SECTION 3 INSPECTION, SAMPLING AND ANALYTICAL METHODS

The AOHS approach to the performance of these three basic tasks was simple. All areas of a building that people could enter were to be surveyed for the presence of ACBM or suspect ACBM. If the area contained either ACBM or suspect ACBM, samples were collected and analyzed to prove the type of material. If the material tested positive, it's condition was assessed in accordance with the EPA seven classifications and presented in the inspection report. AOHS also assess the condition of the material in accordance with it's own classification system.

Destructive sampling was not performed. Walls and floors were not drilled or cored for samples of materials such as transite, plaster, or sheetrock or joint compound. All of these materials should be considered as suspect materials when building demolition or major renovation and samples should be collected at that time.

Only inaccessible areas behind structural walls and ceilings were not inspected. A general statement is made that in the event of **any** renovation or demolition of the building should take into account piping systems and other potential sources of ACBM that may be encountered in those inaccessible spaces.

INSPECTION METHODS

All building surveys were conducted as two part inspections, a pre and a post survey, with a two person survey team. The team consisted of the

accredited inspector and an assistant to help in the process of collecting samples and collection of inspection data. Samples were taken of all suspect ACBM during the Pre-survey and, once the samples were analyzed, final assessments were made during the Post-survey.

During a first visit to the school building, a walk through introductory tour was taken prior to a wall to wall survey of the structure. The school contacts were asked for any detailed drawings or previous asbestos related work that may have been performed. This information was reviewed prior to the survey in order to add any insight into the work to be done.

Each building was surveyed on a room by room basis, with the individual accredited inspector selecting the number and types of samples to be taken.

For the purpose of the inspection, each room, closet, hall, boiler room, or crawl space constituted a functional space. Homogeneity was dependent upon material type and not space related. For example, if the same green vinyl asbestos floor tile was throughout an entire building, it would be considered a homogeneous material for the purposes of sample collection, but assessments of the condition, accessibility and damage would be performed on a room by room basis. It is felt that this degree of definition is required for the implementation of the management plan and operations and maintenance program to be more effective.

Once the sample results were obtained, the inspector and assistant returned to make their assessments of condition in accordance with the EPA criteria. Not all conditions observed fit properly into one of the seven

classifications. In those cases, the inspectors chose the classification that was the "best fit" and included notes to further explain their choice.

To each assessment was added a code used by AOHS that is currently being used by several commercial clients which is a broader category of response actions. The concept is based on criteria outlined in the EPA "Purple Book"; Guidance For Controlling Asbestos-Containing Materials in Buildings, EPA 560 5-85-024, for response action based on current condition, and potential for future damage, disturbance, or erosion. The response actions recommended fall into the categories of decontamination (cleaning), repair, removal, and operations and maintenance. The emphasis is on repair and O&M with removal a goal to be achieved in conjunction with building or building systems renovation or replacement.

AOHS strongly recommends not removing ACBM in undamaged, unfriable condition, simply for the sake of removal. Removal of such materials should be planned and scheduled in conjunction building renovations and building systems repair and replacement. This will prove to be not only more cost effective, but present a far better chance for planning and scheduling the work so that it may be conducted without problems or the creation of exposures to building occupants.

SAMPLING METHODS

Sampling was conducted of all suspect and assumed materials for the purpose of definitive proof. Samples were collected in accordance with the requirements of the standard as follows:

A. For Friable Surfacing Material

1. At least 3 bulk samples for each homogeneous area $\leq$ 1000 square feet
2. At least 5 bulk samples for each homogeneous area > 1000 square feet and $\leq$ 5000 square feet
3. At least 7 bulk samples for each homogeneous area > 5000 square feet

B. For Thermal System Insulation

1. At least 3 bulk samples from each homogeneous area
2. At least 1 bulk sample from patched areas < 6 linear or 6 square feet
3. A sufficient number from each insulated mechanical system to determine whether material is ACM

C. For Friable Miscellaneous Material

1. A sufficient number to determine whether material is ACM

D. For Non Friable Suspected ACBM

1. A sufficient number to determine whether material is ACBM

Sample locations were selected in accordance with the EPA publication Asbestos In Buildings: Simplified Sampling Scheme For Friable Surfacing Materials or as an alternative, a simplified "random" sampling pattern was selected in an effort to **not** conduct destructive sampling. As an example, samples of homogeneous material would be collected from damaged or inconspicuous areas rather than to intentionally damage intact material and create a fiber release episode. Samples for Thermal System Insulation (TSI), for example, might be

collected from a damaged area as opposed to damaging the material for the purpose of sample collection. Floor tile samples may be taken from behind doors or in bathrooms in order to not take samples from the middle of classrooms.

In all cases, the sample locations were repaired and identified for future reference. If a hole was cored into the material, it was either foam filled or filled with spray adhesive and then covered with duct tape with the field sampling number on it. Sample locations were not marked with tape nor were repairs attempted if the location of the sample collection was too damaged and attempts at repair would only result in additional damage or fiber release.

All inspection teams carried with them a HEPA filtered vacuum cleaner for the express purpose of cleaning up any debris or ACBM that may have been released or disturbed in the sample collection process.

ANALYTICAL METHODS

All collected samples were submitted to the AOHS laboratory for analysis by the Polarized Light Microscopy, EPA Interim Method. Submitted samples were renumbered in an attempt to remove any bias on the part of the analyst. For example, field samples were collected for homogeneous materials and so numbered. The three requisite samples collected for green floor tile would bear field sample numbers and the designation A, B and C.

The AOHS laboratory and field surveys operated on a test 'til positive (TTP) basis. That is to say, once a sample of a single homogeneous material has been identified positive for asbestos, any remaining samples for the same material are

not analyzed. If the above noted "A" sample for floor tile proved positive, "B" and "C" would never be analyzed. Conversely, if "A" proved negative, "B" would be analyzed and if it proved negative, "C" would be analyzed. This type of analysis was performed uniformly across all samples collected.

Results were reported as positive for asbestos if the asbestos content of the sample was greater than one percent. The results were reported as negative for asbestos if the asbestos content of the sample was less than one percent.

Applied Occupational Health Systems, is accredited by the American Industrial Hygiene Association, Number 342, for the performance of asbestos air sample analysis. AOHS also is a successful participant in the EPA round robins and has applied for acceptance into the National Volunteer Laboratory Accreditation Program (NVLAP). The laboratory director, Richard Kretovich, has been accepted into the program as an inspector of laboratories for the NVLAP.