

file Asbestos Task Force

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4/7/87

To: Laura Regilly -
For your information
RMH



Organization Resources
Counselors, Inc.

Memorandum

March 23, 1987

PLAINTIFF'S
EXHIBIT
AL-952

To: ORC Occupational Safety and Health Group
ORC Asbestos Data Collection Task Force

From: Darrell K. Mattheis, Rebecca L. Daiss

Subject: Report of the March 10, 1987 Task Force meeting

Task Force Conference Call April 9, 1987, 2:00 p.m., E.S.T.

The task force decided that, rather than schedule another meeting in the near future, we could try a conference call. The two items of business for the call will be 1) comments on the second draft of the ORC data collection form for asbestos removal, the preamble, and the instructions, and 2) the first draft of the telecommunications industry data collection form.

Bill Hall of BellSouth has generously volunteered to host the call, using the phone numbers of those in attendance at the March 10 meeting, plus those numbers from the previous data collection meeting which ORC will supply. Bill will call each individual on the list at 2:00 p.m. Eastern Standard Time.

TENTATIVE Date For Next Task Force Meeting: April 23, 1987

If during the conference call, we are not able to satisfactorily clear up problems with the two data collection forms, we will deal with them on April 23, 1987. We will decide during the conference call if we will have to have the April 23 meeting. If we do have the meeting, ORC will inform task force members who were not involved in the conference call of the cancellation.

Attached Materials For Review and Comment

Attached, separate from this report, you will find a draft "Introduction to the Asbestos Data Collection Study", and two sampling data sheets, one for telecommunications and utilities and the other for chemical and petrochemical companies.

It is intended, as a result of task force discussions, that the introduction to the study and sampling data sheets be used to acquaint the ORC membership with the study and its goals. This material might also be useful for explaining the study inside your company. I look forward to receiving your comments on this!

Purpose of the March 10, 1987 Meeting

This was a joint meeting of the Asbestos Data Collection Task Force and the Telecommunications/Utilities Asbestos Task Force. Because of the similarity of needs and approach it was decided to combine these two task forces to save time and effort. The focus of this meeting was to revise and expand upon the draft data collection form which Mr. Wolf Wagner of ICI generously put together for us.

Accomplishments of The March 10, 1987 Meeting

- * The task force reached agreement on the second draft of a form for asbestos removal operations, primarily aimed at the chemical and petrochemical industries, but also applicable to other industries in many ways.
- * The task force reached agreement on a first draft of a data collection form for the telecommunications and utility industries.
- * The task force agreed on the basic operating assumptions to be used for this study.
 - a) All participants will have met the relevant requirements of the OSHA Construction Asbestos Standard (1926)
 - b) All participants will require the use of personal protective equipment and respirators if there is any chance of exposure at or above the action level.
 - c) All participants agree that sampling data will be for those doing "hands-on" work, not supervisors or observers.
 - d) All participants agree that all analytical work done for the purposes of this study will be performed by laboratories certified under the existing Professional Acceptance Testing, or the American Industrial Hygiene Association (AIHA) Asbestos Accreditation Program.
 - e) It was agreed that, where appropriate, the data collection forms should be filled out by industrial hygienists using their organization's monitoring data forms.

- * It was agreed that for the credibility of the study, the sampling data forms would be signed by the person filling them out. Additionally, a phone number and the company name will be supplied.
- * It was agreed that the data base development, data entry, and analysis of results, would be done by a contractor who would be selected by ORC at a price agreed upon by the Task force.
- * It was agreed that the cost for the study would be divided equally among those participating in the study.
- * After the task force has agreed on the two sampling data collection forms, ORC will have them professionally printed
- * The Task force agreed that all data sheets collected during the study would be sent to ORC who would in turn transmit them to the contractor.
- * The Task force agreed that the detailed data from this study would be available only to those organizations that participated in the study.
- * Companies not having participated in the study but wishing to have access to detailed data from the study after it is completed, must agree to do a certain minimum amount of sampling using the agreed upon task force protocol and data collection forms, the results to be entered into the data base.
- * The Task Force agreed upon the importance of having a certain amount of third party, contractor monitoring data for each participating company. This will greatly add to the overall credibility of the study.
- * The Task Force tentatively agreed to have the sampling data sheets microfiched once the data has been entered into the data base. Each participant in the study will receive a copy of all of the sampling data sheets on microfiche.
- * In order to assist in tracking the source of a sampling sheet, ORC will assign blocks of numbers to each company, and the company will give numbers to the sampling data sheets used for each individual monitored.
- * The task force tentatively agreed that it would write-up the results of the study for publication in the AIHA Journal.

Suggested Additions To Data To Be Collected

After reading over notes of the meeting and thinking about what we are trying to accomplish, ORC came to the conclusion that we should consider adding the following fields to the data that we are collecting.

- * Pump calibration data, both before and after sampling, and the pump serial number should be added to the monitoring form.
- * A separate company data sheet transmitted along with each company's monitoring data sheets. This sheet would have information about the percent of the potentially exposed employee population that was monitored, total number of employees monitored, job titles of employees potentially exposed, and other pertinent information.
- * A field for city and state where sample was collected.
- * A field, for the telecommunications/utilities data sheet, to indicate whether building owner has supplied information on the presence or absence of asbestos, and if the building owner has confirmed the presence of asbestos, whether or not a policy for dealing with it exists.
- * A field on the monitoring form indicating that the employee sampled has or has not received OSHA required training for working with asbestos.

Discussion

During the morning session of the Task force meeting the group discussed the data collection sheet. The Task force pointed out a number of things, that from their experience, are important to include on a data collection form.

One of the suggested additions was the inclusion of pump calibration data, both before and after the sampling runs.

The task force decided that it would be better to leave calibration data off of the sheet in order to reduce the number of fields to be filled out and entered into the computer. However, upon reflection, it is clear that the credibility of the study must be high or we are wasting our time and money.

OSHA thinks it is very important that the pump calibration data be available, and they require it in their own field guide. In OSHA's DRAFT guidelines to the field for enforcement of the Construction Asbestos Standard, 1926., on page 8 section (e) "Evaluating Employer Monitoring Data.", (1) "Examination of Monitoring Protocol.", it says:

"CSHO's shall closely examine the employers sampling methodology paying special attention to the technical reliability of the method. Assurance that proper calibration, both pre and post, proper sampling pattern and frequency, and documentation concerning the representativeness of samples must be available before samples can be relied upon."

Therefore, ORC thinks that calibration data and pump serial number should be included on the data sheet.

Another area that the OSHA thinks important is descriptive information about the job itself i.e., the scope and length of the job, observations from technicians on the job, the number of people actually involved (hands-on) with the job, and the percent of potentially exposed workers within the company which the study monitored. It will be important to identify those jobs where the company knows that there will be asbestos exposure in advance and plans for them. It is just as important to identify jobs where there presently is no way to tell in advance whether or not asbestos may be present as is the case in telephone installation jobs, among others.

It also makes sense to concentrate on the worst case jobs, where one is sure that the potential for exposure is high and monitor them especially carefully.

It will be important to identify and discuss, in the study preamble, the methods of collection and use of the "objective data". This discussion will be important in selling the project to corporate managers, and in defining how we use it to meet OSHA requirements.

Estimates of Costs

ORC discussed the asbestos data collection project with a reputable contractor well known to it, and asked for an estimate of costs. ORC gave as a base line 2000 sampling data sheets to be entered into a computer, and statistical analysis performed upon the results. The contractor gave an estimate of from \$8,500 to \$10,000 dollars for 2000 sample data sheets. This included programing of a data base in D-BASE III, data entry, statistical analysis using SAS and the production of 3-4 types of reports. The data base would be delivered to ORC upon completion of the project on 5.25 inch floppy disks, that could be run on an IBM PC or a compatible.

Any increase in the complexity of the form, or an increase in the number of sampling data sheets beyond 2000 would obviously increase the cost of the project. As we finish our sampling data sheets, ORC will show them to potential contractors and ask for an estimate.

The Next Step

After our sampling forms are completed, a trial run to reveal and problems with the form would be appropriate. After we have final approval on the sampling data forms, the preamble, and the instructions, ORC wants to make a presentation on this project at the May Quarterly meeting. ORC also would like to place copies of the study proposal and data collection forms in each member's folder.

The goal is to have 30-40 ORC members actively participate in the study. Members who want to join the study must sell the idea to their managements, and for that task the preamble to the study will be useful, if it is well written, and if it contains solid reasons why a company can gain something from its participation in the study.

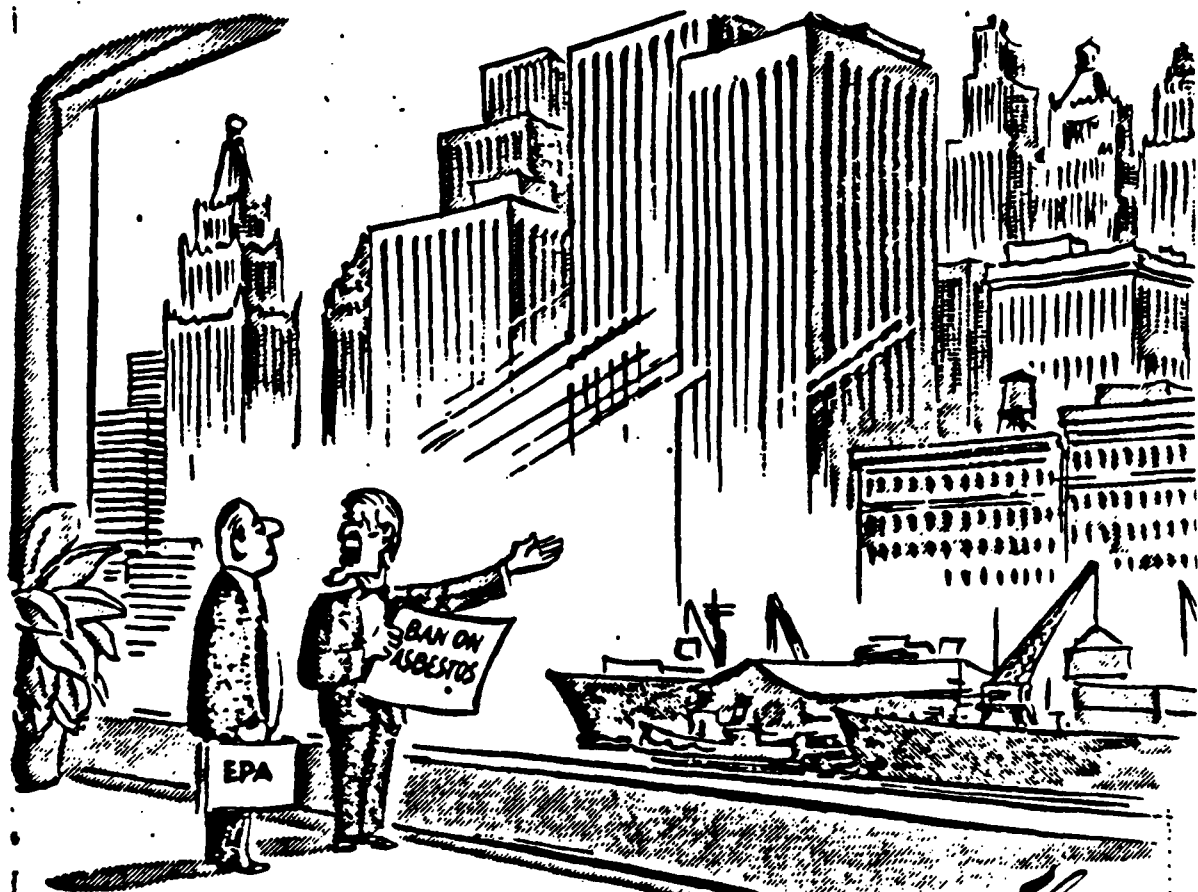
We should try to be ready to distribute the data collection sheets to participating companies by the first of June, 1987.

DON'T FORGET THE CONFERENCE CALL ON APRIL 9, 1987 AT 2:00 P.M. E.S.T.!!!

We need your comments and suggestions!!

Danell K. Mattheis

DKM/jt/20



"You Mean Tear It All Down and Start All Over Again?"

ORC ASBESTOS DATA COLLECTION PROJECT

GOALS

To be build a data base on the levels of airborne asbestos fibers generated during the completion of a variety of routine jobs in the chemical, petrochemical, telecommunications and utility industries.

INTENDED USE

This data base is intended to allow the participating companies to meet the requirements of the Occupational Safety and Health Administration for "objective data".

THE BENEFITS

This "objective data" should allow participating companies to avoid doing new "initial monitoring" each time a small asbestos removal job is started so long as standard techniques are used. This data base should also allow small jobs to be performed without monitoring each worker during the course of the job.

In the telecommunications industry this data base should document the kinds of exposures that can be expected in routine telephone and cable installation jobs where it is known that asbestos is present. Protective measures appropriate to the known hazard can then be put in place to meet the requirements of the OSHA standard, and adequately protect workers.

In those industries, where it is not always known whether or not asbestos is present, the blind sampling of a statistically significant number of jobs across the country should give a solid indication of the probability, on any particular job, of encountering levels of asbestos at or above the 0.1 fibers per cubic centimeter of air, the action level in OSHA's asbestos standard.

HIGH CREDIBILITY NECESSARY

The requirements that OSHA is establishing for the collection of this "historical objective data" are strict. Therefore, for the data base to be credible and thus usable, all data must be collected in strict accordance with the rules of the study.

If we accurately collect monitoring data relating to levels of airborne asbestos fibers generated during certain operations, it can be used with confidence to meet our obligations under the OSHA Asbestos Standards. If we do not make every effort to be as accurate as possible in this study, we will be wasting both our money and our time.

REQUIREMENTS OF THE STUDY

The following are the general requirements that all participants in the study have been asked to meet in order to insure the smooth running and high quality of the study.

1. This study will require that participants monitor a statistically significant number of employees engaged in activities where they may potentially be exposed to airborne asbestos fibers.
2. Documentation information will be collected for each operation monitored, recorded on the ORC forms and send to ORC in a timely fashion.
3. The costs for programing, data entry and analysis will be divided among companies participating in the study. For 2000 sampling data sheets, the initial estimate is \$10,000 for the study.
4. All participants will have met the relevant requirements of the OSHA Construction Asbestos Standard (1926).
5. All participants will require the use of personal protective equipment and respirators if there is any chance of exposure at or above the action level.
6. All participants agree that sampling data will be for those doing "hands-on" work, not supervisors or observers.
7. All participants agree that all analytical work done for the purposes of this study will be performed by laboratories certified under the existing Professional Acceptance Testing (PAT), or the American Industrial Hygiene Association (AIHA) Asbestos Accreditation Program.
8. Where appropriate, the data collection forms should be filled out by industrial hygienists using their organizations monitoring data forms.
9. The sampling data forms will be signed by the person filling them out. The company name and address and a phone number for the person signing the should be included.
10. Where reasonable, a certain amount of third party, (contractor/consultant) monitoring should done as part of the study and identified as such on the data sheet.
11. A separate company data sheet should be included along with each company's sampling data sheets. This sheet should have information about the percent of the potentially exposed employee population that was monitored, the total number of employees monitored, and total number of employees in the corporation.

This data is to be collected with all participants using the same sampling and analytical techniques, and the data recorded on the same form. This information will form the data base of "objective data", documenting the levels of airborne asbestos fibers generated in a variety of jobs, across 4 large industrial classifications, and many individual corporations.

This monitoring data is to be collected with a high degree of accuracy, and thoroughly documented. It is intended that this study be highly credible and able to withstand close examination and criticism.

Many of the jobs that this project will examine are similar across a variety of industries. For instance, removing asbestos insulation from around a valve before working on it. This job, if done in accordance with accepted, good industrial hygiene and safety practices, will be performed similarly in the chemical, petrochemical, or utility industries. With similar jobs and procedures, one would expect that actual levels of airborne asbestos fibers generated would also be similar across different industries; the study will tell us if this assumption is correct.

Sampling Data Sheets

Two sampling data sheets are attached; one intended for use in the chemical and petrochemical industries, and the other for the telecommunications and utility industries. The sampling data sheet for the chemical and petrochemical industries is aimed at asbestos removal jobs. This same form would also be the appropriate one to use for an asbestos removal job in the telecommunications or utility industries. The telecommunications and utility industry sampling data sheets are aimed at a variety of operations unique to these two businesses.

DKM/20

ASBESTOS REMOVAL DATA SHEET

A. BACKGROUND INFORMATION

1. FORM OF ASBESTOS CONTAINING MATERIALS BEING REMOVED:

☐ Building sprayed on insulation	☐ Equipment insulation	☐ Floor tiles
☐ Pipe insulation	☐ Boiler insulation	☐ Clutches
☐ Pipe outer covering	☐ Roofing materials	☐ Gaskets
☐ Asbestos cement materials	☐ Small diameter pipe	☐ Brake shoes
☐ Pipe fittings	☐ Large diameter pipe	
☐ Other, specify _____		

2. CONDITION OF ASBESTOS MATERIAL BEING REMOVED:

☐ loose/friable ☐ Hardened/non-friable ☐ Encapsulated

3. METHODS USED TO CONTROL ASBESTOS EXPOSURE:

☐ Enclosure (without negative pressure) ☐ Enclosure (with negative pressure)
☐ Power tools without exhaust ventilation (specify type) _____
☐ Power tools with exhaust ventilation (specify type) _____
☐ Wetting agent (specify type if known) _____
☐ Glove bag
☐ Other _____

4. WORK DONE: ☐ Indoor ☐ Outdoors ☐ Air temp if less than 32 F.

5. TYPE OF ASBESTOS (IF KNOWN):

6. PERCENT ASBESTOS IN MATERIAL (IF KNOWN): ☐ Percent ☐ Unknown

7. ARE OTHER FIBROUS MATERIALS PRESENT (GLASS FIBERS, PAPER, FIBERS, ROCKWOOL ETC.) BEING WORKED WITH IN AREA: ☐ Yes ☐ No

8. THE ASBESTOS SAMPLING/ANALYTICAL METHOD IS: ☐ NIOSH 7400 ☐ Appendix A OSHA Standard

☐ Other (specify) _____
☐ Confirmatory Analysis (by SEM, TEM)

9. SAMPLING COMPLETED BY: ☐ In-house ☐ Contractors

10. EMPLOYEE RECEIVED OSHA REQUIRED TRAINING FOR WORKING WITH ASBESTOS ☐ Yes ☐ No

2. AIR SAMPLING DATA

Cassette #
One worker only

1

2

3

4

5

Date: (Mo/day/yr)

Worker ID:

Sample duration: (minutes)

Fiber Concentration: (f/cc)

Time spent working with asbestos:

Duration of job:

Upset conditions ___Yes ___No

Amount of asbestos removed
during sample:

Pump flow rate: (liters/min) Pre-sample _____ Post-sample _____

Pump Calibration: _____ Pump Serial Number _____

8 hour TWA: _____

Comments (spills, unplanned events, etc)

Signature/title of person filling out form

Print name in full: _____ Phone No. _____

Company name (print) _____

**INSTRUCTIONS FOR FILLING OUT SAMPLING DATA SHEET
(Asbestos Removal)**

A. BACKGROUND INFORMATION

1. Form of Asbestos Containing Material Being Removed

What is the material being removed used for?
Mark appropriate boxes

2. Condition of Asbestos Material Being Removed

Is the material being removed loose, crumbly, does it flake off, when worked with, is it hard to the touch, or has it been encapsulated with another material?
Mark appropriate boxes.

3. Methods Used To Control Asbestos Exposure

What method(s) are being used to minimize the release or generation of airborne asbestos fibers.
Mark appropriate boxes.

4. Work Done

Is the work being done indoors or outdoors? Is the temperature below freezing? Mark appropriate boxes.

5. Type of Asbestos In Material (If known)

What kind of asbestos is present (crocidolite, Chrysotile, etc)? Mark appropriate boxes.

6. Percent Asbestos In Material (If Known)

What percent of the material was actually asbestos? Indicate the results if a bulk sample of the asbestos material has been analyzed for asbestos content.

7. Are Other Fibrous Materials Present (Glass Fibers, Paper Fibers, Rockwool,) Being Worked With in the Area?

Are other insulating materials present in the work area? Fibers such as fiberglass, paper and rockwool will be counted as fibers by the NIOSH/OSHA analytical method. Mark the appropriate box.

8. The Asbestos Analytical Method is:

What method is being used to analyze samples for the presence of asbestos, and if that tests indicates the presence of asbestos, what kind of confirmatory analysis is performed? Mark the appropriate box or identify alternate method of analysis.

The NIOSH 7400 and the OSHA Appendix A method both call for the use of 25 mm filter cassettes, sampling cowl, and specific counting techniques. Please specify any modifications made to the method.

9. Sampling Completed By:

Was the sampling done by company employees, or an outside consultant/contractor?
Mark the appropriate box.

10. Employee Received Training Required By OSHA For Working With Asbestos

Has the person doing the actual work with the materials which may contain asbestos received the training mandated by the OSHA Construction Standard 1926.58(k)(3) on page 22760 of the Federal Register for June 20, 1986?
Mark the appropriate box.

DKM/20

B. AIR SAMPLING DATA

1. Cassette #, One Worker Only

Each cassette should be numbered. There can be as many cassettes as required so long as they are for the same employee and the same job.

2. Date: (Mo/Day/Yr)

Enter month, day and year.

3. Worker ID:

Enter the worker identification number used by your company.

4. Sample Duration (Minutes)

The duration of time for the sample

5. Fiber Concentration

The fiber concentration (fibers per cc) as determined from the laboratory analysis. Use "GT" and "LT" for "greater than" and "less than" (respectively). If the sample filter is overloaded, note GT before the result.

6. Time Spent Working With Asbestos

During the time of the sample, estimate the amount of time the worker was exposed to asbestos. Do not include preparation time if it does not involve contact with asbestos containing materials. Clean-up time should be included if it is done in the presence of asbestos containing materials. Fill in the appropriate time.

7. Duration Of Job

From start to finish, how long (in minutes) did the job last? Fill in the time.

8. Upset Conditions

Was there a greater than normal exposure to asbestos due to an unplanned event? Specify the event in the comments section. Mark the appropriate box.

9. Amount of Asbestos Removed During Sample

How much asbestos was removed? Estimate in lengths of pipe removed, square feet of boiler insulation, or tiles etc. Fill in the appropriate amount.

10. Pump Flow Rate: (Liters/Min)

The pump flowrate should be the averaged flowrate as determined by calibration with a primary standard such as a bubble tube.

11. Pump Calibration and Serial Number

When was the pump last calibrated? Enter the appropriate date and pump serial number.

12. 8 Hour Time Weighted Average

If more than one sample was taken on a person during a shift, a time weighted average should be calculated using the below formula:

$$\frac{C_1T_1 + C_2T_2 + \dots C_nT_n}{T_1 + T_2 \dots T_n}$$

C_n = the fiber concentration for sample n

T_n = the sample duration for sample n

4. BACKGROUND INFORMATION

1. TYPE OF WORK

☐ Asbestos removal, direct exposure ☐ Clean-up ☐ Other _____
☐ Set-up ☐ Placing cable
☐ Drilling ☐ Removing cable
☐ Splicing cable ☐ Cable maintenance
☐ Remove cable cover ☐ Open ceiling tiles

2. FORM OF ASBESTOS CONTAINING MATERIALS BEING REMOVED:

☐ Building sprayed on insulation ☐ Equipment insulation ☐ Floor tiles
☐ Pipe insulation ☐ Boiler insulation ☐ Clutches
☐ Pipe outer covering ☐ Roofing materials ☐ Gaskets
☐ Asbestos cement materials ☐ Small diameter pipe ☐ Brake shoes
☐ Pipe fittings ☐ Large diameter pipe
☐ Other, specify _____

3. CONDITION OF ASBESTOS MATERIAL BEING REMOVED:

☐ Loose/friable ☐ Hardened/non-friable ☐ Encapsulated

4. BUILDING INFORMATION

a. Type: ☐ Customer premise ☐ Company owned ☐ Leased
b. Structure: ☐ Office ☐ Warehouse ☐ Factory ☐ Garage ☐ Residential ☐ Other
c. Space: ☐ Hung ceiling ☐ Boiler room ☐ Attic ☐ Tunnel ☐ Manhole ☐ Other

5. METHODS USED TO CONTROL ASBESTOS EXPOSURE:

☐ Enclosure (without negative pressure) ☐ Enclosure (with negative pressure)
☐ Power tools without exhaust ventilation (specify type) _____
☐ Power tools with exhaust ventilation (specify type) _____
☐ Wetting agent (specify type if known) _____
☐ Glove bag ☐ Cleaning of area ☐ Alternate route ☐ Provision for other facilities
☐ Other _____

6. JOB INFORMATION

a. Location with respect to insulation ☐ Adjacent to ☐ On ☐ Through ☐ Other
b. Insulation disturbed during work ☐ Yes ☐ No
c. Distance to insulation _____
d. Work done ☐ Indoors ☐ Outdoors ☐ Air temperature if less than 32 _____

7. TYPE OF ASBESTOS (IF KNOWN)

8. PERCENT ASBESTOS IN MATERIAL (IF KNOWN): ☐ Percent ☐ Unknown

9. ARE OTHER FIBROUS MATERIALS PRESENT (GLASS FIBERS, PAPER, FIBERS, ROCKWOOL, ETC.) BEING WORKED WITH IN AREA: ☐ Yes ☐ No

10. THE ASBESTOS SAMPLING/ANALYTICAL METHOD IS: ☐ NIOSH 7400 ☐ Appendix A OSHA Standard
☐ Other (specify) _____
☐ Confirmatory Analysis (by SEM, TEM)

11. SAMPLING COMPLETED BY: ☐ In-house ☐ Contractors

12. EMPLOYEE RECEIVED OSHA REQUIRED TRAINING FOR WORKING WITH ASBESTOS ☐ Yes ☐ No

B. AIR SAMPLING DATA

Cassette #
One worker only

1

2

3

4

5

Date: (Mo/day/yr)

Worker ID:

Sample duration: (minutes)

Fiber Concentration: (f/cc)

Time spent working with asbestos:

Duration of job:

Upset conditions ☐ Yes ☐ No

Amount of asbestos removed
during sample:

Pump flow rate: (liters/min) Pre-sample _____ Post-sample _____

Pump Calibration: _____ Pump Serial Number _____

8 hour TWA: _____

Comments (spills, unplanned events, etc)

Signature/title of person filling out form

Print name in full: _____ Phone No. _____

Company name (print) _____

9. Are Other Fibrous Materials Present (Glass Fibers, Paper Fibers, Rockwool,) Being Worked With in the Area?

Are other insulating materials present in the work area? Fibers such as fiberglass, paper and rockwool will be counted as fibers by the NIOSH/OSHA analytical method. Mark the appropriate box.

10. The Asbestos Analytical Method is:

What method is being used to analyze samples for the presence of asbestos, and if that tests indicates the presence of asbestos, what kind of confirmatory analysis is performed?

Mark the appropriate box or identify alternate method of analysis.

The NIOSH 7400 and the OSHA Appendix A method both call for the use of 25 mm filter cassettes, sampling cowls, and specific counting techniques. Please specify any modifications made to the method.

11. Sampling Completed By:

Was the sampling done by company employees, or an outside consultant/contractor?

Mark the appropriate box.

12. Employee Received Training Required By OSHA For Working With Asbestos:

Has the person doing the actual work with the materials which may contain asbestos received the training mandated by the OSHA Construction Standard 1926.58(k)(3) on page 22760 of the Federal Register for June 20, 1986?

Mark the appropriate box.

INSTRUCTIONS FOR FILLING OUT SAMPLING DATA SHEET
(Telecommunications & Utilities)

A. BACKGROUND INFORMATION

1. Type of Work

What is the nature of the actual work being performed?
Mark the appropriate boxes.

2. Form of Asbestos Containing Material Being Removed

What is the material being removed used for?
Mark appropriate boxes

3. Condition of Asbestos Material Being Removed

Is the material being removed loose, crumbly, does it flake off, when worked with, is it hard to the touch, or has it been encapsulated with another material?
Mark appropriate boxes.

4. Building Information

What kind of a structure is the work being don in or around?
Mark the appropriate boxes.

5. Methods Used To Control Asbestos Exposure

What method(s) are being used to minimize the release or generation of airborne asbestos fibers.
Mark appropriate boxes.

6. Job Information

What are the working conditions with regard to the asbestos containing materials?
Mark the appropriate boxes.

7. Type of Asbestos In Material (If known)

What kind of asbestos is present (crocidolite, Chrysotile, etc)? Mark appropriate boxes.

8. Percent Asbestos In Material (If Known)

What percent of the material was actually asbestos?
Indicate the results if a bulk sample of the asbestos material has been analyzed for asbestos content.

B. AIR SAMPLING DATA

1. Cassette #, One Worker Only

Each cassette should be numbered. There can be as many cassettes as required so long as they are for the same employee and the same job.

2. Date: (Mo/Day/Yr)

Enter month, day and year.

3. Worker ID:

Enter the worker identification number used by your company.

4. Sample Duration (Minutes)

The duration of time for the sample

5. Fiber Concentration

The fiber concentration (fibers per cc) as determined from the laboratory analysis. Use "GT" and "LT" for "greater than" and "less than" (respectively). If the sample filter is overloaded, note GT before the result.

6. Time Spent Working With Asbestos

During the time of the sample, estimate the amount of time the worker was exposed to asbestos. Do not include preparation time if it does not involve contact with asbestos containing materials. Clean-up time should be included if it is done in the presence of asbestos containing materials. Fill in the appropriate time.

7. Duration Of Job

From start to finish, how long (in minutes) did the job last? Fill in the time.

8. Upset Conditions

Was there a greater than normal exposure to asbestos due to an unplanned event? Specify the event in the comments section. Mark the appropriate box.

9. Amount of Asbestos Removed During Sample

How much asbestos was removed? Estimate in lengths of pipe removed, square feet of boiler insulation, or tiles etc. Fill in the appropriate amount.

10. Pump Flow Rate: (Liters/Min)

The pump flowrate should be the averaged flowrate as determined by calibration with a primary standard such as a bubble tube.

11. Pump Calibration and Serial Number

When was the pump last calibrated? Enter the appropriate date and pump serial number.

12. 8 Hour Time Weighted Average

If more than one sample was taken on a person during a shift, a time weighted average should be calculated using the below formula:

$$\frac{C_1T_1 + C_2T_2 + \dots C_nT_n}{T_1 + T_2 \dots T_n}$$

C_n = the fiber concentration for sample n

T_n = the sample duration for sample n