wilger, R. L. Berglund)

A detailed action plan was prepared for the development and submittal to the EPA of closure plans for the Ponce equalization basins and Primary Solids Ponds was drawn up. Three closure alternatives are currently being

considered; i) Closure by cleaning out the contaminated sludge and soil to acceptable levels ii) closure by removal of the sludge and covering of the contaminated soils in place, and iii) closure by covering the contaminated sludges and soils in place. (V. G. Balagopal)

In early May, the EPA informed UCCI that the aeration basins would need to be delisted or "closed" under a plan which would leave the basins intact before the basins could be transferred to PRASA. An accelerated sampling program was completed to support the delisting petition and closure plan. Sample analysis and write-up of both documents is in progress. (T. Wong, V. G. Balagopal)

Soil samples were taken and a piezometer was installed to evaluate dike stability of the Ponce dewatered sludge landfill. These efforts are needed to answer an NOD. (T. Wong, C. A. Wilger)

Leachability tests were performed on specimens of previously stabilized Ponce dripolene A/B, East and West primary solids Pond's sludges. A TCLP test on stabilized dripolene sludge showed relatively low (ppb) concentrations of a few hazardous constituents. A field demonstration by Enrico, a waste stabilization vendor, was attended; a trip report summarizing the attractive features, potential concern areas, and recommendations will be issued in the near future. A field test, using Enrico's system, has been tentatively scheduled for Ponce. (T. Wong, S. I. Shah).

Samples of Ponce A & B dripolene treated using the Kippen process were sent to San Juan Cement for their evaluation of the use of processed dripolene as a fuel. (T. Wong)

The Detection Ground Water Monitoring Program for the Ponce Puntilla Waste Management Area and Compliance Monitoring Program for the Industrial Landfill Waste Management Area were prepared as "stand alone" documents and were sent to EPA as scheduled on May 30, 1986. These documents propose permit language for RCRA Ground Water Monitoring at Ponce. (B. E. Smith)

A scope of work and RFP were prepared for an oil migration study; the contract was awarded to Prof. Jon Sykes, University of Waterloo. The Phase II action plan for Ponce ground water remedial action was prepared and work commenced on the oil migration and ground water modeling tasks. A finite element grid was prepared and a first run was made on the Ponce ground water model to simulate existing ground water conditions. (B. E. Smith)

Environmental endorsement of the Nippon Unicar Company Ltd. - Silicones Expansion was recommended. Previously identified environmental concerns associated with the Sistersville chlorosilanes spill/fire containment project were reviewed and their status documented. CBP summary checklists were prepared for both projects. (R. A. Hoppe)

Aquatic toxicity tests conducted on the Technical Center Outfalls 008 and 003 showed no acute toxicity in 008 to fathead minnows or Daphnia magna and no acute toxicity to fathead minnows in 003. However, significant acute toxicity was indicated in 003 to Daphnia magna with a measured 48-hour LC50 of 63 percent. Based on our initial Daphnia test data on several outfalls, it appears that these test organisms are generally more sensitive than the minnows and suspended solids and algae can contribute to the measured toxicity. (G. T. Waggy)

Degradation of Polymer JR and Cellosize (produced at CPI and Institute) are being studied. Preliminary investigations indicate enzymatic pretreatment followed by biological treatment may be a viable alternative. An internal clarifier and sludge recycle pump and line have been installed in Pond-1 at CPI. Arrangements have been made for wasting of biological sludge on a regular basis. (P. S. Kodukula, J. C. Hoskinson)

The semi-annual CMA Environmental Update was attended in New Orleans, LA., on May 19 and 20. Discussions were held concerning regulatory developments in the areas of RCRA, Superfund, effluent guidelines, groundwater, and air pollutants. While a separate memorandum will issue summarizing major issues, one important finding was that screening level procedures for land disposal prohibition will be abandoned by EPA; performance level requirements or specification of disposal options will be utilized instead. (T. W. Siegrist)

Ecological effect data were collected on UCON Hydrolube Concentrate 5902 to provide requested information to Texaco. These studies showed UCON Hydrolube 5902 to be relatively non-toxic to fathead minnows and Daphnia magna with LC50 values greater than 4,0000 mg/L. Some toxicity was indicated by a LC50 of 270 mg/L in the Microtox test using marine luminescent bacteria. (G. T. Waggy)

Ecological effect data were collected on Silicone Surfactant L-536 to meet the need of a customer, Scotfoam. The information shows that L-536 is biodegradable and relatively nontoxic to bacterial biomass, but it is toxic to fathead minnows and Daphnia magna as most surfactants are. (G. T. Waggy)

The EPA Science Advisory Board started evaluating risks associated with several means of sludge disposal at a May 1-2 meeting. The Publicly Owned Treatment Works (POTW) sludges involved are of both direct interest to South Charleston and Texas City, and of indirect interest as the technology spills over to hazardous wastes. Risks associated with land disposal, incineration, and ocean disposal are to be assessed using common bases; this will lead to proposed regulations later this year. The next meeting is June 10-11. (R. A. Conway)

The development of a waste management system for a multiple purpose incinerator was added to the new proposed ASME combustion research program in support of the regional incinerator projects. (K. C. Lee)

A meeting of an ad hoc workgroup, formed under the CMA RCRA Regulations Taskgroup, was attended. CMA's comments on EPA's recent petition guidance manual (on developing and submitting a petition for a variance to the upcoming land disposal restrictions) were reviewed and finalized. Plans were made and responsibilities were assigned for developing CMA's comments on the recent proposed RCRA codification rule (28-MAR-86 FR). Our main input related to the proposed minimum technology (i.e., double liner) requirements for surface impoundments and landfills. Numerous technical comments questioning the proposed performance standard for liner systems and the Agency's assumption that flexible membrane liners are leak proof were provided. Questions about the validity of some of the assumptions in SOILINER model were raised. (A. J. Pastene)

A position was accepted on the CMA RCRA Modeling Workgroup (formed under the RCRA Regulations Taskgroup). The group is initiating a settlement with EPA's Office of Solid Waste pertaining to EPA's VHS model and other land disposal models, in lieu of litigation. It is anticipated that, through the auspices of the settlement negotiation, CMA can have a significant effect on the models that will be used by the Agency in upcoming land disposal restrictions, waste characterizations, and delistings. (A. J. Pastene)

A summary of the issues associated with the Air Emissions Regulations under RCRA was presented to the CMA RCRA Task Group on May 15. The purpose of this presentation was to ask for their support and continued involvement in the program, particularly when specific hazardous waste issues are involved. (R. L. Berglund)

At meetings of the CMA Secondary Emissions Workgroup on May 13 and May 14, the workgroup first discussed ongoing EPA field sampling studies, and formulated comments on EPA documents. Then it met with over 30 EPA researchers, regulators, and contractors working on secondary emissions programs. Important issues discussed in the EPA/CMA meeting relate to waste water effluents, RCRA facilities, and NESHAPS. Two new documents have been received from the EPA for review. These are associated with air emissions from (1) aerated wastewater treatment systems, and (2) land disposal systems. The first study will be used as a basis for subsequent field investigations. The land disposal study was to be used in developing a laboratory research program. Significant limitations of both documents have been observed and transmitted to the EPA. (R. L. Berglund)

The issues covered at the final meeting of the CMA Process Emissions Regulation Task Group on May 15 included task group reorganization, secondary emissions, the EPA's intent to issue a single Hazardous Organic Chemical NESHA in June of 1987, and ongoing litigation on benzene, vinyl chloride, radionuclides and the 'intent to list' framework. This task group will be reformulated into the new Air Standards and Regulations Task Group in June. (R. L. Berglund)

The key issue discussed at the CMA Hazardous Air Pollutant Work Group meeting was the upcoming Hazardous Organic Chemical NESHA being scheduled for June 1987. This single regulation may cover all the chemicals which the Agency has indicated they 'intend to list'. Presently, chlorinated hydrocarbons and butadiene will be included in the NESHA; ethylene oxide remains under review. (R. L. Berglund, G. M. Whipple)

A meeting of the Ethylene Oxide IC Environmental Task Force with EPA was held on May 6 and 7 to review the recently completed short-term emissions surveys and discuss the Agency's model plant concept. The Agency is still reviewing the need to regulate air emissions of ethylene oxide from production facilities, and make a decision within the next month. (R. L. Berglund)

The U.S. EPA sent three officials, representing different functions, to the ASME research committee May meeting to ask for help in developing regulations for municipal waste incinerators. They acknowledged that EPA needs help from practitioners. (K. C. Lee)

Current EPA thinking on how industrial boilers burning hazardous waste should be regulated was received from CMA; it was reproduced and sent to all plants for comment. Data on the heavy metal content (in ppm level) of wastes are critical in helping EPA set realistic limitations on waste feed. EPA also requested input on other technical issues. (K. C. Lee)

With partial support from the DEAM Remedial Technology project, terrain conductivity surveying, a remote non-destructive geophysical method used to quickly investigate the surface soil and pore water conductivity of a site was evaluated for tracking the subsurface migration of contaminants. The conductivity survey measured, at the ground surface in a marsh environment, the response of the ground to a direct current induced by the instrument. Changes in geologic structure, pipelines, soil composition or pore water composition altered the induced conductivity measured by the instrument. The method is applicable to plumes of separate-phase organics, saline and high or low pH compounds and inorganic compounds that distinctly change the ground-water or soil conductivity. (J. M. Bee)

ASTM Subcommittee D34.09, Treatment Methods discussed performance testing for solidified wastes. Methods for testing of long-term biodegradation effects were brain stormed; preliminary thoughts within the subcommittee will be circulated for technical review. The Canada/USEPA joint study will be closely followed while developing ASTM Standards for developments in other tests for performance of solidified wastes. (S. I. Shah)

The first phase of the DEAM secondary emissions laboratory studies has been completed. Batch tests were conducted to evaluate the relative fates in an activated sludge system of eight specific organics that represent ranges of volatilization potentials and biodegradabilities. Surface and sub-surface aerated reactors were spiked with the compounds of interest, and reactor off-gas and mixed liquor samples were collected as functions of time and analyzed for specific compound content. A preliminary examination of the results reaffirms that some chemicals rapidly bioconvert upon contacting the biological medium. In addition, the removal of chemicals through volatilization follows first order kinetics, but that bioremoval follows zero order kinetics for specific organics. The implications of the results are that the portion of a chemical volatilized in a biological system increases with increasing concentration. (R. L. Berglund, T. W. Siegrist)

This transfer of the secondary emissions issues to the wastewater effluent limitations guideline programs from the EPA Air Office was acknowledged by EPA to be a direct result of the comments submitted by CMA. This option was strongly suggested, and is a significant victory for the chemical industry. Preliminary indications are that if OAQPS is going to propose a pretreatment level for the influent to the WWTF, it will be in the ppm range (possibly 10 ppm, as in vinyl chloride) rather than the ppb range (25 ppb) proposed by the Office of Water. (R. L. Berglund)

A detailed summary of the recent CASAC meeting reviewing the Ozone NAAQS has been prepared, and a plan for future action by the chemical industry was developed. EPA regulatory activity on the Ozone NAAQS will continue for two more years. In addition, the EPA plans to increase their efforts to reduce ozone levels in nonattainment areas. The chemical industry needs to be in a position to respond technically to the approaches being considered in the EPA's regulatory program. (R. L. Berglund)



INTERNAL
CORRESPONDENCE



UNION CARBIDE CORPORATION TECHNICAL CENTER

P.O. BOX 8361, SOUTH CHARLESTON, WV 25303

TO: R. C. Proffitt
511-2009
512

DATE: June 21, 1983

ORIGINATING DEPT: 511 Industrial Hygiene/
Environmental Protection

AREA:

FROM: M. E. Bell
C. W. Maxwell
M. L. Mills
L. R. Noble
D. R. Paugh
R. E. Peele
A. L. Postlethwait
W. F. Williams

SUBJECT: Asbestos Monitoring in
Storeroom, 511 Construction
Department

Dear Mr. Proffitt:

On May 9, 1983, the Technical Center Industrial Hygiene group conducted a monitoring survey for determining the exposure of employees to asbestos dust particles while handling asbestos containing gaskets in the storeroom at the 512 Construction Department. This work was done by M. E. Bell of our group.

Mr. J. H. White was monitored for asbestos exposure when he received one hundred asbestos spiral-wound gaskets in three bundles. During the monitoring period, Mr. White removed these gaskets from the box, counted and placed them in a storage bin in the storeroom. Mr. White wore a dust respirator approved for asbestos while performing the job. In addition to the personal sample, an area sample was also collected. The results of monitoring shown in the attachment indicate that exposure to asbestos fibers above the permissible exposure limit of 2 fiber/cc are unlikely.

It is our observation that while unpacking and placing gaskets in the bin the probability of exposure is minute; however, it is believed that once the gaskets are stored in the bin some dust will become loose due to friction and may build up over a period of time. We recommend that the gasket storage bin be cleaned once every month. The person cleaning the bin should wear a dust respirator. The method of cleaning the bin should be wet. The easiest way would be to rinse the bin with water in the sink.

Please notify Mr. White of his exposure results. If we can

be of further assistance, please call us at extension 3750.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Manhar A. Patel".

Manhar A. Patel

MAP/sc

Attachment



ASBESTOS SAMPLING

May 9, 1983

<u>Name or Location</u>	<u>Sampling Time (Mins)</u>	<u>Concentration Fibers/cc</u>
1. J. H. White	10	0
2. Area Sample	9	< .07

The permissible exposure limit is 2 fibers > 5 μ m/cc of air

Asbestos Sampling Institute Storeroom

5-9-83

J. H. White 233-82-7110
A.L. Postlethwait

#1 Personal sample

0 fib.

Stop: 0854

Start: 0844

10 min x 2 l = 20 l

#2 ^{Source} Area sample

Stop: 0857

1 f / 100 fields

Start: 0848

9 min x 2 l = 18 l

$$\frac{.01 \times 855}{624 \times 18} = 4.07 \text{ fib} > 5 \text{ um/cm}^2$$

Mr. White received 100 asbestos spiral wound gaskets in 3 bundles. Mr. White was monitored while he removed these gasket from the box, counted and placed gasket in storage bin in the storeroom. Mr. White wore a respirator while performing this job.

J.H. White 233-82-7110
Ant L. Post

asbestos special wound
gast.

Start 0844 2l/min
0854 10min - 20l

0

Start 0843 Area
0857 9min.
18l

1/f 1/100 field

$$\frac{.01 \text{ ft.} \times 855}{6.24 \times 18l} = 2.07 \text{ ft}^3 \text{ per } \text{cu}^3$$



INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

Computer Ref. W-1315
Date April 26, 1982

O: R. F. Painter, Trlr. 5583

C: B. H. Avashia, M.D., 23-512 L. R. Noble, 2149-512
G. W. Bott, 701-330 R. E. Peele, 701-334
M. L. Mills, 2149-512 E. C. Shipley, 2009-512

PERSON MONITORED R. E. Templeton
Location Bldg. 706 Date 04/21/82

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	0.9 fibers	92 Mins.	Personal sample
2	>5 $\mu\text{m/cc}$		
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) -
Ceiling Concentration -

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m/cc}$ X OSHA - UCC - Other
Ceiling - - OSHA - UCC - Other

COMMENTS

Personal and area samples were collected while Mr. Shamblin and Mr. Templeton were stripping insulation from a steam line and condensate line in the old compressor room, Building 706. We recommend the insulators continue to wear protective clothing, respirators, gloves and the area to be stripped wet down. Please inform IH Department of the next stripping job in this area, and inform concerned employees of their exposure.

WORK BY Mark E. Bell APPROVED BY Manhar A. Patel
Mark E. Bell Manhar A. Patel

4/21/82

ASBESTOS

CONSTRUCTION

Roto Reading

Pump #1
21
2

3.75

4.00

4.6.

2 l

Pump	Name	Start	Stop	
#2	D.C. Shamblin	0853	1025	92 min
#21	R.E. Templeton	0853	1025	92 min
#1	AREA	0853	1026	93 min

Steam line and condensate return

Old Compressor room 706

100 ft. / 40 ft.

#1 Area 100 ft. 75 fields

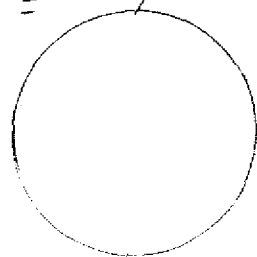
#21 R.E. Templeton 100 ft. 81 fields

#2 D.C. Shamblin 100 ft. 62 fields

$$\#1. \frac{1.33 \times 855}{6.24 \times 186} = 1.0 \text{ ft} > 5 \text{ um/cm}^3$$

$$\#21 \frac{1.23 \times 855}{6.24 \times 184} = 0.9 \text{ ft} > 5 \text{ um/cm}^3$$

$$\frac{1.21 \times 855}{6.24 \times 184} = 1.2 \text{ ft} > 5 \text{ um/cm}^3$$



4-22-82

# 1 F. 100	100 feet	75 fields	93 min
# 21 RE. 100	100 feet	81 fields	92 min
# 3	100 feet	65 fields	92 min

1.75 fields

$$\# 1 \quad \frac{1.33 \times 855}{6.24 \times 186} = 1.0 \text{ filter } 75 \text{ mm. / cm}^3$$

$$\# 21 \quad \frac{1.23 \times 855}{6.24 \times 184} = 0.9$$

$$\# 3 \quad \frac{1.61 \times 855}{6.24 \times 184} = 1.2 \text{ filter}$$



BUSINESS
CONFIDENTIAL

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

Computer Ref. W-1315

Date April 26, 1982

TO: R. F. Painter, Trlr. 5583

cc: B. H. Avashia, M.D., 23-512

L. R. Noble, 2149-512

G. W. Bott, 701-330

R. E. Peele, 701-334

M. L. Mills, 2149-512

E. C. Shipley, 2009-512

PERSON MONITORED D. C. Shamblin

Location Bldg. 706

Date 04/21/82

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers >5 1.2 $\mu\text{m}/\text{cc}$	92 Mins.	Personal sample
2	fibers >5 1.0 $\mu\text{m}/\text{cc}$	93 Mins.	Area sample
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) -

Ceiling Concentration -

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m}/\text{cc}$ X OSHA UCC Other

Ceiling OSHA UCC Other

COMMENTS

Personal and area samples were collected while Mr. Shamblin and Mr. Templeton were stripping insulation from a steam line and condensate line in the old compressor room, Building 706. We recommend the insulators continue to wear protective clothing, respirators, gloves and the area to be stripped wet down. Please inform IH Department of the next stripping job in this area and inform concerned employees of their exposure.

WORK BY Mark E. Bell
Mark E. Bell

APPROVED BY Manhar A. Patel
Manhar A. Patel

UCC 024872

INDUSTRIAL HYGIENE MONITORING FOR

Asbestos

TO: R.F. Painter, 5583-511

Computer Ref. W-1315

Date 4-26-82

cc: B. H. Avashia, M.D., 23-512
G. W. Bott, 701-330
M. L. Mills, 511-2149-512

G. W. Bott, 701-330

M.L. Mills, 511-2149-512

L.R. Noble, 511-2149-512

R E. Peelle, 701-334

E.C. Shipley 51-2009-512

PERSON MONITORED D. C. Shamblin

Location Bld. 706

Date 4-21-82

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	1.2 fibers 75 μ m/cc	92 min.	Personal Sample
2	1.0 fibers 75 μ m/cc	93 min.	Area Sample
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA)

Ceiling Concentration

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 um/cc

~~X~~ OSHA

UCC

Other

Ceiling

OSHA

UCC

Other

COMMENTS

Personal and area samples were collected while Mr. Shores and Mr. Templeton were stripping insulation from a steam line and condensate line in the old compressor room bld. 706. We recommend the insulators working to wear protective clothing, respirators, gloves and ~~also~~ ~~the area to~~ be stripped wet down. Please inform IH Department of the next stripping job in this area and inform concerned employees of their exposure.

WORK BY _____ APPROVED BY _____

WORK BY

APPROVED BY



INDUSTRIAL HYGIENE MONITORING FOR Asbestos

TO: R. F. Painter 5583-511

Computer Ref. W-1315
Date 4-26-82

cc: B. H. Avonlea, M.D., 23-512
G. W. Batt, 701-330
M. L. Mills, 511-2149-512
L. R. Noble, 511-2149-512

R. E. Peele, 701-334
E. C. Shipley 511-2009-512

PERSON MONITORED R. E. Templeton

Location Bld. 706

Date 4-21-82

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	0.9 fibers 75 um/cc	92 min.	Personal sample
2	1.0 fibers 75 um/cc	92 min	Area sample
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA) —

Ceiling Concentration —

ALLOWABLE EXPOSURE

TWA 2 fibers 75 um/cc ☒ OSHA ☐ UCC ☐ Other
Ceiling — ☐ OSHA ☐ UCC ☐ Other

COMMENTS

Done

WORK BY —

APPROVED BY —

INDUSTRIAL HYGIENE MONITORING FOR: ASBESTOS



Computer Ref: W-1500

Date: Nov. 18, 1983

To: W. T. Shelton, 704 SHop

cc: R. E. Peele, 701-334
R. G. Rowe, M.D., 791

PERSON MONITORED: J. W. Greenlee

LOCATION: 770 Fan Room

Date: 11/8/83

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	0.29 fibers/cc	134 Minutes	Personal sample
2	0.06 fibers/cc	23 Minutes	Area sample
3	0.03 fibers/cc	97 Minutes	Area sample
4	0.05 fibers/cc	97 Minutes	Area sample
Time-Weighted Average Concentration (TWA):			-
Ceiling Concentration:			-

ALLOWABLE EXPOSURE

TWA:	.5 fibers/cc	<u> X </u> OSHA	<u> </u> UCC	<u> </u> Other
Ceiling:	-	<u> </u> OSHA	<u> </u> UCC	<u> </u> Other

COMMENTS

Personal and area samples were collected while Mr. Greenlee stripped insulation from a steam line in Building 770 Fan Room. The line was located on S-5 precipitron. Mr. Greenlee stripped six feet of insulation from a two-inch steam line outside the precipitron and twenty feet of insulation from the line inside the precipitron. Mr. Greenlee wore a respirator, gloves, paper suit and hood while performing his work and during the cleanup operation. The area was barricaded and a sign posted. Please inform IH Department of the next stripping job in this area and inform Mr. Greenlee of his exposure. Please note the change in OSHA standard from 2 fibers/cc to .5 fibers/cc.

WORK BY:

Mark E. Bell

APPROVED BY:

Manhar A. Patel

UCC 024875

BUILDING AND AREA - 770 Mechanical Fan Room

NAME OF CHEMICAL MONITORED FOR - Asbestos

ALLOWABLE EXPOSURE LIMIT -

8 HR - 2 fibers/5cc

STEL -

☒ OSHA ☐ UCC ☐ ACGIH ☐ OTHER

DISTRIBUTION LIST:

DATE SAMPLED - 11-8-83

SAMPLED BY - M. Bell

SAMPLE No.	NAME OR TYPE OF SAMPLE	TIME	DESCRIPTION OF MONITORING
#1	J.W. Greenlee	17:17	stripping asbestos insulation on 6ft of pipe inside 5-5 precip.
EMP No.	SOC. SEC. NUMBER - 234-886-0774	STOP - 19:51	and stripping 20 ft of pipe inside precip.
#7	SMOKE - CHEW - NO	START - 17:17	
Collection Media:	JOB TITLE -	2 hr 14 min 13 min	
Filter	PROTECTIVE EQUIPMENT USED		
Res.	Gloves Everhale Respa		

SAMPLE No.	NAME OR TYPE OF SAMPLE	TIME	DESCRIPTION OF MONITORING
2	Source		Located about 15ft away from stripping job at breeching level. Pipe being stripped.
EMP No.	SOC. SEC. NUMBER -	STOP - 17:42	Located about 15ft away from stripping job. 6ft of insulation was stripped.
#3	SMOKE - CHEW -	START - 17:19	
Collection Media:	JOB TITLE -	23 min	
	PROTECTIVE EQUIPMENT USED		

SAMPLE No.	NAME OR TYPE OF SAMPLE	TIME	DESCRIPTION OF MONITORING
#3	Source		Located 2 ft outside door of Precipitation 5-5 four ft from floor.
EMP No.	SOC. SEC. NUMBER -	STOP - 17:51	
#3	SMOKE - CHEW -	START - 19:28	
Collection Media:	JOB TITLE -	1 hr 37 min 97 min	
	PROTECTIVE EQUIPMENT USED		

UCC 024876

BUILDING AND AREA -

NAME OF CHEMICAL MONITORED FOR -

ALLOWABLE EXPOSURE LIMIT -

DISTRIBUTION LIST :

8 HR -

STEL -

☐ OSHA ☐ UCC ☐ ACGIH ☐ OTHER

DATE SAMPLED -

SAMPLED BY -

SAMPLE No.	NAME OR TYPE OF SAMPLE	TIME	DESCRIPTION OF MONITORING
#4	Area		Located inside 55 Pse
MP No.	Soc. SEC. NUMBER -	STOP - 11:51	at 4 ft from floor. Pipe
#1	SMOKE - CHEW -	START - 19:28	being drilled located along floor.
Section Media:	JOB TITLE -	1hr 37min 97min	
	PROTECTIVE EQUIPMENT USED		

SAMPLE No.	NAME OR TYPE OF SAMPLE	TIME	DESCRIPTION OF MONITORING
MP No.	Soc. SEC. NUMBER -	STOP -	
	SMOKE - CHEW -	START -	
Section Media:	JOB TITLE -		
	PROTECTIVE EQUIPMENT USED		

SAMPLE No.	NAME OR TYPE OF SAMPLE	TIME	DESCRIPTION OF MONITORING
MP No.	Soc. SEC. NUMBER -	STOP -	
	SMOKE - CHEW -	START -	
Section Media:	JOB TITLE -		
	PROTECTIVE EQUIPMENT USED		

INDUSTRIAL HYGIENE MONITORING FOR Asbestos

TO: W. T. Shelton, 704 Shop

 Computer Ref. W1500
 Date 1

 cc: R. G. Rowe, M.D., 791
 R. E. Peck, 701-334

 PERSON MONITORED J. W. Greenlee

 Location 770 Fan Room Date 11-8-83

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	0.27 Fibers 25 um/cc	134 mins.	Personal Sample
2	0.06 Fibers 25 um/cc	23 mins.	Area Sample
3	0.03 Fibers 25 um/cc	97 mins.	Area Sample
4	0.05 Fibers 25 um/cc	97 mins.	Area Sample
5			
6			

 Time-Weighted Average Concentration (TWA) _____
 Ceiling Concentration _____

 ALLOWABLE EXPOSURE .5/cc

TWA	<u>2 fibers</u>	<u>OSHA</u>	<u>UCC</u>	<u>Other</u>
Ceiling	<u>25 um/cc</u>	<u>OSHA</u>	<u>UCC</u>	<u>Other</u>

COMMENTS

Personal and area samples were collected while Mr. Greenlee stripped insulation from a steam line in building 770 fan room. The line was located on S-5 precipitation. Mr. Greenlee stripped 6 ft of insulation from a 2" steam line outside the precipitation and 20 ft of insulation from the line inside the precipitation. Mr. Greenlee wore a respirator, gloves, paper suit and hood while performing his work.

WORK BY _____ APPROVED BY _____
 during the cleanup operation. The area was barricaded and sign posted. Please inform I.H. Department of the next stripping job in this area and inform Mr. Greenlee of his exposure. Please note the change in OSHA standard from 2 fibers/cc to .5 fibers/cc.

ASBESTOS

Nov. 10, 1983

#1 - John Greenlee - 29 fibers/100 fields by RCT

$$.29 \times 855$$

$$6.24 \times 134 \text{ l} = 0.29 \text{ fibers}$$

#2 - Source 1 fiber/100 fields

$$.01 \times 855$$

$$6.24 \times 23 \text{ l} = .06 \text{ fibers}$$

#3 - Source 2 fibers/100 fields

35

$$.02 \times 855$$

$$6.24 \times 97 \text{ l} = .03 \text{ fibers}$$

#4 - AREA - 4 fibers/100 fields

$$.04 \times 855$$

$$6.24 \times 97 \text{ l} = .05 \text{ fibers}$$

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

FILE COPY

Computer Ref. W-1198

Date July 17, 1981

TO: R. F. Painter, Trlr. 5583

cc: C. W. Carman, 725-105
L. R. Noble, 511-2149
D. R. Paugh, 511-2009
R. E. Peele, 701-334

H. L. Robinson, 701-401
E. C. Shipley, 511-2009
E. J. Tawney, Trlr. 5583

PERSON MONITORED J. F. Chandler

Location West end Bldg. 774 behind parking lot to south end of parking lot Date 07/10/81

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers > 5 .4 $\mu\text{m}/\text{cm}^3$	160 Minutes	A.M. sample - stripping insulation
2	fibers > 5 .1 $\mu\text{m}/\text{cm}^3$	164 Minutes	P.M. sample - stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA)

Ceiling Concentration

ALLOWABLE EXPOSURE

TWA 2 fibers > 5 $\mu\text{m}/\text{cm}^3$ X OSHA UCC Other
Ceiling OSHA UCC Other

COMMENTS

Stripping approximately 450 feet of 4-inch steam line which had been turned off so the line could cool.

WORK BY

Ruth Clise
Ruth Clise

APPROVED BY

Manhar A. Patel
Manhar A. Patel

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

Computer Ref. W-1198

Date July 17, 1981

TO: R. F. Painter, Trlr. 5583

cc: C. W. Carman, 725-105
L. R. Noble, 511-2149
D. R. Paugh, 511-2009
R. E. Peele, 701-334

H. L. Robinson, 701-401
E. C. Shipley, 511-2009
E. J. Tawney, Trlr. 5583

PERSON MONITORED M. D. Coleman

Location West end of Bldg. 774, behind Date 07/10/81
the parking lot to south end of
parking lot

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers .3 >5 $\mu\text{m}/\text{cm}^3$	159 Minutes	A.M. - bagging stripped insulation
2	fibers .3 >5 $\mu\text{m}/\text{cm}^3$	152 Minutes	P.M. - bagging stripped insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA)

Ceiling Concentration

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m}/\text{cm}^3$ X OSHA UCC Other
Ceiling OSHA UCC Other

COMMENTS

WORK BY

Ruth Clise
Ruth Clise

APPROVED BY

Manhar A. Patel
Manhar A. Patel

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

FILE COPY

Computer Ref. W-1198

Date July 17, 1981

TO: R. F. Painter, Trlr. 5583

cc: C. W. Carman, 725-105
L. R. Noble, 511-2149
D. R. Paugh, 511-2009
R. E. Peele, 701-334

H. L. Robinson, 701-401
E. C. Shipley, 511-2009
E. J. Tawney, Trlr. 5583

PERSON MONITORED B. J. Agosti

Location West end Bldg. 774 behind parking lot to south end of parking lot Date 07/10/81

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers .5 >5 $\mu\text{m}/\text{cm}^3$	149 Minutes	A.M. - stripping insulation
2	fibers .4 >5 $\mu\text{m}/\text{cm}^3$	156 Minutes	P.M. - stripping insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA)

Ceiling Concentration

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m}/\text{cm}^3$ X OSHA UCC Other
Ceiling OSHA UCC Other

COMMENTS

WORK BY

Ruth Clise

Ruth Clise

APPROVED BY

Manhar A. Patel

Manhar A. Patel

INDUSTRIAL HYGIENE MONITORING FOR ASBESTOS

Computer Ref. W-1198

Date July 17, 1981

TO: R. F. Painter, Trlr. 5583

cc: C. W. Carman, 725-105
L. R. Noble, 511-2149
D. R. Paugh, 511-2009
R. E. Peele, 701-334

H. L. Robinson, 701-401
E. C. Shipley, 511-2009
E. J. Tawney, Trlr. 5583

PERSON MONITORED R. E. Templeton

Location West end Bldg. 774 behind parking lot to south end of parking lot
Date 07/10/81

EXPOSURE RESULTS

Sample No.	Conc.	Sampling Time	Comments
1	fibers .2 >5 $\mu\text{m}/\text{cm}^3$	148 Minutes	A.M. - bagging insulation
2	fibers .2 >5 $\mu\text{m}/\text{cm}^3$	155 Minutes	P.M. - bagging insulation
3			
4			
5			
6			

Time-Weighted Average Concentration (TWA)

Ceiling Concentration

ALLOWABLE EXPOSURE

TWA 2 fibers >5 $\mu\text{m}/\text{cm}^3$ X OSHA UCC Other
Ceiling OSHA UCC Other

COMMENTS

WORK BY

Ruth Clise

Ruth Clise

APPROVED BY

Manhar A. Patel

UCC 024883

INDUSTRIAL HYGIENE - ENVIRONMENTAL PROTECTION

ENVIRONMENTAL HAZARD REPORT

DATE _____ TIME _____

PERSON REQUESTING ASSISTANCE _____

LOCATION _____ DEPARTMENT _____

IH DEPARTMENT CONTACT _____

REQUEST _____

ACTION TAKEN _____

IH FILE _____

INDUSTRIAL HYGIENE - ENVIRONMENTAL PROTECTION

ENVIRONMENTAL HAZARD REPORT

File
Const.
Asbestos

DATE _____ TIME _____

PERSON REQUESTING ASSISTANCE _____

LOCATION _____ DEPARTMENT _____

IH DEPARTMENT CONTACT _____

REQUEST _____

ACTION TAKEN _____

IH FILE _____

(IH #1 2/77)

UCC 024885

PERSONNEL EXPOSURE RECORD

Name DAVIS, E.H.

SS
~~Payroll~~ Number 232-32-0010

[illegible]

PERSONNEL EXPOSURE RECORD

Name DEITZ, J. D.

~~Payroll~~ Number 235-01-3698

[illegible]

PERSONNEL EXPOSURE RECORD

Name MONIE, J.R.

SS
Payroll Number 234-24-8772

[illegible]

51 Total

REPORT RC01 ALL ASBESTOS MONITORING AT TECH CENTER FOR 1979 AND 1980

DATE PERSONNEL NAME SAMPLE TYPE SAMPLE TOTAL TIME 8-HOUR T.W.A. CONC. EXP. BUILDING RESP RFSP HRS MTNS OR ZONE WORN

01/22/79	BRAGG C	BREATH Z	25	7.75 F/CC	233	YES	X
01/22/79	LANIER CHUCK R	BREATH Z	25	5.37 F/CC	233	YES	X
01/22/79		AREA	25	.30 F/CC	233	NO	
02/01/79	MONIN J. R.	BREATH Z	20	.24 F/CC	770	YES	X
03/17/79	SAMPSON J F	BREATH Z	70	3.40 F/CC	1	CPL X 6	YES X
03/17/79	SAMPSON J F	BREATH Z	15	1.70 F/CC	1	CPL X 6	YES X
03/17/79	HALL G P	BREATH Z	70	.70 F/CC	1	CPL X 6	YES X
03/17/79	HALL G P	BREATH Z	17	2.90 F/CC	1	CPL X 6	YES X
03/17/79		AREA	125	.30 F/CC		CPL X 6	NO
03/19/79	SAMPSON J F	BREATH Z	48	.20 F/CC		CPL X 6	YES X
03/19/79	CARPENTER D L	BREATH Z	48	.40 F/CC		CPL X 6	YES X
03/19/79		AREA	47	.01 F/CC		CPL X 6	NO
04/23/79	RAINES R E	BREATH Z	47	.30 F/CC	.03	741	YES X
04/23/79		AREA	47	.40 F/CC		741	NO
04/30/79	NEAL K A	BREATH Z	147	1.85 F/CC	2	5	YES X
04/30/79		AREA	67	.19 F/CC		704	NO
05/04/79	RAINES R. E.	BREATH Z	50	.51 F/CC		720	YES X
05/09/79		BREATH Z	44	.09 F/CC		707	YES X
05/09/79	DAVIS E.	BREATH Z	44	.03 F/CC		707	NO Z
05/09/79		AREA	44	.12 F/CC		707	NO
05/15/79	FINNEY M.	BREATH Z	85	4.00 F/CC	1	707	YES X
05/15/79	FINNEY M.	BREATH Z	60	6.10 F/CC	2.20	707	YES X
05/15/79	MILLER C.	BREATH Z	85	2.00 F/CC	1	707	YES X
05/15/79		BREATH Z	60	2.10 F/CC	.90	707	YES X
05/29/79		AREA	170	.01 F/CC		701	NO
05/29/79		AREA	170	.01 F/CC		701	NO
05/29/79		AREA	235	.01 F/CC		701	NO
05/29/79		AREA	235	.02 F/CC		701	NO
05/31/79	VANCE RAYMOND	BREATH Z	34	.18 F/CC		701	YES X
07/02/79	LANDERS G. H.	BREATH Z	60	.50 F/CC		11	YES X
07/02/79	CROUCH T. A.	BREATH Z	60	.98 F/CC		11	YES X
07/30/79	SCHNEIDER B. L.	BREATH Z	74	.24 F/CC	1	704	YES X
07/30/79	SCHNEIDER B. L.	BREATH Z	123	.12 F/CC	2	704	YES X
07/30/79		AREA	180	.01 F/CC		704	NO
07/30/79		AREA	180	.01 F/CC		704	NO
07/30/79		AREA	180	.01 F/CC		704	NO
07/30/79		AREA	180	.01 F/CC		704	NO
08/01/79	PRIDDY P. K.	BREATH Z	95	.11 F/CC	1	704	YES X
08/01/79	PRIDDY P. K.	BREATH Z	65	.01 F/CC	1	704	YES X
08/01/79		AREA	60	.07 F/CC		704	NO
08/01/79		AREA	140	.01 F/CC		704	NO
08/01/79		AREA	80	.02 F/CC		704	NO
08/04/79	PRIDDY P. K.	BREATH Z	157	.01 F/CC	2	704	YES X
08/04/79		AREA	155	.01 F/CC		704	NO
08/04/79		AREA	150	.01 F/CC		704	NO
08/04/79		AREA	150	.01 F/CC		704	NO
09/19/79	MONIN	BREATH Z	68	.30 F/CC	.04	720	YES X
09/19/79	GREENLEE	BREATH Z	72	.50 F/CC	.08	720	YES X
09/25/79	KIRK DOUGLAS	BREATH Z	51	.38 F/CC	.28	6	YES X

DATE	PERSONNEL NAME	SAMPLE TYPE	SAMP TOTL TIME	AIR CONC	8-HOUR T.W.A. CONC.	EXP HRS	EXP MTNS	BUILDING OR ZONE	RESP WORN
09/25/79	CHASE JESSE	BREATH Z	71	.13 F/CC	.10	6			YES X
09/27/79	BOURN D. M.	BREATH Z	41	.80 F/CC	.60	6			YES X
09/27/79	KENNEDY T. J.	BREATH Z	41	1.10 F/CC	.82	6			YES X
09/27/79	BIRO H. C.	BREATH Z	36	.08 F/CC	.06	6			YES X
10/23/79	DEAN	NJ BREATH Z	28	.10 F/CC				704	YES X
10/23/79	DEAN	NJ BREATH Z	37	.20 F/CC				704	YES X
10/23/79	RAINES	RE BREATH Z	28	.10 F/CC				704	YES X
10/23/79	RAINES	RE BREATH Z	39	2.30 F/CC	(.12)			704	YES X
10/24/79	MONIN J. R.	BREATH Z	46	.40 F/CC				773	YES X
10/24/79	GREENLEE J. W.	BREATH Z	43	.10 F/CC				773	YES X
10/26/79		AREA	32	.28 F/CC				704	NO
10/26/79		AREA	27	.51 F/CC				704	NO
10/26/79	POWELL	DR BREATH Z	15	3.93 F/CC				704	YES X
10/26/79	BROWN	PM BREATH Z	15	2.97 F/CC				704	YES X
10/26/79		AREA	51	1.01 F/CC				704	NO
10/26/79		AREA	55	.90 F/CC				704	NO
10/26/79		AREA	48	1.16 F/CC				704	NO
10/30/79	SCHNEIDER B. L.	BREATH Z	18	.10 F/CC				704	YES X
10/30/79		AREA	18	.10 F/CC				704	NO
11/26/79	BARKER	SM BREATH Z	47	2.04 F/CC				704	YES X
11/26/79	BARKER	SM BREATH Z	92	1.83 F/CC		1		704	YES X
11/26/79	BARKER	SM BREATH Z	64	.94 F/CC	.70	1		704	YES X
11/26/79	LANDERS	GM BREATH Z	47	1.34 F/CC				704	YES X
11/26/79	LANDERS	GM BREATH Z	91	.95 F/CC		1		704	YES X
11/26/79	LANDERS	GM BREATH Z	70	.85 F/CC	.30	1		704	YES X
11/26/79	BROWN	PM BREATH Z	47	2.03 F/CC				704	YES X
11/26/79	BROWN	PM BREATH Z	105	.95 F/CC		1		704	YES X
11/26/79	BROWN	PM BREATH Z	80	.46 F/CC		1		704	YES X
11/26/79	BROWN	PM BREATH Z	68	1.44 F/CC	.70	1		704	YES X
11/26/79	POWELL	DR BREATH Z	47	.90 F/CC				704	YES X
11/26/79	POWELL	DR BREATH Z	109	.47 F/CC		1		704	YES X
11/26/79	POWELL	DR BREATH Z	83	.36 F/CC		1		704	YES X
11/26/79	POWELL	DR BREATH Z	66	2.03 F/CC	.50	1		704	YES X
11/27/79	CUNNINGHAM	CN BREATH Z	54	.49 F/CC				704	YES X
11/27/79	CHANDLER	JF BREATH Z	54	.62 F/CC				704	YES X
11/27/79	BROWN	PM BREATH Z	41	.62 F/CC				704	YES X
01/15/80	LANDERS G H	DR BREATH Z	38	1.86 F/CC				704	YES X
01/15/80	DRAKE M E	BREATH Z	60	4.40 F/CC	3.30	6		#1	YES X
01/15/80	CHANDLER J F	BREATH Z	60	3.20 F/CC	2.40	6		#1	YES X
01/15/80	GRANT T G	BREATH Z	45	1.50 F/CC	1.10	6		#1	YES X
01/15/80		AREA	70	1.60 F/CC	1.20	6		#1	YES X
01/15/80		AREA	60	.40 F/CC				#1	NO
01/15/80		AREA	72	.80 F/CC				#1	NO
02/20/80	LANDERS	GM BREATH Z	30	.03 F/CC				#1	NO
02/20/80	LANDERS	GM BREATH Z	95	.20 F/CC		1		5	YES X
02/20/80	JOHNSTON JR	JH BREATH Z	29	.40 F/CC				5	YES X
02/20/80	JOHNSTON JR	JH BREATH Z	83	.10 F/CC		1		5	YES X
02/20/80	CUNNINGHAM	CN BREATH Z	24	.30 F/CC				5	YES X
				.70 F/CC					

DATE	PERSONNEL NAME	SAMPLE TYPE	SAMP TOTL	AIR CONC	8-HOUR T.W.A. CONC.	EXP MINS	EXP HRS	BUILDING OR ZONE	RESP
02/20/80	GRANT	TG BREATH Z	60	.80 F/CC		1		5	YES X
02/22/80	HACKNEY	JE BREATH Z	50	1.50 F/CC	(.16)			777	YES X
02/22/80	HESS	RP BREATH Z	50	1.60 F/CC	(.17)			777	YES X
02/22/80		AREA	50	.70 F/CC				777	NO
03/19/80	RAINES	RE BREATH Z	37	.10 F/CC	.10			770	YES X
03/19/80	GREENLEE	JW BREATH Z	37	.10 F/CC	.10			770	YES X
03/19/80		AREA	38	.10 F/CC				770	NO
03/20/80	FINNEY	ML BREATH Z	84	.60 F/CC	.10	1		103	YES X
03/20/80	BARNETT	DW BREATH Z	89	.10 F/CC	.10	1		103	YES X
03/20/80		AREA	88	.10 F/CC				103	NO
04/01/80	GREENLEE	JW BREATH Z	85	.40 F/CC				773	YES X
04/01/80	RAINES	RE BREATH Z	145	.20 F/CC	.10	2		773	YES X
04/01/80	RAINES	RE BREATH Z	86	.20 F/CC				773	YES X
04/01/80	RAINES	RE BREATH Z	140	.10 F/CC	.10	2		773	YES X
04/03/80	BECKETT	RM BREATH Z	80	.23 F/CC		1		5	YES X
04/03/80	BECKETT	BM BREATH Z	43	.41 F/CC	.07			5	YES X
04/03/80	WARD	RD BREATH Z	80	.17 F/CC		1		5	YES X
04/03/80	WARD	RD BREATH Z	60	.26 F/CC	.06	1		5	YES X
04/11/80	LANDERS	GM BREATH Z	60	.35 F/CC				5	YES X
04/11/80	LANDERS	GM BREATH Z	105	.42 F/CC		1		5	YES X
04/11/80	LANDERS	GM BREATH Z	80	.09 F/CC		1		5	YES X
04/11/80	LANDERS	GH BREATH Z	38	.65 F/CC	.20			5	YES X
04/11/80	NAVLO	DK BREATH Z	60	.35 F/CC				5	YES X
04/11/80	NAVLO	OK BREATH Z	105	.81 F/CC		1		5	YES X
04/11/80	NAVLO	DK BREATH Z	87	.18 F/CC		1		5	YES X
04/11/80	NAVLO	DK BREATH Z	49	.06 F/CC	.30			5	YES X
04/11/80	BECKETT	BM BREATH Z	60	.48 F/CC		1		5	YES X
04/11/80	BECKETT	RM BREATH Z	84	1.24 F/CC		1		5	YES X
04/11/80	MILAN	DK BREATH Z	68	.69 F/CC		1		5	YES X
04/11/80	MILAN	DK BREATH Z	27	2.72 F/CC				5	YES X
04/16/80	FINNEY	ML BREATH Z	157	.48 F/CC		2		5	YES X
04/16/80	FINNEY	ML BREATH Z	130	.33 F/CC	.20	2		5	YES X
04/16/80	KENNEDY	TJ BREATH Z	150	1.34 F/CC		2		5	YES X
04/16/80	KENNEDY	TJ BREATH Z	125	.42 F/CC	.50			5	YES X
04/16/80	SMITH	M BREATH Z	155	.13 F/CC		2		5	YES X
04/16/80	SMITH	M BREATH Z	125	.07 F/CC	.06	2		5	YES X
04/28/80	COBB	FE BREATH Z	63	.15 F/CC		1		5	YES X
04/28/80	COBB	FE BREATH Z	108	.37 F/CC		1		5	YES X
04/28/80	COBB	FE BREATH Z	30	.48 F/CC				5	YES X
04/28/80	COBB	FE BREATH Z	45	.06 F/CC	.14			5	YES X
04/28/80	JIVIDEN	YL BREATH Z	57	.52 F/CC				5	YES X
04/28/80	JIVIDEN	TL BREATH Z	111	.62 F/CC		1		5	YES X
04/28/80	GRANT	TG BREATH Z	58	.43 F/CC				5	YES X
04/28/80	GRANT	TG BREATH Z	116	.64 F/CC		1		5	YES X
04/28/80	GRANT	TG BREATH Z	89	.34 F/CC	.27	1		5	YES X
07/03/80	SHAMBLIN	DC BREATH Z	108	.70 F/CC		1	48	789	YES R
07/03/80	MILLER	C BREATH Z	108	.30 F/CC		1	48	789	YES R
07/03/80	BURGESS	RR BREATH Z	90	.30 F/CC		1	30	789	YES R
07/21/80	STEPHENS	OR BREATH Z	25	1.07 F/CC		8		5	YES R

DATE	PERSONNEL NAME	SAMPLE TYPE	SAMP TIME	AIR CONC	8-HOUR T.W.A. CONC.	EXP HRS	EXP MTNS	BUILDING OR ZONE	RESP
07/21/80	GILMORE	WP BREATH Z	18	.08 F/CC		8	5	YES	R
07/21/80	EDENS	SJ BREATH Z	15	.09 F/CC		8	5	YES	R
07/21/80	WEHRLE	SJ BREATH Z	15	.05 F/CC		8	5	YES	R
07/21/80		AREA	15	.05 F/CC			5	NO	
07/21/80		AREA	15	.09 F/CC			5	NO	
07/21/80		AREA	15	.01 F/CC			5	NO	
07/21/80		AREA	15	.01 F/CC			5	NO	
07/21/80		AREA	15	.01 F/CC			5	NO	
07/21/80		AREA	15	.05 F/CC			5	NO	
08/05/80	RAINES	RE BREATH Z	79	1.85 F/CC		1	19	YES	R
08/05/80	GREENLEE	JW BREATH Z	78	.92 F/CC		1	18	YES	R
08/18/80	SHAMBLIN	DC BREATH Z	41	15.40 F/CC			41	YES	R
08/18/80	TEMPLETON	RE BREATH Z	42	6.30 F/CC			42	YES	R
08/18/80	SHAMBLIN	DC BREATH Z	118	11.30 F/CC	4.10	1	58	YES	R
08/18/80	TEMPLETON	RE BREATH Z	149	3.90 F/CC	1.80	2	29	YES	R
08/19/80	SHAMBLIN	DC BREATH Z	125	14.40 F/CC	3.80	2	5	YES	R
08/19/80	TEMPLETON	RE BREATH Z	118	10.10 F/CC	2.50	1	58	YES	R
08/19/80	RAINES	RE BREATH Z	93	.10 F/CC			93	YES	R
08/19/80	GREENLEE	JW BREATH Z	95	.30 F/CC			95	YES	R

TOTAL NUMBER OF ITEMS RETRIEVED 166

REFERENCE:

UNION CARBIDE CORPORATION
TECHNICAL CENTER
SOUTH CHARLESTON, WEST VIRGINIA

SUBJECT:

DATA BY:

M. L. Keeling

DATE: *Jan 6, 1987*

PROJECT NO:

SUPERVISED BY:

*② Samples - Asbestos
Submitted by V. Stover
701-322
X 4779
Chg 76675
Recd 11-19-86
Reported 1-6-87*

✓ 1 PS-1

✓ 2 PS-1 BWE-3000

Micrographs 5400X

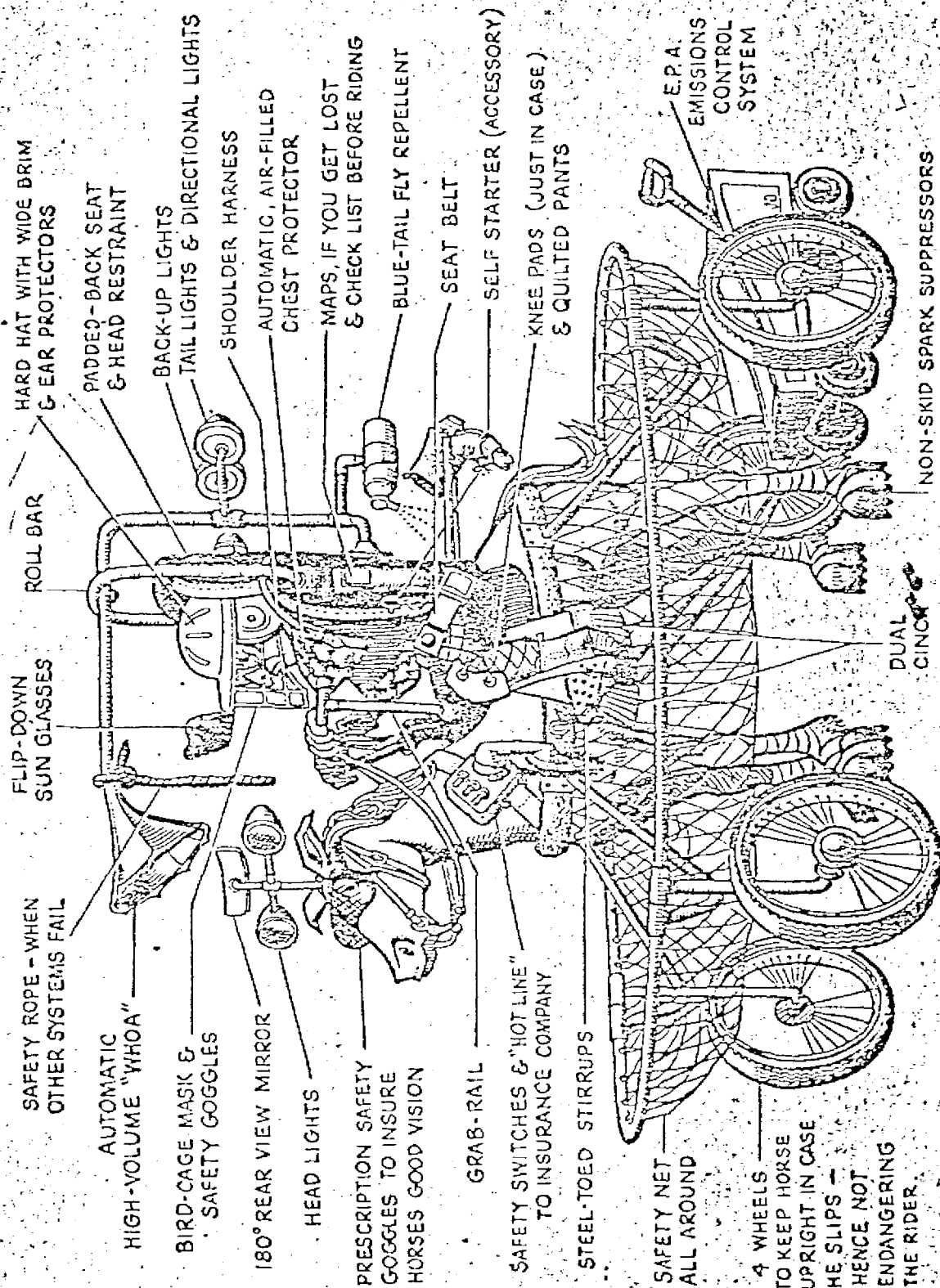
Current List of Pneumoconioses Cases
Within the Construction Department as of 10-7-82

<u>DATE</u>	<u>NAME</u>	<u>CRAFT</u>
9-04-80	Henry M. Adams	Painter
9-04-80	Jerrel R. Bays	Insulation Shopperson
9-04-80	Clifton L. Bryan	Laborer
9-04-80	James A. Byrd	Insulator
9-04-80	Junior F. Chandler	Insulator
9-04-80	Charles P. Epling	Painter
9-04-80	Junior D. Hayes	Insulation Shopperson
9-04-80	William A. Johnson	Equipment Mechanic
9-04-80	Granville H. Landers	Insulator
9-04-80	William A. Mathews	Painter
9-04-80	Lester I. Mitchell	Insulation Shopperson
9-04-80	Chester L. Rose	Painter
9-04-80	Lester R. Shaffer	Insulator
9-04-80	David C. Shamblin	Insulator
9-04-80	William C. Smith	Insulator
9-04-80	Franklin E. Sunderland	Insulator
9-04-80	Harold E. Witt	Insulator Shopperson
9-04-80	Clyde M. Wolfingbarger	Painter
9-04-80	Sherman W. Smallridge	Painter
9-04-80	James A. Williams	Laborer
9-04-80	Carlton K. Campbell	Painter Supervisor
9-04-80	David L. Johnson	Insulator Supervisor
9-04-80	Lawrence U. Woodson	Labor Supervisor
9-04-80	Paul W. Young	Insulator Supervisor

UCC 024894

<u>DATE</u>	<u>NAME</u>	<u>CRAFT</u>
9-17-80	Ethrich C. Shipley	Craft Manager
9-26-80	Darrell H. Cook	Construction Superint.
12-12-80	H.M. Clark	Rigger
05-21-81	J.R. Bryant	Craft Supervisor
5-21-81	W.L. Carnell	Material Clerk
5-21-81	S.G. Chancey	Insulator
5-21-81	H.E. Chittum	Painter/Sandblaster
5-21-81	P.L. Delbart	Equipment Mechanic
5-21-81	E. Downey	Painter/Sandblaster
X 5-21-81	J.R. Hall — <i>De Rose</i>	Craft Supervisor
5-21-81	C.D. Myers	Laborer
5-21-81	J.D. Thacker	Craft Supervisor

OSHAct has arrived—A sure sign of being “in” or a celebrity is to be lampooned. So it is with OSHAct.



Cowboy after O.S.H.A.



E-C

APPARATUS BULLETIN 110

Asbestest®

Test Kit for Screening Sample Materials for Possible Presence of Asbestos.

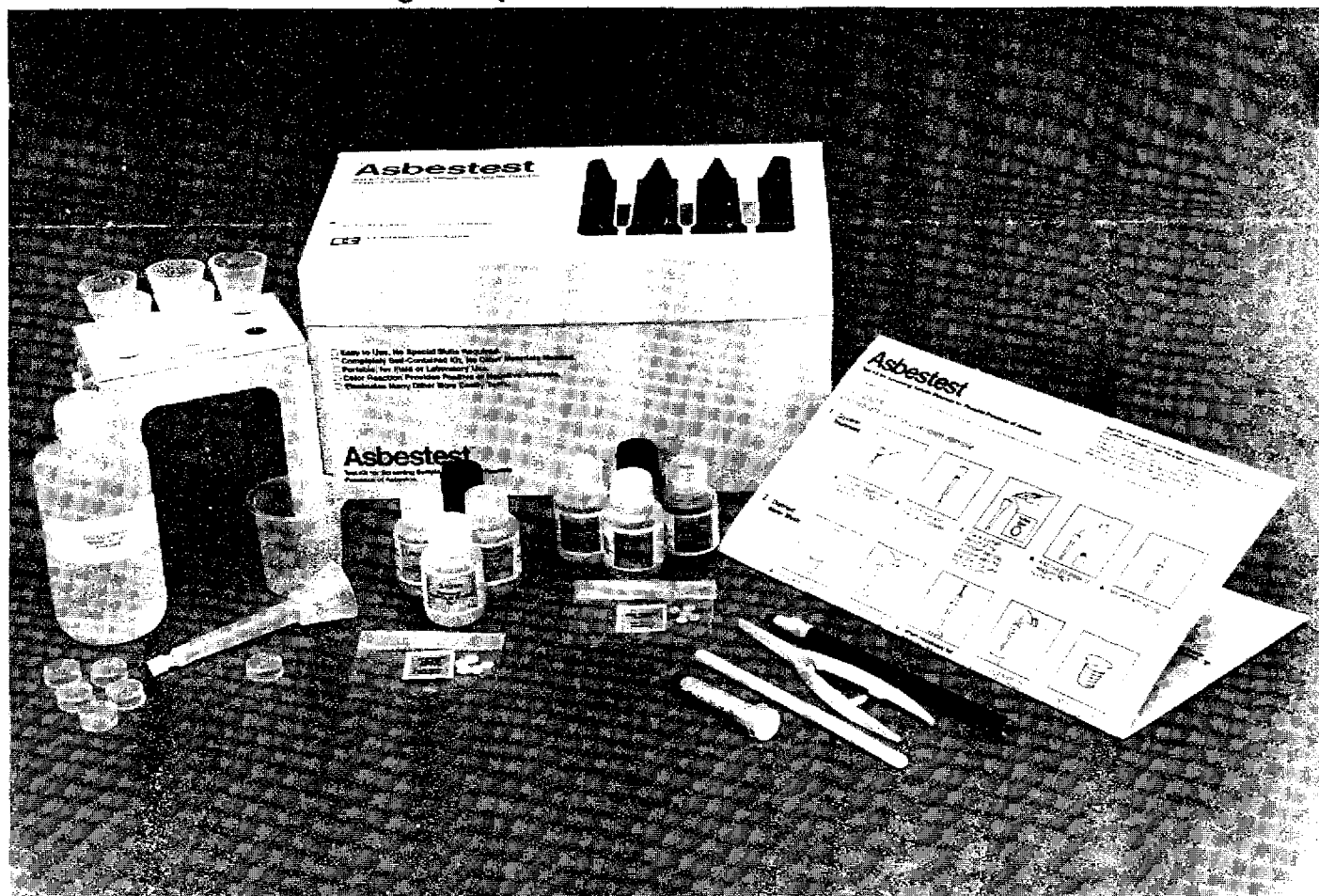


Figure 1. ASBESTEST® 55 test kit includes partitioned carrying box, 55 Chemocolumn® reaction-filter tubes, 6 Chemocolumn® funnels, 55 large reaction-filter tube caps, 55 small reaction-filter tube caps, 50 milliliter beaker, forceps, 3 milliliter syringe, Teflon® stirring rod, test tube rack, wax pencil, distilled water, 4 reagents for Magnesium analysis, 4 reagents for Iron analysis, 8 metering droppers, 5 non-asbestos control samples for Magnesium, 5 non-asbestos control samples for Iron, and color coded detailed instructions.

THE FIRST STEP IN ELIMINATING ASBESTOS HAZARD

Asbestos has been known for many years and more recently, in the last 100 years, has come into wide usage as a fireproof material, electrical insulator and a thermal insulator. The health hazards and related deaths of asbestos exposure were noted as long ago as the 1880's in France and England! Since that time, diseases associated with asbestos exposure have been well documented and include asbestosis, lung cancer and mesothelioma.

- **Easy to Use — No Special Training Necessary**
- **May Eliminate Other Costly Tests**
- **Inexpensive**
- **Rapid — 5 Minute Typical Assay Time**
- **Sensitive — To 1% Asbestos**
- **Complete — Nothing Else to Purchase**
- **Rugged — For Field Use**

Although it is airborne asbestos which creates the health hazard, the detection of the presence of solid asbestos which may become airborne by

mechanical or pneumatic disruption is the first step in eliminating the asbestos hazard.



Figure 3. Step by Step Procedure is Rapid and Easy-to-Follow.

NIOSH BASED TEST

The Asbestest® is an improved procedure³ of the "Quick Screening Test for Asbestos" developed by the National Institute for Occupational Safety and Health (NIOSH).⁴ The Asbestest® Kit is complete (see Figure 1) and improves upon the NIOSH test by carrying out all manipulations in a safe saveable filter-reaction tube, the Chemocolumn®.

The test is conducted in a step-by-step procedure similar to water analysis for the home swimming pool. The test is intended for field use and packaged in a carrying box with all items. The basis of the test is wet chemical analysis of the asbestos bound magnesium and/or iron.

CHEMOCOLUMN®

The E-C Chemocolumn® is molded polypropylene and consists of 5 integral parts (see Figure 2). Two accessory parts are a teflon coated stirring rod and a syringe. The caps are used to retain results for future reference. The funnel is used to augment the reaction tube volume and facilitate easy addition of the reagents. The porous filter retains the solid material of interest while allowing the dissolved matter or small granular particles to be flushed from the column. The stirring rod is used to mix the sample and reagents during processing. The syringe pro-

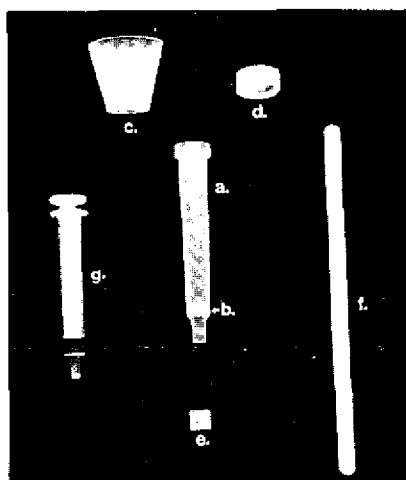


Figure 2. Chemocolumn® and Accessories

a. Chemocolumn® reaction-filter tube. b. Chemocolumn® filter disc in place. c. Funnel. d. Top Cap. e. Bottom Cap. f. Stirring bar. g. Syringe.

vides pressure for rapidly washing the samples to remove unwanted and/or interfering items.

FAST — ACCURATE RESULTS

The chemistries for the test are well established^{5, 6} and are sensitive down to 1% asbestos in the sample which is the upper limit permitted by the Environmental Protection Agency (EPA). In a test of 100 samples known to contain at least 1% asbestos, the results showed 100% specificity.

Results of the tests are available in about 5 minutes without undo haste on the part of the user.

Since 90% of the world asbestos is Chrysotile ($3\text{MgO} \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$), a form with bound magnesium but no bound iron, the magnesium test is usually performed first. Lesser used forms are Amosite [$(\text{FeMg})\text{SiO}_3$], Crocidolite [$(\text{NaFe}(\text{SiO}_3)_2 \cdot \text{FeSiO}_3 \cdot \text{H}_2\text{O})$], and Anthophyllite [$(\text{MgFe})_7 \cdot \text{Si}_8\text{O}_{22} \cdot (\text{OH})_2$]. The test kit is designed to first wash away all non-asbestos unbound magnesium and/or iron then release the asbestos bound magnesium and/or iron for detection. Using the pre-washing technique, as long as sufficient sample has been used, the test produces no false negative results. A few materials which are granular rather than fibrous like asbestos, have similarly bound magnesium and iron which will produce false positive results.

POSITIVE CONTROL SAMPLES PROVIDED

Included with each 55 test kit are five (5) non-asbestos control samples for magnesium and five (5) non-asbestos control samples for iron. These samples may be used for practice and saved as a reference for a positive result. The size of the control samples is similar to the recommended sample size.

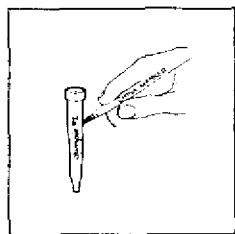


Figure 4. Clear Positive or Negative Results are Available in About 5 Minutes.

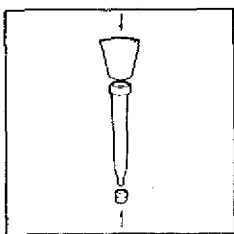
STEP BY STEP PROCEDURE

The instructions are easy to follow.

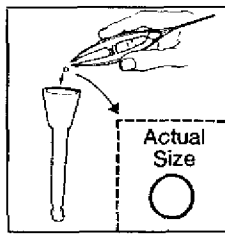
Duplicated below in capsule form are the test instructions for asbestos bound iron:



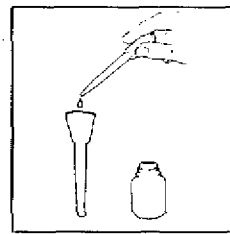
Mark test column with wax pencil for future reference.



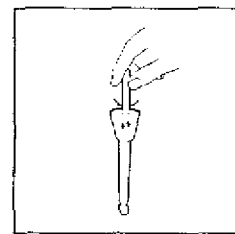
Attach funnel and small cap to column.



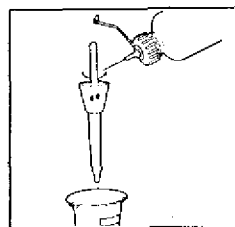
Place a small portion of the unknown sample, approximately the size of a small pea, into the column.



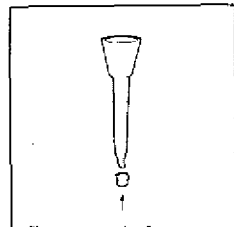
Add five (5) drops of Reagent Fe-1 Acetic Acid and five (5) drops Reagent Fe-2 Sulfuric Acid.



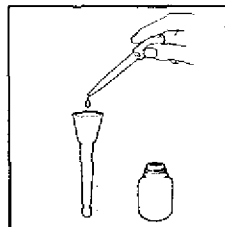
Mix well with stirring rod.



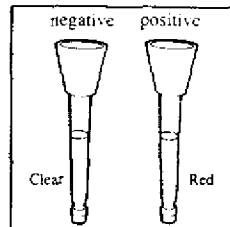
Rinse stirring rod of adhered sample, wash with 50 ml distilled water from water bottle into column. Drain into 50 ml. beaker.



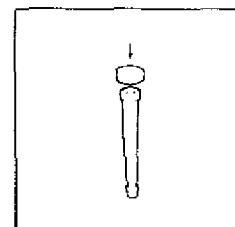
Cap bottom of column with small cap.



Add one (1) drop of Reagent Fe-3 Hydrofluoric Acid.



Add five (5) drops of Reagent Fe-4 Iron Color Reagent, mix and observe color.



Remove funnel and cap column for storage and permanent record.

COST-EFFECTIVE

The rapid results and low cost of the Asbestest® is an advantage even if other tests must be employed for con-

fimation because only selected materials will need to be confirmed. The chart below details the initial

cost, sample analysis time, and the cost per test by a typical testing laboratory.

ANALYTICAL TECHNIQUE	EQUIP. COST	SAMPLE PREP & ANALYSIS TIME (MIN.)	SAMPLE SIZE	TYPICAL LAB TEST CHARGE	COMMENTS
Optical Microscopy	\$ 700	20	a few fibers	\$15	Some training. Not a specific result.
Polarized Light Microscopy	\$ 1,500	30	a few fibers	\$30	Training necessary. Very specific results.
Infrared Spectrophotometry	\$12,000	30	a collection of fibers	\$40	Training necessary. Not specific if mixed forms.
X-Ray Diffraction	\$50,000	60	pea size	\$50	Training necessary. Specific results.
Electron Microscopy	\$75,000	60	part of a fiber	\$200	High degree of training necessary.
Thermal Analysis	\$ 6,000	90	pea size	\$50	Training necessary. Not specific for asbestos.
ASBESTEST®	\$ 125	5	pea size	\$2.27	No training. Specific for asbestos.

ORDERING AND SHIPPING INFORMATION

The 55 Test EC110 ASBESTEST® Asbestos Detection Kit is complete with all materials and reagents. A small excess of each reagent is provided which should be discarded after the 55 tests have been performed. Due to transportation regulations, the kit is shipped in two parts. One part contains all of the items except the Iron Color Reagent which is shipped separately. The Iron Color Reagent is combined with the other items in the carrying box for use and storage. Useful life of reagents is one year or longer.

F.O.B. St. Petersburg, Florida **\$125.00**

Availability: From Stock.

Shipping Mode: UPS Surface, U.S.A. & Canada, Air all other countries.

Payment Terms: Net 10 days.

Shipping Charges: Prepaid and added to invoice for U.S.A. & Canada. Collect all other countries. Prepaid orders sent freight allowed U.S.A. & Canada.

Reagent Replacements: Order by Number, Mg-1, Fe-2, etc. \$12.00 ea.

Chemocolumn® Reaction Filter Tube Replacements: 55 Reaction Tubes with Caps and 6 Funnels
EC114 \$50.00

REFERENCES

1. Michaels, L. and Chissick, S.S., Ed., *Asbestos, Volume 1, Properties, Applications and Hazards*, John Wiley & Sons, New York, NY, 1979.
2. Peters, G.A., and Peters, Barbara J., *Sourcebook on Asbestos Diseases: Medical, Legal and Engineering Aspects*, Garland STPM Press, New York, NY, 1980.
3. Patent No. 4,492,759
4. Kim W.A., Carter, J.W. II, and Kupel, R.E., *Am. Ind. Hyg. Assoc., J.* 42, pp 198-201, 1981.
5. Feigl, F., *Spot Tests in Inorganic Analysis*, 5th Ed., Translated by Oesper, R.E., Elsevier Publishing Co., Amsterdam, pp 161-162, 225-227, 1958.
6. Furman, N.H., Ed., *Standard Methods of Chemical Analysis, Volume 1, The Element*, Sixth Edition, D. Van Nostrand Company, Inc., Princeton, NJ, pp 586-589, 608-609, 1968.

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E-C APPARATUS CORPORATION

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St. Petersburg, Florida 33709

Tel: (813) 344-1644

Toll Free Outside Florida: 800-624-2232

Inside Florida: 800-282-7932

UCC 024900

RECEIVED

JUN 15 1987

C. R. Rothhoff

MEMORANDUM TO: Department Heads
Department Coordinators

FROM: L. W. Phair

DATE: June 10, 1987.

SUBJECT: Interim Plant Procedure for Entry Into Asbestos Enclosures

COPY TO: D. G. Beddow
K. F. Carroll
C. Rothhoff
W. V. Summers

The Maintenance and Safety/Health Departments are currently working with Division HS&EA and other SCD location personnel to develop a standard for entries into enclosures built for asbestos removal activities. Until this procedure is published, a period of time not to exceed 30 days, the following interim procedure will be followed at Sistersville:

- 1) The Maintenance Department will establish a barricade around any asbestos removal enclosure as soon as any 3 sides (or 2 sides and the roof) of the enclosure are erected. The Maintenance Department will immediately communicate to the department in which the enclosure is being built that the enclosure has been barricaded.
- 2) An HWP (issued by the department in which the enclosure is located) will be required for any personnel entry into a barricaded enclosure. The HWP will, at a minimum, require:
 - Continuous monitoring of the atmosphere within the enclosure with an O₂ and Explosion meter
 - Use of airline respirator or self-contained breathing apparatus
 - An attendant with radio communications if there is a concern that those entering may not be able to hear the O₂/Explosion meter alarms or low breathing air supply alarms.


L. W. Phair

LWP/le
5556A



INTERNAL
CORRESPONDENCE

MAR 05 1987

R. Rotthoff

UNION CARBIDE CORPORATION P. O. BOX 8004, SOUTH CHARLESTON, WV 25303

SOUTH CHARLESTON PLANT

To (Name)	B. N. Gliatta	Date	March 4, 1987
Division		Originating Dept.	
Location		Area	
Area		Subject	<u>Asbestos Removal</u>
Copy to	J. F. Dodd S. W. Drake J. E. Llana L. E. McClure M. P. McCready G. F. Painter C. R. Rotthoff A. Walker		

Bart,

I want to move ahead with the asbestos program. Please proceed as follows:

- 1) Assign someone with primary responsibility to manage the asbestos removal program.
- 2) Continue to push for authorization of the CBP.
- 3) Set up an accrual account to collect \$'s until CBP is approved. You may want to get an advanced 930 on this work.
- 4) Make sure that we follow the latest regulations on removal work.
- 5) Clearly establish criteria for removal versus sealing of asbestos insulation. Basically I believe we should:
 - a) Totally remove from all idle equipment.
 - b) Totally remove from inside buildings.
 - c) Seal and label any asbestos insulation in first class condition.
 - d) Remove any asbestos insulation not in first class condition.


R. G. Link

RGL/ph
3726Y

UNION CARBIDE CORPORATION
SOUTH CHARLESTON PLANT
Safety and Health Department
South Charleston, West Virginia 25303

RECEIVED

OCT 08 1986
ENGLE D. SOUTHARD

TO: C. H. Hancock

DATE: October 3, 1986

CC: M. J. Shoger
E. D. Southard

SUBJECT: Equipment Needs for
Asbestos Monitoring

As requested, I have reviewed the Industrial Hygiene Group's needs for addressing the provisions of the new asbestos standards (1910.1001 and 1926). The key requirements for Location 514 that need to be addressed for 1910.1001 (the General Industry Standard) are the training of technicians to perform the counting of asbestos fibers per the NIOSH 7400 method. The standard specifies that each technician that performs analyses must be trained and certified. We would most likely need two technicians to be certified at a minimum. I have already scheduled training for one technician in November, 1986. The equipment necessary to perform analysis per the new technology has/is being requisitioned.

In addition, the hazards of asbestos must be communicated in a similar manner as specified in 1910.1200 (the Hazard Communication Standard). Plans are being made to address this provision.

If we perform any large scale asbestos removal tasks, consideration must be given to training someone to specialize in asbestos abatement procedures and meet the criteria to be certified as a "competent person".

W. J. Vincent
W. J. Vincent

WJV/yc
1714A



Current Report

Litigation

COURT REVIEW OF FINAL ASBESTOS RULES SOUGHT IN PETITIONS BY INDUSTRY, LABOR

Two departments of the AFL-CIO and an asbestos industry association petitioned federal courts for review of the final asbestos standards for general industry and construction, which establish an exposure level 10 times lower than the current permissible level set in 1976.

The labor groups claimed the new permissible exposure limit is not stringent enough, and the industry group argued that monitoring at the new, lower level would be difficult.

The new standards — one covering general industry, including maritime, and the other covering construction — were published June 20 and are scheduled to become effective July 21. Both rules set an identical permissible exposure limit of 0.2 fibers per cubic centimeter of air and an action level of 0.1 f/cc that triggers worker training and medical monitoring requirements (51 FR 22612). The standards do not establish a short-term exposure limit (Current Report, June 19, p. 51).

Labor Groups

The Industrial Union Department of the AFL-CIO filed a petition for review (No. 86-1360) of the general industry standard in the U.S. Court of Appeals for the District of Columbia Circuit. George Cohen, the attorney representing the department, told BNA that "the AFL-CIO is concerned that the permissible exposure limit is higher than it should be and that there is no short term exposure limit in the standard."

The Building and Construction Trades Department of the AFL-CIO, a group of 15 international unions representing 4.1 million construction workers, filed a petition for review of the construction standard in the U.S. Court of Appeals for the District of Columbia Circuit.

Its petition in *Building and Construction Trades Department v. Brock* (No. 86-1359) was filed June 17, the date that the asbestos standard officially was filed at the *Federal Register*, according to Elihu Leifer, the attorney representing the construction group. Leifer told BNA that the petition for review does not ask the court to stay enforcement of the asbestos standard. Filing a petition for review of an agency standard rather than a traditional complaint is "the normal avenue of proceeding for relief if an affected party is not satisfied" with the standard, Leifer said.

Industry Group

The Asbestos Information Association, a group of approximately 50 companies that mine asbestos or market asbestos products, filed two petitions for review June 17 with the U.S. Court of Appeals for the Fifth Circuit in New Orleans, according to association attorney Tim Hardy. The petitions in *Asbestos Information Association v. OSHA* (Nos. 86-4422 and 86-4423) challenge both the general industry standard and the construction standard. The petitions were filed in New Orleans because "the Fifth Circuit had previously addressed the same issue," Hardy told BNA.

In 1984 that court declared invalid an emergency temporary asbestos standard, concluding that the data failed to

show a need for the emergency temporary standard's lowered permissible exposure level (Current Report, March 15, 1984, p. 1123; 11 OSHC 1817).

Hardy said the industry group is seeking review of the standard because it has "questions about the feasibility, particularly of monitoring, at the new lower permissible exposure limit."

Administration

RADER NOMINATION TO OSHRC DEFEATED IN CLOSE VOTE BY SENATE LABOR COMMITTEE

In the wake of his formal nomination's defeat by the Senate Labor and Human Resources Committee June 18, Robert E. Rader Jr. said he does not expect to complete his temporary appointment to the Occupational Safety and Health Review Commission.

The defeat came after a motion by Chairman Orrin G. Hatch (R-Utah) to move the nomination from the committee to the full Senate failed by an 8-8 vote. A similar motion by the chairman to move the nomination without the panel's recommendation failed by the same margin.

Rader told BNA that he may ask President Reagan to withdraw his nomination, and said he does not expect to serve out the remainder of his current recess appointment, which began in August 1985. The appointment, a temporary action which did not require Senate approval, is scheduled to expire in October, at the end of the current session of Congress.

In a statement issued after the vote, Sen. Edward M. Kennedy (D-Mass), the committee's ranking minority member, called Rader's defeat "a victory for the safety of workers." As an attorney in private practice, Rader "advised firms to ignore valid [Occupational Safety and Health Administration] search warrants, and to disregard contempt citations," Kennedy charged.

Key Vote by Weicker

As observers had expected, the key vote on the nomination was cast by Sen. Lowell P. Weicker Jr. (R-Conn), who joined with Kennedy and the other six Democratic members of the committee to defeat both of Hatch's motions.

The Democrats had expressed strong opposition to the nomination in hearings earlier this year, charging that Rader, as an attorney in private practice, overemphasized procedural protections for employers facing inspection by OSHA (Current Report, March 20, p. 1045).

Prior to voting, Sen. Howard M. Metzenbaum (D-Ohio) described the choice of Rader as a commission member as "one of those appointments we wonder how they ever got on the list in the first place." Rader's past performance in private practice has demonstrated that he cannot be "fair-minded and unbiased," the senator asserted.

Sen. Paul Simon (D-Ill) pointed to Rader's voting record as a recess appointee as highlighting concerns the Democrats had about Rader's qualifications to serve as a commissioner. In 11 cases in which Rader participated, he upheld the secretary of labor's position in only one case, and only on one count, Simon said.