# APPENDIX A

## Mini-Enclosure Procedures

# APPENDIX A
# Mini-Enclosure Procedures

**Summary of Use**

The OSHA Asbestos Standard states:

> *"In some instances, such as removal of asbestos from a small ventilation system or from a short length of duct, a glove bag may not be either large enough or of the proper shape to enclose the work area. In such cases, a mini-enclosure can be built around the area where small-scale, short-duration asbestos maintenance or renovation work is to be performed."*

Many different approaches have been used in constructing mini-enclosures, all having the same common goal: To construct a very small enclosure that is capable of containing one person (including equipment) while maintaining negative pressure. This is achieved by containing an existing small area or a prefabricated small area within 6-mil polyethylene sheeting and using a HEPA equipped vacuum (or AFD- air filtration device) to draw air from inside the constructed area to outside the area. This should allow air from outside the enclosure to be drawn into the enclosure and "clean" air to be filtered out through the vacuum. The following methods have been used to construct various types of mini-enclosures:

1. Lumber Mini-Enclosure
   This type of mini-enclosure is usually built using 2" X 4" wood boards nailed together in a frame with polyethylene sheeting adhered to all sides excluding the asbestos abatement surface.

2. Building Component Mini-Enclosure
   This mini-enclosure uses building components/structures (e.g., walls, counter tops, lights) to which to adhere the polyethylene sheeting. Some examples are containing an entire janitor's closet or a corner of a room by attaching the polyethylene sheeting to walls and ceiling.

3. Wire-Strung Mini-Enclosure
   In many cases a heavy gauge wire can be strung from building components (e.g., walls, counter tops, lights) from which the polyethylene sheeting can be hung. Polyethylene sheeting walls and ceilings can then be used for developing mini-enclosures.

There are several things to remember when constructing a mini-enclosure:

1. In accordance with OSHA and EPA recommendations, mini-enclosures should consist of two small rooms - a workroom and a change room. Upon completing the abatement activity, the abatement worker will proceed into the change room and use the vacuum nozzle to vacuum him/herself off. The disposable clothing will then be removed and placed in an asbestos disposal bag (this is detailed in the procedures listed below).

2. Both rooms must be completely enclosed in polyethylene sheeting. There cannot be any holes, gaps, or cuts through which air can enter the mini-enclosure, other than through the pre-cut entryway.

3. When constructing mini-enclosures, extreme caution must be taken near asbestos-containing materials. Asbestos-containing materials must not be disturbed during the mini-enclosure development. In addition, nothing should be adhered to asbestos- containing materials, due to possible fiber releases when the mini-enclosure is dismantled.

4. Although the OSHA Asbestos Standard cites the lumber mini-enclosure as an appropriate method, it is not recommended due to the porous surface of the wood and the inability to decontaminate it through usual cleaning methods. If lumber is used then all lumber exposed to the inside of the mini-enclosure should be cleaned and encapsulated prior to the dismantling of the enclosure.

5. Wood ladders should not be used within mini-enclosures for the reasons stated above in number 4. In addition, large ladders should be used with caution so as to not puncture the mini-enclosure.

6. When using the building component mini-enclosure and the wire-strung mini- enclosure, nothing should be exposed within the mini- enclosure except the asbestos surface/material and equipment. All other surfaces should be covered with polyethylene sheeting; any movable equipment should be moved before the mini-enclosure is built.

**Procedures**

Most small-scale, short-duration abatement activities that require the use of a mini- enclosure, as specified in this O & M Program Manual should, in most cases, use the building component mini-enclosure or the wire- strung mini-enclosure (see cursory definitions above). The following procedures should be followed when conducting asbestos abatement within a mini-enclosure:

1. Define the exact location of the asbestos material that requires abatement.

2. Using either building components (e.g., walls, counter tops, lights, etc.) or heavy gauge wire strung from or between building components (or a combination of both), adhere 6-mil polyethylene sheeting for mini-enclosure walls. The end product should be a small polyethylene sheeting room (area) with only the asbestos surface/material exposed. At this time the floor and ceiling will also be exposed and a slit must be cut in one polyethylene sheeting wall for entry and exit.

3. Using the same procedure as in step 2, construct a second attached polyethylene-sheeting room to be used for changing. Also, cut a slit in one polyethylene sheeting wall for entry and exit. Attach a polyethylene flap that will hang on the outside of the room, covering the entry/exit slit.

4. Adhere one or two layers of polyethylene sheeting to the floor of both rooms.

5. Adhere one layer of polyethylene sheeting to the ceiling of both rooms.

6. Insert the nozzle of a HEPA vacuum through the polyethylene sheeting into the change room and then put the end of the nozzle just inside the workroom. Turn on the vacuum so that negative pressure will be established in the mini-enclosure. Seal the hole around the nozzle of the HEPA vacuum where it penetrates the polyethylene.

7. Put on protective clothing and respirator.

8. The following conditions need to be adhered to depending on the type of material being removed :

    a. If working on a trowelled-on or lay-in asbestos ceiling, then the mini- enclosure should be constructed so that the top is as flush as possible without actually touching/disturbing the ceiling.

    b. If working on wall material or against the wall, then the mini-enclosure should be constructed flush against the wall.

    c. Other placements may be needed for other various surfaces and alterations to the mini-enclosure may be required for the particular surface.

9. Bring the necessary tools and supplies into the work area through the change room.

10. Complete the necessary work on the material in accordance with that particular material's step-by-step procedures located in the **Class III Work Activities for Specific Materials** section (if special instructions are necessary, contact the asbestos administrator).

11. After the asbestos-containing material is bagged (first bag) in an asbestos disposal bag, the bag should be misted with water and placed in the change room.

12. The entire inside layer of the polyethylene sheeting must be wet-wiped, including the floor. The rags used for wet wiping shall be disposed of in a second asbestos disposal bag.

13. The first layer of polyethylene sheeting on the workroom floor should then be disposed of in the second asbestos disposal bag.

14. Tools should then be placed into a bucket of water and cleaned. After cleaning, take the tools out and place them inside a plastic bag for future use. Place the tools inside the clean room. Dispose of the contaminated water from the bucket into the second asbestos disposal bag.

15. Proceed to the change room (bringing the HEPA vacuum nozzle) and, using the HEPA vacuum nozzle, clean the surface of your disposable clothing (LEAVE RESPIRATOR ON).

16. Take off coveralls and gloves and dispose of in the second asbestos disposal bag.

17. The first layer of polyethylene sheeting on the change room floor should then be disposed of in the second asbestos disposal bag.

18. Both asbestos disposal bags should then be double-bagged and placed outside of the mini-enclosure.

19. Dismantle the mini-enclosure and dispose of it in other asbestos disposal bags.

20. Respirator can be taken off, but only after all disposal bags are securely taped.

21. Complete the Small-Scale, Short-Duration Activities and/or Minor Fiber Release Episode, Form D-1, located in Appendix D, and turn it into the response asbestos administrator.

**APPENDIX B**

# Asbestos-Containing Materials Stored in the Building

# APPENDIX B

## Asbestos-Containing Materials Stored in the Building

If you know of asbestos-containing materials that are stored in your building, or if you find asbestos-containing materials stored in your building, the following procedures and precautions should be observed:

### If Material Appears To Be Wrapped or Sealed

1. Put assigned protective clothing and respirator on.

2. Carefully check the quality of the wrap or seal, and make sure there are no openings and/or broken seals.

3. If you observe openings or broken seals, carefully mend wherever possible. If this is not possible, then the material should be carefully placed into an asbestos disposal bag. (If it is placed into an asbestos disposal bag, make sure the bag is securely taped shut.) If the wrap or seal was broken on the original packaging then also complete the following steps:

   a. HEPA vacuum the area where you found the material stored. Vacuum at least 10 feet around this area.

   b. Clean the same area using a wet rag.

   c. HEPA vacuum protective clothing and rags and disposed of in an asbestos disposal bag. (LEAVE RESPIRATOR ON UNTIL BAG IS SEALED WITH TAPE.)

4. Move the material to an area that is not frequently occupied, for storage, until it can be picked up for proper disposal.

5. Put stickers on material, which states that the material is asbestos-containing.

### If The Material Is Not Wrapped Or Sealed

1. Put on protective clothing and respirator before getting too close to the material. (DO NOT TOUCH IT WITHOUT PROTECTION.)

2. Mist or spray the material so that it is thoroughly wet.

3. If the material can be fit into an asbestos disposal bag, then do so at this time. If it does not fit into an asbestos disposal bag, complete the following procedures:

   a. DO NOT BREAK UP MATERIAL SO IT WILL FIT INTO DISPOSAL BAG. (e.g., 2' x 4' lay-in ceiling panels.)

   b. Lay a piece of polyethylene sheeting large enough to wrap the material on the floor near the material.

   c. Carefully pick up the material and place it on the center of the polyethylene sheet.

   d. Carefully wrap the material in this sheet and seal the package completely with duct tape.

   e. Repeat steps B through D with a second sheet of polyethylene so that the material is wrapped twice.

4. HEPA vacuum the area where you found the material stored. Vacuum at least 10 feet around this area.

5. Clean the same area using a wet rag.

6. HEPA vacuum protective clothing and rags and dispose of in an asbestos disposal bag. (LEAVE RESPIRATOR ON.)

7. Respirators can be taken off after the disposal bag is securely sealed.

8. Move the material to an area that is not frequently occupied, for storage, until it can be picked up for proper disposal.

9. Put stickers on material which state that the material is asbestos-containing.

**APPENDIX C**

# Respirator Program

## APPENDIX C

## Respirator Program

### Purpose

This Respirator Program has been developed and instituted to provide for the safety of the maintenance and/or custodial employees in the buildings/facilities, and comply with the OSHA Asbestos Standards. The program is designed to motivate and train employees to wear their respirators and to provide building owners/operators controls to ensure that these objectives are met. Since the respirator is the principal article of safety equipment in the building, employees are expected to fully comply with the tenets of this document.

**Justin A. Schwartz Center**
**14800 Middlebelt Road**
**Livonia, Michigan 48154**

**Respirator Program Director – Mr. Todd Dryer, Facility Compliance Coordinator, CS Partners**

### Respirator Program Director

The program shall be evaluated and revised annually by the Respirator Program Director (hereafter referred to as the Director) in consultation with all concerned parties. Approval of revisions will be determined annually after discussions between all affected parties, but the Director's determination shall be final and binding. Interim changes deemed necessary by the Director shall become policy immediately and shall be deemed incorporated upon promulgation.

Furthermore, any changes in regulatory requirements shall be incorporated into this document as such changes are promulgated and become effective.

### Disciplinary Action

This program is of no use if employees do not comply with its procedures. As stated in the previous sections, respirators will only protect against the hazard of asbestos exposure if they are worn at all times during potential exposure.

The health and safety of employees is of the foremost concern. Therefore, any time an employee fails to comply with proper respirator usage when required, immediate disciplinary action shall commence. Disciplinary action will be at the discretion of the Director.

### Respirator Types & Regulation Standards

Half-face dual cartridge respirators and/or full-face air-purifying respirators will be assigned to maintenance and/or custodial employees who work around or with asbestos-containing materials. Other employees whose job description may cause them to encounter asbestos-containing materials will also be assigned half-face and/or full-face respirators. Respirators must also be used in any situation where airborne asbestos fiber concentrations are determined to be present. These respirators must be worn whenever conducting a Class I, II, III and IV activity or cleaning up a minor fiber release episode as directed in Section II, Part 2 of this O & M Program Manual.

The OSHA Asbestos Standards allow for the use of a half-face respirator whenever airborne concentrations of asbestos are not in excess of (below) 1 fibers per cubic centimeter of air. If airborne concentrations of asbestos exceed 1 fibers per cubic centimeter of air, but are not in excess of 10 fibers per cubic centimeter of air, the full - face air-purifying respirator must be used. Other respirators are required at higher concentrations of airborne asbestos, but these levels should <u>never</u> be reached when conducting O & M activities.

All respirators that are issued to employees must be approved for use in asbestos atmospheres by the Mine Safety & Health Administration and the National Institute for Occupational Safety & Health (NIOSH). The cartridges used should also be approved for use with your assigned respirator by the manufacturer and be suitable for dusts, fumes, mists, and radionuclides.

This Respirator Program specifically addresses asbestos related activities. Should a job involve employees entering an atmosphere with oxygen deficiency, chemical contaminants, radioactive contaminants, or any other breathing hazard, the Director will either obtain the proper respirator and/or cartridges for the job, or the activity will not be performed. The cartridges approved for use in asbestos atmospheres are not appropriate for use in atmospheres contaminated by organic vapors.

**Use**

As stated in the above section, respirators shall be worn by all individuals conducting Class I, II, III and IV activities or cleaning minor fiber release episodes as directed in the O & M Program Manual. All employees in this category will be assigned respirators only upon proper training on the use and maintenance of respirators.

The following is required of all employees using respirators:

1. Respirators shall be worn whenever maintenance and/or custodial staff are conducting a Class I, II, III and IV activity, minor fiber release episode, or at any time the O & M Program Manual calls for their usage.

2. Respirators shall be worn during situations where maintenance and/or custodial employees may be in the presence of airborne asbestos.

3. Respirators shall be worn whenever collecting bulk asbestos samples.

4. Respirators shall be worn whenever any employee is allowed inside an enclosure at an asbestos abatement site.

5. Whenever wearing a respirator, employees are not permitted to chew gum and/or tobacco. Food and drink, as well as smoking are not allowed when wearing a respirator. At no time should the respirator be stretched away from the face to talk, eat, drink, smoke, chew or participate in any similar activity.

6. An employee will not be allowed to wear a half-face respirator without properly shaving, or while wearing a beard.

7. Respirators shall be properly cleaned, maintained and stored according to this Respirator Program as described in later sections.

As stated in the Disciplinary Action Section, any employee violating these requirements or any other parts of this Respirator Program is subject to disciplinary action as deemed necessary by the Director.

**Training**

All employees' assigned respirators will receive some or all training concerning the following:

The hazard that asbestos poses, and its relation to human health.

2. Administrative and engineering controls used in addition to respirators.

3. How the Respirator Program fits into the Operations & Maintenance Program, specifically the respirators use and necessity during small- scale, short-duration activities and minor or major fiber release episodes.

4. Respirator-specific information including:

   a. Why the respirator is used
   b. Limitations of the respirator
   c. Self-fit-testing
   d. How to inspect, clean & properly wear respirators
   e. Respirator maintenance & storage

5. A fit-test of the specific respirator(s) may be conducted at the time of this training or at such other date as deemed proper.

**Qualitative Fit-Test Protection**

When and if negative pressure respirators are used, employees required to wear said respirators will follow mandatory procedures outlined in the OSHA Asbestos Standards. These protocols define procedures used to determine which respirator fits the user adequately to allow for appropriate protection from potentially contaminated work atmospheres. Three protocols are defined in the applicable OSHA regulation, of which a minimum of one must be followed for appropriate fit-testing of employees. These fit-testing protocols are: Isoamyl Acetate, Saccharin Solution Aerosol, and Irritant Fume. The procedures for the Irritant Fume Protocol have been chosen for the building/facility and have been excerpted from the OSHA Asbestos Standard for use in proper fit-testing. At any time, the other protocols or newly approved protocols may be substituted in accordance with the applicable OSHA regulations.

Note: There are no specific training requirements for conducting an OSHA fit-test, thus anyone can conduct a fit-test as long as the outlined procedures (including the OSHA Asbestos Standard) are followed.

**A. Respirator Selection**

Each employee required to wear a respirator will go through a series of steps enabling him/her to choose a comfortable, adequate and properly fitting respirator. The following steps are in accordance with the OSHA regulation regarding appropriate respirator selection:

1. The test subject shall be allowed to pick the most comfortable respirator from a selection including respirators of various sizes from different manufacturers. The selection shall include at least five sizes of elastomeric half face pieces, from at least two manufacturers.

2. The selection process shall be conducted in a room separate from the fit-test chamber to prevent odor fatigue. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine a "comfortable" respirator. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, as it is only a review.

3. The test subject should understand that the employee is being asked to select the respirator that provides the most comfortable fit. Each respirator represents a different size and shape and if fit properly and used properly will provide adequate protection.

4. The test subject holds each face piece up to the face and eliminates those that obviously do not give a comfortable fit. Normally, selection will begin with a half-mask and if a good fit cannot be found, the subject will be asked to test the full face piece respirators. (A small percentage of users will not be able to wear any half-mask.)

5. The more comfortable face pieces are noted: the most comfortable mask is donned and worn at least five minutes to assess comfort. All donning and adjustments of the face piece shall be performed by the test subject without assistance from the test conductor or other person. Assistance in assessing comfort can be given by discussing the points in #6 below. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include reviewing the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

    a. Positioning of mask on nose
    b. Room for eye protection
    c. Room to talk
    d. Positioning mask on face and cheeks

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

    a. Chin properly placed
    b. Strap tension
    c. Fit across nose bridge
    d. Distance from nose to chin
    e. Tendency to slip
    f. Self-observation in mirror

8. The test subject shall conduct the conventional negative and positive-pressure fit checks (e.g. see ANSI Z88.2-1980). Before conducting the negative or positive-pressure test the subject shall be told to "seat" the mask by rapidly moving the head from side-to- side and up and down, while taking a few deep breaths.

9. The test subject is now ready for fit-testing.

10. After passing the fit-test, the test subject shall be questioned again regarding the comfort of the respirator. If it has become uncomfortable, another model of respirator shall be tried.

11. The employee shall be given the opportunity to select a different face piece and be re-tested if the chosen face piece becomes increasingly uncomfortable at any time.

## B. Fit-Test

No employee shall be issued a respirator without first undergoing a fit-test prior to its usage. As previously stated, the Irritant Fume Protocol has been selected as the first choice when conducting fit-tests and is described below from the OSHA regulation. Keep in mind that the OSHA regulation allows for two other protocols that can also be used in place of the Irritant Fume as outlined in this regulation. OSHA's Irritant Fume Protocol fit-test is:

1. The test subject shall be allowed to smell a weak concentration of the irritant smoke to familiarize the subject with the characteristic odor.

2. The test subject should properly don the respirator selected as above, and wear it for at least 10 minutes before starting the fit-test.

3. The test conductor shall review this protocol with the test subject before testing.

4. The test subject shall perform the conventional positive pressure and negative pressure fit checks (See ANSI Z88.2 1980). Failure of either check shall be cause to select an alternative respirator.

5. Break both ends of a ventilation smoke tube containing stannic oxychloride, such as the MSA Part #5645, or equivalent. Attach a short length of tubing to one end of the smoke tube. Attach the other end of the smoke tube to a low pressure air pump set to deliver 200 milliliters per minute.

6. Advise the test subject that the smoke can be irritating to the eyes and instruct the subject to keep the eyes closed while the test is performed.

7. The test conductor shall direct the stream of irritant smoke from the tube towards the face-seal area of the test subject. The person conducting the test shall begin with the tube at least 12 inches from the face piece and gradually move to within 1 inch, moving around the whole perimeter of the mask.

8. The test subject shall be instructed to do the following exercises while the respirator is being challenged by the smoke. Each exercise shall be performed for one minute.

    a. Breathe normally.
    b. Breathe deeply. Be certain breaths are deep and regular.
    c. Turn head all the way from one side to the other. Be certain movement is complete. Inhale on each side. Do not bump the respirator against the shoulders.
    d. Nod head up-and-down. Be certain motions are complete and made every second. Inhale when head is in the full up position (looking toward ceiling). Do not bump the respirator against the chest.
    e. Talking. Talk aloud and slowly for several minutes. The following paragraph is called the Rainbow Passage. Reading it will result in a wide range of facial movements, and thus may be useful to satisfy this requirement. Alternative passages that serve the same purpose may also be used.

**Rainbow Passage**

*When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond his reach, his friends say he's looking for the pot of gold at the end of the rainbow.*

    f. Jogging in place.
    g. Breathe normally.

9. The test subject shall indicate to the test conductor if the irritant smoke is detected. If smoke is detected, the test conductor shall stop the test. In this case, the tested respirator is rejected and another respirator shall be selected.
10. Each test subject passing the smoke test (i.e. without detecting the smoke) shall be given a sensitivity check of smoke from the same tube to determine if the test subject reacts to the smoke. Failure to evoke a response shall void the fit-test.

11. Steps B4, B9, B10 of this fit-test protocol shall be performed in a location with exhaust ventilation sufficient to prevent general contamination of the testing area by the test agents.

12. At least two face pieces shall be selected by the above described test protocol. The test subject shall be given the opportunity to wear them for one week to choose the one that is more comfortable to wear.

13. Respirators successfully tested by the protocol may be used in contaminated atmospheres up to ten times the PEL of asbestos.

14. The test shall not be conducted if there is any hair growth between the skin and the face piece sealing surface.

15. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as powered air-purifying respirators, supplied air respirator, or self-contained breathing apparatus.

16. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician trained in respiratory diseases or pulmonary medicine to determine whether the test subject can wear a respirator while performing her or his duties.

17. Qualitative fit-testing shall be repeated at least every six months.

18. In addition, because the sealing of the respirator may be affected, qualitative fit- testing shall be repeated immediately when the test subject has a:

    a. Weight change of 20 pounds or more.
    b. Significant facial scarring in the area of the face piece seal.
    c. Significant dental changes: e.g., multiple extractions without prosthesis, or acquiring dentures.
    d. Reconstructive or cosmetic surgery, or
    e. Any other condition that may interfere with face piece sealing.

Should another protocol be selected for fit-testing, please note that certain screening tests must be conducted to determine if the protocol is sufficient to accurately fit-test each employee. It is possible that Isoamyl Acetate and Saccharin Solution Aerosol are not detectable to the test subject.

## C. Recordkeeping

The OSHA regulation also requires certain recordkeeping concerning each employee's qualitative fit-test. This recordkeeping shall be as described below in accordance with the OSHA Asbestos Standard. A form has been developed to track this information and is attached to this program (use the attached Qualitative Respirator Fit-Test Summary Form, for recordkeeping).

A summary of all test results shall be maintained (in the Director's office) for 3 years. The summary shall include:

1. Name of test subject
2. Date of testing
3. Name of test conductor
4. Respirators selected (indicate manufacturer, model, size and approval number)
5. Testing agent

### Inspection and Cleaning

Each employee will be responsible for the inspection and cleaning of his/her own respirator. Each respirator must be cleaned, inspected, and disinfected at the end of each day that the respirator was used. Furthermore, each respirator will be visually inspected by the user prior to use. The respirator will be disinfected (using Lensacide brand, or equivalent), is accordance with the manufacturer's instructions and pursuant to procedures outlined during respirator training.

### Maintenance

Each employee will be responsible for the maintenance of his/her own respirator, though the company will supply all necessary replacement parts (see the Director). Each employee will change the cartridges on his/her respirator after approximately each four hours of cumulative use. Records will be kept of every date the cartridges were changed (use the attached Respirator Inspection Checklist, Form R-2, for recordkeeping). Every time the cartridges are changed, whoever changes them will mark the date on the new cartridge with a felt tip marker. Interchanging parts between different brands of respirators is prohibited. Finally, no employee will be permitted to alter the assigned respirator.

### torage

Respirators will be stored in an appropriately marked location at the employee's work place. They will be stored in sealed plastic bags in such a manner as to prevent them from becoming warped or otherwise damaged. No other objects may be stored with the respirator; they could fall over or be jumbled so as to fall on top of the respirators and cause them to warp. Cartridges designed for purposes other than asbestos (e.g., organic vapor cartridges) will be clearly labeled as such and stored on a different shelf or location than the asbestos cartridges.

### Medical Examinations

The employer will provide a medical examination on an annual basis for each employee who is assigned a negative pressure respirator. In addition, employees who are assigned negative pressure respirators will receive an examination within thirty days of employment or discharge. The employee shall not be charged for the examination. Records of the examination will be kept indefinitely. The examination will consist of, at a minimum:

1. Elicitation of medical history
2. A chest roentgenogram
3. Pulmonary function tests, including forced vital capacity and forced expiratory volume at one second

For additional information on medical examinations, review the Medical Surveillance Section located within the Operations & Maintenance Program Manual.

### Air Quality Standards

Should supplied air respirators (class "C") ever be used by the employees, the air used will be of such quality as to meet the qualifications of the Compressed Gas Commodity Specification G- 7.1-1966. All other applicable regulations and guidelines will be followed.

**APPENDIX D**

# Documentation Forms

Form D-1

# CLASS IV ASBESTOS WORK
# MISCELLANEOUS OSHA AND EPA RECORDKEEPING

Class IV Maintenance and Custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.

Name of building: _____

Project Area(s): _____

## CLASSIFICATION

1. OSHA Classification:

   [ ] Class IV Maintenance and Custodial activities during which employees contact ACM and PACM
   [ ] Class IV Activities to clean up waste and debris containing ACM and PACM

2. Regulated Area:

   Yes [ ] see Form D-2
   No [ ]

3. Schedule:

   Starting Date: _____

   Completion Date: _____

4. Type of material contacted:

   [ ] TSI (Thermal System insulation) Describe _____
   [ ] Surfacing Describe _____
   [ ] Material Other than TSI or Surfacing Describe _____
   [ ] Waste/Debris Source _____

5. Personnel performing activity: [ ] See attached sheet

| Name: | Social Security #: | Type of Respirator/Clothing: (If applicable) |
|---|---|---|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

6. Competent Person: - if applicable

Name: _____

Accreditation #. _____

## TRANSPORTATION/STORAGE/DISPOSAL - IF APPLICABLE

1. Name and location of transportation company(s) from generator to disposal:

[ ] Contractor from Generator to Contractor storage site [ ] Transport Co. from Generator to disposal site
[ ] Transport Co. from Contractor to disposal site [ ] Contractor from Generator to disposal site

[ ] _____

[ ] _____

2. Name and location of disposal site of asbestos-containing material:

_____

_____

## EXPOSURE MONITORING INFORMATION - IF APPLICABLE

1. Objective Data used exempting Exposure Monitoring:

Yes [ ] see Objective Data Documentation
No [ ]

2. Exposure Monitoring air sample(s) collected:

Yes [ ]
No [ ]

3. Method of Sampling:

| | |
|---|---|
| Initial Exposure Assessment Monitoring | [ ] Yes [ ] No |
| Excursion Sampling | [ ] Yes [ ] No |
| Time Weighed Average (TWA) Monitoring | [ ] Yes [ ] No |

4. Results of Exposure Monitoring air sample(s) collected:

(see attached sheets)

5. Method of analysis:

Phase Contrast Microscopy (PCM) [ ]
Transmission Electron Microscopy (TEM) [ ]

6. Date(s) Exposure Monitoring air samples collected: _____

7. Name and address of company performing Exposure Monitoring air sample collection:

_____
Name

_____
Street City State Zip

8. Name(s) and signature(s) of Exposure Monitoring air sample collector(s):

_____
Print Name Signature Date

_____
Print Name Signature Date

9. Date(s) of analysis: _____

10. Exposure Monitoring analysis conducted:

On-site [ ]
Other [ ] specify where _____

11. Name and address of laboratory analyzing samples:

_____
Name

_____
Street City State Zip

12. Name and signature of person performing air sample analysis:

_____
Print Name Signature Date

13. Statement of Exposure Monitoring laboratory's qualifications:

_____

_____

**NOTE:** Further documentation regarding air sample analysis required under 40 CFR, 1926.1101 c (1)(2) may be located on results sheets submitted for this project.

Form D-2

# CLASS I, II, III and IV ASBESTOS WORK
# MISCELLANEOUS OSHA AND EPA RECORDKEEPING

Class I, II and III activities - all
Class IV activities involving cleaning up waste and debris in regulated areas

Name of building: _____

Project Area(s): _____

## CLASSIFICATION

1. OSHA Classification:

| | |
|---|---|
| [ ] Class I | Removal of TSI and Surfacing ACM and PACM |
| [ ] Class II | Removal of materials which are not TSI or Surfacing materials |
| [ ] Class III | Repair and Maintenance Operations, where ACM, including TSI and Surfacing materials are likely to be disturbed |
| [ ] Class IV | Activities to clean up waste and debris containing ACM and PACM in regulated areas |

2. Abatement Methodology:

[ ] Full Enclosure – Negative Pressure
[ ] Mini-Enclosure – Negative Pressure
[ ] Glove Bag – Negative Pressure
[ ] Glove Bag
[ ] Glove Box – Negative Pressure
[ ] Water Spray Process System
[ ] Other; _____

3. Schedule:

Starting Date: _____

Completion Date: _____

4. Name and signature of Project Designer:

[ ] NA

_____
Print Name Signature Date

_____
Accreditation #

_____
State of Accreditation

## CONTRACTOR INFORMATION

1. Name and address of Asbestos Abatement Contractor who performed abatement activity:

_____
Name

_____
Street City State Zip

_____
Phone

2. License Number:_____

State: _____

3. Competent Person on-site: _____

Accreditation #:_____

4. Abatement Workers: [ ] See attached sheet

| Name: | Accreditation #: | Type of Respirator/Clothing: (if applicable) |
|---|---|---|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

## TRANSPORTATION/STORAGE/DISPOSAL - IF APPLICABLE

1. Name and location of transportation company(s) from generator to disposal:

[ ] Contractor from Generator to Contractor storage site [ ] Transport Co. from Generator to disposal site
[ ] Transport Co. from Contractor to disposal site [ ] Contractor from Generator to disposal site

[ ] _____

[ ] _____

2. Name and location of disposal site of asbestos-containing material:

_____

_____

## EXPOSURE MONITORING INFORMATION - IF APPLICABLE

1. Objective Data used exempting Exposure Monitoring:

   Yes [ ] see Objective Data Documentation
   No [ ]

2. Exposure Monitoring air sample(s) collected:

   Yes [ ]
   No [ ]

3. Method of Sampling:

   | | |
   |---|---|
   | Initial Exposure Assessment Monitoring | [ ] Yes [ ] No |
   | Excursion Sampling | [ ] Yes [ ] No |
   | Time Weighed Average (TWA) Monitoring | [ ] Yes [ ] No |

4. Results of Exposure Monitoring air sample(s) collected:

   (See attached sheets)

5. Method of analysis:

   Phase Contrast Microscopy (PCM) [ ]
   Transmission Electron Microscopy (TEM) [ ]

6. Date(s) Exposure Monitoring air samples collected: _____

Name and address of company performing Exposure Monitoring air sample collection:

_____
Name

_____
Street City State Zip

8. Name(s) and signature(s) of Exposure Monitoring air sample collector(s):

_____
Print Name Signature Date

_____
Print Name Signature Date

9. Date(s) of analysis: _____

10. Exposure Monitoring analysis conducted:

    On-site [ ]
    Other [ ] specify where _____

11. Name and address of laboratory analyzing samples:

_____
Name

_____
Street City State Zip

12. Name and signature of person performing air sample analysis:

_____
Print Name Signature Date

13. Statement of Exposure Monitoring laboratory's qualifications:

_____

_____

**NOTE:** Further documentation regarding air sample analysis required under 40 CFR, 1926.1101 c (1)(2) may be located on results sheets submitted for this project.

## CLEARANCE INFORMATION

1. Post Abatement Clearance air sample(s) collected:

Yes [ ]
No [ ]

2. Locations and Results of Clearance air sample(s) collected:

(See attached sheets)

3. Amount of ACM abated:

[ ] NA Non-Friable
[ ] Equal or less than 10 sq ft or 15 ln ft
[ ] More than 10 sq ft or 15 ln ft and less than or equal 160 sq ft or 260 ln ft or 35 cu ft
[ ] more than 160 sq ft or 260 ln ft or 35 cu ft

4. Method of Clearance air sampling analysis:

Phase Contrast Microscopy (PCM) [ ]
Transmission Electron Microscopy (TEM) [ ]

5. Date(s) air samples collected: _____

6. Name and address of company performing Clearance air sample collection:

[ ] Same as Exposure Monitoring

_____
Name

_____
Street City State Zip

7. Name(s) and signature(s) of Clearance air sample collector(s):

_____ _____ _____
Print Name Signature Date

_____ _____ _____
Print Name Signature Date

8. Date(s) of analysis: _____

9. Clearance sampling analysis conducted:

On-site [ ]
Other [ ] specify where _____

10. Name and address of Clearance laboratory analyzing samples:

[ ] Same as Exposure Monitoring

_____
Name

_____
Street City State Zip

11. Name and signature of person performing Clearance air sample analysis:

[ ] Same as Exposure Monitoring

_____ _____ _____
Print Name Signature Date

12. Statement of laboratory's qualifications:

[ ] Same as Exposure Monitoring

_____

_____

**NOTE:** Further documentation regarding air sample analysis required under 40 CFR, 1926.1101 c (1)(2) may be located on results sheets submitted for this project.

Form D-3

## Employer/Employee/Tenant Notification

As required by the OSHA Regulation building and/or facility owners shall notify the following persons of the presence, location and quantity of ACM or PACM, at the work sites in their buildings and facilities. Notification either shall be in writing or shall consist of a personal communication between the owner and the person to whom notification must be given or their authorized representative:

A. Prospective employers applying or bidding for work whose employees reasonably can be expected to work in adjacent to areas containing such material;

B. Employees of the owner who will work in or adjacent to areas containing such materials;

C. On Multi-employer worksites, all employers of employees who will be performing work within or adjacent to areas containing such material;

D. Tenants who will occupy areas containing such materials.

Please complete this form and return it to: _____

_____

I, _____, representing and having authority for _____

(Company), hereby indicate and agree that a representative of the _____ building/facility,

_____ (name), (title) has provided me information regarding the specific locations and materials

that are asbestos-containing and which may be encountered or have the potential of being encountered during the course of activities

involving _____ (project name and/or number) in the above-

mentioned building.

I expressly agree that neither I, nor any of my employees, agents, sub-contractors or other individuals or entities over whom I have any responsibility or control, will disturb asbestos-containing materials for the above mentioned building. I further understand and agree that should I, my employees, agents, sub-contractors or other individuals or entities over whom I have control, encounter any material(s) suspected of containing asbestos, said material(s) shall not be disturbed without first notifying the office of the building/facility owner, and receiving written approval that such material(s) may be disturbed.

_____
Print Name

_____
Signature

_____
Company

_____
Position

_____
Date

Form D-4

## Contractor Certification of Asbestos-Free Product Installation

Name of building: _____

1. Contractor name and address:

_____
Name

_____
Street City State Zip

2. Brief scope of contracted activities:

_____

_____

_____

3. Certification statement:

I, _____, representing and having authority for _____ (company), hereby certify that any and all products/materials which will be and/or have been installed or introduced into the above-mentioned building, _____ (project name and/or number) are asbestos free (or less than 1% asbestos by weight).

_____
Print Name

_____
Signature

_____
Company

_____
Position

_____
Date

Form D-5

## Proof of Asbestos Awareness Training

## 2-Hour Course (Class IV Work)

The intent of this form is to provide documentation that you have witnessed the 2-hour Asbestos Awareness Course. This form will be kept in your personal file.

I, _____, hereby verify and confirm that I have witnessed the 2-hour Asbestos Awareness training course on this date of _____. I further understand that if I have any questions regarding the course or need information regarding the locations of asbestos-containing materials in the buildings, I may contact _____, the building/facility owner/operator.

_____
Print Name

_____
Signature

_____
Date

_____
Title or Position

Form D-6

## Proof of Asbestos Generic Material Training

## 8-Hour Course (Class II Work)

The intent of this form is to provide documentation that you have witnessed the 8-hour Asbestos Generic Material Training Course. This form will be kept in your personal file.

I, _____, hereby verify and confirm that I have witnessed the 8-hour Asbestos Generic Material training course specific for _____ on this date of _____.

I further understand that if I have any questions regarding the course or need information regarding the locations of asbestos-containing materials in the buildings, I may contact _____, the building/facility owner/operator.

_____
Print Name

_____
Signature

_____
Date

_____
Title or Position

Form D-7

## Proof of Operations and Maintenance Training Program

## 16-Hour Course (Class III Work)

The intent of this form is to provide documentation that you have attended a 16 hr Operations & Maintenance Program training course. This form will be kept in your personal file.

I, _____, hereby verify and confirm that I have witnessed the 16-hour Operations & Maintenance Program training course on this date of _____. I further understand that if I have any questions regarding the course and/or need information regarding the locations of asbestos-containing materials in the buildings as well as questions regarding handling of asbestos-containing materials, I may contact _____ the building/facility owner/operator.

_____
Print Name

_____
Signature

_____
Date

_____
Title or Position

Form D-8

## Asbestos Worker Training Program

## 32-Hour Course (Class I and II Work)

The intent of this form is to provide a listing of the personal who have attended the Asbestos Worker Training Program and have obtained State Accreditation.

| Name | Training Course | Course Date | Expiration Date | State Accreditation Number | Expiration Date |
|---|---|---|---|---|---|

Form D-9

## Contractor Supervisor Training Program

## 40-Hour Course

The intent of this form is to provide a listing of the personal who have attended the Contractor Supervisor Training Program and have obtained State Accreditation.

| Name | Training Course | Course Date | Expiration Date | State Accreditation Number | Expiration Date |
|---|---|---|---|---|---|

Form D-10

## Warning Label Installation

.t the entrance to mechanical rooms/areas in which the employees reasonably can be expected to enter and which contain thermal system insulation and surfacing ACM/PACM, the building owner shall post signs which identify the material which is present, its location, and appropriate work practices which if followed, will ensure that ACM and or PACM will not be disturbed. In addition to above required information, labels must state:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

Name of building: _____

I, _____, of _____ Company hereby verify that I have installed warning labels in this building in accordance with 40 CFR, 1926.1101, of the OSHA Regulation on _____ (date).

_____
Print Name

_____
Signature

_____
Date

_____
Employer

## APPENDIX E

## Medical Surveillance Forms

# MEDICAL SURVEILLANCE

(In accordance with OSHA, 29 CFR, 1926.1101, m(3))

Provided to physician: 1. OSHA Standard 29 CFR, 1926.1101; appendices D, E, G and I.

To Whom It May Concern:

The following is a description of our employee's duties as they relate to the employee's exposure to airborne asbestos

_____ is a _____ in our building/facility

_____ department. His/Her primary asbestos related job duties include the following:

[ ] Class I Asbestos Work Activities
[ ] Class II Asbestos Work Activities
[ ] Class III Asbestos Work Activities
[ ] Class IV Asbestos Work Activities
[ ] Asbestos Abatement Project Management
[ ] Air sample Collection and Analysis
[ ] Asbestos Inspections/Bulk Sample Collection/Project Design

**Class I Asbestos Work Activities**
During activities involving removal of TSI and surfacing ACM and PACM, **(Name)** will participate in the gross removal and clean-up of materials. The anticipated exposure levels while in the regulated area is rarely above 5 fibers per cubic centimeter (f/cc), based on an 8-hour time weighted average (TWA). **(Name)** is required by **(employer)** policy to wear a negative pressure respirator (PAPR above 2 f/cc TWA) and disposal coveralls at the minimum during this process.

**Class II Asbestos Work Activities**
During activities involving removal of ACM which is not thermal system insulation or surfacing material, **(Name)** will participate in the gross removal and clean-up of materials. The anticipated exposure levels while in the regulated area is rarely above 2 fibers per cubic centimeter (f/cc), based on an 8-hour time weighted average (TWA). **(Name)** is required by **(employer)** policy to wear a negative pressure respirator (PAPR above 2 f/cc TWA) and disposal coveralls at the minimum during this process.

**Class III Asbestos Work Activities**
During activities involving repair and maintenance operations where ACM including thermal system insulation and surfacing material is likely to be disturbed, **(Name)** will participate in the gross removal and clean-up of materials. The anticipated exposure levels while in the regulated area is rarely above 1 fibers per cubic centimeter (f/cc), based on an 8-hour time weighted average (TWA). **(Name)** is required by **(employer)** policy to wear a negative pressure respirator (PAPR above 2 f/cc TWA) and disposal coveralls at the minimum during this process.

**Class IV Asbestos Work Activities**
During maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM, **(Name)** will participate in the clean-up of materials. The anticipated exposure levels while in the unregulated area is rarely above .1 fibers per cubic centimeter (f/cc), based on an 8-hour time weighted average (TWA) and the anticipated exposure levels while in the regulated area is rarely above 1 fibers per cubic centimeter (f/cc), based on an 8-hour time weighted average (TWA).

**(Name)** is required by **(employer)** policy to wear a negative pressure respirator and disposal coveralls above _____ f/cc at the minimum during this process.

**Asbestos Abatement Project Management:**

During asbestos abatement, **(Name)** will be on site to ensure that the job specifications are adhered to by the asbestos abatement contractor. **(Name)** may enter the regulated area to observe the contractor's abatement techniques. The anticipated exposure levels while in the regulated area is rarely above 1 fiber per cubic centimeter (f/cc), based on an 8-hour time weighted average (TWA). **(Name)** is required by **(employer)** policy to wear a negative pressure respirator and disposal coveralls at the minimum during this process.

**Air Sample Collection and Analysis:**

During asbestos abatement activities, **(Name)** may also perform air sample collection and analysis in accordance to OSHA regulations. This process may require **(Name)** to enter the regulated area to set air pumps. The anticipated exposure levels while in the regulated area is rarely above 1 f/cc, based on an 8-hour TWA. **(Name)** is required by **(employer)** policy to wear a negative pressure respirator and disposable coveralls at the minimum while conducting air samples.

**Asbestos Inspection/Bulk Sample Collection/Project Design:**

**(Name)** may also conduct building inspections to locate asbestos containing materials (ACM's). During these inspections, **(Name)** will collect bulk samples of suspected ACM's for subsequent analysis. The anticipated exposure levels while performing the sample collection is rarely above .5 f/cc, based on an 8-hour TWA. **(Name)** is required by **(employer)** policy to wear a negative pressure respirator and disposable coveralls at the minimum during this process.

[ ] Information from previous examinations of _____ **(Name)** is not available at this time.

[ ] If information from previous medical examinations of _____ is available, this information will have been brought to this exam with the employee.

**Important note to physician:** In accordance with OSHA, 29 CFR, 1926.1101 (m)(4)(D)(ii), the physician should not reveal in the written opinion given to the employer, specific findings or diagnoses unrelated to occupational exposure to asbestos, tremolite, anthophyllite, or actinolite.

If you have any questions or concerns regarding this information, please contact me at the below address or phone:

(___)

Signature of Employee Date

Name of Clinic

Address

Signature of Clinic Representative Date

## MEDICAL SURVEILLANCE II

PHYSICIANS WRITTEN OPINION FORM

ASBESTOS

THIS SECTION IS TO BE FILLED OUT BY EMPLOYER

Employee Name: _____

Employee's Social Security No. _____

Location of Examination: _____

_____

_____

THIS SECTION TO BE FILLED OUT BY EXAMINING PHYSICIAN

1. This employee___has___does not have any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos, tremolite, anthophyllite, or actinolite.

2. The following limitations on this employee or on the use of personal protective equipment such as respirators are recommended: _____

   (If none, check here <__>)

3. This employee has been informed of the results of the medical examination and of any medical conditions that may result from asbestos, tremolite, anthophyllite, or actinolite exposure

4. This employee has been informed by the physician of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

5. Results of the medical examination are as follows: (If attachments are used, please list.)

6. Other Comments:

Date of Examination: _____

Examining Physician's Signature: _____

## Part 1
## INITIAL MEDICAL QUESTIONNAIRE

1. NAME _____

2. SOCIAL SECURITY # _____

3. CLOCK NUMBER _____

4. PRESENT OCCUPATION _____

5. PLANT _____

6. ADDRESS _____

7. _____
(Zip Code)

8. TELEPHONE NUMBER _____

9. INTERVIEWER _____

10. DATE _____

11. Date of Birth _____
Month Day Year

12. Place of Birth _____

13. Sex 1. Male _____ 2. Female _____

14. What is your marital status? 1. Single _____ 2. Married _____ 3. Widowed _____ 4. Separated/Divorced _____

15. Race 1. White ____ 2. Black ____ 3. Asian ____ 4. Hispanic ____ 5. Indian ____ 6. Other ____

16. What is the highest grade completed in school (For example 12 years is completion of high school)? _____

## OCCUPATIONAL HISTORY

17A. Have you ever worked full time (30 hours per week of more) for 6 months or more? 1. Yes _____ 2. No _____

IF YES TO 17A:

B. Have you ever worked for a year or more in any dusty job? 1. Yes _____ 2. No _____ 3. Does not apply _____

Specify job/industry _____ Total years worked _____

Was dust exposure: 1. Mild _____ 2. Moderate _____ 3. Severe _____

C. Have you ever been exposed to gas or chemical fumes in your work? 1. Yes _____ 2. No _____

Specify job/industry _____ Total years worked _____

Was exposure: 1. Mild _____ 2. Moderate _____ 3. Severe _____

D. What has been your usual occupation or job - the one you have worked at the longest?

1. Job occupation _____

2. Number of years employed in this occupation _____

3. Position/Job Title _____

4. Business, field or industry _____

(Record on lines the years in which you have worked in any of these industries, e.g. 1960-1969)

Have you ever worked:

| | | Yes | No |
|---|---|---|---|
| E. | In a mine? | ___ | ___ |
| F. | In a quarry? | ___ | ___ |
| G. | In a foundry? | ___ | ___ |
| H. | In a pottery? | ___ | ___ |
| I. | In a cotton, flax or hemp mill? | ___ | ___ |
| J. | With asbestos? | ___ | ___ |

18. PAST MEDICAL HISTORY

| | | Yes | No |
|---|---|---|---|
| A. | Do you consider yourself to be in good health? | ___ | ___ |

If "NO" state reason _____

| | | | |
|---|---|---|---|
| B. | Have you any defect of vision? | ___ | ___ |

If "YES" state reason _____

| | | | |
|---|---|---|---|
| C. | Have you any hearing defect? | ___ | ___ |

If "YES" state nature of defect _____

D. Are you suffering from or have you ever suffered from:

| | | Yes | No |
|---|---|---|---|
| a. | Epilepsy (or fits, seizures, convulsions)? | ___ | ___ |
| b. | Rheumatic fever? | ___ | ___ |
| c. | Kidney disease? | ___ | ___ |
| d. | Bladder disease? | ___ | ___ |
| e. | Diabetes? | ___ | ___ |
| f. | Jaundice? | ___ | ___ |

19. CHEST COLDS AND CHEST ILLNESSES

19A. If you get a cold, does it "usually" go to your chest (usually means more than ½ the time)?

1. Yes _____ 2. No _____ 3. Don't get colds _____

20A. During the past 3 years, have you had any chest illnesses that have kept you off work, indoors at home or in bed?

1. Yes _____ 2. No _____

IF YES TO 20A:

B. Did you produce phlegm with any of these chest illnesses? 1. Yes _____ 2. No _____ 3. Does not apply _____

C. In the last 3 years, how many such illnesses with (increased) phlegm did you have which lasted a week or more?

Number of illnesses _____ No such illnesses _____

21. Did you have any lung trouble before the age of 16? 1. Yes _____ 2. No _____

22. Have you ever had of the following?

1A. Attacks of bronchitis? 1. Yes _____ 2. No _____

IF "YES" TO 1A:

B. Was it confirmed by a doctor? 1. Yes _____ 2. No _____ 3. Does not apply _____

C. At what age was your first attack? Age in years _____ Does not apply _____

2A. Pneumonia (include bronchopneumonia)? 1. Yes _____ 2. No _____

IF "YES" TO 2A:

B. Was it confirmed by a doctor? 1. Yes _____ 2. No _____ 3. Does not apply _____

C. At what age did you first have it? Age in years _____ Does not apply _____

3A. Hay Fever? 1. Yes _____ 2. No _____

IF "YES" TO 3A:

B. Was it confirmed by a doctor? 1. Yes _____ 2. No _____ 3. Does not apply _____

C. At what age did it start? Age in years _____ Does not apply _____

23A. Have you ever had chronic bronchitis? 1. Yes _____ 2. No _____

IF "YES" TO 23A:

B. Do you still have it? 1. Yes _____ 2. No _____ 3. Does not apply _____

C. Was it confirmed by a doctor? 1. Yes _____ 2. No _____ 3. Does not apply _____

D. At what age did it start? Age in years _____ Does not apply _____

24A. Have you ever had emphysema? 1. Yes _____ 2. No _____

IF "YES" TO 24A:

B. Do you still have it? 1. Yes _____ 2. No _____ 3. Does not apply _____

C. Was it confirmed by a doctor? 1. Yes _____ 2. No _____ 3. Does not apply _____

D. At what age did it start? Age in years _____ Does not apply _____

25A. Have you ever had asthma? 1. Yes _____ 2. No _____

IF "YES" TO 25A:

B. Do you still have it? 1. Yes _____ 2. No _____ 3. Does not apply _____

C. Was it confirmed by a doctor? 1. Yes _____ 2. No _____ 3. Does not apply _____

D. At what age did it start? Age in years _____ Does not apply _____

E. If you no longer have it, what age did it stop? Age stopped _____ Does not apply _____

26. Have you ever had:

A. Any other chest illness? 1. Yes _____ 2. No _____

If yes, please specify _____

B. Any chest operations? 1. Yes _____ 2. No _____

If yes, please specify _____

C. Any chest injuries? 1. Yes _____ 2. No _____

If yes, please specify _____

27A. Has a doctor ever told you that you had heart trouble? 1. Yes _____ 2. No _____

IF "YES" TO 27A:

B. Have you ever had treatment for heart trouble in the past 10 years?

1. Yes _____ 2. No _____ 3. Does not apply _____

28A. Has a doctor told you that you had high blood pressure?

1. Yes _____ 2. No _____ 3. Does not apply _____

IF "YES" TO 28A:

B. Have you had any treatment for high blood pressure (hypertension) in the past 10 years?

1. Yes _____ 2. No _____ 3. Does not apply _____

29. When did you have your chest X-Rayed? Year _____

30. Where did you last have your chest X-Rayed (if known)? _____

What was the outcome? _____

## FAMILY HISTORY

31. Were either of your natural parents ever told by a doctor that they had a chronic lung condition such as:

| | | FATHER | | | MOTHER | | |
|---|---|---|---|---|---|---|---|
| | | Yes | No | Don't Know | Yes | No | Don't Know |
| A. | Chronic Bronchitis? | ___ | ___ | ___ | ___ | ___ | ___ |
| B. | Emphysema? | ___ | ___ | ___ | ___ | ___ | ___ |
| C. | Asthma? | ___ | ___ | ___ | ___ | ___ | ___ |
| D. | Lung cancer? | ___ | ___ | ___ | ___ | ___ | ___ |
| E. | Other chest conditions? | ___ | ___ | ___ | ___ | ___ | ___ |
| F. | Is parent currently alive? | ___ | ___ | ___ | ___ | ___ | ___ |
| G. | Please specify | _____ Age if Living<br>_____ Age at Death<br>_____ Don't Know | | | _____ Age if Living<br>_____ Age at Death<br>_____ Don't Know | | |
| H. | Please specify cause of death | _____ | | | _____ | | |

32A. Do you usually have a cough? (Count a cough with first smoke or on first going out of doors. Exclude clearing of throat) (If no, skip to Question 32C.) 1. Yes _____ 2. No _____

B. Do you usually cough as much as 4 to 6 times a day 4 or more days out of the week? 1. Yes _____ 2. No _____

C. Do you usually cough at all on getting up or first thing in the morning? 1. Yes _____ 2. No _____

D. Do you usually cough at all during the rest of the day or at night? 1. Yes _____ 2. No _____

IF YES TO ANY OF THE ABOVE (32 A, B, C OR D), ANSWER THE FOLLOWING. IF NO TO ALL, CHECK "DOES NOT APPLY" AND SKIP TO NEXT PAGE.

E. Do you usually cough more like this on most days for 3 consecutive months or more during the year?

1. Yes _____ 2. No _____ 3. Does not apply _____

F. For how many years have you had the cough? Number of years _____ Does not apply _____

33A. Do you usually bring up phlegm from your chest? (Count phlegm with the first smoke or on first going out of doors. Exclude phlegm from the nose. Count swallowed phlegm.) (If no, skip to Question 33C.) 1. Yes _____ 2. No _____

B. Do you usually bring up phlegm like this as much as twice a day 4 or more days out of the week? 1. Yes ___ 2. No ___

C. Do you usually bring up phlegm at all on getting up or first thing in the morning? 1. Yes _____ 2. No _____

D. Do you usually bring up phlegm at all during the rest of the day or at night? 1. Yes _____ 2. No _____

IF YES TO ANY OF THE ABOVE (33A, B, C OR D), ANSWER THE FOLLOWING:

IF NO TO ALL, CHECK "DOES NOT APPLY" AND SKIP TO 34A

E. Do you bring up phlegm like this on most days for 3 consecutive months or more during the year?

1. Yes ____ 2. No ____ 3. Does not apply _____

F. For how many years have you had trouble with phlegm? Number of years _____ Does not apply _____

EPISODES OF COUGH AND PHLEGM

34A. Have you had periods or episodes of (increased*) cough and phlegm lasting for 3 weeks or more each year? *(For persons who usually have cough and/or phlegm) 1. Yes _____ 2. No _____

IF "YES" TO 34A

B. For how long have you had at least 1 such episode per year? Number of years _____ Does not apply _____

WHEEZING

35A. Does your chest ever sound wheezy or whistling

1. When you have a cold? 1. Yes _____ 2. No _____

2. Occasionally apart from colds? 1. Yes _____ 2. No _____

3. Most days or nights? 1. Yes _____ 2. No _____

IF "YES" TO 1, 2, OR 3 IN 35A

B. For how many years has this been present? Number of years _____ Does not apply _____

36A. Have you ever had an attack of wheezing that has made you feel short of breath? 1. Yes _____ 2. No _____

IF "YES" TO 36A

B. How old were you when you had your first such attack? Age in years _____ Does not apply _____

C. Have you had 2 or more such episodes? 1. Yes _____ 2. No _____ 3. Does not apply _____

D. Have you ever required medicine or treatment for the(se) attack(s)? 1. Yes ____ 2. No ____ 3. Does not apply ____

BREATHLESSNESS

37. If disabled from walking by any condition other than heart of lung disease, please describe and proceed to Question 39A.

Nature of condition(s) _____

_____

38A. Are you troubled by shortness of breath when hurrying on the level or walking up a slight hill? 1. Yes ____ 2. No ____

IF "YES" TO 38A

B. Do you have to walk slower than people of your age on the level because of breathlessness?

1. Yes _____ 2. No _____ 3. Does not apply _____

C. Do you ever have to stop for breath when walking at your own pace on the level?

1. Yes _____ 2. No _____ 3. Does not apply _____

D. Do you ever have to stop for breath after walking about 100 yards (or after a few minutes) on the level?

1. Yes _____ 2. No _____ 3. Does not apply _____

E. Are you too breathless to leave the house or breathless on dressing or climbing one flight of stairs?

1. Yes _____ 2. No _____ 3. Does not apply _____

TOBACCO SMOKING

39A. Have you ever smoked cigarettes? (No means less than 20 packs of cigarettes or 12 oz. of tobacco in a lifetime or less than 1 cigarette a day for 1 year.) 1. Yes _____ 2. No _____

IF "YES" TO 39A

B. Do you now smoke cigarettes (as of one month ago)? 1. Yes _____ 2. No _____ 3. Does not apply _____

C. How old were you when you first started regular cigarette smoking? Age in years _____ Does not apply _____

D. If you have stopped smoking cigarettes completely, how old were you when you stopped?

Age stopped _____ Check if still smoking _____ Does not apply _____

E. How many cigarettes do you smoke per day now? Cigarettes per day _____ Does not apply _____

F. On the average of the entire time you smoked, how many cigarettes did you smoke per day?

Cigarettes per day _____ Does not apply _____

G. Do or did you inhale the cigarette smoke?

Does not apply _____ Not at all _____ Slightly _____ Moderately _____ Deeply _____

40A. Have you ever smoked a pipe regularly? (Yes means more than 12 oz. of tobacco in a lifetime.) 1. Yes ____ 2. No ____

IF "YES" TO 40A:

FOR PERSONS WHO HAVE EVER SMOKED A PIPE

B. 1. How old were you when you started to smoke a pipe regularly? Age _____

2. If you have stopped smoking a pipe completely, how old were you when you stopped?

Age stopped _____ Check if still smoking a pipe _____ Does not apply _____

C. On the average over the entire time you smoked a pipe, how much pipe tobacco did you smoke per week? (A standard pouch of tobacco contains 1-1/2 oz.) oz. per week _____ Does not apply _____

D. How much pipe tobacco are you smoking now? oz. per week _____ Not currently smoking a pipe _____

E. Do you or did you inhale the pipe smoke?

Never smoked _____ Not at all _____ Slightly _____ Moderately _____ Deeply _____

41A. Have you ever smoked cigars regularly? (Yes means more than 1 cigar a week for a year)1. Yes ____ 2. No ____

IF "YES" TO 41A

FOR PERSONS WHO HAVE EVER SMOKED A CIGAR

B. 1. How old were you when you started smoking cigars regularly? Age _____

2. If you have stopped smoking cigars completely, how old were you when you stopped?

Age stopped _____ Check if still smoking cigars _____ Does not apply _____

C. On the average over the entire time you smoked cigars, how many cigars did you smoke per week?

Cigars per week _____ Does not apply _____

D. How many cigars are you smoking per week now?

Cigars per week _____ Check if not smoking cigars currently _____

E. Do or did you inhale the cigar smoke?

Never smoked _____ Not at all _____ Slightly _____ Moderately _____ Deeply _____

Signature _____ Date _____

## Part 2
## PERIODIC MEDICAL QUESTIONNAIRE

1. NAME _____

2. SOCIAL SECURITY # _____

3. CLOCK NUMBER _____

4. PRESENT OCCUPATION _____

5. PLANT _____

6. ADDRESS _____

7. _____
(Zip Code)

8. TELEPHONE NUMBER _____

9. INTERVIEWER _____

10. DATE _____

11. What is your marital status? 1. Single _____ 2. Married _____ 3. Widowed _____ 4. Separated/Divorced _____

## 12. OCCUPATIONAL HISTORY

12A. In the past year, did you work full time (30 hours per week of more) for 6 months or more? 1. Yes _____ 2. No _____

IF YES TO 12A:

12B. In the past year, did you work in a dusty job? 1. Yes _____ 2. No _____ 3. Does not apply _____

12C. Was dust exposure: 1. Mild _____ 2. Moderate _____ 3. Severe _____

12D. In the past year, were you exposed to gas or chemical fumes in your work? 1. Yes _____ 2. No _____

12E. Was exposure: 1. Mild _____ 2. Moderate _____ 3. Severe _____

12F. In the past year, what was your:

1. Job/Occupation _____

2. Position/Job Title _____

13. RECENT MEDICAL HISTORY

13A. Do you consider yourself to be in good health? Yes _____ No _____

13B. In the past year, have you developed:

| | Yes | No |
|---|---|---|
| Epilepsy? | ____ | ____ |
| Rheumatic Fever? | ____ | ____ |
| Kidney Disease? | ____ | ____ |
| Bladder Disease? | ____ | ____ |
| Diabetes? | ____ | ____ |
| Jaundice? | ____ | ____ |
| Cancer? | ____ | ____ |

14. CHEST COLDS AND CHEST ILLNESSES

14A. If you get a cold, does it "usually" go to your chest (usually means more than ½ the time)?

1. Yes ____ 2. No ____ 3. Don't get colds ____

15A. During the past year, have you had any chest illnesses that have kept you off work, indoors at home or in bed?

1. Yes _____ 2. No _____ 3. Does not apply _____

IF "YES" TO 15A:

15B. Did you produce phlegm with any of these chest illnesses? 1. Yes _____ 2. No _____ 3. Does not apply _____

15C. In the past year, how many such illnesses with (increased) phlegm did you have which lasted a week or more?

Number of illnesses _____ No such illnesses _____

5. RESPIRATORY SYSTEM

In the past year, have you had:

| | Yes | No | Comment further on Positive Answers |
|---|---|---|---|
| Asthma | ____ | ____ | _____ |
| Bronchitis | ____ | ____ | _____ |
| Hay Fever | ____ | ____ | _____ |
| Other Allergies | ____ | ____ | _____ |
| Pneumonia | ____ | ____ | _____ |
| Tuberculosis | ____ | ____ | _____ |
| Chest Surgery | ____ | ____ | _____ |
| Other Lung Problems | ____ | ____ | _____ |
| Heart Disease | ____ | ____ | _____ |

Do you have:

| | | | |
|---|---|---|---|
| Frequent colds | ____ | ____ | _____ |
| Chronic Cough | ____ | ____ | _____ |
| Shortness of breath when walking or climbing one flight of stairs | ____ | ____ | _____ |

Do you:

| | | | |
|---|---|---|---|
| Wheeze | ____ | ____ | _____ |
| Cough up phlegm | ____ | ____ | _____ |
| Smoke | ____ | ____ | Packs per day ____ How many years ____ |

Date _____ Signature _____

# GLOSSARY OF TERMS

The following definitions will assist the user of this Operations and Maintenance Program Manual when reading industry-specific terms and regulation terminology. Please note that many of these definitions are regulation-specific and may often be exactly as defined by applicable regulations. Also, some of the terms below are not used within this Manual, but may often be referred to when dealing with certain asbestos situations.

**Accredited Personnel**
Properly trained and registered personnel who conduct certain activities, e.g., inspections, sample analysis, large-scale abatement projects, etc.

**ACM**
Asbestos-containing material. Any material or product that contains more than 1 percent asbestos by weight.

**AFD**
Air filtration device. HEPA filter equipped machines that filter air in an enclosure and other designated locations.

**AHERA**
Asbestos Hazard Emergency Response Act. The EPA regulation requiring all LEAs to identify asbestos-containing building materials in their schools and take appropriate actions to control release of asbestos fibers.

**Air Sampling (Monitoring)**
Air samples collected from a specific quantity of air, from a certain, defined area, in order to determine an airborne fiber concentration. These samples are usually reported as the amount of fibers present per cubic centimeter of air (f/cc).

**Airborne**
Unsettled fibers in the air.

**Airless Water Sprayer**
A device used to spray water on asbestos-containing materials that are not pressurized by air, thereby not causing disturbance to the aterial.

**Amended Water**
Water to which a chemical wetting agent (surfactant) has been added to improve the penetration capabilities on asbestos-containing materials.

**Asbestos**
A group of fibrous minerals that possess unique physical and chemical properties. These characteristics include fibrous nature, heat resistance, thermal and electrical resistance, flexibility, high tensile strength and stability in acids and alkalis. Asbestos includes many asbestiform varieties of which the following are the most common found in buildings: chrysotile, crocidolite and amosite.

**Asbestos Abatement**
Methods used to control or contain asbestos-containing materials. These methods are removal, encapsulation and encasement.

**Authorized Person**
Any person authorized by the employer and required by work duties to be present in regulated areas.

**Building/Facility Owner**
Is the legal entity, including a lessee, who exercises control over management and recordkeeping functions relating to a building and or facility covered by the OSHA standard.

**Class I Asbestos Work**
Activities involving the removal of TSI and surfacing ACM and PACM.

**Class II Asbestos Work**
Activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to the removal of asbestos containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

**lass III Asbestos Work**
Repair and maintenance operations, where "ACM", including thermal system insulation and surfacing material is likely to be disturbed.

**Class IV Asbestos Work**
Maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.

**Caution/Waruing Signs**
Signs that must be posted at all approaches to regulated areas so that all employees, personnel, and the public may read the sign and take necessary protective steps before entering the area.

**Cleau Room**
An uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

**Closely Resemble**
Means that all the major workplace conditions that have contributed to the levels of historic asbestos exposure, are no more protective than conditions of the current workplace.

**Competent Person**
Person who has received specialized training capable of identifying existing asbestos hazards in the workplace and who has the authority to take prompt corrective measures to eliminate them as specified in the OSHA Asbestos Standard.

**Critical Barrier**
One or more layers of plastic sealed over openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos from migrating to an adjacent area.

**overall**
Disposable body covering utilized use when disturbing asbestos-containing materials in any way.

**Decontamination Area**
An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

**Debris**
Asbestos-containing material that is no longer adhered to its original cohesive substrate. This material is usually found lying on the floor and on other horizontal surfaces.

**Demolition**
The wrecking or taking out of any load supporting structural member and any related razing, removing, or stripping of asbestos products.
**Disposal Bag**
Properly labeled bag used only for asbestos waste.

**Disturbance**
Contact which releases fibers from ACM or PACM or debris containing ACM or PACM. This term includes activities that disrupt the matrix of ACM or PACM, render ACM or PACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM and PACM, no greater than the amount which can be contained in one standard sized glove bag or waste bag in order to access o building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length or width.

**Documentation Forms**
Forms used for the necessary and proper documentation of asbestos related activities. The forms are required to update the Management Plans.

**mployee Exposure**
Exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

**Encapsnlation**
A response action entailing the covering of ACMs by coating the material with a sealing agent in order to prevent release of airborne asbestos.

**Encasing**
An abatement method by which an asbestos material is encased (totally enclosed) using some type of structure that seals the asbestos material within an airtight barrier.

**Enclosure**
An isolated area that is sealed from other building areas and where asbestos abatement activities commence. Proper engineering controls and project management methods isolate these work areas from other building areas.

**Engineering Controls**
Proper equipment and procedures used to control an asbestos related activity.

**EPA**
Environmental Protection Agency.

**Exposure Monitoring**
Air monitoring used to determine the concentrations of asbestos to which their individuals may be exposed.

**Friable**
Asbestos material that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure (this includes nonfriable material at is damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure).

**Glove Bag**
Plastic bag-like enclosure used to contain small amounts of material, usually pipe insulation, for asbestos removal.

**HEPA**
High-efficiency particulate air. Filters used for trapping and retaining 99.97 percent of all particles larger than 0.3 micrometers. These filters are commonly used in air filtration devices, vacuums, respirators, and decontamination showers.
**Homogeneous Area**
An area of surfacing material, thermal system insulation material or miscellaneous material that is uniform in color and texture.

**HVAC**
Heating, Ventilation, and Air Conditioning systems found in many building.

**Intact**
The ACM has not crumbled, been pulverized, or otherwise deteriorated so that it is no longer likely to be bound with its matrix.

**Labels**
Refers to warning labels that are attached immediately adjacent to any friable and nonfriable ACBMs and suspected ACBMs, assumed to be ACM, located in routine maintenance areas (e.g., boiler rooms).

**Maintenance Request/Work Order Forms**
General forms that building owners/operators utilize for requesting maintenance work throughout the buildings.

**Medical Surveillance**
The employer shall institute a medical surveillance program for all employees who for a combined total of 30 or more days per year are engaged in Class I, II, and III work or who are exposed at or above the permissible exposure limit or excursion limit, and who wear negative pressure respirators pursuant to the requirements of this section.

**Mil**
Used to determine thickness of polyethylene sheeting. Mil is a prefix meaning one thousandth.

**Mini-enclosure**
A small walk-in enclosure (enclosed area) which accommodates no more than two persons. Made with applicable structural devices and polyethylene in order to isolate an area for disturbances or removal.

**Minor Fiber Release Episode**
The falling or dislodging of 3 square or linear feet or less of friable asbestos-containing material.

**Negative Initial Exposure Assessment**
A demonstration by the employer, which complies with the criteria in the OSHA standard that employee exposure during an operation is expected to be consistently below the PELs.

**Negative Pressure Respirator**
Air is drawn through the respirator's filters when the wearer breathes; as compared to having air supplied mechanically.

**NIOSH**
National Institute for Occupational Safety and Health.

**Non-friable**
Asbestos material that, when dry, may not be crumbled, pulverized, or reduced to powder by hand pressure.

**Operations & Maintenance Program (O&M)**
A program of work practices to maintain friable ACBM in good condition, ensure clean up of asbestos fibers previously released, and prevent further release by minimizing and controlling friable ACBM disturbance or damage.

**OSHA**
Occupational Safety and Health Administration.

**Phase Contrast Microscopy (PCM)**
Method of air sample analysis.

**Permissible Exposure Limit PEL**
An airborne concentration of asbestos of 0.1 fibers per cubic centimeter (f/cc) of air calculated as an eight (8)-hour time weighted average.

**Phase Light Microscopy (PLM)**
Method of bulk sample analysis.

**Polyethylene**
Plastic sheeting used for sealing off asbestos work areas such as large enclosures and mini-enclosures. Also used for drop cloths and various other asbestos work practices.

**Positive Air-Purifying Respirator**
Air is supplied to the respirator wearer. This is done by either having the surrounding air forced through the respirator filters or by a supplied air source being forced through the respirator filters.

**Post Abatement (Clearance) Air Samples**
Samples collected following the completion of an asbestos abatement project in order for clearance of the site in accordance with air levels set by applicable regulations.

**Presumed Asbestos Containing Material (PACM)**
Thermal System Insulation, surfacing, and flooring material found in buildings constructed no later than 1980.

**Preventive Measure**
Actions taken to reduce disturbance of ACBMs or otherwise eliminate the reasonable likelihood of the material becoming damaged or significantly damaged.

**Project Designer**
A person who has successfully completed the training requirements for an abatement project designer.

**Regulated Area**
An area established to demarcate (mark off) areas where Class I, Class II, and Class III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work occur; and a work area within which airborne concentrations of asbestos, exceed or there is a reasonable possibility they may exceed the permissible exposure limit (PEL).

**Removal**
All operations where ACM and/or PACM are taken out or stripped from structures or substrates, and include demolition operations.

**Renovation**
The modifying of any existing structure, or portion thereof.

**Repair**
Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, and including encapsulation or other repair of ACM or PACM attached to structures or substrates.

**Respirator**
Personal protective face-piece used with proper filters to prevent the inhalation of airborne asbestos fibers.

**Respirator Program**
Program designed to motivate and train personnel to wear proper respiratory protection and to provide administrative controls to ensure that these objectives are met.

**esponse Team**
A group of workers selected to conduct specific asbestos related activities.

**Surfacing Material**
Material that is sprayed, trowelled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing and other purposes. Materials must contain more that 1% asbestos.

**Surfactant**
The chemical wetting agent that is added to water to enhance its penetration into asbestos-containing materials

**Transmission Electron Microscopy (TEM)**
Method of air and bulk sample analysis.

**Thermal System Insulation (TSI)**
ACM applied to pipes, fittings, boilers, breaching, tanks, ducts, or other structural components to prevent heat loss or gain. Materials must contain more that 1% asbestos.

**Wet-Wiping**
A cleaning procedure using wet towels/rags to wipe off ACM.

ENVIRONMENTAL, INC.
5300 PLYMOUTH ROAD
ANN ARBOR, MICHIGAN 48105
734-930-0995

October 10, 2016

Mr. Todd Dryer
Facility Compliance Coordinator
CS Partners / Kingsbury Country Day School
869 S. Old US 23, Suite 500
Brighton, MI 48114

Dear Mr. Dryer:

The following is the Asbestos Management Plan for the Kingsbury Country Day School - Justin A. Schwartz Center located at 5000 Hosner Rd., Oxford, Michigan. The Management Plan was developed in accordance with the Asbestos Hazard Emergency Response Act, 40 CFR 763, AHERA, set forth by the United States Environmental Protection Agency.

Nova Environmental, Inc. was contracted to conduct an Inspection and develop a Management Plan for this facility.

If you have any questions regarding the enclosed information, please feel free to contact me at (734) 930-0995.

Sincerely,

NOVA ENVIRONMENTAL, INC.

Li Whitt

Lisa Whitton
Environmental Consultant

Enclosures

Asbestos Management Plan

For

KINGSBURY COUNTRY DAY SCHOOL – JUSTIN A. SCHWARTZ CENTER
5000 HOSNER RD
OXFORD, MICHIGAN 48370

Completed on

October 13, 2016

**LEA Name: Kingsbury Country Day School**

## EXPLANATION OF MANAGEMENT PLAN SECTIONS

**The Management Plan is divided into five (5) sections:**

**Section A:** **General Local Education Agency (LEA) and Building Information**

This section details information pertaining to the LEA and all buildings covered in the Management Plan.

**Section B:** **Consultant Information**

The management planner(s) and inspector(s) are required to provide available information on inspections that were conducted prior to December 14, 1987, if they are the basis of exclusions.

**Section C:** **LEA Responsibilities**

Exclusionary Statements
Notification Procedures
Pre-AHERA Inspection Information
Future Activities
Resource Evaluation

**Section D:** **Inspection & Management Plan Data**

Inspection/Management Plan Data

- Functional Space Listing & Map
- Homogeneous Area Listing
- Inspection List by Functional Space
- Inspection List by Homogeneous Area
- Bulk Sample Results
- Hazard Assessment & Response Action

**Operation and Maintenance Program Manual:**

Section I

Part 1: Personnel Responsibilities and Recordkeeping
Part 2: Notification Procedures
Part 3: Training Procedures
Part 4: Employee Protection Program
Part 5: Asbestos Containing Materials Surveillance

Section II

Part 1: Emergency Work Practices/Definitions and Instructions
Part 2: Small-Scale, Short-Duration Activities for Specific Materials

Appendix A: Mini-Enclosure Procedures
Appendix B: ACM Stored in Buildings
Appendix C: Respirator Program
Appendix D: Documentation Forms (Forms D-1 through D-12)
Appendix E: Medical Surveillance Forms
Appendix F: Glossary of Terms

**LEA Name: Kingsbury Country Day School**

## Section A

## LEA Information

1. Local Education Agency (LEA) Name

   Kingsbury Country Day School

2. LEA Address

| Street | City | State | Zip |
|---|---|---|---|
| 5000 Hosner Rd. | Oxford | Michigan | 48370 |

3. LEA Designated Person

| Last | First | M.I. |
|---|---|---|
| Dryer | Todd | |

4. Designated Person address

| Street | City | State | Zip |
|---|---|---|---|
| 869 S. Old US 23 | Brighton | Michigan | 48114 |

5. Designated Person Telephone Number

   (810) 229-5145

6. Designated Person Training Information

   Mr. Dryer has taken the 8-Hour Designated Person training class, in accordance with 763.84 (g) of the AHERA regulation.

NOVA

ENVIRONMENTAL, INC.

*This Certifies That*

Todd Dryer

has successfully completed the

**Asbestos Designated Person Training Program**

In accordance with 763.84(g)(2) of the Asbestos Hazard Emergency Response Act

Date of Training: April 12, 2016

Instructor

Nova Environmental, Inc. 5300 Plymouth Road, Ann Arbor, Michigan 48105 (734) 930-0995



LITHO IN U.S.A.

**LEA Name: Kingsbury Country Day School**

**Personnel Accreditation Statement**

1. LEA Designated Person Name

| Last | First | M.I. |
|---|---|---|
| Dryer | Todd | |

2. LEA Designated Person Signature — Date

Todd Dryer — 10-19-16

3. Accreditation Statement

Persons who have inspected or carry out response actions (except O&M) for Kingsbury Country Day School are accredited by the State of Michigan.

**LEA Name: Kingsbury Country Day School**

**LEA Responsibility Certification**

1. LEA Designated Person Name

| Last | First | M.I. |
|---|---|---|
| Dryer | Todd | |

2. LEA Designated Person Signature — Date

Todd D — 10-19-16

3. Responsibility Statement

Mr. Dryer, representing Kingsbury Country Day School, hereby certifies that Kingsbury Country Day School will meet the general local education agency responsibilities as stipulated by the Asbestos Hazard Emergency Response Act, 40 CFR, Part 763, Subject 763.84.

**LEA Name: Kingsbury Country Day School**

**Building Summary**

SB#: 1 School Building Name: Hosner Campus

Building Address

| Street | City | State | Zip |
|---|---|---|---|
| 5000 Hosner Rd. | Oxford | Michigan | 48370 |

Building Contains:

| | | | | | |
|---|---|---|---|---|---|
| 1. | Friable ACBM | ___ | 2. | Non-Friable ACBM | X |
| 3. | Friable Material Assumed to be ACM | ___ | 4. | Non-Friable Material Assumed to be ACM | ___ |
| 5. | None of the Above | ___ | | | |

SB#: 2 School Building Name: Justin A. Schwartz Center

Building Address

| Street | City | State | Zip |
|---|---|---|---|
| 5000 Hosner Rd. | Oxford | Michigan | 48370 |

Building Contains:

| | | | | | |
|---|---|---|---|---|---|
| 1. | Friable ACBM | ___ | 2. | Non-Friable ACBM | ___ |
| 3. | Friable Material Assumed to be ACM | ___ | 4. | Non-Friable Material Assumed to be ACM | X |
| 5. | None of the Above | ___ | | | |

SB#: 3 School Building Name: Kingsbury Country Day School Main Building

Building Address

| Street | City | State | Zip |
|---|---|---|---|
| 5000 Hosner Rd. | Oxford | Michigan | 48370 |

Building Contains:

| | | | | | |
|---|---|---|---|---|---|
| 1. | Friable ACBM | ___ | 2. | Non-Friable ACBM | X |
| 3. | Friable Material Assumed to be ACM | ___ | 4. | Non-Friable Material Assumed to be ACM | ___ |
| 5. | None of the Above | ___ | | | |

**LEA Name: Kingsbury Country Day School**

**Building Description**

Property Description

Kingsbury Country Day School – Justin A. Schwartz Center is a one story building with a block exterior. The floors are a combination of carpet and floor tile, walls are a combination of cinderblock, plaster and drywall and the ceilings are suspended ceiling tile and plaster.

The primary suspect ACBM within the building includes, but is not limited to, the following:

- Ceiling Materials
  - 2' x 2' Ceiling Tile
- Flooring Materials
  - Wood Floor
  - Vinyl Sheet
  - Carpet/Glue
- Surfacing Material
  - None
- Other Materials
  - Drywall/Tape/Mud
  - Concrete
  - Sinks
  - Covebase

**LEA Name: Kingsbury Country Day School**

**Section B**

**Consultant Accreditation Statement**

1. LEA Designated Person Name

| Last | First | M.I. |
|---|---|---|
| Dryer | Todd | |

2. LEA Designated Person Signature — Date

Todd Dryer — 10-19-16

3. Accreditation Statement

Persons who have consulted for Kingsbury Country Day School are accredited by the State of Michigan.

Contributor(s) to this Management Plan: Kary Amin, Lisa Whitton, Patrick Lenk

**LEA Name: Kingsbury Country Day School**

**Accreditation Summary Page**

Management Planner(s)

| Name | Accreditation Number | Firm |
|---|---|---|
| Kary S. Amin | A979 | Nova Environmental, Inc. |
| Lisa Whitton | A30431 | Nova Environmental, Inc. |

Inspection By

| Name | Accreditation Number | Firm |
|---|---|---|
| Patrick Lenk | A45614 | Nova Environmental, Inc. |

Samples Collected By

| Name | Accreditation Number | Firm |
|---|---|---|
| Patrick Lenk | A45614 | Nova Environmental, Inc. |

Assessments

| Name | Accreditation Number | Firm |
|---|---|---|
| Lisa Whitton | A30431 | Nova Environmental, Inc. |

Analyst(s)

| Name | Firm |
|---|---|
| Eric Budia | EMSL |

State of Michigan
Department of Licensing and Regulatory Affairs
Michigan Occupational Safety & Health Administration - Asbestos Program

## Asbestos Inspector

**Lisa L. Whitton**
c/o Nova Environmental, Inc.
5300 Plymouth Road
Ann Arbor, MI 48105

**Accreditation Number** A30431
**Expiration Date** 10/11/2017

DOB: 11/18/1981

This individual has satisfactorily met or exceeded the requirements of Michigan Public Act 440 of 1988, as amended, to be accredited as an Asbestos Inspector.

Accreditation card is not valid if altered

124303

State of Michigan
Department of Licensing and Regulatory Affairs
Michigan Occupational Safety & Health Administration - Asbestos Program

## Asbestos Management Planner

**Lisa L. Whitton**
c/o Nova Environmental, Inc.
5300 Plymouth Road
Ann Arbor, MI 48105

**Accreditation Number** A30431
**Expiration Date** 10/11/2017

DOB: 11/18/1981

This individual has satisfactorily met or exceeded the requirements of Section 206 of the Toxic Substances Control Act to be accredited in the above discipline.

Accreditation card is not valid if altered

124304

State of Michigan
Department of Licensing and Regulatory Affairs
Michigan Occupational Safety & Health Administration - Asbestos Program

## Asbestos Project Designer

**Lisa L. Whitton**
c/o Nova Environmental, Inc.
5300 Plymouth Road
Ann Arbor, MI 48105

**Accreditation Number** A30431
**Expiration Date** 10/11/2017

DOB: 11/18/1981

This individual has satisfactorily met or exceeded the requirements of Section 206 of the Toxic Substances Control Act to be accredited in the above discipline.

Accreditation card is not valid if altered

124258

**LEA Name: Kingsbury Country Day School**

**Inspectors and Building Data**

1. Date(s) of Inspection

   September 26-27, 2016

2. Inspector(s) Name(s)

| Last | First | M.I. |
|---|---|---|
| Lenk | Patrick | A. |

3. State(s) of Accreditation(s)

   Michigan

4. Accreditation Number(s)

   A45614

5. Building Name

   Kingsbury Country Day School – Justin A. Schwartz Center

6. Building Address

| Street | City | State | Zip |
|---|---|---|---|
| 5000 Hosner Rd. | Oxford | Michigan | 48370 |

7. Local Education Agency (LEA) Name

   Kingsbury Country Day School

8. LEA Address

| Street | City | State | Zip |
|---|---|---|---|
| 5000 Hosner Rd. | Oxford | Michigan | 48370 |

NOVA ENVIRONMENTAL, INC.

# BULK SAMPLING INFORMATION

This form provides information regarding the collection of bulk samples, in accordance with 40 CFR, part 763.85(b)(vii)(B).

1. **Date(s) of Bulk Sampling (Project #CI0810/KB102):**

   September 26-27, 2016

2. **Name of Accredited Inspector(s) who collected Bulk Sample(s):**

   Patrick Lenk

3. **Signature of Accredited Inspector(s) who collected Bulk Sample(s):**

4. **State of Accreditation of Inspector(s) who collected Bulk Sample(s):**

   Michigan

5. **Accreditation Number of Accredited Inspector(s) who collected Bulk Sample(s):**

   A45614

**Note:** Description of the manner used to determine sample locations:

All Samples are collected in accordance with 40 CFR, Part 763.86 and the EPA's Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials.

*State of Michigan*

Department of Licensing and Regulatory Affairs

Michigan Occupational Safety & Health Administration - Asbestos Program

## Asbestos Inspector

**Patrick A. Lenk**
c/o Nova Environmental, Inc.
5300 Plymouth Road
Ann Arbor, MI 48105

**Accreditation Number**
A45614

**Expiration Date**
10/11/2017

DOB: 12/07/1962

This individual has satisfactorily met or exceeded the requirements of Michigan Public Act 440 of 1988, as amended, to be accredited as an Asbestos Inspector.

Accreditation card is not valid if altered.

124302

**LEA Name: Kingsbury Country Day School**

**Sample Location Determination**

1. Describe Manner Used to Determine Sample Locations

   The sample location determination was conducted in accordance with 763.86.

2. Inspector(s) Name(s)

| Last | First | M.I. |
|---|---|---|
| Lenk | Patrick | A. |

3. State(s) of Accreditation(s)

   Michigan

4. Accreditation Number(s)

   A45614

**LEA Name: Kingsbury Country Day School**

**Hazard Assessment**

1 Inspector(s) Name(s)

| Last | First | M.I. |
|---|---|---|
| Whitton | Lisa | L. |

2. State(s) of Accreditation(s)

Michigan

3. Accreditation Number(s)

A30431

**LEA Name: Kingsbury Country Day School**

**Recommendations & Response Action**

1. Management Planner Name

| Last | First | M.I. |
|---|---|---|
| Whitton | Lisa | L. |

2. Management Planner Signature _____ Date 10/10/16

3. State of Accreditation

Michigan

4. Accreditation Number

A30431

**LEA Name: Kingsbury Country Day School**

**Laboratory Information**

1. Laboratory Name

   EMSL

2. Laboratory Address

| Street | City | State | Zip |
|---|---|---|---|
| 212 South Wagner Rd. | Ann Arbor | MI | 48103 |

3. Analyst Name

| Last | First |
|---|---|
| Budai | Eric |

4. Analyst Signature — See Laboratory Results Sheets

   Date — September 28, 2016

5. National Voluntary Laboratory Accreditation Program (NVLAP) Number:

   101048-4

6. Applicable Requirements Statement

   Samples are analyzed for asbestos by laboratories accredited under the National Voluntary Laboratory Accreditation Program (NVLAP), in accordance with 40 CFR, Part 763.87(a). This program is provided under the auspices of the United States Department of Commerce National Institute of Standards and Technology. Question #5 provides the NVLAP Accreditation Number for the laboratory that performed the asbestos bulk analysis on the samples collected.

**LEA Name: Kingsbury Country Day School**

## Section C
## Exclusionary Statements

No Exclusion Statements have been filed in accordance with 40 CFR Part 763.99(7) of the AHERA regulation.

**LEA Name: Kingsbury Country Day School**

**Notification Procedures**

Notification Procedures:

A letter of notification consisting of information regarding inspections, reinspections, surveillance, response actions and post response actions that have been planned or are in progress will be published at least once each school year within the Academy's Newsletter or the Notification will be sent home to each parent/guardian, along with a copy to each employee.

This notification is intended to provide workers, building occupants, or their legal guardians with the above-noted information in accordance with 40 CFR Part 763.84(c) in AHERA.

# KINGSBURY COUNTRY DAY SCHOOL – JUSTIN A. SCHWARTZ CENTER

## ASBESTOS HAZARD EMERGENCY RESPONSE ACT (AHERA) 2016 NOTIFICATION

The Environmental Protection Agency (EPA) requires that each year, school workers and building occupants receive notification about asbestos activities such as response actions and inspections. The purpose of this correspondence is to meet those requirements and familiarize you with the asbestos related activities that have been conducted at Kingsbury Country Day School – Justin A. Schwartz Center during the past year.

### MANAGEMENT PLANS

In accordance with the EPA's AHERA regulation, all buildings used for K-12 instruction must first be inspected for asbestos then have programs developed to manage the asbestos in-place. These programs are referred to as Management Plans.

Kingsbury Country Day School contracted with a fully qualified environmental consulting firm, Nova Environmental, Inc. to inspect our building for asbestos and develop the asbestos Management Plan. This Management Plan is available to the public for review and is located in the Main Office of Kingsbury Country Day School. Members of the public can review the Management Plan in the Main Office during normal school hours.

### SURVEILLANCE ACTIVITIES

The AHERA regulation requires periodic surveillance of the condition of the asbestos every six months. The regulation also requires Reinspections conducted every three years by Michigan Accredited Inspectors. Kingsbury Country Day School shall ensure that the surveillance activities are conducted in accordance with applicable regulatory standards.

### ASBESTOS ABATEMENT

Due to the complexities of testing, fire doors and frames and wood flooring within the School are assumed to contain asbestos.

If, in the future, these doors and frames or floor need to be disturbed or removed, Kingsbury Country Day School will either test the individual doors/frames scheduled for renovation or will ensure the utilization of an experienced Michigan Licensed Asbestos Abatement Contractor and a qualified Environmental Consulting Firm to oversee the project(s).

If you have any questions or concerns, please contact Mr. Todd Dryer at CS Partners, at (810) 229-5145.

**LEA Name: Kingsbnry Conntry Day School**

**Pre-AHERA Inspection Information**

Nova Environmental, Inc. did not use information produced prior to December 14, 1987.

**LEA Name: Kingsbury Country Day School**

**Future Activities**

1. Surveillance and Reinspection Plan

   Every six (6) months the Designated Person shall select an individual to visually inspect and assess all areas that are identified in the Management Plan as ACBM or Assumed ACBM.

   Every three (3) years the LEA will reinspect all friable and non-friable known or assumed ACBM in each school building using accredited inspectors.

2. Operations and Maintenance Activities Plan

   This information has been provided by the enclosed *Nova Operation and Maintenance Program Manual.*

3. Additional Cleaning Recommendation

   No additional cleaning has been recommended by the Accredited Management Planner(s) from Nova Environmental, Inc.

4. LEA Response to Additional Cleaning Recommendation

   Kingsbury Country Day School –Justin A. Schwartz Center has accepted the above-mentioned recommendations made by the Management Planner from Nova Environmental, Inc.

**LEA Name: Kingsbury Couutry Day School**

**Resource Evaluation**

The following is the asbestos Resource Evaluation for Kingsbury Country Day School – Justin A. Schwartz Center. This evaluation is based on expenditures beginning in 2016 and annually thereafter.

- Successful Response Action Completion:

  Due to the limited amount of known or assumed ACBM that is in need of active response actions, such as removal, it is estimated that expenditures for removal within Kingsbury Country Day School – Justin A. Schwartz Center annually to be set at $100.00.

- Reinspection Implementation:

  Because reinspections are conducted once every three years, the following estimated cost is based on annual allocation: $100.00.

- Operation and Maintenance Activities:

  The cost of implementing the O & M Program for Kingsbury Country Day School – Justin A. Schwartz Center will range with training and equipment expenditures. However, it is estimated that the annual cost of O & M implementation is $100.00.

- Periodic Surveillance and Training Implementation:

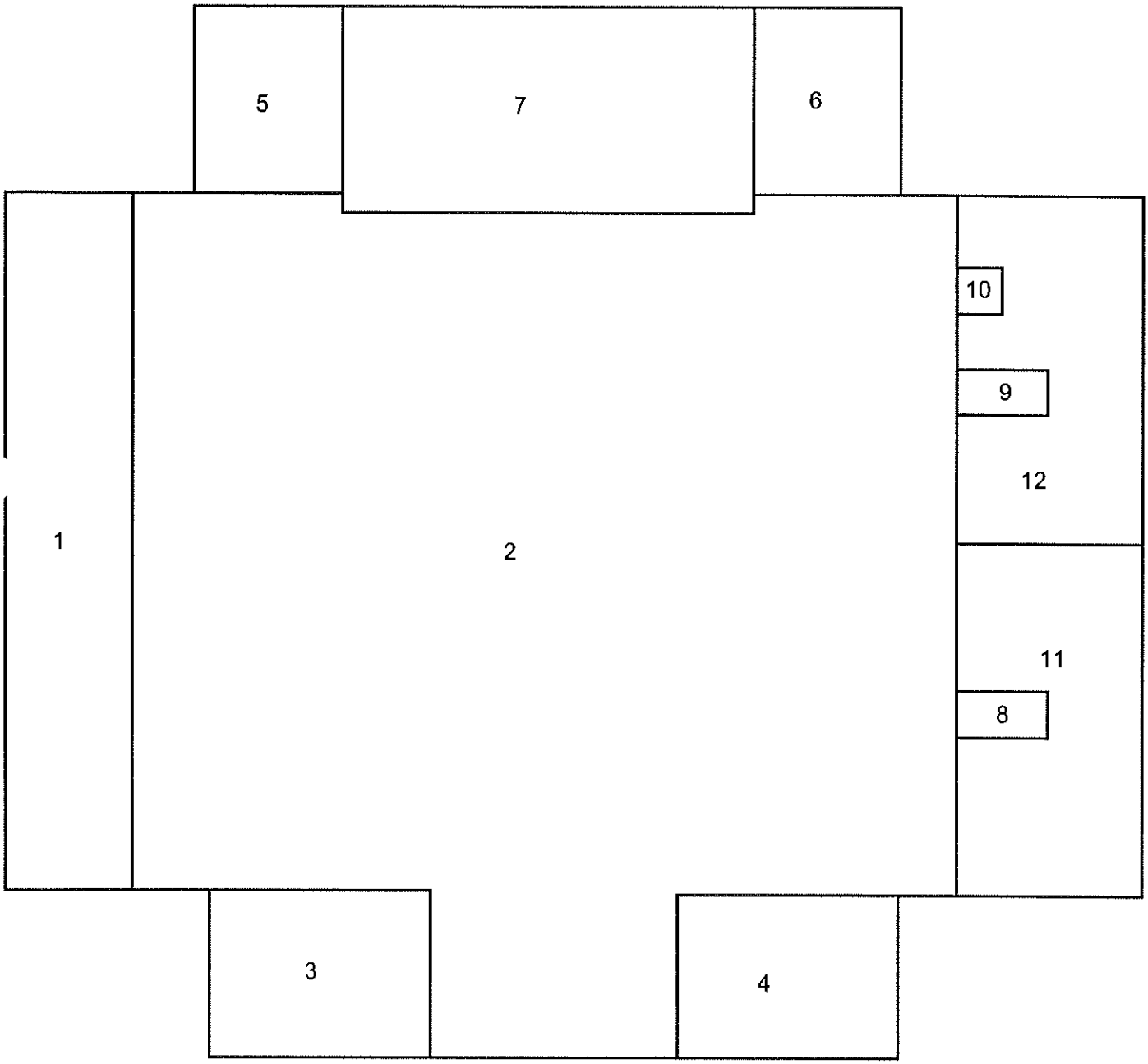
  The cost of surveillance and training is estimated to be approximately $50.00 annually.

JAS

Functional Space List

| FS# | FS Description |
|---|---|
| 1 | Main Entrance |
| 2 | Main Gym |
| 3 | North Bleachers |
| 4 | South Bleachers |
| 5 | Gym Storage/Electrical |
| 6 | Kitchen |
| 7 | Stage |
| 8 | Men's Locker Room Foyer |
| 9 | Women's Locker Room Foyer |
| 10 | Custodial Closet |
| 11 | Men's Locker Room |
| 12 | Women's Locker Room |

KINGSBURY COUNTRY DAY SCHOOL
JUSTIN A. SCHWARTZ CENTER
FUNCTIONAL SPACE MAP



# Kingsbury Country Day

JAS

Homogeneous Area List

| Homogeneous Area Description | HA# | Asbestos |
|---|---|---|
| Door Caulk - Gray | 1 | Negative |
| Door Caulk - White | 2 | Negative |
| Door Window Glaze - Black Rubber | 3 | Negative |
| Window Glaze - Black Rubber | 4 | Negative |
| Window Caulk - Gray | 5 | Negative |
| **Fire Door** | **6** | **Assumed** |
| **Fire Door Frame** | **7** | **Assumed** |
| **Gym Wood Floor** | **8** | **Assumed** |
| **Mastic for Gym Wood Floor** | **9** | **Assumed** |
| Wall Joint Caulk - White | 10 | Negative |
| Corner Covebase - Black | 11 | Negative |
| Mastic for Corner Covebase - Black | 12 | Negative |
| Door Caulk - Black | 13 | Negative |
| Drywall | 14 | Negative |
| Drywall Mud | 15 | Negative |
| Drywall Tape | 16 | Negative |
| Carpet Glue - Yellow | 17 | Negative |
| 2' x 2' Ceiling Panel - Moonscape | 18 | Negative |
| Sink Undercoating - Gray | 19 | Negative |
| Vinyl Floor Sheeting - Red | 20 | Negative |
| Mastic for Vinyl Floor Sheeting - Red | 21 | Negative |
| 4" Covebase - Brown | 22 | Negative |
| Mastic for 4" Covebase - Brown | 23 | Negative |
| Window Caulk - Black | 24 | Negative |
| Duct Insulation - Gray Plastic | 25 | Negative |

# Kingsbury Country Day

JAS

List by Functional Space

| FS# | FS Description | Homogeneous Area Description | HA# | Amount | Units | Asbestos |
|---|---|---|---|---|---|---|
| 1 | Main Entrance | Door Caulk - Gray | 1 | 40 | Ln. Ft. | Negative |
| 1 | Main Entrance | Door Caulk - White | 2 | 40 | Ln. Ft. | Negative |
| 1 | Main Entrance | Door Window Glaze - Black Rubber | 3 | 150 | Ln. Ft. | Negative |
| 1 | Main Entrance | Window Glaze - Black Rubber | 4 | 150 | Ln. Ft. | Negative |
| 1 | Main Entrance | Window Caulk - Gray | 5 | 40 | Ln. Ft. | Negative |
| **1** | **Main Entrance** | **Fire Door** | **6** | **4** | **Total** | **Assumed** |
| **1** | **Main Entrance** | **Fire Door Frame** | **7** | **2** | **Total** | **Assumed** |
| 2 | Main Gym | Door Caulk - White | 2 | 100 | Ln. Ft. | Negative |
| 2 | Main Gym | Door Window Glaze - Black Rubber | 3 | 75 | Ln. Ft. | Negative |
| 2 | Main Gym | Window Glaze - Black Rubber | 4 | 300 | Ln. Ft. | Negative |
| **2** | **Main Gym** | **Gym Wood Floor** | **8** | **6,750** | **Sq. Ft.** | **Assumed** |
| **2** | **Main Gym** | **Mastic for Gym Wood Floor** | **9** | **6,750** | **Sq. Ft.** | **Assumed** |
| 2 | Main Gym | Wall Joint Caulk - White | 10 | 200 | Ln. Ft. | Negative |
| 2 | Main Gym | Corner Covebase - Black | 11 | 350 | Ln. Ft. | Negative |
| 2 | Main Gym | Mastic for Corner Covebase - Black | 12 | 350 | Ln. Ft. | Negative |
| 2 | Main Gym | Door Caulk - Black | 13 | 30 | Ln. Ft. | Negative |
| 2 | Main Gym | Window Caulk - Black | 24 | 150 | Ln. Ft. | Negative |
| 3 | North Bleachers | Drywall | 14 | 216 | Sq. Ft. | Negative |
| 3 | North Bleachers | Drywall Mud | 15 | 216 | Sq. Ft. | Negative |
| 3 | North Bleachers | Drywall Tape | 16 | 216 | Sq. Ft. | Negative |
| 3 | North Bleachers | Carpet Glue - Yellow | 17 | 432 | Sq. Ft. | Negative |
| 4 | South Bleachers | Drywall | 14 | 432 | Sq. Ft. | Negative |
| 4 | South Bleachers | Drywall Mud | 15 | 432 | Sq. Ft. | Negative |
| 4 | South Bleachers | Drywall Tape | 16 | 432 | Sq. Ft. | Negative |
| 4 | South Bleachers | Carpet Glue - Yellow | 17 | 432 | Sq. Ft. | Negative |
| **5** | **Gym Storage/Electrical** | **Fire Door** | **6** | **3** | **Total** | **Assumed** |
| 5 | Gym Storage/Electrical | Door Caulk - Black | 13 | 60 | Ln. Ft. | Negative |
| 6 | Kitchen | Door Caulk - White | 2 | 20 | Ln. Ft. | Negative |
| **6** | **Kitchen** | **Fire Door** | **6** | **4** | **Total** | **Assumed** |
| 6 | Kitchen | Wall Joint Caulk - White | 10 | 20 | Ln. Ft. | Negative |
| 6 | Kitchen | Door Caulk - Black | 13 | 40 | Ln. Ft. | Negative |
| 6 | Kitchen | 2' x 2' Ceiling Panel - Moonscape | 18 | 320 | Sq. Ft. | Negative |
| 6 | Kitchen | Sink Undercoating - Gray | 19 | 1 | Total | Negative |
| 6 | Kitchen | Vinyl Floor Sheeting - Red | 20 | 320 | Sq. Ft. | Negative |
| 6 | Kitchen | Mastic for Vinyl Floor Sheeting - Red | 21 | 320 | Sq. Ft. | Negative |
| 6 | Kitchen | 4" Covebase - Brown | 22 | 50 | Ln. Ft. | Negative |

JAS

List by Functional Space

| FS# | FS Description | Homogeneous Area Description | HA# | Amount | Units | Asbestos |
|---|---|---|---|---|---|---|
| 6 | Kitchen | Mastic for 4" Covebase - Brown | 23 | 50 | Ln. Ft. | Negative |
| 7 | Stage | Door Caulk - White | 2 | 20 | Ln. Ft. | Negative |
| **7** | **Stage** | **Gym Wood Floor** | **8** | **990** | **Sq. Ft.** | **Assumed** |
| **7** | **Stage** | **Mastic for Gym Wood Floor** | **9** | **990** | **Sq. Ft.** | **Assumed** |
| 7 | Stage | Wall Joint Caulk - White | 10 | 60 | Ln. Ft. | Negative |
| 7 | Stage | Corner Covebase - Black | 11 | 120 | Ln. Ft. | Negative |
| 7 | Stage | Mastic for Corner Covebase - Black | 12 | 120 | Ln. Ft. | Negative |
| 7 | Stage | Door Caulk - Black | 13 | 40 | Ln. Ft. | Negative |
| 7 | Stage | 2' x 2' Ceiling Panel - Moonscape | 18 | 20 | Sq. Ft. | Negative |
| 8 | Men's Locker Room Foyer | Wall Joint Caulk - White | 10 | 10 | Ln. Ft. | Negative |
| 8 | Men's Locker Room Foyer | 2' x 2' Ceiling Panel - Moonscape | 18 | 50 | Sq. Ft. | Negative |
| 9 | Women's Locker Room Foyer | Wall Joint Caulk - White | 10 | 10 | Ln. Ft. | Negative |
| 9 | Women's Locker Room Foyer | 2' x 2' Ceiling Panel - Moonscape | 18 | 50 | Sq. Ft. | Negative |
| 10 | Custodial Closet | Door Caulk - White | 2 | 20 | Ln. Ft. | Negative |
| **10** | **Custodial Closet** | **Fire Door** | **6** | **1** | **Total** | **Assumed** |
| 10 | Custodial Closet | 2' x 2' Ceiling Panel - Moonscape | 18 | 25 | Sq. Ft. | Negative |
| 11 | Men's Locker Room | Door Caulk - White | 2 | 40 | Ln. Ft. | Negative |
| 11 | Men's Locker Room | Wall Joint Caulk - White | 10 | 30 | Ln. Ft. | Negative |
| 11 | Men's Locker Room | Door Caulk - Black | 13 | 20 | Ln. Ft. | Negative |
| 11 | Men's Locker Room | 2' x 2' Ceiling Panel - Moonscape | 18 | 600 | Sq. Ft. | Negative |
| 11 | Men's Locker Room | Duct Insulation - Gray Plastic | 25 | 100 | Sq. Ft. | Negative |
| 12 | Women's Locker Room | Door Caulk - White | 2 | 40 | Ln. Ft. | Negative |
| 12 | Women's Locker Room | Wall Joint Caulk - White | 10 | 30 | Ln. Ft. | Negative |
| 12 | Women's Locker Room | Door Caulk - Black | 13 | 20 | Ln. Ft. | Negative |
| 12 | Women's Locker Room | 2' x 2' Ceiling Panel - Moonscape | 18 | 600 | Sq. Ft. | Negative |
| 12 | Women's Locker Room | Duct Insulation - Gray Plastic | 25 | 100 | Sq. Ft. | Negative |

JAS

List by Homogeneous Area

| FS# | FS Description | Homogeneous Area Description | HA# | Amount | Units | Asbestos |
|---|---|---|---|---|---|---|
| 1 | Main Entrance | Door Caulk - Gray | 1 | 40 | Ln. Ft. | Negative |
| 1 | Main Entrance | Door Caulk - White | 2 | 40 | Ln. Ft. | Negative |
| 2 | Main Gym | Door Caulk - White | 2 | 100 | Ln. Ft. | Negative |
| 6 | Kitchen | Door Caulk - White | 2 | 20 | Ln. Ft. | Negative |
| 7 | Stage | Door Caulk - White | 2 | 20 | Ln. Ft. | Negative |
| 10 | Custodial Closet | Door Caulk - White | 2 | 20 | Ln. Ft. | Negative |
| 11 | Men's Locker Room | Door Caulk - White | 2 | 40 | Ln. Ft. | Negative |
| 12 | Women's Locker Room | Door Caulk - White | 2 | 40 | Ln. Ft. | Negative |
| 1 | Main Entrance | Door Window Glaze - Black Rubber | 3 | 150 | Ln. Ft. | Negative |
| 2 | Main Gym | Door Window Glaze - Black Rubber | 3 | 75 | Ln. Ft. | Negative |
| 1 | Main Entrance | Window Glaze - Black Rubber | 4 | 150 | Ln. Ft. | Negative |
| 2 | Main Gym | Window Glaze - Black Rubber | 4 | 300 | Ln. Ft. | Negative |
| 1 | Main Entrance | Window Caulk - Gray | 5 | 40 | Ln. Ft. | Negative |
| **1** | **Main Entrance** | **Fire Door** | **6** | **4** | **Total** | **Assumed** |
| **5** | **Gym Storage/Electrical** | **Fire Door** | **6** | **3** | **Total** | **Assumed** |
| **6** | **Kitchen** | **Fire Door** | **6** | **4** | **Total** | **Assumed** |
| **10** | **Custodial Closet** | **Fire Door** | **6** | **1** | **Total** | **Assumed** |
| **1** | **Main Entrance** | **Fire Door Frame** | **7** | **2** | **Total** | **Assumed** |
| **2** | **Main Gym** | **Gym Wood Floor** | **8** | **6,750** | **Sq. Ft.** | **Assumed** |
| **7** | **Stage** | **Gym Wood Floor** | **8** | **990** | **Sq. Ft.** | **Assumed** |
| **2** | **Main Gym** | **Mastic for Gym Wood Floor** | **9** | **6,750** | **Sq. Ft.** | **Assumed** |
| **7** | **Stage** | **Mastic for Gym Wood Floor** | **9** | **990** | **Sq. Ft.** | **Assumed** |
| 2 | Main Gym | Wall Joint Caulk - White | 10 | 200 | Ln. Ft. | Negative |
| 6 | Kitchen | Wall Joint Caulk - White | 10 | 20 | Ln. Ft. | Negative |
| 7 | Stage | Wall Joint Caulk - White | 10 | 60 | Ln. Ft. | Negative |
| 8 | Men's Locker Room Foyer | Wall Joint Caulk - White | 10 | 10 | Ln. Ft. | Negative |
| 9 | Women's Locker Room Foyer | Wall Joint Caulk - White | 10 | 10 | Ln. Ft. | Negative |
| 11 | Men's Locker Room | Wall Joint Caulk - White | 10 | 30 | Ln. Ft. | Negative |
| 12 | Women's Locker Room | Wall Joint Caulk - White | 10 | 30 | Ln. Ft. | Negative |
| 2 | Main Gym | Corner Covebase - Black | 11 | 350 | Ln. Ft. | Negative |
| 7 | Stage | Corner Covebase - Black | 11 | 120 | Ln. Ft. | Negative |
| 2 | Main Gym | Mastic for Corner Covebase - Black | 12 | 350 | Ln. Ft. | Negative |
| 7 | Stage | Mastic for Corner Covebase - Black | 12 | 120 | Ln. Ft. | Negative |
| 2 | Main Gym | Door Caulk - Black | 13 | 30 | Ln. Ft. | Negative |
| 5 | Gym Storage/Electrical | Door Caulk - Black | 13 | 60 | Ln. Ft. | Negative |
| 6 | Kitchen | Door Caulk - Black | 13 | 40 | Ln. Ft. | Negative |

| FS# | FS Description | Homogeneous Area Description | HA# | Amount | Units | Asbestos |
|---|---|---|---|---|---|---|
| 7 | Stage | Door Caulk - Black | 13 | 40 | Ln. Ft. | Negative |
| 11 | Men's Locker Room | Door Caulk - Black | 13 | 20 | Ln. Ft. | Negative |
| 12 | Women's Locker Room | Door Caulk - Black | 13 | 20 | Ln. Ft. | Negative |
| 3 | North Bleachers | Drywall | 14 | 216 | Sq. Ft. | Negative |
| 4 | South Bleachers | Drywall | 14 | 432 | Sq. Ft. | Negative |
| 3 | North Bleachers | Drywall Mud | 15 | 216 | Sq. Ft. | Negative |
| 4 | South Bleachers | Drywall Mud | 15 | 432 | Sq. Ft. | Negative |
| 3 | North Bleachers | Drywall Tape | 16 | 216 | Sq. Ft. | Negative |
| 4 | South Bleachers | Drywall Tape | 16 | 432 | Sq. Ft. | Negative |
| 3 | North Bleachers | Carpet Glue - Yellow | 17 | 432 | Sq. Ft. | Negative |
| 4 | South Bleachers | Carpet Glue - Yellow | 17 | 432 | Sq. Ft. | Negative |
| 6 | Kitchen | 2' x 2' Ceiling Panel - Moonscape | 18 | 320 | Sq. Ft. | Negative |
| 7 | Stage | 2' x 2' Ceiling Panel - Moonscape | 18 | 20 | Sq. Ft. | Negative |
| 8 | Men's Locker Room Foyer | 2' x 2' Ceiling Panel - Moonscape | 18 | 50 | Sq. Ft. | Negative |
| 9 | Women's Locker Room Foyer | 2' x 2' Ceiling Panel - Moonscape | 18 | 50 | Sq. Ft. | Negative |
| 10 | Custodial Closet | 2' x 2' Ceiling Panel - Moonscape | 18 | 25 | Sq. Ft. | Negative |
| 11 | Men's Locker Room | 2' x 2' Ceiling Panel - Moonscape | 18 | 600 | Sq. Ft. | Negative |
| 12 | Women's Locker Room | 2' x 2' Ceiling Panel - Moonscape | 18 | 600 | Sq. Ft. | Negative |
| 6 | Kitchen | Sink Undercoating - Gray | 19 | 1 | Total | Negative |
| 6 | Kitchen | Vinyl Floor Sheeting - Red | 20 | 320 | Sq. Ft. | Negative |
| 6 | Kitchen | Mastic for Vinyl Floor Sheeting - Red | 21 | 320 | Sq. Ft. | Negative |
| 6 | Kitchen | 4" Covebase - Brown | 22 | 50 | Ln. Ft. | Negative |
| 6 | Kitchen | Mastic for 4" Covebase - Brown | 23 | 50 | Ln. Ft. | Negative |
| 2 | Main Gym | Window Caulk - Black | 24 | 150 | Ln. Ft. | Negative |
| 11 | Men's Locker Room | Duct Insulation - Gray Plastic | 25 | 100 | Sq. Ft. | Negative |
| 12 | Women's Locker Room | Duct Insulation - Gray Plastic | 25 | 100 | Sq. Ft. | Negative |

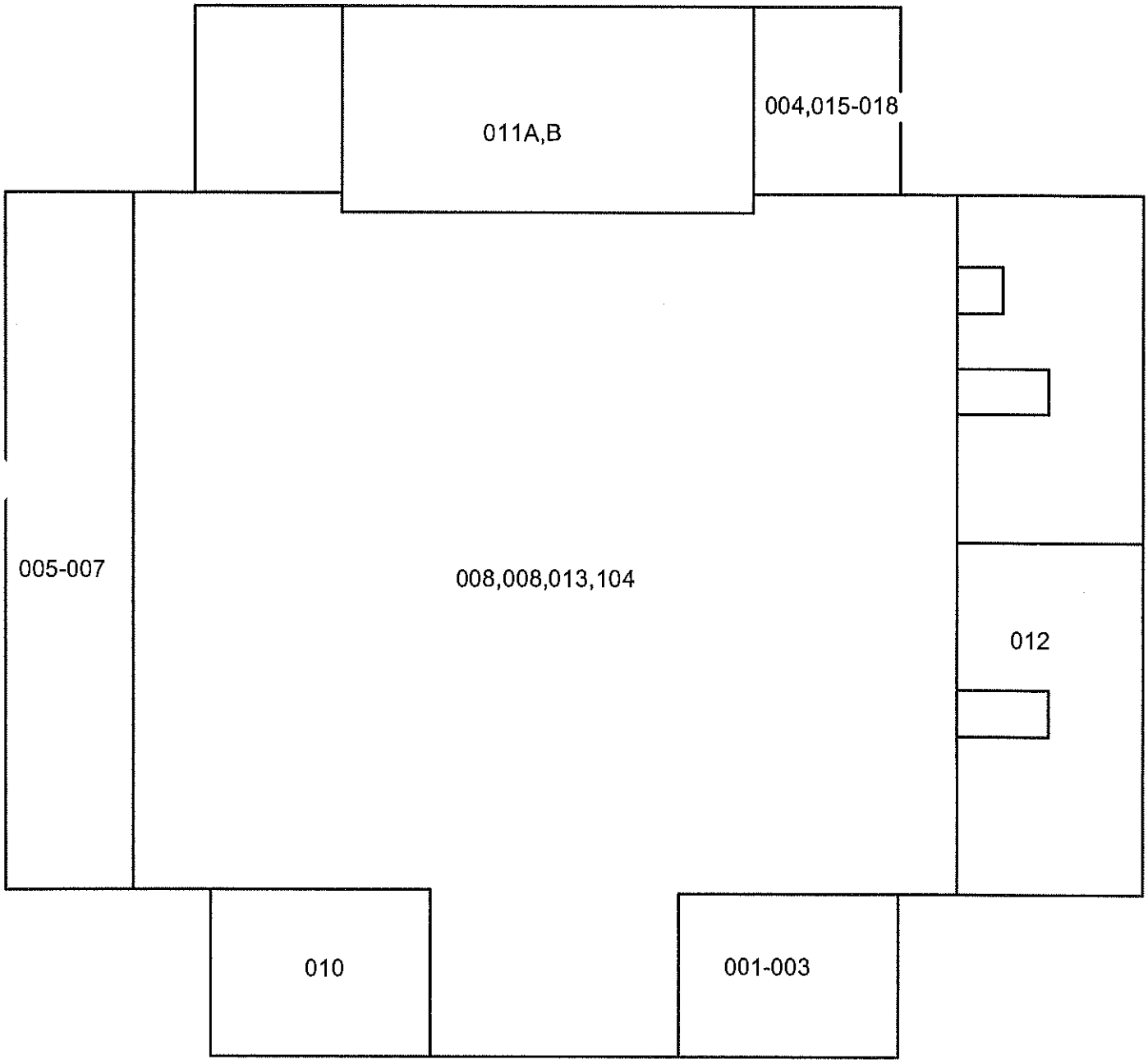
| ACM Sample # | FS# | FS Description | Homogeneous Area Description | HA# | F/NF | S/TSI/M | Sample Location | Asbestos Result |
|---|---|---|---|---|---|---|---|---|
| CI0810/KB102- 001 | 4 | South Bleachers | Drywall | 14 | NF | M | NW Corner | None Detected |
| CI0810/KB102- 002 | 4 | South Bleachers | Drywall Mud | 15 | NF | M | NW Corner | None Detected |
| CI0810/KB102- 003 | 4 | South Bleachers | Drywall Tape | 16 | NF | M | NW Corner | None Detected |
| CI0810/KB102- 004 | 6 | Kitchen | 2' x 2' Ceiling Panel - Moonscape | 18 | F | M | SW Corner | None Detected |
| CI0810/KB102- 005 | 1 | Main Entrance | Door Caulk - Gray | 1 | 5 | M | From Door | None Detected |
| CI0810/KB102- 006 | 1 | Main Entrance | Door Window Glaze - Black Rubber | 3 | 6 | M | From Door Window | None Detected |
| CI0810/KB102- 007 | 1 | Main Entrance | Window Caulk - Gray | 5 | 7 | M | From Window | None Detected |
| CI0810/KB102- 008 | 2 | Main Gym | Window Caulk - Black | 24 | 8 | M | From Window | None Detected |
| CI0810/KB102- 009 | 2 | Main Gym | Window Glaze - Black Rubber | 4 | 9 | M | From Window | None Detected |
| CI0810/KB102- 010 | 3 | North Bleachers | Carpet Glue - Yellow | 17 | 10 | M | NE Corner | None Detected |
| CI0810/KB102- 011A | 7 | Stage | Corner Covebase - Black | 11 | 11 | M | SE Corner | None Detected |
| CI0810/KB102- 011B | 7 | Stage | Mastic for Corner Covebase - Black | 12 | 11 | M | SE Corner | None Detected |
| CI0810/KB102- 012A | 11 | Men's Locker Room | Duct Insulation - Gray Plastic | 25 | 12 | TSI | From Duct | None Detected |
| CI0810/KB102- 012B | 2 | Main Gym | Wall Joint Caulk - White | 10 | 13 | M | NE Corner | None Detected |
| CI0810/KB102- 013 | 2 | Main Gym | Door Caulk - White | 2 | 14 | M | East Door | None Detected |
| CI0810/KB102- 014 | 6 | Kitchen | Sink Undercoating - Gray | 19 | 15 | M | From Sink | None Detected |
| CI0810/KB102- 015 | 6 | Kitchen | Vinyl Floor Sheeting - Red | 20 | 16 | M | SW Corner | None Detected |
| CI0810/KB102- 016 | 6 | Kitchen | Mastic for Vinyl Floor Sheeting - Red | 21 | 16 | M | SW Corner | None Detected |
| CI0810/KB102- 017A | 6 | Kitchen | 4" Covebase - Brown | 22 | 17 | M | NE Corner | None Detected |
| CI0810/KB102- 017B | 6 | Kitchen | Mastic for 4" Covebase - Brown | 23 | 17 | M | NE Corner | None Detected |
| CI0810/KB102- 018 | 6 | Kitchen | Door Caulk - Black | 13 | 18 | M | From Door | None Detected |

Samples Collected By; Patrick Lenk
Samples Collected On; 09/27/2016

KINGSBURY COUNTRY DAY SCHOOL

JUSTIN A. SCHWARTZ CENTER

SAMPLE COLLECTION MAP



**EMSL Analytical, Inc.**
212 South Wagner Road Ann Arbor, MI 48103
Tel/Fax: (734) 668-6810 / (734) 668-8532
http://www.EMSL.com / annarborlab@emsl.com

**EMSL Order:** 081602660
**Customer ID:** NOVA53
**Customer PO:**
**Project ID:**

**Attention:** Jeff Benya
Nova Environmental, Inc
5300 Plymouth Rd
Ann Arbor, MI 48105

**Phone:** (734) 930-0995
**Fax:** (734) 930-2969
**Received Date:** 09/28/2016 8:00 AM
**Analysis Date:** 09/28/2016
**Collected Date:**

**Project:** CI0810/KB102 / Kingsbury (CS Partners) / JAS

## *Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy*

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| Sample | Description | Appearance | % Fibrous | % Non-Fibrous | % Type |
| CI0810/KB102-001<br>*081602660-0001* | DW | Brown/Gray<br>Fibrous<br>Heterogeneous | 3% Cellulose<br><1% Glass | 97% Non-fibrous (Other) | None Detected |
| CI0810/KB102-002<br>*081602660-0002* | M | White<br>Non-Fibrous<br>Homogeneous | <1% Wollastonite | 3% Ca Carbonate<br><1% Mica<br>97% Non-fibrous (Other) | None Detected |
| CI0810/KB102-003<br>*081602660-0003* | Tape | White<br>Fibrous<br>Homogeneous | 90% Cellulose | 10% Non-fibrous (Other) | None Detected |
| CI0810/KB102-004<br>*081602660-0004* | CP | Gray<br>Fibrous<br>Homogeneous | 2% Cellulose<br>65% Min. Wool | 25% Perlite<br>8% Non-fibrous (Other) | None Detected |
| CI0810/KB102-005<br>*081602660-0005* | | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| 0/KB102-006<br>*081602660-0006* | | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| CI0810/KB102-007<br>*081602660-0007* | | Gray<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| CI0810/KB102-008<br>*081602660-0008* | | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| CI0810/KB102-009<br>*081602660-0009* | | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| CI0810/KB102-010<br>*081602660-0010* | | Yellow<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| CI0810/KB102-011A<br>*081602660-0011* | CB | Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| CI0810/KB102-011B<br>*081602660-0012* | | Tan/Yellow<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| CI0810/KB102-012A<br>*081602660-0013* | Wrap | Gray<br>Fibrous<br>Homogeneous | <1% Cellulose<br>5% Glass | 95% Non-fibrous (Other) | None Detected |
| CI0810/KB102-012B<br>*081602660-0013A* | Insulation | Yellow<br>Fibrous<br>Homogeneous | 98% Glass | 2% Non-fibrous (Other) | None Detected |
| CI0810/KB102-013<br>*081602660-0014* | | Gray/White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| )/KB102-014<br>*081602660-0015* | | White<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |

Initial report from: 09/28/2016 16:42:26

**EMSL Analytical, Inc.**
212 South Wagner Road Ann Arbor, MI 48103
Tel/Fax: (734) 668-6810 / (734) 668-8532
http://www.EMSL.com / annarborlab@emsl.com

**EMSL Order:** 081602660
**Customer ID:** NOVA53
**Customer PO:**
**Project ID:**

## *Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy*

| | | | Non-Asbestos | | Asbestos |
|---|---|---|---|---|---|
| **Sample** | **Description** | **Appearance** | **% Fibrous** | **% Non-Fibrous** | **% Type** |
| CI0810/KB102-015<br>*081602660-0016* | | Gray<br>Fibrous<br>Homogeneous | 30% Cellulose | 70% Non-fibrous (Other) | None Detected |
| CI0810/KB102-016A<br>*081602660-0017* | FI Sheet | Brown/White<br>Non-Fibrous<br>Heterogeneous | 5% Cellulose<br><1% Glass | 95% Non-fibrous (Other) | None Detected |
| CI0810/KB102-016B<br>*081602660-0018* | Adhesive | White<br>Non-Fibrous<br>Homogeneous | 3% Cellulose | 97% Non-fibrous (Other) | None Detected |
| CI0810/KB102-016C<br>*081602660-0018A* | Leveler | Gray<br>Non-Fibrous<br>Homogeneous | 10% Cellulose | 90% Non-fibrous (Other) | None Detected |
| CI0810/KB102-017A<br>*081602660-0019* | CB | Brown/Black<br>Non-Fibrous<br>Homogeneous | | 100% Non-fibrous (Other) | None Detected |
| CI0810/KB102-017B<br>*081602660-0020* | | Yellow<br>Non-Fibrous<br>Homogeneous | 3% Cellulose | 97% Non-fibrous (Other) | None Detected |
| CI0810/KB102-018<br>*081602660-0021* | | Gray<br>Non-Fibrous<br>Homogeneous | <1% Wollastonite | 100% Non-fibrous (Other) | None Detected |

Analyst(s)
*Eric Budai (23)*

Ryan Shannon, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim `uct certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL nmends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless quested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Ann Arbor, MI NVLAP Lab Code 101048-4

Initial report from: 09/28/2016 16:42:26

| FS# | FS Description | Homogeneous Area Description | HA# | Amount | Units | S/TSI/M | Hazard Assessment | Response Action | Justification | Schedule |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Main Entrance | Fire Door | 6 | 4 | Total | M | *Non-Friable | Maintain under O & M | Material is Intact | Ongoing |
| 5 | Gym Storage/Electrical | Fire Door | 6 | 3 | Total | M | *Non-Friable | Maintain under O & M | Material is Intact | Ongoing |
| 6 | Kitchen | Fire Door | 6 | 4 | Total | M | *Non-Friable | Maintain under O & M | Material is Intact | Ongoing |
| 10 | Custodial Closet | Fire Door | 6 | 1 | Total | M | *Non-Friable | Maintain under O & M | Material is Intact | Ongoing |
| 1 | Main Entrance | Fire Door Frame | 7 | 2 | Total | M | *Non-Friable | Maintain under O & M | Material is Intact | Ongoing |
| 2 | Main Gym | Gym Wood Floor | 8 | 6,750 | Sq. Ft. | M | *Non-Friable | Maintain under O & M | Material is Intact | Ongoing |
| 7 | Stage | Gym Wood Floor | 8 | 990 | Sq. Ft. | M | *Non-Friable | Maintain under O & M | Material is Intact | Ongoing |
| 2 | Main Gym | Mastic for Gym Wood Floor | 9 | 6,750 | Sq. Ft. | M | *Non-Friable | Maintain under O & M | Material is Intact | Ongoing |
| 7 | Stage | Mastic for Gym Wood Floor | 9 | 990 | Sq. Ft. | M | *Non-Friable | Maintain under O & M | Material is Intact | Ongoing |

## OVERVIEW OF THE OPERATIONS AND MAINTENANCE PROGRAM

This is the Operations and Maintenance Program Manual for:

# Justin A. Schwartz Center

The Operations and Maintenance Program (commonly referred to as an O & M Program) is a set of work practices and procedures designed to minimize or eliminate the exposure of building occupants to asbestos fibers. It is not presently feasible for **Justin A. Schwartz Center** to remove all of the asbestos-containing materials from this facility. However, it is feasible to implement an O & M Program to maintain and manage the existing asbestos-containing materials. It is **Justin A. Schwartz Center's** long-term plan to ultimately remove the vast majority of friable asbestos-containing materials from their facilities. Until this goal can be attained, the O & M Program will be used to provide the maximum feasible level of protection to the public, occupants and workers in this facility.

### A. Environmental Protection Agency Goals

The Environmental Protection Agency (EPA) has established two basic O & M Program goals as defined in EPA reference guides and training manuals. These goals are:

1. Clean up pre-existing asbestos contamination, which has occurred from past work, accidents and daily activities. This is accomplished through detailed initial cleaning procedures identified in Section I, Part 5 of this O & M Program Manual.

2. Maintain asbestos materials that remain in buildings in good condition. This is accomplished through detailed work and emergency practices identified in Section II, Parts 1 and 2 of this O & M Program Manual.

### B. Occupational Safety and Health Administration (OSHA) Goals

The primary goals of the Occupational Safety and Health Administration (OSHA) are to:

1. Ensure the protection of employees from unintentional exposure to asbestos containing materials (ACM).

2. Ensure that employees who must disturb ACM are trained and protected pursuant to existing regulatory standards.

This O & M Program Manual has established procedures that attempt to meet and in certain cases exceed the EPA and OSHA goals outlined above.

## C. Description of the O & M Program Manual

This O & M Program Manual is divided into Section I and Section II. Section I has 5 parts and Section II has 2 parts, as outlined in the table of contents. Both sections have summaries explaining their use, and the summaries should be consulted for a general overview of each section. While the summaries will aid in a clear understanding of each section, the manual should be read and used in its entirety for the Asbestos Program to function properly. This O & M Program Manual is divided and used as follows:

1. **Section I** covers administrative procedures that must be conducted in order for the O & M Program to function properly. Before any in-house O & M activities commence in this facility, all procedures located in Section I (excluding part 5, d & e) should be completed and/or placed into operation. Key personnel involved with the O & M Program are identified with a brief description of their responsibilities. This section serves as a type of checklist for at least minimal compliance with federal regulatory requirements.

2. **Section II** covers emergency/work practices for specific asbestos-containing materials. This section is the day-to-day functioning part of the O & M Program and provides step-by-step procedures for dealing with the various asbestos-containing materials that may be present in your building.

Refer to each Section as needed. Both sections are, however, extremely interrelated and should be continuously and simultaneously used. As mentioned above, each section has a summary detailing its contents and use. The summaries should be thoroughly read for a clear understanding of this O & M Program Manual. It is also important to note that if you are involved with any aspect of the O & M Program, it is essential that you read and understand the entire contents of this manual.

## SECTION I

## Administrative Procedures

# Section I

## Summary

The Federal OSHA Asbestos Standards (29CFR Part 1910 and 1926.1101) identify a wide range of employer responsibilities including but not limited to notification procedures, training requirements, personal protection procedures and labeling to name a few.

In order to properly implement this Operation and Maintenance (O & M) Program there are a number of administrative steps that need to be taken. These steps are delineated into five (5) distinctive parts within this section.

This section is divided into five (5) parts; all parts need to be diligently implemented for an effective O & M Program.

**Part 1** - Part 1 details general administrative responsibilities and recordkeeping.

**Part 2** - Part 2 details the methods in which employees are notified of asbestos related issues.

**Part 3** - Part 3 details the training requirements for employees and outside contractors.

**Part 4** - Part 4 details the employee protection pursuant to applicable OSHA regulations.

**Part 5** - Part 5 details the procedures for surveillance and housekeeping activities within this facility.

**Section I**
**Part 1**

## General Administrative Responsibilities and Recordkeeping

### A. Administrative Responsibilities

The **Designated Person** is responsible for ensuring that all asbestos related activities are carried out in accordance with applicable with Federal, State and Local Regulations and ordinances. The following is a brief summary of a partial list of regulations that must be complied with.

## Federal Regulations

EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) 40CFR Part 61

The NESHAP Regulation is a federal standard affecting all public and commercial buildings. The primary components of the law address demolition, renovation and governmental agency notification when amounts greater than 160 square feet, 260 linear feet or 35 cubic feet of friable ACM are impacted or disturbed. The standard also addresses ACM waste disposal information and procedures.

EPA Asbestos Hazard Emergency Response Act (AHERA) 40CFR Part 763

The AHERA regulation is a federal standard that affects only kindergarten through 12$^{th}$ grade school districts. This standard requires school districts to conduct ACM Inspections within each of their facilities and develop Management Plans to monitor asbestos activities. The law also addresses training, recordkeeping and notification issues to name a few.

Occupational Safety and Health Administration (OSHA) General Industry & Construction

The OSHA asbestos standards are primarily focused on employee protection and training. The law addresses multi-employer worksites, regulated areas, exposure assessments/monitoring, methods of compliance, employee protection, communication of hazards, housekeeping and medical surveillance. Generally, the OSHA Construction Standard is designed to ensure that all employees who may disturb ACM are properly trained in appropriate procedures and equipped to protect themselves and other building occupants from possible asbestos exposure.

## Michigan State Regulations

Public Act 135 of 1986

This State law provides for the licensing of asbestos abatement contractors. This regulation also includes air clearance samples at the completion of friable asbestos abatement projects.

Public Act 440 of 1988

This State law provides for the accreditation of certain asbestos related disciplines, such as, Inspectors, Management Planners, Project Designers, Abatement Workers and Contractor/Supervisors (Competent Person).

Rule 6601

This rule requires employers to instruct each employee in the recognition and avoidance of unsafe conditions, and the regulations applicable to his/her work environment to control or eliminate any hazards or other exposure to illness or injury. Asbestos would be one such hazard.

If you are interested in receiving copies of these laws or need clarification, contact the relevant agencies listed below:

| | |
|---|---|
| EPA NESHAP | Michigan Department of Environmental Quality<br>(517) 373-7064 |
| EPA AHERA | EPA Region V<br>(312) 353-9062 |
| OSHA/Michigan State Laws | Michigan Department of Licensing & Regulatory Affairs<br>(517) 284-7680 |

The first step in implementing an O & M Program is to know what is and is not asbestos-containing material in your building(s). According to OSHA, you must assume all surfacing material, floor material and thermal system insulation in buildings constructed prior to 1980 to be asbestos-containing. Therefore, your firm is required to treat these materials as asbestos until samples of the materials are collected and analyzed pursuant to 1926.1101 (k) (ii) (B).

If the building is constructed subsequent to 1980, you cannot assume that there is no ACM present. It is Nova Environmental, Inc.'s recommendation that, if an inclusive asbestos inspection has not been previously conducted, that there be a full inspection of this facility conducted by an Accredited Asbestos Inspector.

The second step in implementing an effective O & M Program is to designate an individual to ensure that the procedures stated in this manual are properly conducted and that the recordkeeping procedures are performed. This person will here in after be referred to as the Asbestos Administrator.

**Name of Asbestos Administrator: Mr. Todd Dryer**

**Title: Facility Compliance Coordinator, CS Partners**

**Phone Number: (810) 229-5145**

It is expected that the Designated Person become properly trained to perform the expected duties. This will entail a minimum of the Designated Person Training Program.

**Section I**
**Part 1**

## Recordkeeping

There is extensive recordkeeping mandated by the OSHA regulation and accepted industry practices. The recordkeeping provides the basis for ensuring documented compliance with the regulation. It is vital that the recordkeeping be completed accurately and submitted in an organized manner so as to track all Class I, II and III Work.

The Asbestos Administrator will be responsible for maintaining all relevant records in an O & M Program File.

The following is a list and brief description of Recordkeeping Forms located in Appendix D of the O & M Program Manual.

**Form D – 1** Class IV Asbestos Work - Miscellaneous OSHA and EPA Recordkeeping
This form is to be completed when Class IV work activities are conducted.

**Form D – 2** Class I, II and III Asbestos Work - Miscellaneous OSHA and EPA Recordkeeping
This form is to be completed each time Class I through III work activities are conducted.

**Form D – 3** Employer/Employee/Tenant Notification
This form is to be completed in order to document applicable asbestos notification.

**Form D – 4** Contractor Certification of Asbestos-Free Product Installation
This form is to be completed by outside Contractors who are installing building materials, certifying that the products being installed are non-ACM.

**Form D – 5** Proof of Asbestos Awareness Training
This form is to be completed, documenting that all custodial/maintenance employees who may contact ACM are trained in two hour Asbestos Awareness.

**Form D – 6** Proof of Generic Material Training
This form is to be completed, documenting that employees conducting Class II work are trained 8 hours in that generic type of material.

**Form D – 7** Proof of O & M Training
This form is to be completed, documenting that employees who may disturb asbestos in small amounts are trained in 16 hours O & M.

**Form D – 8** Proof of Worker Training Program
Sample Form to provide a listing of the personnel that have attended the Asbestos Worker Training Program and have obtained State Accreditation.

**Form D – 9** Contractor Supervisor Training Program, 40-Hour Course (Class IV Work)
Sample Form to provide a listing of the personnel that have attended the Contractor Supervisor Training Program and have obtained State Accreditation.

**Form D – 10** Warning Label Installation
Sample of required label information.

**Section I**
**Part 2**

## Notification Procedures

### A. Employee Notification

All employees who work at **Justin A. Schwartz Center** must be notified of the presence, location and quantity of ACM/PACM within the facility. Notification either shall be in writing or shall consist of a personal communication between the owner and the employee. (See Notification Form D-3)

### B. Tenant Notification

All tenants of **Justin A. Schwartz Center** must be notified of the presence, location and quantity of ACM/PACM within the facility. Notification shall either be in writing or shall consist of a personal communication between the owner and the tenant (see Notification Form D-3)

### C. Contractor Notification

All contractors who will work at **Justin A. Schwartz Center** must be notified of the presence, location and quantity of ACM/PACM within the facility, specifically those materials located within the areas where they will be working. The Contractor will be required to sign a document stating that he/she has been notified. The Contractors will have the opportunity to meet with the Asbestos Administrator to discuss how their scope-of-work may impact ACM. The Notification Form D-3, located in Appendix D, must be completed by each Contractor prior to working at **Justin A. Schwartz Center.**

All products or types of products, being installed or brought into the facility must, in no way, utilize asbestos-containing materials without prior written approval of the Asbestos Administrator. Whenever materials are used, installed, or in any way becomes a building fixture, component and/or new entity, the contractor shall sign a document stating that these materials and/or products are asbestos-free. The Contractor Certification of Asbestos-Free Product Installation, Form D-4, located in Appendix D, must be completed by each contractor prior to installing products into Justin A. Schwartz Center facility.

In both of the above cases, the Asbestos Administrator will notify the contractors about these requirements and include the documentation forms within the O & M Program File.

**Section I**
**Part 3**

## Training Procedures

### A. 2-Hour Asbestos Awareness Training (Class IV)

The OSHA regulation requires all maintenance and/or custodial staff who may contact asbestos-containing materials to receive at least two hours of asbestos awareness training.

All maintenance and/or custodial staff who work at **Justin A. Schwartz Center** have been trained in this 2-Hour Asbestos Awareness Course and have received proof of this training. The documentation must be kept available for reference upon request.

All new or temporary maintenance and/or custodial staff who are employed by **Justin A. Schwartz Center** will be trained within 60 days after commencement of employment. If an employee is transferred from one of the buildings to another and has not had the required training, the training will be completed within the same time parameters.

The Asbestos Administrator will complete the Proof of Asbestos Awareness Training, Form D-5, Located in Appendix D, for inclusion in the O & M Program File.

### B. 16-Hour Operations and Maintenance Training (Class III)

The OSHA regulation requires all maintenance and/or custodial staff who conduct activities that may result in the disturbance of asbestos- containing materials receive, at a minimum, sixteen hours of asbestos training (the above-referenced 2-hour course plus an additional fourteen hours of training).

All maintenance and/or custodial staff who, in any way, may disturb asbestos-containing materials have received this training. Thus, all maintenance activities which will be handled by in-house maintenance and/or custodial staff will be performed by individuals who are familiar with the necessary precautions to be taken when disturbing asbestos-containing materials.

All maintenance and/or custodial personnel who have attended a 16-Hour Operations and Maintenance Training Course have received course completion certificates. These certificates should be kept in a secure location for future reference.

The Asbestos Administrator will complete the Proof of Operations and Maintenance Training, Form D-7, located in Appendix D, for inclusion in the O & M Program File.

**Section I**
**Part 4**

## Employee Protection Program

### A. Respirator Program

The Occupational Safety and Health Administration (OSHA) Asbestos Standard states that:

> "Where respiratory protection is used, the employer shall institute a respirator program in accordance with 29, CFR 1910.134 (b), (d), (e), and (f)." OSHA, 29 CFR, 1926.1101 (h)(3)(i)

**Justin A. Schwartz Center** has a respirator program to be used by its employees who may perform activities that necessitate the use of respiratory protection. The respirator program is located in Appendix C. Respirator Program documentation forms are included within the Respirator Program.

### B. Medical Surveillance

The OSHA Asbestos Standard states that:

> "The employer shall institute a medical surveillance program for all employees who for a combined total of 30 or more days per year are engaged in Class I, II and III work or are exposed at or above the Permissible Exposure Limit." OSHA, 29 CFR, 1926.1101 (m)(1)(i)

**Justin A. Schwartz Center** will provide medical surveillance for those employees who shall be subjected to conditions that fit within one of the two categories below:

1. Employees working with asbestos materials who are assigned negative air purifying respirators.

2. Employees working in levels of asbestos at or near the Permissible Exposure Limit for 30 or more days per year.

**Justin A. Schwartz Center** shall establish at least one of the following procedures to provide necessary precautions for employees and ensure compliance with applicable regulations.

1. Provide air monitoring to establish sufficient historical data to ensure that the asbestos activities performed within the O & M Program do not exceed the Permissible Exposure Limit.

2. Provide medical surveillance to all employees working with asbestos-containing materials. This medical surveillance will be conducted in accordance with the OSHA Asbestos Standard.

If medical surveillance is provided, then the medical examination forms located in Appendix E must be completed. These forms are:

a. Medical/Safety Summary Form. This form will provide the examining doctor with a description of the employees job duties and provide **Justin A. Schwartz Center** with documentation of the examination.

b. Initial and Periodic Medical Questionnaires. These forms are required by the OSHA Asbestos Standard to be completed by the employee and provided to the examining doctor.

## C. Exposure Monitoring

The OSHA Asbestos Standard requires employers to perform exposure monitoring to determine the concentrations of asbestos to which their employees may be exposed.

This exposure monitoring must be conducted on employees who perform Class I, II or III asbestos work.

**Justin A. Schwartz Center** will perform initial monitoring of employees who may be exposed to asbestos-containing materials. This monitoring will be repeated for each type of asbestos related activity (such as pipe insulation removal using the glovebag method), until the Asbestos Administrator can demonstrate, by means of objective or historical data, that a specific activity cannot release airborne concentrations of asbestos exceeding the Permissible Exposure Level (0.1 f/cc). The Asbestos Administrator will ensure that exposure monitoring will be conducted in accordance with OSHA, 29 CFR, 1926.1101.

**Section I**
**Part 5**

**Asbestos-Containing Materials**

**Surveillance**

## A. Labeling

Warning labels will be attached immediately adjacent to any friable and nonfriable asbestos-containing building materials and presumed ACM located in routine maintenance areas (such as boiler rooms). This labeling is designed to alert the building occupants to the locations of asbestos-containing materials and the need to avoid such materials unless properly trained and equipped to impact such materials.

The Asbestos Administrator shall make sure that these warning labels are readily visible and that they remain posted until the labeled asbestos-containing material is removed.

The warning label shall read: Danger Contains Asbestos Fibers. Avoid Creating Dust. Cancer and Lung Disease Hazard.

Following the application of these labels, the Warning Label Installation, Form D-10, located in Appendix D, shall be completed. Whether the labels are attached by in-house staff or by an outside contractor, the Asbestos Administrator will have the applicable personnel complete this form and include it in the O & M Program File.

## B. Housekeeping

Pursuant to OSHA, all vacuums used on asbestos or suspected ACM must be equipped with a High Efficiency Particulate Air (HEPA) Filter. The vacuum shall be used and emptied in a manner that minimizes the re-entry of asbestos into the workplace.

## C. Waste Disposal

Asbestos waste, scrap, debris, bags, containers, equipment and contaminated clothing consigned for disposal shall be collected and disposed of in sealed, labeled impermeable bags or other closed labeled impermeable containers, except during certain roofing operations.

## D. Care of Asbestos-Containing Flooring Materials

All asbestos-containing vinyl and asphalt flooring material must be maintained in the following manner:

- Sanding of the flooring material is prohibited
- Stripping of finishes shall be conducted using low abrasion pads at speeds lower than 300 rpm and utilizing wet methods
- Burnishing or dry buffing may be performed only on flooring that has sufficient finish so that the pad cannot contact the flooring material.

## SECTION II

## Emergency/Work Practices

## Section II

### Summary

Many different activities can disturb asbestos-containing materials and raise levels of airborne asbestos fibers. These activities may be accidental, creating a minor or major fiber release episode, or these activities may be intentional, in order to perform a Class I, II or III work. In either case, **Justin A. Schwartz Center'** employees involved in these situations must know the proper procedures for handling asbestos-containing materials.

This section is divided into two parts; the first part is important definitions and instructions pertaining to work on asbestos-containing materials and emergency practices. The second part outlines Class III work (work practices) for specific asbestos- containing materials.

**Part 1**
Part 1 defines and provides instructions for Training, Major Fiber Release Episodes, Minor Fiber Release Episodes, Class III work, Class I and II work, and Unexpected Exposures.

**Part 2**
Part 2 lists various materials that have been known to contain asbestos. Please note that all the materials listed in this section may not be asbestos-containing in your facility. Each identified material has the following information:

a. Equipment needed for Class III work projects.
b. Class III work procedures.

Part 2 has five appendices, which are referenced several times. These appendices contain detailed instructions and procedures for A) Mini-Enclosure instructions, B) Asbestos-Containing Materials stored in building, C) Respirator Program, D) Documentation Forms, E) Medical Surveillance Forms and F) Glossary of Terms.

The definitions for these activities are set forth preceding the discussion of each activity and each definition should be carefully read and consulted before performing any work.

# Section II
# Part 1

**Emergency/Work Practices**

**Definitions & Instructions**

## Section II

## Part 1

The OSHA Asbestos Construction Standard (29CFR Part 1926.1101) identifies four distinct types of asbestos work and corresponding training required for each class of work. The following are the four classes of asbestos work and the training required for each. Do Not Disturb Asbestos without the Proper Training and Equipment.

**Class I Asbestos Work** - 32 Hour Asbestos Abatement Worker Training Required

Defined as activities involving the removal of thermal system insulation (TSI) and surfacing ACM.

**Class II Asbestos Work** - 32 Hour Asbestos Abatement Worker Training or 8 Hours of Training in One Generic Category of Work (such as flooring material)

Defined as activities involving the removal of ACM that is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

**Class III Asbestos Work** - 16 Hour O&M Training

Defined as repair and maintenance operations where ACM including TSI and surfacing ACM may be disturbed. (Disturbance must be limited to that which can be contained in a single 60"x 60" waste bag.

**Class IV Asbestos Work** - 2 Hour Asbestos Awareness Training

Defined as maintenance and custodial activities during which employees contact but do not disturb ACM and activities to clean up dust, waste and debris resulting from Class I, II, III and IV work activities.

Note: Annual refresher training is required for all classes of asbestos work.

Required Methods of Compliance

OSHA requires that the following three Methods for Compliance be used on **ALL** asbestos disturbances regardless of levels of airborne exposure.

1. HEPA Vacuums
2. Wet Methods
3. Prompt clean up and disposal of waste and debris

## MAJOR FIBER RELEASE EPISODE

A MAJOR FIBER RELEASE EPISODE IS THE FALLING OR DISLODGING OF ASBESTOS CONTAINING MATERIAL IN EXCESS OF AN AMOUNT WHICH CAN BE FIT INTO A 60" X 60" BAG. IF A MAJOR FIBER RELEASE EPISODE OCCURS, FOLLOW THE PROCEDURES LISTED BELOW:

Training needed for Isolation: Class III 16 hours O & M Training.

**Equipment Needed**:

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, duct tape, and polyethylene sheeting.

**Step-by-Step Procedures**:

1. Restrict entry into the area and post signs to prevent entry into the area. The signs must be posted at all possible entrances to the area.

2. Shut off or temporarily modify the air handling system to prevent the distribution of fibers to other areas in the building. Cover all vents with polyethylene sheeting where necessary. If entry into the area is required, protective clothing and respirators must be worn.

3. Contact the Asbestos Administrator and inform him/her of the fiber release episode and what procedures have been taken. *

***DO NOT PROCEED ANY FURTHER!** A response action for any major fiber release episode must be designed and conducted by accredited personal (Asbestos Abatement Contractor).

Following clean-up of the major fiber release episode the Asbestos Administrator will complete the Miscellaneous OSHA and EPA Recordkeeping Form D-2, located in Appendix D, to be included in the O & M Program File.

## MINOR FIBER RELEASE EPISODE

A MINOR FIBER RELEASE EPISODE IS THE FALLING OR DISLODGING OF ASBESTOS CONTAINING MATERIAL AN AMOUNT WHICH CAN BE FIT INTO A 60" X 60" BAG. IF A MINOR FIBER RELEASE EPISODE OCCURS, COMPLETE THE PROCEDURES LISTED BELOW:

Training needed: Class lll 16 hours O & M Training.

**Equipment Needed:**

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, duct tape, polyethylene sheeting, asbestos disposal bags, HEPA vacuum, airless water sprayer, cleaning rags/mops, (glove bag for pipe insulation fiber release, mini-enclosure and repair equipment, if applicable).

**Step-by-Step Procedures:**

1. Post signs to prevent entry by unauthorized personnel. Signs must be posted at all possible entrances to the area.

2. Shut off or temporarily modify the air handling system and restrict other sources of air movement. Cover all vents with polyethylene sheeting where necessary.

3. Put on personal protective equipment including assigned respirator.

4. All gross visible debris shall be wetted and carefully disposed of in asbestos disposal bags.

5. Any small amount of asbestos that needs to be removed due to the fiber release episode shall be conducted at this time. Pipe insulation shall be removed using appropriate methods, e.g., glove bag or mini-enclosure. If asbestos-containing materials need repairs due to the fiber release episode, then this shall also be conducted at this time.

6. All horizontal and any vertical surfaces that may have been contaminated from the fiber release episode shall be wet-wiped and/or HEPA vacuumed.

7. All fixtures that may have been contaminated from the fiber release episode shall be wet-wiped and/or HEPA vacuumed.

8. Any additional cleaning shall consist of vacuuming with a HEPA equipped vacuum cleaner and wet-wiping where necessary. All rags, towels, mop heads, or other items used to wet-wipe surfaces shall be disposed of as asbestos waste.

9. Complete the Miscellaneous OSHA and EPA Recordkeeping Form D-2, located in Appendix D, and turn it into the Asbestos Administrator for inclusion into the O & M Program File.

## CLASS III WORK ACTIVITIES

REPAIR AND MAINTENANCE OPERATIONS WHERE ACM, INCLUDING THERMAL SYSTEM INSULATION AND SURFACING MAY BY DISTURBED. (THOSE THAT CAN FIT INTO A 60" X 60" BAG)

Note: An activity is **not** considered Class III work when the removal of asbestos-containing materials is the primary goal of the job.

**Equipment Needed:**

The type of equipment needed varies depending on the type of project and material. See the step-by-step procedures below for further instructions.

**Step-by-Step Procedures:**

At this point, if you wish to perform a Class III work activity which involves removal or repair of asbestos-containing material, turn to Part 2 and find the material on which you are working. Once you have located the material, you will find the list of equipment needed and step-by-step procedures. It must be remembered that often Class III work may encompass more than one type of material. While the general procedures required for one material may well be in whole, or in part, the same as those for another, each section, for each material, should be consulted and read completely before work is instituted for the given project.

Note: Contact the Asbestos Administrator if the asbestos-containing material requiring maintenance is not within Part 2.

## CLASS I AND II WORK ACTIVITIES

ACTIVITIES INVOLVING THE DISTURBANCE/REMOVAL OF IN EXCESS OF THAT WHICH CAN FIT INTO A 60" X 60" BAG.

**Equipment Needed:**

No equipment necessary. Only a licensed asbestos abatement contractor will perform this work.

**Step-by-Step Procedures:**

No procedures necessary. Only a licensed asbestos abatement contractor will perform this work.

If unscheduled large-scale activities need to take place, contact the Asbestos Administrator and discuss the situation.

If a Class I or II work activity is conducted, then following this activity the Asbestos Administrator will complete the Miscellaneous OSHA and EPA Recordkeeping Form D-2, located in Appendix D, to be included in the O & M Program File.

## UNEXPECTED EXPOSURE

IN A BUILDING THAT HAS ASBESTOS-CONTAINING MATERIAL THERE IS ALWAYS THE POTENTIAL FOR SOMEONE TO HAVE DIRECT CONTACT TO ASBESTOS DEBRIS. IF AN ACCIDENT SIMILAR TO THIS OCCURS, COMPLETE THE FOLLOWING PROCEDURES:

**Step-by-Step Procedures:**

1. The individual must immediately put clothes in an asbestos disposal bag.

2. The bag must be sealed using duct tape.

3. The individual should proceed to the shower and clean his/her entire body.

4. DO NOT PUT ON THE SAME CLOTHES. Have clean clothes brought in and/or temporarily wear a disposable coverall.

5. Another person should visually check to see if a major or minor fiber release episode has occurred at the site where asbestos was disturbed. (Major & minor fiber release episodes are defined in this section just prior to these procedures.)

6. Accredited personnel must carry out the instructions of the major fiber release episode cleanup including but not limited to all procedures and documentation required by prior applicable sections of this O & M Program Manual.

Note: Contaminated clothing must be disposed of as asbestos contaminated waste or laundered in accordance with OSHA, 29 CFR, 1926.1101 (i)(2).

## Prohibited Activities

In accordance with OSHA, 29 CFR Part 1910.I001 (k), certain maintenance/custodial activities are prohibited when asbestos-containing materials are involved. These activities as described by the OSHA General Industry Standard are:

1. Not to drill holes in asbestos containing materials.
2. Not to hang plants or pictures on structures covered with asbestos-containing materials.
3. Not to sand asbestos-containing floor tile.
4. Not to damage asbestos-containing materials while moving furniture or other objects.
5. Not to install curtains, drapes, or dividers in such a way that they damage asbestos-containing materials.
6. Not to dust floors, ceilings, moldings or other surfaces in asbestos-contaminated environments with a dry brush or sweep with a dry broom.
7. Not to use an ordinary vacuum to clean up asbestos-containing debris.
8. Not to remove ceiling tiles below asbestos-containing materials without wearing the proper respiratory protection, clearing the area of other people, and observing asbestos removal waste procedures.
9. Not to remove ventilation system filters dry.
10. Not to shake ventilation system filters.

In accordance with OSHA, 29CFR Part 1926.1101 (g)(3), the following prohibitions are in effect. When disturbing asbestos, it is illegal to use the following:

1. High-speed abrasive disc saws unless equipped with HEPA filtered system.
2. Compressed air used to remove asbestos.
3. Dry sweeping, shoveling or other cleanup of asbestos dust/debris.
4. Employee rotation as a means to reduce employee exposure to asbestos.

# Section II
# Part 2

## Class III Work

## Activities for Specific Materials

**Adhesive & Mastic Material** (floor tile and carpet)

**Class III Work**
(floor tile adhesive/mastic)

If removal or repairs are needed on floor tile that is adhered by an asbestos-containing adhesive/mastic then follow the procedures necessary for Class III Work activities on floor tile (see "Floor Tile").

No special precautions need to be taken for cleaning floor tile, except to avoid cracked/broken tiles, so as to not expose asbestos-containing adhesive/mastic. Consult Section I Part 5, Care of Asbestos-Containing Flooring Material.

**Class III Work Equipment**
(carpet adhesive/mastic)

No equipment necessary. Please review the step-by-step procedures.

**Class III Work Step-by-Step Procedures**
(carpet adhesive/mastic)

This should be treated the same as asbestos-containing carpet (see "Carpet"). Contact the Asbestos Administrator if you wish to conduct activities on carpet that has asbestos-containing adhesive/mastic. If the Asbestos Administrator deems the activity necessary, an asbestos consultant or Asbestos Contractor will be contacted for equipment and procedural information.

Contacting a consultant for these types of procedures is recommended due to the nature of the adhesive/mastic and the potentially complicated procedures necessary for proper and safe removal. The material is extremely resistant and difficult to remove. Certain solvent type substances have been recently introduced to remove the adhesives/mastics. These solvents may pose both safety risks (due to flammability) and health risks (organic chemicals contained within them) for their users. For these reasons it is advisable that the Asbestos Adminstrator have specially trained consultants and contractors brought in to handle the situation.

If cleaning is needed on carpet that is adhered by an asbestos-containing adhesive/mastic then follow the procedures necessary for asbestos- containing carpet cleaning.

## Boiler & Tank Insulation

### Class III Work

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene sheeting, duct tape, spray glue, HEPA vacuum, water spray bottle, asbestos disposal bags, ladder, bucket with water, mini-enclosure, surfactant, utility knife, wire brush, snips, boiler/tank repair materials (for patching).

### Class III Work Step-by-Step Procedures

Note: Only in emergencies or under unusual circumstances should removal take place on boiler or tank insulation by the maintenance staff. If it is necessary, contact the Asbestos Administrator concerning the specific situation prior to beginning.

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Construct a mini-enclosure contiguous to the tank or boiler that needs to be worked on. BECAUSE OF THE IRREGULAR SURFACE OF MOST TANKS AND BOILERS, THE MINI-ENCLOSURE MAY NEED TO BE MADE OR ADJUSTED TO SPECIFICALLY CONFORM TO THE SURFACE. Follow the mini-enclosure procedures found in Appendix A.

3. Refer to the instructions below during step 10 of the mini-enclosure procedures.

    a. If the material is being removed, it must first be thoroughly wetted with amended water using the airless sprayer.

    b. Cut the material using a utility knife or similar tool while keeping the material wet as you cut. Work very slowly.

    c. Snips may be needed to cut through the wire mesh or similar material if applicable. Also, keep this material wet while you cut.

    d. The material must not be dropped to the floor, but rather gently taken off and placed in an asbestos disposal bag. The material must be thoroughly saturated with amended water.

    e. Any exposed edges of the remaining boiler/tank insulation must now be covered using applicable repair materials for boiler/tank jackets, or the insulation must be re-covered with a new boiler/tank insulation in which no exposed edges from the remaining insulation are exposed.

    f. If the surface is left exposed, it should be cleaned using a wire brush and wet rag.

Note: If repair work is all that is needed, set up mini-enclosure and complete necessary patching during step 10 of the mini-enclosure procedures.

## Carpet

**Class III Work Equipment**
(cleaning)

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, HEPA vacuum, airless sprayer, rag.

**Class III Work Step-by-Step Procedures**
(cleaning)

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Put on protective clothing and respirator.

3. Using the airless water sprayer, mist the carpeted area to be vacuumed.

4. Using the HEPA vacuum, vacuum the carpeted area that was just misted.

Note: This process should be done in sections so as not to let any particular section of the carpet become too dry before vacuuming.

5. Using a wet rag, clean the outside surface of the HEPA vacuum and dispose of the rag in an asbestos disposal bag after use.

6. After completion, vacuum the surface of your disposable clothing.

7. Remove disposable clothing and dispose of it in the asbestos disposal bag (LEAVE RESPIRATOR ON).

8. The asbestos disposal bag must be securely taped shut and stored in a designated area until it can be picked up for proper disposal.

9. Respirator can be taken off after disposal bag is securely taped.

10. Complete the Miscellaneous OSHA and EPA Recordkeeping Form D-2, located in Appendix D and turn it in to the Asbestos Administrator.

**Class III Work Equipment**
(remove and repair)

No equipment necessary. Please review the step-by-step procedures.

**Class III Work Step-by-Step Procedures**
(remove and repair)

Contact the Asbestos Administrator if you wish to conduct activities on carpet. If the Asbestos Administrator deems the activity necessary, an asbestos consultant will be contacted for equipment and procedural information.

A consultant is recommended for this type of operation for several reasons. Initially, carpet made up of asbestos-containing material is relatively rare. Should this material be encountered, numerous special precautions should be undertaken prior to its removal or repair. The design of and the procedures to be employed for these operations should only be performed by specially trained and experienced personnel. This type of expertise can best, if not only, be obtained through the use of outside consultants.

## Caulking

### Class III Work Equipment

Disposable coveralls (including booties and hood) disposable gloves, assigned respirator, warning signs, polyethylene drop cloth, HEPA vacuum, water spray bottle, asbestos disposal bag, knife (or other appropriate scraper type tool).

### Class III Work Step-by-Step Procedures

Note: This procedure should be completed utilizing two-person teams.

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and protective respirators.

2. Lay an 8-foot by 8-foot drop cloth polyethylene sheet beneath the area where the caulking will be removed. The center of the sheet should be positioned directly under the caulking unless physically impossible. Many times caulking is located on windows or similar areas in which the center of the drop cloth cannot be positioned directly under the caulking. If this is your situation, the drop cloth should be placed on the wall all the way to the caulking. If there are ledges or windowsills below the caulking, these must also be covered. Many situations will be unique and special care must be taken to ensure coverage of all horizontal and vertical surfaces below the caulking.

3. Put on protective clothing and respirators.

4. Remove caulking from surface by using whatever method is appropriate and by following these precautions:

    a. One person should continuously mist the caulking with the water spray bottle while another person removes the caulking.

    b. When removing the caulking, the work MUST ALWAYS TAKE PLACE ABOVE A POLYETHYLENE DROP CLOTH.

    c. Attempt to remove all of the caulking, do not leave residue if at all possible.

Note: Take extreme care when walking off the drop cloth so that no caulking debris is tracked off the drop cloth area.

5. Old caulking must be disposed of in an asbestos disposal bag, including all debris found on the drop cloth (DO NOT SWEEP ANY OF THE MATERIAL UP).

6. HEPA vacuum the drop cloth.

7. Wet-wipe the drop cloth using a wet rag.

8. Move the drop cloth to the next caulking removal area, if necessary, and repeat the above procedures (if in the same area). If you are moving to an area where signs have not been posted, or if you are done for the day, continue to next steps.

9. Clean tools with a wet rag and then store in a plastic bag for future use. The bag should be marked "For asbestos removal only."

10. Dispose of the drop cloth and wet-wipe rag(s) in an asbestos disposal bag.

11. Remove disposable clothing and dispose of it in an asbestos disposal bag (LEAVE RESPIRATOR ON).

12. The asbestos disposal bag must be securely taped shut and stored in a designated area until it can be picked up for proper disposal.

13. Respirators can be taken off after disposal bag is securely taped.

14. Complete the Miscellaneous OSHA and EPA Recordkeeping Form D-2, located in Appendix D and turn it in to the Asbestos Administrator.

Note: If caulking is replaced with a non-asbestos material, this should be documented as being non-asbestos caulking so that the above procedures do not have to be followed for future work on this caulking.

## Ceiling Panels

### Class III Work Equipment

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene sheeting, duct tape, spray glue, HEPA vacuum, water spray bottle, asbestos disposal bags, ladder, bucket with water (if using mini-enclosure), mini- enclosure (for Panel Disturbance section below).

### Class III Work Step-by-Step Procedures

Panel Disturbance

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Construct a mini-enclosure below the panel that needs to be moved or will be disturbed in some way. Follow the mini-enclosure procedures found in Appendix A.

3. Refer to the instructions below during step 10 of the mini-enclosure procedures.

    a. If panel is being removed for access purposes, lightly mist edges and lay the ceiling panel gently on a contiguous panel. Take special care when placing panel back in - never force it.

    b. If work is being done on the panel or items (e.g., objects teacher/students have hung) are being removed from a panel(s), mist area of work and throw away any items as asbestos waste.

Changing Light Bulbs

Note: Do not change light bulbs during work hours or during a time of high activity unless area is adequately marked off and signs are posted.

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Lay an 8-foot by 8-foot drop cloth polyethylene sheet below the area where the light bulb will be changed. The center of the sheet should be positioned directly under the light bulb unless physically impossible.

3. Put on protective clothing and respirator.

4. Make necessary light bulb change.

5. Wet-wipe and HEPA vacuum the drop cloth and the ladder before moving it to the next location. (Do this each time the ladder and drop cloth is moved to another location.)

6. After the last light bulb change, the drop cloth should again be misted and then rolled up and disposed of in an asbestos disposal bag. Dispose of wet-wipe rag in the asbestos disposal bag.

7. Remove disposable clothing and dispose of it in as asbestos disposal bag (LEAVE RESPIRATOR ON).

8. The asbestos disposal bag must be securely taped shut and stored in a designated area until it can be picked up for proper disposal.

9. Respirator can be taken off only after the disposal bag is securely taped.

10. Complete the Miscellaneous OSHA Recordkeeping Form D-2, located in Appendix D and turn it into the Asbestos Administrator.

## Ceiling Tiles

### Class III Work Equipment

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene sheeting, duct tape, spray glue, HEPA vacuum, water spray bottle, asbestos disposal bags, ladder, bucket with water, airless sprayer, encapsulant, mini-enclosure.

### Class III Work Step-by-Step Procedures

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Construct a mini-enclosure below the ceiling tile(s) that need to be worked on/removed. Follow the mini-enclosure procedures found in Appendix A.

3. Refer to the instructions below during step 10 of the mini-enclosure procedures.

    a. A solution of amended water should be prepared for the airless sprayer (according to manufacturer's instructions) if tile is being removed.

    b. The tile(s) being removed should be thoroughly wetted before removal. If tile is being worked on in any way, lightly mist the tiles using the water spray bottle.

    c. Gently remove tile(s) so as to prevent the tile(s) from breaking up.

    d. Gently place tile(s) into an asbestos disposal bag.

    e. After removal of the tiles cover any exposed areas and edges.

**Duct Insulation**

**Class III Work Equipment**

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene sheeting, duct tape, spray glue, HEPA vacuum, water spray bottle, asbestos disposal bags, ladder, bucket with water, mini-enclosure, surfactant, utility knife, wire brush, duct repair materials (for patching).

**Class III Work Step-by-Step Procedures**

Note: Only in emergencies or under unusual circumstances should removal take place on duct insulation by the maintenance staff. If necessary, contact the Asbestos Administrator concerning the specific situation prior to beginning.

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Construct a mini-enclosure contiguous to the duct that needs to be worked on. BECAUSE OF THE UNUSUAL AREAS WHERE MOST DUCTS ARE FOUND, THE MINI-ENCLOSURE MAY NEED TO BE MADE OR ADJUSTED TO SPECIFICALLY CONFORM TO ITS SURFACE. Follow the mini- enclosure procedures found in Appendix A.

3. Refer to the below instructions during step 10 of the mini-enclosure procedures.

    a. If material is being removed, it must first be thoroughly wetted with amended water using the airless sprayer.

    b. Cut the material using a utility knife or similar tool, while keeping the material wet as you cut. Work very slowly.

    c. The material must not be dropped to the floor, but rather gently taken off and placed in an asbestos disposal bag. The material must be thoroughly saturated with amended water.

    d. Any exposed edges of the remaining duct insulation must now be covered using applicable repair materials for duct insulation, or the insulation must be recovered with a new duct insulation on which no exposed edges from the remaining insulation are left exposed.

    e. If the surface is left exposed then it should be cleaned using a wire brush and wet rag.

**Electrical Insulation**

Due to the extremely friable nature of most asbestos-containing electrical insulation, combined with the danger of working with electrical items, small- scale, short-duration asbestos activities should not take place on this material.

**Class III Work Equipment**

No equipment necessary. Please review step-by-step procedures.

**Class III Work Step-by-Step Procedures**

Contact the Asbestos Administrator if you wish to conduct activities that may impact on or involve this type of material. If the Asbestos Administrator deems the activity necessary, the asbestos consultant will be contacted for equipment and procedures information.

## Fire Doors & Frames

### Class III Work Equipment

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene sheeting, duct tape, spray glue, HEPA vacuum, water spray bottle, asbestos disposal bags, bucket with water, mini-enclosure, equipment for door (if applicable).

### Class III Work Step-by-Step Procedures

Note: This work may be performed in a pre-designated maintenance area, where only custodial and maintenance personnel are permitted. If the door is damaged and asbestos-containing materials are exposed, the maintenance work should be done at the location of the door.

1. Post signs at the work area to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. IF IN UNDAMAGED STATE: The door that needs to be repaired or worked-on should be brought back to the pre-designated work area. The door should be carefully taken off its hinges by removing the pins. If the frame needs to be repaired or worked-on and it can be removed, then it should also be taken to the pre-designated area. The door may also be worked on in- place as long as a mini-enclosure is constructed at the location.

3. Construct a mini-enclosure at the work area, which will be used for repairing/working on the doors/frames. Follow the mini- enclosure procedures found in Appendix A.

4. Refer to the instructions below during step 10 of the mini-enclosure procedures.

    a. Do not use electric or abrasive tools.

    b. Make all necessary alterations to door/frame or perform all work while keeping the area worked on wet.

    c. All items that are removed from the door/frame must be disposed of as asbestos waste.

    d. After work is complete, make sure all the seals are tight so as to have no exposed material or open areas to the inside of the door.

    e. The door should be wet-wiped when work is complete and placed in the change room.

    f. Follow the rest of the mini-enclosure procedures, except that when you reach step 16 of the procedures you should first HEPA vacuum the door. The door is then ready to be put back to its original location, if it is at a designated location for repairs.

## Firebricks

### Class III Work Equipment

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene sheeting, duct tape, spray glue, HEPA vacuum, water spray bottle, asbestos disposal bags, ladder (if needed), bucket of water, airless sprayer, encapsulant, mini-enclosure.

### Class III Work Step-by-Step Procedures

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Construct a mini-enclosure next to the firebrick that needs to have a section removed or repaired. Follow the mini-enclosure procedures found in Appendix A.

3. Refer to the below instructions during step 10 of the mini-enclosure procedures.

    a. A solution of amended water should be prepared for the airless sprayer (according to the manufacturer's instructions).

    b. If the firebrick is being removed, it must be thoroughly wetted before removal. If the firebrick is being worked on in some other capacity, lightly mist or wet the area being worked on to reduce airborne asbestos.

    c. Gently place firebrick into an asbestos disposal bag.

    d. After removal of any firebrick, encapsulate exposed edges of any remaining firebrick.

**Floor Tile** (including seamless floor tile)

**Class III Work Equipment**
(cleaning)

No additional items are required, beyond what is needed for normal cleaning activities, but special precautions must be observed as highlighted in the step-by-step procedures below.

**Class III Work Step-by-Step Procedures**
(cleaning)

1. No specific procedures have been provided in writing by the EPA, although the following precautions should be observed when using the stripping-buffing machine.

    a. Areas where the machine will be used must be swept first.

    b. Areas where the machine will be used must be wet-cleaned first (mopped).

    c. The buffer/stripper pad must be cleaned before each use to make sure that no foreign objects or debris is on the pad.

    d. When using the machine, be alert to watch for objects that may get caught in the pad which could damage the surface of the tile. If this happens, immediately stop the machine and remove the object.

    e. Areas where broken or cracked tile are observed should not be cleaned using this machine. These areas should be reported to the Asbestos Administrator for proper handling. See below for repair procedures if applicable.

**Class III Work Equipment**
(removal and repair)

Disposable coveralls (including booties and hood) disposable gloves, assigned respirator, warning signs, HEPA vacuum, rag(s), water spray bottle, bucket of water,

**Class III Work Step-by-Step Procedures**
(removal and repair)

Note: The procedures below should be followed only if it is possible to remove the tile(s) without intentionally breaking or cracking the tile(s) (unless tile is already broken or cracked).

1. Post signs to prevent entry by personnel not working on project and not wearing protective clothing and respirators.

2. Put on protective clothing and respirator.

3. HEPA vacuum the area of removal/work.

4. Wet-wipe the area of removal/work.

5. Remove the tile(s) gently, using your hand or a scraper, being careful not to break or crack the tile(s). (If tile does break or crack, quickly mist tile and the immediate surrounding area, and HEPA vacuum any debris.)

6. Do not remove adhesive unless needed for replacement purposes. If this is needed, thoroughly wet and gently scrape the adhesive, but only to the extent needed.

7. Put tile(s) in an asbestos disposal bag and seal it with duct tape.

8. Put the asbestos disposal bag containing the tile(s) into another asbestos disposal bags (be careful not to break open asbestos disposal bag with tile(s) in it).

9. HEPA vacuum area where tile(s) was removed and HEPA vacuum a 5' radius around the tile removal area.

10. Wet-wipe the same area as step 10.

11. If new tile(s) must be replaced in area of tile removal, then do so at this time. Protective clothing and respirator must remain on for replacement. When replacing tile take special care not to disturb the surrounding asbestos-containing tiles.

12. If replacement was necessary, then repeat steps 9 and 10 at this point.

13. HEPA vacuum the surface of your disposal clothing.

14. Wet-wipe tools and dispose of the rag in an asbestos disposal bag.

15. Remove disposable clothing and dispose of it in an asbestos disposal bag. (LEAVE RESPIRATOR ON).

16. The asbestos disposal bag must be securely taped shut and stored in a designated area until it can be picked up for proper disposal.

17. Respirators can be taken off after disposal bags are securely taped.

18. Complete the Miscellaneous OSHA and EPA Recordkeeping Form D-2, located in Appendix D and turn it in to the Asbestos Administrator.

Note: The OSHA Floor Tile Settlement Agreement procedures may be used by 16 hour trained staff only if they have been trained on the settlement agreement procedures.

## Gaskets

### Class III Work Equipment

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene drop cloth, HEPA vacuum, water spray bottle, asbestos disposal bag, knife (or appropriate scraper).

### Class III Work Step-by-Step Procedures

Note: This procedure should be performed utilizing two-person teams.

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Lay an 8-foot by 8-foot drop cloth polyethylene sheet below the area where the gasket will be removed/changed. The center of the sheet should be positioned directly under the gasket, unless physically impossible.

3. Put on protective clothing and respirators.

4. Separate hardware/fitting from surfaces to expose gasket material.

5. Remove gasket from hardware/fitting utilizing whatever method is most appropriate and necessary and in compliance with these further precautions:

    a. The first person should continuously mist the gasket with the water spray bottle, while the second person removes it from the equipment.

    b. When removing a gasket you should be as close as possible to the center of the drop cloth. THE WORK MUST ALWAYS TAKE PLACE ABOVE A POLYETHYLENE DROP CLOTH.

    c. Attempt to remove the entire gasket, do not leave residue if at all possible.

Note: Take extreme care when walking off drop cloth so that no gasket debris is tracked off the drop cloth area.

6. Old gasket must be disposed of in asbestos disposal bag, including any gross debris found on the drop cloth. (DO NOT SWEEP).

7. HEPA vacuum the drop cloth.

8. Wet-wipe the drop cloth using a wet rag.

9. Move the drop cloth to the next gasket change area and repeat procedures above if necessary (if in the same area). If you are moving to an area where signs have not been posted, or if you are done for the day, continue to the next steps.

10. Clean tools with a wet rag and then store in plastic bag for future use. The bag should be marked "For asbestos removal only."

11. Dispose of drop cloth and wet-wipe rag(s) in an asbestos disposal bag.

12. Remove disposable clothing and dispose of it in an asbestos disposal bag. (LEAVE RESPIRATOR ON).

13. The asbestos disposal bag must be securely taped shut and stored in a designated area until it can be picked up for proper disposal.

14. Respirator can be taken off after the disposal bag is securely taped.

15. Complete the Miscellaneous OSHA and EPA Recordkeeping Form D-2, located in Appendix D and turn it in to the Asbestos Administrator.

Note: If gaskets are replaced with a non-asbestos material, they should be documented as being a non-asbestos gasket so that the above procedures do not have to be followed for future work on these gaskets.

Note: If asbestos-containing gaskets are still used in the building, they should be stored in an area not frequently used by personnel, and they should be clearly marked as asbestos-containing. They should also be marked indicating that they are still being used and are not being discarded as asbestos waste, as stated in the "Asbestos- containing-materials stored in building" located in Appendix B.

**Heating, Ventilation & Air Conditioning Fabric (HVAC)** - Vibration Dampeners

Because this material is located on HVAC equipment and therefore has a greater potential to distribute particulate material throughout the building, Class III Work activities should not be conducted on this material.

### Class III Work Equipment

No equipment necessary. Please review the step-by-step procedures.

### Class III Work Step-by-Step Procedures

Contact the Asbestos Administrator if you wish to conduct activities on this material. If the Asbestos Administrator deems the activity necessary, an asbestos consultant will be contacted for proper procedures for working on or around this material.

The procedures for working on this material are complicated and difficult to perform. Additionally, as previously noted the potential of contaminating extensive and distant areas through the HVAC system is especially prevalent with these types of operations. For these reasons, only specially trained and experienced personnel should attempt to work on this type of material.

## Pipe & Fitting Insulation

Fittings include couplings, valves, or other apparatus used for joining pipes to each other or to fixtures for which they are made.

### Class III Work Equipment

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene drop cloth, glove bag, duct tape, asbestos disposal bag, HEPA vacuum, airless sprayer, utility knife, surfactant, encapsulant, wire brush.

### Class III Work Step-by-Step Procedures

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Lay an 8-foot by 8-foot drop cloth polyethylene sheet below the glovebag work area. The center of the sheet should be positioned directly under the glove bag area unless physically impossible.

3. Put on protective clothing and respirator.

4. Complete the following instructions for proper glove bag procedures:

Note: Glove bags should never be used on pipes in excess of $150^0$ because the heat could cause the bag to melt.

Note: An inspection of the pipe should be made. If the insulation is damaged at locations where the bag will be attached, removal with a glove bag may not be possible. If this occurs, contact the Asbestos Administrator for further instructions.

a. A solution of amended water shall be prepared (according to manufacturer's instructions) for the airless sprayer.

b. The glove bag should be fitted to the size of the pipe by cutting the top and the top sides of the glove bag.

c. The following tools and supplies shall be placed inside the glove bag in the tool pouch: utility knife, wire brush, rags, container with thick encapsulate (such as Childer's Viak).

d. The glove bag is then attached to the pipe by folding the open edges together (making a top seam above the pipe) and securely sealing them with duct tape, as well as sealing both cut sides around the pipe.

e. The bottom seam of the glove bag may be sealed with duct tape to prevent any leakage from a defective bag.

f. Insert the wand of the airless sprayer through the glove bag by making a small hole in a location that allows the wand to move freely in the bag, and tape the plastic tightly. (There may be a prefabricated hole, especially for the sprayer.)

g. Insert the nozzle of the HEPA vacuum through the appropriate opening (prefabricated hole) and tape the plastic tightly around the nozzle (do not use vacuum until step 5o).

h. Place your arms into the glove bag appendages and thoroughly wet the pipe insulation.

i. Using the knife, cut through the asbestos at each end of the section to be removed. The section to be removed is then slit from end to end (keep material wet while cutting).

j. The insulation is then lifted off the pipe and lowered carefully to the bottom of the glove bag.

k. Using the wire brush, rags and water, the pipe shall be thoroughly cleaned.

l. Wet the entire inside of the bag with specific attention to the plastic around the pipe and the arms and sockets.

m. The exposed ends of the insulation remaining on the pipe shall be encapsulated, as well as the bare pipe.

n. Put all tools and supplies into wet cleaned arm socket by pulling socket and tools inside-out.

o. Collapse the bag by sucking all of the air out of the bag using the HEPA vacuum (this is the only time vacuum should be used).

p. Tape the arm close to the tools (tape it in two locations with a one-inch space between the taped spots). Cut between the taped spots and put the enclosed tools into a bucket of water.

q. Remove the sprayer wand and seal the opening.

r. Remove the vacuum nozzle and seal the opening.

s. The glove bag should be squeezed tightly (as close to the top as possible) twisted, and sealed with duct tape.

t. Cut the bag off the pipe above the taped area and put the glove bag into an asbestos disposal bag, as well as the remaining portion of the bag on the pipe.

u. Clean the tools in the bucket of water and dispose of the water and glovebag remains in the asbestos disposal bag. The clean tools should be placed inside a plastic bag for future use.

5. Lightly mist the drop cloth polyethylene sheet with water using the water spray bottle, carefully roll it up and put it in an asbestos disposal bag.

6. The asbestos disposal bag must be securely taped shut and stored in a designated area until it can be picked up for proper disposal.

7. Respirator can be taken off after the disposal bag(s) are securely taped.

8. Complete the Miscellaneous OSHA and EPA Recordkeeping Form D-2, located in Appendix D and turn it in to the Asbestos Administrator.

Note: If repairs to pipe insulation are to be conducted, then steps 4a through 4u shall be altered as follows:

- Step 4c shall be used, but tools needed for removal shall be substituted with tools and supplies needed for necessary repairs.

- Step 4f is not necessary.

- Steps 5h through 5m shall not be used, but instead necessary repairs shall be made to the pipe insulation.

**Sink Undercoating** (Trowelled-on)

**Class III Work Equipment**

Disposable coveralls (including booties and hood), disposable gloves, assigned respirators, warning signs, polyethylene drop cloth, duct tape, HEPA vacuum, airless sprayer, asbestos disposal bag, rag, surfactant, necessary tools to remove sink.

**Class III Work Step-by-Step Procedures**

Note: If you are working under the sink but not touching the material, just wear a respirator and take special care not to disturb material.

Note: If you do disturb the material, be prepared to HEPA vacuum and wet-wipe the area below the sink thoroughly.

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Put on protective clothing and respirator.

3. Put a polyethylene drop cloth under the sink, covering the entire cabinet area, and hold it in place with duct tape. If the sink is not in a cabinet, then lay an 8-foot by 8-foot drop cloth under the sink and secure it on the contiguous wall, if necessary.

4. Using the airless sprayer containing amended water, thoroughly wet the sink undercoating.

5. Using the appropriate tools, carefully work on the sink, disturbing the sink undercoating as little as possible.

Note: If the sink is being removed, carefully remove the sink without disturbing the undercoating and place the sink directly into an asbestos disposal bag.

6. Thoroughly wet-wipe the entire cabinet and the surface of the polyethylene sheeting used as a drop cloth.

7. Place the polyethylene drop cloth into the asbestos disposal bag.

8. Wet-wipe the area that was under the drop cloth.

9. Throw the rags and protective clothing into the asbestos disposal bag (LEAVE RESPIRATOR ON).

10. The asbestos disposal bag must be securely taped shut and stored in a designated area until it can be picked up for proper disposal.

11. Respirators can be taken off after the disposal bag is securely sealed.

12. Complete the Miscellaneous OSHA and EPA Recordkeeping Form D-2, located in Appendix D and turn it in to the Asbestos Administrator.

**Sprayed-on & Trowelled-on Fireproofing**

Due to the extremely friable nature of most sprayed-on/trowelled-on fireproofing materials, Class III Work activities should not be conducted on this material.

**Class III Work Equipment**

No equipment necessary. Please review the step-by-step procedures.

**Class III Work Step-by-Step Procedures**

Contact the Asbestos Administrator if you wish to conduct activities on this material. If the Asbestos Administrator deems the activity necessary, an asbestos consultant will be contacted for equipment and procedural information.

Activities performed on this material are extremely difficult and complicated to do, because of the nature of the material. Special equipment and specially trained personnel should be utilized for any activities that may disturb or otherwise impact on this material. The Asbestos Administrator is the individual who will make the required arrangements for the work to be safely and properly performed.

## Transite Board

### Class III Work Equipment

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene sheeting, duct tape, spray glue, HEPA vacuum, water spray bottle, asbestos disposal bags, ladder (if needed), bucket of water, airless sprayer, encapsulant, mini-enclosure.

### Class III Work Step-by-Step Procedures

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Construct a mini-enclosure below or next to the transite board. Follow the mini- enclosure procedures found in Appendix A.

3. Refer to the instructions below during step 10 of the mini-enclosure procedures:

    a. A solution of amended water should be prepared for the airless sprayer (according to the manufacturer's instructions).

    b. If the transite is being removed, it must be thoroughly wetted before removal. DO NOT CUT TRANSITE WITH SAW OR ELECTRIC TOOLS, ONLY REMOVE EASILY REMOVABLE INTACT SECTIONS. If transite is disturbed in some other capacity (e.g., nails removed or material drilled into), lightly mist or wet area being worked on to reduce airborne asbestos.

    c. Gently place transite into an asbestos disposal bag.

    d. After removal of transite, encapsulate any exposed edges. If the transite board has only been disturbed (e.g., drilled or nails removed), encapsulate the areas where the work was performed.

## Trowelled-on Plaster

### Class III Work Equipment

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene sheeting, duct tape, spray glue, HEPA vacuum, water spray bottle, asbestos disposal bags, ladder (if needed), bucket of water, airless sprayer, encapsulant, mini-enclosure.

### Class III Work Step-by-Step Procedures

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Construct a mini-enclosure below or next to the trowelled-on plaster that needs to be removed or worked on. Follow the mini-enclosure procedures found in Appendix A.

3. Refer to the instructions below during step 10 of the mini-enclosure procedures.

    a. A solution of amended water should be prepared for the airless sprayer (according to the manufacturer's instructions).

    b. If the plaster is being removed, it must be thoroughly wetted before removal. DO NOT CUT PLASTER WITH SAW OR ELECTRICAL TOOLS, ONLY REMOVE EASILY REMOVABLE INTACT SECTIONS. If plaster is disturbed in some other capacity (e.g., nails removed or material drilled into), lightly mist or wet area being worked on to reduce airborne asbestos.

    c. Gently place plaster into an asbestos disposal bag.

    d. After removal of any plaster, encapsulate exposed edges. If the plaster has only been disturbed (e.g., drilled or nails removed), encapsulate the areas where the work was performed.

## Wallboard

### Class III Work Equipment

Disposable coveralls (including booties and hood), disposable gloves, assigned respirator, warning signs, polyethylene sheeting, duct tape, HEPA vacuum, water spray bottle, asbestos disposal bags, ladder (if needed), bucket of water, airless sprayer, encapsulant, mini- enclosure.

### Class III Work Step-by-Step Procedures

1. Post signs to prevent entry by personnel not working on the project and not wearing protective clothing and respirators.

2. Construct a mini-enclosure next to the wallboard that needs to have a section removed or repaired. Follow the mini-enclosure procedures found in Appendix A.

3. Refer to the instructions below during step 10 of the mini-enclosure procedures.

    a. A solution of amended water should be prepared for the airless sprayer (according to the manufacturer's instructions).

    b. If the wallboard is being removed, it must be thoroughly wetted before removal. DO NOT REMOVE WALLBOARD WITH SAW OR ELECTRIC TOOLS, ONLY REMOVE EASILY REMOVABLE INTACT SECTIONS. If wallboard is disturbed in some other capacity (e.g., nails removed or material drilled into), lightly mist or wet the area being worked on to reduce the airborne asbestos.

    c. Gently place wallboard into an asbestos disposal bag.

    d. After removal of any wallboard, encapsulate any exposed edges. If the wallboard has only been disturbed (e.g., drilled or nails removed), encapsulate the areas where the work was performed.

RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
MICHIGAN OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (MIOSHA)
BARTON G. PICKELMAN, CIH, DIRECTOR

SHELLY EDGERTON
DIRECTOR

November 7, 2016

Mr. Todd Dryer
Kingsbury Country Day School, Justin A. Schwartz Center
5000 Hosner Road
Oxford, MI 48370

Dear Mr. Dryer:

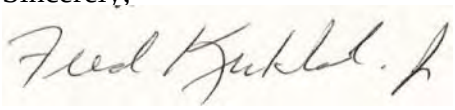
RE: AHERA Management Plan - ACCEPTANCE

On October 24 2016, the Asbestos Program of the Michigan Department of Licensing and Regulatory Affairs (LARA) received an AHERA Management Plan for Kingsbury Country Day School, Justin A. Schwartz Center. We are pleased to inform you that based upon the information received and in our opinion, your Management Plan meets or exceeds the requirements specified in 40 CFR Part 763 (Federal Register/Volume 52, No. 210/Friday, October 30, 1987). The management plan has, therefore, been accepted.

The Environmental Protection Agency (EPA) has requested that we inform you that although the LEA's management plan has been accepted by the state, EPA may still determine, after subsequent on-site enforcement inspection, that the LEA is violating the AHERA regulations.

Thank you for your continued cooperation. Should you have questions concerning this correspondence or other asbestos related issues, please contact me at 517.284.7698.

Sincerely,



Fred Kirkland, Jr., Industrial Hygiene Specialist
Asbestos Training/Accreditation Administrator

FK:kaw

cc: Charter School Partners
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Brighton MI 48114

Nova Environmental, Inc.
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